

Chapter 1 Introduction

In the analysis of the imperfective aspect in Mandarin, most studies pay attention to the distinction between *zai* (在) and *zhe* (著) (Li and Thompson 1981, Smith 1991, Egerod 1994, and many others) and only few studies are concerned with distinctions between the markers *zai*, *zheng* (正), and *zhengzai* (正在), which all denote a progressive event and occur in the same position of a syntactic structure as competing forms. Thus, this thesis aims to explore the syntactic and semantic properties of *zai*, *zheng*, and *zhengzai* with respect to their collocational patterns.

1.1 Background

Every language has tense and aspect, in which tense represents the relation between the speech time and the event time along the ordered linear dimension of time (Givon 1993), while aspect represents “the grammatical description of verbs, referring primarily to the way the grammar marks the duration or type of temporal activity denoted by the verb (Crystal 1997).” In English, tense may be classified into four types: the past tense which indicates the speech time after or following the event time, the future tense indicating the speech time before or preceding the event time, the present tense representing the speech time and the event time right at the same position, and the habitual tense expressing either an always occurring event, or a timeless event, or an event with unspecified event time (Givon 1993). On the other hand, aspect is commonly classified into two categories: perfective and imperfective. The perfective aspect, from the perspective of speakers, expresses the completion of an event and views the event in its entirety (Comrie 1976), whereas the imperfective (progressive) aspect indicates the internal structure of an event without the initial and final points involved (Comrie 1976; Smith 1991, 1994; Hsu 1996; Chen 2004, etc.).

In the aspect system of Mandarin Chinese, the most general perfective aspect markers

involve *le* (了) and *guo* (過), and the basic imperfective aspect markers include *zhe*, *zai*, *zheng*, and *zhengzai*. This thesis essentially concerns the imperfective aspect in Mandarin, especially the markers *zai*, *zheng*, and *zhengzai*. When talking about the Mandarin imperfective aspect, most studies illustrate the distinction of *zai* as the progressive marker and *zhe* as the stative imperfective marker (Li and Thompson 1981, Huang 1989, Smith 1994, Egerod 1994, Shirai 1998, and Chu 1998), and fewer studies mention the other two imperfective markers *zheng* and *zhengzai* (Smith 1991; Guo 1991, 1992; Hsu 1996; and Chen 2003). *Zheng* and *zhengzai* are nearly identical to *zai* which syntactically precedes verbs and semantically denotes an ongoing event, and sometimes these three markers are interchangeable in certain context with the progressive sense (Pan 1980, Egerod 1994, Xiao 2002, and Zhang 2002a). Given that these three markers are morphologically distinct, some questions will have to be asked: do they encode the same grammatical, semantic, and pragmatic information? Do they occur in completely the same contexts or they have different contextual constraints? If the three markers are functionally identical, we may wonder why Chinese has three different and redundant marking devices. Given the principle of economy in language, our assumption is that there must be some fine-grained distinctions between *zai*, *zheng*, and *zhengzai*. Therefore, our research questions are what makes the three markers distinct from each other and what are exactly their lexical semantic distinctions that bear syntactic consequences. This study aims to explore the semantic distinctions of *zai*, *zheng*, and *zhengzai* from their collocational patterns.

1.2 Semantic Features of the Progressive Aspect (Givon 1993)

Givon (1993) explores the progressive aspect from three aspects: unboundedness vs. compactness, proximity vs. remoteness, and simultaneity vs. sequentiality. In the unboundedness vs. compactness viewpoint, the progressive aspect in (1a) represents an unbounded ongoing event. It is observed from close proximity with a wide camera-angle

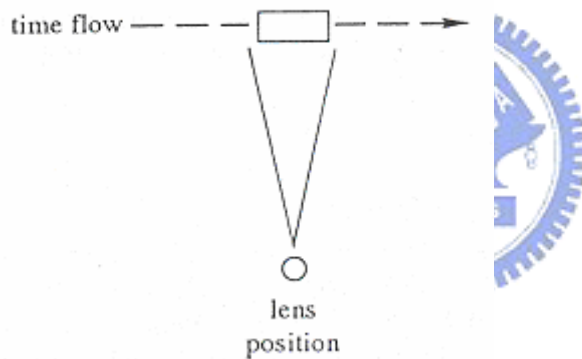
view to describe the internal structure of an event disregarding its boundaries. In contrast, the bounded event in (1b) converts a compact, bounded, terminated event and is as a narrow camera-angle view whose boundaries are included. The diagrammatical representations of bounded and progressive perspectives may be shown as Figure 1 (Givon 1993:154):

- (1) a、 She was cutting the log.
 b、 She cut the log.

Figure 1. Bounded and progressive perspectives

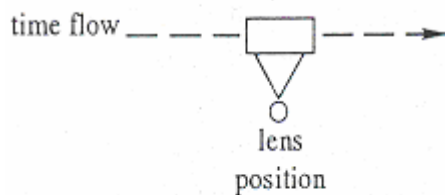
a、

Bounded (narrow-angle) perspective:



b、

Progressive (wide-angle) perspective:



In the notion of proximity vs. remoteness, the metaphor of wide camera-angle view portrays a large or a nearby object. Then, a progressive event is viewed from close proximity to describe the middle of an event and all the details in the middle are visible as if the observer is placed right at the scene. Conversely, the bounded event, as a narrow

camera-angle view, is observed from a remote position. The observer is far from the scene with its details unclear. This proximity of the progressive aspect is a cognitive consequence (Givon 1993:155):

“The strong, near automatic association of the progressive with the present — absent explicitly marked tense — is indeed a cognitive reflection of the metaphoric extension from spatial to temporal proximity.”

The final feature of the progressive is simultaneity—a simultaneous point-of-reference. One event can not be defined without reference to another event, and this simultaneous reference-point is demanded in the progressive perspective. An ongoing event can be accomplished by an adjacent clause, in which the preceding clause is the ‘entry’ of a witness to bring the observer onto the scene in the middle of the event, and the simultaneous event provides the temporal reference-point to the ongoing event. In addition, this simultaneous point-of-reference is implicit even in a single-clause progressive event as presented in example (3). The discourse context ‘now’ (3a) establishes the simultaneous temporal reference to the ongoing event in (3b). However, the juxtaposition of two bounded events is not used to depict two simultaneous events but two temporally sequential events. For instance, the bounded perspective in (2b) is used to represent the event ‘he cooked dinner’ sequentially after the event ‘she came home’, while the progressive aspect in (2a) is used to express the event ‘he was cooking dinner’ which is simultaneous to the adjacent event ‘she came home’.

- (2) a、 When she came home, he was cooking dinner.
b、 After she came home, he cooked dinner.

(3) a、 **Question (context):**

What is he doing (now, as we are talking?)

b、 **Response:**

He's eating supper.

In sum, the semantic properties of the progressive aspect are unboundedness, proximity, and simultaneity. The progressive perspective indicates a temporally unbounded ongoing event with a simultaneous point-of-reference which is always implicit in the discourse context. The observer is placed in close proximity to observe the event in the middle of happening with all details visible. The semantic properties of the progressive aspect, supposedly, are universal and every language with aspect systems should have the similar progressive perspective, so this thesis intends to unravel the semantic attributes of the Mandarin imperfective markers *zai*, *zheng*, and *zhengzai* based on the progressive features of Givon's proposition.



1.3 Scope and Goal

Distinguishing the three imperfective markers *zai*, *zheng*, and *zhengzai* is basically an issue of lexical semantics, a field of linguistics which deals with word meanings. Lots of theories and methodologies can be used to explore the differentiation of these three markers, and the method adopted by this study is to analyze their collocations, a term used to refer to the habitual co-occurrence of individual lexical items (Crystal 1997). By examining collocational associations, the semantic properties of *zai*, *zheng*, and *zhengzai* will be borne out as Levin (1993:1) claimed:

“...the behavior of a verb, particularly with respect to the expression and interpretation of its arguments, is to a large extent determined by its meaning.”

In addition, some previous works discuss the syntactic and semantic properties of *zai*, *zheng*, and *zhengzai* with intuitive data and are missing certain realities of language usage in Mandarin (e.g., Li and Thompson 1981; Smith 1991; Guo 1991, 1992, etc.), and some use natural samples to investigate these markers (e.g., Hsu 1996, Guo 1998, Yang 2000, and Chen 2003). To get a better description, Hsu (1996) used corpus to analyze the semantic, syntactic, and pragmatic perspectives of the markers *zai*, *zheng*, and *zhengzai*. The corpus-based approach might provide a helpful and sufficient solution to examine collocations, since corpus data provide a wealth of grammatical associations that may help delimit the key semantic distinctions, as successfully shown in recent studies on lexical semantics (cf. Chang et al. 2000 and Liu 2002, 2003). However, Hsu explored the collocational patterns of the three markers with respect to clausal structures—the discourse-pragmatic distribution involving affirmative constructions, inanimate subjects, stative situations, reference time and so on. But surprisingly, Hsu (1996) fails to capture the collocational variations with manner adverbs, which turns out to be crucial in delimiting the three markers.

Hence, this thesis aims to investigate the imperfective markers *zai*, *zheng*, and *zhengzai* in terms of the collocational patterns with adverbs, which statistically is a significant indicator for classifying their semantic distinctions¹. The study will provide a detailed description of the distribution of collocational patterns with adverbs of *zai*, *zheng*, and *zhengzai* and tentatively attempt to define the pertinent lexical information from their collocational evidences.

1.4 Organization of the Paper

The thesis is organized into six sections. Section 1 gives an introduction of this study. Section 2 reviews some previous works about *zai*, *zheng*, and *zhengzai*. Section 3 briefly

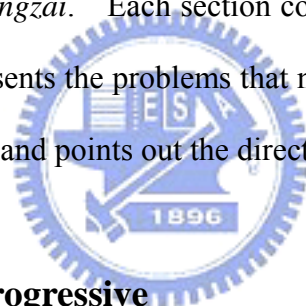
¹ The statistical significance of the relation of adverbial adjuncts is illustrated in section 3.2.2.

introduces the method and data resources and observes the grammatical functions and significant collocational associations of these three markers. Section 4 explores the relation between adverbs and the imperfective markers *zai*, *zheng*, and *zhengzai* and provides a preliminary illustration of their semantic distinctions. Section 5 defines the semantic properties of *zai*, *zheng*, and *zhengzai* with respect to their development of grammaticalization. Lastly, section 6 states the conclusion on the basis of the proposed analysis.



Chapter 2 Literature Review

This section will briefly review some previous studies about the progressive aspect. Previous works on the English progressive will be introduced in section 2.1 and studies on the Mandarin progressive in section 2.2. The studies emphasizing on one or two of the three Mandarin markers will be discussed in section 2.2.1. The research papers of Li and Thompson (1981) and Smith (1991) on Chinese aspects mainly focus on the marker *zai*, while Guo (1998) and Yang (2000) study the marker *zheng* and/or *zai*. Contrastive studies on *zai*, *zheng*, and *zhengzai* are represented in section 2.2.2. Guo (1991, 1992) essentially pays attention to the syntactic behaviors of the three markers; Chen (2003) concentrates more on their semantic distinctions; and Hsu (1996) emphasizes the semantic, syntactic, and pragmatic analyses of *zai*, *zheng*, and *zhengzai*. Each section contains a short summary and comments of the reviewed works and presents the problems that need further explanations. Section 2.3 concludes the literature review and points out the direction of this study.



2.1 Studies on English Progressive

2.1.1 Givon (1993)

Givon (1993) states that the progressive aspect is scrutinized from close proximity to observe an event in the middle of happening without its boundaries. The progressive involves three properties—unboundedness, proximity, and simultaneity. Besides the basic progressive representation, there are other types of the progressive perspectives including the habitual progressive, the continuous-repetitive progressive, the inceptive-progressive and the terminative-progressive. The habitual progressive is often associated with some specific time adverbs indicating the progressive aspect in the habitual tense, that is, without a specific time reference (such as ‘*She is always watching TV.*’). The continuous-repetitive progressive indicates the continuation and repetition of an event (like ‘*She continued dealing*

out cards.' or '*She kept breaking her leg.*'). The inceptive-progressive consists of three inceptive aspectual markers 'start', 'begin' and 'resume' followed by a verb with the progressive suffix '-ing' (like '*She started dealing out cards.*'), and the terminative-progressive occurs with the aspectual auxiliaries 'stop', 'quit' and 'finish' to signal the termination of a progressive event (such as '*She finished reading her book.*').

Givon provides a basic and preliminary description and classification of the English progressive, but the question that this study concerned with is how about the Mandarin progressive. Does Mandarin have the same semantic and syntactic characteristics of the English progressive aspect? Are all kinds of progressive representations can be found in the Mandarin progressive?

2.2 Works on Mandarin Progressive

2.2.1 Studies on Individual Imperfective Markers: *Zai*, *Zheng*, and/or *Zhengzai*

In the analyses of Chinese language, there are a handful of studies exclusively exploring the markers *zai*, *zheng*, and *zhengzai*, especially *zai*. Of those only a few investigate the distinction between even two of these three markers.

2.2.1.1 Traditional Works on Chinese Aspect

In most Chinese aspect and grammar references, there is a preliminary illustration of *zai* which is categorized as an imperfective or durative aspect marker² as well as *zhe*. Two pioneering studies on Chinese aspect and grammar mainly focus the imperfective aspect on the marker *zai*³ in terms of its semantic and syntactic behaviors.

² Li and Thompson (1981) and Egerod (1994) consider *zai* as part of the durative aspect, while Smith (1991) takes it as part of the imperfective (progressive) aspect.

³ Most studies on Chinese aspects discuss the imperfective aspect using both *zai* and *zhe*, but in this thesis, we only concentrate on the description of the marker *zai*.

According to Li and Thompson (1981), *zai* is an imperfective durative aspect marker, which signals the ongoing or durative nature of an event. The progressive perspective of *zai* is frequently restricted to co-occur with activity verbs to express an ongoing event.

Li and Thompson provide the basic information of the marker *zai* and briefly present the syntactic behaviors with verbs. However, it is insufficient to provide a complete illustration of the imperfective aspect in Mandarin. They lack the observation and explanation of the other two imperfective markers *zheng* and *zhengzai* which can also be used to denote an ongoing event as well as *zai*.

Smith (1991), besides analyzing the marker *zai*, makes an even more concise discussion of another marker *zheng*. *Zai*, semantically, indicate the internal stages of a situation without including the initial and final points. Syntactically, it appears with non-stative events disregarding the Semelfactive and Achievement events which depict instantaneous events with the endpoint of the situation. On the other hand, the marker *zheng* often collocates with *zai* in discourse, contributing contrastive and attitudinal functions to the event, without giving other illustration.

In Smith's study, the marker *zheng* is often used with *zai* to provide a more specific feature to an ongoing event. However, the marker *zhengzai* can be treated as the other imperfective marker in Mandarin Chinese, which should not be taken into the analysis of *zheng*.

2.2.1.2 Corpus-based Analyses

Later studies put more emphases on the semantic properties of *zai*, *zheng*, and/or *zhengzai*. Two representative studies (Guo 1998 and Yang 2000) explore their semantic attributes by examining corpus data⁴.

⁴ Both Guo (1998) and Yang (2000) used written data as examples for examination. In Guo (1998), the data came from seven Chinese literature publications including novels, prose and essay, and Yang (2000) came from a

Guo (1998) discusses the semantic and syntactic distinctions between *zai* and *zheng*. He suggests that *zai* denotes the temporal quantity of an ongoing event and the temporal quantity can be long, short, or infinite, implying the function of durative. In contrast, the marker *zheng* focuses on the temporal position representing the definite time reference of an event, which suggests the features of non-durative. The semantic distinction between *zai* and *zheng* can further correspond to their syntactic representations. 1) The sentence with *zai* is independent, while *zheng* is dependent. 2) The typical constructions with *zai* are “NP + *zai* + VP” and “NP + adverb⁵ + *zai* + VP”, and the prototypical construction of *zheng* is “N(P) + *zheng* + VP.” 3) In the focus and stress, sentences with *zai* intensify the elements before and after *zai*, while sentences with *zheng* focus on *zheng* itself.

Yang (2000) states that *zheng* is not an imperfective marker and the progressive function of sentences with *zheng* mainly comes from the associated elements in discourse such as *zai* and *ne*. In addition, the syntactic behaviors of *zheng* have some counter-representations of an ongoing event. For instance, *zheng* might co-occur with stative verbs, emotional verbs, and verbs without the internal process but it cannot appear with durative adverbs, which can be associated with *zai* to indicate an ongoing event. Yang suggests that the basic function of *zheng* is to emphasize the link between two situations in a certain aspect such as time, characteristics, objects, location and the like.

The two above mentioned works provide the more detailed semantic functions of the markers *zai* and/or *zheng* by examining natural data. Despite the strengths, there are a number of small, but important, weaknesses. First off the data of both works are mainly collected from literature publications without other sources such as news and conversation, which would not represent the whole picture of language phenomena. Thus, other variations of genres of data should be put into examination. Secondly, the collocational associations

novel involving more than 1,000,000 characteristics.

⁵ The adverb in this construction has the features of durative and temporal quantity, for example: *hai* ‘still’ (還), *changchang* ‘often’ (常常), *yizhi* ‘all the time’ (一直) etc.

should not only be based on grammaticality but also on the distributional frequency. Finally, the other marker *zhengzai* still remains unsettled. This then raises some fundamental questions: what are the semantic properties and syntactic patterns of the marker *zhengzai*? What are the relation and distinction between *zhengzai* and the other two markers *zai* and *zheng*?

2.2.2 Contrastive Studies on all Three Markers: *Zai*, *Zheng*, and *Zhengzai*

The functional distinction and correlation of the imperfective markers *zai*, *zheng*, and *zhengzai*, are a puzzling issue in Mandarin Chinese. There are quite a few contrastive studies that investigate the distinction between *zai*, *zheng*, and *zhengzai*.

