

The Information Structure and Argument Mapping of Mandarin Chinese Resultative Verb Construction

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**I hereby declare that, except where it is otherwise acknowledged in the text,
this thesis represents my own original work.**

**All versions of the submitted thesis (regardless of submission type) are
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Abbreviation

1, 2, 3	1 st person, 2 nd person, 3 rd person
AV	active voice
CL	classifier
COP	copula
com.Focus	completive Focus
con.Focus	contrastive Focus
cs.Topic	contrastive Topic
DEF	define
DC	default classification
DUR	durative aspect maker
GF	grammatical functions
IC	intrinsic classification
LMT	Lexical Mapping Theory
PASS	passive
PTC	particle
p.Topic	primary Topic
PFV	perfective aspect marker
PL	plural
Q	question markers
RVC	resultative verb construction
s.Topic	secondary Topic

SG	singular
UV	undergoer voice

Abstract

This thesis will investigate the information structure and its interaction with argument mappings of Chinese resultative verb construction (RVC). One RVC may have several different mappings. This thesis proposes that these mappings have a strong relation with information structure. If a mapping is not in accord with the information structure of the sentence, this mapping will not be chosen by the speaker.

This thesis proposes that there are four types of Topics in Chinese: primary Topic, secondary Topic, continuing Topic and contrastive Topic. The primary Topic and contrastive Topic motivate a Patient-type argument to be the Subject, and an Agent-type argument being a secondary Topic may not be the Subject of the sentence. Secondary Topics in BA and BEI construction bear different information update, and this blocks some mappings that are possible in the canonical structure to appear in BA and BEI construction.

Chapter 1: Introduction

The syntactic properties of Chinese resultative verb construction (RVC) have been discussed widely in the literature on Chinese linguistics (Thomson, 1973; Cheng, 1993; Cheng & Huang, 1994; Li 1995; Gao, 1997; Huang 2006; Her, 2007; Li, 2007; Li, 2013 and so on). (1) and (2) give the examples of two RVCs: ‘打跑 dǎ-pǎo’ and ‘打碎 dǎ-suì’.

(1). 他们打跑了敌人

Tāmen	dǎ-pǎo-le	dírén
3PL	hit-run-PFV	enemy

‘they have beaten the enemy’

(2). 那个小孩打碎了花瓶

Nàgè	xiǎohái	dǎ-suì-le	huāpíng
that	child	hit-fragmentary-PFV	vase

‘that child broke the vase into pieces’

A RVC is composed of two sub-predicates. The first sub-predicate, usually a verb, denotes the action or the state part of an event and is noted as V_{caus} , such as ‘打 dǎ’ in (1) and (2); the second sub-predicate denotes the result of the event and is noted as V_{res} . The second sub-predicate can be either a verb or adjective. As shown in the examples above, the second sub-predicate in (1), ‘跑 pǎo (run)’, is a verb, while ‘碎 suì (fragmentary)’ in (2) is an adjective.

In both (1) and (2), the second sub-predicate is predicated of the Object; the enemy is the Object of (1) and they are the ones who ‘run (跑 pǎo)’; the vase is the Object of (2) and it is in ‘fragments (碎 suì)’. This is what is commonly expected cross-linguistically in resultative constructions (Simpson, 1983; Cheng & Huang, 1994) ; resultative secondary predicates in sentences with transitive verbs are normally predicated of the Object, while resultative secondary predicates in sentences with intransitive verbs are normally predicated of the Subject.

One interesting property of RVC is that the arguments of some RVCs can be mapped onto grammatical functions in different ways, which allows a sentence containing a RVC to be interpreted in several ways. One famous example is the RVC ‘追累 zhuī-lèi (chase-tired)’ which has three possible interpretations (Cheng & Huang, 1994; Li, 1995; Her 2007).

(3). 张三追累了李四

Zhāngsān zhuī-lèi-le Lǐsì

Zhangsan chase-tired-PFV Lisi

- a. Zhangsan chased Lisi, as a result Lisi got tired. (Agent-Subject, Patient-Object)
- b. Zhangsan chased Lisi, as a result Zhangsan got tired. (Agent-Subject, Patient-Object)

c. Lisi chased Zhangsan, as a result Lisi got tired (Lisi chased Zhangsan; Zhangsan ran so fast, as a result Zhangsan caused Lisi tired). (Patient-Subject, Agent-Object)

The example (3) shows that the mapping between arguments and grammatical functions of the RVC ‘追累 *zhuī-lèi* (chase-tired)’ is not stable. The meaning of this sentence is highly dependent on the context. Only when given the complete context, can the listener understand what the speaker of this sentence intends to say: who is the chaser and who gets tired. This thesis will investigate the interaction of argument mappings and information structure. We will see that new information given by RVCs will update information of different entities in different mappings. When the information structure is changed, a different mapping will be chosen.

This chapter will first introduce Lexical Mapping Theory (LMT) and show the problem caused for LMT by the mismatches between arguments and grammatical functions in RVCs. This problem has been discussed by Her (2007). Although Her (2007) introduces the causative hierarchy proposed by Y. Li (1995) and explains the mismatches based on LMT, the problem is still not solved completely, because it does not generalize to constructions with similar meanings, i.e. the BA construction and the so-called passive ‘BEI construction’. After the discussion of the research background, this chapter will give the research question that this thesis aims to answer and then the outline of the thesis.

1.1 Lexical Mapping Theory (LMT)

A predicate usually describes a property, action or state of people or things, and these participants whose properties, actions or states are identified as arguments of the predicate. Consider examples in (4).

- (4). a. John saw Mary.
b. John loves Mary.
c. John kicked Peter.
d. John went to school.

The argument-taking predicates (*saw*, *loves*, *kicked*, *went*) in (4) have different meanings, but the roles played by their arguments (e.g. see-er, lover, kicker, goer, etc.) can be categorized into a small number of semantic roles. John in (4a) and (4b) is the Experiencer, defined as perceiving a stimulus or registering a mental state, while in the same sentence Mary is stimulus, the Object of perception, cognition or emotion (Kroeger, 2005, p. 54). In (4c) and (4d), John is Agent, the causer or initiator of the event of ‘kicking’ and ‘going’. Peter in (4c) is affected by the action of John, so the semantic role of Peter is Patient. Although predicates can denote numerous actions, states or properties, their arguments have semantic similarities that allow them to be categorized into a limited number of semantic roles. Kroeger (2005) lists the inventory of semantic roles as (5).

(5). Inventory of semantic roles (Kroeger, 2005, p. 54)

- **Agent:** causer or initiator of events
- **Experiencer:** animate entity which perceives a stimulus or registers a particular mental or emotional process or state
- **Recipient:** animate entity which receives or acquires something
- **Beneficiary:** entity (usually animate) for whose benefit an action is performed
- **Instrument:** inanimate entity used by an agent to perform some action
- **Theme:** entity which undergoes a change of location or possession, or whose location is being specified
- **Patient:** entity which is acted upon, affected, or created; or of which a state or change of state is predicated
- **Stimulus:** Object of perception, cognition, or emotion; entity which is seen, heard, known, remembered, loved, hated, etc.
- **Location:** spatial reference point of the event (the source, goal, and path roles are often considered to be sub-types of location)
- **Source:** the origin or beginning point of a motion
- **Goal:** the destination or end-point of a motion
- **Path:** the trajectory or pathway of a motion
- **Accompaniment** (or Comitative): entity which accompanies or is associated with the performance of an action

An argument structure represents the number and types of semantic roles of predicates (Kroeger, 2005, p. 68). For example, *love* and *see* in (4a) and (4b)

require an Experiencer and a Stimulus. *Kick* in (4c) requires an Agent and a Patient, and arguments of *go* in (4d) are an Agent and a Goal. So, argument structure of these verbs can be interpreted as (6).

(6). a. see <Experiencer, Stimulus>

b. love <Experiencer, Stimulus>

c. kick <Agent, Patient>

d. go <Agent, Goal>

Lexical Mapping Theory (LMT) in the framework of Lexical-Functional Grammar (LFG) proposes general principles that link argument structure with grammatical functions. Certain semantic roles tend to be associated with certain grammatical functions. In many languages, Agent is always Subject of the sentences, and Patient could be either Subject or Object. Lexical Mapping Theory (LMT) proposes that the linking between semantic roles and grammatical function is stable and predictable. For example, LMT proposes that Agent is always Subject of a clause and could never be Object. Based on the discussion in Bresnan and Kanerva (1989), Dalrymple (2001), Falk (2011) and Bresnan, Asudeh, Toivonen, and Wechsler (2016), we will look at four components of LMT in the following sections: (a) a hierarchy of role structure; (b) a bi-dimensional classification of syntactic functions; (c) lexical mapping principles; (d) well-formedness conditions.

1.1.1 The hierarchy of semantic roles structure

Kiparsky (1987) observes that it is common to find idioms and lexicalized expressions formed by the combination of a verb and its Location and Theme arguments, while expressions formed by a verb and its Agent or Agent-like argument are infrequent. This means that the ability to participate in the process of lexicalization is different among semantic roles. Another cross-linguistic property of semantic roles is that Agent, Beneficiary and Patient arguments are more likely to have grammatical agreement with verbs (Givón, 1984). From these pieces of evidence, it can be assumed that semantic roles show different tendencies towards different syntactic structures. They are not distributed randomly.

Bresnan and Kanerva (1989) propose a hierarchy of semantic roles as (7), which captures the pattern that the more Agent-like semantic roles are more likely to be the Subject than the Patient or Locatives.

(7). Agent > Beneficiary > Recipient/Experiencer > Instrument > Theme/Patient > Locative

For example, the English verb *kick* takes two arguments, Agent and Patient. According to the hierarchy in (7), the Agent is in the higher position on the hierarchy than the Patient. Thus, in the argument structure of the verb *kick*, the more prominent semantic role is the Agent.

1.1.2 A classification of syntactic functions

A cross-linguistic observation is that grammatical functions vary as to what the corresponding semantic roles are. For example, in many languages Subject and Object can represent almost any semantic roles, while for languages that have ditransitive verbs, the secondary Object of ditransitive verbs and Oblique only accept a limited number of semantic roles. In other words, there is a restriction on Oblique and secondary Object linking them to a limited set of semantic roles, while Subject and Object are less restricted. Another observation related to grammatical functions is that Object and secondary Object can only be the argument of transitive predicates, such as verbs and prepositions (Bresnan & Kanerva, 1989), but Subject and Oblique are not so restricted.

Based on these observations, Bresnan and Kanerva (1989) decompose grammatical functions into the features [+/- r(restricted)] and [+/- o(Objective)]:

(8). Explanation for each feature (Bresnan & Kanerva, 1989; Dalrymple, 2001, p.204; Bresnan, Asudeh, Toivonen, & Wechsler, 2016, p.331)

[-r]: semantically unrestricted SUBJ and OBJ: any semantic role can be mapped onto these grammatical functions

[+r]: semantically restricted OBJ_θ and OBL_θ: only arguments with particular semantic roles can be mapped on these grammatical functions.

[-o]: non-Objective functions, SUBJ and OBL_θ

[+o]: Objective functions, OBJ and OBJ_θ: these functions appear as arguments of transitive categories of predicates (Verbs and Prepositions) but are less likely to appear as arguments of Nouns and Adjectives which are normally intransitive categories.

Examples in (9) show grammatical functions with possible semantic roles.

(9) a. 张三追李四

Zhāngsān zhuī Lǐsì

Zhangsan chase Lisi

‘Zhangsan chases Lisi’

b. 李四累了

Lǐsì lèi-le

Lisi tired-PFV

‘Lisi is tired’

c. 张三在桌子上放了一本书

Zhāngsān zài zhuōzi shàng fàng-le yī-běn shū

Zhangsan on table up put-PFV one-CL book

‘Zhangsan has put a book on the table’

d. 张三给了李四一本书

Zhāngsān gěi-le Lǐsì yī-běn shū

Zhangsan give-PFV Lisi one-CL book

‘Zhangsan gives Lisi a book’

Agent ‘Zhangsan’ in (9a) and Patient/Theme ‘Lisi’ in (9b) can be the Subject, which has the features (-r, -o). The Patient ‘Lisi’ in (9a) can be the Object that has the feature (-r, -o). (9c) show the example of oblique (+r, -o): the Locative ‘zài zhuōzi shàng (on the table)’. (9d) shows that the Recipient ‘Lisi’ can be the restricted Object with the features (+r, +o).

Table (10) shows the proposed the natural classes of grammatical function:

(10). Decomposition of grammatical functions

features	[-r]	[+r]
[-o]	SUBJ	OBL _θ
[+o]	OBJ	OBJ _θ

The minus valued features are unmarked (Bresnan et al., 2016). In terms of markedness, LMT assumes that there is a hierarchy among the grammatical functions. The Subject (-r, -o) is least marked, and the restricted Object (+r, +o) is most marked. LMT proposes a partial ordering hierarchy of argument functions:

(11). Partial ordering of argument functions (Bresnan et al., 2016)

$$\text{SUBJ} > \text{OBJ}, \text{OBL}_{\theta} > \text{OBJ}_{\theta}$$

(Negatively specified features are unmarked)

1.1.3 Lexical Mapping Principles

As LMT discusses the mapping between argument structure and grammatical functions, it needs rules to classify the relation between argument structure and grammatical functions. It is lexical mapping principles that associate semantic roles and grammatical functions by the features [+/-r] and [+/-o]. There are three lexical mapping principles (intrinsic role classification, morpholexical operation and default classification). Each of them will be discussed in the following sections.

1.1.3.1 *Intrinsic classification (IC)*

The intrinsic classification is the basic principle for determining semantic roles mapping onto syntactic functions (Bresnan et al., 2016). The Intrinsic classification (IC) assigns the [+/- r] and [+/- o] feature to semantic roles, according to their intrinsic semantic meanings. After the features having been assigned to semantic roles, the linking between argument structure and grammatical functions can be constructed.

