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台灣手語事件類型的語意及句法

The Semantics and Syntax of Eventuality Types in Taiwan Sign Language

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ABSTRACT

Based on the idea that eventuality types play an important role in linguistic analysis, this thesis focuses on three main issues. The first issue is concerned with the intertwined relationships between three temporal adverbials (i.e., *for*-adverbials, *in*-adverbials and *at*-adverbials) and eventuality types in Taiwan Sign Language (hereafter TSL), with the goal of finding out how these different temporal adverbials are expressed in TSL and how they associate with four eventuality types, including their distributions and semantic interpretations with different eventuality types.

The second issue is concerned with three syntactic properties (i.e., progressives, imperatives, and agentive adverbials) among eventuality types in TSL. The purpose of this issue is to find out how TSL expresses progressives, imperatives and agentive adverbials and their interrelationship with different eventuality types.

The last issue is concerned with degree and manner expressions in TSL. The degree expression includes the intensive degree, approximate degree and the degree of gradual change, while the manner expression includes the manner describing the fast motion, slow motion and the motion of gradual change. The result shows that these two different kinds of information can be encoded either by using lexical words, or by changing the movement of the verb itself. But the latter strategy is more frequently used.

Keywords: Taiwan Sign Language (TSL), eventuality types, semantics, syntax

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The expression of time is one of the most important notions in all languages of the world. In the temporal system, tense and aspect are the two basic grammatical categories. Both of them allow speakers to relate situation to time but in different ways. Tense allows a speaker to locate a situation relative to the time of speaking while aspects are different ways of viewing the internal temporal constituency of a situation (Comire 1976: 2). Examples (1a) and (1b) show a difference in tense (i.e., non-past tense vs. past tense). However, examples (2a) and (2b) show the contrast in grammatical aspect (i.e., non-progressive vs. progressive), even though both of them illustrate the past tense.

(1) a. He works.
    b. He worked.
(2) a. He wrote.
    b. He was writing.

Grammatical aspect is also known as Viewpoint Aspect (Smith 1997:5), which means the choice between non-progressive and progressive, as in (2a) and (2b), reflects a speaker's viewpoint of a situation. Although a verb can show different grammatical aspects, its lexical aspect is always the same. For instance, no matter the verb *write* in (2a) or (2b), it consists of an intrinsic duration. A different predicate such as *write a letter* has both the intrinsic duration (e.g., the writing of the

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letter) and the endpoint (e.g., the completion of the letter). In other words, lexical aspect refers to the inherent temporal structures or characteristics of verbs or verb phrases (Bardovi-Harlig & Reynolds 1995: 107). In the literature, the study about this is known as event structure. But the terms for the internal structure of events vary according to different authors. For example, Aktionsart (Hinrichs 1985; Van Valin 1990), aspectual classes (Dowty 1972, 1979), eventuality types (Bach 1981, 1986), situation aspect (Smith 1997), proposition types (Bennett 2002) or eventuality classes (Chang 2001). This thesis will use *eventuality types* to refer to different event structures or situation types.

Eventuality types play an important role in linguistic analysis because a great number of grammatical phenomena make reference to its properties. Many linguistic phenomena are accounted by the eventuality types; for example, issues about the syntactic properties (e.g., progressive, imperative or as complements of *persuade*) of an eventuality (Dowty 1979; Tai 1984; Tenny 1987; Smith 1997; He 1992; Chang 2001, among others), the diversity between resultative verb constructions (RVC) in English and Chinese (Chang 2001), the language acquisition of tense and aspect (Bardovi-Harlig and Reynolds 1995) or the learning difficulties of ESL students in Taiwan (Li 2004), etc. are all related to eventuality types. In other words, the study of eventuality types can not only describe different grammatical phenomena of a language but also reveal the essential importance of a language. Therefore, this thesis will investigate the semantics and syntax of eventuality types by looking at Taiwan Sign Language (hereafter TSL).

Before introducing TSL, it is important to know that one apparent difference between signed languages and spoken languages is their mechanisms to produce and

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perceive information. That is, signed languages use visual-gestural modality while spoken languages use auditory-vocal modality (Stokoe 1960; Stokoe, Casterline, and Croneberg 1965; McBurney 2002; Meier 2002).[1] More and more researches have shown that signed languages and spoken languages have many things in common, both involving complex grammatical structures to encode the relationship between form and meaning (Fisher and Siple 1990, 1991; Emmorey 1996; Liddell 2003; Chang, Su and Tai 2005). In Taiwan, TSL, also known as *ziran shouyu* 'natural sign language', is the primary language of approximately 110,000 deaf and hearing-impaired citizens (Chang, Su and Tai 2005).

As Smith (1989:1) points out, TSL originates from the dialects of Japanese Sign Language and it has two mutually intelligible dialectal forms: TSL of Taipei and TSL of Tainan. Both of them mainly differ in lexicon, e.g., CAR, WINE, WHAT, etc. and the grammatical structure for these two dialects is basically the same (Chang, Su and Tai 2005).[2] Sign Chinese, which is also known as *wenfa shouyu* 'grammatical sign language', is another signed language created for the instructional purpose in schools for deaf citizens in Taiwan (Smith 1989:1). The difference between Sign Chinese and TSL is that the grammatical system of Sign Chinese is the same as Chinese whereas TSL has its own lexicon and a systematical grammar.[3]

After the brief introduction, this chapter proceeds as follows: Section 1.2 introduces four basic eventuality types and each of their syntactic and semantic properties; Section 1.3 illustrates three major issues of this thesis. Finally, Section 1.4 provides the organization of this thesis.

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[1] According to Meier (2002), the word 'modality' here is the means by which language is produced and perceived.
[2] Words in capital letters represent each single TSL sign.
[3] Throughout this thesis, the term 'Chinese' refers to Mandarin Chinese.

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1.2 The background of eventuality types

Vendler (1967) categorizes English verbs into four classes (also called Vendler Classes) according to their internal temporal properties. They are states, activities, accomplishments and achievements. The definitions and the examples of each category are given below:

(3) State: non-actions that hold for some period of time but lack continuous tenses.
   a. John knows the answer.
   b. John believes in ghosts.

(4) Activity: events that go on for a time, but do not necessarily terminate at any given point.
   a. John walked for an hour.
   b. John plays computer games everyday.

(5) Accomplishment: events that proceed toward a logically necessary terminus.
   a. John walked to school yesterday.
   b. John painted a picture yesterday.

(6) Achievement: events that occur at a single moment, and therefore lack continuous tenses.
   a. John found his watch last night.
   b. John won the race.

States and activities are regarded as atelic eventualities while accomplishments and achievements are regarded as telic eventualities (Garey 1957; Dowty 1991; Frawley 1992; among others). Telic eventualities have a change of state, which constitutes the outcome, or goal, of the eventuality. When the goal is reached, a change state occurs and the eventuality is complete (Garey 1957:106). Atelic eventualities, on the other hand, do not involve these properties. As in the

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sentences *he walked* and *he walked to school*, the first one that describes an activity eventuality does not entail the completion (or endpoint) of the action *walking* but the second one that describes an accomplishment eventuality does. There are a number of terminologies to illustrate the notion of telic/atleic (Garey 1957). For example, conclusive/nonconclusive (Jespersen 1924), bounded/unbounded (Allen 1966), delimited/non-delimited (Tenny 1987, 1994), change of state/activity (Dowty 1979), quantized/cumulative (Krifka 1986), accomplishment/activity (Vendler 1967), terminative/aterminative (Maslov 1959), performance/activity (Mourelatos 1978). In this thesis, we use telic/atelic to denote the eventualities with/without a terminal endpoint.

Telic and atelic eventualities can be distinguished through the test of temporal adverbials, including *for*-adverbials, *in*-adverbials and *at*-adverbials (Tenny 1994; Dowty 1979; Smith 1997; among others). *For*-adverbials such as *for an hour*, also known as durative adverbials (Smith 1997; Chang 2001), express the duration of an eventuality or situation maintains. *In*-adverbials such as *in an hour*, also known as completive adverbials (Smith 1997), interval adverbials (Krifka 1998) or frame adverbials (Bennett and Partee 1978), express a time interval or frame which an eventuality takes. As for *at*-adverbials such as *at 10 o'clock*, they express the time-point of the happening of an eventuality or situation. Generally, atelic eventualities (i.e., states and activities) are able to take *for*-adverbials but not *in*-adverbials and *at*-adverbials. Conversely, telic eventualities (i.e., accomplishments and achievements) are able to take *in*-adverbials and *at*-adverbials but not *for*-adverbials. More discussion about this will be given in Chapter 2.

States such as *know the answer* or *believe in ghosts* consist of an

undifferentiated period without internal structure. They internally uniform, in marked contrast to the other eventuality types; thus, when a state holds for a certain period of time, the whole schema is true every moment (Vendler 1967). In addition, states are atelic because they don't show any intrinsic endpoint. Therefore, they cannot occur with *in*-adverbials and *at*-adverbials, as shown in (7a) and (7b) but they can occur with *for*-adverbials, as shown in (7c). The *for*-adverbial in example (7c) indicates the duration of the state expression *know the answer* (Chang 2001:36).

(7) a. *Mary knew the answer in two hours.
b. * Mary knew the answer at 10 o'clock.
c. Mary knew the answer for two hours and then forgot.

Besides, states are not dynamic, which means they don't describe something with motion or something that happens such as *run* or *build a house*. Instead, they are stative and they obtain, hold or exist for a certain period of time.[4] Thus, they don't occur in the progressive, as in (8a). Moreover, Binnick (1991:187) points out that states are largely involitional and involuntary. Therefore, they cannot be agentive and consequently any structure presupposing agency, for example, the imperative or the modification of agentive adverbials are excluded, as shown in (8b) and (8c).

(8) a. *Mr. Lee is believing in ghosts.
b. *Believe in ghosts.
c. *Mr. Lee deliberately believes in ghosts.

[4] In the literature, the distinction between static and dynamic is fundamental and bifurcates situation types into the classes of states and events: states are static, events are dynamic (Smith 1997:19). This distinction is also made using the terms statives and non-statives (Binnick 1991:173; Lakoff 1970).

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Pustejovsky (1995:15), following Carlson (1977) and Kratzer (1989), distinguishes two kinds of states: individual-level states and stage-level states (see Chang 2001:88; Yeh 1993; Zhong 2001). The examples of these two kinds of states are given below:

Individual-level state	**Stage-level state**
smart	tired
stupid	angry
arrogant	sore
brave	hungry
beautiful	noisy

Individual-level states such as *smart* or *beautiful* are usually thought of as one individual's property throughout its lifetime and thus it is also known as permanent states. On the other hand, stage-level states such as *tired* or *hungry* are also known as temporal or transient states. They describe the temporal properties or situations that might change through time (Pustejovsky 1995: 15). As pointed out by Smith (1997), Yeh (1993) and Chang (2001; 2003), these two types of states differ from other eventuality types such activities, accomplishments and achievements in that they can take degree adverbials such as *hen/feichang* 'very' while other eventuality types cannot, as demonstrated in (9) and (10).[5]

[5] He's (1992:135-159) categorization about states includes several classes, such as absolute states, non-absolute states, existential states, habitual states and mental states. The non-absolute states express the classes of both stage-level states and individual-level states.

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(9) a. Stage-level state

Ta xianzai he/feichang e.

He now very hungry

'He is very hungry now.'

b. Individual-level state

Ta he/feichang haoke.

He very hospitable

'He is very hospitable.'

(10) a. Activity

*Ta hen/feichang pao.[6]

He very run

b. Accomplishment

*Ta hen/feichang xie yi feng xin.

He very write one Cl. letter[7]

c. Achievement

*Ta hen/feichang si.

He very die

(Chang 2001:89-90; 2003:98-99)

Activities refer to processes that include a physical activity such as *run* or a mental activity such as *think about* (Smith 1997:23). Like states, activities are also atelic eventualities because they do not contain an inherent endpoint; therefore, they are unable to co-occur with *in*-adverbials and *at*-adverbials, as shown in (11a) and

[6] Example (10a) is acceptable when it is added by the auxiliary word *hui* 'can' as it shows in (i). However, the grammaticality of this sentence doesn't indicate that activities can take degree adverbials such as *hen* 'very'. In example (i), the word *hui* 'can' expresses the ability of the given activity *run*. As a result, the word *hui* 'can' can occur with the degree adverbial *hen* 'very' to describe the degree of an individual's ability.

(i) Ta hen hui pao.
He very can run
'He is good at running.'

[7] CL stands for classifiers in Chinese.

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(11b) respectively. Conversely, they are able to co-occur with *for*-adverbials, indicating the duration of the activities, as shown in (11c).

(11) a. *John drove a car in an hour.
b. *John ran at 9.30.
c. John ran for an hour.

Unlike states, activities are dynamic. Therefore, they can occur in the progressive, as an imperative, and co-occur with agentive adverbials, as shown in (12).

(12) a. The girl is singing.
b. Sing!
c. The girl carefully sang.

Accomplishments such as *walk to the park* and *draw a picture* consist of an activity and a state/change of state (Grimshaw 1990), an activity and an achievement/a goal (Foley and Van Valin 1984) or a process and an outcome/change of state (Smith 1990, 1997). This shows that an accomplishment comprises two sub-events and they are also known as complex eventualities (Chang 2001:48). Besides, it is stated that the relationship between the process and the outcome of an accomplishment is non-detachability, which means that conceptually the preceding activity cannot be detached from the eventuality (Dowty 1977; Vlach 1981; Smith 1997). For example, any point of the accomplishment *she baked a cake* does not count as an instance of the whole. In other words, no subpart of *bake a cake* can actually be termed *bake a cake*. This concept is also illustrated by saying that accomplishments do not consist of a sequence of homogeneous stages (Vendler

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1967:101; Bennett 2002:41). Example (13) occurs in the progressive and it does not imply the pie has been made by Andy.

(13) Andy is making a pie.

Besides, accomplishments are telic. They have successive stages in which the activity advances to its inherent endpoint (Smith 1997:26). Therefore, they can co-occur with *in*-adverbials as well as *at*-adverbials. However, they cannot co-occur with *for*-adverbials to indicate the duration of the activity as activity eventualities do. Example (14) illustrates these points.

(14) a. Andy made a pie in an hour.
b. Andy made a pie at 4 o'clock.
c. *Andy made a pie for an hour.

When accomplishments co-occur with *in*-adverbials as in (14a), they indicate the time interval before the change of state occurs (e.g., the pie was made). When accomplishments co-occur with *at*-adverbials as in (14b), they indicate the time-point of the change of state. As Chang (2001:39) has suggested, examples like (14a) and (14b) express the notion that the state has been changed, so they are said to have a *conclusive reading*. The term *conclusive*, also known as *eggressive*, is used to express the notion 'to finish doing' (Trask 1993:54).

Moreover, accomplishments are dynamic as activities. Therefore, they can appear in the progressive, as example (15a) shows. Aside form this, they also can occur as imperatives and with agentive adverbials, as shown in (15b) and (15c).

(15) a. John is walking to school now.
b. Make a pie!
c. Andy carefully made a pie.

Achievements such as *arrive in Taipei* and *lose the game* are instantaneous events that result in a change of state. It has been pointed out that an achievement is possibly preceded by some activities (Binnick 1991: 195; Smith 1997: 31). For example, *winning a running race* is preceded by *running hard* or *finding the watch* is preceded by *searching for it*. Although an activity may be implied in the achievement, it is conceptually detached from the eventuality. Achievements are telic eventualities; therefore, like accomplishments, they can co-occur with *in*-adverbials and *at*-adverbials, indicating the conclusive reading, as shown in examples (16a) and (16b). Because achievements do not contain the property of duration, they cannot take *for*-adverbials to express the duration of the eventuality, as in (16c).

(16) a. He found the cat in an hour.
b. He found the cat at 10 o'clock.
c. *He found the cat for an hour.

However, unlike activities and accomplishments, achievements cannot occur in the progressive, as imperatives, nor can they occur with agentive adverbials such as *carefully*. Examples in (17) illustrate these. The reason that achievements cannot occur as imperatives or with agentive adverbials is the same as the case in state eventualities. That is achievement expressions like *find* is involitional.[8] In other

[8] Smith (1997:31) points out we still can find achievement expression allow agent-oriented adverbials such as *John deliberately missed the target* or *John deliberately hit the new window*. However, this

words, they cannot be controlled by an agent. One can look for the cat and he might find it, but you cannot control the happening of *finding the cat* (Ryle 1947:149). Consequently, any syntactic properties related to agency will be improper if they occur in achievements.

(17) a. *He is finding the cat.
b. *Find the cat!
c. *He is finding the cat carefully.

1.3 The main issues of the thesis

There are three major issues in this thesis and each issue involves several sub-issues. The first issue is about the temporal adverbials and eventuality types in TSL. As I have discussed in Section 1.2, telic and atelic eventualities can be distinguished through three kinds of temporal adverbials: *For*-adverbials, *in*-adverbials and *at*-adverbials. Generally, telic eventualities (e.g., accomplishments and achievements) can occur with *in*-adverbials and *at*-adverbials, indicating the conclusive reading. Atelic eventualities, on the other hand, can only occur with *for*-adverbials, indicating the duration of the given eventuality types. In English, these three temporal adverbials are expressed through prepositional phrases (e.g., *for an hour*, *in an hour* and *at 10 o'clock*), which usually appear at the end of the sentence. However, the association between temporal adverbials and TSL eventuality types seems not entirely the same as English. It is observed that activities, though are atelic eventualities, are also able to appear with *at*-adverbials, as

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does not mean that achievements can co-occur with agentive adverbials. Most examples reveal the oddness when achievements occur with agentive adverbials (see Binnick 1991:173-177; Chang 2001: 33-44). These two sentences above can only occur under the assumption that John is a good shot.

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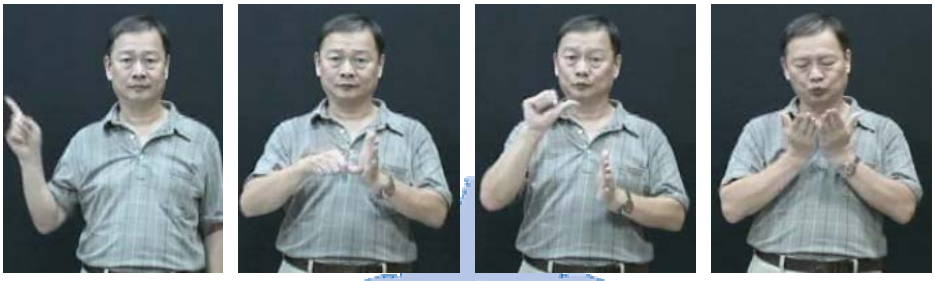
shown in (18). The co-occurrence of activities and *at*-adverbials denote the starting point of the activity, meaning *He began to read at 5 o'clock*. In literature, this kind of reading is called inceptive reading (Chang 2001: 35). The term inceptive, also known as inchoative or ingressive, is an aspectual form expressing the beginning of a state or activity (Bybee 1985: 147-148; Trask 1993: 137).

(18) PRO TIME (A) FIVE READ.[9]
'He began to read at 5 o'clock.'



a. PRO b. TIME (A) c. FIVE d. READ

Figure 1.1

In example (18), it is also shown that the *at*-adverbial in TSL is formed by two nouns: One is the noun TIME and the other is the noun referring to the number indicating the time. This *at*-adverbial does not appear at the end of the sentence. It is always located before the verb phrase, namely, in the preverbal position.