2.2.2.1 Guo (1991, 1992)

Guo investigates the collocational distribution of the three markers *zai*, *zheng*, and *zhengzai* in terms of their relations to verbs, adverbs, and complements. In relation to verbs, he classifies five parts to discuss the collocational variation of *zai*, *zheng*, and *zhengzai*: dynamic and stative events, length of a process, direction of an event, frequency of an event, and pragmatic functions. The results show that the three markers could appear with control stative predicates, dynamic predicates, non-instantaneous predicates which signal an active event, instantaneous predicates with plural agent or as repetitive events, non-directional predicates, and directional predicates denoting both functions of direction and event. The major distinction between *zai*, *zheng*, and *zhengzai* is that habitual and permanent events are not allowed to co-occur with *zheng* and *zhengzai*, and active events which represent assertion, negation, doubt, surprise, explanation, inquiry, comparison, listing, and emphases are only used with the marker *zai*.

Guo further explores the collocational associations with adverbs of *zai*, *zheng*, and *zhengzai* in terms of adverbs of time, aspect, frequency, position, location, range, object,

condition, result or purpose, dependence, means or way, manner or mood, and attitude. As a result, the marker *zai* mostly can collocate with all these kinds of adverbs except the positional adverb “*zai* + Object”, while the marker *zhengzai* has similar collocational distribution of *zheng*: both can not appear with continuous point-time adverbs (like *meitian* ‘everyday’ (每天) and *yongyuan* ‘forever’ (永遠)), point-time adverbs with a period-time adverb (e.g. 元旦過後，職工們在/*正/*正在日夜搶運春節商品。 *Yuandan guohou, zhigongmen zai/*zheng/*zhengzai riye qiangyun chunjie shangpin* ‘After the Western New Year's Day (January 1st), workers are rushing to transport products for Chinese New Year's.’), aspectual adverbs, the frequency adverb *you* (又), range adverbs indicating amount and limitation, and attitudinal adverbs expressing assertion, negation, surprise, and question. The distinction between *zheng* and *zhengzai* is that only *zheng* occurs with the positional adverb “*zai* + Object”.

Later, Guo provides the distribution of associated complements with *zai*, *zheng*, and *zhengzai* involving direction, position and manner, range, condition, cause and purpose, object, and result. The finding is that the collocations of *zheng* have a wide variation of complements. It can associate with nearly all kinds of complements, except for directional complements like *hui* ‘come’ (回), *huilai* ‘come back’ (回來) and *qu* ‘go’ (去), while the marker *zhengzai* has one more prohibition—conditional complements, and *zai* is more restricted. Not only the above directional and conditional complements but also the directional (with *shang/xia/guo/qi* ‘up/down/over/rise(lift)’ (上/下/過/起) etc.), positional and manner, and resultative (with *ping/zheng/wei* ‘flat/upright/as’ (平/正/為) etc.) complements are not accompanied with *zai*.

Guo (1991, 1992) presents an attractive and complete analysis of the collocational patterns of *zai*, *zheng*, and *zhengzai* but fails to distinguish the semantic attributes of these three forms from their collocational evidences. According to Levin (1993), the syntactic behaviors of a verb are determined by its meanings and functions. Thus, the collocational

variation of these three markers should be further investigated with respect to their semantic attributes.

2.2.2.2 Hsu (1996)

Hsu (1996) studies the three markers *zai*, *zheng*, and *zhengzai* from semantic, syntactic, and pragmatic perspectives with the corpus-based approach⁶. She suggests that semantically *zai*, *zheng*, and *zhengzai* differ in that *zai* focuses on “the internal temporal structure⁷” of an ongoing situation, *zheng* is relevant to “the external reference time” of an ongoing situation, and *zhengzai* correlates both functions of “the external reference time” and “the internal temporal structure” of an ongoing event. This semantic distinction determines the syntactic and pragmatic distributional variation of *zai*, *zheng*, and *zhengzai*. From the discourse-pragmatic perspective, the syntactic distributions, the skewings of the distributions, and the semantic collocations of *zai*, *zheng*, and *zhengzai* are demonstrated in terms of written and oral discourse. The finding is that *zheng* has higher tendency to co-occur with inanimate subjects, nonvolitional involvement of subjects, and stative situations, because *zheng* is relevant to the external reference time rather than the event. In addition, passive and negative situations rarely occur in progressive events. If these cases do happen, the marker used would be *zheng*, since passive and negative situations do not normally represent the event. Moreover, Hsu investigates the basic syntactic positions of the markers *zai*, *zheng*, and *zhengzai*. The significant distinction is that the followed adjective category has a higher tendency to occur with *zheng*, since *zheng* focuses on the external reference time and not the internal temporal structure of an event.

In Hsu’s study, she explores the semantic attributes of *zai*, *zheng*, and *zhengzai* in a more

⁶ The corpus involved written and oral data. The written data came from three genres, including novels, autobiographies and news articles, and the oral data obtained from spontaneous talk.

⁷ According to Hsu (1996), the external reference time means the particular moment at which the ongoing event occurs, and the internal temporal structure denotes the process or duration of the ongoing event.

generative description to offer a clear distinction of these three markers. However, it is insufficient in its account of the observed phenomena. Moreover, she mainly investigates the distribution of *zai*, *zheng*, and *zhengzai* in terms of the discourse-pragmatic distribution. She fails to capture some significant collocational variations such as collocations of manner adjuncts before and after *zai* but only after *zheng* and *zhengzai*, which turns out to be crucial in defining the lexical information of these three markers. It seems that Hsu's explanation is insufficient to fully characterize the three Mandarin imperfective markers *zai*, *zheng*, and *zhengzai*.

2.2.2.3 Chen (2003)

Chen (2003) attempts to examine the internal differences of the Mandarin imperfective markers *zhe*, *zheng*, *zhengzai*, *zai*, and *ne* based on Johanson's theory of focality and Traugott's theory of subjectivity. He finds that these markers form a left-right scale of focality from high to low, which parallels the scale of subjectivity with opposite direction. The marker *zai* has lower focality than *zheng* and *zhengzai*, since *zai*, syntactically, is more flexible. For instance, *zai* can occur with repetitive events. In addition, the focality of *zhengzai* is lower than *zheng* because of the less frequent occurrence of events with reference time⁸. On the other hand, the marker *zai*, with higher subjectivity, often occurs in the *shi*-construction and collocates with lexical items which represent assertion and guessing such as the attitudinal adverb *daodi* 'after all' (到底) and the insertion-clause *kanqilai* 'It looks like' (看起來), while the markers *zheng* and *zhengzai* are frequently forbidden to occur in these situations. Thus, both *zheng* and *zhengzai* are not high subjectivity, among which the subjectivity of *zhengzai* is higher than *zheng* with the higher distribution of above conditions.

While the author's position that the markers *zai*, *zheng*, and *zhengzai* correlate on the

⁸ Chen (2003) studies the focality of *zheng* and *zhengzai* in terms of their collocational distributions between reference time and extended period of time which were quoted from the study of Hsu (1996).

scale of focality and subjectivity is attractive, it is insufficient to account for the internal lexical information of these imperfective markers.

2.3 Summary

Regarding their ultimate goals, research studies on the markers *zai*, *zheng*, and *zhengzai* are primarily classified into two groups. The description-oriented studies aim to show the distribution of the progressive aspect by examining the intuitive data, paying little attention to the explanation (e.g., Li and Thompson 1981; Smith 1991; Guo 1991, 1992; and Givon 1993). Analyzing the progressive perspectives with intuitive examples will not reveal the true picture of language usage. The other group is composed of function-oriented studies, which aim to explicate the semantic characteristics of the progressive aspect with real samples involving written or oral data (e.g., Hsu 1996, Guo 1998, Yang 2000, and Chen 2003). Although these studies work in the right direction, by observing the data which was actually used, the semantic attributes of the three markers *zai*, *zheng*, and *zhengzai* still need to be further elaborated on. Guo (1998) demonstrates the semantic distinction between *zai* and *zheng* in terms of their collocational associations, and disregards the other marker *zhengzai*. Furthermore, the studies of Hsu (1996) and Chen (2003) provide a simple generalization of the semantic properties of *zai*, *zheng*, and *zhengzai*, which is inadequate to fully illustrate the observed language phenomena. All in all, previous works contribute an overview of language descriptions of these three forms, but the distribution of collocational associations that are crucial for the semantic distinction of *zai*, *zheng*, and *zhengzai* should be investigated in greater detail to describe their semantic attributes.

Chapter 3 Methodology and Observations

In Mandarin, the three imperfective markers *zai*, *zheng*, and *zhengzai* all can be used to signal an ongoing event, and this attribute makes them distinct from another imperfective marker *zhe*, which represents a stative progress. Few previous studies on Chinese aspects suggest that these three markers have the same meaning in certain situations, which makes them interchangeable sometimes (Egerod 1994, Xiao 2002, and Zhang 2002a). However, they are not arbitrarily interchangeable in all contexts and, even in some discourse, they absolutely can not be substituted by one another (Pan 1980, Guo 1998, and Shi 2001). This thesis thus aims to distinguish between *zai*, *zheng*, and *zhengzai* by examining the corpus data, which provides a wide range of grammatical and collocational distributions with respect to their semantic properties.

3.1 Methodology

3.1.1 Database



In order to effectively explore the elements co-occurring with the three markers *zai*, *zheng*, and *zhengzai*, two online resources are used for the analysis of this study. One is Academia Sinica Balanced Corpus of Modern Chinese, which is abbreviated to Sinica Corpus (<http://www.sinica.edu.tw/SinicaCorpus/index.html>), and contains oral samples and written articles of different genres and sources in Taiwan, with nearly five million words in it. It is taken as the main data source in this work. The other online resource is Yahoo (<http://tw.yahoo.com/>) as an assisting reference to confirm and complement the peripheral situations and insufficient samples in this study.

3.1.2 Corpus-based Approach

The methodology used for the analysis in this study is the corpus-based approach.

Corpus provides a large database of natural data in order to observe the generalization of language and make statistical comparisons, and it also provides a wealth of grammatical associations which may help delimit the key semantic distinctions. In addition, this method of analysis represents the distributional tendency, rather than grammaticality, as the central concern and evidence for linguistic analysis (Liu 2002).

The characteristic of the corpus-based approach is that it provides a better picture of description of the language usage from actual daily used samples, unlike another approach which explores the language phenomena from their intuitive data and may miss certain perspectives of the language. Another characteristic is that it provides the frequency distribution of collocational associations, not the grammaticality of collocations. Even though some previous studies used the natural data for analysis, their explanation was based on the grammaticality (see Chen 2003) which can not fully define the primary semantic characteristics of words, since some cases are such that they would be grammatically correct to occur in one situation but with rare frequency.

As mentioned above, the collocational associations can define the facets of semantics. Therefore, by examining the collocational patterns of the markers *zai*, *zheng*, and *zhengzai*, their internal semantic properties will be borne out. Hsu's study (1996) used the corpus data mostly to emphasize the frequency distribution on a broader level (sentential and pragmatic level) such as affirmative, active, animate subject and so on, and did not delimit the overall semantic attributes of *zai*, *zheng*, and *zhengzai*. Thus, this study will explore the collocational patterns on co-occurring lexical items to discuss the relation between these three markers and their neighboring elements, in order to clarify their semantic properties. According to the observed data, we found that the collocational distribution with adverbs of the markers *zai*, *zheng*, and *zhengzai* is a possible direction to establish their semantic attributes. Previous works rarely infer the significant relation of adverbial adjuncts and define the semantic characteristics of these three markers in terms of the collocations. In this

thesis, the distribution of collocational patterns with adverbial adjuncts of *zai*, *zheng*, and *zhengzai* will be discussed, and their semantic attributes will be received from their collocational representations.

3.2 Initial Observations

3.2.1 Grammatical Functions

In Sinica Corpus, the total occurrences of *zai* are 12,899, *zheng* 2579, and *zhengzai* 696. The grammatical functions of *zai*, *zheng*, and *zhengzai* are multiple, and the online tools in Sinica Corpus provides a preliminary classification and distribution with respect to their grammatical functions, as shown in Table 1, and the illustrated examples are represented in examples (4) to (8).

Table 1. Grammatical functions of *zai*, *zheng*, and *zhengzai*

	Adverb	Verb	Preposition	Noun	Adjective
Zai	18.12% (2337/12899)	16.65% (2148/12899)	65.23% (8414/12899)	0%	0%
Zheng	93.91% (2422/2579)	5.04% (130/2579)	0%	0.65% (17/2579)	0.35% (9/2579)
Zhengzai	97.27% (677/696)	0%	2.73% (19/696)	0%	0%

(4) **Adverb:**

a、大家都在忙，不容易湊齊，

Dajia dou zai mang, burongyi couqi

‘It is hard to gather together, since everyone is busy.’

b、他們正忙於搞階級鬥爭，

Tamen zheng mangyu gao jieji douzheng

‘They are busy making the class struggle.’

c、他（她）正在忙，害他（她）工作做錯了總不好吧！

Ta(ta) zhengzai mang, hai ta(ta) gongzuo zuocuole zong buhao ba

‘He/she is busy and it is not good to make him/her make a mistake on work.’

(5) **Verb:**

a、我在一個遙遠的世界，

Wo zai yige yaoyuande shijie

‘I am in a faraway world.’

b、一個人的思想、觀念、語言都要正。

Yigerende sixiang, guannian, yuyan douyao zheng

‘All the thoughts, ideas, and languages of a person have to be correct.’

(6) **Preposition:**

a、這在臺灣有兩個國樂版，

Zhe zai taiwan you liangge guoyueban

‘This has two Chinese music versions in Taiwan.’

b、他看到螞蟻正在眉心前十公分方位。

Ta kandao mayi zhengzai meixinqian shigongfen fangwei

‘He saw that the ant is exactly ten centimeters before the middle of his eyebrows.’

(7) **Noun:**

a、八點正送電，我們得走啦！

Badianzheng songdian, women de zou la

‘It is sending the electricity right at eight o’clock, so we have to go!’

(8) **Adjective:**

a、曾任職正教授十二年，

Zeng renzhi niuyue shili daxue zhengjiaoshou 12nian

‘(He) had worked as a professor at the City University of New York for 12 years.’

Although the markers *zai*, *zheng*, and *zhengzai* have a diversity of grammatical functions, the one common similarity between them is that all can be used as an adverb to denote a progressive event. But, one thing that should be paid attention to is that not all samples with the adverbial function are aspectual adverbs. The marker *zheng* has other adverbial functions—non-aspectual and clausal adverbs in examples (9) and (10). The distribution of types of adverbial function between the three markers are classified and counted in Table 2.

Table 2. Types of adverbial functions of *zai*, *zheng*, and *zhengzai*

	Aspectual adverb	Non-aspectual adverb	Clausal adverb
Zai	18.12% (2337/12899)	0%	0%
Zheng	54.05% (1309/2422)	35.05% (849/2422)	10.9% (264/2422)
Zhengzai	97.27% (677/696)	0%	0%

(9) **Non-aspectual adverb:**

a、這正是O型—獅子座最大的魅力。

Zhe zheng shi Oxing—shizizuo zuidade meili

‘This is exactly the biggest charm of the O bloodtype of the Leo.’

(10) **Clausal adverb:**

a、觀眾之所以感受到「精采」，正因基本上他們也懂得規則。

Guanzhong zhi suoyi ganshoudao "jingcai", zheng yin jibenshang tamen ye dongde guize

‘The audience feels "excitement" exactly because they also know the rule basically.’

From Table 1 and Table 2, we found that the grammatical functions of *zhengzai* are more unitary—only the functions of aspectual adverbs and prepositions, while *zai* and *zheng* have

more multiple functions. *Zhengzai* is almost used exclusively to encode the progressive aspect, while *zai* may have prepositional (locative) and verbal functions and *zheng* may have verbal, nominal, adjective, and other adverbial functions. Moreover, although *zhengzai* is highly used as aspectual adverbs, the marker *zai* has the highest occurrence to express an ongoing event with 2337 utterances. *Zai* is more often used to indicate a progressive event in Mandarin.

Even though some samples of *zheng* do not represent the progressive perspective, this thesis mainly focuses on the grammatical function of adverb of *zai*, *zheng*, and *zhengzai* for analyses. We got 2337 samples of *zai*, 2422 samples of *zheng*, and 677 samples of *zhengzai*. Moreover, in order to decrease the huge work of tagging, this study took about 500 utterances of each marker as represented data. It is assumed that the basic syntactic behaviors can be demonstrated in these 500 instances.



3.2.2 Significant Collocational Association

With the searching tools and POS tags in Sinica Corpus, we can readily retrieve the frequency counts of neighboring categories which precede or follow *zai*, *zheng*, and *zhengzai* for further analysis.

The data in Sinica Corpus reveal that the top ten grammatical categories before and after *zai*, *zheng*, and *zhengzai*⁹ do vary, as shown in Tables 3-5.

Table 3. Grammatical categories before and after *zai*

<i>Zai</i>	R1	R2	R3	R4	R5	total	%
Na	22	385	303	343	339	1392	12.51
VC	883	108	91	78	108	1268	11.39
,	3	463	354	174	181	1175	10.56

⁹ This study surveyed five words before and after *zai*, *zheng*, and *zhengzai* with the on-line tool in Sinica Corpus, and this range, supposedly, is efficient to examine their collocational associations.

