A Meaning Analysis of Chinese Temporal Adverbs

Ceng(jing) and Yi(jing)

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摘要

本研究旨在探讨中文时态副词「曾（經）」和「已（經）」之意义，并一併讨论情
状类型（situation type）与其搭配之适切性。

本研究采用 Reichenbach (1947) 之三个时点关系结构以及 Kennedy (2007) 之级
差（scale）理论来分析「曾（經）」和「已（經）」。本研究主张「曾（經）」为一过
去时间副词，其语意范畴（scope）内之情状的事件时间（event time）必须先于说话者
讲述该情状的说话时间（speech time）；「已（經）」则表现出两类语意，其一为相对
过去（relative past），另一为级差关系，即指出其语意范畴内之情状已达到某级差关系
中的特定门槛。

鉴于「曾（經）」和「已（經）」必须依附于情状，本研究另辟专章探讨其搭配适
切性。本研究采用 Tai (1984) 之情状区分，将中文情状分为状态（State）、活动（Activity）
及结果（Result）。「曾（經）」除与绝对（absolute）状态次类不相容外，与其余情状
皆相容；「已（經）」亦表现出类似的相容性，然在非绝对（non-absolute）状态及惯
性（habitual）状态次类表现出侷限性的语意。

关键词：时态副词、情状语意、时制、时貌、级差
Abstract

This thesis examines the meanings of the Chinese temporal expressions *ceng(jing)* and *yi(jing)* and their compatibility with different situation types.

In this thesis, previous studies of *ceng(jing)* and *yi(jing)* are first discussed and commented, and then the meanings of the two temporal adverbs are examined via Reichenbach (1947) and the scale structure, particularly Kennedy (2007). *Ceng(jing)* is suggested to be a past time adverb that obligates the event time (E) to precede the speech time (S). On the other hand, *yi(jing)* is suggested to have two different meanings. First, it can be a relative past, showing the order of the event time (E) preceding the reference time (R). The other meaning is illustrated by scale structure, where *yi(jing)* marks a threshold of degree-relevant contexts.

The compatibility between *ceng(jing)/yi(jing)* and the situation types are also discussed since they are indispensable to forming meaningful *ceng(jing)/yi(jing)* sentences. In this thesis, Tai’s (1984) classification of Chinese situation types into States, Activities and Results is adopted. *Ceng(jing)* is found to be compatible with all the situation types except the absolute subtype of States; *yi(jing)* shows a similar pattern but is more restricted in meanings when it comes to the non-absolute and habitual subtypes of States.

Keywords: temporal adverbs, situation semantics, tense, aspect, scale
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“Violá” and here it is, which is never the way to describe the production of this thesis. It took more than a year to attain the final stage. There were moments of frustration and anxiety. The result, nevertheless, feels as rewarding as other important milestones in my life.

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# Abbreviations

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<tr>
<td>AND</td>
<td>Andative</td>
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<tr>
<td>BA</td>
<td>A disposal construction marker</td>
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<tr>
<td>CL</td>
<td>Classifier</td>
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<tr>
<td>DE</td>
<td>A manner adverb marker or relative clause marker</td>
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<tr>
<td>DIM</td>
<td>Dimension, one of the three core elements in Kennedy’s (2007) scale structure</td>
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<td>DUR</td>
<td>Durative</td>
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<tr>
<td>E</td>
<td>Event time in Reichenbach (1947)</td>
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<td>EXP</td>
<td>Experiential</td>
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<td>INCH</td>
<td>Inchoative</td>
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<td>NEG</td>
<td>Negative</td>
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<td>PFV</td>
<td>Perfective aspect</td>
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<td>PROG</td>
<td>Progressive</td>
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<td>R</td>
<td>Reference time in Reichenbach (1947)</td>
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Chapter One

Introduction

1.1 Motivation

Thinking and speaking about time is a process of clarifying one of the deictic patterns in languages. When it comes to temporal location, all situations confront the same issue of the relation between the anchor time and the time when this situation occurs, i.e. event time.

Like space, time requires an anchor point for location. Smith and Erbaugh (2005) argue that the speaker is the canonical center of linguistic communication; as a result, the canonical temporal anchor point is the speech time, now: the situations expressed in sentences are located in relation to the speech time. Mandarin, however, does not reveal temporal location with tense markers that are commonly seen among Indo-European languages. Mandarin in fact relies on adverbs and pragmatics heavily. The example below shows the situation of going to Taipei is contextually adaptable to the past, the present or the future; thus, a situation like going to Taipei in (1a) can go with different time references, which give rise to a past event in (1b), an ongoing state in (1c) or a future situation in (1d). These adverbs, zuotian ‘yesterday’, xianzai ‘now’ and mingtian ‘tomorrow’, give direct information about location in time.
(1) (a) Wo qu Taibei.
   I go Taipei
   ‘I went/am going/will go to Taipei.’

(b) Wo zuotian qu Taibei.
   I yesterday go Taipei
   ‘I went to Taipei yesterday.’

(c) Wo xianzai qu Taibei.
   I now go Taipei
   ‘I am going to Taipei.’

(d) Wo mingtian qu Taibei.
   I tomorrow go Taipei
   ‘I will go to Taipei tomorrow.’

Temporal adverbs not only play roles in tense specification but in aspects as well. For example, (2a) and (2b) both denote a situation happening at a reference time of last year. However, they differ in the context where each is uttered.

(2) a. Qunian wo cengjing kan-guo zhe-ben shu.
   last year I CENGJING see-EXP this-CL book
   ‘I read (PAST) this book last year.’

b. Qunian wo yijing kan-guo zhe-ben shu.
   last year I YIJING see-EXP this-CL book
   ‘I had already read this book last year.’ (Ma 2003: 25)

Among a variety of temporal adverbs, cengjing and yijing have drawn enormous attention because they have similar but distinct meanings. How one sentence differentiates itself from the other is a constant interest of research in the literature. Despite several attempts by previous studies, e.g. Lu and Ma (1985), Lü (1999) and Ma (2003), there are still
counterexamples left unaddressed. For example, cengjing has not been given a clear
definition and its compatibility with other aspectual markers is debatable. Deng (2010) argues
that cengjing is not compatible with progressive zai, like (3). However, (4) shows that an
ongoing hesitant state is likely to go under the scope of cengjing.

(3) *Womende aiqing yu women cengjing zai
our love with we CENGJING PROG
jinxing de shehui fuwu shiye yiyang yong cun.
process DE society service career same forever exist.
*‘Our love exists as forever as the social service we were once doing.’ (Deng 2010: 127)

(4) Ta cengjing zai panghuang.
he CENGJING PROG hesitate
‘He was once hesitant.’

As for yijing, its meanings have not been exhaustively examined either. Though it has long
been considered an adverb denoting relative past, there are cases where it appears to be more
than a temporal expression. In (5), the assumption of yijing being a relative past marker does
not make much sense since the situation has not even started.

(5) Taiyang yijing kuai luo shan le.
sun YIJING soon fall mountain PFV
‘The sun is about to come down the mountain.’ (Chang 2009: 24)
The unsolved problems prompt a more comprehensive analysis of *cengjing* and *yijing*, which can reconcile derivative meanings shown in the literature and identify those neglected by previous studies.

*Cengjing* and *yijing* are made manifest and comprehensible by seeing their effect on situations; that is, they need situations, as media, to embody their distinct features. As more situations are explored, the relation between *cengjing*, *yijing* and situations is found to be bidirectional. Some of the situations appear to have restricted compatibility with temporal expressions, including *cengjing* and *yijing*. It is this finding that helps to bring about a full chapter for the discussion of situation types.

1.2 Purposes of the Study

This study has three main purposes. Frist, I will identify temporal and aspectual classification of *cengjing* and *yijing* via Reichenbach (1947) so as to see where they overlap and where they diverge. Second, for *yijing* in particular, I will incorporate Kennedy’s (2007) scale into explaining the non-temporal meanings that are yet given an agreed analysis in the literature. Third, the inseparable relation with situations causes a need to examine the compatibility between *cengjing/yijing* and various situation types. Instead of Smith’s (1997) well-known classification, I turn to Tai’s (1984) view on situation classification in Chinese, with reasons stated in the relevant section. The examination will cover how *cengjing/yijing*
affect the meanings of various situation types, which in turn may accommodate themselves to the scope of *cengjing* and *yijing*, or lead to a semantic clash.

In the literature and example sentences, *cengjing* and *yijing* sometimes appear without the suffix *jing*. In this study, *cengjing* and *ceng* are viewed as equivalents and the same goes to *yijing* and *yi*, but *cengjing* and *yijing* will be used for convenience.

1.3 Organization of the Thesis

This thesis is organized as follows. Chapter One is an introduction, covering the motivation, the purposes and the organization of the thesis. Chapter Two is a review of what has been studied about *cengjing* and *yijing*, including consensus and conflicting arguments. Chapter Three is a proposal of my own analysis, based on the ideas of Reichenbach (1947) and Kennedy (2007). Chapter Four will go further into the internal structure of situation types, following Tai (1984), and discuss how *cengjing* and *yijing* interact with each situation type. Chapter Five concludes this study and suggests areas of further study.
2.1 Introduction

_Cengjing_ and _yijing_ have often been paired up as temporal adverbs addressing past situations in Mandarin Chinese. Though they have similar meanings, the distinction is equally worth exploring. In this chapter, previous studies related to _cengjing_ and _yijing_ are reviewed and their inadequacies are discussed. _Cengjing_ and _yijing_ are words composed of the root morphemes _ceng_ and _yi_, respectively, and a suffix _jing_. _Ceng_ and _yi_ denote the core meanings of _cengjing_ and _yijing_ and can be used without the suffix.

Section 2.2 is a review of _cengjing_ and Section 2.3 that of _yijing_. Section 2.4 is a summary of 2.2 and 2.3. Section 2.5 points out the inadequacies of the previous studies.

2.2 Previous Studies on _Cengjing_

In Lü (1999), _cengjing_ is classified as an adverb, indicating an act/situation in the past, usually not a recent past. The situation involved in (6) is in the past. Lü further suggests that _cengjing_ cannot scope over negation. (7) shows that Lü marks the sentence in which the negation is under the scope of _cengjing_ as ungrammatical.
(6) Zhe-wei huajia ceng dao-guo Xizang.
    this-CL painter CENG reach-EXP Tibet
    This painter went to Tibet before.’ (Lü 1999: 110)

(7) *Weile gao shiyan ta cengjing bu chu men.
    for do experiment he CENGJING NEG out door
    ‘In order to do an experiment, he did not go out.’ (Lü 1999: 110)

However, Cao (2002, 2003) provides evidence to argue that cengjing is compatible not
only with the time frames of remote past but also with that of the recent past. In Cao (2002),
cengjing is understood as a terminative aspect (yirantai), indicating a situation in the past that
has come to a halt. (8) shows the situation of planning an activity, i.e. committing suicide,
does not hold at the time of speech (henceforth S) because of cengjing. Cao (2003) also finds
cengjing is compatible with durative zhe, as in (9).

(8) Ta zi ai zi lian, cengjing dasuan xuan yi-ge hao
    she self love self pity CENGJING plan select one-CL good
    day die-AND
    ‘She felt sorry for her own circumstances and once planned to commit suicide on a
    selected day.’ (Cao 2002: 44)

(9) Gao ma zai ta zhangfu huo zhe de shihou jiu
    Gao Mrs. at she husband live PROG DE time as.early.as
    cengjing shou zhe zhe-ge zui.
    CENGJING suffer DUR this-CL sin
    ‘Mrs. Gao was suffering when her husband was alive’ (Cao 2003: 143)
Cao (2002) also proposes that *cengjing* sentences can be classified into two kinds, depending on whether or not there is a lexicalized temporal reference. When there is no such a temporal reference, it is set in the past and the act or situation under *cengjing*’s scope has no extension to S. In contrast, when temporal reference is involved, *cengjing* is applicable to the context of both recent and remote past, which are displayed in (10) and (11) respectively. According to Cao (2002), *cengjing*, generally considered an adverb indicating remote past as in (11), can have a ‘just now’ meaning as well, as in (10). (11) denotes a state of being beautiful in a remote past while (10) talks about an event that just happened, possibly a few minutes ago.

(10) Gangcai ta ceng shuodao-guo ni. just.now he CENG talk.about-EXP you
‘He just talked about you.’ (Cao 2002: 44)

(11) Dan nian wo ye ceng piaoliang-guo. that year I also CENG beautiful-EXP
‘I was quite a beauty in those days.’ (Cao 2002: 44)

Similar to Cao (2002), Lu and Ma (1985) have pointed out *cengjing*’s flexibility of talking about the past. In (12) the event of learning French occurs in a distant past; in contrast, (13) shows the inquiry took place just now.

(12) Ershi nian qian ta cengjing xue-guo fayu. twenty year before he CENGJING learn-EXP French
‘He studied French twenty years ago.’ (Ma 2003: 26)

(13) Zhe-jian shi gangcai wo cengjing wen-guo ta.
This-CL matter just.now I CENGJING ask-EXP him
‘I just asked him of this thing.’ (Ma 2003: 26)

Moreover, Ma (2003) classifies cengjing as a tense adverb (dingshi shijian fuci). It usually refers to an experiential situation in the past. Therefore (14) is anomalous because cengjing is temporally incompatible with xianzai ‘now’.