There are two important questions associated with the current discussion. First, how are the adverbials such as *for an hour*, *in an hour* and *at 5 o'clock* expressed in TSL? Second, how do these three kinds of temporal adverbials associate with different eventuality types in TSL and what kind of meaning does each

[9] Following Liddell (2003), I use PRO-1 for the first person singular pronoun and PRO for the non-first person singular pronoun in the glosses. Besides, there are three forms indicating the meaning *time* in TSL; thus, they are marked TIME (A), TIME (B) and TIME (C). More discussion about this is provided in Chapter 2.

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indicate in the eventuality that it occurs?

The second issue is about three syntactic properties among eventuality types in TSL. These three syntactic properties are progressives, imperatives and agentive adverbials. The previous discussion on English has shown that within four eventuality types, only activities and accomplishments can occur in the progressive, as imperatives and with agentive adverbials. Similar to the goal of the first issue, the second issue of this thesis will investigate (a) how TSL expresses the progressives, the imperatives and agentive adverbials in the eventuality types and (b) how these three syntactic properties associate with eventuality types in TSL.

The last issue aims at the manner and degree expression in TSL. An eventuality usually involves other information except the eventuality itself. For example, *He runs everyday* involves the time information *everyday*; *He runs quickly* involves the manner information about the motion *quickly* or *She is very tired* involves the information about the degree *very*. Manner and degree are two major aspects that usually connect to an eventuality. In English, the manner and degree are usually expressed through separate adverbials such as *quickly* in *he ran quickly* or *very* in *he is very fat*. However, TSL, like many other signed languages, usually changes the movement of the verb itself to denote these aspects (Emmorey 1996; Klima and Bellugi 1979; Liddell 2003; Sutton-Spence and Woll 1998). The changes could involve the length, speed, size or tension (strength) of a sign and in the literature, they are known as *aspectual modulation* (Klima and Bellugi 1979:245; Fischer and Gough 1978:138). For example, to sign the verb FAT in TSL, the two hands are opened with palms facing each other and the cheeks puffed up, as shown in Figure 1.2.; to express the intensive degree of FAT, i.e., *very fat*, TSL extends the

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movement of the verb with great tension on the arms and body, as shown in Figure 1.3., and to express the approximate degree of FAT, i.e., *a little fat*, the size of the movement of the verb is reduced and the movement is repeated slightly at the end with lax hand configuration, as shown in Figure 1.4.[10]

FAT

Figure 1.2 'fat'

$FAT_{[M:intensive]}$

Figure 1.3 'very fat'

$FAT_{[M:\ approximate]}$

Figure 1.4 'a little fat'

Following Klima and Bellugi (1979), the change of the movement is marked by [M:x] after the verb in the gloss, in which the subscript M refers to modulation and the subscript X indicates the aspect the modulated sign arouses. Therefore, $FAT_{[M:intensive]}$ in Figure 1.3 indicates the state verb FAT is modulated and conveys the intensive degree (i.e., very fat) and $FAT_{[M:\ approximate]}$ in Figure 1.4 indicates the state verb FAT is modulated and conveys the approximate degree (i.e., a little fat). Another degree expression is the degree describing the gradual change, which is also conveyed through changing the movement of the verb.

Besides the degree expression, an eventuality can describe different manner expression, including the manner describing the fast motion (e.g., *He ran quickly*), slow motion (e.g., *He ran slowly*) and the motion of gradual change (e.g., *He ran more and more quickly*). However, not all types of eventuality allow both manner

[10] Most of the descriptions of TSL lexicons in this thesis follow the descriptions of the researches: NSC 90-2411-H-194-025, NSC 91-2411-H-194-030, NSC 91-2411-H-194-007 and NSC 91-2411-H-194-001.

and degree expression. Only states allow the degree information and only eventuality types that involve the feature of dynamism allow the manner information.

The discussion above brings up two interesting questions. First, how does TSL encode the degree information such as the intensive degree, approximate degree, and degree of gradual change? Second, how does TSL encode the manner information such as the manner describing the fast motion, the slow motion, and the motion of gradual change?

1.4 The organization of the thesis

Following the brief introduction on the background of eventuality types, and the major issues of the thesis, the organization of this thesis is as follows:

Chapter 2 examines the association between three temporal adverbials (e.g., *for*-adverbials, *in*-adverbials, and *at*-adverbials) and eventuality types in TSL, with the goal of finding out how these three kinds of temporal information are expressed in TSL and how they interplay with each eventuality type.

Chapter 3 aims to answer the following two questions: (a) how TSL expresses the progressive, imperative and agentive adverbial in eventuality types, and (b) how these three syntactic properties associate with the four eventuality types in TSL.

Chapter 4 attempts to investigate the manner and degree expression in TSL eventuality types, with the goal of figuring out how the degree information such as intensive degree, approximate degree, and degree of gradual change and the manner information such as the manner describing the fast motion, the slow motion, and the motion of gradual change are encoded in TSL eventuality types.

The final chapter, Chapter 5, concludes this thesis.

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CHAPTER 2

TEMPORAL ADVERBIALS AND EVENTUALITY TYPES IN TSL

2.1 Introduction

I have introduced that there are four types of eventuality, e.g., states, activities, accomplishments and achievements (Vendler 1967). They can be further divided into two parts according to the feature of telicity. That is, states and activities are atelic eventualities while accomplishments and achievements are telic eventualities. The difference between telic and atelic eventualities also creates the difference of syntactic and semantic properties each is associated with. In this chapter I will discuss the association between TSL eventuality types and three kinds of temporal adverbials. These three temporal adverbials are *for*-adverbials, *in*-adverbials and *at*-adverbials, respectively. Many previous studies have shown that different temporal adverbials can co-occur with different eventuality types and they might produce different semantic interpretations with different kinds of eventuality types (see Chang 2001; Dowty 1979; He 1992; Tenny 1994; Putejovsky 1991; Smith 1997, among others). Generally, only atelic eventualities (i.e., states and activities) are able to take *for*-adverbials, as shown in (1) whereas only telic eventualities (i.e., accomplishments and achievements) are able to take *in*-adverbials, as shown in (2). In addition, it is observed that telic eventualities can take *at*-adverbials, while atelic eventualities cannot, as shown in (3).

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(1) *For*-adverbials

a. Mary knew the answer for an hour and then forgot. (state)

b. John walked for an hour. (activity)

c. *John painted a picture for an hour.[11] (accomplishment)

d. *Mary found her wallet for an hour. (achievement)

(2) *In*-adverbials

a. *Mary knew the answer in an hour. (state)

b. *Mary walked in an hour. (activity)

c. John painted a picture in an hour. (accomplishment)

d. Mary found her wallet in an hour. (achievement)

(3) *At*-adverbials

a. * Mary knew the answer at 10 o'clock. (state)

b. * Mary walked at 10 o'clock. (activity)

c. John painted a picture at 10 o'clock. (accomplishment)

d. Mary found her wallet at 10 o'clock. (achievement)

When *for*-adverbials appear with atelic eventualities, they indicate the duration of the eventualities themselves, such as the duration of knowing the answer in (1a) and the duration of walking in (1b). On the other hand, when *in*-adverbials appear with telic eventualities, they denote the time interval before the occurrence of the change of state, such as the picture is finished in (2c) and the wallet is found in (2d). Different to *in*-adverbials, *at*-adverbials describe the time-point when the change of state occurs. Hence, in (3c) and (3d) the *at*-adverbial *at 10 o'clock* indicates the time-point when the picture is finished and when the wallet is found, respectively. In

[11] Some might think (1c) is acceptable but according to Dowty (1997:57), he indicates that the entailment of activity verbs with *for*-adverbials differs from that of accomplishment verbs under the same conditions. He points out that if John walked for an hour, then at any time during that hour it was true that John walked. But if John painted a picture for an hour, then it is not the case that he painted a picture at any time during that hour. If example (1c) is acceptable, it is comprehended as a complete eventuality *paint a picture* repeating again and again for an hour. Therefore, it is not the same as the interpretation of that in activities, which indicates the activity *walk* lasts for a period of time. The sentence in (1c) is thus considered unacceptable in this thesis.

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addition, in English these three kinds of temporal information are all expressed through the prepositional phrases, such as *for an hour*, *in an hour* and *at 10 o'clock*. When they occur in the sentence, they are usually located at the end of the sentence.

In the section that follows, I will discuss two questions related to the analysis above. First, how are the adverbials such as *for an hour*, *in an hour* and *at 10 o'clock* expressed in TSL? Second, how do these three kinds of temporal adverbials associate with each eventuality type and what kind of meaning does each indicate in the eventuality it occurs?

The rest of this chapter consists of the following sections: In Section 2.2, the association between *for*-adverbial and different eventuality types is examined. The discussion is divided into two parts: The form and its syntactic position as in Section 2.2.1. and its collocation with each eventuality as in Section 2.2.2. In Section 2.3, the association between *in*-adverbials and each of the eventuality types are investigated. Similarly, the discussion is also processed within two sub-sections: Section 2.3.1 introduces the form and its syntactic position and Section 2.3.2 introduces its collocation with each eventuality type. In Section 2.4, the discussion goes to *at*-adverbials. The form and its syntactic position are given in Section 2.4.1 and its collocation with eventuality types is given in Section 2.4.2. Section 2.5 offers the conclusion.

2.2 *For*-adverbials

2.2.1 Syntactic form and position

Durative adverbials such as *for a year* or *for an hour* illustrate the duration of a given eventuality. In English, durative adverbials are formed by prepositional

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phrases such as *for an hour* and are located at the end of a sentence, as in the sentence *he swam for an hour*. Unlike English, this temporal adverbial in TSL is not indicated by a prepositional phrase. Technically, it is indicated by a noun phrase as Figure 2.1 shows. To sign ONE-HOUR, one hand hold a fist with its palm facing down and then the forefinger extends out above the place of the other hand where we wear a wristwatch. The extending forefinger signifies the number of the hour; therefore, Figure 2.2 indicates the noun phrase *eight hours* because the extending forefinger signifies the TSL number EIGHT.

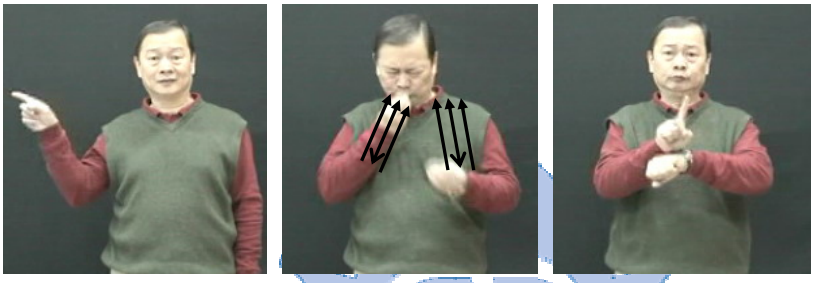
Figure 2.1 ONE-HOUR

Figure 2.2 EIGHT-HOURS

The noun phrase ONE-HOUR in Figure 2.1 and EIGHT-HOURS in Figure 2.2 can express either the duration or the time interval of an eventuality depending on the position they appear in. The duration of an eventuality is denoted when they occur after the verb, namely postverbal position, as example (4) shows. Thus, the noun

phrase ONE-HOUR in (4) describes the duration of the activity *eat* lasts. On the other hand, the time interval of an eventuality is denoted when this noun phrase (e.g., ONE-HOUR) follows with the word INSIDE, together expressing the *in*-adverbial *in an hour*, as shown in Figure 2.4. They are located before the verb, namely preverbal position, in the sentence. More detailed discussion and related examples about this will be shown later.

(4) PRO EAT+++ ONE-HOUR.
'He ate for an hours.'



a. PRO b. EAT+++ c. ONE-HOUR
Figure 2.3

a. ONE-HOUR b. INSIDE
Figure 2.4 'in an hour'

In example (4), the verb EAT is marked with three pluses (i.e., +++). The triple pluses here indicate the reduplication of the verb EAT. Compared with the verb EAT in example (5), we can understand that the reduplication of the verb here is

aroused by the durative adverbial of the sentence, because the only difference between (4) and (5) is that example (4) describes the activity EAT with the *for*-adverbial *for three hours* while the verb EAT in example (5) only describes the activity EAT. Originally, the verb EAT is formed by the five fingertips of one hand connecting and touching the open mouth repeatedly, as shown in Figure 2.6. But when this verb co-occurs with a *for*-adverbial, as in example (4), whole movement of the verb is repeated several times by both hands. In other words, the meaning associated with the reduplication in this case is durative and this kind of grammatical phenomena (i.e., the reduplication of verb indicating the duration or iteration of the given eventuality) has been discovered in many languages (for spoken languages, see Haiman 1980; Lakoff and Johnson 1980; Tai 1993; Wang 1999, among others, and for signed languages, see Bergman 1983; Klima and Bellugi 1979; Supalla and Newport 1978; Warren 1978).

(5) PRO EAT.
'He ate (food).'

a. PRO b. EAT

Figure 2.5

Figure 2.6 EAT

Many previous studies have shown that signed languages usually change the movement of the sign to denote different aspectual meanings (Bergman 1983; Fischer and Gough 1978; Fischer 1973; Klima and Bellugi 1979; Supalla and Newport 1978; Warren 1978). In literature, these changes are referred to as *aspectual modulation* (Klima and Bellugi 1979). Reduplicating the movement of the verb is one of the important modulations. Generally, the meaning associated with the reduplication is usually either iterative or durative, depending on the modulated eventuality type (Kyle and Woll 1985:146-147; Supalla and Newport 1978:103-104). With the eventualities involving the property of duration such as activities and accomplishments, it indicates that one action maintains over a period of time (i.e., durative meaning).[12] With the eventualities which occur as a single event such as *knock* or *kick*, it indicates the eventuality happens over and over again (i.e., iterative meaning) (see Kyle and Woll with Pullen and Maddix 1985:146).

However, it is noteworthy to point out that the reduplication in the case of TSL (e.g., when *for*-adverbials co-occur with an activity or accomplishment eventuality) is

[12] The phenomena of reduplication discussed by Kyle and Woll (1985:146-147) and Supalla and Newport (1978:103-104) only focus on the eventualities involving the property of dynamism. Therefore, the states are not included. Nevertheless, the reduplication on state verbs can also be found in Klima and Bellugi (1979:256-257), who observed that in ASL state verbs such as PAINFUL can express the continuative aspect (e.g., *My brother's leg has pained him for a long time*) when the verb is modulated with a slow reduplication, which generally takes on an elliptical movement in overall visual form. Nevertheless, this result does not occur in TSL.

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optional according to my observation. For some native signers, they don't reduplicate the verb but some do. Usually, the reduplication is more striking in comparative sentences such as *My mother swam for one hour* and *my father swam for three hours*, or in the sentences with abnormal or exaggerated meaning such as *He talked on the phone for six hours* or *he sang for five hours*. Nevertheless, the lack of reduplication of the verb does not affect the transmission of the durative information, because the sentence has contained the lexical durative adverbial (e.g., *for an hour* or *for three hours*) and it has already indicated the duration of the given eventualities. Therefore, the reduplication of the movement of the verb is not crucial when the given eventuality occurs with a for-adverbial.

2.2.2 Eventuality types and *for*-adverbials

As I mentioned in the introduction of this chapter, *for*-adverbials can only occur wth atelic eventualities such as states and activities and they indicate the duration of given states and activities. In the case of states, there are two kinds of state: They are individual-level states and stage-level states, as discussed in Chapter 1. Individual-level states are usually thought of as one individual's property throughout its lifetime; on the other hand, stage-level states describe the temporal properties or situations that might change through time (Carlson 1977; Kratzer 1989). Between them, only stage-level states are able to co-occur with *for*-adverbials because *for*-adverbials describe some action or states that maintain for a period of time but not for a lifetime. As a result, examples (6) and (7) below, which represent stage-level state HUNGRY and ANGRY, are grammatical when they co-occur with *for*-adverbials. But examples in (8), which represent the individual-level states ARROGANT and

SHORT, are not acceptable when they co-occur with *for*-adverbials.

(6) PRO HUNGRY ONE-HOUR. (Stage-level state)
'He has been hungry for an hour.'

a. PRO b. HUNGRY c. ONE-HOUR

Figure 2.7

(7) MOTHER ANGRY THREE-HOURS. (Stage-level state)
'(My) mother has been angry for three hours.'

a. MOTHER b. ANGRY c. THREE-HOURS

Figure 2.8

(8) a. *PRO ARROGANT TWO-HOURS. (Individual-level state)
b. *SISTER SHORT TEN-HOURS.

ONE-HOUR in example (6) represents the meaning of *for an hour* and this noun phrase denotes the time duration of the state HUNGRY. Likewise, THREE-HOURS in example (7) represents the meaning of *for three hours* and this noun phrase denotes the period of time that the state ANGRY obtains. Also, one thing I need to point out is although I said TSL can reduplicate the movement of verbs

to denote the duration or iteration of the given eventuality, this is not applicable with state eventualities. Like examples (6) and (7) illustrate, the movements of state expressions HUNGRY and ANGRY are not repeated. As a matter of fact, spoken languages like English also show that the durative information can be encoded through the reduplication of the verb such as *he talked and talked and talked* and this phenomenon does not happen when it describes states such as **he is angry and angry and angry*.[13]

Moreover, activities are also compatible with durative adverbials. The activity eventuality SWIM is produced by the extended forefinger and middle finger, which standing for two feet, keeping moving in the water, as shown in Figure 2.9. Similarly, the sign JUMP also created by the extended forefinger and middle finger, standing for two feet, jumping up and down repeatedly with another hand representing the ground, as shown in Figure 2.10.[14] When these two eventualities occur with the noun phrase such as ONE-HOUR, as in example (9) and TEN-MINUTES, as in example (10), the sentences indicate that the eventualities SWIM and JUMP go on for a period of time.

Figure 2.9 SWIM

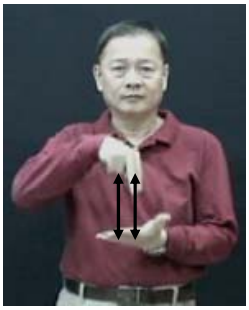

Figure 2.10 JUMP

[13] English, however, allows the sentence such as *He is very, very angry* in the discourse to denote the intensive degree of the state expression *angry*.
[14] The hand, which stands for the ground, is optional.

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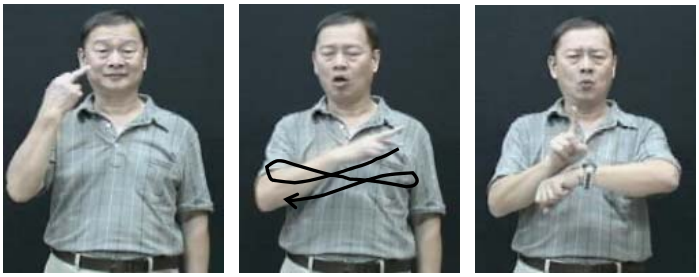
(9) BROTHER SWIM+++ ONE-HOUR.

'He swam for an hour.'

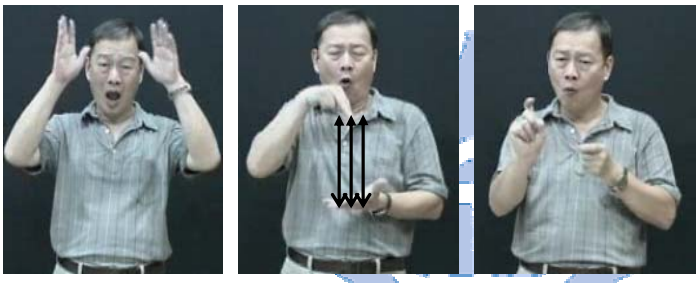


a. BROTHER b. SWIM+++ c. ONE-HOUR

Figure 2.11

(10) DOG JUMP+++ TEN-MINUTES.