Agent argument, cross-linguistically, tends to be Subject or Oblique (in Passive) and not Object or secondary Object. Therefore, an Agent argument is assigned the feature [-o]. This indicates that Agent could not be an Object or Objective-like function (Dalrymple, 2001):

(12). a. Agent encoding:

Agent

|

[-o]

b. 张三打死了李四

Zhāngsān dǎ-sǐ-le Lǐsì

Zhangsan hit-die-PFV Lisi

‘Zhangsan has killed Lisi (by hitting Lisi).’

Thus, in (12b), ‘Zhangsan’ as Agent is assigned [-o]

Theme and Patient can be either Subject or Object in many languages. Thus, Theme or Patient requires the feature [-r], which enables them to alternate between Subject and Object:

(13). a. Theme/Patient encoding:

Theme or Patient

|

[-r]

b. 张三打死了李四

Zhāngsān dǎ-sǐ-le Lǐsì

Zhangsan hit-die-PFV Lisi

‘Zhangsan has killed Lisi (by hitting Lisi).’

In (13b), ‘Lisi’ as Patient is assigned [-r].

Finally, a Locative argument (as opposed to locative adjuncts), similar to Agent, can be Subject or Oblique. This requires the feature [-o] to be assigned to Locative arguments:

(14). a. Locative encoding:

Locative

|

[-o]

b. 张三在桌子上放了一本书

Zhāngsān zài zhuōzi shàng fàng-le yī-běn shū

Zhangsan on table up put-PFV one-CL book

‘Zhangsan has put a book on the table’

(14b) the Locative ‘zài zhuōzi shàng (on the table)’ is assigned the feature [-o].

1.1.3.2 Morpholexical operation

The same information can be expressed by different voice (active, passive, antipassive, etc.). For example, (15a) and (15b) have the same truth conditions but the mappings between semantic roles and grammatical functions are different.

(15) a. John saw Mary

b. Mary was seen by John.

(16) gives the examples of Chinese. (16a) and (16b) describe the same event. However, (16a) is in the canonical structure with Agent being the Subject, while (16b) expresses this event with BEI construction in which the Patient is the Subject.

(16) a. 张三打死了李四

Zhāngsān dǎ-sǐ-le Lǐsì

Zhangsan hit-die-PFV Lisi

‘Zhangsan has killed Lisi (by hitting Lisi).’

b. 李四被张三打死了

Lǐsì bèi Zhāngsān dǎ-sǐ-le

Lisi BEI Zhangsan hit-die-PFV

‘Lisi was killed by Zhangsan’

LMT represents this alternation of lexical argument structure of the same predicate by a morpholexical operation. Bresnan & Kanerva (1989) propose that the lexical argument structure will be affected by morpholexical operations which add or suppress semantic roles. For example, the passive suppresses the highest semantic role in the argument structure of a verb, which causes Theme or Patient argument (semantic roles which are lower on the hierarchy) to be the Subject, instead of Agent or Experiencer (semantic roles which are higher on the

hierarchy) being Subject. the suppressed Agent or Experiencer argument can be unexpressed in the sentence. The encoding for the passive can be noted as (17):

$$(17). \quad \text{passive} \quad \hat{\theta}$$

$$|$$

$$\emptyset$$

(the highest semantic role is marked as $\hat{\theta}$)

For example, the English passive in (15b) suppresses the Experiencer, and the Stimulus is promoted as the Subject. This can be noted as (18).

$$(18). \quad \text{see (passive)} \quad < \text{Experiencer}, \quad \text{Stimulus} >$$

$$| \qquad \qquad |$$

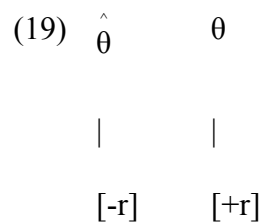
$$\emptyset \qquad \qquad \text{Subject}$$

1.1.3.3 Default classification (DC)

Each grammatical function has two features, one of which is assigned by Intrinsic classification. After the lexical argument structure having been built up, a default classification (DC) is applied to assign another feature to semantic roles in order to ensure that semantic roles will get two features so that they can be mapped to grammatical functions. DC is also designed to ensure that the higher roles will be mapped to Subject, and that lower roles will be mapped onto a non-Subject function. The default classification will only be applied when a semantic

role has not already possessed an incompatible feature with default classification (Bresnan & Kanerva, 1989).

The default classification assigns [-r] to the semantic role of the predicate that is highest on the semantic hierarchy and [+r] to other roles.



(the highest semantic role on the hierarchy is marked as $\overset{\wedge}{\theta}$)

The RVC ‘打死 dǎ-sǐ’ in (20) has two arguments, the Agent ‘Zhangsan’ and the Patient ‘Lisi’.

(20). a. 张三打死了李四

Zhāngsān dǎ-sǐ-le Lǐsì

Zhangsan hit-die-PFV Lisi

‘Zhangsan has killed Lisi (by hitting Lisi).’

The Agent is more prominent than the Patient; therefore, the feature [-r] is assigned to the Agent by the default classification. The default classification will assign the [+r] feature to Patient, but this is incompatible with the intrinsic classification of Patient, which assigns the [-r] feature to Patient. Therefore, the

[+r] by the default classification will not be assigned to the Patient in (20) in order to avoid the clash of two features

1.1.4 Well-formedness conditions

The mappings are subject to well-formedness conditions. Consider examples such as (21a) and (21b), which both contain the verb ‘run’ and its Theme argument ‘the dog’.

(21) a. The dog is running.

*b. Is running the dog.

In LMT, Theme argument gets a [-r] feature, which allows this Theme argument to be mapped to Subject or Object. If it is mapped to Object, this sentence will have no Subject as in (21b). This sentence is ill-formed. Therefore, LMT needs a rule, *the Subject condition*, to make sure that each sentence has a Subject:

(22) **The Subject Condition:** Every verb must have a SUBJ.

Another problem that LMT has to address is a possible mapping clash in passivization of ditransitive verbs.

(23) a. I gave John a book.

b. John was given a book by me.

c. *John a book was given by me.

For example, in passive voice like (23b), *give* takes three arguments, a Beneficiary (*John*), a Theme (*a book*) and an Agent (*me*). The Theme argument gets a [-r] feature by IC and the Beneficiary also gets a [-r] by DC. This indicates that both arguments can be Subject or Object of a verb like *give* (passive). However, a clause could not possess two Subjects; therefore, LMT need another rule called *Function-argument Biuniqueness* to restrict the mapping so that each argument will only be mapped onto one grammatical function, and each grammatical function only gets one argument that is mapped onto it.

(24) **Function-argument biuniqueness:** Each a-structure role corresponds to a unique f-structure function, and each f-structure function corresponds to a unique a-structure role.

1.1.5 LMT in English - an example

To give a clear illustration of how LMT is used, here is an example from English.

(25) John hits Peter.

a-str	hit	<Agent, Patient>	
IC:	[-o]	[-r]	(IC = intrinsic classification)
DC:	[-r]		(DC = default classification)

	(SUBJ)	(SUBJ/OBJ)
GF:	SUBJ	OBJ

The English verb *hit* takes two arguments, an Agent and a Patient. The mapping takes place sequentially. The intrinsic role classification (IC) of the two roles is [-o] and [-r] respectively. Then, default classification (DC) comes in and assigns [-r] feature to the Agent argument, the highest role in this situation. Default classification would assign [+r] feature to the Patient argument, however, since Patient is already assigned [-r] by intrinsic classification, DC cannot be applied, because [-r] and [+r] are incompatible (Bresnan & Kanerva, 1989). A Patient argument with only a [-r] feature can be mapped onto either subject or object, but an Agent argument with [-o] and [-r] can only be mapped onto the Subject. Thus, two arguments of the verb *hit*, the Agent and the Patient, are mapped onto the Subject and the Object respectively.

(26) Peter is hit (by John).

a-str	hit.passive	<Agent,	Patient>
		∅	
IC:			[-r]
DC:			[-o]
			(SUBJ)
GF:		OBL	SUBJ

(26) is an example of English passivisation. IC is not changed as the semantic roles of *hit* are the same. The process of passivisation, in the perspective of LMT, is a process of suppression of the higher argument on the hierarchy of semantic roles. In this case, the Agent of *hit* is suppressed, then the Patient of *hit* becomes the more prominent argument in the passive of *hit*; thus, DC assigns [-o] to Patient. The subject condition requires that each verb has a Subject and the Agent argument is suppressed, therefore, the Patient with the features of [-r] and [-o] is mapped onto the Subject. The Agent argument can be expressed as an oblique, or omitted from the sentence.

1.2 Agent mapping as a problem in LMT

From the examples given in section 1.1.5, an obvious problem appears: the agent argument, as predicted by LMT, will never be mapped onto Object. This may be true for English and other European languages, but for many Austronesian languages, an Agent-like argument (higher on the hierarchy of semantic roles) can become an Object-like grammatical function. For example, the undergoer voice (or Objective voice) in Balinese requires the Agent argument to be linked to Object (Arka, 2003).

(27) Ida ngadol bawi-ne
 3SG AV.sell pig-DEF
 ‘(S)he sold the pig’

(28) Bawi-ne adol ida

pig-DEF UV.sell 3SG

‘the pig, (s)he sold’

(29) Bawi-ne ka-adol antuk ida

pig-DEF PASS-sell by 3SG

‘The pig was sold by him/her’ (Arka, 2003, p.118)

Arka argues that in each of the 3 sentences above, the Agent *ida* has different grammatical functions: Subject (active voice) in (27), Object (undergoer voice) in (28) and Oblique (passive voice) in (98). This is not in accord with LMT, because the intrinsic classification [-o] prevents the Agent from acting as Object.

A similar situation is found in Mandarin Chinese. Some RVCs have interpretations with the linking that is not well-formed according to LMT. We have mentioned the well-known Chinese example of the predicate *zhuī-lèi* given in (3) and now repeated here in (30).

(30) 张三追累了李四

Zhāngsān zhuī-lèi-le Lǐsì

Zhangsan chase-tired-PFV Lisi

- a. Zhangsan chased Lisi, as a result Lisi got tired.
- b. Zhangsan chased Lisi, as a result Zhangsan got tired.
- c. Lisi chased Zhangsan, as a result Lisi got tired.

As the example shows above, the example can have three readings. Compare (30a) and (30c). In (30a), Zhangsan is the Agent (chaser) and Lisi is the Patient (being chased, chasee). However, in (30c), Zhangsan is the Patient (chasee) and Lisi is the Agent (chaser). It is expected that there could be three argument structures of *zhuī-lèi*, and one of these argument structures is interpreted as (30c), in which the Patient (Zhangsan, chasee) is linked to Subject and Agent (Lisi, chaser) is linked to Object. This is not possible in LMT, as Agent with the feature [-o] is not allowed to be Object. LMT only allows Agent to be linked with Object through morpholexical operation, but there is no obvious syntactic or morpholexical marker of a morpholexical operation having taken place, such as passive marker or an undergoer voice marker as Balinese.

1.3 The argument-function mapping of RVC in a revised LMT

The mismatch between arguments and grammatical functions in Mandarin RVC is a challenge for LMT. To address this problem, Her (2007) introduces the analysis of Cause roles (C-roles) proposed by Y. Li (1995) into LMT. This section will first introduce the analysis of C-roles by Y. Li (1995) and then show how Her (2007) applies this to LMT to address the mismatch.

Y. Li (1995) proposes that a RVC contains a causative relation between two arguments of this RVC. Neither sub-predicate in a RVC denotes a causative relation between two arguments, but when the two predicates are compounded to form a RVC, the causativity will emerge.

(31) a. 张三追李四

Zhāngsān zhuī lǐsì

Zhangsan chase Lisi

‘Zhangsan chases Lisi’ (no causativity involved)

b. *张三累了李四

Zhāngsān lèi-le lǐsì

Zhangsan tired-PFV Lisi

‘*Zhangsan tired Lisi’ (ungrammatical and no causativity involved)

c. 张三累了

Zhāngsān lèi-le

Zhangsan tired-PFV

‘Zhangsan was tired’ (no causativity involved)

The two sub-predicates of the RVC ‘追累 *zhuī-lèi*’ cannot express causativity individually. The simple verb ‘追 *zhuī*’ only denotes the chasing action (Zhangsan chased Lisi), and it does not contain causativity, such as Lisi causing Zhangsan to chase him. (31b) is ungrammatical, because ‘累 *lèi*’ can only take one argument. (31c) shows that this predicate just describes the state of Zhangsan. It does not clarify who or what causes Zhangsan to be tired.

However, the causative reading will appear in the sentence containing the RVC ‘追累 *zhuī-lèi*’.

(32). 张三追累了李四

Zhāngsān zhuī-lèi le Lǐsì

Zhangsan chase-tired PFV Lisi

- a. Zhangsan chased Lisi, as a result Lisi got tired. (Causative)
- b. Zhangsan chased Lisi, as a result Zhangsan got tired by chasing Lisi. (non-Causative)
- c. Lisi chased Zhangsan, as a result Lisi got tired. (Causative)

The readings of (32a) and (32c) contain the causativity. In (32a), the tiredness of Lisi is caused by Zhangsan, who chased Lisi. In (32c), the tiredness of Lisi is also caused by Zhangsan, who ran so fast that Lisi became tired from chasing Zhangsan. (32b) does not have this causative meaning. (32b) says that Zhangsan got tired from doing the action of chasing. This is not caused by the other argument, Lisi.

Based on this observation, Y.Li (1995) proposes *Cause roles* (C-roles) for the arguments involved in causative readings of RVCs, in addition to the semantic roles they receive from the V_{caus} . There are two C-roles: Cause and Affectee. The Cause role is assigned to the initiator of the causativity, like ‘Zhangsan’ in (32a), and the Affectee is assigned to the affected argument, like ‘Lisi’ in (32a). The assignment of C-roles is not random, and Y.Li (1995) gives the conditions for the assignment.