(14) *Xianzai ta cengjing kan dao 120 ye le.
now she CENGJING see to 120 page PFV
*‘In the present she once read up to page 120.’ (Ma 2003: 25)

Ma (2003) further proposes the semantic features yanxuxing ‘persistence’ and youxiaoxing ‘validity’ to describe the situation modified by cengjing (and yijing). Yanxuxing means the sustaining quality of a situation whereas youxiaoxing means whether a situation holds at the reference time. Ma argues that these two features are positive if a situation persists in being valid after the reference time. Cengjing, according to Ma’s argument, is negative of both features, so the situation under its scope is neither persistent nor valid at the reference time. For example, the referent of the first person pronoun in (15) is not short of confidence at S because cengjing makes ‘losing confidence’ no longer valid.

(15) Wo cengjing sangshi-guo xinxin.
I CENGJING lose-EXP confidence
‘I used to lose faith (but it is not the case now).’ (Ma 2003: 27)

The two semantic features, yanxuxing and youxiaoxing, are later adopted by Deng (2010), who argues that cenjing’s incompatibility with zai, a progressive marker in Mandarin,
and a habitual situation is a result of *cengjing*’s lack of persistence. Deng argues that in (16) the progressive aspect of processing is in conflict with the non-persistence of *cengjing*; similarly the fact that the sun rises from the east is valid from the past through the present into the future, a consistency that *cengjing* cannot capture, as shown in (17).

(16) *Womende aiqing yu women cengjing zai
cour love with we *CENGJING PROG
jinxing de shehui fuwu shiye yiyang yong cun.
process DE society service career same forever exist

**‘Our love lasts as long as the social service we were once doing.’** (Deng 2010: 127)

(17) *Taiyang cengjing cong dongfang shengqi-guo.
sun *CENGJING from east rise-EXP

**‘The sun once rose up from the east.’** (Deng 2010: 127)

Qu (2009) is almost in the same vein as Ma (2003). Qu agrees that *cengjing* indicates the termination of a situation. However, considering a lack of reference time, Qu (2009) suggests adding explicit temporal location, such as *yesterday, two years ago*, so that the reference time of the situation can be more accurate. For example, both of the following sentences are plausible. A situation of talking about something could occur as recent as yesterday, like (18), or as remote as two years ago, like (19).

(18) Zuotian ta cengjing shuo-guo zhe-jian shi.
yesterday he *CENGJING talk-EXP this-CL matter

‘He talked about this thing yesterday.’ (Qu 2009: 172)

(19) Liang nian qian ta cengjing shuo-guo zhe-jian shi.
Qu (2012) believes pragmatics is the key to telling apart cengjing and yijing. He argues that, though previous scholars have studied the semantics and syntax of cengjing and yijing, the main distinction is that cengjing does not involve contextual factors while yijing is subject to them. He proposes three functions that concern cengjing. The third function transfers cengjing into an adjective, which is irrelevant to my study. Thus only the first two functions are under my review. First, Qu draws an analogy between physic static state and cengjing. That is, cengjing indicates a static status of a situation in the past. Given that the meaning is fixed and contextual factors are ruled out, further interpretation is not possible. (20) is a factual statement about the past: a group of people worked at Foxconn for a period of time. Other pragmatic meanings, for example, speaker’s attitude toward this statement, are not inferable.

(20) Tamen cengjing zai fushikang gongzuo le yi duan shijian.
they CENGJING at Foxconn work PFV one period time
‘They used to work at Foxconn for a while.’ (Qu 2012: 161)

Second, Qu suggests that cengjing is more likely to scope over a realis mood due to its lack of persistence. That cengjing states the termination of a situation means it will remain unchanged thenceforth. In (21), cengjing and the smashing event accommodate each other well because the aviation history is a fact in the past, thus in a realis mood.

(21) Ju hangkong shi jizai kongqi qiangbi cengjing ba
Hu (2005) proposes a pragmatics-based account in which the grammatical meaning is composed of a basic aspect and a derivative aspect. The basic aspect of meaning is stable, but the derivative is subject to the pragmatics. He uses the terms, *zhuanzhe* (a turn) and *xiangcheng* (pass-on) to distinguish those semantic phenomena. Hu claims that *cengjing*’s basic meaning, *yiwang de yizhong jingli* ‘an experience in the past’, corresponds to Ma’s (2003) no persistence and no validity and is a display of *zhuanzhe* (a turn); i.e. it does not hold at S. (22) shows that the secretary is no longer an employee here at S.

(22) Li shuji cengjing zai zheli gongzu-guo.
Li secretary CENGJING at here work-EXP
‘Secretary Li worked here before.’ (Hu 2005: 26)

On the contrary, if *cengjing* takes a derivative meaning, which is pass-on (*xiangcheng*) for *cengjing*, it will display persistence so the situation is still valid at S, as in example (23). The activity of reading happens again at S after its first earlier appearance.

(23) Bieren wo bu lun, ruoshi ziji ze cengjing kan-guo xuduo
others I not judge if self then CENGJING see-EXP much
jiu shu weile jiaoshiu zhi jin ye hai zai kan.
old book for teach till today also still PROG see
‘As for me, I used to read many old books, and for teaching, I still do.’ (Hu 2005: 26)
Yisheng Zhang (2000) and Yajun Zhang (2002) believe *cengjing* in a specified context assumes a role of contrasting then with now. In (24), *cengjing* marks a cutting line of time: before the line the brother was engaged in a labor-intensive job and after it he gets a presumably better-paid job.

(24) *Ni ge cengjing shi gongren xianzai ye gan de*  
you brother CENGJING be worker now also do DE  
*bu cuo.*  
not wrong  
‘Your brother used to be a worker, and now he has got a good job (or even better).’  
(Zhang 2002: 224)

The view that the situation under the scope of *cengjing* does not hold at S is supported by Lu (1988), Hou (1998), Yisheng Zhang (2000), Yajun Zhang (2002), Ma (2003), Qu (2009) and Chang (2009) but not Cao (2002), Liu et al. (2004) and Hu (2005). Liu et al. argue that whether the situation holds at S is contingent. Though in (25) the experience of having been to China implies, by default, he is not in China at S, his whereabouts can, even at the slightest chance, choose China again at S.

(25) *Ta cengjing lai-guo Zhongguo.*  
He CENGJING come-EXP China  
‘He once came to China.’ (Liu et al. 2004: 131)
2.3 Previous Studies on Yijing

The meaning of yijing is controversial, without consensus reached so far. Lu and Ma (1985) define it as shiqing wancheng huo shijian guoqu ‘a situation in the past or the completion of it’. According to Lü (1999), yijing is an adverb indicating dongzuo huo bianhua wancheng huo dadao mou zhong chengdu ‘an action or a change is completed or has reached a certain extent’. Instead of discussing the developing stage of a situation, Cao (2002) and Ma (2003) both stress the relation of the situation to S. They argue that whether a situation holds at S and how much it is realized at S is an integral part of yijing study.

Cao (2002) argues that yijing has its primary meaning on realizing a situation in any temporal context. If it is in the past, this realization may hold on till S. As a result, yijing is allowed to appear with xianzai ‘now’ in the same clause. In (26) the state of feeling good is achieved.

(26) Wo xianzai yijing jue de hen bu cuo le.
   I now YIJING feel very not wrong PFV
   ‘I already feel pretty good.’ (Cao 2002: 45)

Ma (2003) supports the argument of extension to S with her proposal of the aforementioned ‘persistence’ feature (see 2.2). Yijing differentiates itself from cengjing by embodying continuity of a situation or its resulting effect at S. For example, the referent of the subject in (27) does not smoke at the time the sentence is uttered, a persistent result of the quitting.

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Ma (2003) questions that the feature ‘completion’ proposed by Lü (1999) is not always true. Instead, she argues that what *yijing* signals is *juzi suoshuo de qingkuang zai shuohua zhiqian huo zai mouge xingwei dongzuo zhiqian huo zai mouge teding de shijian zhiqian jiu chengwei shishi le* ‘to make a situation a fact, which exists before the speech time, another given event, or a temporal anchor’. Hence whether that situation is completed or not does not affect the occurrence of that situation. In (28) *yijing* highlights the fact that the referred person has already been living in a place for a certain period and this experience of residence will always hold true. For a situation like a state, no completion issue is concerned.

According to Cao (2002) and Ma (2003), *yijing* behaves as an aspectual adverb because its temporal location varies with the contextually-decided anchor time, spanning from the past, the present to the future, as shown in (29) and (30). (29) is a past time whereas (30) a future one.

(27) **Wo yijing jie yan le.**

I YIJING quit smoke PFV

‘I have quit smoking (and I don’t smoke now)’ (Ma 2003: 27)

(28) **Wo yijing zai zheli zhu le san nian.**

I YIJING at here live PFV three year

‘I have been living here for three years.’ (Ma 2003: 27)

(29) **Qu nian wo yijing kan-guo zhe-ben shu.**

past year I YIJING see-EXP this-CL book

‘I already read this book last year.’ (Ma 2003: 25)

(30) **Zai guo ershi nian women dou yijing tuixiu le.**
again pass twenty year we all YIJING retire PFV
‘We will have been retired after 20 years.’ (Cao 2002: 45)

Lü (1999) finds *yijing* can scope over negation, as shown in (31). Someone being unable to change the plan is a situation established prior to S.

(31) Xianza *yijing bu neng gaibian jihua le.*
now YIJING NEG able change plan PFV
‘(We) cannot change the plan now!’ (Lü 1999: 612)

Deng (2010) points out a habitual event that is true all the time can stand under the scope of *yijing*, as in (32), though he pursues no further the meaning of this sentence. He also finds that *yijing* as an aspectual adverb can co-occur with progressive *zai* as well, as in (33).

(32) Taiyang *yijing cong dong bian shengqi le.*
sun YIJING from east side rise PFV
‘The sun has risen from the east.’ (Deng 2010: 127)

(33) *Womende aiqing yu women yijing zai our love with we YIJING PROG jinxing de shehui fuwu shiye yiyang yong cun.*
process DE society service career same forever exist
‘Our love lasts as long as the social service we have been doing.’ (Deng 2010: 127)

Qu (2012) follows Ma’s (2003) argument about *yijing*, i.e. signaling a fact that occurs before speech time, another given event, or a temporal anchor. According to his proposal of three functions of *yijing*, the first is that due to a dynamic characteristic, *yijing* may have
different implicatures depending on the context. Interfering factors contain pragmatic presupposition and implication. In the case of (34), it implies that that they have worked long enough so it’s time for others to do it.

(34) Tamen yijing zai fushikang gongzuo le yi duan shijian.
they YIJING at Foxconn work PFV one period time
‘They have worked at Foxconn for a while.’ (Qu 2012: 161)

Second, *yijing*, in contrast to *cengjing*, is more likely to run with sentences in irrealis mood. In (35) *haoxiang* ‘as if’ is an irrealis expression that modifies *yijing*.

(35) Zai tade ganjue zhong hei cun haoxiang yijing zai
in her feel center black village as.if YIJING again
bu hui bei ganzou le.
not able PAS drive.away PFV
‘In her feeling, the Black Village was unlikely to be driven away anymore.’ (Qu 2012: 162)

The third function is that *yijing* might imply a speaker’s reluctance to give endorsement to a referred situation. In (36) the extent to which something unspecified has developed is not what the speaker would like to see.

(36) Yijing zhe yang le hai neng zenme ban?
YIJING this way PFV still can how do
‘It has been done in this way, what else can you do?’ (Qu 2012: 162)

Hu (2005) analyzes *yijing* with the pragmatics-based account in which the grammatical meaning is composed of a basic aspect and a derivative aspect, similar to his analysis of
Cengjing. He claims that the basic meaning of yijing is persistence, implying the pass-on (xiangcheng) meaning. He takes Ma’s (2003) example (i.e., (27)) to prove this point, repeated here as (37). The referent of the subject remains a non-smoker at S, so the situation of quitting smoking persists, i.e. xiangcheng.

(37) Wo yijing jie yan le.
I YIJING quit smoke PFV
‘I have quitted smoking.’ (Hu 2005: 27)

When yijing takes a derivative meaning, a turn (zhuanzhe), there is no persistence. In (38), Hu claims that a man at an advanced age retains a childlike mind is the evidence of a turn, zhuanzhe.

(38) Jishi tade nianji yijing hen da haishi baoyou yi-ke
though his age YIJING very big still keep one-CL
xin xin-de tong xin.
fresh kid heart
‘Though already at such an old age, he is still innocent as a kid.’ (Hu 2005: 28)

Ma’s (2003) definition of yijing is referred to by Liu et al. (2004) and Chang (2009). Chang (2009) concludes that the basic definition of yijing can be encapsulated in Ma’s (2003) argument: to grant a situation a factual status because this situation has occurred before speech time, another given event, or a temporal anchor. In (39) the referent has been in an agreement state before S.

(39) Ta yijing tongyi le.
he YIJING agree PFV
‘He has agreed (on something).’ (Chang 2009: 22)

Chang (2009) in addition provides four derivative meanings of *yijing* compiled from previous literature. The first is to assert a factual status of an experience that is gained before speech time, another given event, or a temporal anchor. In (40) the first chapter has been studied before this sentence is uttered; thus, this learning experience has been a fact ever since the process of learning reached its endpoint.

(40) Yijing xue-guo diyi zhang.

YIJING learn-EXP first chapter

‘The first chapter has been learned.’ (Chang 2009: 21)

The second meaning is that a change has happened to a situation, and the situation is probably still in progress. For example, the state of being married, a marital status from presumably single to wedlock, is going on thenceforth.