D	81	43	142	284	275	825	7.41
VE	357	40	40	54	74	565	5.08
VA	398	36	40	42	46	562	5.05
Nh	4	171	119	130	121	545	4.90
VH	173	67	86	94	106	526	4.73
◦	1	140	154	74	57	426	3.83
Nep	3	138	45	56	33	275	2.47
	L5	L4	L3	L2	L1	total	%
Na	351	360	337	398	468	1914	17.29
D	214	186	198	295	887	1780	16.08
,	262	253	294	254	108	1171	10.58
Nh	102	115	131	216	304	868	7.84
VH	111	110	92	78	39	430	3.89
Nf	63	73	88	106	22	352	3.18
SHI	31	42	40	73	151	337	3.05
◦	69	82	66	41	31	289	2.61
VE	85	61	66	68	6	286	2.58
Nc	49	71	59	60	29	268	2.42

Table 4. Grammatical categories before and after *zheng*

<i>Zheng</i>	R1	R2	R3	R4	R5	total	%
Na	11	336	555	532	572	2006	16.77
VC	306	266	174	166	153	1065	8.90
VH	278	172	156	168	129	903	7.55
P	428	156	69	55	71	779	6.51
SHI	637	3	6	9	11	666	5.57
,	0	48	157	209	218	632	5.28
D	172	74	105	114	132	597	4.99
Nc	0	194	152	101	100	547	4.57
VA	64	101	71	56	69	361	3.02
Nh	1	145	61	44	55	306	2.56
	L5	L4	L3	L2	L1	total	%
Na	480	498	442	542	558	2520	21.13
,	158	184	278	415	595	1630	13.67

D	165	132	96	43	263	699	5.86
Nc	99	108	123	162	148	640	5.37
VH	158	185	152	136	9	640	5.37
◦	96	118	113	133	100	560	4.70
Nd	51	63	50	79	245	488	4.09
VC	120	128	105	81	15	449	3.76
Nh	56	49	52	33	162	352	2.95
Nf	67	72	74	76	21	310	2.60

Table 5. Grammatical categories before and after *zhengzai*

<i>Zhengzai</i>	R1	R2	R3	R4	R5	total	%
Na	14	105	132	169	138	558	17.37
VC	290	56	59	31	30	466	14.51
,	0	65	73	66	71	275	8.56
VH	81	13	26	30	31	181	5.64
Nc	37	37	25	29	28	156	4.86
VA	57	24	28	17	14	140	4.36
D	24	11	13	45	45	138	4.30
◦	0	19	45	33	27	124	3.86
P	47	9	6	12	18	92	2.86
VE	34	10	9	12	23	88	2.74
	L5	L4	L3	L2	L1	total	%
Na	107	102	113	124	204	650	19.84
,	54	62	77	117	70	380	11.60
D	51	43	34	26	59	213	6.50
Nc	25	36	46	42	63	212	6.47
Nh	20	19	23	13	88	163	4.98
Nd	23	16	26	25	52	142	4.33
VH	35	40	36	24	2	137	4.18
◦	26	32	36	23	18	135	4.12
VC	38	39	26	15	14	132	4.03
Nf	12	25	18	30	13	98	2.99

(R = right position of the target or after the target; L = left position of the target or before the target; Na = common noun; Nc = place noun; Nd = time noun; Nf = measure; Nep = demonstrative determinatives; Nh = pronoun; VA = active intransitive verb; VC = active

transitive verb; VE = active verb with a sentential object; VH = stative intransitive verb; D = adverb; P = preposition; SHI = 是)

The result shows that although there is no significant distinction in the categories after *zai*, *zheng*, and *zhengzai*, there are indeed differences in the categories before the three markers as shown in Tables 3-5. The three categories commonly found after *zai*, *zheng*, and *zhengzai* are the same and their percentages are close—no more than five percent. On the other hand, from Tables 3-5, we found an interesting difference in the preceding positions. The three higher-frequency categories preceding the three markers are categorically the same but with different rankings, among which adverbs show a significant distinction. Adverbs preceding *zai* occur 10 percent more often than those of *zheng* and *zhengzai*. The relation between the collocational patterns with adverbs and *zai* is statistically significant in the Kruskal-Wallis test¹⁰ ($P = 0.007$, $P < .05$). It may suggest that adverbs could be an important indicator to distinguish *zai*, *zheng*, and *zhengzai*. Therefore, this study aims to delimit the three markers *zai*, *zheng*, and *zhengzai* fundamentally with respect to their collocational patterns with adverbs.

¹⁰ “The Kruskal-Wallis test is a nonparametric test for the comparison of 3 or more treatment groups, which are independent; it is the nonparametric equivalent to analysis of variance (ANOVA).” by statistiXL Version 1.5, a add-in program for Window Excel.

Chapter 4 Collocational Patterns with Adverbs

This section explores the collocational associations with adverbs of the markers *zai*, *zheng*, and *zhengzai* and tries to figure out their semantic attributes. As mentioned in section 3.2.2, the collocation of adverbial adjuncts could be an important indicator to distinguish *zai*, *zheng*, and *zhengzai*. Although some previous researches described the syntactic behaviors of the three markers for analysis in detail (e.g. Pan 1980; Guo 1991, 1992; Xiao 2002; Zhang 2002a; and Chen 2003), specifically the work of Guo (1991, 1992), which provides a complete syntactic description of co-occurring verbs, adverbs and complements, few of them explore the importance of collocation with an emphasis on adverbs and with a corpus-based approach. This study examines large corpora to verify previous analyses and at the same time provides a different perspective based on Givon (1993)'s view of progressive aspect. It basically classifies adverbs into six types to characterize the relation between adverbs and *zai*, *zheng*, and *zhengzai*. The six types of adverbs are time adverbs, frequency adverbs, manner adverbs, aspectual adverbs, modal adverbs, and negative adverbs.

4.1 Distribution of Co-occurring Adverbs

The collocation of adverbs with *zai*, *zheng*, and *zhengzai* has some differentiation and the distributional frequency of time adverbs, frequency adverbs, manner adverbs, aspectual adverbs, modal adverbs, and negative adverbs with these three markers are shown in Table 6.

Table 6. Distribution of co-occurring adverbs

	<i>Zai</i>	<i>Zheng</i>	<i>Zhengzai</i>
Time	31.46% (112/358)	38.04% (70/184)	54.55% (108/199)
Frequency	13.48% (48/358)	0.54% (1/184)	2.02% (4/199)
Modal	0.84% (4/358)	13.04% (24/184)	3.54% (7/199)
Negative	1.4% (5/358)	2.72% (5/184)	0%
Manner	12.36% (46/358)	21.2% (39/184)	21.72% (43/199)

Aspectual	8.99% (32/358)	20.65% (38/184)	8.08% (16/199)
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Table 6 shows that there are slight differences in the frequency rankings of adverbs among *zai*, *zheng*, and *zhengzai*¹¹. In general, time adverbs and manner adverbs most frequently co-occur with the markers *zai*, *zheng*, and *zhengzai*, and negative adverbs rarely collocate with these three markers. However, there are some exceptions, including frequency adverbs, modal adverbs, and aspectual adverbs. Frequency adverbs highly collocate with *zai* rather than *zheng* and *zhengzai*, and modal adverbs and aspectual adverbs tend to appear with *zheng*.

In addition, adverbs might either precede or follow *zai*, *zheng*, and *zhengzai*. Time adverbs, frequency adverbs, modal adverbs, and negative adverbs mostly occur in the preceding position of the markers, while manner adverbs and aspectual adverbs often occur after the markers. However, there are some counter-examples. In regards to *zheng* and *zhengzai*, frequency adverbs are usually placed after the markers, and modal adverbs usually precede *zheng*. The variation of the syntactic position of adverbs with *zai*, *zheng*, and *zhengzai* and the reasonable explanations will be illustrated in the following.

4.2 Time Adverbs

Time adverbs supply information about the time at which or during which the event occurs, whose semantic scope covers the entire clause and the whole proposition (Li and Thompson 1981 and Givon 1993). Previous studies have mentioned that both *zai* and *zheng* can co-occur with time adverbs and the distinction is that time adverbs with *zai* represent “*shiduan* ‘period of time’ (時段)”, which is durative, and time adverbs with *zheng* denote

¹¹ The adverbs of *zai* ranked by frequency are: time adverbs, frequency adverbs, manner adverbs, aspectual adverbs, negative adverbs, and modal adverbs; for *zheng* they are: time adverbs, manner adverbs, aspectual adverbs, modal adverbs, negative adverbs, and frequency adverbs; and for *zhengzai* they are: time adverbs, manner adverbs, aspectual adverbs, modal adverbs, frequency adverbs, and negative adverbs.

“*shidian* ‘point of time’ (時點)”¹², which is non-durative (Pan 1980, Guo 1998, and Xiao 2002). Moreover, time adverbs are movable adverbs which might occur not only after the subject or topic but also before the subject or topic, that is, in the sentence-initial position (Li and Thompson 1981). The semantic and syntactic distinctions of time adverbs with *zai*, *zheng*, and *zhengzai* are discussed below.

4.2.1 Semantic Distinction of Time Adverbs

There are two groups of time adverbs. One group is composed of time adverbs with a specific time reference which occupy a concrete position in the time axis, such as *nashi* ‘at that time’ (那時), *muqian* ‘currently’ (目前), and *jintian* ‘today’ (今天), including a deictically specified time point, a lexically specified time point, and a contextually specified time point as illustrated in examples (11). The other is time adverbs with habitual time reference like *tiantian* ‘everyday’ (天天), *suishi* ‘at any time’ (隨時), *yongyuan* ‘forever’ (永遠) etc., which do not refer to a specified temporal reference-point as in examples (12). The distributional differences between *zai*, *zheng*, and *zhengzai* in terms of adverbs with specific time reference or with habitual time reference are represented in Table 7.

Table 7. Distribution of collocational associations with time adverbs

		Specific time reference 那時、目前、今天...		Habitual time reference 天天、隨時、永遠...	
		adv < * ¹³	* < adv	adv < *	* < adv
Zai	(112)	61.61%	0%	38.39%	0%
Zheng	(70)	100%	0%	0%	0%
Zhengzai	(108)	100%	0%	0%	0%

¹² Zhang (2002b) suggests that the concept of time can be divided into two groups: *shidian* ‘point of time’ (時點) and *shiduan* ‘period of time’ (時段). Point of time locates a concrete position in the time axis, while period of time refers to duration of time between two spots in the time axis.

¹³ This thesis uses the marker “*” to represent the markers *zai*, *zheng*, and *zhengzai* in tables.

(11) **Specific time reference:**

- a、目前，編目小組在/正/正在制定各項規範， (deictically specified time point)

Muqian, bianmu xiaozu zai/zheng/zhengzai zhiding gexiang guifan

‘Currently, the cataloguing group is drawing up various standards.’

- b、一九七八年十二月，台灣在/正/正在進行中央民意代表選舉， (lexically specified time point)

1978nian 12yue, taiwan zai/zheng/zhengzai jinxing zhongyang minyi daibiao xuanju

‘In December 1978, Taiwan is electing the central public representatives.’

- c、小喬說話的時候我嘴在/正/正在嚼著花生米。 (contextually specified time point)

Xiaoqiao shuohuade shihou wo zui zai/zheng/zhengzai jiaozhe huashengmi

‘When Xiaoqiao is talking, I am chewing peanuts in my mouth.’

(12) **Habitual time reference:**

- a、我天天在/*正/*正在想你。

Wo tiantian zai/*zheng/*zhengzai xiang ni

‘I miss you everyday.’

- b、我們永遠在/*正/*正在作選擇。

Women yongyuan zai/*zheng/*zhengzai zuo xuanze

‘We are making choices forever.’

The result shows that *zheng* and *zhengzai* can only co-occur with time adverbs with a specific time reference and are not allowed to appear with adverbs without a specified reference point (habitual time reference). *Zheng* and *zhengzai* indicate what is on-going at a given time point, locating the event in the time axis and contributing contrastive and attitudinal features to the sentence (Smith 1991). As we know, the marker *zheng* focuses on the reference time of an occurring event (Pan 1980, Hsu 1996, Guo 1998, and Zhang 2002a), and the marker *zhengzai*, morphologically with *zheng*, is also relevant to the time of an event

(Pan 1980, Hsu 1996, and Zhang 2002a). Both can not occur in an event without a clear reference-point. *Zheng* and *zhengzai* indicate an ongoing event at a specified time reference, and they highlight the progressive feature of simultaneity in which a clear simultaneous point-of-reference is required in an event. In contrast, *zai* focuses on the ongoing process (Pan 1980, Hsu 1996, and Zhang 2002a). It can be used to denote not only an ongoing event at a specific time reference (simultaneity) but also an ongoing event without a specified time reference (non-simultaneity). The simultaneous temporal reference-point is not definitely demanded, so the marker *zai* can be accompanied with habitual-time adverbs with an indefinite temporal reference.

In addition, time adverbs with specific time reference can be further divided into two types: reference time spot and extended period of time¹⁴. The former denotes a precise temporal point, while the latter refers to the duration of time (cf. Hsu 1996, Zhang 2002a, and Chen 2003). The distribution of *zai*, *zheng*, and *zhengzai* in terms of time adverbs is re-analyzed as Table 8.

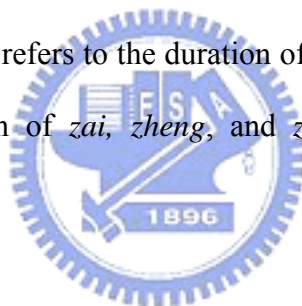


Table 8. Distribution of collocational associations with time adverbs (revised)

	Specific time reference		Habitual time reference 天天、隨時、永遠...
	Reference time spot 那時、目前、今天...	Extended period of time 近百年來、這兩年...	
Zai (112)	41.96%	19.64%	38.39%
Zheng (70)	90%	10%	0%
Zhengzai (108)	96.3%	3.7%	0%

(13) **Reference time:**

a、今天社會上各行各業都在燃燒自己，

Jintian shehuishang gehanggeye dou zai ranshao ziji

¹⁴ In Hsu's study (1996), "reference time" generally refers to the moment of speaking, and "extended period of time" involves a long period of time, usually including the discourse reference time.

‘All kinds of occupations in society are burning themselves today.’

b、目前經貿正蓬勃發展

Muqian jingmao zheng pengbo fazhan

‘Currently, the trade is developing rapidly.’

c、現在東吳正在招募啦啦隊隊員，

Xianzai dongwu zhengzai zhaomu laladui duiyuan

‘The Soohow University is recruiting the team members of the cheer-leading squad now.’

(14) **Extended period of time:**

a、這兩年我一直都在學中文。

Zheliangnian wo yizhi dou zai xue zhongwen

‘These past two years, I have been continually learning Chinese.’

b、近百年來中國正面對著「再生」的困境，

Jin bainian lai zhongguo zheng mianduizhu "zaisheng"de kunjing

‘China is confronting the predicament of "rebirth" in the last hundred years.’

c、近三、四年來，「國際通婚」的風潮正在臺灣蔓延。

Jin sansinian lai, "guoji tonghun"de fengchao zhengzai taiwan manyan

‘The unrest of “international intermarriage” is spreading in Taiwan in last three or four years.’

The distributional frequency of time adverbs in Table 8 shows that the events with *zheng* and *zhengzai* mostly occur at a “reference time spot” and less over an “extended period of time”, and examples (13-14) are illustrated respectively. *Zheng* and *zhengzai* represents the concept of “*shidian* ‘point of time’ (時點)” (Pan 1980 and Xiao 2002); in other words, they are non-durative (Guo 1998 and Xiao 2002). Therefore, *zheng* and *zhengzai* generally do not coexist with adverbs in a situation with extended period of time and habitual time references which express an ongoing event continuing for a while or over a span of time, i.e.

they indicate the duration of a progressive event. They are typically used to depict an ongoing event at a temporal reference-point with the feature of simultaneity foregrounded, and the temporal reference always focuses on a precisely particular moment. On the other hand, *zai* is free to appear with all kinds of adverbs involving reference time spot, extended period of time, and habitual time reference. According to Pan (1980) and Xiao (2002), *zai* is possessed of the characteristic of “*shiduan* ‘period of time’ (時段)”, that is, it is durative (Guo 1998 and Xiao 2002). However, the result shows that *zai* involves both features of “*shidian*” and “*shiduan*” and it is either durative or non-durative. The marker *zai* can represent not only an ongoing event focusing on a referential moment but also an ongoing event over a long period of time.

Because of the property of durative *zai* can appear with the nonmovable nonmanner adverbs *hai* (還), *shang* (尚), and *reng(ran)* (仍(然))¹⁵ which indicate the durative or continuing meaning (i.e. ‘still’) but *zheng* and *zhengzai* can not (Guo 1992, Xiao 2002, and Zhang 2002a). The distributional frequency and illustrated examples of *hai*, *shang*, and *reng(ran)* are represented in Table 9 and example (15).

Table 9. Distribution of adverbs *hai*, *shang*, and *reng(ran)*

	Zai (360)	Zheng (184)	Zhengzai (199)
還、尚、仍(然)	8.33%	0%	1.01%

(15) a、「妳怎麼還在混呀」

Ni zemo hai zai hun ya

‘How can you still be loitering?’

b、目前該圖書室尚在蒐集論文，

¹⁵ According to Li and Thompson (1981), *hai*, *shang*, and *reng(ran)* belong to nonmovable nonmanner adverbs, which occur immediately after the subject or topic and before the verb, and do not signal the manner of an event. There are three meanings of these adverbs—‘still/even’, ‘also’, and ‘moderately’—and in this work we mainly concentrate on the examples of ‘still’.

Muqian gai tushushi shang zai souji lunwen

‘Currently, the library is still collecting papers.’

c、八月掀起的恐慌仍正在向四处蔓延，

Bayue xianqide konghuang reng zhengzai xiang sichu manyan

‘The panic started in August is still spreading everywhere.’

Examples (15) represent that the activities of *hun* ‘loiter’, *souji* ‘collect’, and *manyan* ‘spread’ were going on for some time before and are still happening at the moment of speaking. The events continue from the occurring change of state to the speaking time implying the duration of the progressive event. However, we found that the marker *zhengzai* can also co-occur with the durative adverb *reng*, representing the duration of the ongoing event. This collocational association might be based on the frequency distribution rather than the grammaticality; therefore, it is found that the markers *zheng* and *zhengzai* rarely express the continuity or duration of an ongoing event, since they commonly depict an event precisely at a specific point-of-reference. *Zheng* and *zhengzai* tend to be non-durative. In contrast, *zai* is free to happen in an event at a specific temporal reference-point or over a period of time, so it is more frequent to appear with adverbs *hai*, *shang*, and *reng(ran)* which denote the continuity and duration of an event. *Zai* can be durative or non-durative.