(33) Conditions for C-role assignment (Y.Li, 1995)

- a. The argument in the Subject position receives the c-role Cause from a resultative compound only if it does not receive a theta role from V_{res}
- b. the argument in the Object position receives the c-role Affectee from a resultative compound if it receives a theta role at least from V_{res}

‘追 zhuī (chase)’ takes two arguments, Agent and Patient, and ‘累 lèi (tired)’ takes one argument, Theme. When these two predicates form the RVC ‘追累 zhuī-lèi (chase-tired)’, the resulting structure has three semantic roles that need to be expressed: Agent, Patient and Theme, but only two grammatical functions available to express them. Thus, the Theme will be combined with either Agent or Patient. (34) shows how the C-roles are assigned to the arguments of the RVC ‘追累 zhuī-lèi’.

(34). 张三追累了李四

Zhāngsān zhuī-lèi le Lǐsì

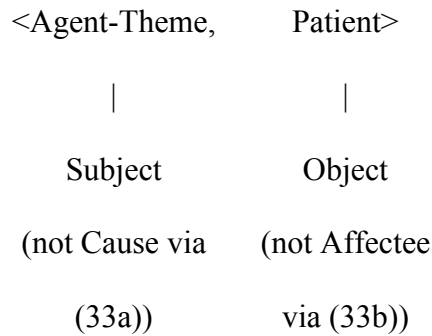
Zhangsan chase-tired PFV Lisi

- a. Zhangsan chased Lisi, as a result Lisi got tired. (Causative)

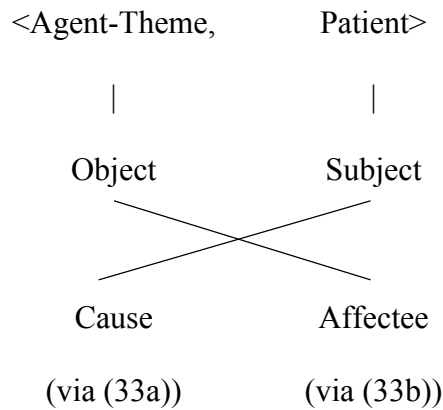
<Agent, Patient-Theme>	
Subject	Object
Cause	Affectee

(via (33a)) (via 33b)

b. Zhangsan chased Lisi, as a result Zhangsan got tired. (non-Causative)



c. Lisi chased Zhangsan, as a result Lisi got tired. (Causative)



In (34a), the Theme is combined with the Patient, and the argument with combined semantic roles is in the Object position; thus, this argument is assigned the C-role of Affectee via (33b). Agent argument in the Subject position does not receive the semantic role from V_{res} , thus, it is assigned the C-role of Cause via (33a). In (34b) and (34c), Theme is combined with Agent. The C-roles will not be assigned to the arguments in (34b), because the argument in the Subject position contains a semantic role from V_{res} , which blocks it to receive the C-role of Cause. The C-role assignment will be applied in (34c). The argument with combined semantic roles is in the Object position and it will receive the C-role

of Affectee by the condition stated in (33b). The Patient is not combined with Theme and it is in the Subject position; therefore, it receives the C-role of Cause via (33a).

Y.Li (1995) claims that the Cause must be in the Subject position and the Affectee in the Object position; thus, there is a hierarchy between two C-roles: the Cause is more prominent than Affectee. The proposal of C-role does not predict the linking between argument structure and grammatical functions, because the C-role assignment is only possible when the Subject and Object have been decided in the sentence. Therefore, Her (2007) modifies the condition of causativity assignment in RVC and applies the revised causativity assignment conditions in LMT in order to get a predictable linking between argument structure and grammatical functions.

Her (2007) proposes that one of the combined semantic roles in the RVC will be suppressed. The argument mapping of RVCs will be decided by the unsuppressed semantic role. The suppression means that this semantic role will not receive argument mapping, but it does not semantically eliminate this semantic role (Her, 2007). The suppression only blocks the semantic role of Patient (chasee) or Agent (chaser) from being mapped onto grammatical functions. The relation of chaser and chasee still exists in the sentence containing the RVC ‘追累 *zhuī-lèi*’.

Therefore, the RVC ‘追累 zhuī-lèi’ can have four possible argument structures as (35) (semantic roles with strikethrough is suppressed).

- (35). a. 追累 zhuī-lèi ‘chase-tired’ < Agent, Patient-~~Theme~~>
 b. 追累 zhuī-lèi ‘chase-tired’ < Agent, ~~Patient~~-Theme>
 c. 追累 zhuī-lèi ‘chase-tired’ < Agent-~~Theme~~, Patient >
 d. 追累 zhuī-lèi ‘chase-tired’ < ~~Agent~~-Theme, Patient >

The first three argument structures in (35) can have well-formed mapping onto grammatical functions as LMT predicts: the Agent is mapped on the Subject and the Patient or Theme is mapped onto Object. (36) shows the mapping process of the argument structures in (35).

(36).

a.	< Agent,	Patient- Theme >
Intrinsic Classification	[-o]	[-r]
Possible GF	(SUBJ)	(SUBJ, OBJ)
	SUBJ	OBJ
b.	< Agent,	Patient -Theme >
Intrinsic Classification	[-o]	[-r]
Possible GF	(SUBJ)	(SUBJ, OBJ)
	SUBJ	OBJ
c.	< Agent- Theme ,	Patient >

Intrinsic Classification	[-o]	[-r]
Possible GF	(SUBJ)	(SUBJ, OBJ)
	SUBJ	OBJ
d.	< Agent -Theme,	Patient>
Intrinsic Classification	[-r]	[-r]
Possible GF	(SUBJ, OBJ)	(SUBJ, OBJ)
	?	?

(36a) and (36b) show the argument mappings of the interpretation of (30a). These two mappings have the same meaning, but the difference is that the Theme in the combined semantic roles is suppressed in (36a), and in the (36b) the suppressed role in the combined semantic roles is the Patient. (36c) is the argument mapping of the interpretation of (30b). The Theme is suppressed in this mapping.

The problem lies in (36d). (36d) is the argument mapping of the interpretation of (30c). In this argument mapping, the Agent is suppressed, the mapping will be decided by two unsuppressed roles: Theme and Patient. However, it is impossible to decide which argument can be mapped onto Subject, because the Theme and Patient both get the [-r] feature and they are in the same position on the hierarchy of semantic roles, which limits the assignment of default classification. In order to account for this problem, Her (2007) revises the C-role assignment conditions as (37) and applies it in LMT

(37) Causativity Assignment in Resultative verb construction

An unsuppressed role from V_{res} receives Affectee (noted as [af]) iff an unsuppressed role from V_{caus} exists to receive Cause (noteds as [caus]).

Thus, the argument structures of ‘追累 zhuī-lèi’ can be revised as (38).

- (38) a. 追累 zhuī-lèi ‘chase-tired’ < Agent, Patient-~~Theme~~>
b. 追累 zhuī-lèi ‘chase-tired’ < Agent[caus], ~~Patient~~-Theme[af]>
c. 追累 zhuī-lèi ‘chase-tired’ < Agent-~~Theme~~, Patient >
d. 追累 zhuī-lèi ‘chase-tired’ < ~~Agent~~-Theme[af], Patient[caus] >

In (38a) and (38c), the Theme is suppressed, so (37) will not be applied in (38a) and (38c). The suppression of Theme means that the Theme will not receive argument mapping. The suppression does not eliminate the meaning that the argument with the combined semantic roles becomes tired. Thus, we can have the interpretation as (30a) and (30b). In (38b), the Patient is suppressed and the Theme is overt, thus (37) is applied: the Theme receives the C-role of Affectee, and the overt Agent receives the C-role of Cause. (37) is also applied in (38d), as the Agent in the combined roles is suppressed and the Theme is overt. The Theme receives the C-role of Affectee, and the Patient which is unsuppressed and overt semantic role receives the C-role of Cause. Thus, the mapping between argument structure in (36d) and the grammatical functions can be built up as (39).

(40). 张三追累了李四

Zhāngsān zhuī-lèi le Lǐsì

Zhangsan chase-tired PFV Lisi

a. Zhangsan chased Lisi, as a result Lisi got tired. (Causative)

i.	< Agent,	Patient-Theme >
Intrinsic Classification	[-o]	[-r]
Possible GF	(SUBJ)	(SUBJ, OBJ)
	SUBJ	OBJ
ii.	< Agent[caus],	Patient -Theme[af] >
Intrinsic Classification	[-o]	[-r]
Possible GF	(SUBJ)	(SUBJ, OBJ)
	SUBJ	OBJ

b. Zhangsan chased Lisi, as a result Zhangsan got tired. (non-Causative)

iii.	< Agent-Theme,	Patient >
Intrinsic Classification	[-o]	[-r]
Possible GF	(SUBJ)	(SUBJ, OBJ)
	SUBJ	OBJ

c. Lisi chased Zhangsan, as a result Lisi got tired. (Causative)

iv.	< Agent -Theme[af],	Patient[caus] >
Intrinsic Classification	[-r]	[-r]
Possible GF	(SUBJ, OBJ)	(SUBJ, OBJ)
	OBJ	SUBJ

The mappings of (40a.i), (40a.ii) and (40b.iii) are similar to the first three mappings in (36). The mapping (40c.iv) is decided by the C-roles of arguments. It can be known from these mappings that the argument mapping of RVC is complex, as the mappings involve semantic roles combination, suppression and causativity. It cannot be simply decided by the semantic hierarchy or the restricted and objective features.

1.4 BA and BEI construction

BA and BEI construction has been discussed widely in the studies of Mandarin Chinese. Unlike sentences with canonical structure which have typical post-verbal Objects, a sentence containing the BA construction has the preverbal Object marked by the morpheme ‘把 bǎ’. The word-class of this morpheme has been analysed as a case marker, a preposition, a coverb, or a verb (Bender, 2000). The BEI construction is considered as the passive in Mandarin Chinese. The word-class of BEI is also a controversial topic, as it has been analysed as a preposition or a verb (Her, 2009). There are two types of passive in Mandarin Chinese: long passive with an overt Agent in BEI construction, and short passive without an overt Agent in BEI construction (C.-T. J. Huang, 1999)

(41) repeats (3) with the RVC ‘追累 zhuī-lèi’; (42) shows it with the BA construction, and (43) shows it with the BEI construction.

(41). 张三追累了李四

Zhāngsān zhuī-lèi-le Lǐsì

Zhangsan chase-tired-PFV Lisi

- a. Zhangsan chased Lisi, as a result Lisi got tired. (Causative)
- b. Zhangsan chased Lisi, as a result Zhangsan got tired. (non-Causative)
- c. Lisi chased Zhangsan, as a result Lisi got tired. (Causative)

(42). 张三把李四追累了

Zhāngsān bǎ Lǐsì zhuī-lèi-le

Zhangsan BA Lisi chase-tired-PFV

- a. Zhangsan chased Lisi, as a result Lisi got tired. (Causative)
- *b. Zhangsan chased Lisi, as a result Zhangsan got tired. (non-Causative)
- c. Lisi chased Zhangsan, as a result Lisi got tired. (Causative)

(43). 李四被张三追累了

Lǐsì bèi Zhāngsān zhuī-lèi-le

Lisi BEI Zhangsan chase-tired-PFV

‘Zhangsan is tired, as the result of being chased by Lisi.’

(42) with a BA construction can only have two readings. It is not possible to interpret that the result ‘being tired’ as the state of the Subject ‘Zhangsan’. The result must be associated with the element marked by BA ‘Lisi’. (43) is an example containing BEI construction. As (43) shows, the RVC in BEI construction only has one mapping, in which the Patient must be the Subject and the result is also related to the Patient. The Agent cannot be the Subject in (43).

The mismatch between arguments and grammatical functions in RVC has been well explained by LMT and C-roles, but there are some remaining problems: why does Chinese allow two or more different mappings in one sentence (e.g. (40))? The second problem is that morpholexical operations involving the BA construction and BEI construction with RVCs, do not allow some mappings that might otherwise seem possible.

The limitation on mappings between argument and grammatical functions in BA construction and BEI construction cannot be fully explained by Her (2007). (41b) is a possible mapping in canonical structure and it is expected that it will be also possible mapping in BA construction. However, (42b) shows that this is not possible. This problem is not addressed in Her (2007). This thesis will try to find out what the difference is between these syntactic structures that causes the limitation on mapping. I explore the idea that the BEI and BA construction have different word orders, and these have different information structure possibilities. Information structure may affect people to choose the different mappings. The choice of mapping is context-dependent. If the discourse cannot assign certain information structure roles, then certain mappings become less likely.

1.5 Outline of this thesis

Chapter 2 will examine the information structure and propose the components of information structure in Chinese. Chapter 3 will show the relation between information structure and different argument mappings of RVC. Chapter 4 will

give an account of why certain mapping is not possible in BA and BEI construction from the perspective of the information structure.

1.6 Data

This research will use data from the BCC corpus (Xun, Rao, Xiao, & Zang, 2016). This corpus is available online (<http://bcc.blcu.edu.cn>). This corpus contains data from academic articles, newspaper (in Mandarin) published in Xiamen, literature and Weibo (a Chinese social media). It contains around 15 billion characters, which may give adequate data for this research.

One of the advantages of this corpus is that it permits users to search by using part of speech; therefore, this make it possible to extract data of RVC directly. As mentioned before, a RVC is composed by a verb and an adjective or another verb. Thus, RVCs can be found in the corpus by searching the combination of verb-adjective or verb-verb. Due to the limitation on downloading data from the corpus, I have found 111 RVCs that occur in 537 examples in total.

The argument mapping and information structure of each example will be examined to find out the interaction between argument mapping and the information structure. The data analysis concentrated on the situations in which the Patient-like arguments are the Subject and Agent-like arguments are not the Subject.

Chapter 2: Information structure

Chapter 1 has mentioned that BA and BEI construction may possess different possibilities of the information structure, and this may affect people's choice on argument mapping of a RVC. Before investigating the interaction between argument mappings and the information structure, we will first look at what is the information structure and the information structure in Mandarin Chinese. Chapter 2 will begin with a brief introduction of information structure and review the proposals of Vallduví and Engdahl (1996) and Choi (1996). Then, this chapter will introduce the components of information structure in Chinese, showing that the Prominence feature of Topics is not a bipartite feature, but a gradient feature.