(41) Tamen yijing shi fuqi le.

they YIJING be husband.wife PFV

‘They are already husband and wife.’ (Chang 2009: 21)

The third meaning, already identified by Hou (1998), Zhang (2002), Liu et al. (2004) and compiled in Chang (2009) is discernible in the context when *yijing* is followed by temporal and numeral expressions. *Yijing* implies the speaker’s attitude toward the proposition, usually emphasizing the greatness, lengthiness, or immediateness. For example, in (42) the speaker does not expect today to be Wednesday, i.e. s/he feels Wednesday comes earlier than expected. *Yijing*’s interpretation is speaker-oriented, depending on what is under discussion.
The last derivative meaning, also noticed by Hou (1998), Lü (1999), Zhang (2002) and Liu et al. (2004), is found with *kuai(yao)* ‘soon to be.’ *Yijing* in this structure means almost reaching the starting point of a situation but still away from it. Since *kuai* implies a recent future, the overall situation does not happen yet. In (43), the sun is about to fall behind the mountains at S but this sunset situation does not reach completion. Chang (2009) argues that in (43) *yijing* adopts a derivative meaning of ‘soon to be.’

(43) Taiyang yijing kuai luo shan le.
    sun YIJING soon fall mountain PFV
    ‘The sun is about to come down the mountain.’ (Chang 2009: 24)

2.4 Summary

This section provides a summary of the main arguments from previous literature of *cengjing* and *yijing*.

‘persistence’ and ‘validity’ to specify the semantic components of *cengjing*, which lacks both of the features. Deng (2010) follows Ma’s proposal that *cengjing* lacks the feature of persistence and claims that this is the reason for *cengjing*’s incompatibility with the progressive whereas Cao (2003) believes that in some contexts *cengjing* with durative *zhe* is acceptable. Yisheng Zhang (2000) and Yajun Zhang (2002) argue that *cengjing* makes a contrast between then and now. When it comes to whether a situation holds at S, there are both sides of viewpoints. Cao (2002), Liu et al. (2004) and Hu (2005) see whether the situation holds at S as contingent whereas the others argue that *cengjing* nullifies situation at S.

*Yijing* is viewed as an adverb with a completion sense noted by Lü (1999); however, Ma (2003) argues that completion does not apply to every situation due to the nature of situation types following *yijing*. Cao (2002) and Ma (2003) instead switch focus to the fact that a situation has taken place; it is the record of realizing a situation (possibly only its inchoative stage) that holds at S. In an analogous manner, Liu et al. (2004) argue that a situation has taken place and the consequent effect holds at S. *Yijing* is a versatile temporal expression in that it is contextually adaptable to the past, the present or the future (Cao 2002, Ma 2003); in addition, Deng (2010) finds it also compatible with the habitual or the progressive. Lü (1999) also points out its capacity of scoping over negation. Hu (2005) and Qu (2012) study *yijing* from a pragmatic viewpoint. All the relevant meanings are classified into basic and derivative categories by Hu. If the situation holds at S, *yijing* displays its basic meaning; if the situation does not hold at S, *yijing*’s meaning is one of the derivative. In Qu (2012), *yijing* is seen as a more dynamic and multifaceted adverb in comparison to *cengjing*: it adds speaker-oriented
perspective to a sentence; *yijing* tends to scope over sentences in irrealis mood. Chang (2009: 30) summarizes *yijing*’s basic meaning as *juzi suoshuo de qingkuang zai shuohua zhiqian huo zai mouge xingweizhiqian huo zai mouge teding de shijian zhiqian jiu chengweishishi le* ‘to grant a situation a factual status because this situation has occurred before the speech time, another given event, or a temporal anchor’ along with four other derivative meanings.

Below is a restatement of the summary in the form of a table.

**Table 1 Summary of Previous Works of Cengjing and Yijing**

<table>
<thead>
<tr>
<th>Author</th>
<th>Cengjing</th>
<th>Yijing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cao (2002, 2003)</td>
<td>Situation may not hold at S.</td>
<td>- Perfective marker &lt;br&gt;- Scope over recent and remote past &lt;br&gt;- Compatible with durative <em>zhe</em> &lt;br&gt;- Whether the situation holds at S is contingent.</td>
</tr>
<tr>
<td>Liu et al. (2004)</td>
<td>- A situation occurred in the past. &lt;br&gt;- Whether the situation holds at S is contingent.</td>
<td>- A situation occurred in the past. &lt;br&gt;- The effect of the situation holds at S.</td>
</tr>
<tr>
<td>Hu (2005)</td>
<td>- Basic meaning: the situation does not hold at S. &lt;br&gt;- Derivative meaning: the situation holds at S.</td>
<td>- Basic meaning: the situation holds at S. &lt;br&gt;- Derivative meaning: the situation does not hold at S.</td>
</tr>
<tr>
<td>Lü (1999)</td>
<td>Situation</td>
<td>- Adverb</td>
</tr>
<tr>
<td>does not hold at S.</td>
<td>An act or a situation in the past</td>
<td>An action or a change is completed or has reached a certain extent.</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------</td>
<td>------------------------------------------------------------------</td>
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<tr>
<td></td>
<td>- A contrastive expression between then and now</td>
<td>- Possibly ongoing at S</td>
</tr>
<tr>
<td>Ma (2003)</td>
<td>- Past tense</td>
<td>- Make a situation a fact, which exists before the speech time, another given event, or a temporal anchor</td>
</tr>
<tr>
<td></td>
<td>- Scope over recent and remote past</td>
<td>- Contextually adaptable to the past, the present, and the future</td>
</tr>
<tr>
<td></td>
<td>- Proposal of semantic features: persistence, validity</td>
<td></td>
</tr>
<tr>
<td>Qu (2009, 2012)</td>
<td>- Explicit temporal reference to distinguish recent and remote past</td>
<td>- Speaker-oriented perspective</td>
</tr>
<tr>
<td></td>
<td>- Static status</td>
<td>- Dynamic status</td>
</tr>
<tr>
<td></td>
<td>- More likely to scope over realis mood</td>
<td>- More likely to accommodate irrealis mood</td>
</tr>
<tr>
<td>Chang (2009)</td>
<td>Grant a situation an experiential status and the situation is no longer valid at S</td>
<td>Grant a situation a factual status because this situation has occurred before speech time, another given event, or a</td>
</tr>
</tbody>
</table>
2.5 Inadequacies of Previous Works

In this section I will raise problems about the analysis in the literature. I will first cover cengjing’s problems, then yijing’s and finally point out the insufficiency in distinguishing them.


Cao (2002) claims that cengjing is able to scope over both recent and remote past. She provides (10), repeated as (44), as an example in support of recent past. However, in a random survey (14 out of 17 people) I found more than ten informants see (44) as unacceptable. Cengjing sounds unfit unless it is intended to create perceptual remoteness.

(44) Gancai ta ceng shuodao-guo ni.
just.now he CENG talk.about-EXP you
‘He just talked about you.’ (Cao 2002: 44)
Deng (2010) argues *cengjing* is not compatible with the progressive *zai*. Since *cengjing* is a past tense adverb (Ma 2003), any situation under its scope does not hold at S. It does not restrict aspectual condition of the situation under its scope. Following this rationale, it is reasonable to deem *cengjing* legitimate to take a progressive marker like *zai* in (45) – the event of considering registering a summer camp was ongoing for a period of time (in the past).

(45) Women cengjing zai kaolu baoming xialing ying.

We CENGJING PROG consider sign.up summer camp

‘We were once considering signing up for the summer camp.’

Also, there is no reason to prevent a past tense from scoping over negation. (46), a slightly different version of (7), should be considered grammatical. (46) makes perfect sense in the context where the referent resumed going out after a period of staying inside at home all day.

(46) Weile shiyuan ta cengjing san-ge yue bu for experiment he CENGJING three-CL month NEG

chu damen yi bu.

out gate one step

‘In order to do an experiment, he did not stay even a step out of the door.’

Hu (2005) and Qu (2012) examine *cengjing* on pragmatics-based accounts. Hu classifies all the relevant meanings into basic and derivative categories. If the situation does not hold at S, *cengjing* displays its basic meaning; if the situation holds at S, *cengjing*’s meaning is one of the derivative. The fact is that Hu’s (2005) analysis of the example (23), repeated as (47),
is incorrect. Even *cengjing* takes the derivative meaning claimed by Hu, there is discontinuity and the resumed situation is a new event. It is impossible for a situation under the scope of *cengjing* to hold until S.

(47) Bieren wo bu lun, ruoshi ziji ze cengjing kan-guo xuduo others I not judge if self then CENGIJING see-EXP much jiu shu weile jiaoshu zhi jin ye hai zai kan. old book for teach till today also still PROG see ‘As for me, I used to read many old books, and for teaching, I still do.’ (Hu 2005: 26)

On a related note, whether or not the situation under the scope of *cengjing* extends to S is not a debatable issue. Cao (2002) and Liu et al. (2004) think it is contingent. However, it is by definition impossible for the situation scoped by *cengjing* to continue till S. (48) is unacceptable since *hai* ‘still’, displaying continuity, is incompatible with discontinuity of *cengjing*. ‘I will continue living there’ in (48) will cause semantic anomaly. To allow *jixu* ‘continue’ to make sense, the situation of living in the countryside has to be going on so this situation can be continued. *Cengjing* cuts off the continuity and explains why (48) is anomalous.

(48) #Wo cengjing zai nongcun zhu-guo liu nian, hai hui I CENGIJING in farm live-EXP six year still will jixu zhu. continue live ‘#I used to live in the countryside for six years and I will continue living there.’
Qu (2012) finds *cengjing* tends to scope over sentences in realis mood. In (21), repeated as (49), *cengjing* and the realis smashing event accommodate each other well. A problem is that Qu does not explain why *cengjing* is less likely to accommodate an irrealis situation or show relevant examples.

(49) **Ju hangkong** shi jizai kongqi qiangbi **cengjing** ba by aviation history record air wall CENGJING BA

jianying-de feiji zhuang de fensui.

hard plane hit DE smash

‘The aviation history writes that air curtains once smashed a hard plane.’ (Qu 2012: 162)

Regarding *yijing*, Chang (2009) wrongly attributes ongoing or experiential meaning to *yijing*. It is equally inappropriate for *yijing* to be assigned the meaning of a recent future by Hou (1998), Lü (1999), Zhang (2002), Liu et al. (2004) and Chang (2009). Deng (2010) argues that *yijing* and the habitual are mutually compatible but is not aware of *yijing* changing the time frame of the habitual. Hu (2005) gives an incorrect analysis that claims the situation under *yijing*’s scope may not persist. Moreover, all of them have not done an exhaustive study of *yijing*, leaving other meanings unexplored.

Among the derivative meanings proposed by Chang (2009), including the experiential, the in-progress, speaker’s emphasis on the proposition and the about-to meaning, all but speaker’s emphasis are questionable. For example, the ‘experiential’ of first derivative meaning in (40), repeated as (50), roots from the suffix *guo* rather than *yijing*. Without *yijing*, *xue-guo* *diyi zhang* ‘the first chapter was learned’ alone retains the experiential meaning; in
other words, *guo* gives an experiential sense to the overall situation. The derivative meanings Chang claims should be attributed to situation types or temporal suffixes like *guo* rather than *yijing*. On a similar note, the second meaning, the in-progress, sees a situation as ongoing at S. However, this progress is due to the situation type that follows it. In (41), repeated as (51), the marital status is still ‘married’ at S without *yijing*. *Yijing* only plays an inchoative role in a proposition with state situation, which is the main contributor to the ongoing meaning.

(50) Yijing xue-guo diyi zhang.

YIJING learn-EXP first chapter

‘The first chapter has been learned.’ (Chang 2009: 21)

(51) Tamen (yijing) shi fuqi le.

they YIJING be husband.wife PFV

‘They are (already) husband and wife.’ (Chang 2009: 21)

Instead of focusing on *cengjing*’s or *yijing*’s own meaning, Chang (2009) infers their meanings from situation types that follow them. This is a back-formation way of obtaining *cengjing*’s and *yijing*’s meanings. She mistakenly conjures up meanings that do not originate from *cengjing* or *yijing*. Only when their basic meanings are examined can one answer such a question like where *cengjing* and *yijing* overlap and where they diverge. It is barely persuasive to explain *cengjing* and *yijing* by resorting to the situation type that is semantically under their scope. This fallacy has been pointed out by Lübner (1989), who accuses this of confusing co-occurrence-conditions with truth-conditions.

Deng (2010) points out a habitual event that is true all the time can stand under the scope of *yijing* as in (32), repeated as (52b). What Deng is not aware is that the time frame is
changed accordingly. (52a) constitutes a panchronic generalization: habitual events are located within an interval of indefinite size incorporating past time, future time, and the “now” of speech time (Michaelis 2002). In (52b), *yijing*, as a present contiguous past interval (a phase extending from some past point up to the moment of speech) restrains the original habitual sentence to a single temporal point (Michaelis 2002: 109). Thus (52b) is a one-time event in the past.

(52) a. Taiyang cong dong bian shengqi le.
   sun from east side rise PFV
   ‘The sun rises from the east.’

b. Taiyang yijing cong dong bian shengqi le.
   sun YIJING from east side rise PFV
   ‘The sun has risen from the east.’ (Deng 2010: 127)

Hu (2005) gives an inappropriate example to support the claim of situation’s extension to S. In (38), repeated as (53), the ‘kid heart’ cannot be evidence of negating old age, given that ‘old age’ and ‘innocence’ are not semantically antonymous. Their co-occurrence is actually in semantic harmony and does not offer any hint of no ‘persistence’. Therefore, this example is not eligible to prove whether extension holds or not.