'The dog jumped for ten minutes.'



a. DOG b. JUMP+++ c. TEN-MINUTES

Figure 2.12

Besides, the verbs SWIM and JUMP in examples (9) and (10) are modulated to convey the durative information of the activities, too. These two verbs are reduplicated. Compare each of their citation forms with the forms in examples (9) and (10), we can see that the movement of the sign SWIM is changed from one unidirectional movement to repeated bi-directional movement. Simply speaking, the movement of the sign SWIM is reduplicated. But the reason that the movement is not uni-directionally repeated is because the signer assumes the person swam in the swimming pool. Therefore, when he swam constantly for a period of time, he must swim back and forth in the swimming pool repeatedly. For that reason, the

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movement of the sign SWIM in (9) is repeated bi-directionally. On the other hand, the sign JUMP in (10), although still shows the same movement as that in the citation form (e.g., jumps up and down repeatedly), the times of repetition (also reduplication) in this case is more than that in its citation form.

In terms of accomplishments, they are claimed not to take *for*-adverbials in English. However, in TSL as example (11) illustrates, the *for*-adverbial that appears after the verb SWIM turns out to be grammatical and acceptable. The noun phrase TWENTY-MINUTES '*for twenty minutes*' in (11) aims at modifying the duration of the activity SWIM before reaching the endpoint (i.e., reaching the shore). As it has pointed out that accomplishments are consisted of an activity and a change of state; therefore, this gives *for*-adverbials a chance to describe the duration of the activity in the accomplishment eventuality. And that's why TSL allows *for*-adverbials co-occurring with accomplishments. But it is noteworthy that the noun phrase TWENTY-MINUTES has to be located right after the activity expression SWIM. If it is situated at the end of the sentence, the sentence will be unacceptable. Note that in the two signs with a plus symbol, the sign by the left hand is represented first while the sign by the right hands is represented next. The hyphen between two signs indicates the two signs are produced simultaneously and the verb after hyphen expresses the motion carried out by the proform indicating the figure (e.g., the moving object) (see Chang, Su and Tai 2005).

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(11) PRO SWIM TWENTY-MINUTES
SHOREpro+PEOPLEpro-SWIM.[15]
'He swam for twenty minutes and then he got to the shore.'

a. PRO

b. SWIM

c. TWENTY-MINUTES

d. SHOREpro+PEOPLEpro-SWIM

Figure 2.13

Example (12) also describes the accomplishment, which is able to co-occur with the *for*-adverbial. In this example, the noun phrase THIRTY-MINUTES occurs after the activity expression RUN, indicating the duration of this activity. But both the activities in examples (11) and (12), such as SWIM in Figure (2.13b) and RUN in Figure (2.14d), do not clearly show the reduplication. The change of the movement here (i.e., the reduplication of the movement of the verb) does not affect the expression of the durative information because as I just mentioned, the addition of the lexical word, such as THIRTY-MINUTES has provided the durative information of the activity already. Therefore, although the movement of the verb SWIM and RUN

[15] The symbol *pro* is the abbreviation for proform, which refers to and stands in the place of something previously identified. See Chang, Su and Tai (2005) for further discussion.

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does not undergo the modulation of reduplication, the whole sentences are still clear and grammatical.

(12) STAMP PLACE PRO RUN THIRTY-MINUTES.
'He ran for thirty minutes and then he got to the post office.'

a. STAMP

b. PLACE

c. PRO

d. RUN

e. THIRTY-MINUTES

Figure 2.14

Though achievements are also telic eventualities as accomplishments, they do not have the properties of activities like accomplishments. Therefore, *for*-adverbials cannot appear in achievement eventualities. Examples (13a) and (13b) show this.

(13) a. *PRO FALL-DOWN ONE-HOUR.
b. *PRO-1 CHOKE TEN-MINUTES.

2.2.3 Summary

Unlike English, *for*-adverbials in TSL are not expressed through the prepositional phrase. They are expressed by a noun phrase such as ONE-HOUR and

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they are in the postverbal position. Besides the addition of noun phrases, the movement of the verb sometimes is reduplicated to show its durative aspect. But the reduplication is optional. The examples of TSL show that *for*-adverbials not only can co-occur with states and activities, indicating the duration of the eventualities themselves, they also can co-occur with accomplishments. When they appear in the accomplishments, they still describe the duration of the activity because accomplishments are consisted of an activity and a change of state (Grimshaw 1990). Only achievements are not compatible with *for*-adverbials because achievements do not contain the property of activity. Therefore, *for*-adverbials cannot modify the durative information of the activity in achievements.

2.3 *In*-adverbials

2.3.1 Syntactic form and position

In-adverbials such as *in ten minutes*, *in an hour* or *in one day* are also known as completive adverbials in Smith (1997), interval adverbials in Krifka (1998) or frame adverbials in Bennett and Partee (1978) (see Chang 2001:34). Like *for*-adverbials, English uses prepositional phrase to represent this temporal information. However, the *in*-adverbials in TSL do not involve any preposition. The *in*-adverbial such as *in ten minutes* is expressed by a noun phrase and the word INSIDE, as Figure 2.15 shows.

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a. TEN-MINUTES b. INSIDE

Figure 2.15 ‘in ten minutes’

To sign INSIDE, the bended fingers, palm facing down, moves downward with the other hand, palm facing the moving hand. The word INSIDE is equivalent to the English meaning ‘in’ or ‘inside’.[16] As I have mentioned, the noun phrase such as TEN-MINUTES can express either the time duration or the time interval of an eventuality depending on the position they appear in. When this noun phrase appears in the postverbal position (e.g., RUN TEN-MINUTES ‘he ran for ten minutes’), it indicates the duration of the given eventuality, which has been discussed in the Section 2.2.1. However, when this noun phrase appears with the word INSIDE, it will denote the time interval of the given eventuality, such as ‘in ten minutes’ shown in Figure 2.15. Besides, in this case, they are in the preverbal position but not postverbal position, as example (14) illustrates.

[16] Although the word INSIDE is equivalent to the English meaning ‘in’ or ‘inside’, it is not a preposition in TSL. TSL doesn’t have prepositions. The locative expression in TSL such as *The book is in the bag* or *The car is parked inside the gate* is expressed by the simultaneous spatial construction of two objects (e.g., the book and the bag or the car and the gate). The lexical prepositions such as *in*, *on*, *at*, etc. do not exist in TSL. For more discussion about the locative expressions in TSL, see Tsou (2004).

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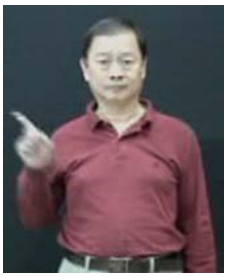
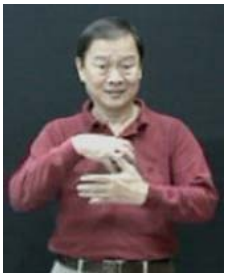
(14) PRO THREE-MINUTES INSIDE BANANA EAT FINISHED (B).
'He ate the banana in three minutes.'



a. PRO

b. THREE-MINUTES



c. INSIDE

d. BANANA

e. EAT

f. FINISHED (B)

Figure 2.16

The word FINISHED (B) here functions as an endpoint-denoting element. The endpoint-denoting element provides an eventuality an endpoint and makes an atelic eventuality shift into a telic eventuality. For example, when the activity EAT follows the word FINISHED (B), the eventuality will shift from an activity to an accomplishment. Many accomplishment expressions in TSL are expressed by an activity expression and a word denoting the endpoint such as FINISHED (B) in (14). There are several different forms which has the same meaning and function as the word FINISHED (B). Appendix 1 provides the descriptions of these different forms. Each of them might have other lexical meanings and grammatical categories, but all of them can function as endpoint-denoting elements in TSL. Therefore, they are called telic markers in this thesis.

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2.3.2 Eventuality types and *in*-adverbials

It is proposed that *in*-adverbial can only appear with telic eventualities such as accomplishments and achievements. The reason is that *in*-adverbials locate an eventuality at an interval, at the end of which the eventuality is completed (Smith 1997:114). Example (15) represents the accomplishment in TSL. It shows its compatibility with the *in*-adverbial such as THIRTY-MINUTES INSIDE 'in thirty minutes.' In this sentence, the telic marker FINISH (B) provides the activity *do homework* an endpoint. The *in*-adverbial THIRTY-MINUTES INSIDE 'in thirty minutes' here denotes the time interval this eventuality takes before the change of state occurs (i.e., the homework is finished). Chang (2001:39) notes that examples like (15) express the notion that the state has been changed, so they are said to have a *conclusive reading*. The term *conclusive*, also known as *eggressive*, is used to express the notion 'to finish doing' (Trask 1993:54).

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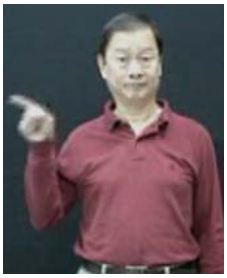
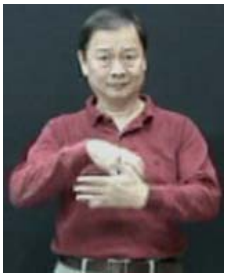
(15) PRO THIRTY-MINUTES INSIDE HOMEWORK DO FINISH (B).
'He did the homework in thirty minutes.'


a. PRO

b. THIRTY-MINUTES


c. INSIDE

d. HOMEWORK

e. WRITE

f. FINISH (B)

Figure 2.17

Likewise, the *in*-adverbial such as ONE-MINUTE INSIDE 'in one minute' in example (16) also expresses the conclusive reading, meaning the father finished walking and he reached the bank in this time interval of one minute.

(16) FATHER ONE-MINUTE INSIDE BANK.
PEOPLEpro+BANKpro-WALK.
'(My) father walked to the bank in one minute.'

The other telic eventualities, achievements, are also able to co-occur with *in*-adverbials in TSL. As in example (17), the *in*-adverbial ONE-DAY INSIDE 'in one day' expresses the time interval before the change of state takes place (i.e., the secret is discovered). Again, they are said to have a conclusive reading. This sentence can also be translated as it took me one day to discover this secret (see

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Dowty 1979:59). Example (18) provides another example of achievements *lost the game* with the *in*-adverbial TEN-MINUTES INSIDE 'in ten minutes.' Similarly, the *in*-adverbial denotes how long it takes before the change of state occurs (i.e., lost the game).

(17) THIS SECRET PRO-1 ONE-DAY INSIDE DISCOVER (C).[17]
'I discovered this secret in one day.'

a. THIS

b. SECRET

c. PRO-1

d. ONE-DAY

e. INSIDE

f. DISCOVER (C)

Figure 2.18

[17] There are three forms indicating the verb *discover* in TSL. DISCOVER (A), which has the meaning of HAVE SEEN, is formed by the index and middle fingers of one hand curving with the palm facing inside, and then the hand moves aside from the eye. DISCOVER (B), which has the meaning of BECOME AWARE OF, is formed by the thumb and forefinger connecting as a circle, lying at the eye. Then the hand opens and hits on the palm of the other hand. The last one, DISCOVER (C), which has the meaning of FIND, BECOME AWARE OF and APPREHEND, is usually used to describe that one finds or notices some thing negative such as *find someone cheating*. It is formed by one hand holding fist, moving to the nose. Then the hand moves aside from nose with the extended index and middle finger.

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(18) THIS RACE BROTHER TEN-MINUTES INSIDE LOSE.
'(My) Brother lost this game in ten minutes.'

Atelic eventualities such as states and activities only describe the obtained states or maintained action and they do not have any endpoint. Therefore, they are not allowed to co-occur with *in*-adverbials. Examples in (19) and (20) which are states and activities, respectively, explain this.

(19) (State)
a. * MOTHER ONE-DAY INSIDE TIRED.
b. *BROTHER TEN-MINUTES INSIDE TALL.

(20) (Activity)
a. *PRO ONE-HOUR INSIDE EAT.
b. *TEACHER ONE-HOUR HALF INSIDE TEACH.

2.3.3 Summary

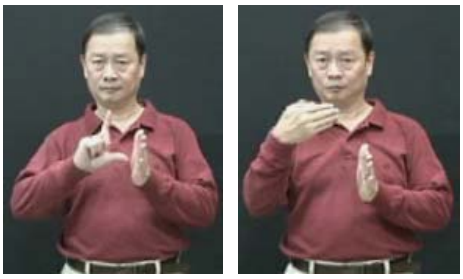
In TSL, *in*-adverbials such as *in an hour* is encoded by a noun phrase (e.g, ONE-HOUR) and the word INSIDE. When this temporal adverbial appears in the sentence, it is located preverbally in TSL. Like English, *in*-adverbials in TSL can only co-occur with telic eventualities like accomplishments and achievements and they describe the time interval this eventuality takes before the change of states occurs, which is said to have a conclusive reading.

2.4 *At*-adverbials

2.4.1 Syntactic form and position

Similar to *for*-adverbial and *in*-adverbial, *at*-adverbials are also expressed by the prepositional phrase in English and all of them usually appear at the end of the

sentence (i.e., appear postverbally). In TSL, *at*-adverbials such as *at 9 o'clock* is represented by two single lexicons: One is the noun TIME (A) and the other is the time reference NINE-O'CLOCK, as Figure 2.19 demonstrates. Figure 2.20 expresses the time-point *4 o'clock*.



a. TIME (A) b. NINE-O'CLOCK

Figure 2.19 'at 9 o'clock'

a. TIME (A) b. FOUR-O'CLOCK

Figure 2.20 'at 4 o'clock'

There are three forms that stand for the word TIME in TSL. In order to distinguish each one, they are called TIME (A), TIME (B) and TIME (C) respectively. Each of them is illustrated below and the description for the production of each sign is given in the parentheses. TIME (A) and TIME (B) are used more often than TIME (C) generally.

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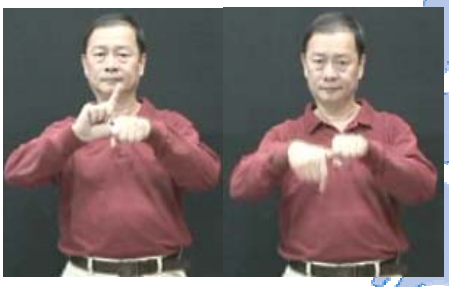
(The extended thumb of one hand touches the palm of the other hand and the extended forefinger of the same hand turns downside.)

Figure 2.21 TIME (A)

(The extended thumb of one hand touches the back of the wrist of the other hand and the forefinger of the same hand draws a semicircle)

Figure 2.22 TIME (B)



(One hand holds the thumb of the other hand while the held hand turns downside.

Figure 2.23 TIME (C)

Like *in*-adverbials, TSL locates *at*-adverbials preverbally. Examples (21), (22) and (23) all describe the achievement eventuality *the train arrived* with the *at*-adverbial ‘at two o’clock’. But among them, only (21) and (22) are acceptable because the *at*-adverbials TIME (A) TWO ‘at 2 o’clock’ in these two examples occur before the verb while the one in example (23) does not. The difference between (21) and (22) is their word order.

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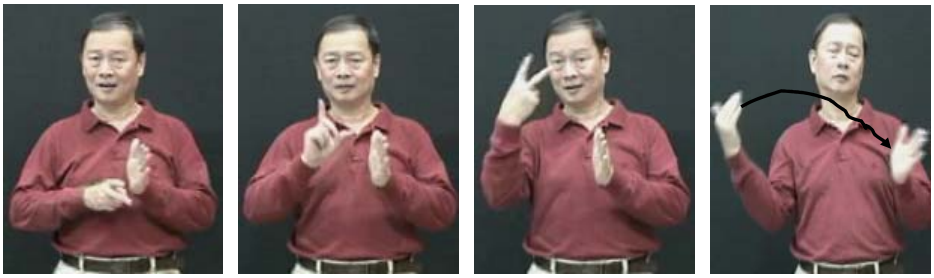
(21) TRAIN TIME (A) TWO ARRIVE.
'The train arrived at 2 o'clock.'



a. TRAIN b. TIME (A) c. TWO d. ARRIVE

Figure 2.24

(22) TIME (A) TWO TRAIN ARRIVE.
'The train arrived at two o'clock.'

(23) *TRAIN ARRIVE TIME (A) TWO.

2.4.2 Eventuality types and *at*-adverbials

I have pointed out in the beginning of this chapter that generally only telic eventualities such as accomplishments and achievements can co-occur with *at*-adverbials. Examples (21) and (22) above illustrate the TSL achievement, and the *at*-adverbial TIME (A) TWO 'at two o'clock' in these sentences expresses the time-point when the change of state occurs (e.g., the train arrived). Because these examples convey the notion that the state has been changed, so they are also said to have a conclusive reading. The same result is shown in example (24), describing the achievement eventuality *my grandfather died at 8 o'clock*.

(24) GRANDFATHER TIME (A) EIGHT DIE.
'(My) grandfather died at 8 o'clock.'

Accomplishments also arise the conclusive reading when they co-occur with

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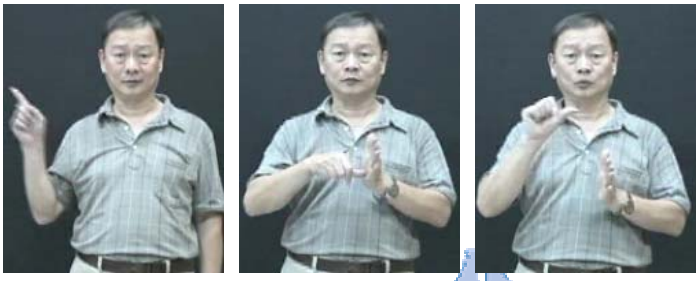
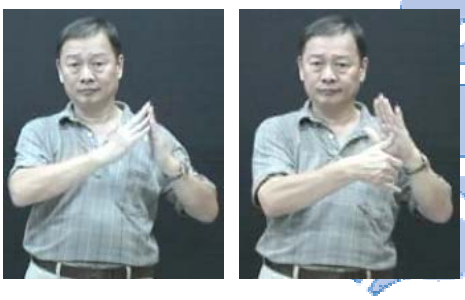
at-adverbials, as shown in (25) and (26). The *at*-adverbial TIME (A) FIVE ‘at 5 o’clock’ in example (25) refers to the time-point when the person reached the school and the *at*-adverbial TIME (A) ONE ‘at one o’clock’ in example (26) denotes the time-point when the milk is drunk.

(25) PRO TIME (A) FIVE SCHOOL SCHOOLpro+ PEOPLEpro-RUN.
‘He ran to school and reached the school at 5 o’clock.’



a. PRO b. TIME (A) c. FIVE



d. SCHOOL e. SCHOOLpro+ PEOPLEpro-RUN

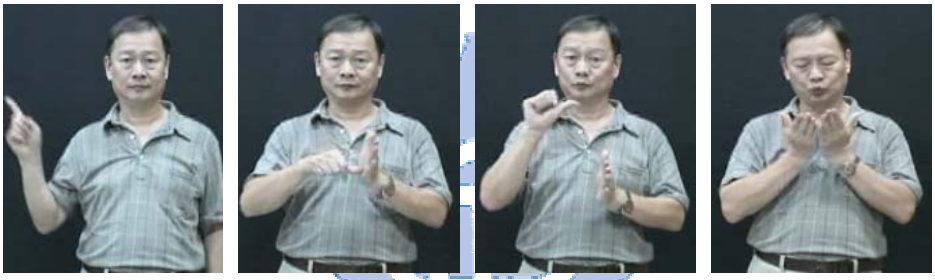
Figure 2.25

(26) DOG TIME (A) ONE PRO MILK DRINK FINISHED(B).
‘The dog drank the milk at one o’clock.’