In sum, the markers *zheng* and *zhengzai* are relevant to the reference time of an ongoing event and are used to indicate an ongoing event at a specific time reference with the feature of simultaneity highlighted. The temporal reference of the progressive event of *zheng* and *zhengzai* is necessary and always focuses on a specific moment. *Zheng* and *zhengzai* rarely indicate an ongoing event over an extended period of time and tend to non-durative. On the other hand, the marker *zai* is free to occur in an ongoing event at a specified temporal reference or without a specified temporal reference without profiling the feature of simultaneity. The temporal reference is not specified or restricted to a particular reference

point, so *zai* can occur not only in an ongoing event with a focused reference-point but also in an ongoing event over a long period of time. *Zai* can be non-durative or durative.

4.2.2 Syntactic Distinction of Time Adverbs

According to Li and Thompson (1981), time adverbs are movable adverbs which might occur immediately after the subject or in the sentence-initial position. The distribution of the position of time adverbs between *zai*, *zheng*, and *zhengzai* is shown in Table 10, and examples are, respectively, represented in (16) and (17).

Table 10. Distribution in terms of syntactic position of time adverbs

	Sentence-initial		subj. < time < *
	time < *	time < subj. < *	
<i>Zai</i> (112)	9.91%	47.75%	42.86%
<i>Zheng</i> (70)	37.14%	48.57%	14.29%
<i>Zhengzai</i> (108)	16.67%	74.07%	9.26%

(16) **Sentence-initial:**

a、現在這信念在動搖了。

Xianzai zhe xinnian zai dongyao le

‘Now this belief is fluctuating.’

b、目前，編目小組正著手制定各項規範，

Muqian, bianmu xiaozu zai/zheng/zhengzai zhiding gexiang guifan

‘Currently, the cataloguing group is drawing up various standards.’

c、目前學校正在加蓋新舍，

Muqian xuexiao zhengzai jiagai xinshe

‘Currently, the school is building a new dorm.’

(17) **After the subject:**

a、她這時在做什麼。

Ta zheshi zai zuo sheme

‘What is she doing at this time?’

b、中心目前正進行C C C I I 連結的工作，

Zhongxin muqian zheng jinxing C C C I I lianjiede gongzuo

‘The center is doing the work of the CCCII link currently.’

c、歐威尼目前正在寫一位雕刻師力大古的傳記，

Ouweini muqian zhengzai xie yiwei diaokeshi lidagude zhuanji

‘Wei-Ni Ou is writing a biography of a sculptor Da-Gu Li currently.’

The result shows that time adverbs with *zheng* and *zhengzai* tend to locate in the sentence-initial position as a topic which signifies a stronger semantic function—providing the temporal information of an event and locating the position in the time axis (Zhang 2002b), while time adverbs with *zai* can occupy the sentence-initial position or the position after the subject. This syntactic variation may be determined by the semantic properties of *zai*, *zheng*, and *zhengzai*. The markers *zheng* and *zhengzai* express an ongoing event with a simultaneous point-of-reference with the feature of simultaneity foregrounded. When time adverbs are located after the subject, *zheng* and *zhengzai* easily conflict with the time adverbs, since both the markers and adverbs are relevant to time and syntactically located together. Therefore, time adverbs with *zheng* and *zhengzai* are frequently located in the marked position, the sentence-initial position, to provide the temporal information of an event. In contrast, the marker *zai* indicates an ongoing event with or without a specified time reference in which the feature of simultaneity is not marked. *Zai* is not relevant to the time reference, so time adverbs after the subject will not cause a conflict with the neighboring *zai*. They can appear not only in the sentence-initial position but also in the position after the subject in the

situation with *zai*.

4.3 Frequency Adverbs

Frequency adverbs express the repetition of an event, and syntactically they can occur either after or before the three markers *zai*, *zheng*, and *zhengzai*. It is commonly thought that only *zai* can co-occur with frequency adverbs but *zheng* and *zhengzai* can not. However, it is found that *zheng* and *zhengzai* can also appear with frequency adverbs and only after the frequency adverbs, as proposed by Guo (1992). The semantic and syntactic relation between frequency adverbs and the three markers will be discussed below.

4.3.1 Semantic Distinction of Frequency Adverbs

Frequency adverbs can be classified into two types: durative frequency adverbs and iterative frequency adverbs. The former expresses the repeated event over a long period of time such as *yizhi* ‘all the time’ (一直), *zongshi* ‘always’ (總是), *changchang* ‘often’ (常常) and so on, while the latter describes the repetition of an event in a moment like *you* ‘again’ (又), *buting* ‘incessantly’ (不停), *buduan* ‘continuously’ (不斷) and the like. The durative frequency adverbs can only co-occur with the marker *zai*, while the iterative frequency adverbs are free to appear with all the three markers *zai*, *zheng*, and *zhengzai*, as shown in Table 11 and examples (18) and (19).

Table 11. Distribution of collocational associations with frequency adverbs

		Durative 一直、總是、常常...		Iterative 又、不停、不斷...	
		adv < *	* < adv	adv < *	* < adv
Zai	(48)	58.33%	0%	33.33%	8.33%
Zheng	(1)	0%	0%	0%	100%
Zhengzai	(4)	0%	0%	0%	100%

(18) **Durative:**

- a、我公公一直在/*正/*正在忍耐，

Wo gonggong yizhi zai/*zheng/*zhengzai rennai

‘My father-in-law is enduring all the time.’

- b、上校總是在/*正/*正在等待著，

Shangxiao zongshi zai/*zheng/*zhengzai dengdai zhe

‘The colonel is always waiting.’

- c、你常常在/*正/*正在想這種問題

Ni changchang zai/*zheng/*zhengzai xiang zhezhong wenti

‘You are often thinking about this kind of problem.’

(19) **Iterative:**

- a、蚊子整天都在不停的叫，

Wenzi zhengtian dou zai butingde jiao

‘Mosquitoes incessantly call all day long.’

- b、反對文化中的「執政」意識正不斷地發展，

Fandui wenhua zhongde "zhizheng"yishi zheng buduandi fazhan

‘The consciousness of "ruling" in the anti-culture is developing continuously.’

- c、社會心理成本正在不斷加大。

Shehui xinli chengben zhengzai buduan jiada

‘The socio-psychological cost is increasing continuously.’

As mentioned above, the markers *zheng* and *zhengzai* indicating an ongoing event precisely at a temporal reference-point are non-durative and they can not occur in an event over a period of time. Therefore, they cannot occur with the durative frequency adverbs to form the habitual progressive as in example (18) (Guo 1998, Yang 2000, Xiao 2002, and Zhang 2002a). In contrast, the marker *zai* denotes an event either at a temporal

reference-point or over a period of time with the attributes of durative, so it can collocate with the durative frequency adverbs to represent the habitual progressive (cf. Guo 1998, Yang 2000, Xiao 2002, and Zhang 2002a). Moreover, the quantity of repetition of an event has some limitation—*zai* rarely co-occur with low frequency adverbs, such as *youshi* ‘sometimes’ (有時), *ouer* ‘occasionally’ (偶爾), *congbu* ‘never’ (從不) and so on; *zai* often co-occur with positive frequency. The possible reason is that the number of repetitions of the event needs to reach a certain quantity to be considered progressive. However, previous research usually claimed that only *zai* can co-occur with adverbs, which represent repetitions, but *zheng* and *zhengzai* can not (e.g. Yang 2000 and Xiao 2002). But, it is found that iterative frequency adverbs can be accompanied by any of the three markers *zai*, *zheng*, and *zhengzai* with syntactic variation, as proposed by Guo (1992). The reason for the co-occurrence of iterative frequency adverbs is that this kind of adverbs indicates the repeated action at A MOMENT in the time axis and any of the three aforementioned markers can be used to indicate an ongoing event at a specific temporal reference-point, so there is no semantic clash between iterative frequency adverbs and the three markers. *Zai*, *zheng*, and *zhengzai* can co-occur with iterative frequency adverbs.

4.3.2 Syntactic Distinction of Frequency Adverbs

There is a syntactic distinction between *zai*, *zheng*, and *zhengzai* in terms of the positions of frequency adverbs. The forbiddance of co-occurrence with durative frequency adverbs of *zheng* and *zhengzai* is mentioned above, and we mainly focus on the iterative frequency markers to characterize the relation of the syntactic position of frequency adverbs and the three markers *zai*, *zheng*, and *zhengzai*. In the iterative frequency adverb, *you* ‘again’ is only located in the pre-aspectual position to signal repetition of an event as well as the durative frequency adverbs, while *buting* ‘incessantly’ and *buduan* ‘continuously’ can occur in either the pre-aspectual position or the post-aspectual position as exemplified in (20-21).

(20) a、你又在/*正/*正在騙人。

Ni you zai/*zheng/*zhengzai pianren

‘You are cheating again.’

b. *你在/正/正在又騙人。

* Ni zai/*zheng/*zhengzai you pianren

‘You are cheating again.’

(21) a、她不斷在/*正/*正在做同樣的事情。

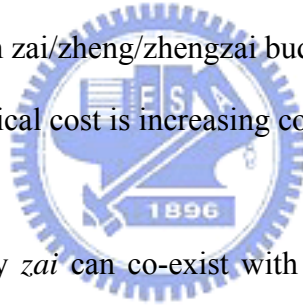
Ta buduan zai/*zheng/*zhengzai zuo tongyangde shiqing

‘She is continuously doing the same thing.’

b. 社會心理成本在/正/正在不斷加大。

Shehui xinli chengben zai/zheng/zhengzai buduan jiada

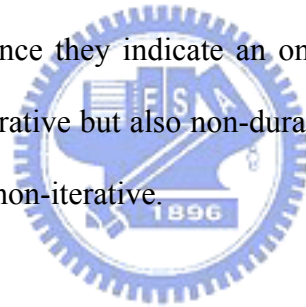
‘The socio-psychological cost is increasing continuously.’



The result shows that only *zai* can co-exist with the adverb *you* ‘again’ to express the repetition of an event, while *zheng* and *zhengzai* can not. And the adverbs *buting* ‘incessantly’ and *buduan* ‘continuously’ might occur before and after *zai*, but only after the markers *zheng* and *zhengzai*. The iterative frequency adverbs after *zai*, *zheng*, and *zhengzai* do not denote the repetition of an event but the repetition of an action in which the iterative frequency adverbs modify the following verbs. The construction “imperfective marker + iterative frequency adverb + VP” (正在不斷加大 *zhengzai buduan jiada* ‘is increasing continuously’) only refers to one event. All the three markers *zai*, *zheng*, and *zhengzai* can be followed by an event which is composed of repeated actions to represent a progressive event. On the other hand, when frequency adverbs occur before the three markers *zai*, *zheng*, and *zhengzai* as in examples (20a) and (21a), they describe the repetition of an ongoing event as the repetitive progressive, that is, the frequency adverbs modify the following event

“imperfective marker +VP” to represent the repetition of the ongoing event. Only *zai* can co-occur with pre-aspectual frequency adverbs including durative and iterative frequency adverbs, while *zheng* and *zhengzai* can not. *Zheng* and *zhengzai* with the feature of simultaneity are used to denote an ongoing event precisely at a particular temporal position, and they can not indicate a repetitive ongoing event which do not refer to one concrete point-of-reference. In contrast, *zai* is not restricted to mark an ongoing event at a specific temporal reference, so it can be used to form the habitual progressive and the iterative-progressive to denote an on-going process of a repeated event over a time span.

In summary, the results show that only the marker *zai* can take pre-aspectual frequency adverbs to form the habitual progressive and the repetitive progressive tense, depicting an ongoing process of a repeated event over a time span, while *zheng* and *zhengzai* can not occur in these kinds of situations, since they indicate an ongoing event precisely at a time point. *Zai* is not only durative and iterative but also non-durative and non-iterative, while *zheng* and *zhengzai* are non-durative and non-iterative.



4.4 Manner Adverbs

Manner adverbs typically characterize the way or means the event is carried out and can be composed of an adverbial phrase such as *youxiandi* ‘leisurely’ (悠閒地) and *nulidi* ‘hard/diligently’ (努力地) or a prepositional phrase such as *yong/yi* ‘by/with’ (用/以...). With regard to manner adverbs, few previous studies examined the collocational pattern with manner adverbs, since all the three markers *zai*, *zheng*, and *zhengzai* may occur with a variety of manner adverbs (e.g. Guo 1992). But, corpus data show that there is a significant constraint in terms of the position of the manner adverb: while a manner adverbial can occur before or after *zai*, it can only occur **after** *zheng* or *zhengzai*, as represented in Table 12.

Table 12. Distribution of collocational associations with manner adverbs

	AdvP (悠閒地、努力地...)		PP (用/以...)	
	adv < *	* < adv	adv < *	* < adv
Zai (44)	45.45%	43.18%	11.36%	0%
Zheng (39)	0%	79.49%	0%	20.51%
Zhengzai (43)	0%	88.37%	4.65%	6.98%

(22) **Manner adverb (AdvP):**

- a、畫家悠閒地在/*正/*正在寫生，

Huajia youxiandi zai/*zheng/*zhengzai xiasheng

‘The painter is sketching leisurely and in a carefree manner.’

- b、中華民族的精英在無聲無息地倒下。

Zhonghua minzude jingying zai wusheng wuxidi daoxia

‘The elite of the Chinese people are unnoticeably falling down.’

- c、她們正辛勤地工作

Tamen zheng xinqindi gongzuo

‘They are working hard.’

- d、他們正在密切地注意事態的發展

Tamen zhengzai miqiedi zhuyi shitaide fazhan

‘They are noticing the development of the situation intently.’

(23) **Manner adverb (PP):**

- a、整個社會以群體性的方式在運作，

Zhengge shehui yi quntixingde fangshi zai yunzuo

‘The whole society is operating with forming in-group.’

- b、周博士正以流利的英語解說病毒的分化，

Zhouboshi zheng yi liulide yingyu jieshuo bingdude fenhua

‘Dr. Zhou is explaining the disunion of the virus with fluent English.’

c、一個女人用很大聲的廣東國語正在對一位老先生「解說」。

Yige nyuren yong hendashengde guangdong guoyu zhengzai dui yiwei laoxiansheng
"jieshuo"

‘A woman is explaining to an old man with very loud Guangdong Mandarin.’

With manner adverbs (AdvP), *zheng* and *zhengzai* can only take a following manner adverb but not a preceding manner adverb, while *zai* can collocate with both preceding and following manner adverbs as in the examples in (22). In manner adverbs (PP), although Table 12 shows that the occurrence of manner adverbs (PP) after *zai* is zero, we can find the example of *zai* with a following manner adverb (PP) from Yahoo as represented in example (24). *Zai* and *zhengzai* can co-occur with a preceding or following manner adverb (PP), while *zheng* only collocates with a following manner adverb (PP).

(24) 電腦用戶的數量在以驚人的速度增長著。(yahoo 2005/12/07)¹⁶

Diannaoyonghude shuliang zai yi jingrende sudu zengzhang zhu

‘The number of the computer customers is increasing with astonishing speed.’

The inherent meaning of *zheng* is ‘precisely’, marking a focused point/element. As an imperfective marker, it indicates that the occurring event is right or precisely at **the specified time**, which focuses on the temporal reference rather than the ongoing event (Pan 1980 and Zhang 2002a). Syntactically, the position of *zheng* is higher on the structure tree: over the node of VP. Therefore, when a manner adverb co-occurs with *zheng*, it should be placed in the position after *zheng* since the manner adverb is structurally under the node VP. The marker *zheng* singles out the manner adverb immediately following *zheng*, focusing on the

¹⁶ This example comes from the Yahoo on-line source to complement the insufficient samples of *zhengzai* in Sinica Corpus, and the obtained date is represented in the sentence final.

preciseness of the manner. On the other hand, the marker *zai* focuses on the ongoing event (Pan 1980, Hsu 1996, and Zhang 2002a), profiling the feature of ongoingness, and is syntactically under VP. Therefore, when a manner adverb is accompanied by *zai*, it might occur either before or after the marker *zai* to modify the event. That the marker *zheng* focuses on the manner and *zai* on the ongoing event can be seen in the following sentence:

(25) 這個社會正這般激烈的在更動，

Zhege shehui zheng zheban jiliede zai gengdong

“This society is changing so drastically.”

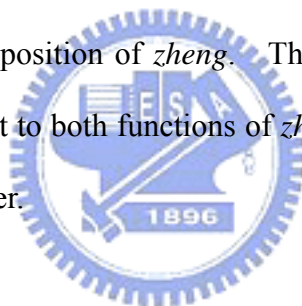
In example (25), *zheng* highlights the manner adverb *zheban jiliede* ‘so drastically’ and *zai* indicates the ongoing event *gengdong* ‘is changing’.

The marker *zhengzai*, morphologically composed of *zheng* and *zai*, involves the functions of both morphemes—the simultaneous manner and the ongoing process (Pan 1980, Hsu 1996, and Zhang 2002a)—and its semantic attributes include the feature of simultaneity and ongoingness. It is suggested that the syntactic behaviors *zhengzai* has to satisfy the requirements of both *zheng* and *zai* (Pan 1980). Manner adverbs, thus, should take the place after the marker *zhengzai* because of the function of *zheng*; however, we found that the manner adverbs (PP) could precede the marker *zhengzai*. The presumable reason is that the relation between manner adverbs (PP) and the modified event is less close than manner adverbs (AdvP), and *zhengzai* is relevant to the ongoing event, so manner adverbs (only PPs) can occur in the pre or post-aspectual position.

In addition, the scope of modification differs in different syntactic positions of the manner adjunct and the variation of word order will define different meanings. When a manner adjunct occurs after *zai* and immediately before the verb, it is event-internal, modifying the single instance of the predicated event. However, when a manner adjunct

occurs before *zai*, it is event-external, modifying the relation of the predicated event with some other constituent. For instance, in example (22b), the manner adverb 無聲無息地 *wusheng wuxidi* ‘unnoticeably’ modifies the action of ‘fall down’ not the event of ‘is falling down’, so it can not occur before *zai* as *無聲無息地在倒下 *wusheng wuxidi zai daoxia*. Example (22a) with the same reason, 寫生 *xiesheng* ‘sketch’ is a kind of event, thus 悠閒地 *youxiandi* ‘leisurely’ should occur before *zai* as event-external but it is unacceptable to occur after *zai* as event-internal to modify the predicated event as *畫家在悠閒地寫生 *Huajia zai youxiandi xiesheng*.