(53) Jishi tade nianji yijing hen da haishi baoyou yi-ke
    though his age YIJING very big still keep one-CL
    xinxian-de tong xin.
    fresh kid heart
    ‘Though already at such an old age, he is still innocent as a kid.’ (Hu 2005: 28)
Throughout the literature, previous studies leave untouched other meanings of yijing, a multidimensional expression. Though yijing modifies a situation in the past when it assumes a role of relative past, there are several counter examples undermining this argument. (33), repeated as (54), is an ongoing situation at S, so a relative past is not an appropriate explanation. In (42), repeated as (55), the S is still on Wednesday. Yijing is here for other reasons than a relative past. (43), repeated as (56), has kuai, a near future expression, without even the slightest sense of past involved in this sentence. To say yijing has a meaning of recent future in this particular kind of sentence is a stipulated arrangement.

(54) Womende aiqing yu women yijing zai our love with we YIJING PROG jinxing de shehui fuwu shiye yiyang yong cun. process DE society service career same forever exist ‘Our love lasts as long as the social service we have been doing.’ (Deng 2010: 127)

(55) Jintian yijing xingqi san le. today YIJING week three PFV ‘It’s Wednesday already.’ (Chang 2009: 23)

(56) Taiyang yijing kuai luo shan le. sun YIJING soon fall mountain PFV ‘The sun is about to come down the mountain.’ (Chang 2009: 24)

In addition to individual problems of cengjing and yijing, the distinction between cengjing and yijing has not obtained a rigorous analysis. Previous scholars either attribute their difference to pragmatics (Lu 1988, Hu 2005, Qu 2012), come to loose conclusions (Deng 2010) or provide no further explanations (Ma 2003).
Lu (1988) and Qu (2012) both believe the difference between sentence (57a) and (57b) or (58a) and (58b) lies in implicature from the speaker, depending on the context where the sentences are uttered. Lu (1988) argues that in (57b) the speaker implies she has been involved in the situation of living in the countryside too long; Qu (2012) argues that (58b) implies they have worked at Foxconn long enough and it’s time to let others replace them.

(57) a. Wo cengjing zai nongcun zhu-guo liu nian.
    I CENGJING in farm live-EXP six year
    ‘I used to live in the countryside for six years.’

    b. Wo yijing zai nongcun zhu le liu nian.
    I YIJING in farm live PFV six year
    ‘I have lived in the countryside for six years.’ (Lu 1988: 52)

(58) a. Tamen cengjing zai fushikang gongzuo le yi duan shijian.
    they CENGJING at Foxconn work PFV one period time
    ‘They used to work at Foxconn for a while.’

    b. Tamen yijing zai fushikang gongzuo le yi duan shijian.
    they YIJING at Foxconn work PFV one period time
    ‘They have worked at Foxconn for a while.’ (Qu 2012: 161)

Deng (2010) concludes that yijing can co-occur with habitual situations but cengjing not. On the contrary, once-off event like an experience of skipping meals for a day in (59) works well for cengjing as well as yijing. Deng spots out the context where cengjing sounds anomalous but a proper explanation is not seen in his paper.

(59) a. Ta cengjing yi tian bu chi fan.
    she CENGJING one day not eat rice
    ‘She once ate nothing for a whole day.’
b. Ta yijing yi tian bu chi fan le.
   she YIJING one day not eat rice PFV
   ‘She has been eating nothing for a day.’ (Deng 2010: 127)

Some (e.g. Zhang 2000, Cao 2002) even argue cengjing and yijing are both perfective adverbs, but (60) shows this understanding comes from a confusion of perfective with past tense.

(60) a. Ta 1870 nian cengjing dida meiguou.
   he 1870 year CENGJING arrive America
   ‘He once entered America in 1870.’

b. Ta 1870 nian yijing dida meiguou.
   he 1870 year YIJING arrive America
   ‘By 1870 he had already arrived in America.’

When the situation is set with an explicit past time reference, e.g. 1870, cengjing does not add any perfective sense to the proposition of (60a); instead, it states a simple past situation. This perfective analysis of cengjing is especially inappropriate with the fact that cengjing can scope over a progressive, as in example (45). Though a past tense pattern may convey perfective viewpoint, past tense and perfective should be specified individually rather than interchangeable. An aspectual perfective has nothing to do with speech time. It concerns the internal structure of a situation.

Previous literature extends the discussion to various ideas, such as relation to S, or scope over progressive, habitual, and realis mood, but they look scattered and arbitrary. They should be knotted together under a unified argument, which will be presented in Chapter Three.
Chapter Three

A Semantic Analysis of Cengjing and Yijing

3.1 Introduction

The review in Chapter Two reveals that there is no agreed analysis of cengjing and yijing in the literature. In particular of yijing, none of the previous scholars is seen analyzing yijing beyond a temporal expression, and this indicates oblivion to other meanings of yijing. Following Li and Ho (2016), in this chapter I discuss the meanings of cengjing based on Reichenbach’s (1947) three abstract times and those of yijing based on Reichenbach’s approach and the scale theory.

Reichenbach’s (1947) invention of three times distinguishes between cengjing and yijing in a clear and unmistaken way. My adoption of Reichenbach’s idea will make this study stick to the tense and aspect, which are fundamental in understanding time. One of the purposes of this study is to make distinction between these two temporal expressions. In consideration of directedness and specificity, Reichenbach (1947) seems to suit better than any previous approach.

In Section 3.2 the meanings of cengjing are examined based on Reichenbach (1947). 3.2.1 is an overview of Reichenbach’s E-R-S relation, which is then employed to clarify the temporal location that cengjing denotes and to place the unsolved problems from Chapter Two
under appropriate analysis in 3.2.2. Section 3.3 discusses the meanings of *yijing* from the perspective of Reichenbach (1947) and the scale theory. 3.3.1 gives a review of scale, especially Kennedy’s (2007) structure of scale, a triple consisting of a set of degrees D, an ordering relation on that set (>), and a dimension DIM. 3.3.2 revisits the unaddressed issues regarding *yijing*. In addition to Reichenbach-based analysis of relative past, other meanings of *yijing* are given an explanation via scale. Section 3.4 is a summary of my analysis.

3.2 *Cengjing*

Section 3.2.1 provides a review of Reichenbach (1947), whose time points E, R, S and ordering relation of simultaneity/anteriority are then used to analyze the meanings of *cengjing* in 3.2.2.

3.2.1 A Review of Reichenbach (1947)

Reichenbach (1947) distinguishes three abstract times in time and two ordering relations, which together construct the analysis of time. The three times are the event time (henceforth E), the reference time (henceforth R) and speech time (henceforth S). The two ordering relations are anteriority (represented by ‘-’) and simultaneity (represented by ‘,’) (Reichenbach 1947: 287).

Reichenbach’s terminology sees ‘past,’ ‘present,’ and ‘future’ as the position of R relative to S; the terms ‘anterior,’ ‘simple,’ and ‘posterior’ indicate the position of E relative to
R. The interaction between the position of R relative to S and the position of E relative to R will give rise to nine possible forms, which Reichenbach (1947) calls fundamental forms. As listed in Table 2, the corresponding traditional names are offered as well.

**Table 2 Relations between E, R and S in Reichenbach (1947: 294)**

<table>
<thead>
<tr>
<th>Structure</th>
<th>New Name</th>
<th>Traditional Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-R-S</td>
<td>Anterior past</td>
<td>Past perfect</td>
</tr>
<tr>
<td>E, R-S</td>
<td>Simple past</td>
<td>Simple past</td>
</tr>
<tr>
<td>R-E-S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-S, E</td>
<td>Posterior past</td>
<td>–</td>
</tr>
<tr>
<td>R-S-E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-S, R</td>
<td>Anterior present</td>
<td>Present perfect</td>
</tr>
<tr>
<td>S, R, E</td>
<td>Simple present</td>
<td>Present</td>
</tr>
<tr>
<td>S, R-E</td>
<td>Posterior present</td>
<td>Simple future</td>
</tr>
<tr>
<td>S-E-R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S, E-R</td>
<td>Anterior future</td>
<td>Future perfect</td>
</tr>
<tr>
<td>E-S-R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-R, E</td>
<td>Simple future</td>
<td>Simple future</td>
</tr>
<tr>
<td>S-R-E</td>
<td>Posterior future</td>
<td>–</td>
</tr>
</tbody>
</table>

I find that the temporal relation centers on R’s relation to the other two points in time; the order of E and S is flexible when they are on the same side of R. As a result, the posterior past and the anterior future, both of which have E and S on the same side of R, have more than one ordering relation between S, E, and R.

In the following, I will focus on the relation of R anterior to S and the relation of R posterior to E, which are relevant to the scope of studying *cengjing* and *yijing*. I will follow
up with a detailed analysis of each in the next two sections. The rest of relations are left out in the discussion.

Reichenbach’s three abstract times are interrelated in understanding time. For example, in (61) the E refers to the time when the situation of doing homework took place; the R was the time John came home and the S was the time the sentence was uttered. In this example, S comes after E, because the situation of doing homework is complete before the speech time, however unknown it is. The E is anterior to R since the event of doing homework is followed by a point of reference, represented by John’s arrival at home. The R is a reference time before this sentence is uttered (S). The ordering relation between the three times is E-R-S.

Furthermore, the R in (61) is not given a specific time point. Therefore the intervals between E and R, and between R and S, are contextually decided. What is for certainty is the order of E-R-S.

(61) When John came home, Mary had done her homework.

Reichenbach’s model is powerful in distinguishing simple past from present perfect. According to Reichenbach, his simple past means the event time (E) and reference time (R) coincide, and both are before the point of speech (S), such as (62a). In contrast, the E denoted by the present perfect precedes R, which coincides with S, such as (63a). Therefore the same E-S is further subdivided, by R, into the simple past (E,R-S) and the present perfect (E-R,S).

(62) a. I saw him.
   b. I saw him at 9 this morning.
(63) a. I have seen him.
b. *I have seen him at 9 this morning.

(62b) and (63b) add time reference to their (a) version of sentences. It becomes clear that a particular past time reference is not compatible with present perfect in (63b). The R in (63b) should be simultaneous with S, in this case, now. (62b), on the other hand, takes R with E, so any past time reference meets this requirement.

The E,R-S order shown by simple past is a contrast to E-R-S shown by past perfect. As in (64), the E of finishing the project precedes last winter, as R, and last winter itself precedes the time when this E-R relation was uttered, S.

(64) I had finished the project by last winter.

Simple past, past perfect are distinguished by the relation between E and R, simultaneity or anteriority, whereas simple past and present perfect show difference in which time point, E or S, R chooses to align with. In brief conclusion, past perfect, simple past and present perfect have the following order of time points respectively, E-R-S, E,R-S and E-R,S.

3.2.2 A Reichenbach-based Analysis of Cengjing

Cengjing has been proposed to serve as an adverb by Lü (1999), defined as marking past time by Ma (2003) and as a perfective aspect marker by Cao (2002), as reviewed in Chapter Two. I suggest that cengjing is a past time adverb, following Lü (1999), Yisheng Zhang (2002), Yajun Zhang (2002), Chang (2009), Li and Ho (2016), among others. The
terminology seen among previous works is not consistent, if not accurate for some of them. I will elaborate in the following with Reichenbach’s three times.

Based on the proposal that sees *cengjing* as past time adverb, the situations under *cengjing*’s scope accordingly happened in the past. As reviewed in Chapter Two, *cengjing* is not compatible with the future and the present tense. For example, (65) is not acceptable in that the time frame of *mingnian* ‘next year’ (S-R) violates the setting of *cengjing* as a past tense adverb (R-S). The resultative state of creating a novel, conveyed by *wan* ‘complete’, belongs to a time that has not come yet, apparently against the past context predetermined by *cengjing*.

(65) *Mingnian zhe-ge shihou wo jiu hui cengjing xie wan yi-ben xiaoshuo.*
next.year this-CL time I just will CENGJING write finish one-CL novel

*‘I will have once finished this novel by this time next year.’*

*Cengjing* marks past time but does not restrict the stage of the situation. That is, *cengjing* requires R precede S but leaves open the order of R and E. Besides scoping over a simple past, *cengjing* is compatible with different aspectual scenarios. For example, in (66), in the order of E-R-S, a finished situation of arriving in the UK comes before a reference time (R), i.e. six years ago. This shows *cengjing* can modify a past situation in another past. In (67), the dancing activity was going on for a while in the remote past specified by time reference *duo nian qian* ‘years ago’. The R coincides with E, which covers a certain stretch of time.
This time extension is marked by present participle in English. The extended tense shows an order of R,E-S.

(66) Liu-nian qian ta qu Meiguo qian cengjing xian
six-year ago he go US before CENGJING earlier
qu le Yingguo.
go PFV UK
‘He went to UK first before going to US six years ago.’

(67) Duo nian qian de mou-ge wuye ta cengjing hen
many year before DE some-CL midnight he CENGJING very
xingfen-de zai tiaowu.
excitedly PROG dance
‘In a midnight years ago he was dancing with much excitement.’

Cengjing requires that the situation terminate before S, i.e. E must precede S. In (68) where cengjing scopes over a state situation, the state of perplexity lasted only in the past and is no longer available at S. Cengjing cancels the future possibility, and the E is expected to be kept with the R in the past.

(68) Wo cengjing miwang, dan xianzai zhidao fangxiang le.
I CENGJING at.a.loss, but now know direction PFV
‘I was once at a loss, but now have figured out the way to go.’

The previous analyses of cengjing, as seen in Chapter Two, leave many problems that are awaiting a better explanation. I will address them with the abstract times from Reichenbach (1947).
Scholars such as Cao (2002) and Hu (2005) argue that it is possible for situations under cengjing’s scope to hold at S. Cao has a quick mention of the possibility, though she provides no example to support it. Hu examines cengjing on pragmatics-based accounts; he classifies all the relevant meanings into basic and derivative categories. According to Hu, if the situation does not hold at S, cengjing displays its basic meaning; if the situation holds at S, cengjing’s meaning is one of the derivative. He argues that in (69) (= (23) in Chapter Two) cengjing takes a derivative meaning, so the situation continues at S.