However, except achievements and accomplishments, TSL also shows that activities can co-occur with *at*-adverbials. As example (27) depicts, the activity READ is allowed to co-occur with the *at*-adverbial. But opposite to the conclusive reading the telic eventuality types arise, the *at*-adverbial TIME (A) FIVE ‘at 5 o’clock’ in example (27) actually indicates the starting point of the activity READ.

Thus, this kind of reading is called inceptive reading in the literature (Chang 2001: 35). The term inceptive, also known as inchoative or ingressive, is an aspectual form expressing the beginning of a state or activity (Bybee 1985: 147-148; Trask 1993: 137). This is the reason that example (27) is translated as *he began to read at 5 o'clock* and it is equivalent to example (28) which has an additional verb START before the activity READ. Like (28), examples in (29) also show the compatibility of activities and *at*-adverbials, and they entail the inceptive reading.

(27) PRO TIME (A) FIVE READ.
'He began to read at 5 o'clock.'



a. PRO b. TIME (A) c. FIVE d. READ

Figure 2.26

(28) PRO TIME (A) FIVE START READ.
'He started/began to read at 5 o'clock.'

(29) a. SISTER TIME (A) SIX DRAW.
b. SISTER TIME (A) SIX START DRAW.
'(My) sister began to draw at 6 o'clock.'

2.4.3 Summary

At-adverbials in TSL are expressed by a noun phrase such as TIME (A) ONE 'at one o'clock' and they appear in the preverbal position. The data in TSL shows that not only telic eventualities such as accomplishments and achievements can

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appear with *at*-adverbials, activities can, too. However, different from the conclusive reading (i.e., the point of finishing doing something) that telic eventualities entail, when the activities co-occur with *at*-adverbials, they yield the inceptive reading, which means the point of starting doing something.

2.5 Concluding remarks

In this Chapter, I have discussed how TSL expresses three kinds of temporal adverbials such as *for*-adverbial, *in*-adverbial and *at*-adverbial and also their association with each eventuality type. TSL usually expressed these three kinds of temporal concept by noun phrases. There are not prepositions in TSL, so they don't use so-called prepositional phrases to indicate the temporal information as it does in English. English usually locates these three kinds of adverbials at the end of the sentence, thus in the postverbal position. In TSL, *for*-adverbials appear postverbally. *In*-adverbials and *at*-adverbials, conversely, appear preverbally and right after the subject. Besides, it is found that in TSL the movement of the verb sometimes will reduplicate several times when activities or accomplishments co-occur with *for*-adverbials. The reduplicate of the verb, however, can only be regarded as the assistant role because there is already a *for*-adverbial, explicitly expressing the duration of the verb lasts. As a result, this phenomenon of reduplication in this aspect is optional.

Furthermore, this chapter has shown that in TSL for-adverbials can co-occur with accomplishments, indicating the duration of the activity. This is because the fact that accomplishments are consisted of an activity and a change of state gives a chance to for-adverbials to describe the duration of the activity expression in the

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accomplishments. Moreover, it also has revealed that *at*-adverbials not only can appear with telic eventualities, they can co-occur with activities in TSL, too. But instead of yielding the conclusive reading, they entail the inceptive reading expressing the notion of starting doing. Table 2.1 and Table 2.2 present the association between these three kinds of adverbials and four eventuality types and the meaning of each eventuality types with temporal adverbials.

	States	Activities	Accomplishments	Achievements
for-adverbial	✓	✓	✓	×
in-adverbial	×	×	✓	✓
at-adverbial	×	✓	✓	✓

Table 2.1 The association between temporal adverbials and four eventuality types in TSL

	States	Activities	Accomplishments	Achievements
for-adverbial	Duration of state	Duration of activity	Duration of activity	--
in-adverbial	--	--	Conclusive reading	Conclusive reading
at-adverbial	--	Inceptive reading	Conclusive reading	Conclusive reading

Table 2.2 The meaning of eventuality types with temporal adverbials in TSL

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CHAPTER 3

SYNTACTIC PROPERTIES OF EVENTUALITY TYPES IN TSL

3.1 Introduction

Following Chapter 2, this chapter focuses on three syntactic properties associated with TSL eventualities. They are progressives, imperatives, and agentive adverbials respectively. These are the most common and basic syntactic properties that usually connect with the eventuality types in the previous studies (Bennett 2002; Chang 2001; Frawley 1992; Putejovsky 1991; Smith 1997).

As I introduced in Chapter 1, eventuality types can be distinguished into the so-called telic and atelic eventualities according to the boundness (or endpoint) of the eventualities themselves. Thus, telic eventualities involve accomplishments and achievements whereas atelic eventualities involve states and activities. In Chapter 2, it shows that this feature (e.g, telicity) becomes the main factor that affects the compatibility with different temporal adverbials. That is, *for*-adverbials can occur with atelic eventualities, while *in*-adverbials and *at*-adverbials can occur with telic eventualities. But it is not the case when they confront with progressives, imperatives and agentive adverbials. The literature indicates that only activities and accomplishments are able to co-occur with these three syntactic forms while states and achievements cannot, as it shows in the following examples.

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(1) Progressive (Binnick 1991:282)

a. *Sue is being sick with scarlet fever. (state)

b. Sue is jogging. (activity)

c. Sue is repairing the plumbing. (accomplishment)

d. *Sue is noticing a drunk on the street. (achievement)

(2) Imperative

a. *Being sick with scarlet fever. (state)

b. Jog! (activity)

c. Repair the plumbing! (accomplishment)

d. *Notice a drunk on the street. (achievement)

(3) Agentive adverbial

a. *Sue is sick with scarlet fever carefully. (state)

b. Sue jogged carefully. (activity)

c. Sue repaired the plumbing carefully. (accomplishment)

d. *Sue notices a drunk on the street carefully. (achievement)

In addition, though progressives, imperatives or agentive adverbials are common syntactic phenomena in all languages, they are not expressed in the same way in all languages. For example, English progressive is composed of the auxiliary verb *be* before the verb, plus a present participle (V + -ing), as in example (4a). Chinese, however, uses the aspect marker *(zheng)zai* before the verb to encode the progressive aspect of the given eventuality, as in example (4b) (Li and Thompson 1981; Chu 1983; Tai 1984; Gu 1999; Chang 2001; Cheng 2004; among others).

(4) a. He is running. (English)

b. Ta *(zheng)zai* paobu. (Chinese)

He (ZHENG)ZAI run.

'He is running.'

Two questions arise from the discussion above. First, how does TSL express the progressive, imperative and agentive adverbials? Second, how do these three syntactic properties associate with four eventuality types in TSL? These two questions are the main issues of this chapter.

The rest of this chapter proceeds as follows: Section 3.2 examines the progressive in TSL. The investigation contains two subsections: Section 3.2.1 introduces the syntactic form of the progressive and Section 3.2.2 talks about the association between the progressive and TSL eventuality types. Section 3.3 explicates the imperatives. Its syntactic form is discussed in Section 3.3.1 and its interaction with eventuality types is elucidated in Section 3.3.2. Section 3.4 investigates agentive adverbials in TSL. Likewise, the discussion is divided into two parts: Section 3.4.1 analyzes the syntactic form of agentive adverbials and Section 3.4.2 provides their association with each eventuality types in TSL. Section 3.5 contains the concluding remarks of this chapter.

3.2 Progressives

3.2.1 Syntactic form

Progressive is one of the major types of aspect that has been widely discussed in semantic literature (Bach 1986; Brinton 1988; Dowty 1979; Frawley 1992; Parsons 1989; Payne 1997). If we put these people's accounts together into a unified definition of progressives, the progressive implies an ongoing dynamic process or activity.

The category of progressive is apparently universal but the difference is that they are not all represented in the same way in all languages. For example, the

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progressive in English is composed of some form of the verb *to be* plus a present participle (V + *-ing*), as in example (5) (Frawley 1992:149). In Chinese, however, it is encoded by the aspect marker (*zheng*)*zai*, as in example (2) (Li and Thompson 1981; Chu 1983; Tai 1984; Gu 1999; Chang 2001; Cheng 2004; among others)[18].

(5) a. The dog is attacking the mailman.
b. Fred was driving to the store when the rain started.

(6) a. ta (*zheng*)*zai* paobu.
He (ZHENG)ZAI run
'He is running.'
b. ta (*zheng*)*zai* chi dongxi.
He (ZHENG)ZAI eat things
'He is eating.'

Compared with TSL, the morphological inflection *–ing* does not exist in TSL (e.g., there is neither any sign indicating the form *–ing* nor any consistent change of movement of the verb expressing the progressive meaning). Besides, though the progressive aspect markers (*ZHENG)ZAI*, as shown in Figure 3.1, is available in the deaf society of Taiwan, they belong to Sign Chinese, namely *wenfa shouyu* 'grammatical sign language.' Thus, example (7) although expresses the progressive, is rarely used by native speakers of TSL.

[18] The aspect marker *zheng* in the parentheses means its existence is optional. Therefore, both *zheng zai* and *zai* express Chinese progressives.

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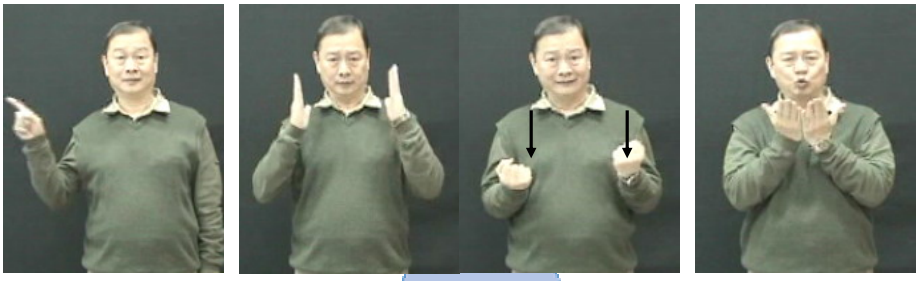
Figure 3.1 (ZHENG)ZAI

(7) PRO (ZHENG)ZAI READ.

'He is reading.'



a. PRO b. (ZHENG)ZAI d. READ

Figure 3.2

According to TSL data, it is found that TSL has two ways to express the progressive aspect. The first is by the aspect marker MIDDLE. The word MIDDLE is produced by one hand with the bended fingers while the other hand with extended forefinger crossing the bended fingers as the Chinese character *zhong* (中) 'middle', as shown in Figure 3.3. This sign is taken as the progressive aspect marker for the reason that it only occurs in the progressive sentence of TSL and implies the progressive of an activity.

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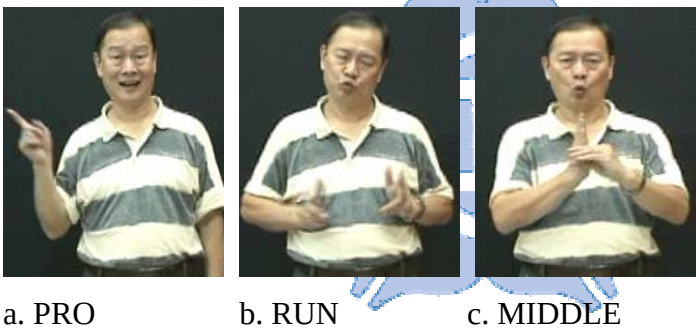
Figure 3.3 MIDDLE

This progressive aspect marker is placed at the end of the sentence, as examples (8) and (9) illustrate. Specifically, example (8) denotes the present progressive while example (9) denotes the past progressive of the activity RUN.

(8) PRO RUN MIDDLE.

'He is running.'



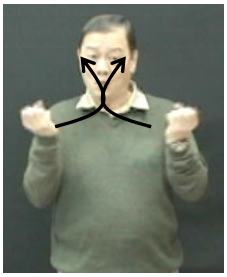
a. PRO b. RUN c. MIDDLE

Figure 3.4

(9) EARTHQUAKE HAPPEN THIS TIME (C) FATHER THAT PARK RUN MIDDLE.

‘(My) father was running in the park when the earthquake happened.’

a. EARTHQUAKE



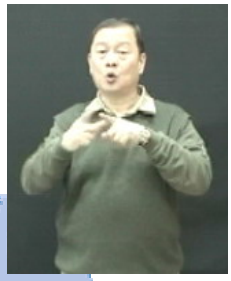
b. HAPPEN

c. THIS

d. TIME (C)

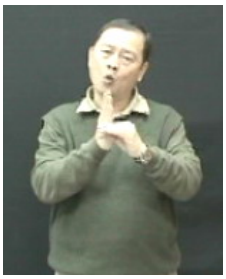
e. FATHER

f. THAT



g. PARK

h. RUN



i. MIDDLE

Figure 3.5

The other way to describe TSL progressive is very different if we compare it with the way it is done in spoken languages. The data show that without the progressive aspect marker MIDDLE, the same aspect information still can be encoded. Thus, examples (8) and (10) have the same syntactic construction, so do (9) and (11). But the difference between them is that examples (10) and (11) do not contain the progressive aspect marker MIDDLE, and they still express the progressive of the

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activity RUN.

(10) PRO RUN.
'He is running.'

(11) EARTHQUAKE HAPPEN THIS TIME (C) FATHER THAT PARK RUN.
'(My) father was running in the park when the earthquake happened.'

In other words, TSL uses the simple present tense to indicate the progressive of a sentence. It doesn't need any syntactic markers. And this has been shown to be the most common way to illustrate the progressive aspect for native signers of TSL. However, it is worthy pointing out that the context usually plays a very important role in such kinds of expression of progressive. That is also to say that this kind of expression of progressive usually occurs in the related context, which can make the addressee understand that examples (10) and (11) are illustrating the progressive but not the simple present tense or habitual aspect (e.g., *He runs*) or simple past tense of RUN (e.g., *He ran*). The context of example (11), e.g., when the earthquake happened or at the moment when the earthquake happened, can lead the receiver to comprehend that the following event must refer to someone who is in the process of some activity. So the denotation of the progressive *he was running* is automatically derived and that's why it does not need the progressive aspect marker MIDDLE in this case. As for example (10), the information of the progressive aspect is sensed through the conversation shown in example (12). The time adverbial NOW in example (12) has revealed that what speaker A asked is the ongoing action or process of the teacher. So it is not necessary to add the progressive aspect marker MIDDLE for speaker B and the progressive aspect can still be comprehended.

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(12) A: TEACHER NOW DO WHAT?
'What is the teacher doing now?'
B: PRO RUN.
'He is running.'

Consequently, the expression of progressive through examples like (11) and (12) can be perceived easily. As for the addition of the progressive aspect marker MIDDLE, conversely, it does not have to rely on the context too much. Sometimes, native signers of TSL choose to adopt the aspect marker MIDDLE is for the reason that they want to emphasize the progressive aspect of an eventuality. In the following discussion about the association between progressives and eventuality types in TSL, it would be easier to investigate this issue via the application of the progressive aspect marker MIDDLE because it is a more straightforward way to understand what kind of eventuality type can co-occur in the progressive.

3.2.2 Eventuality types and progressives

Due to the fact that progressives encode ongoing activity, it is argued to be preferentially connected to dynamic eventualities, themselves characterized by progress (Chung and Timberlake 1985; Vlach 1981). So activity eventualities like *run* or *drink coffee* and accomplishment eventualities like *fix the phone* or *drive to Taipei* all allow the progressive expression, but state eventualities like *know English* or *like cats* do not contain the property of dynamism, they disallow the progressive. Examples (13), (14) and (15) illustrate English activities, accomplishment and states respectively.

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(13) (Activity)

a. Jimmy is running.

b. Jessie is drinking coffee.

(14) (Accomplishment)

a. My father was fixing the phone when he walked in.

b. We are driving to Taipei.

(15) (State)

a. *She is knowing English.

b. *That boy is liking cats.

However, the dynamic property of the eventuality is not the only criterion to meet the progressive aspect. The eventualities have to be durative, too. Achievements like *recognize the person* or *discover the island*, as in example (16), though are dynamic, do not allow progressive because they happen simultaneously and lack duration (see He 1992:26-27; Cheng 2004:7-9). Combining with examples above, it shows that only eventualities, which contain the properties of dynamism and duration at the same time (i.e.., activities and accomplishments), are preferable to occur in the progressive.

(16) a. *Denny is recognizing the person.

b. *That boy is discovering the island.

Similarly, TSL shows that only activities and accomplishments allow progressive while states and achievements do not. Both examples (17) and (18) illustrate the progressive aspect of activity eventualities TEACH and COOK, respectively by the addition of the progressive aspect marker MIDDLE.

(17) TEACHER TEACH MIDDLE.

'The teacher is teaching.'

a. TEACHER b. TEACH c. MIDDLE

Figure 3.6

(18) MOTHER COOK MIDDLE.

'(My) Mother is cooking.'

Examples (19) and (20) show the progressive aspect of accomplishment eventualities *hit that dog* and *paint this house*. The progressive aspect marker is placed at the end of the sentences and they describe the ongoing accomplishments.

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(19) THIS DOG THAT HIT MIDDLE.

'He is hitting that dog.'

a. THIS

b. DOG

c. THAT

d. HIT

e. MIDDLE

Figure 3.7

(20) FATHER THIS HOUSE PAINT MIDDLE.

'Father is painting this house.'

The main reason that states do not co-occur with progressives, as shown in example (21), is because of its non-dynamic property. In addition, Frawley (1992:149) also explains that the incompatibility of states with the progressive is due to that the progressive marks extension in time, and so a progressivized verb can represent a very large time interval into which smaller time intervals can be inserted such as *I was running when it started raining*. But states are already extended and continuous by definition, the use of the progressive with states is superfluous.

Achievements in example (22) are also unacceptable to occur in the progressive because all achievements do not contain the durative process. How can

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a person describe an ongoing eventuality when this eventuality is not durative?

(21) (State)

a. *PRO HUNGRY MIDDLE.

b. *PRO SMART MIDDLE.

c. *PRO BEAUTIFUL MIDDLE.

(22) (Achievement)

a. *FATHER WATCH GONE MIDDLE.

b. *THIS GIRL NAME PRO FORGET MIDDLE.

3.2.3 Summary

Overall, there are two ways to express TSL progressives. First is by the progressive aspect marker MIDDLE, which appears at the end of the sentence. The other way is by the simple present tense to denote the progressive aspect of the given eventualities. So the sentence doesn't need any aspect markers. Compared with these two kinds of expression of progressive in TSL, the latter is more common than the former. Sometimes, the adoption of progressive aspect marker MIDDLE is for the purpose of emphasis of progressive aspect. Similar to spoken languages, TSL shows that only eventualities, which are dynamic and durative such as activities and accomplishments, allow the progressive whereas states and achievements do not.

3.3 Imperatives

3.3.1 Syntactic form

An imperative sentence is a sentence used by an addresser to make a command or request to a second person (e.g., both singular and plural) who is expected to carry out the command or request. The command or request may be

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made to the addressee to ask him to carry out certain activities including those to prevent something from happening (see Hamblin 1987; He 1992).

In English, an imperative sentence begins with the root form of the verb. As example (23) shows, the subject of the sentence is omitted and each of the examples begins with the root form of the verb such as *give* and *open*. In negative imperatives, it begins with the auxiliary verb *do* and negation *not*, abbreviated as *don't*, as shown in example (23c).

(23) a. Give me that book!
b. Open the door!
c. Don't talk!