In conclusion, the marker *zai* is used to signify an ongoing event and manner adverbs can occur not only in the pre-aspectual position but also in the post-aspectual position, while the marker *zheng*, syntactically over VP, is used to precisely mark one object and manner adverbs have to be located in the post-position of *zheng*. The focus scope of *zheng* is the manner. The marker *zhengzai* is relevant to both functions of *zheng* and *zai*, and manner adverbs most frequently occur after the marker.



4.5 Aspectual Adverbs

Aspectual adverbs including *zhe* (著), *le* (了), and *yi(jing)* (已(經)) indicate the aspect of an event. Syntactically, *zhe* always follows predicates to signal the imperfective aspect and *le* also take the post-verbal position to express an perfective situation, while *yi(jing)* usually precedes verbs to indicate the happened event. Previous works claim that all of the three markers can co-occur with the aspectual adverb *zhe* and only *zai* can appear with *yi(jing)*. However, we found that the distinction between *zai*, *zheng*, and *zhengzai* also shows in the co-occurrence with the aspectual adverbs *le*—only *zheng* can collocate with *le*. The distributional differences of aspectual adverbs with *zai*, *zheng*, and *zhengzai* are shown in Table 13 and the illustrated examples (26-28) are demonstrated below.

Table 13. Distribution of collocational associations with aspectual adverbs

	<i>Zhe</i> (著)		<i>Le</i> (了)		<i>Yi(jing)</i> (已(經))	
	adv < *	* < adv	adv < *	* < adv	adv < *	* < adv
<i>Zai</i> (32)	0%	78.13%	0%	0%	21.88%	0%
<i>Zheng</i> (38)	0%	92.11%	0%	7.89%	0%	0%
<i>Zhengzai</i> (16)	0%	100%	0%	0%	0%	0%

(26) *Zhe*:

- a、蘇魯克在大聲咆哮著。

Suluke zai dasheng paoxiao zhe

‘Lu-Ke Su is roaring loudly.’

- b、天正下著傾盆大雨，

Tian zheng xia zhe qingpen dayu

‘The rain is pouring down.’

- c、他正在吸著血珠，

Ta zhengzai xi zhe xiezhu

‘He is sucking the beads of blood.’



(27) *Le*:

- a、這種現象，正在正在說明了現實與事實的問題，

Zhezhong xianxiang, zheng/*zai/*zhengzai shuoming le xianshi yu shishide wenti

‘This kind of phenomenon just explained the problem between reality and fact.’

(28) *Yi(jing)*:

- a、有些廟會已在正在蛻變。

Youxie miaohui yi zai/*zheng/*zhengzai tuibian

‘Some temple fairs are already undergoing metamorphosis.’

Zai, *zheng*, and *zhengzai* all can collocate with the aspectual adverb *zhe* which denotes

the state of an ongoing event as a stative imperfective aspect to depict the progressive event. The reason of co-occurrence of *zai*, *zheng*, and *zhengzai* with *zhe* is that all the three markers are used to depict the internal structure of an event as well as *zhe*. There are no conflicting semantic attributes to block the juxtaposition of *zai*, *zheng*, and *zhengzai* with the aspectual adverb *zhe*.

The surprising finding is that *zheng* can occur in a perfective event, as in (27), which is in conflict with the generally-defined imperfective perspective of progressive aspect. The aspectual adverb *le*, indicating a completed or bounded event, only collocates with the marker *zheng* rather than *zai* and *zhengzai*. *Zheng* does not profile the progressive feature of ongoingness so it can occur in a perfective event, while *zai* and *zhengzai* are always used to depict an event in the middle of happening, profiling the feature of ongoingness, and thus can not occur in a perfective event. In addition, it needs to be noted that the collocation of *le* with *zheng* cannot have the progressive meaning, since the event does not refer to the internal structure of an event. The meaning of *zheng* in this context is ‘exactly/precisely’ as a degree marker. *Zheng* is further developed from marking temporal proximity to marking degree/manner precision.

Moreover, given the non-durative nature of achievement verbs, it is commonly believed that *zheng* or *zai* cannot occur with achievement verbs (e.g. Smith 1991 and Shi 2001), but in our data, it is found that the two markers can actually co-occur with achievement verbs, as shown in (29a) and (29b):

(29) **Achievement verbs:**

a、你哥正死了嫂嫂,房中沒有個得意掌家 (yahoo 2005/10/30)

Nige zheng sile saosao, fangzhong meiyou ge deyi zhangjia

‘Your elder brother’s wife just died, and there is no competent mistress in the family of your elder brother.’

b、像是一整隊的人都在死 (yahoo 2005/10/30)

Xiangshi yi zhengdui de ren dou zai si

‘It seems that the whole group of people is dying.’

The distinction between *zai* and *zheng* is that only *zheng* with the achievement verb can denote a perfective event in (29a), meaning ‘one’s wife died’, while the marker *zai* with the achievement verb in (29b) indicates a prolonged ongoing process, in which the plural subject died one by one as in a continuous process.

The other distinction between the three markers is that *zai* can co-occur with *yi(jing)* but *zheng* and *zhengzai* can not. *Zai* in sentence (28) with *yi(jing)* signals the event occurred before and is going on at the speaking moment and may keeps going later (Guo 1992, Xiao 2002, and Zhang 2002a). Only *zai* can be used to depict an ongoing event with the initial occurring point, but *zheng* and *zhengzai* cannot. *Zheng* and *zhengzai*, which are non-durative, express an ongoing event precisely at a specific time reference which is located at a concrete position in the time axis, while *zai* can be durative and can be used to denote an ongoing event over a long period of time. Therefore, *zai* can co-occur with *yijing* to code an ongoing event with the initial boundary involved, in which the event refers to the initial change of state and there is duration between the event time and the reference time. Another supporting and attractive piece of evidence that *zai* refers to a progressive event with the initial boundary is that *zai* can co-occur with the preceding verb *kaishi* ‘start’ (開始) to denote the inceptive-progressive as shown in example (30).

(30) 開始在/*正/*正在想，是不是我們一開始就錯了呢？

Kaishi zai/*zheng/*zhengzai xiang, shibushi women yikaishi jiu cu le ni

‘We start thinking, “Were we wrong from the beginning?”’

Zai has the representation of the inceptive-progressive, and it is debatable that the markers *zai*, *zheng*, and *zhengzai* in Mandarin does not represent the beginning of an ongoing event i.e. the inceptive-progressive (Shi 2001).

In sum, *zai* and *zhengzai* involves the progressive feature of ongoingness so they can not occur in a perfective event, while *zheng* does not profiles the feature of ongoingness so it can collocate with *le* to denote a perfective event. In addition, *zheng* and *zhengzai* express an ongoing event with a concrete specific position in the time axis which can not be durative, so they can not be used to indicate an inceptive-progressive. In contrast, *zai* can denote an ongoing event over a long period of time, which is durative, so it can be used to represent an ongoing event with the initial boundary as the inceptive-progressive.

4.6 Modal Adverbs

Modal adverbs are classified into deontic (evaluative) adverbs and epistemic adverbs. Deontic adverbs such as *yao* ‘will’ (要) and *keyi* ‘can’ (可以) convey the speaker’s attitude of the desirability, obligation, or permission of the state or event, while epistemic adverbs such as *keneng* ‘may’ (可能) and *sihu* ‘it seems that’ (似乎) indicate the speaker’s attitude toward the truth, certainty, or probability of the event or proposition (Givon 1993). Generally speaking, modal adverbs represent irrealis events, which should not occur with the imperfective markers *zai*, *zheng*, and *zhengzai*. But, the result shows that all the three markers can appear with modal adverbs and their semantic and syntactic distinction will be discussed below.

4.6.1 Semantic Distinction of Modal Adverbs

The distributional differences of *zai*, *zheng*, and *zhengzai* in terms of deontic and epistemic adverbs are shown in Table 14. The result shows that there is a significant distinction between *zai*, *zheng*, and *zhengzai*, that is, only *zheng* can collocate with deontic

adverbs. The markers *zai* and *zhengzai* only appear with epistemic adverbs, while *zheng* can co-occur not only with deontic adverbs but also with epistemic adverbs. The represented examples are shown in (31) and (32).

Table 14. Distribution of collocational associations with modal adverbs

	Deontic 要、可(以)...		Epistemic 可能、似乎...	
	adv < *	* < adv	adv < *	* < adv
<i>Zai</i> (3)	0%	0%	100%	0%
<i>Zheng</i> (24)	0%	91.67%	8.33%	0%
<i>Zhengzai</i> (7)	0%	0%	100%	0%

(31) **Deontic:**

a、王先生，我正在找您。

Wangxiansheng, wo zheng/*zai/*zhengzai yao zhaonin

‘Mr. Wang, I was just about to look for you.’

b、這觀念正在說明理財的重要性。

Zheguannian zheng/*zai/*zhengzai ke shuoming licaide zhongyaoxing

‘This idea can just about explain the importance of managing finance.’

(32) **Epistemic:**

a、東尼可能在喝酒，

Dongni keneng zai hejiu

‘Tony may be drinking (alcohol).’

b、現代人似乎正處於這樣的困境之中。

Xiandai ren sihu zheng chuyu zheyangde kunjing zhizhong

‘The modern people seem to be being in such dilemma.’

c、他的手可能正在掏髒髒的下水道，

Tade shou keneng zhengzai tao zangzangde xiashuidao

‘His hand may be scooping the dirty sewer.’

The events with deontic adverbs are irrealis or future events, since the intention, ability, preference, permission and obligation are all future projecting (Givon 1993), that is, the speaker or the subject will do the event in the future. Only *zheng* can occur in this irrealis situation, while *zai* and *zhengzai* can not as proposed by Hsu 1996. Since *zheng* does not involve the progressive feature of ongoingness as mentioned above, it could occur in a present ongoing event, a perfective event, or a future (irrealis) event, while *zai* and *zheng* highlight the feature of ongoingness in which an event precisely should have started and is continuing at the reference time. In addition, *zheng* in the future projecting sentence with deontic adverbs is likely a degree marker ‘exactly/precisely’ not an imperfective marker. The marker *zheng* is extended from precision in time to precision in degree¹⁷. On the other hand, epistemic adverbs express the speakers’ attitude of the truth, certainty, or probability of an event or proposition and this event or proposition could be an ongoing event. For instance, in example (32a), the speaker guesses that Tony is drinking (alcohol)’, and he/she judges what is Tony doing now and the propositional information is an ongoing event. Since the propositional event with epistemic adverbs can be an ongoing process, all the three markers *zai*, *zheng*, and *zhengzai* can co-occur with epistemic adverb to express the speaker attitude of the ongoing event.

From the above findings, we conclude that *zheng* can appear with deontic adverbs which denote irrealis events because the feature of ongoingness is backgrounded, but *zai* and *zheng* are disallowed to occur with deontic adverbs since they mark the progressive feature of ongoingness which is restricted to an ongoing event. On the other hand, all the three markers can collocate with epistemic adverbs since this kind of adverb can be used to indicate

¹⁷ The process of grammaticalization will be discussed in section 5.3

the speaker's attitude of the truth or certainty of an occurring event.

4.6.2 Syntactic Distinction of Modal Adverbs

It is revealed in Table 14 that *zai* and *zhengzai* only occur after epistemic adverbs while *zheng* can occur not only before deontic adverbs but also after epistemic adverbs and the examples are illustrated, respectively, in (31) and (32). However, from the data in Yahoo, we found that epistemic adverbs may occur before the three markers, and deontic adverbs can also be located in the post-aspectual position of *zheng* as in examples (33) and (34). From the above syntactic consequences, the overall finding is that there is a significant syntactic distinction of modal adverbs between *zai*, *zheng*, and *zhengzai* in which modal adverbs can either precede or follow the marker *zheng* but only occur before *zai* and *zhengzai*.

(33) Pre-aspectual deontic adverbs:

- a、這種聯想的產生要有一個特定的條件,就是馬必須在跑。(yahoo 2005/12/10)

Zhezhong lianxiangde chansheng yao you yige tedingde tiaojian, jiushi ma bixu zai pao

‘The creation of this kind of association should have a particular condition, that is, a horse has to be running.’

- b、當執行此過程時,任務伺服器必須正在運行。(yahoo 2005/12/10)

Dang zhixing ci guocheng shi, renwu cifuqi bixu zhengzai yunxing

‘When this process is carried out, the mission server has to be executing.’

- c、為了找到一個結點,這個結點上的智能代理(Intelligent Agent)必須正運行著。

(yahoo 2005/12/10)

Weile zhaodao yige jiedian, zhege jiedian shangde zhineng daili (Intelligent Agent) bixu zheng yunxing zhu

‘In order to find a crunode, the Intelligent Agent on this crunode has to be

operating.’

(34) **Post-aspectual epistemic adverbs:**

a、意外事故的生還者正/在/正在可能開始有很多情緒出來。(yahoo 2006/05/30)

Yiwai shigude shenghuanzhe zheng/*zai/*zhengzai keneng kaishi you henduo
qingxu chulai

‘The survivor of the contingency may be about to have lots of emotions start coming out.’

When modal adverbs occur in the pre-aspectual position, they denote the attitude of the following ongoing event with *zai*, *zheng*, and *zhengzai*. The three markers after modal adverbs are in the propositional frame of clauses, and according to Givon (1993), “the propositional frame of clauses—participant roles, verb-type, transitivity—as well as the actual lexical items that fill the various slots in the frame, remain largely unaffected by the modality wrapped around it.” The three markers represent the progressive meaning in the propositional information and the modal adverbs denote the speaker’s attitude toward the ongoing event. In addition, there is one limitation of the three markers with preceding deontic adverbs that most of them occur in the condition or requirement sentence with the preceding deontic adverb *bixu* ‘must/ have to’, and these sentences are peripheral cases of future projecting events. On the other hand, when modal adverbs are in the post-aspectual position, only *zheng* can take the following modal adverbs. As mentioned above, *zheng* is on a higher position of the structure tree and might be located in the position before modal adverbs. In sentence (34), the marker *zheng* in the main clause places a focus on the modality, and the modal adverb as an irrealis operator overrides the value of the following proposition, that is, the sentence becomes an irrealis event. *Zheng* does not necessarily involve the progressive feature of ongoingness and may occur with an irrealis modal. However, *zheng* in this context can not have a progressive function, but rather has the

meaning of ‘exactly/precisely.’ *Zheng* is extended to degree domain to denote the matching of the speakers’ thought and expectation.

In summary, *zai* and *zhengzai* only occur after modal adverbs, i.e. in the propositional frame of clauses to indicate an ongoing event. In contrast, *zheng* not only occurs in the propositional information of the modality representing a progressive event but also comes before the modal adverbs in sentences. *Zheng* can occur before modal adverbs, precisely focusing on the modality, to represent an irrealis event because the feature of ongoingness is not intensified in *zheng*.

4.7 Negative Adverbs

There are two prototypical negative adverbs in Mandarin—*bu* (不) and *mei* (沒)—which commonly occur in the preceding position of *zai*, *zheng*, and *zhengzai* and whose scope involves the entire sentence. The distributional difference of *zai*, *zheng*, and *zhengzai* in terms of negative adverbs *bu* and *mei* are represented in Table 15, and the represented examples are demonstrated in (35) and (36).

Table 15. Distribution of collocational associations with negative adverbs

	<i>Bu</i> (不)		<i>Mei</i> (沒)	
	adv < *	* < adv	adv < *	* < adv
<i>Zai</i> (5)	80%	0%	20%	0%
<i>Zheng</i> (5)	100%	0%	0%	0%
<i>Zhengzai</i> (0)	0%	0%	0%	0%

(35) *Bu*:

a、人無時無刻不在選擇；

Ren wushi wuke bu zai xuanze

‘People are making choices all the time.’

b、哪個省不在餓死人？

Nagesheng bu zai esi ren

‘Which province is not starving people?’

(> Every province is starving people.)

c、在冬日的寂默之後，不正是為了春陽下的開放。

Zai dongride jimo zhihou, bu zheng shi weile chunyang xiade kaifang

‘After the desolation of the winter, it is for the sake of the open under the spring sun.’

d、這不正是建築師夢想已久的樂園嗎？

Zhe bu zheng shi jianzhushi mengxiang yijiude leyuan ma

‘Isn’t this the paradise which the architect has dreamed a long time?’

e、我們現在不正在想辦法嗎？ (yahoo 2005/12/08)

Women xianzai bu zhengzai xiang banfa ma

‘Aren’t we devising a plan right now?’



(36) *Mei*:

a、台灣好像沒在/*正作。

Taiwan haoxiang mei zai/*zheng zuo

‘It seems that Taiwan is not doing it.’

b、專家沒正在嘗試在水稻中添加貝它胡蘿蔔素 (yahoo 2005/12/08)

Zhuanjia mei zhengzai changshi zai shuidaozhong tianjia beita huluobosu

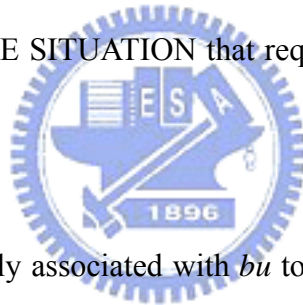
‘The expert is not trying to put β -carotenoid into the paddy rice.’

It is revealed that all the three markers *zai*, *zheng*, and *zhengzai* seldom co-occur with negative adverbs¹⁸, especially the marker *zhengzai* (none is found in Sinica Corpus). With

¹⁸ The distribution of collocational associations with negative adverbs of *zai*, *zheng*, and *zhengzai* make up less than 3 percentages as shown in Table 6, and the amount of negation sentences with the three markers sum up to

the samples from Yahoo, it is found that *zhengzai* can also co-occur with negative adverbs to represent the negation of an event as in (35e) and (36b). According to Gao (2003), the negation of the Mandarin progressive is ‘*mei V*’; however, from the examples (35) and (36), we found that *zai* and *zhengzai* can collocate with either *bu* or *mei* but *zheng* only co-occurs with *bu*. When the event with *zai* and *zhengzai* are negated by the negative adverb *bu*, the sentences are rhetorical negation including double negation and negative question with affirmative meaning. So, the markers *zai* and *zhengzai* are used to code an ongoing event with the feature of ongoingness foregrounded, so they tend to associate with *mei* to negate the progressive event. *Mei* being used to negate an event is proposed by Lin (2003) as:

Mei aspectually selects an EVENT as its complement, but *bu* aspectually selects as its complement a STATIVE SITUATION that requires no input of energy in order to obtain that situation.