(69) Bieren wo bu lun, ruoshi ziji ze cengjing kan-guo xuduo
others I not judge if self then CENGIJING see-EXP much
jiu shu, weile jiaoshu zhi jin ye hai zai kan.
old book for teach till today also still PROG see
‘As for me, I used to read many old books, and for teaching, I still do.’ (Hu 2005: 26)

Against Cao’s and Hu’s views, my proposal is that it is impossible for the same situation under the scope of cengjing to hold until S. In (69) the situation of reading books lacks continuity. The resuming situation is a new event, separate from the previous one. (69) consists of two clauses denoting two events, and cengjing only has scope over the first event. Therefore, in the second clause the situation holds until S.

Deng (2010) argues that cengjing is incompatible with the progressive aspect as reviewed in Chapter Two, such as (70) (= (16) in Chapter Two) and dismisses the possibility of combining cengjing and zai, without further elaboration. I suggest that the reason for (70) to be unacceptable is a semantic clash between cengjing and yong cun ‘exist forever’. The
yong cun predicates two arguments, aiqing ‘love’ and shiye ‘career’, the latter of which is modified by a relative clause under cengjing’s scope. The shiye under cengjing’s scope should no longer exist at S, and thus this sentence is semantically contradictory.

(70) *Womende aiqing yu women cengjing zai
       our love with we CENGJING PROG
       jinxing de shehui fuwu shiye yiyang yong cun.
       process DE society service career same forever exist
*‘Our love lasts as long as the social service we were once doing.’ (Deng 2010: 127)

As for the issue of compatibility between cengjing and zai, since my argument sets cengjing as an adverb marking past time, I regard the combination of cengjing and a progressive particle as semantically legitimate. In (71) zai demonstrates time extension of an event, which Reichenbach (1947) terms as extended tense, and cengjing places this aspectual situation in a past context, so the in-progress process of the plan is in the past. Reichenbach views E and R as coincidental in the extended tense, thus showing an order of R,E-S.

(71) Na-chang zhanzheng zhongduan le women cengjing
       that-CL war suspend PFV we CENGJING
       zai jinxing de jihua.
       PROG process DE plan
*‘The war suspended the plan we were processing.’

Cao (2002) argues that cengjing, generally considered an adverb indicating remote past, can have a ‘just now’ meaning as well, as in (72), which is about an event that just happened, possibly a few minutes ago. As mentioned in 2.5, the informants of this study, nevertheless,
consider (72) awkward unless it is intended to create perceptual remoteness. I suggest there is no definitive value of the minimum remoteness of the event time from the speech time. Still, *cengjing* is apparently against a too recent situation, as in (72). It is not a well-formed sentence because *gangcai* ‘just now’ brings in an extremely recent past (R), but the situation (E) under *cengjing*’s scope belongs to a remoter past. The closest explanation to clarify this semantic obscurity is that *cengjing* is compatible with a recent past under the condition of stressing the time difference between the happening of a situation (E) and speech time (S).

For instance, it makes sense to use *cengjing* in (73). *Shuodao-guo ni* is an event in the recent past, which seems to lose validity when this situation is uttered. *Cengjing* has the function of highlighting a then-and-now discontinuity.

(72) Gangcai ta ceng shuodao-guo ni.  
just.now he CENG talk.about-EXP you  
‘He just talked about you.’ (Cao 2002: 44)

(73) Gangcai ta ceng shuodao-guo ni, xianzai que wang le.  
just.now he CENG talk.about-EXP you now but forget PFV  
‘He just talked about you, but forgets it now.’

Qu (2012) argues that *cengjing* tends to scope over realis mood, as in (74) (= (21) in Chapter Two), but does not explain why it has such an inclination. In fact, there are counterexamples that undermine the credibility of Qu’s claim. The possibility of sentences like (75) questions the argument that *cengjing* tends to scope over realis mood. In (75) *cengjing* is under the scope of *keneng* ‘may’ but the lack of tense in modal verbs allows
**cengjing** to give tense to the sentence, so the likelihood of his working for CIA is in the past.

In opposition to Qu (2012), **cengjing** has equal tendency to scope over realis or irrealis mood.

(74) Ju hangkongshi jizai kongqi qiangbi cengjing ba  
by aviation history record air wall CENGJING BA  
jianying-de feiji zhuang de fensui.  
hard plane hit DE smash  
‘The aviation history writes that air curtains once smashed a hard plane.’ (Qu 2012: 162)

(75) Ta keneng cengjing xiaoli yu zhongqingju.  
he may CENGJING serve at CIA  
‘He once worker for CIA.’

In sum, **cengjing** is analyzed as a past time adverb (R-S) based on Reichenbach’s (1947) three abstract times in this study. Though it is open to any aspectual possibility, the E must precede S. Given this anterior relation of E to S, I refute Cao’s (2002) and Hu’s (2005) proposal that there is possibility for situations under **cengjing**’s scope to hold at S. The controversy of progressive’s compatibility (Deng 2010) is resolved by proving a past progressive (E,R-S) sentence to be well-formed. Qu’s (2012) finding of the relation between **cengjing** and realis mood is refuted with the acceptable irrealis mood sentence. In terms of the remoteness of a past situation (Cao 2002), **cengjing** and recent past can get along well when **cengjing** is used to contrast past from present.
3.3 *Yijing*

The meanings of *yijing* reviewed in Chapter Two, either basic or derivative, share the concept of degree against a certain background. To capture this concept, the subsequent analysis of *yijing* is based on the theory of scale, following Li and Ho (2016).

In 3.3.1 I will cover the ontology and application of scale on various word classes, and particular attention is given to Kennedy’s (2007) structure of scale, which introduces three elements of scale. In 3.3.2, *yijing* is analyzed by Reichenbach (1947) for the meaning of relative past and by the scale for the non-temporal meanings.

3.3.1 A Review of Scale

Under review is the theory of scale relevant to my analysis, with coverage of the origin, core elements of scale and its application to word classes of numerals, verbs, nouns and modals.

3.3.1.1 The Ontology of Scale

The origin of scales comes from a range of perspectives. Some authors take degrees and scales to be some sort of abstraction, which embody our ability to judge magnitudes and make comparisons, e.g. von Stechow (1984) and Kennedy (2007), or take degrees to be numbers (Krifka 1989).
Other authors propose that degrees and scales are derived from elements already assumed as part of the ontology. Bierwisch (1989: 112) for instance proposes that degrees, while being ‘mental entities’, are produced via the operation of comparing individuals: “there is no degree without comparison and no comparison without degree.” This comparison relation is arguably to be the degrees of the scale (Cresswell 1977).

In summary, scale is an embedded property that enables human beings to judge and compare values in a variety of measurements.

3.3.1.2 Kennedy’s (2007) Structure of Scale

Semantic approaches that make reference to scales (i.e. degree semantics) have a long tradition and in recent years have seen an upsurge of interest. A review of literature will reveal the nature and role of the scales that underlie meaning in language. Kennedy (2007: 4-6) states that a scale S has a triple consisting of a set of degrees D, an ordering relation on that set >, and a dimension DIM:

\[
S = \{D, >, \text{DIM}\}, \text{ where}
\]

- D is a set of degrees,
- > is an ordering relation on that set, and
- Dim is a dimension of measurement (Kennedy 2007: 4-6)

The three elements of a scale are linked to individual x via measure function \(\mu S\), which maps an individual x to the degree on the scale S. The measure information includes degrees and ordering relation of x with respect to the dimension DIM.
Take a random sentence for example. (76) is explained by incorporating the scale triple. It might be paraphrased as saying that the point on the scale of height (DIM) that corresponds to Anna’s is (at least) 5 centimeters (Degree) above or beyond (ordering relation) the point corresponding to Mary’s.

(76) Anna is 5 centimeters taller than Mary.

3.3.1.3 On Degrees, Ordering Relation and the Dimension of Measurement

The scale model has, in fact, evolved many semantic analyses. More information on degrees, ordering relation and the dimension of measurement is summarized below.

Regarding the set of degrees D, scalar endpoints and the nature of degrees are involved. Scalar endpoints include minimum and maximum points (e.g., Kennedy 2007). These two endpoints constitute a typology of four scale types: totally closed (both maximum and minimum), lower closed (minimum only), upper closed (maximum only) and open (neither). Kennedy (2007) argues that ‘the standard of comparison for gradable adjectives is determined by the structure of the underlying scale’ and that open, smooth, rough, and tall represent each type. He employs the lexical semantics of completely and slightly to make distinction. Completely requires the adjective have a scale with a maximum (to be completely smooth is to have the maximum value on the scale of smoothness). Conversely, slightly requires a scale with a minimum (to be slightly rough is to have a degree of roughness just beyond the minimum value). So-called absolute adjectives like open, smooth and rough have
endpoint-oriented standards. Relative adjectives such as *tall*, whose scales are totally open, have instead contextually determined standards.

The parameter of open/closed distinction is also relevant to verbal telicity. For example, (77a) favors a telic reading, while (77b) has only an atelic reading, which can be explained in that the process of emptying has an endpoint (complete emptiness), while the process of widening does not (Kennedy & Levin 2008).

(77) a. The sink emptied.
   b. The gap between the boats widened. (Kennedy 2007: 11)

Various authors over the years have conceptualized degrees as points (Solt 2014), intervals, extents (Bierwisch 1989), vectors or some sort of complex entity (Grosu and Landman 1998). Another aspect of the structure of D is whether it is dense or discrete. Density is intuitively plausible for dimensions such as height, weight, temperature, duration and such (Solt 2014), but Fox and Hackl (2006) claim that this property holds even for the dimension of cardinality. Though there are other points of variation touched upon such as granularity (Krifka 2007), I will not go further for their irrelevance to *yijing*.

The most obvious parameter of variation in the ordering relation > is direction. According to Kennedy and McNally (2005), the scales lexicalized by antonym pairs such as *tall/short* can be analyzed as sharing the same dimension DIM and set of degrees D, but differing in the direction of the relation > on that set. This allows an account of equivalences such as (78).
(78) Anna is taller than Mary ⇔ Mary is shorter than Anna

Dimension of measurement, or DIM, varies in whether there is a numerical measurement system. Degrees of height, for example, can be associated with numerical values, while degrees of beauty cannot. Non-numerical system does not obtain further notice in the literature. Among those with the numerical system, they are classified according to how measurement interacts with concatenation: some dimensions (e.g. height) are additive with respect to concatenation, while others, e.g. temperature, are intermediate since the temperature of two bowls of soup poured together is intermediate between the temperatures of the two individual bowls (Solt 2014: 4).

The scale identified above is a simple linearly ordered set of points, or an ordinal scale, but some linguistic phenomena require more than an ordinal scale. Grade and quantity are another set of variation. The scales concerning quantity include interval scale (featuring a fixed unit of measure) for (79a) and ratio scale (fixed unit of measure plus non-arbitrary zero point) for (79b).

(79) a. The Empire State Building is 695 feet taller than the Washington Monument.
   b. The Empire State Building is twice as tall as the Washington Monument. (Solt 2014: 4)

However, problems that might undermine the numerical measurement system are encountered in dimensions such as beauty, intelligence and importance; they are hard to be classified into ordinal, interval or ratio scale. Solt (2014) concludes that there is at least some
evidence that the typology of scale structures assumed in measurement theory does not adequately characterize the range of variation in natural language scales.

3.3.1.4 Scale across Word Classes

Sapir (1944) and Bolinger (1972) recognize that scalarity also plays an important role outside of the adjectival domain. Numerals, verbs, nouns, and modals are also included, briefly introduced below.

Number words (e.g., *three*) and modified numerals (e.g., *more than three, at least four*) are also readily analyzed in a scalar semantics (Partee 1987; Krifka 1999). This approach can also be extended to measure phrases corresponding to mass dimensions, such as two liters (of wine) and five ounces (of gold) (e.g. Cresswell 1977; Krifka 1989).

Doetjes (1997) proposes that verb phrases can contain two types of scalar argument positions, q-position (for ‘quantity’) and g-position (for ‘grade’). Q-position is associated with the event argument, which may be saturated by a degree expression such as *a lot* and is responsible for the frequency reading in examples like (80a), and the duration reading in cases like (80b). G-position is responsible for the intensity reading in examples like (80c).

(80) a. Anne went to the movies a lot last year. (Solt 2014: 6)
   b. I slept a lot. (Solt 2014: 7)
   c. Joe appreciates Lisa a lot. (Solt 2014: 7)

Measure verbs such as *weigh*, degree achievement verbs such as *widen*, directed motion verbs such as *ascend*, and incremental theme verbs such as *eat* are some among a wide and
varied class of verbs that can be understood as expressing gradual change along some scalar dimension (Hay et al. 1999).

Nouns can be gradable in the form of a quantity argument. In (81) phonologist and phonetician are assumed applicable to the use of comparative structure, as if they map to different markings on the same scale. One way of analysis is that certain nouns are like gradable adjectives in themselves having a degree argument (per Morzycki 2009).

(81) Clyde is more phonologist than phonetician. (Solt 2014: 8)

As for modal expressions, Yalcin (2010) analyzes them as functions that map propositions to points on a scale and compare them to a threshold value. Lassiter (2011) provides the scales that cater to different modalities: in the case of epistemic modality, the relevant scale is a probability scale, specifically a finitely additive probability space; for deontic and bouletic modality, it is a scale derived from a preference relation on propositions.