The imperative construction in Chinese is very similar to English, as illustrated in example (24). That is, it begins with the root of the verb and the subject is omitted. The negative imperative in example (25) is encoded with the negative particle *bie* 'don't', which functions exclusively as a negative imperative particle (Li and Thompson 1981:455).

(24) a. Jiao ta jin-lai!
ask he come-in
'Ask him to come in!'
b. na wo de qianbi lai!
take I GEN[19] pencil come
'Bring my pencil!'

[19] GEN is the abbreviation for genitive.

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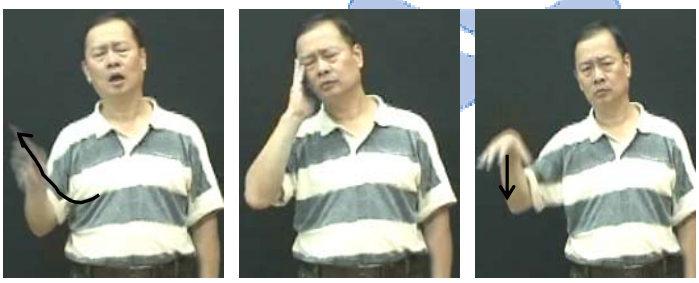
(25) Bie dong!
don’t move
‘Don’t move!’

In TSL, the imperative appears similar to those in English and Chinese. For example, the subject is omitted, as shown in example (26). However the imperative does not always need to start with the root verb as it does in spoken languages. Owing to the fact that TSL allows placing a noun phrase, which refers to a place such as SCHOOL or HOUSE, before the verb, the noun phrase such as SLEEP PLACE ‘bedroom’ and the verb GO in example (26) is reversible.[20] Thus, the verb can also occur after the noun phrase, as it shows in example (27). Both (26) and (27) express the same imperative of TSL.,

(26) GO SLEEP PLACE!
‘Go back to the bedroom!’



a. GO b. SLEEP c. PLACE

Figure 3.8

(27) SLEEP PLACE GO!
‘Go back to the bedroom!’

[20] For the discussion about the word order in TSL, see Smith (1989).

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3.3.2 Eventuality types and imperatives

In the literature, it shows that only activities and accomplishments are able to occur in the imperatives, as shown in examples (28) and (29), respectively (Dowty 1979; Hamblin 1987; Frawley 1992; He 1992; Chang 2001; Bennett 2002).

(28) (Activity)
a. Drive carefully!
b. Help!

(29) (Accomplishment)
a. Write down the answer!
b. Take one of these!

The reason why only activities and accomplishments allow imperatives has been explained clearly in He (1992:89-97). He points out that the very function of imperative sentences requires that the verbs to be used are dynamic and agentive. The requirement of dynamism is because the request or command is meant to be carried out by the addressee. Consequently, states such as *I know him* or *I am hungry*, describing the obtained situations but not dynamic activities, are unacceptable with imperatives, as example (30) illustrates.

(30) a. *Know him!
b. *Be hungry!

Besides, not all dynamic eventualities can be used in the imperative. The notion of agentivity of the dynamic eventualities also involves the compatibilities with imperatives. Simply speaking, if the verb involves an agent, it means the subject of the eventuality must play the role of the agent such as the person who

drives in example (28a) or the person who writes in example (29a). Conversely, the subject of the states is usually an experiencer; for example, *know him* in example (30a) or *be hungry* in example (30b) is not something that an agent can do.

Achievements *find the book* in example (31a) and *arrive at the top* in example (31b) show the same inability as states. That is, the subject of an achievement eventuality is not an agent. Moreover, both state and achievement expressions as in (30) and (31) are said to be non-volitional, which means they cannot be carried out by the agent with his own will. Compared with the verb *look for* and *find*, the former is volitional while the latter is non-volitional. What a person can do is to actively *look for* something, leaving the result *find* to be decided by other factors (He 1992:94). As a result, the imperative *Look for the book carefully!* is acceptable but the imperatives such as **Find the book!* and **Arrive at the top!* are not acceptable, as (31a) and (31b) show.

(31) a. *Find the book!
b. *Arrive at the top!

Like spoken languages, TSL reveals the same association between imperatives and four eventuality types. Only activities and achievements allow occurring with imperatives. Examples (32) and (33) express the activity eventualities and examples (34) and (35) express the accomplishment eventualities.

(32) RUN! (Activity)

'Run!'

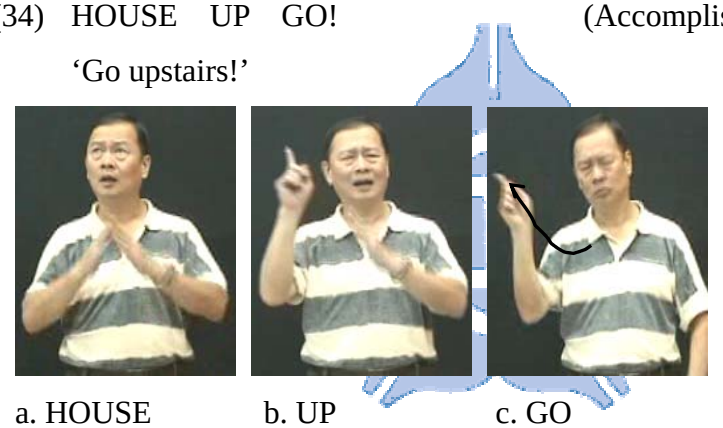
Figure 3.9

(33) WRITE QUICKLY! (Activity)

'Write quickly'

(34) HOUSE UP GO! (Accomplishment)

'Go upstairs!'



a. HOUSE b. UP c. GO

Figure 3.10

(35) EAT CLEAN! (Accomplishment)

'Eat up (all of the food)!'

In addition, it is also noticed that some imperatives with activities are expressed by adding a verb GO additionally at the end, as illustrated in (36) and (37). Example (32) expresses the same meaning as example (36) but they differ in the way that (36) has an extra verb GO at the end of the sentence.

(36) RUN GO!

'Run!'

a. RUN b. GO

Figure 3.11

(37) STUDY GO!

'Study!'

a. STUDY b. GO

Figure 3.12

In fact, Chinese also can do the same thing in the imperative. But in Chinese this verb GO can either be added in the initial of the sentence, as in example (38a), or at the end of the sentence, as in example (38b). As a native Chinese speaker, I think the verb Go in example (38b) actually has become another sentence, forming another imperative. So example (38b) contains two imperatives: *Ask him to come in!* and *Go!*. And the verb Go here is comprehended as asking the addressee to take action and carry out the command right away. The verb Go in example (38a) has the same notion as that in example (38b) but the construction *go ask* 'go and ask' in example (38a) becomes a serial verb. Hence, it is still an imperative. The same explanation

is also applicable to account for the TSL phenomenon in examples (36) and (37).

(38) a. Qu jiao ta jin-lai!
go ask he come-in
b. Jiao ta jin-lai, qu!
ask he come-in go
'Ask him to come in!'

Though both TSL and Chinese show evidence that some imperatives are expressed by adding an extra verb GO, this formation is not suitable to create all imperatives according to the collected data. Basically, an imperative with the verb GO is only acceptable when the addressee of the command or request (i.e. *run* or *study*) has to leave where he or she is at the time and fulfill the command or request elsewhere. Therefore, imperative like *Nod!* or *Stand up!* can't be added by the verb GO additionally as *NOD GO! or * STAND-UP GO! because the addressee can nod or stand up on the spot in the location where he or she is, without necessarily moving to other places and carrying out this command. In addition, if the command has already contained the verb GO such as the accomplishment *Go upstairs!*, then this kind of imperative is also improper to add an extra GO to otherwise it will become redundant.

Finally, states like *fat* or *tired* are non-dynamic and not agentive whereas achievements like *fall down*, *die* or *discover* though are dynamic, they are not agentive either. As a result, they cannot occur in the imperative, as examples (39) and (40) illustrate.

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(39) (State)

a. *FAT!

b. *TIRED!

(40) (Achievement)

a. *FALL-DOWN!

b. *DISCOVER(A) SECRET!

3.3.3 Summary

To sum up, TSL basically represents the imperative via the same means as English or Chinese. They are formed by omitting the subject of the sentence and usually beginning with the root verb. But since TSL allows having the noun phrase, which expresses a place, appearing before a verb, some imperatives might begin with the noun phrase and then the verb as in SLEEP PLACE GO ‘go back to the bedroom!’ Besides, TSL imperatives could also consist of an extra verb GO as it does in Chinese, but this is only preferable when the command or request cannot be accomplished on the spot in the place where the person is. Like the result of spoken languages, only activities and accomplishments are compatible with imperatives because these two kinds of eventuality types are not only dynamic, they also involve the notion of agentivity.

3.4 Agentive adverbials

3.4.1 Syntactic form

Agentive adverbials, also known as subject-oriented adverbials (Jackendoff 1972; McConnell-Ginet 1982) or agent-oriented adverbials (Smith 1997:31), are a kind of manner adverbials describing agency such as *seriously*, *deliberately*, *purposely*, *intentionally*, *reluctantly* or *carefully* (Shopen 1985:215). In spoken

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languages such as English, these adverbials are usually represented by separate lexicons and they can occur in the preverbal position as in (41) or postverbal position as in (42).

(41) a. She sat in the outside seat *purposely*.
b. Nancy listened *carefully*.
(42) a. John *intentionally* seduced Mary.
b. Mary *reluctantly* kissed Bill.

Basically, TSL also contains those adverbials mentioned above. I will introduce three TSL agentive adverbials here. First, Figure 3.13 shows the adverbial CAREFULLY, which is produced by produced by two hands holding fist with one on top of the other; they are then pulled into the chest. Agentive adverbials in TSL can appear both in the preverbal position and postverbal position, as shown in example (43).

Figure 3.13 CAREFULLY

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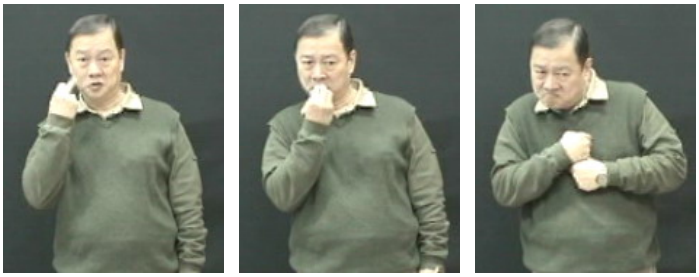
(43) a. BROTHER CAREFULLY EAT.

b. BROTHER EAT CAREFULLY.

‘(My) brother eats carefully.’



a. BROTHER b. CAREFULLY c. EAT

Figure 3.14

Besides, the adverbial WITH-AN-EFFORT means doing something hard with mind or body. To sign WITH-AN-EFFORT, the fist of one hand knocks against the temple with the palm facing backwards, as shown in Figure 3.15. Example (44) shows its syntactic position. It can appear before the verb or after the verb.

Figure 3.15 WITH-AN-EFFORT

(44) a. SISTER WITH-AN-EFFORT READ.

b. SISTER READ WITH-AN-EFFORT.

‘(My) sister studied hard.’[21]

Finally, while English allows different agentive adverbials such as *purposely*,

[21] Because the adverbial WITH-AN-EFFORT denotes doing something hard with mind or body, sometimes this word is translated as *hard* in English as the example *(My) sister studied hard* shows.

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deliberately and *intentionally*, TSL only uses one word to convey these meanings. That is, the adverbial PURPOSELY. This adverbial is formed by the forefingers of both hands extending, palms facing each other. Then two hands touch each other and the extended forefingers wiggle back and forth in turn, as in Figure 3.16. Example (45) illustrates its preverbal and postverbal position in the sentence.

Figure 3.16 PURPOSELY

(45) a. PRO PURPOSELY FOUL.
b. PRO FOUL PURPOSELY.
'He fouled purposely.'

3.4.2 Eventuality types and agentive adverbials

As the definition of an agentive adverbial described in the previous section, it is a kind of manner adverbials describing agency. To put it another way, a sentence modified by an agentive adverbial must describe something to be carried out by an agent. An agent, according to Longacre (1983:156-157) and Larson (1984:199-203), is usually the grammatical subject of the verb in an active clause and a prototype agent is conscious, acts with volition (on purpose), and performs an action that has a physical, visible effect. Therefore, within four eventuality types, only activities and accomplishments meet these criteria. Examples (46) and (47) demonstrate activities and accomplishments respectively and it shows that they are all acceptable because

these eventualities can be executed by the agent of the sentence and the agent can act or make things happen with his will or volition.

(46) (Activity)

a. This girl played games reluctantly.

b. Larry jumped around purposely.

(47) (Accomplishment)

a. He jumped to the bed intentionally.

b. Mr. Lee took the egg out of the bag carefully.

Compared with the achievements in example (48), *die* and *fall asleep* don't involve the agency (i.e., these are not what a person can do with his will), so these examples are unacceptable with agentive adverbials. Besides, it has been pointed out that the subject of the state is usually an experiencer but not an agent. As a result, the agentive adverbial cannot occur with states, as shown in example (49).

(48) (Achievement)

a. *Ken died deliberately.

b. * Jimmy fell asleep intentionally.

(49) (State)

a. *John is honest purposely.

b. *Ken was angry carefully.

It shows the same result in TSL. Both activities and accomplishment are perfectly acceptable to co-occur with agentive adverbials. Examples (50) and (51) below show activity eventualities with agentive adverbial CAREFULLY and PRUPOSELY, respectively. In (50), if the father drives carefully, he might not drive

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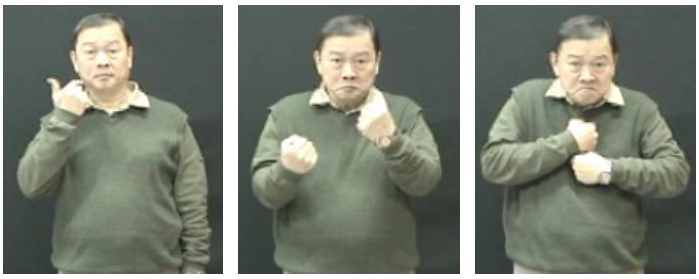
too fast or do any other things while driving. In (51), the activity expression *walk fast* is done by someone on purpose. Both examples (50) and (51) explain that activity eventualities can be executed with individuals' will and volition.

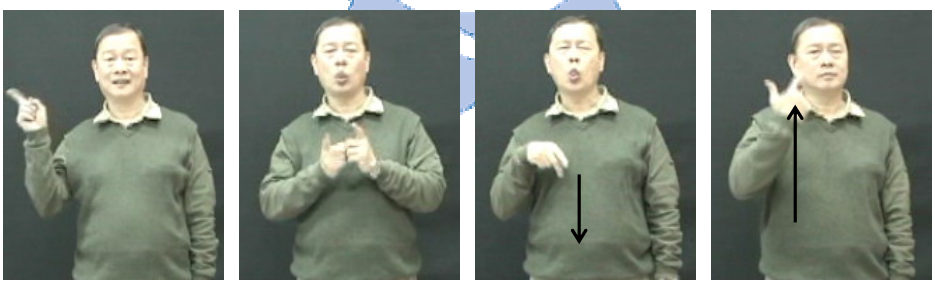
(50) FATHER DRIVE CAREFULLY.
'(My) father drives carefully.'



a. FATHER b. DRIVE c. CAREFULLY

Figure 3.17

(51) PRO PURPOSELY WALK FAST.
'He walked fast purposely.'



a. PRO b. PURPOSELY c. WALK d. FAST

Figure 3.18

Example (52) shows the accomplishments with the agentive adverbial CAREFULLY. Likewise, if the sister put the bowl on the table carefully, she might hold the bow with both hands and gently put the bowl on the table. In example (53), the agentive adverbial WITH-AN-EFFORT is located before the verb DO. This example also illustrates the compatibility of accomplishments with agentive

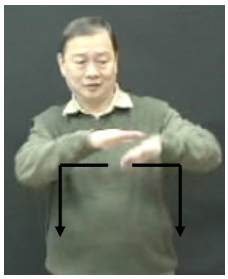
adverbials.

(52) SISTER BOWL TABLE TABLEpro+BOWLpro-PUT ON CAREFULLY.

'(My) Sister put the bowl on the table carefully.'

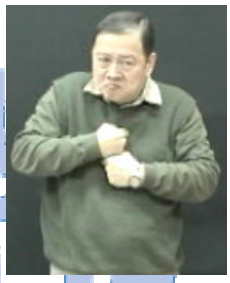
a. SISTER

b. BOWL



c. TABLE

d. TABLEpro+BOWLpro-PUT ON



e. CAREFULLY

Figure 3.19

(53) THIS REPORT PRO WITH-AN-EFFORT DO FINISH (B)

'He has done this report with an effort.'

a. THIS

b. REPORT

c. PRO

d. WITH-AN-EFFORT

e. DO

f. FINISH (B)

Figure 3.20

However, states and achievements cannot occur with agentive adverbials, as shown in examples (54) and (55). The ungrammaticality of these two sentences is because both the states (i.e., *angry* and *noisy*) and achievements (i.e., *lose this game* and *choke*) describe something that cannot be controlled by the agent (i.e., cannot be executed by a person's will). Since they cannot be controlled by the agent; they cannot be modified by any agentive adverbials.

(54) (State)

a. *PRO CAREFULLY ANGRY

b. *THAT STUDENT WITH-AN-EFFORT NOISY

(55) (Achievement)

a. *PRO WITH-AN-EFFORT DIE

b. *SISTER PURPOSELY CHOKE

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3.4.3 Summary

TSL adopts different lexical words to encode different agentive adverbial meanings and also both of their syntactic positions could be either preverbally or postverbally. In addition, it also reveals that in TSL only activities and accomplishments can take agentive adverbials. State and achievement eventualities cannot be controlled by an agent, so they cannot occur with any agentive adverbials.

3.5 Concluding remarks

In this chapter, I have introduced the way TSL expresses the progressive, imperative and different agentive adverbials, and their association with each eventuality type. The progressive, imperative and agentive adverbials are three basic syntactic properties that usually connect to the four eventuality types directly. The result shows that the way TSL expresses three syntactic forms is not exactly the same as English or Chinese, but the association between these three syntactic properties and each eventuality type exhibits the same outcome as English and Chinese.

In terms of the syntactic formation, TSL progressives are encoded by two ways. One is through the aspect marker MIDDLE and the other is through simple present tense without any additional markers. It also reveals that the second way is more common than the first way when expressing the progressive aspect. But the role of context is relatively more important when there is not any marker to indicate the progressive. The use of the aspect marker MIDDLE sometimes becomes the element for emphasizing the progressive aspect. TSL imperative is expressed in the same way as English and Chinese. They are formed by omitting the subject and beginning with the root verb. Some imperatives can by added by an extra verb GO

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at the end of the sentence but this is only preferable when the addressee of the command or request has to leave where he or she is at the time and fulfill the command or request elsewhere. So commands like *Stand up!* are not applicable with the extra verb GO. Finally, the agentive adverbials are also expressed through different lexical words and they appear either preverbally or postverbally in TSL.

Table 3.1 shows the association between these three syntactic properties and eventuality types in TSL. Similar to the studies of spoken languages, it exhibits that in TSL only activities and accomplishments possess these three syntactic properties while states and achievements do not.

	States	Activities	Accomplishments	Achievements
Progressive	×	✓	✓	×
Imperative	×	✓	✓	×
Agentive adverbials	×	✓	✓	×

Table 3.1 The syntactic properties: progressive, imperative, and agentive adverbials of eventuality types in TSL.