On the other hand, *zheng* is only associated with *bu* to represent the negation which includes not only the basic negative patterns but also the rhetorical negative patterns. According to Lin (2003), *bu* is used to negate a stative situation. The marker *zheng* with the feature of simultaneity typically indicates the simultaneous point-of-reference and does not represent the ongoing event, so *zheng* co-occurs with the negative adverb *bu* to negate a situation rather than the negative adverb *mei*. In example (35c,d), *zheng* co-occurs with stative verbs *si* ‘is’ (是) which represents an stative situation not an event, so *bu* is the candidate operator to negate the sentence. In addition, the reason for the co-occurrence of *zheng* with individual stative verbs is because *zheng* does not emphasize the progressive feature of ongoingness, and *zheng* in this context represents the meaning ‘exactly/precisely’ as a degree adverb rather than the progressive meaning. The detailed discussion will be illustrated in section 5.2.1.

be a total of 10 examples.

In sum, the markers *zai* and *zhengzai* tend to associate with *mei* to negate an event, since they profile the progressive feature of ongoingness which codes an ongoing event, while *zheng* co-occurs with *bu* to negate a situation, since *zheng* is relevant to the simultaneous reference-point rather than the ongoing event.

4.8 Summary

This section explores the distributional differences between *zai*, *zheng*, and *zhengzai* in terms of the collocational patterns with adverbs and tries to define their semantic properties from the collocational evidence. The overall distribution of *zai*, *zheng*, and *zhengzai* in terms of the collocation of adverbial adjuncts including time adverbs, frequency adverbs, manner adverbs, aspectual adverbs, modal adverbs and negative adverbs is shown in Table 16, and Table 17 summarize the collocations of these three markers.

Table 16. Distributional differences of collocational patterns with adverbs

		<i>Zai</i>		<i>Zheng</i>		<i>Zhengzai</i>	
		adv<*	*<adv	adv<*	*<adv	adv<*	*<adv
Time	Specific time reference 那時、今天...	61.61%	0%	100%	0%	100%	0%
	Habitual time reference 每天、永遠...	38.39%	0%	0%	0%	0%	0%
Frequency	Durative 一直、總是...	58.33%	0%	0%	0%	0%	0%
	Iterative 又、不斷...	33.33%	8.33%	0%	100%	0%	100%
Manner	AP(悠閒地、辛勤地...)	45.45%	43.18%	0%	79.49%	0%	88.37%
	PP(用/以...)	11.36%	Yahoo ¹⁹	0%	20.51%	4.65%	6.98%
Aspectual	Zhe (著)	0%	78.13%	0%	92.11%	0%	100%
	Le (了)	0%	0%	0%	7.89%	0%	0%

¹⁹ “Yahoo” means that this study received this collocational pattern from samples in on-line Yahoo resource.

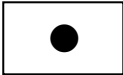


	<i>Yi(jing)</i> (已(經))	21.83%	0%	0%	0%	0%	0%
Modal	Deontic 要、可(以)...	Yahoo	0%	Yahoo	91.67%	Yahoo	0%
	Epistemic 可能、似乎...	100%	0%	8.33%	Yahoo	100%	0%
Negative	<i>Bu</i> (不)	80%	0%	100%	0%	Yahoo	0%
	<i>Mei</i> (沒)	20%	0%	0%	0%	Yahoo	0%

Table 17. Collocations of *zai*, *zheng*, and *zhengzai*

	<i>Zai</i>	<i>Zheng</i>	<i>Zhengzai</i>
Time reference	Specified and habitual time	Specified time	Specified time
Durative adverb	Durative and non-durative	Non-durative	Non-durative
Iterative adverb	Iterative and non-iterative	Non-iterative	Non-iterative
Modified event	Process	Process, perfective, irrealis	Process

We found that the syntactic behaviors of *zhengzai* are more similar to *zheng*. Both express an ongoing event at a specific time reference with the feature of simultaneity, and they cannot associate with adverbs without a specified temporal point (time adverbs with habitual time reference), adverbs which refer to durative meanings (time adverbs with extended period of time), and frequency adverbs (durative and iterative frequency adverbs) indicating the repetition of an event. On the other hand, *zai* indicates an ongoing event without marking the temporal reference i.e. the feature of simultaneity, so it can appear with adverbs with specified or habitual time reference, with durative or non-durative adverbs, and with iterative or non-iterative adverbs.

Moreover, another collocational distinction between the three markers is that the following modified events of *zai* and *zhengzai* are an ongoing event, but *zheng* can be an ongoing event, a perfective event, and an irrealis event. *Zai* and *zhengzai* profiles the

progressive feature of ongoingness so an ongoing process is required, while *zheng* does not profile the feature of ongoingness so it can take a non-ongoing situation. But, one thing should be heeded is that not all the data of *zheng* denote the progressive function but some represent the meaning of ‘exactly/precisely.’ The marker *zheng* is further extended from temporal proximity to degree domain. One tentative solution to distinguish these two senses ‘exactly/precisely’ and ‘is Ving’ is that if *zheng* refers to the internal structure of a situation, such as 正忙著 *zheng mang zhe* ‘is being busy’ depicted as (----------), it expresses the progressive meaning. On the other hand, if *zheng* refers to the external event or outside the event, such as the perfective event 正說明了 *zheng shuoming le* ‘just explained that’ (-----●---) and the irrealis event 正要 *zheng yao* ‘is just about to’ (-----●-----) in which the time reference does not locate in the internal event, the meaning ‘exactly’ will come out.

Zheng is not restricted to focus on an ongoing event. The internal information of the marker *zheng* is ‘focus on the preciseness of one point’. As an imperfective marker, *zheng* indicates the ongoing event at a precisely temporal reference-point, and the focus scope is the ongoing proposition. Besides, *zheng* could also focus on the manner as 正激烈的 *zheng jiliede* ‘just drastically’, the modality as 正要 *zheng yao* ‘is just about to’, the sentence as 正因(為) *zhengyi(wei)* ‘just/exactly because’ as a clausal adverb, and the like.

Furthermore, both *zheng* and *zhengzai* require a time reference, indicating the on-going process pertaining to a specific time point. They are a semantically and pragmatically stronger form to represent progressive events with respect to their semantic properties (Zhang 1995). They cannot be used to express the other types of progressive as habitual progressive (*He is always hitting the ball*), repetitive-progressive (*He is repetitively hitting the ball*), or inceptive-progressive (*She started dealing out cards*). But *zai* can occur with iterative and durative events without a specified time reference. The distinction between *zai*, *zheng*, and *zhengzai* is that *zheng* and *zhengzai* only indicate **deictic progressive** (tensed aspect), while

zai is compatible with other types of progressives as represented in Table 18.

Table 18. Types of progressive

	<i>Zai</i>	<i>Zheng</i>	<i>Zhengzai</i>
Basic progressive	○	○	○
Habitual progressive	○	X	X
Repetitive-progressive	○	X	X
Inceptive-progressive	○	X	X

In sum, our findings provide convincing corpus evidence to support the traditional assumption that *zai* focuses on the ongoing process; *zheng* focuses on the time of an ongoing event; and *zhengzai* is relevant to both the ongoing process and the reference time (e.g. Pan 1980, Hsu 1996, and Zhang 2002a). The progressive perspective of *zai* contains the feature of ongoingness to denote a occurring event; the progressive perspective of *zheng* emphasizes the feature of simultaneity to indicate the simultaneous point-of-reference; and the progressive perspective of *zhengzai*, supposedly composed of *zheng* and *zai*, involves both functions—ongoingness and simultaneity. *Zhengzai* is used to represent an ongoing event with a temporal reference-point containing the simultaneous manner and the progressive process. The semantic attributes of *zai*, *zheng*, and *zhengzai* with respect to the development of grammaticalization will be illustrated in the following section.

Chapter 5 Semantic Distinction of *Zai*, *Zheng*, and *Zhengzai*

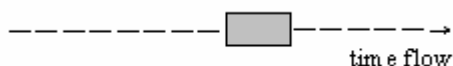
The collocation evidence can be related to the grammaticalization studies of *zai*, *zheng*, and *zhengzai*. This section illustrates the internal lexical information of the three markers with respect to their grammaticalization development. Section 5.1 defines the semantic properties of *zai*, *zheng*, and *zhengzai* based on the progressive features advanced by Givon (1993) and some further semantic extensions are discussed in section 5.2. Section 5.3 describes the process of grammaticalization and section 5.4 concludes the semantic attributes of the three markers.

5.1 Semantic Properties

5.1.1 *Zai*: Profiling Ongoingness and Proximity

The lexical meaning of *zai* is ‘existence’ and, diachronically, evolves from spatial existence to temporal existence which implies the occupation of a temporal duration as represented diagrammatically as Figure 2 (e.g. Comrie 1976, Hsu 1996, Zhang 2002a, and Chen 2004). The event is an ongoing event by means of the existence at a temporal point; in other words, the imperfective marker *zai* is typically used to represent an ongoing process. It is suggested that the marker *zai* contains the feature of ongoingness, so *zai* is only used to describe an ongoing event and can not occur in irrealis and perfective events as mentioned in chapter 4. The demonstrated examples are shown again in examples (37).

Figure 2. Temporal existence of *zai*



(37) a、他們在說：親愛的中華民國，生日快樂呀！

Tamen zai shuo: Qinaide zhonghuaminguo, shengri kuaile ya

‘They are saying: Dear R.O.C., Happy Birthday!’

b、*王先生，我在要找您。

*Wangxiansheng, wo zai yao zhaonin

‘Mr. Wang, I am going to look for you.’

c、*這種現象，在說明了現實與事實的問題，

*Zhezhong xianxiang, zai shuoming le xianshi yu shishide wenti

‘This kind of phenomenon explained the problem between reality and fact.’

Moreover, the progressive perspective of *zai* is from close proximity to depict the internal structure of a situation, and all details in the middle are visible as if the subject is placed right at the scene. As Givon (1993) stated, this feature of proximity is related to the metaphoric extension from spatial proximity to temporal proximity.

The marker *zai* spans from spatial existence to temporal existence, which suggests that the progressive perspective of *zai* profiles the features of ongoingness and proximity disregarding the feature of simultaneity. *Zai* is not restricted to occurring in an event with a simultaneous point-of-reference of another event, so the progressive event of *zai* can occur in either an event with a simultaneous point-of-reference of another event or a single-clause ongoing event without a clear simultaneous reference-point as illustrated in (38).

(38) a、一些有名的明星出現時，幾萬人在捧場，

Yixie youmingde mingxing chuxian shi, jiwanren zai pengchang

‘As some well-known stars are appearing, tens of thousands of people are cheering.’

b、群眾在呼喊：『天天困在田裡，困死了！』

Qunzhong zai huhan: Tiantian kunzai tianli, kunsile

‘The crowd is shouting: "Trapped in the farmland every day, (we're) trapped to death!"’

In sum, the meaning of the marker *zai* changes from existence in a spatial area to occupation at a temporal duration, implying the feature of ongoingness. As a progressive marker, it highlights the progressive features of ongoingness and proximity. *Zai* is typically used to represent an ongoing event from close proximity to observe an event in the middle of happening.

5.1.2 *Zheng*: Profiling Simultaneity and Proximity

The original meaning of *zheng* is ‘precision’ in space with reference to another object and describes the spatial precision of two objects. The precision in space, then, is extended to precision in time to describe the temporal precision of two events (Chen 2004). Two events precisely at a temporal point imply that they are simultaneous with a time reference, implying the feature of simultaneity. Thus, the progressive perspective of *zheng* is commonly used to code an ongoing event with a simultaneous point-of-reference of another event (e.g. Guo 1998, Yang 2000, Zhang 2002a, and Chen 2004), and this temporal simultaneous reference-point in discourse is obligate and can not be obscure. Example (39) shows that the event with *zheng* can not be defined without reference to another event. It must occur in an event with a clear simultaneous reference-point in discourse but not an event with a vague temporal reference-point. The feature of simultaneity is profiled in the progressive perspective of *zheng*.

(39) a、心中正叫：「我要死了！」忽然有人撲向瓦耳拉齊。

Yaojian zhong le yiquan, xinzhong zheng jiao: "Wo yao si le!" huran youren puxiang waerlaqi

‘When I am crying in mind: “I am going to die!” someone suddenly pounces upon Wa-Er-La-Qi.’

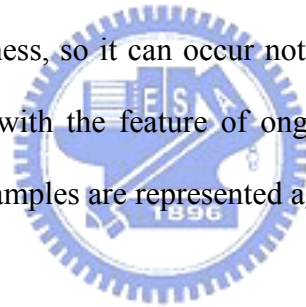
b、*心中正叫：「我要死了！」

Xinzhong zheng jiao: "Wo yao si le!"

‘When I am crying in mind: “I am going to die!”’

In addition, *zheng* can be used to depict an ongoing event in the middle of happening with a simultaneous point-of-reference as well as *zai*. It is scrutinized from close proximity to observe what is going on at the reference-point, and all details in the middle of an event can be seen as right at the scene.

The marker *zheng* is from precision in space to precision in time. It is inferred that the progressive perspective of *zheng* highlights the features of simultaneity and proximity, and the progressive event is represented by means of the feature of simultaneity. *Zheng* does not profile the feature of ongoingness, so it can occur not only in progressive events but also in irrealis and perfective events with the feature of ongoingness disregarded as mentioned in section 4 and the illustrated examples are represented again as below.



(40) a、小喬說話的時候我嘴正嚼著花生米。

Xiaoqiao shuohuade shihou wo zui zheng jiaozhe huashengmi

‘As Xiaoqiao speaks, I am chewing peanuts in my mouth.’

b、王先生，我正要找您。

Wangxiansheng, wo zheng yao zhaonin

‘Mr. Wang, I was just about to look for you.’

c、這種現象，正說明了現實與事實的問題，

Zhezhong xianxiang, zheng shuoming le xianshi yu shishide wenti

‘This kind of phenomenon just explained the problem between reality and fact.’

In conclusion, the marker *zheng* evolves from spatial precision of an object with

reference to another object to temporal precision of an event with a simultaneous point-of-reference. The progressive perspective of *zheng* marks the features of simultaneity and proximity to express what is going on at a simultaneous reference-point.

5.1.3 *Zhengzai*: Profiling Ongoingness, Proximity, and Simultaneity

The marker *zhengzai* is morphologically composed of *zheng* and *zai*, which is relevant to both functions—features of ongoingness and simultaneity—as stated in section 4.8. The progressive perspective of *zhengzai* is commonly used to indicate an ongoing event at a simultaneous reference-point. Like the marker *zai*, it does not represent an unrealis event or a perfective event with the feature of ongoingness foregrounded as shown in (41).

(41) a、外面正在下雨，

Waimian zhengzai xiayu

‘It is raining outside.’

b、*王先生，我正在要找您。

Wangxiansheng, wo zhengzai yao zhaonin

‘Mr. Wang, I am going to look for you.’

c、*這種現象，正在說明了現實與事實的問題，

Zhezhong xianxiang, zhengzai shuoming le xianshi yu shishide wenti

‘This kind of phenomenon explained the problem between reality and fact.’

In addition, the progressive event with *zhengzai* is also viewed from close proximity to describe an event in the middle of happening. It seems that the observer is placed right at the scene, and all details in the middle of the event are clear.

Furthermore, the progressive feature of simultaneity is also highlighted in *zhengzai* as well as the marker *zheng*. The marker *zhengzai* indicates an ongoing event with a

simultaneous point-of-reference. If this simultaneous reference-point is indefinite, the sentence will be unacceptable as in example (42b).

(42) a、失業以後正在徬徨，突然他的代理人告知明尼蘇達對他有興趣，

Shiye yihou zhengzai panghuang, turan tade dailiren gaozhi mingnisuda duita you xingqu

‘After unemployment, when he is hesitating, his agent suddenly tells that the Minnesota Company is interested in him.

b、*失業以後正在徬徨，

Shiye yihou zhengzai panghuang,

‘After unemployment, when he is hesitating,’

In summary, the marker *zhengzai* consisted of *zai* and *zheng* intensifies the features of ongoingness and simultaneity. The progressive perspective of *zhengzai* profiles all the features of ongoingness, proximity, and simultaneity. It is from close proximity to describe a progressive event with a simultaneous point-of-reference.

5.1.4 The Other Marker *Zheng...Zai*

The marker *zhengzai* has another similar representation i.e. *zheng...zai* in which a manner adverb inserted between *zheng* and *zai* as shown in (43).

(43) 這個社會正這般激烈的在更動，

Zhege shehui zheng zheban jiliede zai gengdong

‘This society is changing so drastically.’

Zheng...zai is composed of *zheng* and *zai* as well as *zhengzai*, so it involves the simultaneous

manner and the ongoing process with the features of simultaneity and ongoingness.

The syntactic behaviors of *zheng...zai* are supposedly same with *zhengzai*. Therefore, it can not occur in a non-ongoing event in (44) and occur with a time adverb without a definite temporal reference in (45).

(44) *這個社會正這般激烈的在要更動，

Zhege shehui zheng zheban jiliede zai yao gengdong

“This society is going to changing so drastically.”