3.3.2 A Reichenbach (1947) and Scale-based Analysis of Yijing

Yijing is classified as an adverb by Lü (1999). The meaning most widely supported (Cao 2002, Ma 2003, Liu et al. 2004, Chang 2009) is Ma’s (2003) definition, zai mouge teding shijian qian jiu chengwei shishi le ‘to grant a situation a factual status because this situation has occurred before a temporal anchor’. In this section I will analyze yijing with Reichenbach’s approach (1947) and the scale structure and then incorporate the analysis into explaining those inadequacies found in the studies discussed in Chapter Two.
In 3.3.2.1 there will be a comprehensive look at the relative past meaning of *yijing*; the next subsection, 3.3.2.2, is about the previously unexplored meanings, all of which are concerned with the scale structure.

### 3.3.2.1 Relative Past

My first argument is that *yijing* is a temporal adverb denoting relative past, similar to the proposal of Lü (1999), Ma (2003), Liu et al. (2004), Chang (2009). Where mine diverges from theirs is the aid of Reichenbach (1947).

Under the meaning of relative past, *yijing* is explained with Recheinbach’s (1947) event time (E) and reference time (R); *yijing* requires that R come after E so that the event is viewed as relatively past. The R in (82a) was the moment when the speaker came, and it is preceded by E, the time of composing a song. To achieve a relative past to the R, *yijing* is indispensable to E in this sentence, thus (82b) being ungrammatical.

(82) a. *Wo* lai de shihou ta *yijing* xie-wan le
   I come DE time he *YIJING* write-finish PFV
   yi-shou ge.
   one-CL song
   ‘He had (already) written a song the moment I came.’

b. *Wolai de shihou ta* xie-wan le *yi-shou ge.*
   I come DE time he write-finish PFV one-CL song
   *‘He wrote a song the moment I came.’*
The first meaning states the relative relation between E and R. It has nothing to do with tense but the internal structure of a situation. What *yijing* needs is a reference point, from which a situation is relatively earlier. It is this openness that makes *yijing* able to occur with other times. In (83), the reference time *four o’clock yesterday afternoon* means the R is prior to S. *Yijing* ensures another time point, E, to be even more prior. The relative past in the sentence means that the E of taking a shower precedes the R, *four o’clock yesterday afternoon*. Future tense, as shown in (84), demonstrates *yijing* is adaptable to the time frame of S-R as well. The speaker utters a situation in the future, thus in the order of S-R while the situation of *my setting off* (E) comes earlier than the R, *your arriving home tomorrow*.

(83) Zuotian xiawu si-dian wo yijing xizao le.
    yesterday afternoon four-o’clock I YIJING take.a.shower PFV
    ‘I had taken a shower by four yesterday afternoon.’
(84) Mingtian ni hui jia shi wo yijing chufa le.
    tomorrow you come home time I YIJING set.of PFV
    ‘By the time you come home tomorrow I will have set off.’

3.3.2.2 Meanings beyond Time

The second meaning, as I have brought up in Chapter Two, is that *yijing* gives a situation a sense of exceeding some scale-involved threshold. *Yijing* is to have an attitudinal meaning that indicates the speaker’s surprise at a situation, which is beyond the speaker’s or hearer’s expectation. The ‘out-of-expectation’ points out the likelihood of stratifying situations on a scale. If there is ‘out-of’, there exists, comparatively, ‘within’ and the
threshold that defines the boundary. By the scale-based analysis, following Li and Ho (2016), *yijing* maps propositions to points on a scale and compares them to a threshold value determined by individual DIM.

The *yijing* in (85) can be interpreted in the same way as (82) to (84); that is, the situation of eating is in the past compared to the R, the arrival time.

(85) Wo lai de shihou ta yijing chi fan le.
I come DE time he YIJING eat rice PFV
‘He had (already) ate when I came.’

A further look will find (85) can be interpreted in various ways. One interpretation is to juxtapose the situation of eating against a DIM of evening routine. The routine includes cooking dinner, setting the table, eating, dish-washing, shower time, etc. Eating is a portion of a larger situation, i.e. evening routine. It is inferred by the use of *yijing* that the situation of eating in (85) is a stage beyond the threshold, i.e. speaker’s expectation, which assumes only the stage of cooking rather than finishing consuming the meal. *Yijing* functions as exceeding some scale-involved threshold.

Another interpretation is to put *yijing* itself on a scale. The relative past maps to the degree of completeness of a situation, presumably going through the stage of ‘not yet,’ ‘in progress,’ and ‘done.’ In (86), the hearer A thought the referent had not eaten, and this is inferred from the use of *yijing* by the speaker B. The stage of ‘done’ is more ahead of what the hearer anticipates.

(86) A: Ta cai gangdao yinggai hai mei chifan.
he just just arrive should still not eat
‘I suppose he has not eaten since he just arrived.’

B: Wo lai de shihou ta yijing chi fan le.
I come DE time he YIJING eat rice PFV
‘He had (already) ate when I came.’

The DIM comes in numerous forms, and each DIM relies on the speaker’s or the hearer’s understanding of a particular situation. By this rationale, the inadequacies in the previous studies reviewed in Chapter Two can be properly addressed. The mistakenly added meanings like ongoing, experiential, or recent future (Liu et al. 2004, Chang 2009, etc.) are replaced with ‘exceeding the threshold of varying stratified dimension (DIM).’

(87) and (88) are among the problems raised in Chapter Two. Chang (2009) argues that yijing has an in-progress meaning, usually referring to a new state. Instead of the ongoing meaning proposed by Chang, I propose that yijing is to express a new situation, like an inchoative. In the context of discussing a couple’s relationship in (87), the marital status is a stage the speaker expects to come later than the time of speech, as implied by the use of yijing to show surprise. Likewise, in (88) the meaning of yijing is not near future, as argued by Chang. Rather, yijing is to say that the sunset has entered the stage of imminent future, kuai ‘soon.’

(87) Tamen yijing shi fuqi le.
they YIJING be husband.wife PFV
‘They are already husband and wife.’ (Chang 2009: 21)

(88) Taiyang yijing kuai luo shan le.
sun YIJING soon fall mountain PFV
‘The sun is about to come down the mountain.’ (Chang 2009: 24)
Lu (1988) argues that in (89) the speaker implies that the situation of living in the countryside is too long. This interpretation is on the right track of perceiving unexpected lengthy time. My analysis goes even further to the cause of this perception. In (89) the DIM is the number of years living in the countryside; the threshold value is expected to be, for instance, only five years of living in the countryside. Therefore, the proposition of ‘I live in the countryside for six years’ is out of the hearer’s expectation.

(89) Wo yijing zai nongcun zhu le liu nian.
I YIJING in farm live PFV six year
‘I have lived in the countryside for six years’ (Lu 1988: 52)

Chang (2009) points out one derivative meaning of yijing is to imply the speaker’s attitude toward the proposition, usually emphasizing the greatness, lengthiness, or immediateness. Her view is close to mine, only less clear in the reason why the speaker senses the proposition in this way. In (90), the speaker does not expect today to be Wednesday, i.e. s/he feels Wednesday comes earlier than expected. In (90) the threshold value could be Tuesday.

(90) Jintian yijing xingqi san le.
today YIJING week three PFV
‘It’s Wednesday already.’ (Chang 2009: 23)

The meanings of yijing are distinguished in two ways. The first is the basic meaning of relative past (R,E) while the second is derived from the context where the sentence is uttered.
The second usually contextualizes the situation into a scale and *yijing* shows the situation has reached the threshold of the scale. The derived meaning of exceeding a threshold is applicable to almost every situation, unless it is excluded by a detailed context that restricts *yijing* to the relative past. All the inadequacies pointed out in Chapter Two, including ongoing, experiential, or recent future (e.g. Lu 1988, Liu et al. 2004, Chang 2009), have been properly explained by the scale analysis. The derivative meanings of *yijing* have long been mistakenly understood as aspectual emphasis, and the scale structure underlying it is not disclosed until this study, following Li and Ho (2016). The scale-based analysis unifies those seemingly arbitrary meanings, fulfilling intuitive as well as explanatory expectation of a language study.

3.4 Summary of the Analysis

*Cengjing* and *yijing* are correlated under Reichenbach’s (1947) three points of time. *Cengjing* concerns the R and S whereas *yijing* is best explained by E and R. In this way, I clarify why *cengjing* does not accommodate non-past sentences or the reason for *yijing* to be applicable to any tense. In particular, I employ the scale to address the long-held problem of *yijing*’s derivative meanings.

Considering the anterior relation of E to S, I dismiss the proposal from previous works that a situation is likely to hold at S under *cengjing*’s scope. *Cengjing* and recent past can co-occur under certain circumstances, usually to contrast past from present. Like a regular past, *cengjing* is compatible with progressive (E,R-S) and realis mood, as already shown by
acceptable corresponding sentences. The inadequacies regarding other meanings of *yijing*, including misplaced ongoing, experiential, or immediate future, have been identified with explanation. Moreover, I provide the scale-based analysis to complement the study of *yijing*. 
Chapter Four

CENGJING, YIJING AND SITUATION TYPES

4.1 Introduction

In Chapter Three, the meanings of cengjing and yijing has been investigated through Reichenbach’s (1947) approach and the scale structure (e.g. Kennedy 2007). In this chapter, the focus will be on the interaction between the two temporal expressions and aspectual situation types. Some situation types may take cengjing/yijing as an optional enhancer of meaning; some rely on them to achieve semantic integrity; others, however, cannot co-occur with them. In fact, a similar issue has been raised by Ma (2003), who suggests that the feature ‘completion’ proposed by Lü (1999) is not always true because the internal structure of situation types affects the possibility of completion. Given the different compatibility found between cengjing/yijing and different situation types, the discussion of the interaction between these two adverbs and various situation types appears as a matter of course.

Section 4.2 gives a brief introduction of Smith’s (1997) aspektual situation types, which are classified into State, Activity, Accomplishment, Semelfactive and Achievement based on the semantic features of dynamism, telicity and duration. 4.3 is a review of Tai (1984), which guides to a Mandarin-specific categorization of situation types. Cengjing and yijing will
return in 4.4 and in 4.5, respectively, where their interaction with Tai’s (1984) situation types is under analysis.

4.2 A Review of Smith (1997)

The modern study of lexical aspect begins with Ryle (1947) and Vendler (1957). Lexical aspect, sometimes called “Aktionsart”, corresponds to Smith’s (1997) situation aspect, which covers distinctions between properties of event-types denoted by verbal expressions (Rothstein 2003). Smith (1997) discusses the situation types at an abstract level holding across languages. She argues that situation types are semantic classes of idealized situations with distinctive temporal features.

Smith (1997) bases temporal features on the Vendlerian classification (Vendler 1957). Vendler (1957) identifies temporal features among the verb classes. They are whether it is progressing or developing (whether it is dynamic or has stages), whether an event type has a natural stopping point (telicity), and whether it holds for an interval (continuous tense). Smith brings in Semelfactives to the existing four verb classes and she terms Vendler’s verb classes as ‘situation types’.

Smith (1997) uses the temporal features of dynamism, telicity, and duration to distinguish the basic-level situation types. All of the situation types are distinguishable with three two-valued semantic properties, namely static/dynamic, telic/atelic, and durative/instantaneous. Dynamism distinguishes events from States, telicity distinguishes
Accomplishments and Achievements from Activities and Semelfactives, and duration is only found in Activities, Accomplishments and States.

Dynamism means that “events consist of successive stages which occur at different moments” (Smith 1997: 19). Due to the lack of such feature, a state consists of “a single, undifferentiated, static period” (Smith 1997: 19). In contrast, dynamic durative situation types own successive stages that take up time and are circumvented by the initial endpoint and the final endpoint, such as Activities and Accomplishments.

Telicity concerns whether an event results in a change of state which constitutes the outcome, or goal of the event. A telic event is said to have a natural final endpoint (Smith 1997: 19). Accomplishments and Achievements are telic events while States, Activities and Semelfactives are atelic.

Duration is a semantic feature that distinguishes the length of an event, from an instant to a perceptible interval of time. Activities and Accomplishments are grouped together as durative while Achievements and Semelfactives are instantaneous events. Duration also holds of States.

The three features, dynamism, telicity and duration, are mapped to situation types, as Table 3 shows.

**Table 3 Temporal Features of the Situation Types (Smith 1997: 20)**

<table>
<thead>
<tr>
<th></th>
<th>Static</th>
<th>Durative</th>
<th>Telic</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Activity</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Accomplishment</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Semelfactive</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Achievement</td>
<td>-</td>
<td>63</td>
<td>+</td>
</tr>
</tbody>
</table>
As Smith (1997: 32) states, States consist of an undifferentiated period without internal structure. They have the features of static and durative. Possessing something like own the farm and physical features like height be tall are among the typical examples of States.

State predicates come in two levels, individual or stage. According to Carlson (1977), individual-level predicates denote relatively stable properties, such as be extinct while stage-level predicates denote transitory properties like be angry.

States include the concrete and abstract properties of all kinds, possession, location, mental states and habits, etc. (Smith 1997: 32). For example, habituals present stable properties, like (91), where a state of consuming mice holds consistently over an interval.

(91) My cat eats mice frequently. (Smith 1997: 34)

The habitual interpretation is not only found in present tense sentences. The information in the sentence can shift other types of situation or non-present tense to a habitual State. In (92) there is an individual nominal and a quantized object but the habitual adverbial every afternoon makes the Accomplishment a habitual. In (93) the habitual is caused by the interval of summer season. Moreover, world knowledge informs that getting up normally occurs every day.

(92) Every afternoon John ate an apple.

(93) Eva got up at noon last summer. (Smith 1997: 35)
According to Smith, Activities consist entirely in the process; they terminate or stop but do not finish, thus lacking a natural final endpoint. The process is of considerable length, not a vanishingly small interval (Smith 1997: 23). Activities have the temporal features of dynamic, atelic and durative. The strolling in *stroll in the park* has an arbitrary final endpoint, and the notion of completion is irrelevant to the process of strolling.