To be able to occur in the progressive, the eventuality has to be dynamic as well as durative, such as activities and accomplishments. States which are non-dynamic cannot describe the ongoing eventualities themselves. Achievements occur at a single moment without duration, so that they cannot describe the progressive either. On the other hands, there are two mutual criteria to meet the compatibility with imperatives and agentive adverbials. First, the eventuality must be dynamic. Only eventualities involve the property of dynamism can be executed by a person. Second, the eventuality must be agentive. If the eventuality involves the notion of agentivity, it must be controllable, too. Therefore, in other words, the

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eventuality can be carried out by an agent with his or her will. Among the four eventuality types, only activities and accomplishments meet these two criteria, so they possess these two syntactic properties while states and achievements do not.

CHAPTER 4

DEGREE AND MANNER EXPRESSIONS IN TSL

4.1 Introduction

As I mentioned in Chapter 1, different aspects like degree and manner are usually expressed through separate adverbs such as *very* or *slowly* in *very fat or run slowly* in English. However, TSL, like many other signed languages, usually changes the movement of the verb itself to denote these aspects (Emmorey 1996; Klima and Bellugi 1979; Liddell 2003; Sutton-Spence and Woll 1998). In the literature, the change of the movement is known as *aspectual modulation* (Klima and Bellugi 1979). Basically, lexicons in signed languages are composed of three phonological categories: handshape, location and movement (Stokoe 1960). Within them, the variations in movement, including length, speed, size or tension (strength) of a sign (Klima and Bellugi 1979:245; Fischer and Gough 1978:138) can describe various aspects of an event. For example, to sign the verb FAT in TSL, the two hands are opened with palms facing each other and the cheeks puffed up as in Figure 4.1, but to express the intensive degree of FAT, i.e., *very fat*, TSL extends the movement of the given sign with great tension on the arms and body, as in Figure 4.2. The other expression about degree also involves approximate degree and the degree of gradual change.

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FAT

Figure 4.1 ‘fat’

FAT$_{[M:intensive]}$

Figure 4.2 ‘very fat’

Nevertheless, not all eventuality types allow degree expression. Eventualities such as activities, accomplishments and achievements cannot indicate degree information because they do not describe something gradable as states (He 1992). Activities and accomplishments, conversely, allow the manner expression such as the manner describing the fast motion (e.g., *She ran fast*), the slow motion (e.g., *He walked to school slowly*) or the motion of gradual change (e.g., *She ran faster and faster*). Achievements are the only eventualities that cannot convey both information about degree information and manner related to motion. However, either degree or manner information is usually expressed through changing the movement of the verb in TSL. This chapter aims at finding out how the degree information (e.g. the intensive degree, approximate degree, and degree of gradual change) and the manner information (e.g. the manner describing the fast motion, the slow motion, and the motion of gradual change) are encoded in TSL.

The rest of this chapter proceeds as follows: Section 4.2 examines the degree information and discusses how different kinds of degree information are encoded in TSL. Section 4.3 investigates the manner information and try to find out how different kinds of manner expression are expressed in TSL. Finally, Section 4.4 offers the conclusion.

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4.2 The degree

Three kinds of degree are discussed here: The intensive degree (e.g., *very fat*), the approximate degree (e.g., *a little fat*) and the degree of gradual change (e.g., *get fatter and fatter*). In the four eventuality types, it has been pointed out that only states such as stage-level states and individual-level states allow the degree expression because they describe something gradable and they can be modified by degree adverbials (see He 1992; Yeh 1993; Smith 1997; Chang 2001). In the section that follows, I will discuss how degree is expressed in TSL. The intensive degree is discussed in Section 4.2.1, the approximate degree is discussed in Section 4.2.2, while the degree of gradual change is discussed in Section 4.2.3. Section 4.2.4 provides the summary.

4.2.1 The intensive degree

The intensive degree is usually conveyed in spoken languages like English by the adverbial *very* as in *she is very tall*. In TSL, the adverbial VERY is created by the bended thumb and extended forefinger with the palm facing the chest moving backward, as Figure 4.3 shows. Different from English, which has the degree adverbial *very* occurring before the verb, TSL locates this adverbial after the verb as in example (1).

Figure 4.3 VERY

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(1) PRO FAT VERY.

'He is very fat.'

a. PRO b. FAT c. VERY

Figure 4.4

Without the lexical adverbial VERY, TSL can change the movement of the verb FAT to achieve the same purpose. Originally, the verb FAT is created by both hands opened with palms facing each other and puffed cheeks as it shows in Figure 4.5. But when expressing the intensive meaning of FAT, i.e., *very fat*, the movement of this sign is extended in a rapid motion, showing great tension on the muscles of the arms and body at the same time, as it shows in Figure 4.6. If we compare this with the citation form of FAT in Figure 4.5, we can see the length between the two hands in Figure 4.6 is apparently longer; even the cheeks are puffed up more. This kind of change is called *tense modulation*.

FAT $FAT_{[M:intensive]}$

Figure 4.5 'fat' Figure 4.6 'very fat'

Although Klima and Bellugi (1979:259) also use this term to denote the

intensive degree, the tense modulation in their analysis is characterized by tension in the muscles of the hands and arms, a long tense hold at the beginning of the sign, a very rapid single performance and a final hold. However, it is found that TSL doesn't show the clear long tense hold at the beginning and ending in this case. Besides, the movement does not have to be single. The feature of the initial hold or single movement is actually depending on the citation form of the verb itself. For example, according to Supalla and Newport (1978:94), a sign can be a single movement or repeated movement. A single movement sign consists of moving the hand(s) in any direction only once whereas a repeated movement sign consists of moving in any direction repeated. They use ASL words: COVER-UP and PAPER to illustrate these two examples, as shown in Figures 4.7 and 4.8.[22] Usually, a single movement sign ends with a hold but a repeated movement does not.

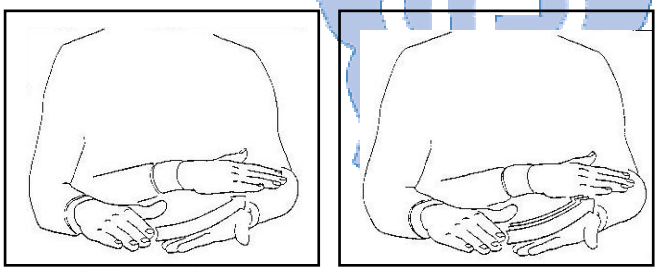


Figure 4.7 COVER-UP Figure 4.8 PAPER
(Supalla and Newport 1978:94)

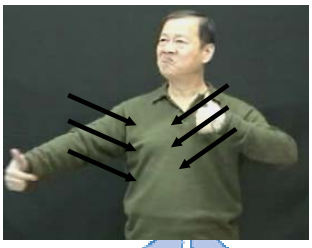
In TSL, signs such as FAT in Figure 4.5 is a single movement sign because the hands move in one direction once and stop around the waist (e.g., moving outwards). Then, when it undergoes the tense modulation as in Figure 4.6, it will also show the single movement and a hold at the end. On the other hand, a repeated movement

[22] See Stokoe (1960), Stokoe et al. (1965) and Supalla and Newport (1978) for more discussion about the single and repeated movement.

such as ARROGANT in Figure 4.9, which is produced by having the forefinger touching the chest repeatedly, will repeat the movement constantly and extend the movement as well when it is tense-modulated, as shown in Figure 4.10.[23] Consequently, the term tense modulation is used here to denote the intensive degree of the states but the characteristics of this modulation is not entirely the same as that in Klima and Bellugi (1979).

ARROGANT

Figure 4.9 'arrogant'



ARROGANT[M:intensive]

Figure 4.10 'very arrogant'

Figures 4.11 and 4.12 show the contrast between the state ANGRY without the tense modulation and the state ANGRY with the tense modulation. Similarly, the one that undergoes the tense modulation (i.e., Figure 4.12) shows much strength on the whole body and even on the muscles of the face. Besides, the movement is extended in a rapid motion. That's why the state ANGRY in Figure 4.12 ends in a relatively higher position. In addition, because the citation form of ANGRY is a single movement, the modulated form also shows the single movement.

[23] The thick line indicates the great tension and the thin line indicates the normal tension.

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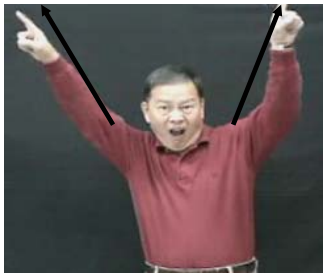
ANGRY

Figure 4.11 ‘angry’



ANGRY$_{[M:intensive]}$

Figure 4.12 ‘very angry’

The states FAT and ANGRY introduced above are both stage-level states (i.e., expressing momentary properties or situations might change through time) (Pustejovsky 1995: 15; Chang 2001: 89). Individual-level states (i.e., expressing permanent properties or situations) such as SMART and TALL can also denote the intensive degree through the tense modulation. The comparisons between un-modulated and modulated SMART and TALL are in Figure 4.13 to Figure 4.16.

SMART

Figure 4.13 ‘smart’

SMART$_{[M:intensive]}$

Figure 4.14 ‘very smart’

TALL

Figure 4.15 ‘tall’

TALL$_{[M:intensive]}$

Figure 4.16 ‘very tall’

These modulated states, i.e., Figure 4.14 and Figure 4.16, have a consistent result. That is, the signer’s face looks more tensed and the muscle tension of the arms and body is also greater than that of the un-modulated states. Moreover, the size of movements in the modulated states is bigger and the movement is executed rapidly. These changes on the movement of the verb express the intensive degree of the states.

4.2.2 The approximate degree

Opposite to the intensive degree, the approximate degree describes the low intensity of degree. The term *approximate degree*, proposed by Klima and Bellugi (1979:260) means ‘*sort of*’ or a small degree of a quality or attribute. In English, the approximate degree can be expressed by various adverbials such as *a little*, *sort of* or *rather*, as in *she is a little/sort of/rather fat*. In TSL, the most common adverbial used to describe the approximate degree is the word LITTLE. To sign the word LITTLE, the forefinger and the thumb are bended, connecting each other in a circle and the thumb flips the forefinger repeatedly with closed pout and knitted brows, showing the concept of a small amount of something, as Figure 4.17 illustrates. Similar to the degree adverbial VERY in TSL, this adverbial appears in the postverbal

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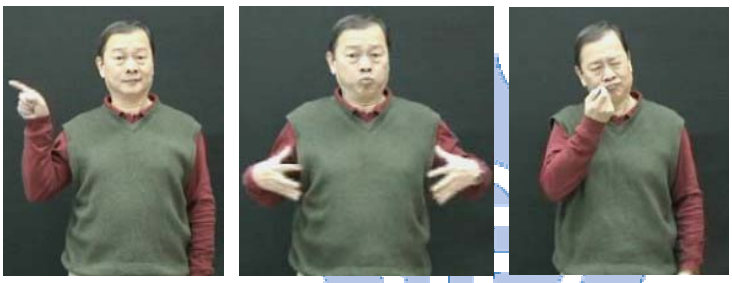
position, as shown in example (2).

Figure 4.17 LITTLE

(2) PRO FAT LITTLE.

'He is a little fat.'



a. PRO b. FAT c. LITTLE

Figure 4.18

The other way to show the approximate degree is by the *lax modulation* on the movement of the state eventualities. This modulation will reduce the size of the movement and slightly repeat the movement at the end with lax hand configuration, as Figure 4.20 shows.[24] The so-called lax hand configuration means the held handshape is lax without much tension on it. Comparing the size of the movement of the un-modulated FAT in Figure 4.19 with that of the modulated FAT in Figure 4.20, the latter is especially minimal. Even the puffed check is less puffed up here.

[24] The feature of slightly repeating at the end of the movement is illustrated by bi-arrows in the figure. This feature does not exist in the study of Klima and Bellugi (1979).

FAT

Figure 4.19 ‘fat’

FAT[M:approximate]

Figure 4.20 ‘a little fat’

Another state such as ANGRY, as in Figure 4.22, which also belongs to stage-level states as FAT, also denotes the approximate degree through the lax modulation. This modulated ANGRY is reduced in the length of the upward movement and the hands also slightly moves up and down repeatedly around the ears at the end. In addition, the whole movement is executed by lax hand configuration while the un-modulated ANGRY in Figure 4.21 is executed by a tenser hand configuration.

ANGRY

Figure 4.21 ‘angry’

ANGRY[M:approximate]

Figure 4.22 ‘a little angry’

Individual-level states like TALL also show the same phenomenon. To sign the state TALL, the palm of one hand faces down and then moves upward, as in Figure 4.23. When it is modulated to mean *a little tall*, the hand moves upward, but the upward height is less than that in the non-modulated form, as in Figure 4.23, and the movement is relatively lax. Besides, the hand moves up and down repeatedly at

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the end, as Figure 4.24 shows.

TALL

Figure 4.23 ‘tall’

TALL$_{[M:approximate]}$

Figure 4.24 ‘a little tall’

4.2.3 The degree of gradual change

The degree of gradual change, based on its literal meaning, describes progressive changing in the degree. In English, the way to express this kind of degree information varies depending on the number of syllables the verb contains. For instance, if the verb has more than two syllables (e.g., *beautiful* or *important*), the adverbial phrase *more and more* is used to express the degree of gradual increase (e.g., *more and more beautiful*) while *less and less* expresses the degree of gradual decrease (e.g., *less and less beautiful*). If the verb has less than two syllables (e.g., *small* or *short*), the information about the degree of gradual change is indicated through the morphological inflection; that is, the suffix –er is added to the verb stem (e.g., *smaller and smaller*, or *shorter and shorter*).

TSL has two ways to indicate the aspect of gradual change in degree: One is through lexical adverbials and the other is through aspectual modulations. TSL uses the adverbial INCREASE to convey the meaning *more and more*, as in Figure 4.25 and the adverbial DECREASE to convey the meaning *less and less*, as in Figure 4.26.

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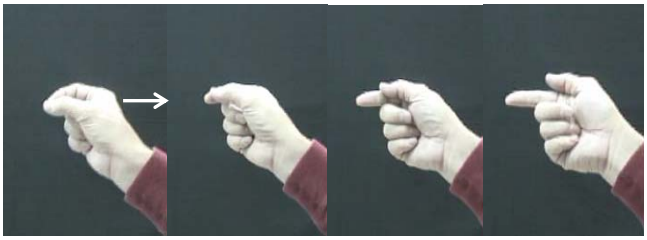

Figure 4.25 INCREASE

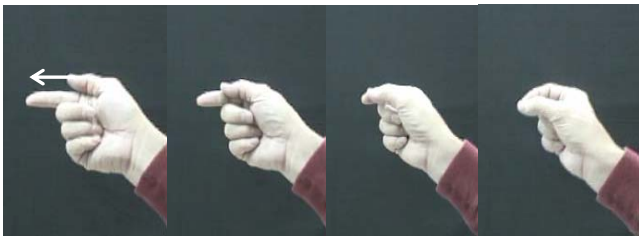

Figure 4.26 DECREASE

These two opposite meanings are represented by the opposite moving direction in TSL. As Figures 4.25 and 4.26 show, both of them are produced with the thumb and forefinger of one hand combining together and then separating gradually. The only difference between them is that the word INCREASE moves the thumb back from the tip of forefinger while the word DECREASE moves the thumb toward the tip of forefinger.

Different from English, the number of the syllables of the verb is irrelevant to TSL's behavior on the expression of the degree of gradual change. As example (3) and (4) illustrate, both the meanings *more and more beautiful* and *fatter and fatter* are encoded by the same way. That is, use the lexical adverbial INCREASE plus the states BEAUTIFUL and FAT. The adverbial INCREASE appears in the preverbal position.

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(3) PRO INCREASE BEAUTIFUL.

'She became more and more beautiful.'

a. PRO b. INCREASE c. BEAUTIFUL

Figure 4.27

(4) PRO INCREASE FAT.

'She became fatter and fatter.'

a. PRO c. INCREASE b. FAT

Figure 4.28

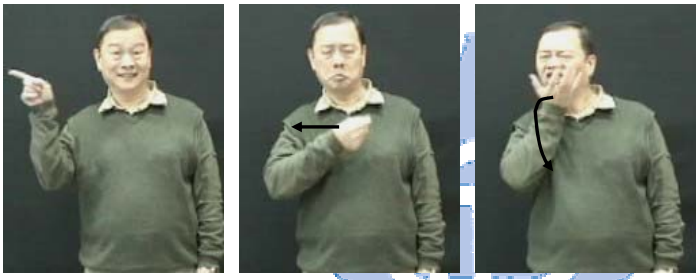
If the word INCREASE can express the meaning *more and more* while the word DECREASE can express the meaning *less and less*, it can be predicted that TSL might adopt the word DECREASE and plus the state BEAUTIFUL to express the sentence S*he became less and less beautiful*, as shown in (5). However, the result is unacceptable. The concept conveying the degree of gradual change between English and TSL is different. English allows both the gradually increased degree of states such as *more and more beautiful*, and gradually decreased degree of states such as *less and less beautiful*. TSL, however, only expresses the gradually increased degree by the word INCREASE with the given state eventualities. Therefore, to express the

sentence *She became less and less beautiful*, TSL will encode it as *She became uglier and uglier*, as example (6) shows. Similarly, the sentence *Marriage has become less and less important for her* in English will be translated as *Marriage has become more and more unnecessary for her* in TSL, and this sentence will be expressed by the word INCREASE and the state UNNECESSARY. In other words, TSL only denote the gradually increased degree of state eventualities.

(5) *PRO DECREASE BEAUTIFUL.

(6) PRO INCREASE UGLY.

'She became less and less beautiful/she became uglier and uglier.'



a. PRO b. INCREASE c. UGLY

Figure 4.29

Besides, according to native signers of TSL, example (7) also expresses the meaning *she became less and less beautiful* as example (6) does. Example (7) has similar syntactic components as example (3) (i.e., PRO INCREASE BEAUTIFUL. 'She became more and more beautiful'), except that example (7) contains an additional word: HAVE-NOT. To sign HAVE-NOT, the five fingertips connect and separate repeatedly with the palm facing upward. The existence of the word HAVE-NOT makes the example (7) denote the opposite meaning of example (3). However, example (6) is more common in general and it is used more frequently for the native TSL signers.

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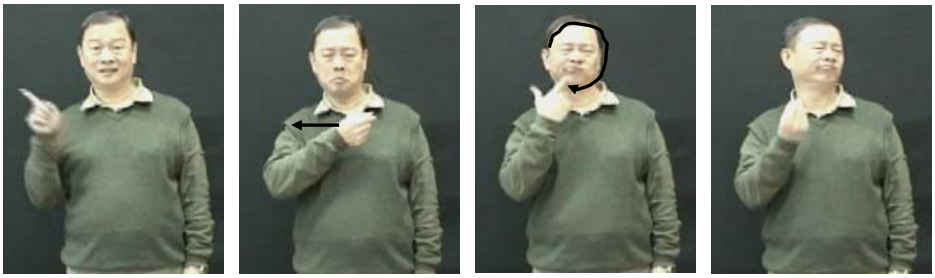
(7) PRO INCREASE BEAUTIFUL HAVE-NOT.

'She became less and less beautiful/she became uglier and uglier.'



a. PRO b. INCREASE c. BEAUTIFUL d. HAVE-NOT

Figure 4.30

In brief, when TSL expresses the information of gradual change in degree by using lexical adverbials, only the adverbial INCREASE (meaning *more and more*) is adopted describing either the decreased degree (e.g., *less and less beautiful*) or increased degree (e.g., *more and more beautiful*). Conversely, the adverbial DECREASE in TSL does not modify the state eventualities. Examples in (8) explain the grammatical functions of the word DECREASE. It shows that the word DECREASE not only functions as an adverbial *less and less*, as in (8a), it also functions as a verb meaning *fade* in (8b) or functions as an adjective meaning *weaker* in (8c). Overall, this word never appears before a state eventuality as the word INCREASE does.