2.1 Introduction

Information structure gives an account of the different structures of sentences that are semantically equivalent, such as voice alternations (Lambrecht, 1996). It also has been applied to analyse the change of word order in some languages, such as, Catalan (Vallduví, 1995), Korean (Choi, 1996), Urdu and Turkish (Butt & King, 1996). Lambrecht (1996) defines the information structure as (1):

(1) Definition of information structure

Information structure: That component of sentence grammar in which propositions as conceptual representations of states of affairs are paired with lexicogrammatical structures in accordance with the mental states of interlocutors who use and interpret these structures as units of information in given discourse contexts

Here is an example to illustrate what information structure represents. Compare (2) and (3).

(2) a. What happened?

b. [Jack kicked John]_{Focus}

(3) a. What happened to John?

b. [John]_{Topic} [was kicked by Jack]_{Focus}.

(2b) and (3b) describe the same situation, but the syntactic structures used in the two sentences are different. The question is, why do speakers use these different structures? Why is (3b) a better answer to (3a) than (2b) is? The question in (2a) is a general question: ‘what happened’. It doesn’t presuppose any Agent or Patient. So, a declarative sentence in the active voice is enough for this context. However, the question (3) introduces ‘John’ as someone who has undergone something. The answer needs to take up ‘John’ in some way. ‘John’ is a continuing Topic for the answer. (Continuing) Topics in English are often put in the initial position (Erteschik-Shir, 2007, p. 108). For ‘John’ as patient to

appear in the normal position for continuing Topics, something has to happen to the normal active voice sentence *Jack kicked John* in which the agent, Jack, is in the initial position. A way to do this is to use the passive voice counterpart, in which the Patient, John, becomes the Subject and appears in initial position. From this example, we can see that information structure is a useful tool to explain the variety of syntactic structures that have the same meaning.

The following sections will discuss components of information structure and information status (old versus new) in Chinese. Information structure is not only composed of Focus and Topic. Vallduví and Engdahl (1996) argue that old information can be divided as Link and Tail, and Choi (1996) proposes that the Focus can also be bipartite: completive and contrastive Focus. These four components of information structure can be categorized by two features, Newness ([+/-New]) and Prominence ([+/-Prom]) (Choi, 1996). This results in two types of Topic [-Prom, -New] and [+Prom, -New]. However, I will show that in Chinese the binary distinction of Prominence, [-Prom] and [+Prom], is not adequate to cover all Topics and that we must recognise 4 types of Topic: primary Topic, secondary Topic, continuing Topic and contrastive Topic.

2.2 Components of information structure

Vallduví and Engdahl (1996) consider that the traditional bi-partite division of information structure into Topic-Comment, or Ground-Focus, is not satisfying. The ground-focus divides sentences into two parts: one is less informative; it is

the known and expected part, namely the Ground. the other one is informative, unknown or contrary to expectation, namely the Focus. (4) shows how Ground and Focus fit in a sentence.

(4) a. What about John? What does he drink?

b. [John drinks]_{Ground} [beer]_{Focus}. (Vallduví & Engdahl, 1996)

Ground and Focus categorize information structure, according to whether the information is old or new. On the other hand, Topic-Comment concerns which entity or action in the utterance speakers intend to add information to. The Topic of a sentence is an entity (or action) about which speakers intend to add information in the discourse. The remaining elements in the sentence will be considered as Comment. The example (4) can be encoded as (5) by using the terminology of Topic-Comment.

(5) a. What about John? What does he drink?

b. [John]_{Topic} [drinks beer]_{Comment}. (Vallduví & Engdahl, 1996)

It is clear from (4) and (5) that these two divisions of information structure are problematic: the verb ‘drinks’ is treated differently: it is part of the Ground and distinguished from the new information, Focus; or it is included together with the new information as a part of the Comment.

Because of the ambiguity between the two terminologies, Vallduví and Engdahl (1996) propose that information structure should be divided into three parts: Focus and Ground, and that the latter is further composed of *Link* and *Tail*. The Focus is new information in the discourse, which contributes to the hearer's information state. The Ground indicates how this new information is introduced into the discourse. Tail and Link contribute to this function in different ways: Link bears the information update that is denoted by Focus, while Tail indicates how the Focus is related to the Link. Example (4b) and (5b) can be marked as (6), which shows how Link, Tail and Focus fit in a sentence.

(6) a. What about John? What does he drink?

b. [John]_{Link} [drinks]_{Tail} [beer]_{Focus}.

It is obvious that the new information is 'beer' in this conversation, thus 'beer' is the Focus. This conversation talks about 'John', so 'John' is the Link. The information structure proposed by Vallduví and Engdahl (1996) shows clearly that the predicate 'drink' is not an ambiguous element in the answer (6b); its function is to clarify that the Link 'John' performs the action of drinking upon 'beer', the Focus.

Vallduví and Engdahl (1996) use the metaphor of collections of file-cards to illustrate their idea. Information states of conversation participants can be considered as collections of file cards. The Link points out which file cards need

to be updated and the Tail further specifies how the new information (Focus) fits in this file card.

(7) a. What about the president? How does he feel about chocolate?

b. [The president]_{Link} [HATES]_{Focus} [chocolate]_{Tail}. (Vallduví & Engdahl, 1996)

‘President’ and ‘chocolate’ are already given by the question (7a), and the relation between the two entries needs to be clarified. Thus, it is obvious that ‘hate’ is new information in the discourse and updates the information states of the listener. Thus, ‘hate’ is the Focus. This update goes to ‘the president’, as the ‘what about’ question shows that this conversation that ‘president’ is the Link in the answer (7b). ‘Chocolate’ is old information which is given by (7a). Vallduví and Engdahl (1996) think that this given information is already under the file-card of the Link ‘president’, and it needs the Focus to clarify the relation with the Link; therefore, it is the Tail in this discourse.

2.3 Feature-based classifications of information structure

Choi (1996) argues that not only can the old information (Ground) be divided as Link and Tail, but also it is possible to divide new information (Focus) into two parts: completive Focus and contrastive Focus. Consider the example (8).

(8) a. What did John buy?

b. John bought a [TOYOTA]_{completive Focus}.

c. John bought a [TOYOTA, not a VOLKSWAGEN]_{contrastive Focus}.

(8b) is a possible answer to the question in (8a) where ‘TOYOTA’ is new information, which fills in the information gap between speaker and hearer. This is a completive Focus. (8c) can also be an answer to (8a). The difference between (8b) and (8c) is that the Focus (TOYOTA, not a VOLKSWAGEN) in (8c) is not only new information, but also indicates that this is contrary to the interlocutor’s expectation. This additional property of expressing contrast separates it from completive Focus, and it is named as contrastive Focus.

Choi (1996) further proposes that these four aspects of information structure can be categorized by two features, Newness and Prominence. A difference between Ground and Focus is the newness in the discourse: Ground is old information, while Focus is new in the discourse. Choi (1996) considers Prominence as a property of being singled out among potential alternatives. The Link is more prominent than the Tail, because Link is singled out from other old information as the most prominent element in this discourse. Contrastive Focus is more prominent than completive Focus. In the example given in (8), contrastive focus emphasises that something is different from the speech participants’ expectations, whereas completive focus simply gives the new information.

Newness is marked as [+NEW] or [-NEW], and prominence is marked as [+PROM] or [-PROM]. Choi (1996) considers that Link is the same as Topic, and so she proposes replacing the term Link by ‘Topic’. Choi (1996) describes

the information structure in terms of newness and prominence as binary features as in (9)

(9) feature-based classification of information structure

		Newness	Prominence
Ground	Topic	-	+
	Tail	-	-
Focus	completive Focus	+	-
	contrastive Focus	+	+

One of the advantages of this feature-based analysis of information structure is that it can further assemble Link and contrastive Focus together as [+PROM] components in information structure. That means this analysis of information structure can remove the limitation of newness, which is a traditional criterion of determining information structure. For example, Choi (1996) finds that a more prominent element will be more free in scrambling than non-prominent elements. Without having the feature of Prominence as well as the feature of Newness, this generalization is hard to express.

Another apparent advantage of this analysis is that in the information structure literature, there are lots of labels for the same or similar components of information structure, such as Topic-Ground, Focus-Comment, and Link-Topic. Choi's proposal allows a four-way distinction. It is easy to see what we are talking about when we are discussing information structure.

2.4 Components of information structure

Following Vallduví and Engdahl (1996) and Choi (1996), this thesis proposes that the given information can be separated into two parts: Topic and Background. This thesis makes further distinctions, following authors who have proposed different kinds of given information, for example, secondary Topic (Nikolaeva, 2001), contrastive Topic (Lee, 1999). Thus, this thesis proposes that Topic is subdivided into primary Topic, secondary Topic, contrastive Topic and continuing Topic. These components will be examined in the following sections. The new information is still composed by contrastive Focus and completive Focus. Therefore, the components of information structure in Mandarin Chinese can be concluded as (10)

(10) components of information structure in Mandarin Chinese

	Newness	
	Given information	New information
Prominence	Contrastive Topic	Contrastive Focus
	Secondary Topic	
	Primary Topic	
	Continuing Topic	
	Background	Completive Focus

2.4.1 Given information: Topics and Background

2.4.1.1 *Topics*

Topics are very important elements in Chinese, as C. N. Li and Thompson (1976) suggest that Chinese is a Topic-prominent language, rather than a Subject-prominent language. An entity in a discourse should possess the following two features to become a Topic.

(11) Features of Topics:

- a. The entity is already mentioned in previous discourse
- b. The listener receives updated information about this entity

These are the basic features of Topics, and we will see that each Topic has its own characteristics.

2.4.1.1.1 Primary Topic and Secondary Topic

A primary Topic is an entity which a discourse is mainly talk about. The notion of primary Topic is equal to the concept of Topic or Link. Here is an example of primary Topic.

(12) a. What about John?

b. [John]_{Primary Topic} likes Mary.

The conversation in (11) talks about ‘John’, and the updated information in the answer (12b) goes to ‘John’. Thus, ‘John’ is a primary Topic in (12b). The concept of primary Topic is straightforward, as there is no difference between it and ‘Topic’ discussed in previous works. The reason why I call this Topic as primary Topic is that we need this term to be distinguished from secondary Topic in Chinese. Topic in this thesis is thus a higher category of given information, which contains primary Topic, secondary Topic and other kinds of Topics.

Chinese allows a sentence to have two Topics. Apart from primary Topic, the other given information bearing updated information is called ‘secondary Topic’. The preverbal Object marked by BA in BA construction can be a secondary Topic (Tsao, 1987). Consider example (13).

(13). a. 他们怎么处理这些石头？

Tāmen	zěnmē	chǔlǐ	zhèxiē	shítou _j
3PL	how	solve	these	stone

‘How did they treat these stones?’

b. 他们把石头敲碎了

Tāmen	bǎ	shítou	qiāo-suì
3PL	BA	stone	knock-fragmentary

‘They have cracked the stones into pieces’

(13a) asks how to treat the stones. Two participants are involved in this treatment, the Agent ‘Tāmen (3PL)’ and the Patient ‘shítou (stone)’. In Vallduví and

Engdahl (1996)'s terminology, the patient here is deemed as a Tail. They consider that Tail and Link (or Topic) are two different types of old information: the update of information is completed within a Link, and a Tail is used to clarify the relation between the Link and the new information (Focus). Thus, in their analysis, a Tail is not the locus where an information update will take place. However, the old information, Patient in (13b), is not a Tail that designates a condition that Focus must complete or alter as Vallduví and Engdahl (1996) suggest. The conversation in (13) is concerned with both Agent and Patient. (13a) is asking for the action that 'Tāmen (they)' have taken with respect to the stones. (13b) provides this new information, and it also further specifies the resulting effect on the stone after this action has taken place. Therefore, there are two pieces of new information in (13b), the action of cracking and the result of this action ('into pieces'). The action is obviously related to both the Agent and the Patient, but the result is only related to the Patient, the stone. These two pieces of updated information are associated with two different entities. Therefore, in this conversation, the interlocutors are dealing with two entities, and the information states of each of these two entities will be updated.

The Chinese RVC combines the action (or event) and the result of the action together as a single predicate. This obscures the fact that the complex predicate provides different pieces of new information about the Agent and the Patient respectively. In terms of information structure, these two arguments are given information and the loci where the update information happens. These properties are typical features of Topics that have been defined in the beginning of this

section. Therefore, the Patient argument, as well as the Agent argument, should be treated as Topic, rather than Tail or any other role of information structure. The conversation in (13) is mainly about the Agent ‘Tāmen (they)’, so in the example of (13b), the Agent ‘Tāmen (they)’ is the primary Topic. As the Patient ‘shítou (stone)’ marked by BA also bears the information update, it is also a Topic. In order to distinguishing with the primary Topic which the discourse is mainly about, this Topic (Patient ‘shítou (stone)’ marked by BA) is named as secondary Topic.

Apart from the NP marked by BA in preverbal position, Chinese can have other types of secondary Topic in preverbal position, such as the NP after BEI in the passive construction. (14) gives the example of BEI NP being secondary Topic.

(14). a. 张三被李四怎么了

Zhāngsān bèi Lǐsì zěnmē-le

Zhangsan BEI Lisi how-PFV

‘What did Lisi do to Zhangsan?’

b. 张三被李四打死了

[Zhāngsān] _{primary.Topic} [bèi Lǐsì] _{secondary.Topic} [dǎ-sǐ-le] _{com.Focus}

Zhangsan BEI Lisi hit-die-PFV

‘Zhangsan was killed by Lisi’

(14a) asks what kind of action Zhangsan has undergone at the hands of Lisi. This question gives two pieces of information into the discourse, the Agent ‘Lisi’ and

the Patient ‘Zhangsan’. These are the old information in (14b). The RVC ‘打死 dǎ-sǐ (hit-die) in (14b) is one single predicate but contributes two pieces of new information into the discourse: the action *hit* done by ‘Lisi’ and the result *die* describing the state of ‘Zhangsan’ after the action. These two pieces of new information update the information state of two entities. The new information of action shows what ‘Lisi’ has done and what ‘Zhangsan’ has undergone. The new information of result shows the state of the Patient ‘Zhangsan’ after he underwent the action. The entity ‘Zhangsan’ can be labelled as primary Topic, because this discourse mainly talks about what ‘Zhangsan’ has undergone; The primary Topic in this discourse possesses two pieces of new information: the action and the result coming from the RVC. The entity ‘Lisi’ is the secondary Topic. This secondary Topic only bears the information update of the action. Unlike the secondary Topic in BA construction, the secondary Topic marked by BEI construction has the information update of the action from RVCs, rather than the resultant state from RVCs.