The homogenous nature of Activities is shown by the test of imperfective and perfective sentences (Smith 1997: 25). If (94a) is true during interval I, the corresponding perfective (5b) is true; (94a) entails (94b).

(94) a. The kitten was chasing its tail.
    b. The kitten chased its tail. (Smith 1997: 25)

Multiple-event Activities are an important class of derived Activities. Their internal stages consist of sub-events. In (95), there is a single event consisting of a series of feeding.

(95) We fed the puppy for an hour. (Smith 1997: 24)

Accomplishments, in Smith’s definition, consist of a process and an outcome, or change of state. The outcome is the completion of the process (Smith 1997: 26). Accomplishments have the temporal features of dynamic, telic and durative. For example, in *drink a glass of*
wine there are successive stages in which the process advances to its natural final endpoint, a
new state coming out as a result, i.e. the glass is empty.

The notion of non-detachability is embodied in the relation between the process and the
outcome (Smith 1997: 26). That is, if an outcome is reached, the process must have occurred.
Therefore the perfective Accomplishment entails its imperfective version. In (96), if (96a) is
ture then (96b) is true. This entailment pattern is not necessarily true the other way since not
all Accomplishments are completed, i.e. (96b) may not entail (96a). For example, Smith
remarks that in the middle of crossing the street Mary may decide to stroll down the center, or
she may be hit by a truck and never complete the crossing. In this case, Mary was crossing
the street but it was not true that Mary crossed the street.

(96) a. John built a cabin last summer.
    b. John was building a cabin last summer. (Smith 1997: 29)

Semelfactives are single-stage events with no result or outcome (Smith 1997: 29). They
have the features of dynamic, atelic, and instantaneous. For example, in flap a wing the
flapping is conceptualized as instantaneous occurrence.

Smith (1997) argues that Semelfactives include bodily events such as blink, cough,
internal events like the light flicker, or actions tap, pound on the table. These situations often
occur in repetitive sequences, leading to multiple-event Activities (Smith 1997: 30). This
reading is triggered by the imperfective or durative adverbials. In (97) the imperfective suffix
shifts the Semelfactive into an Activity; the same goes to (98) where the coughing is made durative because of the adverbial for an hour.

(97) Mary was coughing.

(98) Mary coughed for an hour. (Smith 1997: 30)

Achievements are instantaneous events that result in a change of state (Smith 1997: 30). Achievements have the features of dynamic, telic, and instantaneous. In recognize Aunt Jane, the recognition is a single-state event, detached from any associated process. Preliminary or resultant stages may be associated but not considered part of it (Smith 1997: 30). For example, arrive in Boston is an Achievement, which is likely to have preliminary stages like spending time flying to the city and likewise to have a resultant state, such as staying there for a few days.

4.3 A Review of Tai (1984)

Tai (1984) identifies essential characteristics of the temporal structure underlying the Chinese verb system with reference to Vendler’s (1967) four verb classes. He argues that Chinese exhibits three categories of verbs pertaining to the notion of time: States, Activities, and Results (Tai 1984: 294). Tai’s argument is summarized as follows.

As Tai (1984: 289) states in the beginning that he wishes ‘to focus on differences rather than similarities between Chinese and English,’ he focuses mostly on the distinction between
the Accomplishment/Achievement in English and his new category, Result, in Chinese, and pays little attention to States and Activities, of which he does not give any redefinition. Tai indicates that States in Chinese can co-occur with a degree adverb such as *hen ‘very’ and cannot occur in the progressive tense. After noting Vendler’s (1967) finding that the notion of time is neither unique nor definite in States and Activities, Tai devotes the rest of the paper to distinguishing Results in Chinese from Accomplishments and Achievements in English.

Tai (1984: 292) argues that the Accomplishment verb in Chinese is actually an Activity plus a Result, which has the form of resultative verb compound (henceforth RVC). An RVC in Chinese has two parts, the first indicating a presupposed Activity and the second an asserted Result (Tai 1984: 295). For example, the Activity verb *study and the Accomplishment verb *learn are represented in Chinese as *xue and *xue-hui respectively, the latter of which is an RVC with *xue denoting action and *hui result.

Tai further points out that Chinese RVCs and English Accomplishments are ‘different in a fundamental manner’. While an Accomplishment has both action and result aspects, an RVC has only the result aspect (Tai 1984: 292), as evidenced with the following examples. In (99a) the Accomplishment is compatible with the progressive whereas (99b) shows the Chinese RVC cannot occur with the progressive.

(99) a. I am learning Chinese.
       I PROG study-understand Chinese
       ‘I am learning Chinese.’ (Tai 1984: 292)
In (100a), the adverbial *almost* in English scopes over either the action or the result. Thus it is ambiguous between two readings; the first is that John has not even started the learning process (the action reading) while the other (the result reading) is that John is in the middle of the learning but hasn’t yet completed the learning process. The Chinese counterpart in (100b), however, has only the result reading. Similarly, while the negative scope in (101a) is ambiguous with both action and result interpretations, it has only the result interpretation in (101b), where the learner has started the learning but fails to master this language.

(100)  
\begin{align*}
\text{a. } & \text{John almost learned Chinese.} \\
\text{b. } & \text{Zhangsan jihu xue-hui-le zhongwen.} \\
& \text{Zhangsan almost study-understand-PFV Chinese} \\
& \text{‘Zhangsan almost learned Chinese.’ (Tai 1984: 292-293)}
\end{align*}

(101)  
\begin{align*}
\text{a. } & \text{John didn't learn Chinese.} \\
\text{b. } & \text{Zhangsan mei xue-hui zhongwen.} \\
& \text{Zhangsan NEG study-understand Chinese} \\
& \text{‘Zhangsan didn’t learn Chinese (but he studied it).’ (Tai 1984: 293)}
\end{align*}

Tai (1984) therefore concludes that Chinese does not have the category of Accomplishment verbs. Instead of a corresponding category, Chinese shows this situation in the form of RVC, an Activity plus a resultative state.

Regarding Achievements, Tai finds that Achievement verbs are realized in Chinese in the form of an RVC or a simple verb. For instance, ‘to find’ is *zhao-dao* ‘seek-reach’, ‘to see’ is *kanjian* ‘look-for-perceive’. A simple Achievement verb must co-occur with the inchoative aspect marker –*le*. For example,
Tai identifies this category of resultative state (Accomplishment and Achievement in English) as Result, which has a definite point of time corresponding to the ending point of an event, in contrast with States and Activities. More importantly, the Result looks backward from the ending point (Tai 1984: 294). In short, Tai proposes that Chinese exhibits three categories of verbs: States, Activities, and Results.

I will follow Tai’s (1984) categorization in the analysis of *cengjing’s* and *yijing’s* compatibility with different situation types. He (1992), based on Tai’s categorization, provides a finer distinction within each category. Some of the examples in the following are taken from He (1992), with references noted.

### 4.4 The Similarity and Difference between Smith (1997) and Tai (1984)

Since Tai (1984) does not argue against Vendler’s (1967) verb classes of States and Activities occurring in Chinese, I infer that Tai agrees with Smith’s (1997) view on the situation types of States and Activities, which are inspired by Vendler (1967). According to Smith (1997: 32), States have the temporal features of static and durative and consist of an undifferentiated period without internal structure while Activities have the temporal features of dynamic, atelic and durative and consist entirely in the process.
What Tai (1984) and Smith (1997) diverge is the way to view Accomplishments and Achievements. According to Tai, a Chinese resultative simple verb is equivalent to an English Achievement whereas a Chinese resultative verb compound may find its English counterpart in Accomplishment or in Achievement. Tai considers both resultative simple verbs and RVCs belong to one single category, Result. One significant difference of the Chinese Result from the English Accomplishment or Achievement is that it looks backward from the ending point (Tai 1984: 294) of a situation, in contrast to the English Accomplishment looking from the initial point of a situation.

Tai (1984), apparently proposed earlier than Smith (1997), does not address the Semelfactive, which Smith identifies as an independent situation type. Though the Semelfactive differs from the Activity in the length of duration or from the Result in telicity, its compatibility with cengjing/yijing is just like an Activity. Therefore, I will incorporate cases of Semelfactives in the section of Activities below.

4.5 Cengjing and Situation types

This section discusses the compatibility of cengjing with various sentences of the three situation types proposed by Tai (1984) — States, Activities, and Results.
4.5.1 *Cengjing* and States

States do not involve changes. I will bring to the discussion He’s (1992) subtypes of States — absolute states, non‐absolute states, existential states, and habituals.

He finds that some state situations can be modified by degree adverbs like *hen* as shown in (103a) while others can not, such as (103b). The situation that can not take degree adverbs is an absolute state; on the other hand, situations that can occur with degree adverbs or other intensifying complements are non‐absolute states (He 1992: 138).

(103)  
a. Yi jia yi dengyu er.  
one plus one equal two  
‘One plus one equals two.’

b. *Yi jia yi hen dengyu er.*  
one plus one very equal two  
*‘One plus one equals two very much.’* (He 1992: 138)

He classifies non‐absolute states into permanent and temporary state situations. Permanent situations generally concern the lasting quality of the subjects whereas temporary situations are more descriptive in nature to indicate the temporary condition of the subjects (He 1992: 144). In (104) the height and body shape are expected to hold for a long period, in comparison to the mood status situation in (105), possibly lasting only for a few hours.

(104)  
Ta you gao you zhuang.  
he and tall and strong  
‘He is tall and strong.’

(105)  
Ta xinqing diluo.
He mood low.
‘He is in a bad mood.’

*Cengjing* is not compatible with absolute situations because those situations always hold true, regardless of time. The mathematical equation confined to past time in (106) does not match the reality in the world, thus anomalous. On the other hand, non-absolute situations are open to temporal measurement; among the subtype, both permanent and temporary situations can be restricted to the past. When (107) and (108) are cast into the past, the distinction of permanent/temporary is less striking since both of them are viewed as past at the speech time (S).

(106) #Yi jia yi cengjing dengyu er.
one plus one CENGJING equal two
#‘One plus one used to equal two.’
(107) Ta cengjing you gao you zhuang.
he CENGJING and tall and strong
‘He used to be tall and strong.’
(108) Ta cengjing xinqing diluo.
He CENGJING mood low.
‘He was once in a bad mood.’

He’s (1992) third subtype of state is existential states. They are static due to a particular group of state verbs suffixed by *zhe*. The state verb is preceded by expressions denoting place and followed by the predicates indicating the existence of a person or a thing (He 1992: 149). For example, the state verb in (109) is *tang* ‘lie’, with the bed as the place and a patient as the person. The durative *zhe* presents a state situation of no change. This sentence presents the
posture and existence of a person at a particular place. It does not allude to other actions that cause this existence.

(109) Chuang shang tang-zhe yi-ge bingren.
      bed top lie-DUR one-CL patient
      ‘On the bed lies a patient.’ (He 1992: 150)

He (1992) does not mention *you* ‘have/exist’, which can be used to express existence as well. For example, the state verb in (109) can be replaced by *you*, like (110).

(110) Chuang shang *you* yi-ge bingren.
      bed top exist one-CL patient
      ‘There is a patient on the bed.’

The existential state is compatible with *cengjing*. In (111), the reclining position is made temporary from the perspective of S, and accommodates a past time induced by *cengjing*.

(111) Chuang shang cengjing tang-zhe yi-ge bingren.
      bed top CENGJING lie-DUR one-CL patient
      ‘On the bed once lay a patient.’

He’s last subtype of state is the habitual. In (112), the situation of taking a shower has iterative meaning because of *meitian* ‘every day,’ a frequency adverb. (113) shows that an Achievement is converted to a State by *changchang*. Both of them come from other situation types, Activity and Result respectively, and are shifted to a habitual situation because of frequency adverbs.
Cengjing is compatible with the habitual, leading to a situation of past habits. For example, (114) describes a habitual activity in the past.

\[
(114) \quad \text{Ta cengjing meitian zaoshang xizao.} \quad \text{he CENGJING everyday morning take.a.shower} \quad \text{‘He used to take a shower every morning.’}
\]

### 4.5.2 Cengjing and Activities

Activities are processes that involve physical or mental activity, and consist entirely in the process. They can last for an undefined period of time without a natural ending point (Smith 1997). Semelfactives are like Activities in that they are dynamic and atelic (Smith 1997) and their interactions with cengjing are also alike. Hence, in this section, the compatibility between cengjing and Activities is discussed and cases of Semelfactives are also incorporated.

Smith (1997) finds that the form of an Activity in Mandarin is composed of intransitive activity verbs or transitive verbs with generic objects. For example, in (115) the object of *kan* ‘read’ has a generic reference, thus an activity situation as well.
Since Activity has no inherent terminal point, a postverbal duration expression helps fixate the length of a certain Activity. In (116) the book-reading has the duration of one hour.

(116)  Ta kan shu kan le yi-ge xiaoshi.
he read book read PFV one-CL hour
‘He did book-reading for an hour.’ (He 1992: 171)

Activity is compatible with cengjing, which makes an Activity a past event, as in (117). When the Activities come in the progressive aspect, cengjing is able to scope over it as well, like (118).

(117)  Ta cengjing kan shu kan le yi-ge xiaoshi.
he CENGJING read book read PFV one-CL hour
‘There was a time he did book-reading for an hour.’
(118)  Duo nian qian de mou-ge wuye ta cengjing hen
many year before DE some-CL midnight he CENGJING very
xingfen-de zai tiaowu.
excitedly PROG dance
‘In a midnight years ago he was dancing with much excitement.’