(8) a. PRO CLOSE HOUSE HOUSEpro+PEOPLEpro-COME DECREASE.

'He has came to my house less and less often recently.'

b. THIS CLOTH COLOR DECREASE.

'The color of this cloth has faded.'

c. COFFEE DECREASE PRO-1 WANT.

'I want the coffee weaker.'

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Another way to denote the degree of gradual change in TSL is by aspectual modulations on the given state eventualities. As Figures 4.32 and 4.34 show, the gradually increased degree of the states FAT and SMART is expressed by executing the movement of these two signs gradually, as shown by the dotted line. The movement starts slowly and accelerates to the end. Thus, this kind of change is called *accelerando modulation* and it indicates the gradually increased degree in this case.

FAT

Figure 4.31 ‘fat’

FAT [M:gradually increased]

Figure 4.32 ‘get fatter and fatter’

SMART

Figure 4.33 ‘smart’

SMART[M:gradually increased]

Figure 4.34 ‘get smarter and smarter’

The term originated from Klima and Bellugi (1997:261) but the accelerando modulation in their study conveys the resultative aspect, meaning ‘become fully…’ as in the sentence *he became really angry*. The change in rate is the characteristic of this modulated form: A restrained (i.e., hold), slow beginning and rapid end. Although the change of the movement in TSL as introduced above also emphasizes the change in rate, the feature of the hold at the beginning does not exist. Here, I still adopt *accelerando modulation* to indicate the gradually increased degree of state eventualities. But in Klima and Bellugi’s analysis on ASL, the accelerando modulation denotes the resultative aspect.

As for the state expression ARROGANT, which involves the repeated movement, the movement is also carried out gradually when it takes accelerando modulation, expressing the meaning *more and more arrogant*. Furthermore, at the beginning the two hands take turns to touch the chest slowly and slightly. Then at the end, the action becomes faster and faster, as shown in Figure 4.36.

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ARROGANT

Figure 4.35 ‘arrogant’

ARROGANT$_{[M:gradually\ increased]}$

Figure 4.36 ‘get more and more arrogant’

All in all, to change the movement of the verb is more common than to adopt the lexical adverbial INCREASE when native signers of TSL try to express the degree of gradual change.

4.2.4 Summary

TSL not only expresses degree information of states by using separate adverbials (i.e., VERY, LITTLE and INCREASE) as it does in English, it can also achieve the same goal by different kinds of modulations on the verb. Generally, the intensive degree is conveyed by tense modulation, in which the movement is extended rapidly with great tension on muscles of the body and arms; the approximate degree is expressed by lax modulation, in which the movement is reduced in size and slightly repeated at the end with lax hand configuration. The degree of gradual change, more specifically is the gradually increased degree, is indicated by accelerando modulation, in which the sign moves gradually, starts slowly and accelerates to the end. The degree information is incorporated into the verb and the result shows that this is the most common way to convey the degree information of state eventualities in TSL.

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4.3 The manner

An eventuality can describe different kinds of manner information, such as the manner of speed, frequency, duration, etc. In this section, the discussion is focused on the manner of speed, for example, the fast or slow motion of an action. Within four eventuality types, only activities and accomplishments allow the expression of motions. States, due to the lack of dynamic property cannot indicate the speed of an action (e.g., **He is fast tall*). As for achievements, because they usually happen instantaneously and they don't have any duration, there is no reason to talk about how quickly or how slowly an achievement eventuality acts (e.g., **He fell down quickly/slowly*). In the following discussion, I will investigate three kinds of manner describing the motions. The first is the manner describing the fast motion in Section 4.3.1; the second is the manner describing the slow motion in Section 4.3.2, and the third is the manner describing the motion of gradual change in Section 4.3.3. Section 4.3.4 is the summary.

4.3.1 The manner describing the fast motion

English usually uses the adverbial *fast* or *quickly* to express the manner describing the fast motion. In Section 4.2, it was pointed out that TSL can either use lexical adverbials or change the movement of the verb (i.e., aspectual modulation) to convey the degree information. It is the same when describing the manner information.

In terms of the lexical adverbials, TSL has two signs for the adverbial *fast* (or *quickly*), in which Figure 4.37 represents the lexicon of TSL of Taipei while Figure 4.38 represents the lexicon of TSL of Tainan. Because that Taipei is in the Northern

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Taiwan while Tainan is in the Southern Taiwan, I distinguish these two lexicons as FAST (N) and FAST (S), respectively. To produce FAST (N), the thumb and forefinger of one hand extend up and then move upward with palms facing inward, whereas to produce FAST (S), the thumb and index of one hand touch each other, and then two fingers separate with the index bending and the thumb extending. These two adverbials denote the equivalent meanings of *fast*, *quick(ly)* and *rapid* in English.

Figure 4.37 FAST (N)

Figure 4.38 FAST (S)

TSL locates the adverbial FAST (N) or FAST (S) in the sentential-final position, as example (9) illustrates.

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(9) PRO WALK FAST (N).

'He walks fast.'

a. PRO b. WALK c. FAST (N)

Figure 4.39

It is noted that only activities and accomplishments are able to express the manner about motions. Example (9) illustrates the activities WALK and its manner information is conveyed by the manner adverbial FAST (N). The same manner information (e.g., fast motion) in example (10), however, is indicated by changing the movement of the verb WALK called *fast modulation*. This modulation is characterized by speeding up and strengthening the movement. So the movement of the original sign will become faster and tenser. Take the verb WALK for example, the citation form of WALK is signed by the extended index and middle fingers wiggling back and forth as walking with two feet, as shown in (9). The verb WALK in example (10), which undergoes the fast modulation, changes its movement (i.e., the action of two fingers wiggling) into an extremely fast and tense movement (i.e., the wiggling fingers move forward very rapidly). When the movement is tensed, it shows its tension on the arms and body.

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(10) PRO WALK$_{[M: fast]}$.

'He walks fast.'

a. PRO

b. WALK$_{[M: fast]}$

Figure 4.40

Two pairs of examples in Figure 4.41 to Figure 4.44 illustrate other activities such as TYPE and SPEAK. TYPE is formed by two open hands acting as typing the keyboard, whereas SPEAK is formed by wiggling the extending fingers of one hand with the thumb of the same hand touching the chin with sucked-in cheeks. When they are modulated to show the fast motion of TYPE and SPEAK, as shown in Figures 4.42 and 4.44, respectively, the movement of the verb (e.g., the typing fingers in TYPE and wiggling fingers in SPEAK) will become faster and tenser.

TYPE

Figure 4.41 'type'

TYPE$_{[M: fast]}$

Figure 4.42 'type fast'

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SPEAK

Figure 4.43 ‘speak’

SPEAK$_{[M: fast]}$

Figure 4.44 ‘speak fast’

While comparing fast modulation with tense modulation introduced in Section 2.1, which indicates the intensive degree of states, we might find that the features of these two modulations seem very similar. For example, both of their movements become faster with tension on the muscles of the arms and body. However, fast modulation does not extend the movement (e.g., increase the size or length of the movement) while tense modulation does. Figures 4.45 and 4.46 represent the state eventuality ANGRY, in which Figure 4.46 illustrates the state ANGRY that undergoes the tense modulation, and its movement is extended. Besides, though these two modulations look similar, usually the given eventuality that undergoes the fast modulation will stress the feature of its fast movement, and the one that undergoes the tense modulation will stress the feature of its tensed movement. Another big difference between these two modulations is that only state eventualities can express the degree information by the tense modulation, and only activity and accomplishment eventualities can express the manner information that describing motions by the fast modulation. Therefore, these two aspectual modulations can still be distinguishable from several perspectives.

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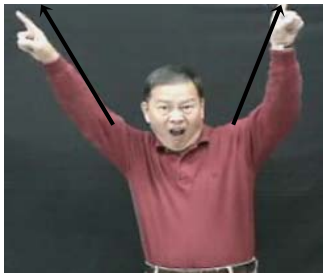
ANGRY

Figure 4.45 ‘angry’



ANGRY$_{[M:intensive]}$

Figure 4.46 ‘very angry’

Accomplishment expressions such as *drive to Taipei* in example (11) also can describe the fast motion of the activities since they are composed of an activity and a state/a change of state (Grimshaw 1990). The verb DRIVE in example (11) clearly shows the signer’s tension on the arms, body and even on the face when compared to the citation form of DRIVE in Figure 4.48. Moreover, the speed of moving the hands to the left becomes very fast. The accomplishment expression *eat up the food* in example (12) is constructed by an activity EAT and a telic marker FINISH (B). The conveyance of the fast motion is made by speeding up the movement of the verb EAT and strengthening the whole movement as Figure (4.49b) illustrates.

(11) TAIPEI PRO DRIVE$_{[M: fast]}$.

‘He drove to Taipei very fast’

a. TAIPEI b. PRO c. DRIVE$_{[M: fast]}$

Figure 4.47

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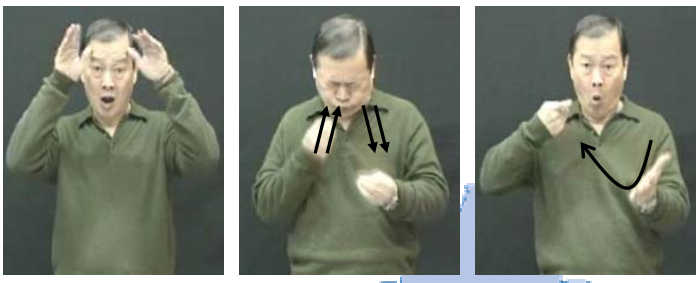
Figure 4.48 DRIVE

(12) DOG EAT$_{[M: fast]}$ FINISH (B).

'The dog ate up (the food) quickly.'



a. DOG b. EAT$_{[M: fast]}$ c. FINISH (B)

Figure 4.49

Although achievements are also dynamic eventualities, they are unable to express the fast motion of the eventuality. The main reason, as mentioned earlier, is because of the instantaneity of the achievements. For example, the achievement expression *discover the problem* happens promptly and the happening of this kind of eventualities is incontrollable (e.g., one can read a lot and investigate carefully, but whether he can discover the problem is not something he can decide); therefore, we can not describe the motion (e.g., fast motion or slow motion) of the achievement eventualities as we do to the activities and accomplishments. However, it is noted that the adverbial FAST (S) is still compatible with achievements in TSL, as shown in example (13).

(13) PRO PROBLEM DISCOVER (A) FAST (S).
'He discovered the problem quickly.'

Actually, if we take a closer look at this sentence from the perspective of semantics, the adverbial FAST (S) here does not express the fast motion of the achievement. In (13), the adverbial FAST (S) is used to indicate the short period of time taken before the given achievement *discover the problem* takes place. So example (13) can also be interpreted as the meaning *He discovered the problem within a short time*. All in all, achievements usually do not denote the fast motion of the eventualities themselves but activities and accomplishments, which contain internal durations, do.

4.3.2 The manner describing the slow motion

The most common adverbial describing the slow motion of an eventuality in English is *slowly* as in *she wrote the homework slowly*. The sign SLOWLY in TSL is similar to the sign FAST (N), except the moving direction of the hand. As Figure 4.50 shows, the hand draws downward while the hand in FAST (N) in Figure 4.51 draws upward. Like FAST (N), the adverbial SLOWLY appears in the sentential-final position in TSL, as example (14) illustrates.

Figure 4.50 SLOW

Figure 4.51 FAST (N)

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(14) PRO WORK SLOWLY.

'He worked slowly.'

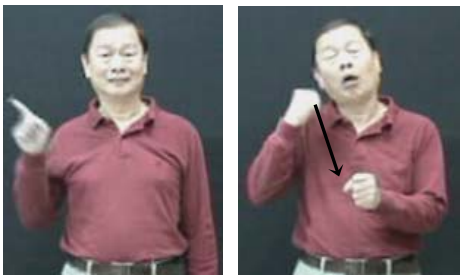
a. PRO b. WORK c. SLOWLY

Figure 4.52

Example (14) expresses the slow motion of the activity WORK by using the lexical adverbial SLOWLY. It can also change the rate of the movement of the sign WORK to denote the same meaning, for example, by changing the rate of the movement from having two fists hitting each other repeatedly in a normal speed to a very slow speed with lax movement, as it shows in example (15). The signer's facial expression also becomes very lax and lazy. This kind of change is opposite to the fast modulation in which the movement becomes faster and tenser; therefore, it is called *slow modulation* and it associates the meaning that indicates the manner of slow motion.

(15) PRO WORK [M: slow].

'He worked slowly.'



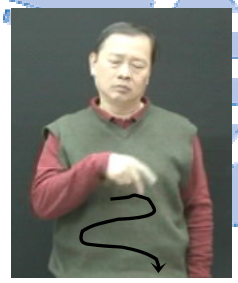
a. PRO b. WORK [M: slow]

Figure 4.53

Since both fast and slow motion express the information of speed of an eventuality, slow motion behaves similarly to fast motion in the way that it can only occur with activity and accomplishment eventualities. Figures 4.54 and 4.55 below illustrate the activity WALK of both the un-modulated and modulated forms. In the modulated one, the signer looks more relaxed. In addition, the path of the movement is zigzag. Recall that the verb that takes the fast modulation and indicates the fast motion of the activity eventuality, the path of its movement is straight (this example is given again below in Figure 4.56). The change of the path does not have to be the main changing feature of the fast or slow modulation. The reason the signer does this is because the zigzag path will take much time while the straight path will make the trip faster.

WALK

Figure 4.54 ‘walk’



$WALK_{[M: slow]}$

Figure 4.55 ‘walk slowly’

$WALK_{[M: fast]}$

Figure 4.56 ‘walk fast’

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WRITE

Figure 4.57 ‘write’

WRITE$_{[M: slow]}$

Figure 4.58 ‘write slowly’

Example (16) expresses the accomplishment eventuality and the slow motion of this eventuality is shown on the activity expression SWEEP by taking the slow modulation. The verb SWEEP is produced by one hand presenting the broom and the other hand presenting the dustpan. Then the hand sweeps toward the dustpan several times as sweeping the ground. In the modulated form as in Figure 4.59c, the hand still sweeps inward several times, but the movement is relatively slower. The accomplishment eventuality in example (17) shows the same modification on the activity expression WASH.

(16) PRO-1 ROOM SWEEP$_{[M: slow]}$ FINISH (B).

‘I have swept the room slowly.’

a. PRO-1

b. ROOM

c. SWEEP$_{[M: slow]}$

d. FINISH (B)

Figure 4.59

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(17) THIS CLOTHES SISTER WASH$_{[M: slow]}$ FINISH (B).

'(My) sister has washed the clothes slowly.'

a. THIS

b. CLOTHES

c. SISTER

d. WASH$_{[M: slow]}$

e. FINISH (B)

Figure 4.60

As we can see from the figures above, the facial expression (i.e., relaxed or serious) and the body (i.e., tense or lax) of the signer are always coherent with the manner the eventualities describe. When you do something slowly, you usually feel lax and less pressured, so you look more relaxed and your body shows less tension; however, if you do things quickly, your body will become tenser subconsciously, and usually you will look more serious.

It has been mentioned that achievements are not able to describe the fast motion of the eventualities themselves; therefore, they are not allowed to denote the slow motion of the eventualities either. For example, we cannot express that the happening of the achievement eventuality *discover the problem* is slow because it always happens in a moment. But it is found that the co-occurrence of the achievement and the adverbial SLOWLY is acceptable in TSL, as shown in example

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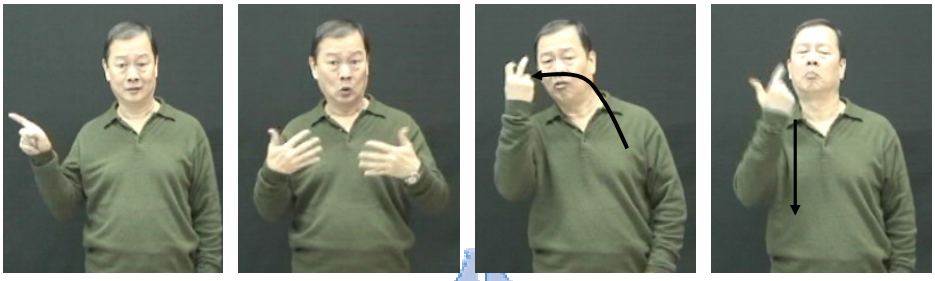
(18). Similar to the explanation of the case describing the fast motion in Section 3.1, here the adverbial SLOWLY does not modify the speed of the achievement itself, but it expresses the long period of time taken by other eventualities before the occurrence of the achievements.

(18) PRO PROBLEM DISCOVER (A) SLOWLY.
'He discovered the problem slowly.'



a. PRO b. PROBLEM c. DISCOVER (A) d. SLOWLY

Figure 4.61

4.3.3 The manner describing the motion of gradual change

The discussion in this section focuses on the manner describing the motion of gradual change. If we follow the analysis on the degree of gradual change in Section 4.2.3, i.e., placing the adverbial INCREASE before the verb to denote the gradually increased degree, the activity RUN describing the gradually increased motion such as *he ran faster and faster* (or *run more and more quickly*) will be expressed, as in example (19), while the activity RUN expresses the gradually decreased motion such as *he ran more and more slowly* will be expressed, as in example (20). However, both (19) and (20) turn out to be ungrammatical. The reason is that native signers of TSL don't use the adverbials FAST (N) or FAST (S) and SLOWLY with the word INCREASE simultaneously.

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(19) *PRO RUN INCREASE FAST (N).

(20) *PRO RUN INCREASE SLOWY.

How does TSL express the motion of gradual change if the addition of the adverbial INCREASE does not work? There are two ways to do this: One is having the given eventuality undergoing a certain aspectual modulation without using the lexical adverbials. Another is relying on the addition of the lexical adverbials such as FAST (N) or SLOWLY, but this adverbial still has to undergo a certain aspectual modulation to achieve the goal that expresses the motion of the gradually change. Let's start by looking at the first method. As example (21) illustrates, the gradually increased motion (i.e., *faster and faster*) is encoded by the activity eventuality RUN which takes the accelerando modulation. The sign RUN is carried out step by step. It starts slowly and gets faster at the end. In other words, the accelerando modulation in example (21) denotes the gradually increased motion. It is different from the accelerando modulation introduced in Section 4.2.3 that indicates the gradually increased degree when it is superimposed on the state eventuality. Another way to denote the same meaning is through example (22). In this example, it adopts the lexical adverbial FAST (N). But this adverbial FAST (N) has to undergo the accelerando modulation. As example (22) shows, the hand signing the word FAST (N) moves upwards slowly in the initial and accelerates to the end. Therefore, the entire movement is going from slowly to fast step by step. But the verb RUN in (22) moves normally without any change. The combination of the adverbial FAST (N) and accelerando modulation creates the meaning *faster and faster*, as in Figure (4.63c).

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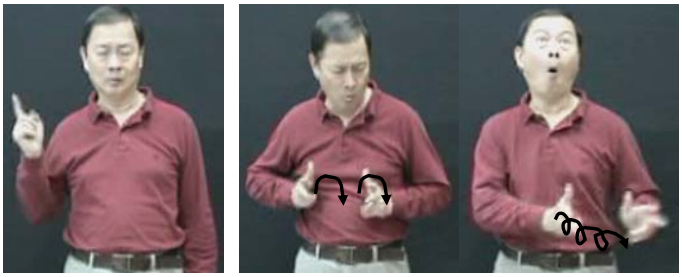
(21) PRO RUN [M:gradually increased].