However, not all NP marked by BA or BEI are a secondary Topics. Being a secondary Topic requires that the NP is old information and has the updated information related to this NP. If the element ‘shítou (stone)’ or ‘Lisi’ is unexpressed in the question, these two elements cannot be the secondary Topic. (15) and (16) give the examples in which the NP in BEI and BA construction is not a secondary Topic.

(15). a. 他们做了什么？

Tāmen zuò-le shénme

3PL do-PFV what

‘what did they do?’

b. 他们把石头敲碎了

[Tāmen]_{primary Topic} [bǎ shítou qiāo-sui]_{completive Focus}

3PL BA stone knock-fragmentary

‘They have cracked the stones into pieces’

(16). a. 张三怎么了

Zhāngsān zěnmē-le

Zhangsan how-PFV

‘What happened to Zhangsan’

b. 张三被李四打死了

[Zhāngsān]_{primary.Topic} [bèi Lǐsì dǎ-sǐ-le]_{completive Focus}

Zhangsan BEI Lisi hit-die-PFV

‘Zhangsan was killed by Lisi’

In these examples, there is only one type of given information in questions: (15a) asks what ‘Tāmen (they)’ did and (16a) asks what happened to Zhangsan. In (15b), only ‘Tāmen (they)’ is the old information, and the remaining elements in (15b) are new information. Hence, there is only one Topic in (15b), ‘Tāmen (they)’. The same situation is observed in (15b). The NP marked by BEI is new information in (16b). It gives the new information about the Agent of the action. This new information updates the information state of ‘Zhangsan’. ‘Zhangsan’

in (16b) is a Topic, a primary Topic, but ‘Lisi’ in (16b) is not a Topic. ‘Lisi’ belongs to the completive Focus.

If we assume that there can be two types of Topics in one sentence, a primary Topic and a secondary Topic, then which of these two types of Topics is more prominent? I propose that the secondary Topic is more prominent than the primary Topic, because it is possible to omit the primary Topic in the discourse and the secondary Topic is marked.

(17). a. 他们_i怎么处理这些石头_j?

Tāmen	zěnmē	chǔlǐ	zhèxiē	shítou _j
3PL	how	solve	these	stone

‘How did they treat these stones?’

b. ∅_i 把它们敲碎了

∅ _i	[Bǎ	shítou] _{secondary Topic}	[qiāo-suì-le] _{completive Focus}
	BA	stone	knock-fragmentary-PFV

‘They have cracked the stones into pieces’

c. * 他们 ∅_j 敲碎了

[Tāmen] _{primary Topic}	∅ _j	qiāo-suì-le
3PL		knock-fragmentary-PFV

Intended meaning: ‘they cracked (something) into pieces.’

(17b) omits the Agent (primary Topic) and keeps the secondary Topic in the sentence. This sentence is grammatical and an appropriate answer to the question

in (17a). However, it is not possible to just keep primary Topic (Subject) and omit the secondary Topic (Object) as (17c). (17c) itself is an ungrammatical sentence, and is not a good answer to (17a). The same situation can be found in (18), which has the BEI NP as the secondary Topic.

(18) a. 张三_i被李四_j怎么了

Zhāngsān bèi Lǐsì zěnmē-le

Zhangsan BEI Lisi how-PFV

‘What did Lisi do to Zhangsan?’

b. $\emptyset_i$ 被李四打死了

$\emptyset_i$ [bèi Lǐsì]_{secondary.Topic} [dǎ-sǐ-le]_{com.Focus}

BEI Lisi hit-die-PFV

‘Zhangsan was killed by Lisi’

c. *张三打死了

[Zhāngsān]_{primary.Topic} $\emptyset_j$ [dǎ-sǐ-le]_{com.Focus}

Zhangsan hit-die-PFV

Intended meaning: ‘Zhangsan was killed’

d. $\emptyset_j$ 打死了张三

$\emptyset_j$ dǎ-sǐ-le Zhāngsān

hit-die-PFV Zhangsan

The primary Topic can be omitted as (18b), but the secondary Topic cannot be omitted like (18c). (18b) is an appropriate answer to the question. (18c) is

ungrammatical, because the absence of the BEI construction blocks the Patient of this RVC to be the Subject. (18c) is also not an appropriate answer to the question. Although (18d) is grammatical with an unexpressed Subject, it is not an appropriate answer to the question.

The comparison between these sentences shows that it is much easier to omit the primary Topic (which is usually the Subject) than secondary Topic (which can be Object or oblique). The primary Topic is more salient than the secondary Topic. The secondary Topic either in BA construction or BEI construction are both marked. Therefore, I propose that the secondary Topic is more prominent than the primary Topic.

2.4.1.1.2 Continuing Topic

A part of a sentence will be (constantly) repeated as Topic in following sentences throughout the discourse. The primary Topic and secondary Topic are the role of information structure in a sentence, but this repeated Topic is a concept at the level of the discourse. Therefore, we need another term *continuing Topic* to distinguish with the sentential Topics. (19) shows an example of continuing Topic.

(19) **My mom** toughed it out for 18 years on her own, working two jobs while raising my sister and me. No matter how bad things got, **she** handled every

challenge without ever once feeling sorry for herself. In naval combat, though, **she** wouldn't stand a chance. (Wolfe, 2016)

In (19), this paragraph is talking about the author's mother, and each sentence describes a property of her mother. The entity is constantly repeated throughout the discourse. Therefore, it is the continuing Topic of this discourse.

A property of continuing Topic of Chinese is that the continuing Topic can be omitted after it has been introduced into the discourse, while English continuing Topic is required to show up in the following sentences as pronouns (unless coordinated with 'and'). (20) is a rough Chinese translation of (20).

(20). 妈妈十八岁以后就靠自己生活，每天打两份工来养活我们。不管事情多么糟糕，她都能解决每一个挑战。

Māmā _i	shíbā	sui	yǐhòu	kào-zhe	zìjǐ	shēnghuó ,	
mother	eighteen	age	after	rely.on-DUR	self	live	
∅	měitiān	dǎ	liǎng-fèn	gōng	lái	yǎnghuo	women,
i	everyday	hit	two-CL	work	come	raise	1PL
Bùguǎn	shìqíng	duōme	zāogāo ,	∅	dōu	néng	jiějué měi
no.matter	thing	how	bad	i	all	able.to	solve every
yīgè	tiǎozhàn.						
one.CL	challenge						

In this example (20), the continuing Topic ‘my mom’ is not expressed in the following clauses and is understood from the first sentence and the whole context. Absence of a pronoun is interpreted as coreferential with something in the previous sentence.

A continuing Topic is quite similar to a Primary Topic and secondary Topic, for they are all given information. However, the difference is that primary Topic and secondary Topic might simply refer to the entity that this proposition talks about and need not be repeated in the following discourse. Continuing Topic, however, refers to the entity which repeatedly appears in the discourse. Therefore, primary Topic and secondary Topic is a concept within a sentence, but continuing Topic is a concept at the level of the discourse.

A primary Topic can be a continuing Topic. The example (20) can be an answer to a question ‘what about your mother?’. As noted by Tsao (1987), a secondary Topic can also lead a Topic chain. Consider example (21)

(21). a. 你觉得这顿饭怎么样？

Nǐ juéde zhè-dùn fàn zěnmeyang?

2SG think this-CL meal how

‘how do you think about this meal?’

b. 这顿饭_i 把我_j 吃撑了, $\emptyset_{*i/j}$ 休息了两个小时才缓过来。

Zhè-dùn fàn bǎ-wǒ chī-chēng-le, xiūxi-le liǎng-gè

This-CL	meal	BA-1SG	eat-full-PFV	rest-PFV	two-CL
xiǎoshí	cái	huǎn-guò-lái.			
hour	then	refresh-pass-come			

‘This meal filled me up, and it took me two hours to recover (to digest the food)’

(21a) asks the listener’s opinion about the meal. (21b) is the answer to this question. In (21b), it is clear that ‘the meal’ is the primary Topic and ‘wǒ (1SG)’ is the secondary. It is the secondary Topic that is continuous in the following discourse, as the omitted entity is the first person pronoun which is the secondary Topic. Therefore, a secondary Topic can also be a continuous Topic in the following clause.

2.4.1.1.3 Contrastive Topic

If the NP expressing a Topic denotes a group, or something which has parts, then a member of the group or a part of the thing can be set in contrast with the group or the other parts. This member or this part of the thing is called ‘contrastive Topic’ (Lee, 1999). The contrast lies in the difference between the actions of the group members or their properties, etc. Contrastive Topic indicates speakers’ consciousness of contrast among given information.

The notion of contrastive Topic not only indicates which entity in the discourse is talked about, but also conveys other information. This is similar to the distinction of contrastive and completive Focus as it is discussed in the section 2.3: Completive Focus only provides new information to fill the information gap

between interlocutors, while contrastive Focus also indicates that certain information is contrary to interlocutors' expectations. The difference between contrastive Topic and contrastive Focus is that a contrastive Topic is old information in the discourse, while a contrastive Focus is new information in the discourse. (22) is an example of contrastive Topic.

(22) a. How does the couple like the decoration of their house?

b. The husband likes it very much, but [as for the wife]_{contrastive Topic}, she hates it.

c. The husband likes it very much, but the wife hates it.

Compare (22b) and (22c). (22c) just conveys the attitude toward the decoration. An additional marker 'as for' on 'the wife' in (22b) makes it more prominent than the regular answer in (22c) and a clear contrast is built up: it is the wife, not the husband, who hates the decoration.

A similar example can be found in Chinese as (23).

(23) 玉米适合在这地方种, 至于大米, 产量很低。

Yùmǐ shìhé zài zhè dìfāng zhòng,

corn proper in this place plant

zhìyú dàimǐ, chǎnliàng hěn dī.

as.for rice, yield very low

'Corn is appropriate for planting in this place, as for rice, its yield is very low.'

Two kinds of crops are compared in (23). This sentence can be used to answer a question ‘Is it appropriate to plant corn and rice in this place?’ In order to make it clear that this place is not suitable to plant rice, an adverb *zhìyú* is used to construct the contrast between the yield of rice and corn.

Predicates, as well as noun phrases, can also be contrastive Topics. Consider the example (24).

(24). a. 他们敲碎石头了吗?

tāmen qiāo-suì shítou-le-mā

3PL knock-fragmentary stone-PFV-Q

‘Did they crack the stone into pieces’

b. 他们敲了, (但)没敲碎

tāmen qiāo-le (dàn) méi-qiāo-suì

3PL knock-PFV, but not-knock-fragmentary

‘they did crack the stone, (but) did not crack it into pieces.’

The negation is the new information in this conversation, and it updates the listener’s information state about the predicate. (24b) does two things. Firstly, it confirms that the action has been taken, and then it partially negates the result. The affirmation and negation can be seen as new information, and they are taken by the predicates. The predicates in (24b) can be considered as Topic. Because the two predicates are affirmative and negative respectively, there is a contrast

between the two predicates. Therefore, these two predicates are contrastive Topic.

2.4.1.2 Background

Not all given information has the property of taking updated information. Some information does not refer to a concrete entity. It can be a clarification of a relation between different references. For example, (25) suggests that we should have another level of information structure to explain the information state of something like the predicate ‘drink’ in (25b)

(25) a. What about John? What does he drink?

b. [John]_{Topic} [drinks]_{tail} [beer]_{Focus}.

The question in (25a) has given a presumption that John drank something, and the Focus in (25b) provides new information to clarify what is this something. The predicate ‘drink’ in (25b) designates a condition that needs the Focus to complete it. The predicate does not get updated information. I propose that the old information that does not get information updated is Background. A simple example is (26).

(26) a. What about the hat? What color of hat did you buy?

b. I bought a red hat.

c. a red one.

The ‘what about’ test shows that ‘hat’ is the Topic in (26b), and (26c) shows that the new information, the color, updates the listener’s knowledge of ‘hat’. The remaining elements, the Subject (I) and verb ‘bought’ in (26b), are old information and do not get information updated. Therefore, they get the information structure role of Background. (27b) shows the information structure of (26b).

(27) a. What about the hat? What color of hat did you buy?

b. [I bought]_{background} [a red]_{completive.Focus} [hat]_{(primary).Topic}.

The reason for building up this notion of Background is that in Chinese, a part of a predicate can be the focus, like the RVC *dòng-yìng* in (28b), while the other part of predicate is given information. ‘Yìng’ occurs in the first sentence as part of the predicate. In the second sentence, it appears in the RVC *dòng-yìng* and is not expressing new information. The new information is expressed by *dòng* which provides the reason why the bone is hard (Yìng). The bone is not expressed in (28b).

(28). a. 这骨头怎么有点硬

Zhè gǔtou zěnmē yǒudiǎn yìng

this bone how little hard(not soft)

‘why is this bone a little hard (because we expect to be able to chew it)?’

b. 冻硬的吧。

[Dòng]_{focus}-[yìng]_{background} de ba

freeze-hard DE PTC

‘probably because (it has been) frozen (and then became) hard’

(28a) asks the reason why the bone is hard (and so not chewable), and (28b) gives the answer that something freezes it hard. *yìng* in (28b) does not possess the property of taking update information, like a secondary Topic and continuing Topic. The RVC *dòng-yìng* denotes that the action or event that the bone has experienced and the result that the bone gets from the action or event. The two parts of this predicate are both related to ‘the bone’, which is a continuing Topic in this conversation. The new information denoted by ‘dòng’ is not updated information related to ‘yìng’. As the old information *yìng* does not bear any new information, it is not a Topic but Background in this discourse.