For a Semelfactive, it behaves in the same way as an Activity. The coughing situation is set in the past, like (119).

(119)  Wo cengjing kesou ke-le san tian.
I CENGJING cough cough-LE three day
‘I coughed for three days before.’

4.5.3 Cengjing and Results

Results are a prolific situation type in Mandarin; in fact, Accomplishments and Achievements in English can find a relevant match in the type of Result. They are grouped together in Mandarin because all of them show focus on the change of a situation. They are incompatible with the progressive aspect and are obligatorily suffixed with the aspect marker _le_ in affirmative sentences (He 1992: 189). (120a) does not make semantic sense in that the arrival situation can not be ongoing; (120b) is ungrammatical because the meaning of this sentence is incomplete.

(120)  a. *Wo zai dao meiguo.
   I PROG arrive America
   ‘I am arriving in the US.’

  b. *Wo dao meiguo.
   I arrive America
   ‘I arrive in the US.’

Results are commonly presented in the form of the resultative verb compound (RVC). In _ku-hong_ ‘cry-red’ the resultant state is someone with red eyes and the manner in which the resultant state is achieved is expressed by the preceding activity verb, _ku_ ‘cry’. In (121), _kan-dong_ ‘read-realize’ _dong_ ‘realize’ is a result after the activity of reading.

(121)  Ta kan dong le na-ge xiaohua.
   he see realize PFV that-CL joke
There is a great deal of variation among the Result situations. For instance, despite a result coming about in the following two examples, (122) does not give the information of the manner in which the result is attained whereas (123) does. In (122) the arrival situation takes place with unknown manner whereas (123) shows the situation is completed in the manner of running.

(122) Wo dao meiguo le.
I arrive America PFV
‘I arrived in the US.’

(123) Wo pao wan malasong le.
I run done marathon PFV
‘I finished the marathon.’

The inchoative le creates Result as well. For instance, in (124) the inchoative le, marking initiation, indicates the change into a fatter state.

(124) Ta pang le.
he fat PFV
‘He has gained weight.’ (He 1992: 197)

When cengjing is brought in, (125a) and (125b) are ungrammatical and this ungrammaticality reveals that the result brought out by Result situation, e.g. in the US territory, still holds at S. cengjing, however, requires not only the change-of-state but also the result be set in the past. In order to be grammatical, the experiential marker guo ensures the result, i.e. staying in the US, is in the past as well. All the relevant information is in the
past, as in (125c). The same goes to (126a) where the semantic clash occurs because the result of being fat holds at S. (126b), instead, is grammatical because of the experiential marker guo.

(125)  a. *Wo cengjing dao meigu.  
   I CENGJING arrive America  
   ‘I once arrived in the US.’
   b. *Wo cenging dao le meigu.  
    I CENGJING arrive PFV America  
    ‘I once arrived in the US.’
   c. Wo cengjing dao-guo meigu.  
    I CENGJING arrive-EXP America  
    ‘I once arrived in the US.’

(126)  a. *Ta cengjing pang le.  
   he CENGJING fat PFV  
   ‘He once gained weight.’
   b. Ta cengjing pang-guo.  
    he CENGJING fat-EXP  
    ‘He once gained weight.’

4.5.4 Summary

In conclusion, States are likely to be scoped over by cengjing, and they should not be available at S. We have seen compatibility between cengjing and non-absolute states, existential states, and habituals. The only situation against cengjing is absolute state, which holds true across time. Activities (with Semelfactives as a subtype) of properly delineated length are generally congruous with cengjing. Results are realized by verbs implying telic
situations, and the length may take an instant or an interval of time. The resultant state must not hold at S when Results co-occur with cengjing, preferably suffixed with guo.

4.6 Yijing and Situation types

This section will discuss the compatibility of yijing with each situation type. I will reuse some of the examples in the previous section to see their interaction with yijing.

4.6.1 Yijing and States

States do not involve changes. Similar to 4.4.1, the interaction between yijing and absolute states, non-absolute states, existential states, and habituals is discussed below.

Absolute states are at odds with yijing. Neither the relative past nor the scale analysis can reconcile yijing with absolute state. The relativity sense is contradictory to absoluteness. It is impossible to view a constant fact as past, as in (127).

(127) *Yi jia yi yijing dengyu er.
     one plus one YIJING equal two
     *‘One plus one equals two.’

For non-absolute states, as in (128), yijing serves as a modifier. The yijing is unlikely to take a relative past, perhaps a result of the atemporal nature of state situations. With the meaning of relative past deactivated, the scale analysis can explain what role yijing plays in
this sentence. (128) implies the crops are indeed green – the current shade is projected to hue ranges ordered by luminance.

(128) Zhuangjia yijing hen lu le.  
crop YIJING very green PFV
‘Crops were already very green.’

Existential states present the posture and existence of an entity at a particular place. It can adopt a relative past if there is a relevant R to serve as an anchor. In (129a) by the reference time, ten o’clock, the existential situation is viewed as past. In contrast, if the state holds at S, the possibility of relative past is excluded. Such a sentence is subject to various interpretations. The intuitive one would be to make a contrast between ‘not yet’ and ‘ongoing’ stage of this state. In (129b) the happening of this lying state is earlier than the speaker’s expectation.

(129) a. Shi-dian shi chuang shang yijing tang-zhe yi-ge ten-o’clock time bed top YIJING lie-DUR one-CL bingren. patient
‘At ten there is already a patient lying on the bed.’

b. Xiang bu dao chuang shang yijing tang-zhe yi-ge Think no to bed top YIJING lie-DUR one-CL bingren. patient
‘It is unexpected to see a patient already lying on the bed.’
The last one belonging to States is the habitual. Based on Reichenbach’s (1947) E-R analysis, habituels, whose E encompasses R, are apparently in conflict with the meaning of relative past. The scale interpretation might allow such combination, as in (130). The possible scenario could be a list of weight control plans, which is ranked according to intensity and effectiveness. The habit of regularly doing exercise is a plan more intense and effective than what was originally set.

(130)  Wo yijing dingqi yundong le.
       I YIJING regularly exercise PFV
       ‘I have been regularly doing exercise.’

4.6.2 Yijing and Activities

In this section, the compatibility between *yijing* and Activities and that between *yijing* and Semelfactives are discussed since Semelfactives are like Activities in that they are dynamic and atelic (Smith 1997), as mentioned above.

Compared to States, Activities are dynamic situations. In (131), a postverbal duration expression gives boundary to the Activity of reading and this event is seen as a relative past by *yijing*. Another interpretation of this sentence is that the one hour duration is longer than the speaker’s expectation, and the use of *yijing* notes the unexpected length of time.

(131)  Ta yijing kan shu kan le yi-ge xiaoshi.
       he YIJING read book read PFV one-CL hour
       ‘He already did book-reading for an hour.’ (He 1992: 171)
In (132), where relative past is not applicable, the context is a distance scale and the use of *yijing* means 26-thousand-kilometer of driving has reached the threshold of expected spatial length.

\[(132) \quad \text{Wode paoche yijing xingshi le erwanliuqian gongli.}
\]
\[
\text{my sports.car YIJING drive PFV 26,000 kilometer}
\]
\`
My sports car has run 26,000 kilometers.
```

Activities are atelic situations. Each of the internal stages is homogenous, so it is hard to find natural development within the situation. Expressions of time or distance are used to measure Activity situations, like reading and driving. As the examples show, *yijing* is only compatible with Activities with phrases of duration or distance.

For a Semelfactive, the situation of knocking the door is interpreted differently according to the context, just like an Activity. In (133a), the situation of knocking is viewed as relatively past to the reference time, *three o’clock*; in (133b), the knocking gesture is a stage more advanced than expected punctual arrival.

\[(133) \quad \begin{align*}
\text{a. San-dian shi wo yijing qiao men le.} \\
\text{three-o’clock time I YIJING knock door PFV}
\end{align*}
\]
\`
I have knocked the door by three o’clock.’
```

\[(133) \quad \begin{align*}
\text{b. Wo budan tizao dao ye yijing qiao men le.} \\
\text{I not.only earlier arrive also YIJING knock door PFV}
\end{align*}
\]
\`
‘Not only did I arrive earlier than expected, but I also knocked the door.’
4.6.3 Yijing and Results

Results in Mandarin feature the change of a situation. They are obligatorily suffixed with the aspect marker le in affirmative sentences (He 1992: 189). Some Results give information about previous stages that lead to this result while other Results are less explicit. As a relative past, yijing concerns the relation between E and R. In (134) and (135), the arrival and the completion of running marathon are considered past at R, presumably co-occurring with S, though the S is dependent on the context.

(134)  Wo yijing dao meiguo le.
       I YIJING arrive America PFV
       ‘I already arrived in the US.’

(135)  Wo yijing pao wan malasong le.
       I YIJING run done marathon PFV
       ‘I have finished the marathon.’

Smith (1991) specifies the inceptive achievement, constructed with inchoative le. This indicates a new situation. Yijing in (136) means the change of state has happened before R, the same as S, from unknown size to a body shape seen as fat.

(136)  Ta yijing pangle.
       he YIJING fat PFV
       ‘He has gained weight.’

Yijing, in combination with Results, can take both the meanings of relative past and scale. Appropriate contexts will naturally lead to each meaning. In (137a) the early arrival is
unexpected and *yijing* helps deliver the speaker’s lack of belief; in (137b) *yijing* means the arrival is viewed as relatively past to R, *tomorrow 4 pm.*

(137) a. Cai qifei mei duo jiu ta yijing dao meiguo just take off not much long he YIJING arrive America le?

   PFV
   ‘It just took off a moment ago, and he already arrived in the US?’

b. Mingtian xiawu shi-dian wo yijing dao
   Tomorrow afternoon four-o’clock I YIJING arrive meiguo le.

   America PFV
   ‘Tomorrow at 4 pm I will have arrived in the US.’

**4.6.4 Summary**

Among the variations of States, absolute states are incompatible with *yijing*, regardless of any context; non-absolute and habitual states are compatible with *yijing* under the scale analysis. Existential states, more event-like, can accommodate both relative past meaning and scale analysis. Activities, including Semelfactives, and Results belong to the dynamic situations; both can be seen as past event in proper context. The scale interpretation is however far more productive because of the diversity of situations. *Yijing* can serve to contrast the positive of a situation with the negative, which is originally expected; it can show a situation advances ahead of expected stages. Generally, there is a certain scale underlying the situation, and *yijing* marks the current situation as beyond a conceptual threshold on that scale.
4.7 Compatibility between Cengjing/Yijing and Situation Types: Summary

The compatibility of cengjing/yijing with different situation types is summarized in Table 4.

**Table 4 The Compatibility of Cengjing/Yijing with Situation Types**

<table>
<thead>
<tr>
<th>State</th>
<th>Cengjing</th>
<th>Yijing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Relative past</td>
<td>Scale analysis</td>
</tr>
<tr>
<td>Absolute</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Non-absolute</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>Existential</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Habitual</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>Activity</td>
<td>+ (with guo)</td>
<td>+</td>
</tr>
<tr>
<td>Result</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
Chapter Five

Conclusion

5.1 Summary of the Study

In the study, cengjing and yijing are under a rigorous examination. The review in Chapter Two goes through the most relevant and influential studies that have shaped how academics view these two expressions. The review discloses not only mistakes in understanding meanings of the two adverbs but a lack of thoroughly studying yijing as well. These insufficiencies are addressed in Chapter Three by incorporating Reichenbach’s (1947) three times and the scale analysis into examining the sentences in question. A variety of situation types are seen over the course of analysis, which paves the way to a detailed look at Chinese situation types in Chapter Four.

In this thesis, cengjing is shown to be an adverb marking past time, exhibiting an R-S order, and hence is able to co-occur with the progressive marker zai. The situation under the scope of cengjing is also shown to not hold at S, since the discontinuity nature of cengjing obligates E to precede S. As to yijing, it has been wrongly granted meanings that root from elsewhere in previous studies. In this thesis, yijing is shown to have two different meanings. First, it can be a relative past, showing the order of E-R. The other meaning is illustrated by
scale structure, where *yijing* marks a threshold of degree-relevant contexts. The disorganized meanings are thus linked to one another under scale analysis.

When *cengjing* and *yijing* are discussed with States, Activities and Results respectively, each pair shows different compatibility. Among the subtypes of States, both adverbs cannot accommodate absolute states; for the others, including non-absolute, existential and habitual states, *cengjing* creates a past time context whereas *yijing* can accommodate them under the scale analysis. Activities, including Semelfactives, are allowed to be scoped over when their duration is properly measured by extra expressions. Results are compatible with *cengjing* and *yijing*, though *cengjing* usually requires an experiential marker to ensure the resultative state is in the past as well. The most significant divergence between *cengjing* and *yijing* is whether a situation can hold at S: the value of a situation must be negative for *cengjing* while *yijing* depends on scale structure to explain the ongoing situation.

### 5.2 Limitations and Suggestions

Sufficient as this study may seem, I find alternative analysis and wider range of data over the course of producing the thesis but have yet utilized those ideas in my study.

Adopting Reichenbach (1947) as well as the scale structure in the analysis of *yijing* addresses the problems left in the previous works; however, the possibility of extending the scale analysis to temporal meanings of *cengjing* and *yijing* is an alternative, considering the principle of parsimony. As introduced in 3.3.1, the scale is arguably inherent in every aspect
of ontology. Further studies are suggested to investigate the potential threshold that might exist in time.

Due to the length of thesis, the range of examples representing each situation type is limited to typical examples, leaving aside other examples that may cause semantic anomalousness. The thesis is a starting point looking forward a more comprehensive and representative work in the discussion of Chinese situation types.
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