(45) *這個社會永遠正這般激烈的在更動，

Zhege shehui yongyuan zheng zheban jiliede zai gengdong

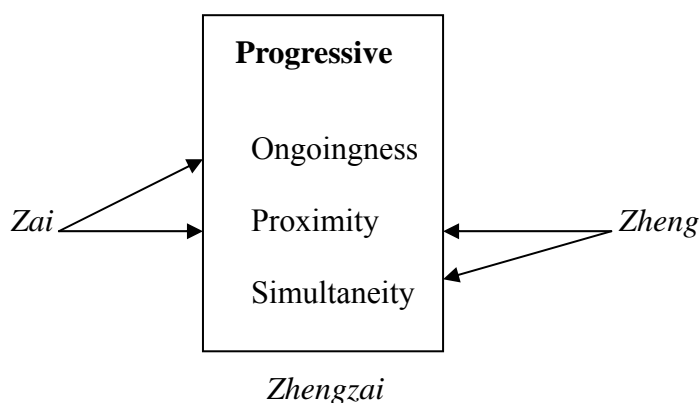
“This society is changing so drastically forever.”

The marker *zheng...zai* highlights the feature of ongoingness so it can not used to represented an irrealis event; moreover, it contains the feature of simultaneity and has to occur with time adverbs with a specific time reference. The marker *zheng...zai*, like *zhengzai*, involves the progressive features of ongoingness, proximity, and simultaneity.

5.1.5 Summary

From above discussion, it is found that the progressive perspective of *zai* describes an ongoing event in the middle of happening which involves the features of ongoingness and proximity. *Zheng* depicts an event at a simultaneous reference-point intensifying the features of simultaneity and proximity and an ongoing event is presented by means of the feature of simultaneity. The marker *zhengzai* expresses an ongoing event with a simultaneous point-of-reference profiling the features of ongoingness, proximity, and simultaneity. The semantic attributes of these three markers are diagrammatically portrayed in the following.

Figure 3. Semantic attributes of *zai*, *zheng*, and *zhengzai*



The finding is confirmed the notion of Hsu (1996). She suggests that *zai* represents the internal structure of an event, *zheng* signals the external reference time, and *zhengzai* correlates both the external reference time and the internal structure. The marker *zai* semantically profiles the features of ongoingness and proximity with the feature of simultaneity disregarded, so it is typically used to represent an ongoing event. However, the marker *zheng* semantically highlights the features of simultaneity and proximity, and the simultaneous point-of-reference is demanded in an event disregarding the ongoing event. *Zheng* is relevant to the temporal reference. And the marker *zhengzai* are composed of *zheng* and *zai* has both functions of them—ongoingness, proximity, and simultaneity—and both the ongoing process and the simultaneous manner, rationally, should be intensified.

Finally, the following represents an attracted case to illustrate what are exactly the lexical semantic distinctions that bear syntactic consequences of *zai*, *zheng*, and *zhengzai*. In examples (44), the marker *zai* and *zhengzai* can occur in the context ‘what is he doing?’ but *zheng* can not. But, when the temporal reference is established, the sentences with *zheng* become acceptable as shown in (46).

(46) a、他在做什麼？

Ta zai zuo sheme

b、*他正做什麼？

Ta zheng zuo sheme

c、他正在做什麼？

Ta zhengzai zuo sheme

‘What is he doing?’

(47) a、我進來的時候，他正做什麼？

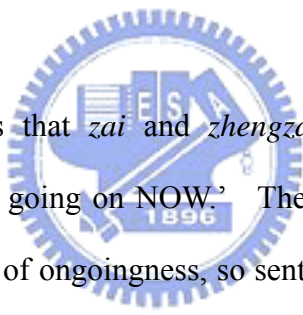
Wo jinlaide shihou, ta zheng zuo sheme

‘When I came in, what is he doing?’

b、那時他正做什麼？

Nashi ta zheng zuo sheme

‘What is he doing at that time?’



The reasonable explanation is that *zai* and *zhengzai* marks the feature of ongoingness implying the meaning ‘what is going on NOW.’ The default temporal reference ‘now’ can be established from the feature of ongoingness, so sentence (46a, c) can retrieve the meaning of ‘what is he doing now?’ On the other hand, *zheng* highlights the feature of simultaneity rather than the feature of ongoingness. The marked time reference is a must in *zheng*. However, the temporal reference in example (46b) can not be established without the feature of ongoingness. The marker *zheng* encodes the precisely simultaneous point with something, and the event (46b) is not complete because of the lack of a simultaneous point-of-reference. If the temporal reference is settled as in examples (47), the sentence becomes acceptable. The lexical semantic properties of the three markers determine their syntactic behaviors.

5.2 Further Semantic Extension

5.2.1 Dynamicity vs. Stativity

The interaction between the aspect markers and the situation types is tight (e.g. Li and

Thompson 1981; Smith 1991, 1994; Xiao and McEnery 2004), and, traditionally, the imperfective markers are supposed to occur in a non-stative event. However, it is found that *zheng* can be associated with stative predicate such as 是 *shi* ‘is’ in section 4.7 which is supposed not to occur in a progressive event. In the following, we thoroughly examine the distribution of *zai*, *zheng*, and *zhengzai* in terms of situation types as presented in Table 19.

Table 19. Distribution of *zai*, *zheng*, and *zhengzai* in terms of situation types

Data	State		Activity	Accomplishment	Semelfactive	Achievement
	Individual-level	Stage-level				
<i>Zai</i>	0%	16.22% (78/481)	79.83% (384/481)	1.66% (8/481)	1.04% (5/481)	1.25% (6/481)
<i>Zheng</i>	55.8%% (231/414)	11.59% (48/414)	29.47% (122/414)	2.9% (12/414)	0.24% (1/414)	0%
<i>Zhengzai</i>	0%	14.53% (69/475)	83.16% (395/475)	1.68% (8/475)	0.21% (1/475)	0.42% (2/475)

Table 19 shows that *zai* and *zhengzai* tend to co-occur with non-stative verbs with nearly 85 percent of occurrence, while *zheng* is likely to occur with stative predicates about 70 percent of occurrence. Although these three markers could be occur in stative situations, there are some distinctions between *zheng* and the other two markers, *zai* and *zhengzai*. *Zheng* can be associated with not only individual-level state predicates but also stage-level state predicates as represented in (48) and (49). The former expresses the permanent perspective of an event and will not change over time or place, while the latter indicates the transient stage of an event and vary over time or place (“more event-like”) (Xiao and McEnery 2004). In contrast, *zai* and *zhengzai* are only accompanied with stage-level state predicates but not take the individual-level state as predicates, as exemplified in (48) and (49).

(48) **Individual-level State:**

- a、舞者的疏離交錯正/*在/*正在象徵著都會人的內心世界。

Wuzhede shuli jiaocuo zheng/*zai/*zhengzai xiangzheng zhe duhuirende neixin shijie

‘The separation and interlacement of the dancer is just symbolized the inner world of people in the city.’

- b、這正/*在/*正在是O型—獅子座最大的魅力。

Zhe zheng/*zai/*zhengzai shi Oxing—shizizuo zuidade meili

‘This is exactly the biggest charm of the O bloodtype of the Leo.’

(49) **Stage-level State:**

- a、大家在/正/正在忙著辦事情。

Dajia zai/zheng/zhengzai mang zhe ban shiqing

‘Everyone is busying themselves in handling matters.’

- b、罹患愛滋病毒的比率在/正/正在逐年增加中

Lihuan aizi bingdude bilyu zai/zheng/zhengzai zhunian zengjia zhong

‘The ratio of contraction of HIV is increasing year by year.’

The distributional tendency of *zai*, *zheng*, and *zhengzai* is determined by their semantic attributes. *Zai* and *zhengzai* tend to occur in dynamic situations and are mostly used to code the heterogeneous stages of an ongoing event rather than the homogenous disposition of an event, and this syntactic consequence is related to their inherent progressive features—ongoingness. *Zai* and *zhengzai* highlight the progressive feature of ongoingness implying that the event has abstract boundaries and will change over time, so *zai* and *zhengzai* tend to be dynamicity with highly percentage of occurrence of non-stative situations. On the other hand, *Zheng* does not profile the feature of ongoingness, so the modified event cannot be a process. *Zheng* with the feature of ongoingness backgrounded tends to be stativity

which mostly occurs in stative situations. Moreover, when *zheng* codes the homogenous temperament of a stative event, it does not denote the function of the progressive aspect but the function of a degree adverb, representing the meaning of ‘exactly’.

5.2.2 Focalization

All the three markers *zai*, *zheng*, and *zhengzai* are from close proximity to describe an event in the middle of happening. However, there are some differences between these three markers in the degree of proximity. The marker *zheng* and *zhengzai* tend to be viewed from closer proximity than *zai*. The significant indication is that *zheng* and *zhengzai* highly (over 90%) occur in an event with a specific temporal spot, while *zai* often (almost 60%) occurs in an event with an extended period of time as illustrated in section 4.2, and the distributional distinction in terms of reference time and extended period of time is shown in Table 20.

Table 20. Reference time vs. extended period of time

	Reference time spot 那時、第二天...	Extended period of time ²⁰ 近百年來、這兩年...
Zai (112)	41.96%	59.04%
Zheng (70)	90%	10%
Zhengzai (108)	96.3%	3.7%

Zheng and *zhengzai* are observed from closer proximity to describe the action precisely at a temporal point. Their progressive perspective may be likened to an extra wide camera-angle view to focus the motion at the temporal spot, while *zai* may be likened to a wide camera-angle view to describe the middle of an event and this event may be keep for a while. Another easier metaphorical illustration is that with an extra wide camera-angle view, a blue pen in the pencil box is focused, but with a wide camera-angle view, all the elements in

²⁰ The distribution is come from the collocational patterns with time adverbs, and habitual time reference and extended time in specific time reference put together since both represent an event over a long period of time.

the pencil box are visible. From above, we know that *zheng* and *zhengzai* are highly focalized to code an ongoing event at a specific temporal spot, while *zai* has low focalization to express an event in the middle of happening possibly with a temporal duration.

According to Chen's (2003) study, the focality of *zai*, *zheng*, and *zhengzai* is *zheng* > *zhengzai* > *zai* in terms of the distribution of occurrence with respect to reference time and extended periods which quoted from Hsu (1996). However, the result shows that the ranking of focalization of the three markers is *zhengzai* > *zheng* > *zai*, in which *zhengzai* is higher than *zheng*. The differentiation between Chen's (2003) work and the thesis might be because of the different corpus that the quoted distribution of Chen's study is from written discourse and this thesis is from Sinica Corpus involving written and oral data.

5.3 Process of Grammaticalization

In grammaticalization, both the markers *zai* and *zhengzai* develop from space to time. However, except for the meaning of progressive, the marker *zheng* is further extended to represent the meaning 'exactly' as mentioned above. For instance, the following illustrated events in (50) can not be encoded with a progressive event which represents simultaneous with a temporal reference, but can be used to describe that something is matching the speaker's thought and expectation, the time, the location and the like.

(50) a、『忠言逆耳』，正屬於這種類型，

"Zhongyan nier", zheng zhuyu zhezhong leixing

"Honest advice is hard to take" exactly belongs to this kind of type.'

b、妳的能力正合我們的需要，

Nide nengli zheng he womende xuyao,

'Your ability exactly matches our demand.'

c、忽聽得一個女子大叫，依稀正是阿曼。

Hu tingde yige nyuzi dajiao, yixi zheng shi aman

‘I suddenly hear a woman shout loudly, and it exactly seems to be Oman.’

d、他們登山的那一天，正是九月九日。

Tamen dengshande nayitian, zheng shi jiuyuejiuri

‘The day which they climbed the mountain is exactly September ninth.’

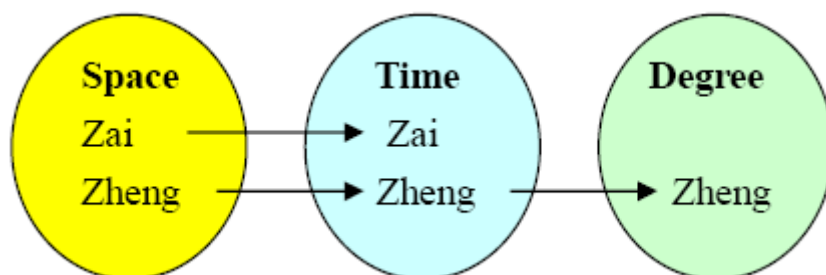
e、愚公的住宅前面有一座大山，正對著他家門口。

Yugongde zhuzhai qianmian you yizuo dashan, zheng duizhe tajia menkou

‘There is a big mountain in front of the house of Yu-Gong, and it is exactly facing the entrance of his house.’

The marker *zheng* developing from spatial precision to temporal precision is further extended to degree domain. *Zheng* codes ‘precision in degree’ to express that two situations are matching in certain aspect including size, length, time, location, characteristics and so on (Yang 2000 and Chen 2004), and the meaning ‘exactly’ of *zheng* is developed through the function of correspondence of two situations in certain degree. The process of grammaticalization is represented as Figure 4.

Figure 4. Grammaticalization process

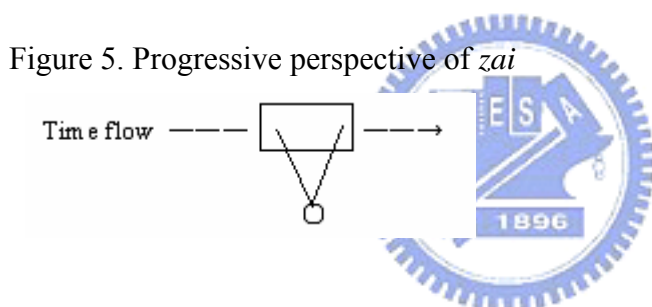


In the development of grammaticalization, *zai* evolves from existence in space such as 在桌上 *zai zhuozhang* ‘on the table’ to existence in time like 在吃飯 *zai chifan* ‘is eating a meal’, while the marker *zheng* is metaphorically extended from precision in space such as 正立 《論

語》²¹ *zhengli* 《*lunyu*》 ‘stand straight’ to precision in time 正叫 *zheng jiao* ‘is shouting’ and then is further developed an extended meaning ‘exactly’ as precision in degree such as 正合 *zheng he* ‘exactly match.’ *Zheng* develops into a more abstract function as a degree marker.

5.4 Summary

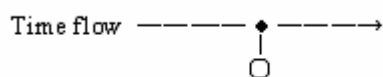
The markers *zai*, *zheng*, and *zhengzai* profiles different semantic features which determine their syntactic consequence. The marker *zai* is from spatial existence to temporal existence and highlights the features of ongoingness and proximity. *Zai* is used to express an event in the middle of happening, and this ongoing event can be extended a period of time. The progressive perspective of *zai* is diagrammatically represented as Figure 5.



Another marker *zheng* is also metaphorically developed from space to time indicating precision in space to precision in time. *Zheng* profiles the progressive features of simultaneity and proximity and is used to express an event with a simultaneous reference-point which is demanded in an event. It focuses the event precisely at a temporal spot which places a concrete position in the time axis, and this event can be not only an ongoing event but also an irrealis or perfective event with the feature of ongoingness disregarded. The representation of *zheng* can be shown as Figure 6.

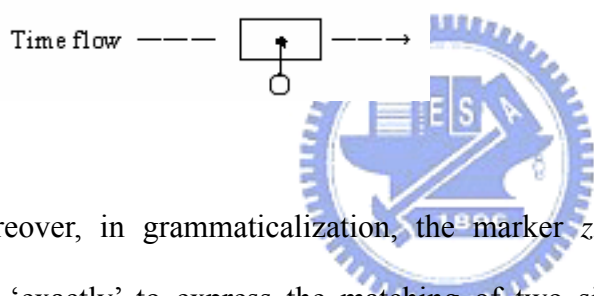
²¹ The data was taken from Zhang (2002a).

Figure 6. Progressive perspective of *zheng*



The other marker *zhengzai*, consisting of *zheng* and *zai*, profiles all the progressive features—ongoingness, proximity, and simultaneity. It is typically used to represent an ongoing event with a simultaneous point-of-reference. The ongoing event is described in the middle of happening concentrically at a specific temporal point. The progressive representation of *zhengzai* is depicted as Figure 7.

Figure 7. Progressive perspective of *zhengzai*



Moreover, in grammaticalization, the marker *zheng* has another extended semantic meaning ‘exactly’ to express the matching of two situations as a degree marker. *Zheng* evolves from precision in space to precision in time and then is extended to precision in degree. In contrast, the marker *zai* just undergoes two stages in the development of grammaticalization—from existence in space to existence in time—and it does not develop into another more abstract function.

Chapter 6 Conclusion

This thesis discusses the distinction between *zai*, *zheng* and *zhengzai* on a corpus-based approach with respect to their collocational patterns with adverbs. It is found that the use of adverbial adjuncts with *zai*, *zheng*, and *zhengzai* represents a significance difference. *Zheng* and *zhengzai* are more constrained in semantic and pragmatic specifications. They cannot co-occur with iterative adverbials indicating repetition of an event (repetitive-progressive), durative adverbials representing habitual progressive, or adverbials without a specific time reference. They profile the feature of simultaneity to indicate an on-going progressive event at a specific time reference signaling temporally deictic aspectuality. On the other hand, *zai* is less restricted to co-occurring with the above adverbials, and can mark all kinds of progressive perspectives. These three markers also have distinctions in terms of the feature of ongoingness. *Zai* and *zhengzai* only occur in an ongoing event with the feature of ongoingness foregrounded, but *zheng* can occur either in progressive events or perfective and irrealis events without the feature of ongoingness. These collocational associations and semantic distinctions can be related to their grammaticalization process. *Zai* is from existence in space to existence in time implying the feature of ongoingness, so it emphasizes the progressive feature of ongoingness and proximity. *Zheng* is from precision in space to precision in time, suggesting the feature of simultaneity, and the progressive perspective of *zheng* marks the feature of simultaneity and proximity. The marker *zhengzai* is composed of *zheng* and *zai* containing the feature of simultaneity and ongoingness and profiles all the progressive features of ongoingness, proximity, and simultaneity. Moreover, the function of *zheng* is further extended to degree domain (precision in degree) to denote the matching of two situations.