The discussion in this section has shown that the old information in Chinese Mandarin can be divided as two parts: Topics and Background. Background is the old information that does not bear information update, which Topics are old information bearing information update. Topics can be further divided as primary Topic, secondary Topic, continuing Topic and contrastive Topic.

2.4.2 New information: Focus

A Focus provides the new information in the discourse. Following Choi (1996), I propose that Mandarin Chinese also has two types of Focus, completive Focus

and contrastive Focus. Choi (1996) has given a good explanation of two types of Focus, so I will not repeat the explanation here. Instead, I provide an example for each type of Focus.

A completive Focus provides new information into the discourse and fills the gap of information states between interlocutors. (29) is an example of completive Focus.

(29). a. 山上种满了什么?

Shānshàng zhǒng-mǎn-le shénme

mountain-up plant-full-PFV what

‘what is the mountain top planted fully with?’

b. 山上种满了树

Shānshàng zhǒng-mǎn-le [shù]_{completive focus}

mountain-up plant-full-PFV tree

‘The mountain top is planted fully with trees.’

The question in (29a) asks what is planted on the mountain. The ‘tree’ in (29b) provides the new information to answer the question in (29a) that it is the trees that are planted on the mountain. Thus, the ‘tree’ in (29b) is the completive Focus.

A contrastive Focus not only provides the new information into the discourse, but shows the contrast with the interlocutors’ expectation. (30) is an example of the contrastive Focus.

(30). a. 田里种的是什么？

Tián-lǐ zhǒng de shì shénme

field-inside plant-DE COP what

‘what is planted in the field?’

b. 田里种的是大米，不是玉米

Tián-lǐ zhǒng de shì [dàmǐ, bùshì yùmǐ]_{contrastive Focus}

field-inside plant-DE COP rice, not corn

‘it is rice, not corn that planted in the field’

(30a) asks what is planted in the field. If the answer in (30b) just provides the information that it is rice that is planted in the field, the ‘rice’ will only be the completive Focus. However, the answer not only provides the new information to answer the question, also makes a contrast to show that the interlocutors expect that it should be the corn that is planted in the field. The utterance ‘shì dàmǐ, bùshì yùmǐ (rice, not corn)’ provides the new information and shows the contrast with interlocutors’ expectations, thus it is the contrastive Focus.

2.5 Prominence hierarchy of information structure

The feature based analysis of information structure in Choi (1996) only has binary features of prominence and newness. The binary features of Newness, [-NEW] and [+NEW], can satisfy the need of marking new information and old information, as none information is not new or old. However, the [-PROM] and

[+PROM] are not enough to mark the four given information structure roles of Topics. If only [+/-PROM] is used to encode these different types of Topics, it is hard to decide where to draw the line between [+PROM] and [-PROM]. The prominence is a gradient feature, rather than bipartite (Arka, 2016). From the discussion in section 4, we can know that a contrastive Topic is more prominent than a secondary Topic, then followed by primary Topic and Background. This indicates that there is a hierarchy of prominence among these given information structures as listed in (31).

(31) A possible hierarchy of prominence among given information:

Contrastive Topic > Secondary Topic > Primary Topic > Background

2.7 Conclusion

This chapter has discussed different notions of the information structure. The information structure can be divided as given information and new information. The given information can be further divided as Topic and Background. A Topic can take updated information, while a Background does not take updated information. We take Chinese as an example to show that prominent given information (Topics) can comprise contrastive Topic, secondary Topic, primary Topic and continuing Topic. The bipartite feature of Prominence cannot encode all of these Topics, thus, we argue that the Prominence is a gradient feature in Mandarin Chinese.

This thesis follows the discussion of Choi (1996) that the new information is composed by contrastive Focus and completive Focus, and that the contrastive Focus is prominent than the completive Focus.

Therefore, the components of information structure can be concluded as the table (32) below.

(32) components of information structure

	Newness	
	Given information	New information
Prominence	Contrastive Topic Secondary Topic Primary Topic Continuing Topic	Contrastive Focus
	Background	Completive Focus

Chapter 3: Topic as a motivation of argument mismatch

Chapter 2 has shown that there are several different types of Topics in Mandarin Chinese. This chapter will examine the interaction between the information structure and argument mappings of RVCs. As both Topic and Subject appear in the initial position of a sentence, we need tests to distinguish between Topic and Subject. This chapter will propose some useful tests to distinguish Topic from Subject. Following that, there will be a discussion of the relation between argument mapping and information structure.

3.1 Subject properties

Keenan (1976) proposes cross-linguistic properties of Subject, but not all these properties are can be found in Chinese, such as verb agreement with its arguments. Mandarin Chinese lacks agreement of grammatical functions on verbs, so this test cannot be used. Word order is also not conclusive as a test of Subject, since both the Subject and a primary Topic usually appears in the initial position of a sentence.

From the properties proposed by Keenan (1976), Tan (1991) finds that there are four properties that are applicable in Chinese:

- (1). a. Reflexive binding: Subject in general can control reflexive pronouns

b. Control: Subjects are always among the possible controllers of stipulated coreference

c. Imperatives: Subjects normally express the addressee of imperatives

d. Possessor relativizing: The NPs whose possessors can be relativized, questioned, and cleft include Subjects

The following sections will discuss each of these four Subject properties in Chinese, and then Topic properties in Chinese. Based on these discussions, we will have a clear perspective on how to separate Subject and Topic from each other in Chinese.

3.1.1 Reflexive binding

Unlike English, Chinese has just one reflexive pronoun *zìjǐ* (自己) which does not distinguish person, number and gender. (2) shows that a reflexive pronoun is bound by the Subject.

(2). a. 玛丽喜欢自己

Mary_i xǐhuān zìjǐ_i

Mary_i like self_i

‘Mary likes herself’

b. 玛丽知道自己喜欢约翰

Mary_i zhīdào zìjǐ_{i/*j} xǐhuān John_j

Mary_i know self_{i/*j} like John_j

‘Mary_i knows that she_i(herself) likes John.’ (Tan, 1991, p.26)

(2a) shows that in a simple clause, the reflexive in Object position is bound by the Subject. The binding will not be affected in complex clauses. The Subject of embedded clause in (2b) is the reflexive pronoun *zìjǐ*. It is not bound by the Object ‘John’ in the embedded clause, but by the matrix Subject ‘Mary’.

When a sentence has two NPs, a Topic and a Subject, the reflexive pronoun is still bound by the Subject, rather than the Topic. Consider the example (3).

(3). 六个人, 三个人不会写自己的名字

Liù-gè rén, sān-gè rén bùhuì xiě zìjǐ-de míngzì

six-CL person_i, three-CL person_j unable write self_{i/j}-DE name

‘of the six people, three of them cannot write their own names’ (Tao, 1991, p.27)

Two NPs in (3) appear in the initial position of this sentence. The first NP ‘Liù-gè rén (six people)’ is the Topic of (3), and the second NP ‘sān-gè rén (three people)’ is the Subject. The reflexive pronoun *zìjǐ* is not bound by the Topic but by the Subject. Therefore, it is clear from this example that the Topic is not able to bind a reflexive pronoun, when the grammatical Subject is not the same as the Topic.

3.1.2 Control

The second argument relates to the control of adjuncts. Tan (1991) argues that Subject is the only controller of adjuncts in Chinese. He gives the examples of *qǔ* and *jià* which both mean ‘to marry’ but differ in the gender of Subject.

(4). a. 约翰(犹犹豫豫地)娶了玛丽

John (yóuyóuyùyù-de) qǔ-le Mary

John hesitantly-DE marry-PFV Mary

‘John married Mary (hesitantly)’

b. 玛丽(犹犹豫豫地)嫁了约翰

Mary (yóuyóuyùyù-de) jià-le John

Mary hesitantly-DE marry-PFV Mary

‘Mary married John (hesitantly)’ (Tao, 1991, p.28)

The manner adjunct ‘yóuyóuyùyù-de (hesitantly)’ in both sentences is controlled by the Subject and indicates that it is the Subject that is hesitant to marry the other person. Tan (1991) further argues that this Subject-adjunct control will not be affected by the word order. Example (5) shows a manner adjunct following the Subject and preceding the Object in a simple sentence (5a), and following a BA Object in a sentence with a BA construction (5b).

(5) a. 约翰不小心打了杰克

John bùxiǎoxīn dǎ-le Jack

John carelessly hit-PFV Jack

‘John carelessly hit Jack.’

b. 约翰把杰克不小心打了

John bǎ Jack bùxiǎoxīn dǎ-le

John BA Jack carelessly hit-PFV

‘John carelessly hit Jack’

The adjunct ‘bùxiǎoxīn (carelessly)’ in (5a) is immediately after the Subject ‘John’ and is controlled by this Subject. When it is put after the Patient ‘Jack’ as (5b), the adjunct ‘bùxiǎoxīn (carelessly)’ is still controlled by the Subject.

However, there are ambiguities created by word order differences. In some sentences, if the position of an adjunct is changed, the meaning of this sentences will be ambiguous. Consider example (6).

(6). a. 张三被李四光着脚踢死了

Zhāngsān bèi Lǐsì guāng-zhe-jiǎo tī-sǐ-le

Zhangsan BEI Lisi bare-DUR-foot kick-die-PFV

‘Zhangsan was kicked by Lisi with bare feet, as a result, Zhangsan died.’

b. 张三光着脚被李四踢死了

Zhāngsān guāng-zhe-jiǎo bèi Lǐsì tī-sǐ-le

Zhangsan bare-DUR-feet BEI Lisi kick-die-PFV

‘Zhangsan whose feet were bare was kicked by Lisi; as a result, Zhangsan died.’

The adjunct ‘guāng-zhe-jiǎo (bare feet)’¹ in (6a) can be controlled either by ‘Zhangsan’ or ‘Lisi’ marked by BEI. However, the Subject-adjunct control reading in (6a) is less natural than the ‘oblique control’ (i.e. it is more natural for the kicker, ‘Lisi’, to have bare feet). If the speaker wants to clarify that the Patient’s (Zhangsan’s) feet are bare when being kicked, the adjunct has to be put immediately after the Patient, as (6b).

The previous examples were of adjuncts expressing the manner of an action. Adjuncts expressing quantification are also not always controlled by the Subject. Consider the example (7), which shows a difference as to whether the Agent (Subject) is quantified (they all), or the Patient (Object) is quantified (all the cups).

(7). a. 他们全部把杯子打碎了

Tāmen quánbù bǎ bēizi dǎsuì-le

3PL all BA cup hit.fragmentary-PFV

¹ The adjunct ‘guāng-zhe-jiǎo (bare feet)’ is not a nominal in apposition to the Subject in (6b), because we can have an adverb between this phrase and the Subject like the following sentence:

i. 张三也许光着脚被李四打死了

Zhāngsān yěxǔ guāng-zhe-jiǎo bèi Lǐsì tī-sǐ-le

Zhangsan maybe bare-DUR-feet BEI Lisi kick-die-PFV

‘Zhangsan whose feet were bare was probably kicked by Lisi; as a result, Zhangsan died.’

‘They all broke the cups.’

b. 他们把杯子全部打碎了

tāmen bǎ bēizi quánbù dǎsuile

3PL BA cup all hit.fragmentary-PFV

‘they broke all the cups.’

The adjunct ‘quánbù (all)’ can appear after the Subject ‘tāmen (3PL)’ or the Object ‘bēizi (cups)’. However, in these examples, the meaning will be different if the position of the adjunct is changed. In (7a), the adjunct ‘quánbù (all)’ appears immediately after the Subject. This sentence means that everyone has a cup (or several cups) and all of them broke their cups. When this adjunct is after the Object ‘bēizi (cups)’, (7b) means that the Agent ‘tāmen (3PL)’ broke all the cups they have.

Therefore, in Chinese, the adjunct is not always controlled by the Subject. The reason why adjuncts in the examples Tan (1991) gives are all controlled by the Subject is probably that the meanings of adjuncts are not related to other grammatical functions in the examples. For example, the Patient in (5) cannot be carelessly performed upon the action ‘hitting’; thus, this adjunct cannot be controlled by the Patient. The control relation between the Patient and adjunct is disallowed semantically.

In conclusion, the control of adjunct is not a reliable test for distinguishing Subject and primary Topic in Mandarin Chinese. Therefore, this thesis will not use this test to distinguish Subject and primary Topic.

3.1.3 Imperatives

In Chinese, like other languages, the Subject of imperatives must be the NP expressing addressee. The addressee does not have to be expressed in the sentence as (8).

(8). 敲碎它们

qiāo-suì tāmen

knock-fragmentary 3PL

‘crack them into pieces’

The imperative reading will be lost, if the Subject is not the addressee. Compare (9a) and (9b).

(9). a. (你) 跟他学中文 (imperative)

(nǐ) gēn-tā xué zhōngwén

2SG from-3SG learn Chinese

‘(you) learn Chinese from him.’

b. 他(跟你)学中文 (declarative)

tā (gēn-nǐ) xué zhōngwén

3SG (from-2SG) learn Chinese

‘he learns Chinese (from you).’ (Tan, 1991, p.31)

In (9a), the addressee appears in the position of Subject and this sentence has the imperative reading. (9b) the addressee does not appear in the position of Subject and is marked by the preposition ‘gēn (from)’ as an oblique. (9b) is not an imperative sentence. It is a declarative sentence, which means that the Subject ‘he’ is learning Chinese.

The application of this is that we can change a preverbal NP with the second person pronoun ‘nǐ’ to check whether this preverbal NP is a Subject or not. For example, if preverbal NP in a sentence like ‘tā (3SG)’ in (9b) can be changed into a second person pronoun like ‘nǐ (2SG)’ in (9a), and this sentence can have imperative reading with the second person pronoun, then we can confirm that the preverbal NP is the Subject. However, this test is limited, because not all verbs (or predicates) can appear in an imperative sentence. Hence, it should be checked whether a predicate can appear in an imperative sentence before we take this test to check a preverbal NP is a Subject.

3.1.4 Possessor relativisation

The fourth test concerns relative clauses where the possessor is the relativized NP. Possessed noun phrases in Chinese can take any possible grammatical

functions, but only when the possessed noun phrase is the Subject of the relative clause, can the possessor be relativized. The examples below show that possession noun phrase can be Subject in (10a), Object in (11a) and direct Object of a ditransitive verb in (12a).