'He ran faster and faster.'

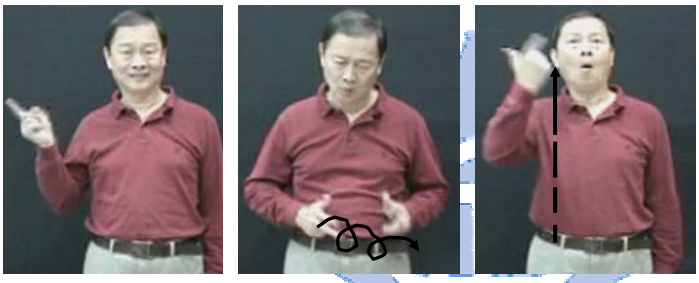


a. PRO b. RUN [M:gradually increased]

Figure 4.62

(22) PRO RUN FAST (N) [M:gradually increased].

'He ran faster and faster.'



a. PRO b. RUN c. FAST (N) [M:gradually increased]

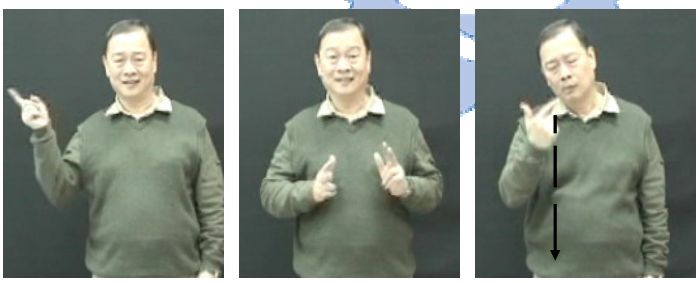
Figure 4.63

Both examples (21) and (22) express the gradually increased motion of the activity eventuality by the accelerando modulation. But in (21), it is the activity expression RUN that undergoes the accelerando modulation, while in (22), it is the adverbial FAST (N) that undergoes the accelerando modulation. The reason why FAST (N) can take the accelerando modulation is because this word can be taken as one of the state expressions. Like the state expression FAT, the word FAST (N) is gradable and it can be modified by the degree adverbial such as *very fast*. Therefore, when this word undergoes the accelerando modulation, it will indicate the gradually increased degree such as *faster and faster*, as example (22) shows. In other words,

according to examples (21) and (22), it shows that the accelerando modulation does not only associate with one meaning. When this modulation is superimposed on the activity eventuality (e.g., RUN), it expresses the gradually increased motion such as *run faster and faster*, as in (21). However, when this modulation is superimposed on the state eventuality (e.g., FAST (N)), it expresses the gradually increased degree such as *faster and faster*, as in (22).

Like the adverbial FAST (N), if the adverbial SLOWLY (also regarded as a state expression) undergoes the accelerando modulation, as shown in example (23), it will express the gradually increased degree of the word SLOWLY (i.e., *more and more slowly*). The word SLOWLY is carried out step by step with slow motion in the initial but faster motion at the end, as the word FAST (N) does in example (22).

(23) PRO RUN SLOWLY [M:gradually increased].
'He ran more and more slowly.'



a. PRO b. RUN c. SLOWLY [M:gradually increased]

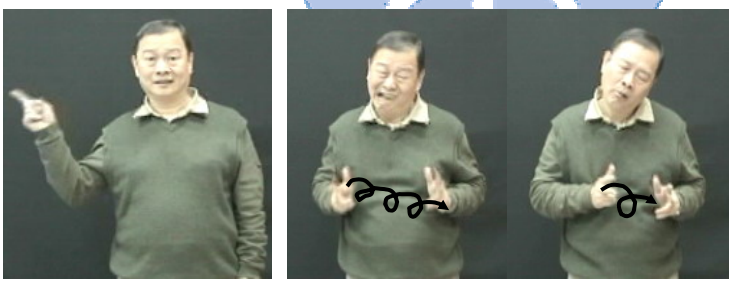
Figure 4.64

Similarly, TSL can just alter the movement of the verb RUN without the addition of the adverbial SLOWLY to indicate the same meaning (i.e., *He ran more and more slowly*). But the accelerando modulation is not applicable here since the meaning that associates with this modulation is (a) describing the gradually increased motion such as *faster and faster* and (b) describing the concept which indicates the

gradually increased degree.

The aspectual modulation used to indicate the gradually decreased motion such as *more and more slowly* is called *ritardando modulation*. This modulation is characterized by starting the movement in a quicker motion, and ending with a slower motion. But the whole movement is still carried out gradually like that of accelerando modulation. Example (24) illustrates the gradually decreased motion of the activity eventuality RUN by the ritardando modulation. Both accelerando modulation and ritardando modulation belong to musical terminologies, which are used to describe the progressive change of tempo. They are used here to indicate the notion of gradual change of motion in the eventuality types.

(24) PRO RUN [M:gradually decreased].
'He ran more and more slowly'



a. PRO b. RUN[M:gradually decreased]

Figure 4.65

Examples (25) and (26) provide another activity expression which indicates the gradually decreased motion of the verb WORK. Likewise, there are two ways to do this: One is expressed by using the adverbial SLOWLY, which undergoes the accelerando modulation and produces the meaning *more and more slowly*, as shown in example (25). Another is expressed by the verb WORK, which undergoes the ritardando modulation and produces the meaning *work more and more slowly*, as

shown in example (26).

(25) PRO WORK SLOWLY [M:gradually increased].

'He worked more and more slowly.'

a. PRO b. WORK c. SLOWLY [M:gradually increased]

Figure 4.66

(26) PRO WORK [M:gradually decreased].

'He worked more and more slowly.'

a. PRO b. WORK [M:gradually decreased]

Figure 4.67

Accomplishments behave exactly like activities because accomplishments contain the property of activity, and they can describe the manner of the motion on the activity. As example (27) shows, it can encode the gradually increased motion of the activity by the accelerando modulation on the verb CLIMB without taking the adverbial FAST (N). Besides, it can also achieve the same goal by the addition of the adverbial FAST (N), which undergoes the accelerando modulation, as it shows in example (28). The modulated activity expression CLIMB in example (27) is

executed step by step. And the upward movement, as shown in Figure 4.68c, is slow in the beginning and then becomes faster at the end. But when the accelerando modulation is superimposed on the adverbial FAST (N) in example (28), the movement of the sign CLIMB is not changed.

(27) TREE MONKEY TREEpro+MONKEYpro-CLIMB$_{[M:gradually\ increased]}$.
'The monkey climbed up the tree more and more quickly as it went near the top.'

a. TREE

b. MONKEY

c. TREEpro+MONKEYpro-CLIMB$_{[M:gradually\ increased]}$

Figure 4.68

(28) TREE MONKEY TREEpro+MONKEYpro-CLIMB
FAST (N)[M:gradually increased]
'The monkey climbed up the tree more and more quickly as it went near the top.'

a. TREE

b. MONKEY

c. TREEpro+MONKEYpro-CLIMB

e. FAST (N)[M:gradually increased]

Figure 4.69

In addition, when accomplishments express the gradually decreased motion, they can either have the activity verb taking the ritardando modulation, as shown in example (29), or have the adverbial SLOWLY taking the accelerando modulation, as shown in example (30). In (29), the movement of the verb WALK in the beginning is normal but at the end it becomes very slow. The signer's facial expression becomes more sluggish at the end. But when the information of the gradually decreased motion is encoded by the adverbial SLOWLY, this adverbial still undergoes the accelerando modulation. This modulation changes the meaning of the adverbial SLOWLY from *slowly* to *more and more slowly*, as the adverbial FAST (N) does in example (28). In other words, both the adverbial FAST (N) and the adverbial

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SLOWLY take accelerando modulation to convey the gradually increased degree since they can be taken as one of the state expressions. But the verbs such as CLIMB or WALK take different kinds of aspectual modulations depending on the manner they try to express. Taking accelerando modulation, it denotes the gradually increased motion, while taking ritardando modulation, it denotes the gradually decreased motion.

(29) HOUSE PRO HOUSEpro+PEOPLEpro-WALK$_{[M:gradually\ decreased]}$.
'He walked to the house more and more slowly as he approached it.'

a. HOUSE

b. PRO

c. HOUSEpro+PEOPLEpro-WALK$_{[M:gradually\ decreased]}$

Figure 4.70

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(30) HOUSE PRO HOUSEpro+PEOPLEpro-WALK SLOWLY[M:gradually increased].

'He walked to the house more and more slowly as he approached it.'

a. HOUSE

b. PRO

c. HOUSEpro+PEOPLEpro-WALK

d. SLOWLY[M:gradually increased]

Figure 4.71

4.3.4 Summary

Among the four eventuality types, only activities and accomplishment can express the manner of the motion. To express the manner information such as the description of fast motion and slow motion, TSL can use lexical adverbials like FAST (N) or SLOWLY. Besides, it can use different modulations on the movement of the given eventualities to express these two manners. For example, the fast motion is encoded by the fast modulation, which makes the movement become faster and tenser, while the slow motion is encoded by the slow modulation, which makes the movement become slower and laxer. When expressing the motion of gradual change, it can be accomplished by the modulated eventuality without involving the adverbials FAST (N) or SLOWLY, or it can be accomplished by the modulated adverbials FAST

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(N) or SLOWLY. But this information can never be conveyed by the word INCREASE as in expressing the degree of gradual change. The modulated eventuality, specifically, is the given eventuality that undergoes either the accelerando modulation or the ritardando modulation. When it undergoes the accelerando modulation, it entails the gradually increased motion (i.e., *faster and faster*) but when it undergoes the ritardando modulation, it entails the gradually decreased motion (i.e., *more and more slowly*). Both accelerando and ritardando modulations make the sign move gradually. However, the movement of the former starts slowly and gets faster at the end while the movement of the latter is starts quickly and gets slower at the end. As for the addition of the modulated adverbials FAST (N) or SLOWLY, no matter which kinds of manner the eventuality describes, both of them undergo the accelerando modulation because these two words are taken as state expressions. The accelerando modulation provides FAST (N) or SLOWLY the meaning of gradually increased degree (e.g., *more and more quickly* or *more and more slowly*). Overall, both the addition of the lexical words and the aspectual modulation on the movement of the given eventualities are able to express the manner expressions in TSL, but it is more frequent and common to convey this information by different aspectual modulations.

4.4 Concluding remarks

In this chapter, I have demonstrated how different eventuality types in TSL express degree information (e.g., the intensive degree, the approximate degree and the degree of gradual change) and manner information (e.g., the manner describing the fast motion, slow motion and the motion of gradual change). The result shows that

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there are two ways to encode these two kinds of information. First, like English, TSL can take different lexical adverbials to indicate degree and manner information of an eventuality, as shown in Table 4.1.[25] Within four eventuality types, only states allow degree expression, but only activities and accomplishments allow manner expression about motions.

Degree & Manner expression \ Lexical adverbials			Sta.	Act.	Acc.	Ach.
Degree	Intensive		VERY	--	--	--
	Approximate		LITTLE	--	--	--
	Degree of gradual change	Gradual increase	INCRASE	--	--	--
		Gradual decrease	--	--	--	--
Manner	Fast motion		--	FAST	FAST	--
	Slow motion		--	SLOWLY	SLOWLY	--
	Motion of gradual change	Gradual increase	--	FAST+ Accelerando modulation	FAST+ Accelerando modulation	--
		Gradual decrease	--	SLOWLY+ Accelerando modulation	SLOWLY+ Accelerando modulation	--

Table 4.1 Degree & manner expressions through the addition of lexical adverbials in eventuality types of TSL

As it is illustrated in Table 4.1, both the degree and motion of gradual change include two types: Gradual increase and gradual decrease. In TSL, whenever expressing the notion of degree of gradual change, TSL tends to use the word INCREASE plus a state expression. Though English has the expression like *less and*

[25] In this table, sta., act., acc., and ach. stand for states, activities, accomplishments and achievements, respectively.

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less beautiful, describing the gradually decreased degree of BEAUTIFUL, TSL will uses the word INCREASE, plus the word UGLY to denote the same meaning. Besides, when describing the motion of gradual change, TSL needs the lexical word SLOWLY or FAST and these two words have to undergo some changes of the movement, called *accelerando modulation*.

Changing the movement of the given eventualities is another way to express the degree and motion information in TSL. In the literature, these changes are known as aspectual modulations (Klima and Bellugi 1979). Table 4.2 summarizes the six aspectual modulations proposed in this Chapter and the aspectual meaning each modulation is associated with.

Modulation	Characteristics of the modulation	Aspectual meaning
Tense	The movement becomes very tensed and the movement is extended rapidly.	Intensive degree
Lax	The size of the movement becomes smaller and the movement is repeated slightly at the end with lax hand configuration.	Approximate degree
Fast	The movement becomes faster and tenser.	Manner of fast motion
Slow	The movement becomes slower and laxer.	Manner of slow motion
Accelerando	The movement is carried out gradually, which starts slowly and accelerates to the end.	Gradually increased degree or motion
Ritardando	The movement is carried out gradually, which starts quickly and retards to the end.	Gradually decreased motion

Table 4.2 Six aspectual modulations in TSL

Each of these six modulations is associated with one or more than one meanings. As shown in Table 4.2, accelerando modulation can denote either the

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gradually increased degree (e.g., *get fatter and fatter* or *more and more beautiful*) or gradually increased motion (e.g., *run faster and faster*) depending on what eventuality type it is superimposed on. Table 4.3 explicitly demonstrates the association between degree and manner expressions and aspectual modulations in each eventuality type in TSL. The result reveals that signed languages like TSL can modify the movement of the sign itself to denote different aspectual meaning without involving other lexical words. This is a big difference between spoken languages and signed languages. It is more straightforward to convey different aspectual meanings by changing the movement of the sign itself, such as extending the size of the movement to indicate the intensive degree while reducing the size of the movement to indicate the approximate degree. These regular and systematic changes prove that TSL, like other signed languages, has a regular morphological operation for marking subtle distinctions in aspectual meaning (Klima and Bellugi 1979:270).

Degree & Manner expression \ Aspectual modulations			Sta.	Act.	Acc.	Ach.
Degree	Intensive		Tense	--	--	--
	Approximate		Lax	--	--	--
	Degree of gradual change	Gradual increase	Accelerando	--	--	--
		Gradual decrease	--	--	--	--
Manner	Fast motion		--	Fast	Fast	--
	Slow motion		--	Slow	Slow	--
	Motion of gradual change	Gradual increase	--	Accelerando	Accelerando	--
		Gradual decrease	--	Ritardando	Ritardando	--

Table 4.3 Degree & manner expressions through different aspectual modulations in eventuality types of TSL

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CHAPTER 5

CONCLUSION

The study of eventuality types is important because it accounts for many different linguistic phenomena such as the application of different syntactic forms (e.g., progressive, imperative or as complements of *persuade*) (Dowty 1979; Tai 1984; Tenny 1987; Smith 1997; He 1992; Chang 2001; among others), the divergence between resultative verb constructions (RVC) in English and Chinese (Chang 2001), the language acquisition of tense and aspect (Bardovi-Harlig and Reynolds 1995), and so on. This thesis investigates the eventuality types in TSL with the aim of finding out the semantics and syntax associated with these different eventuality types.

Chapter 2 has examined the association between three temporal adverbials (e.g., *for*-adverbials, *in*-adverbials, and *at*-adverbials) and eventuality types in TSL. It has been demonstrated that their syntactic positions are not all in the postverbal position. Within them, only *for*-adverbials appear postverbally, but *in*-adverbials and *at*-adverbials appear preverbally. Besides, the result has shown that *for*-adverbials can appear with accomplishments because accomplishments have been proposed to consist of an activity and a change of state/state (Grimshaw 1990); therefore, they involve both duration and endpoints. When *for*-adverbials co-occur with accomplishments, they will denote the duration of the activity. In addition, it has also observed that in TSL *at*-adverbials can appear with activities. However, different from the conclusive reading the telic eventualities such as accomplishment and achievements yield, the co-occurrence of *at*-adverbials with activities entails the inceptive reading, i.e., the starting point of the activity.

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Chapter 3 has answered the question how TSL expresses progressives, imperatives and agentive adverbials and how these three syntactic properties are related to four eventuality types in TSL. TSL uses the progressive aspect marker MIDDLE to indicate the progressive aspect of an eventuality. But it also has been shown that this aspect can be expressed by using the simple present tense without involving any markers. Consequently, the aspect marker MIDDLE is sometimes used to emphasize the progressive aspect. The expressions of imperatives and agentive adverbials in TSL behave like spoken languages such as English or Chinese. An imperative is expressed by omitting the subject and beginning with the root verb. Agentive adverbials such as CAREFULLY or PURPOSELY can either appear preverbally or postverbally.

Moreover, TSL has exhibited a consistent result on the association between these three syntactic properties and eventuality types. That is, only activities and accomplishments can appear in the progressives, as imperatives and with agentive adverbials. Eventuality types that can occur in the progressive must be dynamic and involve duration, and eventuality types that can occur as imperatives and with agentive adverbials must be dynamic and involve agentivity.

Chapter 4 has been devoted to illustrating the way how TSL encodes the degree information (e.g., the intensive degree, approximate degree and degree of gradual change), and manner information (e.g., manner describing fast motion, manner describing slow motion and the motion of gradual change) in each eventuality type. The result has exhibited that TSL can denote these different aspectual meanings through separate lexicons such as VERY, LITTLE, INCREASE, FAST, SLOWLY, it can also can achieve the same goal by changing the movement of the

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verb. The changes on the verb are known as aspectual modulations in the literature (Klima and Bellugi 1979). Using different aspectual modulations to indicate different degree and manner expression is more preferable than using lexical words.

In addition, it has demonstrated that only states allow the degree expression while only activities and accomplishments allow the manner expression about motions (e.g., fast motion, slow motion or the motion of gradual change). The reason that achievements cannot describe the motion of the eventuality themselves is because they happen instantaneously.

This study has shown the semantics and syntax of eventuality types in TSL and exhibited how TSL expresses manner and degree information in different eventuality types. The result of this study may shed light on the future study of sign language, at the same time providing insights for the understanding of other human languages.

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APPENDIX 1

Telic markers in TSL

(1) Finish (A)

(Two hands hold fist at the shoulders with the palms facing inside. Two fists drag apart at the shoulders and the palms turn to face outside.)

(2) Finish (B)

(The four fingertips of one hand touch the palm of the other hand repeatedly.)

(3) Finish (C)

(The hand with the five fingers connecting as a hollow circle touches the shoulder first. Then extend the fingers once touch the shoulder.)

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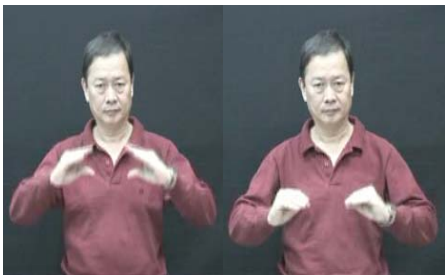
(4) Dry



(Both hands hold the shape as the letter C with the palms facing each other. Gradually close the hands.)

(5) Finished (A)

(One hand lies still with the palm facing up. The other hand with five extended fingers hits the palm of the hand and then moves outward.)

(6) Finished (B)

(One hand lies still with the palm facing up. The index of the other hand bends to touch the palm of the hand and then draws backward.)

(7) Pass

(The thumb of one hand extends up. The palm of the other hand moves the whole hand upward.)