This work is essential to the understanding of *zai*, *zheng*, and *zhengzai* through a corpus-based approach to observe their distribution of collocational patterns which may help

to delimit the key semantic distinction. According to Levin (1993), syntactic differences between words could be determined by their internal semantic differences. And, these syntactic differences are not easily revealed by intuition. In this thesis, we used corpus data and tools to find collocational differences between *zai*, *zheng*, and *zhengzai* and then to clarify their semantic properties. The results support the generative assumption—*zai* denotes the ongoing process; *zheng* focuses on the simultaneous manner; and *zhengzai* is relevant to both the ongoing process and the simultaneous manner. This work provides a new way to understand the distinction of the imperfective markers *zai*, *zheng*, and *zhengzai* in terms of the interaction between syntax and semantics. Moreover, this thesis also shows that the Mandarin progressive has not only the basic progressive representations but also other types of progressive including habitual progressive, repetitive-progressive, and inceptive-progressive as the English progressive proposed by Givon (1993).

In Mandarin, there are other markers which can also indicate the imperfective aspect such as *zhe* (著). Thus, in further studies, we can compare *zai*, *zheng* and *zhengzai* with other markers to get a more complete picture of the imperfective marking system in Mandarin. In addition, this thesis only explores collocations in terms of adverbial adjuncts. There are other types of collocations which can discriminate *zai*, *zheng* and *zhengzai* like verbs as a follow-up study in the future. Finally, this work mentioned four types of progressive in Mandarin—basic progressive, habitual progressive, repetitive-progressive, and inceptive-progressive—the terminative-progressive is not discussed in this thesis, so in the following studies we can examine how many progressive types exist in Mandarin and how do we present it.

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Website Resources

Sinica Corpus (Zhongyanyuan Pinghen Yuliaoku). <http://www.sinica.edu.tw/SinicaCorpus/>

Yahoo. <http://tw.yahoo.com/>



Appendix A: List of Figures

Figure 1. Bounded and progressive perspectives

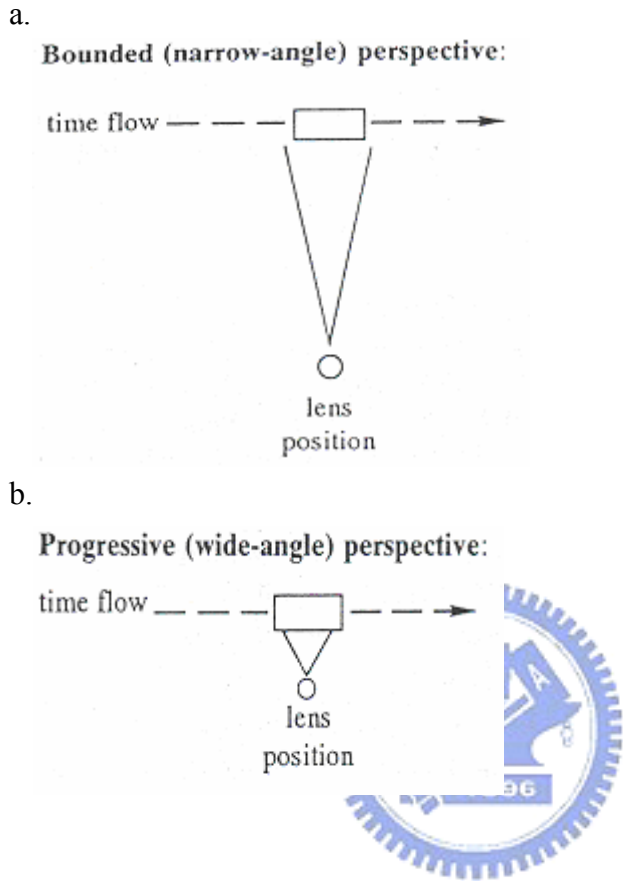


Figure 2. Temporal existence of *zai*

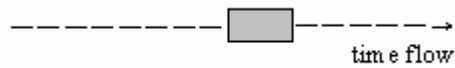


Figure 3. Semantic attributes of *zai*, *zheng*, and *zhengzai*

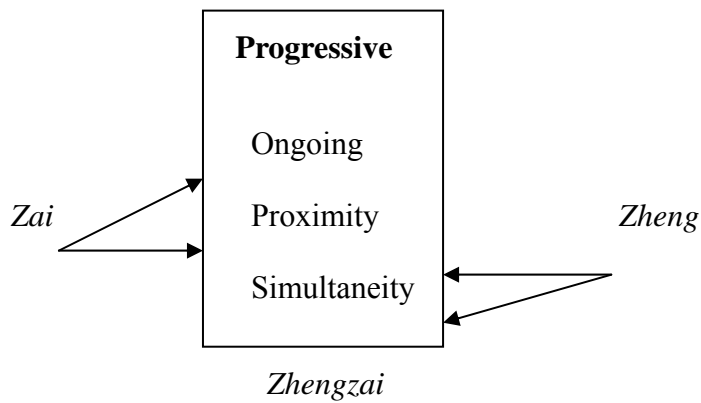


Figure 4. Grammaticalization process

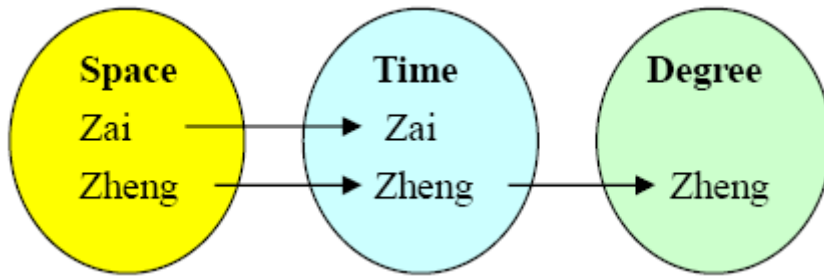


Figure 5. Progressive perspective of *zai*

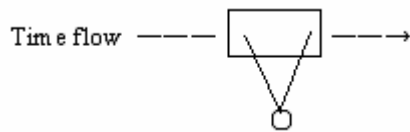


Figure 6. Progressive perspective of *zheng*

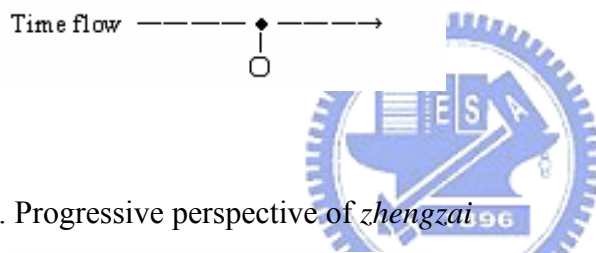
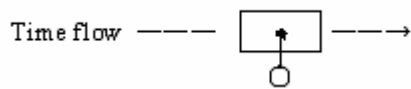


Figure 7. Progressive perspective of *zhengzai*



Appendix B: List of Tables

Table 1. Grammatical functions of *zai*, *zheng*, and *zhengzai*

	Adverb	Verb	Preposition	Noun	Adjective
Zai	18.12% (2337/12899)	16.65% (2148/12899)	65.23% (8414/12899)	0%	0%
Zhengzai	97.27% (677/696)	0%	2.73% (19/696)	0%	0%
Zheng	93.91% (2422/2579)	5.04% (130/2579)	0%	0.65% (17/2579)	0.35% (9/2579)

Table 2. Types of adverbial function of *zai*, *zheng*, and *zhengzai*

	Aspectual adverb	Non-aspectual adverb	Clausal adverb
Zai	18.12% (2337/12899)	0%	0%
Zhengzai	97.27% (677/696)	0%	0%
Zheng	54.05% (1309/2422)	35.05% (849/2422)	10.9% (264/2422)

Table 3. Grammatical categories before and after *zai*

<i>Zai</i>	R1	R2	R3	R4	R5	total	%
Na	22	385	303	343	339	1392	12.51
VC	883	108	91	78	108	1268	11.39
,	3	463	354	174	181	1175	10.56
D	81	43	142	284	275	825	7.41
VE	357	40	40	54	74	565	5.08
VA	398	36	40	42	46	562	5.05
Nh	4	171	119	130	121	545	4.90
VH	173	67	86	94	106	526	4.73
◦	1	140	154	74	57	426	3.83
Nep	3	138	45	56	33	275	2.47

	L5	L4	L3	L2	L1	total	%
Na	351	360	337	398	468	1914	17.29
D	214	186	198	295	887	1780	16.08
,	262	253	294	254	108	1171	10.58
Nh	102	115	131	216	304	868	7.84
VH	111	110	92	78	39	430	3.89
Nf	63	73	88	106	22	352	3.18
SHI	31	42	40	73	151	337	3.05
◦	69	82	66	41	31	289	2.61
VE	85	61	66	68	6	286	2.58
Nc	49	71	59	60	29	268	2.42

Table 4. Grammatical categories before and after *zheng*

<i>Zheng</i>	R1	R2	R3	R4	R5	total	%
Na	11	336	555	532	572	2006	16.77
VC	306	266	174	166	153	1065	8.90
VH	278	172	156	168	129	903	7.55
P	428	156	69	55	71	779	6.51
SHI	637	3	6	9	11	666	5.57
,	0	48	157	209	218	632	5.28
D	172	74	105	114	132	597	4.99
Nc	0	194	152	101	100	547	4.57
VA	64	101	71	56	69	361	3.02
Nh	1	145	61	44	55	306	2.56
	L5	L4	L3	L2	L1	total	%
Na	480	498	442	542	558	2520	21.13
,	158	184	278	415	595	1630	13.67
D	165	132	96	43	263	699	5.86
Nc	99	108	123	162	148	640	5.37
VH	158	185	152	136	9	640	5.37
。	96	118	113	133	100	560	4.70
Nd	51	63	50	79	245	488	4.09
VC	120	128	105	81	15	449	3.76
Nh	56	49	52	33	162	352	2.95
Nf	67	72	74	76	21	310	2.60

Table 5. Grammatical categories before and after *zhengzai*

<i>Zhengzai</i>	R1	R2	R3	R4	R5	total	%
Na	14	105	132	169	138	558	17.37
VC	290	56	59	31	30	466	14.51
,	0	65	73	66	71	275	8.56
VH	81	13	26	30	31	181	5.64
Nc	37	37	25	29	28	156	4.86
VA	57	24	28	17	14	140	4.36
D	24	11	13	45	45	138	4.30
。	0	19	45	33	27	124	3.86
P	47	9	6	12	18	92	2.86
VE	34	10	9	12	23	88	2.74
	L5	L4	L3	L2	L1	total	%
Na	107	102	113	124	204	650	19.84
,	54	62	77	117	70	380	11.60
D	51	43	34	26	59	213	6.50
Nc	25	36	46	42	63	212	6.47
Nh	20	19	23	13	88	163	4.98
Nd	23	16	26	25	52	142	4.33
VH	35	40	36	24	2	137	4.18
。	26	32	36	23	18	135	4.12
VC	38	39	26	15	14	132	4.03
Nf	12	25	18	30	13	98	2.99

(R = right position of the target or after the target; L = left position of the target or before the target; Na = common noun; Nc = place noun; Nd = time noun; Nf = measure; Nep = demonstrative determinatives; Nh = pronoun; VA = active intransitive verb; VC = active transitive verb; VE = active verb with a sentential object; VH = stative intransitive verb; D = adverb; P = preposition; SHI = 是)

Table 6. Distribution of co-occurring adverbs

	<i>Zai</i>	<i>Zheng</i>	<i>Zhengzai</i>
Time	31.46% (112/358)	38.04% (70/184)	54.55% (108/199)
Frequency	13.48% (48/358)	0.54% (1/184)	2.02% (4/199)
Modal	0.84% (4/358)	13.04% (24/184)	3.54% (7/199)
Negative	1.4% (5/358)	2.72% (5/184)	0%
Manner	12.36% (46/358)	21.2% (39/184)	21.72% (43/199)
Aspectual	8.99% (32/358)	20.65% (38/184)	8.08% (16/199)

Table 7. Distribution of collocational associations with time adverbs

	Specific time reference 那時、目前、今天...		Habitual time reference 天天、隨時、永遠...	
	adv < *	* < adv	adv < *	* < adv
<i>Zai</i> (112)	61.61%	0%	38.39%	0%
<i>Zheng</i> (70)	100%	0%	0%	0%
<i>Zhengzai</i> (108)	100%	0%	0%	0%

Table 8. Distribution of collocational associations with time adverbs (revised)

	Specific time reference		Habitual time reference 天天、隨時、永遠...
	Reference time spot 那時、目前、今天...	Extended period of time 近百年來、這兩年...	
<i>Zai</i> (112)	41.96%	19.64%	38.39%
<i>Zheng</i> (70)	90%	10%	0%
<i>Zhengzai</i> (108)	96.3%	3.7%	0%

Table 9. Distribution of adverbs *hai*, *shang*, and *reng(ran)*

	<i>Zai</i> (360)	<i>Zheng</i> (184)	<i>Zhengzai</i> (199)
還、尚、仍(然)	8.33%	0%	1.01%

Table 10. Distribution in terms of syntactic position of time adverbs

	Sentence-initial		subj. < time < *
	time < *	time < subj. < *	
<i>Zai</i> (112)	9.91%	47.75%	42.86%
<i>Zheng</i> (70)	37.14%	48.57%	14.29%
<i>Zhengzai</i> (108)	16.67%	74.07%	9.26%

Table 11. Distribution of collocational associations with frequency adverbs

	Durative 一直、總是、常常...		Iterative 又、不停、不斷...	
	adv < *	* < adv	adv < *	* < adv
<i>Zai</i> (48)	58.33%	0%	33.33%	8.33%
<i>Zheng</i> (1)	0%	0%	0%	100%
<i>Zhengzai</i> (4)	0%	0%	0%	100%

Table 12. Distribution of collocational associations with manner adverbs

	AdvP (悠閒地、努力地...)		PP (用/以...)	
	adv < *	* < adv	adv < *	* < adv
<i>Zai</i> (44)	45.45%	43.18%	11.36%	0%
<i>Zheng</i> (39)	0%	79.49%	0%	20.51%
<i>Zhengzai</i> (43)	0%	88.37%	4.65%	6.98%

Table 13. Distribution of collocational associations with aspectual adverbs

	<i>Zhe</i> (著)		<i>Le</i> (了)		<i>Yi(jing)</i> (已(經))	
	adv < *	* < adv	adv < *	* < adv	adv < *	* < adv
<i>Zai</i> (32)	0%	78.13%	0%	0%	21.88%	0%
<i>Zheng</i> (38)	0%	92.11%	0%	7.89%	0%	0%
<i>Zhengzai</i> (16)	0%	100%	0%	0%	0%	0%

Table 14. Distribution of collocational associations with modal adverbs

	Deontic 要、可(以)...		Epistemic 可能、似乎...	
	adv < *	* < adv	adv < *	* < adv
<i>Zai</i> (3)	0%	0%	100%	0%
<i>Zheng</i> (24)	0%	91.67%	8.33%	0%
<i>Zhengzai</i> (7)	0%	0%	100%	0%

Table 15. Distribution of collocational associations with negative adverbs

	<i>Bu</i> (不)		<i>Mei</i> (沒)	
	adv < *	* < adv	adv < *	* < adv
<i>Zai</i> (5)	80%	0%	20%	0%
<i>Zheng</i> (5)	100%	0%	0%	0%
<i>Zhengzai</i> (0)	0%	0%	0%	0%



Table 16. Distributional differences of collocational patterns with adverbs

		<i>Zai</i>		<i>Zheng</i>		<i>Zhengzai</i>	
		adv<*	*<adv	adv<*	*<adv	adv<*	*<adv
Time	Specific time reference 那時、今天...	61.61%	0%	100%	0%	100%	0%
	Habitual time reference 每天、永遠...	38.39%	0%	0%	0%	0%	0%
Frequency	Durative 一直、總是...	58.33%	0%	0%	0%	0%	0%
	Iterative 又、不斷...	33.33%	8.33%	0%	100%	0%	100%
Manner	AP(悠閒地、辛勤地...)	45.45%	43.18%	0%	79.49%	0%	88.37%
	PP(用/以...)	11.36%	Yahoo	0%	20.51%	4.65%	6.98%
Aspectual	Zhe (著)	0%	78.13%	0%	92.11%	0%	100%
	Le (了)	0%	0%	0%	7.89%	0%	0%
	Yi(jing) (已(經))	21.83%	0%	0%	0%	0%	0%
Modal	Deontic 要、可(以)...	Yahoo	0%	Yahoo	91.67%	Yahoo	0%
	Epistemic 可能、似乎...	100%	0%	8.33%	Yahoo	100%	0%
Negative	Bu (不)	80%	0%	100%	0%	Yahoo	0%
	Mei (沒)	20%	0%	0%	0%	Yahoo	0%

Table 17. Collocations of *zai*, *zheng*, and *zhengzai*

	<i>Zai</i>	<i>Zheng</i>	<i>Zhengzai</i>
Time reference	Specified and habitual time	Specified time	Specified time
Durative adverb	Durative and non-durative	Non-durative	Non-durative
Iterative adverb	Iterative and non-iterative	Non-iterative	Non-iterative
Modified event	Process	Process, perfective, irrealis	Process

Table 18. Types of progressive

	<i>Zai</i>	<i>Zheng</i>	<i>Zhengzai</i>
Basic progressive	○	○	○
Habitual progressive	○	X	X
Repetitive-progressive	○	X	X
Inceptive-progressive	○	X	X

Table 19. Distribution of *zai*, *zheng*, and *zhengzai* in terms of situation types

Data	State		Activity	Accomplishment	Semelfactive	Achievement
	Individual-level	Stage-level				
<i>Zai</i>	0%	16.22% (78/481)	79.83% (384/481)	1.66% (8/481)	1.04% (5/481)	1.25% (6/481)
<i>Zheng</i>	55.8%% (231/414)	11.59% (48/414)	29.47% (122/414)	2.9% (12/414)	0.24% (1/414)	0%
<i>Zhengzai</i>	0%	14.53% (69/475)	83.16% (395/475)	1.68% (8/475)	0.21% (1/475)	0.42% (2/475)

Table 20. Reference time vs. extended period of time

	Reference time spot 那時、第二天...	Extended period of time 近百年來、這兩年...
<i>Zai</i> (112)	41.96%	59.04%
<i>Zheng</i> (70)	90%	10%
<i>Zhengzai</i> (108)	96.3%	3.7%