(10). a. 这些人的子女在斯坦福上学。(Subject)

zhèxiē-rén-de zǐnǚ zài Stanford shàngxué

these-person-DE children at Stanford study

‘these people’s children study at Stanford’

b. $\emptyset_i$ 子女在斯坦福上学的这些人_i

[$\emptyset_i$ zǐnǚ zài Stanford shàngxué-DE] zhèxiē-rén_i

[$\emptyset_i$ children at Stanford study-DE] these-person

‘these people whose children study at Stanford.’

(11). a. 斯坦福录取了这些人的子女。(Object)

Stanford lùqǔ-le zhèxiē-rén-de zǐnǚ

Stanford accept-PFV these-person-DE children

‘Stanford accepted these people’s children.’

b. * 斯坦福录取了 $\emptyset_i$ 子女的这些人_i

[Stanford lùqǔ-le $\emptyset_i$ zǐnǚ-de] zhèxiē-rén

[Stanford accept-PFV $\emptyset_i$ children-DE] these-person

‘*these people whose children Stanford accepted’

(12). a. 王老师教这些人的子女中文。(direct Object)

Wáng lǎoshī jiāo zhèxiē-rén-de zǐnǚ zhōngwén

Wang Teacher teach these-person-DE children Chinese

‘Teacher Wang teaches these people’s children Chinese’

b. *王老师教_i子女中文的这些人

[Wáng lǎoshī jiāo zǐnǚ zhōngwén-de] zhèxiē-rén

[Wang Teacher teach children Chinese-DE] these-person

‘*people [whose children teacher Wang teaches Chinese]’ (Tan, 1991, p.33)

The NP containing a possessor (a ‘possession NP’) in (10) is the Subject of the main clause (10a) and the head of that NP is the Subject of the relative clause (10b) in which the possessor can be relativized. The possession NP in (11) is the Object of the main clause and the possessor cannot be relativized, as the ungrammaticality of (11b) shows. The possession NP in (12) is the direct Object (Goal) of the ditransitive verb, and the possessor cannot be relativized.

If a sentence has two preverbal NPs, this possessor relativization test can tell which of the two NPs is the Subject between two preverbal NPs. Consider examples in (13)

(13). a. 李明打断了张三的腿。

Lǐmíng dǎ-duàn-le Zhāngsān-de tuǐ

Lǐmíng hit-broken-le Zhāngsān-DE leg

‘Liming broke the leg of Zhangsan’

b. 张三的腿，李明打断了。

Zhāngsān-de tuǐ, Lǐmíng dǎ-duàn-le
 Zhāngsān-DE leg Lǐmíng hit-broken-le
 ‘the leg of Zhangsan, Liming broke it.’

c. *腿李明打断了的张三。

tuǐ Lǐmíng dǎ-duàn-le-de Zhāngsān
 leg Lǐmíng hit-broken-le-DE Zhāngsān
 ‘*Zhangsan whose leg Liming broke’

A possession NP as an Object in (13a) can be topicalized as a primary Topic in (13b). When this possession NP is a primary Topic, there are two preverbal NPs. The possessor of possession NP in (13b) cannot be relativized, as the ungrammaticality of (13c) shows. The Patient ‘Zhāngsān-de tuǐ (Zhangsan’s leg)’ is the Object. The possessed NP as an Object cannot be relativized.

However, this is not to say that a possessor in a primary Topic cannot be relativized. (14b) can be the answer to a question like ‘what happened to Zhangsan’s leg?’ in (14a).

(14). a. 张三的腿怎么了？

Zhāngsān-de tuǐ zěnmē-le
 Zhāngsān-DE leg how-PFV
 ‘What happened to Zhangsan’s leg?’

b. 张三的腿被李明打断了。

[Zhāngsān-de tuǐ]_{p.Topic} [bèi Lǐmíng dǎ-duàn-le]_{Focus}

Zhāngsān-DE leg BEI Lǐmíng hit-broken-le

‘Zhangsan’s leg were broken by Liming.’

c. 腿被李明打断了的张三。

tuǐ bèi Lǐmíng dǎ-duàn-le-de Zhāngsān

leg BEI Lǐmíng hit-broken-le-DE Zhāngsān

‘Zhangsan whose leg was broken by Liming’

This question-answer pair in (14) clearly identifies the possession NP as a primary Topic. This possession NP is the Subject of the passivisation. Therefore, the possessor can be relativized as (14c).

To sum up, this thesis will take three tests, reflexive binding, imperative and possessor relativization, to check whether a preverbal NP is Subject or not. As the Subject is not always the controller of an adjunct, the adjunct control test will not be used as evidence for a preverbal NP being a Subject.

3.2 Primary Topic and Patient-Subject mapping

RVCs can appear in four types of sentence structures: active, passive (BEI construction), BA construction and Patient-Subject (without passivisation) sentence. BA construction will be examined in the discussion of secondary Topic in next section, and this section will focus on the Patient-Subject sentence (the term ‘Patient’ here refers to all the Patient-like arguments whose semantic roles

are at the lower end of the hierarchy of semantic roles, and the term ‘Agent’ refers to all the Agent-like arguments whose semantic roles are at the higher end of the hierarchy of the semantic roles).

A simple verb in Chinese usually does not allow a Patient-like argument to be the Subject without any morpholexical operation, such as passivisation. The simple verb ‘dǎ (hit)’ takes two arguments, an Agent and a Patient as in (15a)

(15). a. 李四打了张三。 (Active)

Lǐsì dǎ-le Zhāngsān

Lisi hit-PFV Zhangsan

‘Lisi has hit Zhangsan’

b. *张三打了 (Patient as Subject without passivisation)

Zhāngsān dǎ-le

Zhangsan hit-PFV

not grammatical as the intended meaning is ‘*someone has hit Zhangsan’

c. 张三被(李四)打了。 (Passive)

zhāngsān bèi Lǐsì dǎ-le

Zhangsan BEI Lisi hit-PFV

‘Zhangsan was hit (by Zhangsan)’

The only way to promote the Patient argument of the simple verb to be the Subject is to use the passivisation (the BEI construction), as shown in (15c). If the passive marker ‘BEI’ is absent as (15b), it is ungrammatical in isolation with

the Subject interpreted as the Patient. However, an appropriate context can make it acceptable. (16b) shows that if the Patient is the primary Topic (but not the Subject) in the initial position, the sentence is acceptable. In this situation, the Patient is still not the Subject. (p.Topic = primary Topic, com.Focus = completive Focus)

(16). a. 你打张三了吗？

Nǐ dǎ ZhāngsānZ-le ma

Lisi hit Zhangsan-PFV Q

‘Did you hit Zhangsan?’

b. 张三, (我)打了 (with Topicalisation)

[Zhāngsān]_{p.Topic}, [(Wǒ) dǎ-le]_{com.Focus}

Zhangsan 1SG hit-PFV

‘Zhangsan, (I) has hit’

The question-answer pair shows that when the Patient is the primary Topic, it can appear in the preverbal position. The preverbal Patient can be considered as the result of the topicalisation of the Object. This Patient argument is not the Subject, because there is an understood Subject which does not need to be expressed. (16b) suggests that there can have another argument between the primary Topic and the verb, and this argument is the Subject of (16b).

(17) uses the reflexive test to show that the NP between the primary Topic and the verb is the Subject.

(17). 张三, 妈妈打了自己

Zhāngsān_i, māmā_j dǎ-le zìjǐ_{*i/j}

Zhangsan_i mother_j hit-PFV self_{*i/j}

‘as for Zhangsan, (his) mother hit herself’

As we discussed in the Subject tests, the Subject is the controller of the reflexive ‘zìjǐ’. ‘Zhangsan’ in (17) can only be considered as the external topic related by possession to the Subject ‘māmā (mother)’. ‘Zhangsan’ cannot be the controller of the reflexive, because then ‘māmā (mother)’ will have no semantic role. In (17), the controller of the reflexive is ‘māmā (mother)’. Thus, the Subject of (17) is ‘māmā (mother)’. If the reflexive is absent as (16b), the argument ‘Zhangsan’ can be seen as the Object of the verb ‘dǎ’, which is topicalised and put in the initial position of the sentence.

However, some RVCs are different from simple verbs. Some RVCs allow a preverbal Patient argument to be the Subject without passivisation. (18) shows possible structures of the RVC ‘烫伤 tang-shāng’: active voice in (18a), passive in (18b), Patient-Subject without passive in (18c).

(18). a. 热水烫伤了我的手。(active)

rè-shuǐ tàng-shāng-le wǒ-de shǒu

hot-water burn-injured-PFV 1SG-DE hand

‘the hot water scalded my hand.’

b. 我的手被(热水)烫伤了。(passive)

wǒ-de shǒu bèi (rè-shuǐ) tàng-shāng-le

1SG-DE hand BEI hot-water burn-injured-PFV

‘My hand is scalded by the hot water’

c. 我的手烫伤了。(patient-Subject without passive)

shǒu tàng-shāng-le

hand burn-injured-PFV

‘My hand is scalded.’

(18a) gives the example of the RVC ‘烫伤 tàng-shāng (burn-hurt)’ in the canonical structure (with the active voice): the Agent is linked to the Subject and the Patient to the Object. This sentence can be used to answer a question asking what had happened as (19).

(19). a. 怎么了 ?

zěnmé-le

how-PFV

‘what happened?’

b. 热水烫伤了我的手

[rè-shuǐ tàng-shāng-le wǒ-de shǒu]_{Com.Focus}

hot-water burn-injured-PFV 1SG-DE hand

‘the hot water scalded my hand.’

In this case, there is no Topic. The whole sentence is a completive Focus, because the whole sentence is new information in the discourse. As well as being an answer to (19), (18a) can also be an answer to a question asking what the hot water has done as (20).

(20). a. 热水怎么了？

rè-shuǐ zěnmé-le

hot-water how-PFV

‘What about the hot water?’

b. 热水烫伤了我的手。

[rè-shuǐ]_{P.Topic} [tàng-shāng-le wǒ-de shǒu]_{Com.Focus}

hot-water burn-injured-PFV 1SG-DE hand

‘the hot water scalded my hand.’

In this example, there is a primary Topic, the hot water, and the Patient argument is still a part of the completive Focus. (19a) and (20a) are the most natural questions for which (18a) is a possible answer. In both cases, the Patient is not a Topic, but a part of the completive Focus.

However, (18b) and (18c) are not appropriate answers to the questions in (19) and (20) that (18a) can answer. They can be answers to the question asking ‘what happened to your hand’. The information structures of (18b) and (18c) are presented in (21).

(21). a. 你的手怎么了？

Nǐ-de shǒu zěnmé-le

2SG-DE hand how-PFV

‘what happened to your hand?’

b. 我的手被(热水)烫伤了。

[wǒ-de shǒu]_{p.Topic} [bèi (rè-shuǐ) tàng-shāng-le]_{com.Focus}

1SG-DE hand BEI hot-water burn-injured-PFV

‘My hand is scalded by the hot water’

c. 我的手烫伤了。

[wǒ-de shǒu]_{p.Topic} [tàng-shāng-le]_{com.Focus}

1SG-DE hand burn-injured-PFV

‘My hand is scalded.’

(21) shows that the initial NPs in (21b) and (21c) are primary Topic, as this entity is old information given by the question in (21a). The remaining information in the two sentences is new to the discourse; thus, both ‘bèi (rè-shuǐ) tàng-shāng-le (being scalded (by hot water))’ and ‘tàng-shāng-le (scald)’ are completive Focus. The information structure of both sentences comprises a primary Topic (the hand) and a completive Focus, and the primary Topic is the Patient argument. The primary Topic in (21b) and (21c) is the Subject of this sentence. The evidence for the Patient being Subject is that the possessor of the Patient can be relativized as shown in (22).

(22). a. 那个人的手烫伤了

Nà-gè rén -de shǒu bèi (rè-shuǐ) tàng-shāng-le
that-CL person-DE hand BEI hot-water burn-injured-PFV

‘That person’s hand has been scalded’

b. 那个手烫伤的人不能拿东西

Nà-gè shǒu tàng-shāng-de rén bùnéng ná dōngxi
that-CL hand burn-injured-DE person cannot hold thing

‘The person whose hand is scalded cannot hold anything’

It has been shown in the section 3.1.4 that only the possessor of the Subject can be relativized. The possessor of the Patient can also be relativized; therefore, the Patient ‘shǒu (hand)’ is the Subject of this sentence, rather than only being a primary Topic in the sentence.

(23) shows the information structure of examples in (18), which we have just discussed.

(23). a. 热水烫伤了我的手

[rè-shuǐ]_{p.Top} [tàng-shāng-le wǒ-de shǒu]_{Com.Focus}
hot-water burn-injured-PFV 1SG-DE hand

‘the hot water scalded my hand.’

b. 我的手被(热水)烫伤了。

[wǒ-de shǒu]_{p.Topic} [bèi (rè-shuǐ) tàng-shāng-le]_{com.Focus}

1SG-DE hand BEI hot-water burn-injured-PFV

‘My hand is scalded by the hot water’

c. 我的手烫伤了。

[wǒ-de shǒu]_{p.Topic} [tàng-shāng-le]_{com.Focus}

1SG-DE hand burn-injured-PFV

‘My hand is scalded.’

3.3 Contrastive Topic

The influence of contrastive Topic on the speakers’ choice of argument mapping is similar to the primary Topic. Consider the examples in (24). (cs.Topic = contrastive Topic).

(24). a. 你的腿怎么样了？ (Active voice)

Nǐ-de tuǐ zěnmeyàng-le

2SG-DE leg how-PFV

‘How are your legs?’

b. 我的左腿被(热水)烫伤了，右腿没有。 (Passive voice)

[wǒ-de zuǒtuǐ]_{cs.Topic} [bèi (rè-shuǐ) tàng-shāng-le]_{com.Focus}

1SG-DE left-leg BEI hot-water burn-injured-PFV

[yòutuǐ]_{cs.Topic} [méiyǒu]_{com.Focus}

right-leg no

My left leg is scalded (by the hot water); right leg is not’

c. 我的左腿烫伤了，右腿没有。 (Patient Subject)

[wǒ-de zuǒtuǐ]_{cs.Topic} tàng-shāng-le]_{com.Focus},

1SG-DE left-leg burn-injured-PFV

[yòutuǐ]_{cs.Topic} [méiyǒu]_{comFocus}

right-leg no

‘My left leg is scalded; right leg is not’

Contrastive Topics appear in the initial position of sentences, and in (24b) and (24c), it is the Patient argument that is the contrastive Topic. Similar to the primary Topic, the contrastive Topic motivates the speaker to map the Patient to the Subject in (24c). This shows that if a contrastive Topic is the Patient argument in RVC, the Patient-Subject mapping will be chosen.

3.4 Secondary Topic and Agent-Object mapping

(25). a. 我看累了(*电影)

Wǒ kàn-lèi-le (*diànyǐng)

1SG see-tired-PFV movie

‘I got tired of watching (*movie).’

b. 我看电影看累了。

Wǒ kàn diànyǐng kàn-lèi-le

1SG see movie see-tired-PFV

‘I got tired from watching the movie’

c. 电影把我看累了，想睡觉。

diànyǐng bǎ-wǒ kàn-lèi-le xiǎng shuìjiào
 movie BA-1SG see-tired-PFV want sleep

‘the movie made me tired by watching it; (I) want to sleep’

d. *我把电影看累了，想睡觉。

wǒ bǎ-diànyǐng kàn-lèi-le xiǎng shuìjiào
 1SG BA-movie see-tired-PFV want sleep

‘*I make the movie tired by watching it; (?the movie) wants to sleep

The RVC ‘看累 kàn-lèi (see-tired)’ is an intransitive predicate, as (25a) shows that ‘看累 kàn-lèi (see-tired)’ cannot take two arguments. If the speaker wants to specify the stimulus that he has watched and that it made him tired, the stimulus can be introduced by the verb copying, as in (25b): the verb ‘看 kàn (see)’ takes the introduced Stimulus argument, which is then followed by the RVC. The primary Topic in both (25a) and (25b) is the pronoun ‘wǒ (1SG)’. In both cases, it is the Subject. These two sentences are used to answer a question like ‘what happened to you’ in (26).

(26) a. 你怎么了

Nǐ zěnmé-le

2SG how-PFV

‘What happened to you?’

b. 我看累了(*电影)

[Wǒ]_{p.Topic} [kàn-lèi-le (*diànyǐng)]_{com.Focus}

1SG see-tired-PFV movie

I got tired of watching (*movie).

c. 我看电影看累了

[Wǒ]_{p.Topic} [kàn diànyǐng kàn-lèi-le]_{com.Focus}

1SG see movie see-tired-PFV

‘I got tired from watching the movie’

In the BA construction, this RVC ‘kàn-lèi (see-tired)’ predicate can take two arguments. The classification of marker BA is a controversial Topic in the literature on Chinese linguistics; it has been treated variously as a case marker of direct Object, a preposition, a coverb and so on (Bender, 2000). In any cases, the NP marked by BA is not Subject any more. This thesis considers that the Experiencer ‘wǒ’ marked by BA is the Object of (25c). But ‘kàn-lèi’ is otherwise an intransitive verb in (25a), and the Experiencer ‘wǒ’ is the Subject of (25a). This suggests that the argument mapping of this RVC in BA construction is different from the mapping in a canonical structure.

As we have discussed before, the Patient can be the Subject, if the Patient is the primary Topic in the clause. Information structure in (25c) is different from (25a) and (25b). In (25c), the movie is the primary Topic and the Experiencer is the secondary Topic. This sentence can be used to answer a question asking ‘what do you think about the movie’, while (25a) and (25b) cannot be used to answer this question. The information structure of (25c) is shown as (27).

(27). a. 你觉得电影怎么样？

Nǐ juéde diànyǐng zěnmeyàng

2SG think movie how

‘What do you think about the movie?’

b. 电影把我看累了，想睡觉。

[diànyǐng]_{p.Topic} [bǎ-wǒ]_{s.Topic} [kàn-lèi-le, xiǎng shuìjiào]_{com.Focus}

movie BA-1SG see-tired-PFV want sleep

‘the movie made me tired by watching it; (I) want to sleep’

(27b) shows that the Patient is the primary Topic and the Agent is the secondary Topic. The new information of ‘being tired’ is only predicated of the Agent, the secondary Topic, but the new information that the movie caused this is new information about both the Agent and the Patient. In this sentence, a split of new information can be observed, as two pieces of new information update information states of different entities (or Topics). The primary Topic motivates the Patient argument to be the Subject and the secondary Topic moves the Agent argument from the Subject to the Object.

Another reason for speakers choosing this different mapping (Agent-Object) is that there is other new information about the secondary Topic. Compare examples in (28).

(28). a. 电影很无聊，把我看累了。

[diànyǐng]_i.Topic hěn wúliáo, $\emptyset_i$ [bǎ-wǒ]_j.Topic kàn-lèi-le,
 movie very boring BA-1SG see-tired-PFV
 ‘the movie is boring, which made me tired by seeing it’

b. ? 电影把我看累了, $\emptyset_{i/j}$ 很无聊。

[diànyǐng]_i.Topic [bǎ-wǒ]_j.Topic kàn-lèi-le, $\emptyset_{i/j}$ hěn wúliáo
 movie BA-1SG see-tired-PFV very boring
 ‘the movie made me tired by watching it; (the movie is /I am) very boring’

c. 电影很无聊，把我看累了，想睡觉

[diànyǐng]_i.Topic hěn wúliáo, $\emptyset_i$ [bǎ-wǒ]_j.Topic kàn-lèi-le,
 movie very boring BA-1SG see-tired-PFV
 $\emptyset_j$ xiǎng shuìjiào
 want sleep
 ‘the movie is boring, and it made me tired by watching it; (I) want to sleep’

(28a) is a good example of the Patient as the continuing Topic. If the Patient ‘movie’ is the continuing Topic in the discourse, the clause containing BA NP cannot be put immediately after the continuing Topic. (28b) has the BA NP immediately after the Patient. This causes an ambiguity in the following discourse. It is difficult to interpret which entity is boring. If the speaker wants to clarify that it is the movie that is boring, the utterance ‘hěn wúliáo (very boring)’ should be put before the BA NP in (28a). (28c) shows that if the BA NP

appears, then it will be appropriate to have the secondary Topic as the continuing Topic in the following discourse. The NP marked by BA can lead a Topic chain (Tsao, 1987). The Subject of ‘shuìjiào (sleep)’ in (28c) cannot be the movie. It must be the person who watches the movie.

This comparison shows that if there is still other new information related to the Agent in the discourse, it is more appropriate to make the Patient argument as primary Topic and the Agent argument as the secondary Topic of a RVC.

3.5 The limitation of the mismatches

The argument mismatches (Agent-Object, Patient-Subject without passive) are not possible in simple verbs and all RVCs. Simple verbs do not allow a Patient to be the Subject without passivisation, and do not allow an Agent to be the Object. Some RVC do not allow these mismatches as well, regardless of the change in the information structure. This section will discuss the limitation of argument mismatch, showing that the information structure cannot affect the argument mapping directly, but does affect people’s choice of different mappings.

3.5.1 Patient-Subject mapping without passivisation

The mapping between Patient and Subject without passivisation is not allowed in simple verbs and some RVCs. Preverbal Patient as the primary Topic or

contrastive Topic can be the Subject in some RVCs as section 3.2 and section 3.3 have shown. Simple verbs and several RVCs do not allow the preverbal Patient to be the Subject. The preverbal Patient is still the Object as the primary Topic appearing in the initial position.

As shown in section 3.2, a simple verb in Chinese does not allow a Patient argument to be the Subject without passivisation, regardless of the information structure role of the arguments. (29) repeats the examples of simple verbs from section 3.2 to show this.

(29). a. 李四打了张三。

Lǐsì dǎ-le Zhāngsān

Lisi hit-PFV Zhangsan

‘Lisi has hit Zhangsan’

b. *张三打了 (patient in Subject position without passivisation)

Zhāngsān dǎ-le

Zhangsan hit-PFV

‘*someone has hit Zhangsan’

c. 张三被(李四)打了 (Patient as Subject in passivisation)

zhāngsān bèi Lǐsì dǎ-le

Zhangsan BEI Lisi hit-PFV

‘Zhangsan was hit (by Zhangsan)’

The Patient ‘Zhangsan’ in (29a) is the Object in the post-verbal position, and this Patient argument cannot be the Subject of the sentence in the initial position without the passivisation as in (29b).

However, when the Object ‘Zhangsan’ is the primary Topic, it can appear in the initial position of the sentence as (30) shows.

(30). 你打张三了吗？

Nǐ dǎ Zhāngsān-le ma

2SG hit Zhangsan-PFV Q

‘Did you hit Zhangsan?’

b. 张三, (我)打了 (Patient with Topicalisation)

[Zhāngsān]_{p.Topic}, [(wǒ) dǎ-le]_{com.Focus}

Zhangsan 1SG hit-PFV

‘Zhangsan, (I) has hit’

The Patient ‘Zhangsan’ in (30b) is in the initial position as the primary Topic. In this context of (30), the Agent ‘wǒ (1SG)’ can be omitted in (30b). When the Agent ‘wǒ’ is omitted, (30b) looks like (29b) which has the preverbal Patient, but the Patient is not the Subject but the Object, because the Patient cannot be the controller of the reflexive. This has been discussed in section 3.2.

Section 3.2 and 3.3 have shown that a Patient argument of some RVC can be the Subject, if this Patient argument is a primary Topic or a contrastive Topic.

However, not all RVCs can allow the argument mismatch between Patient and Subject. (31) lists two types of RVC: RVCs in (31a) do not allow patient arguments to be the Subject without passivisation, while RVCs in (31b) allow this mismatch.

(31)

a. 打死 dǎ-sǐ ‘hit-die (hit somebody and this somebody dead)’

刺瞎 cì-xiā ‘stab-blind (stab someone’s eye and this someone become blind)’

b. 卖光 mài-guāng ‘sell-bare (sold out)’

烫伤 tāng-shāng ‘burn(v.)-injured (scald)’

吹倒 chuī-dǎo ‘blow-fall (blow something, and this something falls)’

Like simple verbs, RVCs in (31a) do not allow a Patient-like argument to be the Subject without passivisation. (32) gives examples of RVC ‘打死 dǎ-sǐ (hit-die)’.

(32) a. 张三打死了李四。

Zhāngsān dǎ-sǐ-le Lǐsì

Zhangsan hit-die-PFV Lisi

‘Zhangsan killed Lisi (by hitting Lisi)’

b. *李四打死了 (Patient as the Subject without passivisation)

Lǐsì dǎ-sǐ-le

Lisi hit-die-PFV

‘intended meaning: *(someone) killed Lisi’

c. 李四被打死了 (Patient as the Subject)

Lǐsì bèi dǎ-sǐ-le

Lisi BEI hit-die-PFV

‘Lisi was killed’

The RVC ‘打死 dǎ-sǐ (hit-die)’ behaves like a simple verb: the Patient is the Object in (32a) or Subject of the passivisation in (32c). The Patient cannot be the Subject without passivisation as (32b). (32b) is not grammatical: the Patient in (34) cannot be the Subject, regardless of its information structure role.

(33) a. 李四怎么了

Lǐsì zěnmē-le

Lǐsì how-PFV

‘what happened to Lisi?’

b.* 李四打死了 (Patient as the Subject)

[Lǐsì]_{p.Topic} [dǎ-sǐ-le]_{Focus}

Lǐsì hit-die-PFV

‘intended meaning of this sentence: (somebody) killed Lisi’

c. 李四被打死了

[Lǐsì]_{p.Topic} [bèi dǎ-sǐ-le]_{Focus}

Lǐsì BEI hit-die-PFV

‘Lisi was killed’

The question-answer pair in (33) shows that even though the Patient is a primary Topic, it still needs the passivisation to promote the Patient to become the Subject. If the passivisation is absent, the Patient cannot be the Subject.

(34) a. 张三呢？你打死张三了吗？

Zhāngsān ne? Nǐ dǎ-sǐ Zhāngsān-le ma

Zhangsan Q 2SG hit-die Zhangsan-PFV Q

‘What about Zhangsan? Did you hit and kill Zhangsan?’

b. 张三_i, (我_j)打死了(他) (with Topicalisation)

[Zhāngsān_i]_{p.Topic}, [(Wǒ)_j] dǎ-sǐ-le tā_{i/*j}]_{com.Focus}

Zhangsan 1SG hit-die-PFV 3SG

‘Zhangsan, (I) has hit’

Similar to the simple verbs, a sentence with a preverbal Patient can appear in the discourse if this preverbal patient is the Object and the primary Topic. This preverbal patient is not the Subject, because a resumptive pronoun in the Object position after the verb can refer to this preverbal Patient. This preverbal Patient is the Object that is topicalised and put in the initial position of the sentence.

However, there are only two RVCs in the data, ‘打死 dǎ-sǐ (hit-die)’ and ‘刺瞎 cì-xiā (stab-blind)’, which disallow a Patient argument to be the Subject without passivisation. We might hypothesise that this rejection is caused by the semantic properties of the action: the verbs in these two RVCs need a highly agentive

argument to be the Subject. However, this is disconfirmed by the fact that if we just change the result in RVC and keep the same verb, the Patient-Subject is now possible.

(35) a. 张三打肿了李四的脸

Zhāngsān dǎ- zhǒng-le lìsì-de liǎn

Zhangsan hit-swollen-PFV Lisi-DE face

‘Zhangsan hit Lisi’s face; as a result, Lisi’s face is swollen’

b. 李四的脸打肿了

lìsì-de liǎn dǎ-zhǒng-le

Lisi-DE face hit-swollen-PFV

‘Lisi’s face is swollen (because of being hit by someone)’

The RVC in (35) is ‘打肿 dǎ-zhǒng (hit-swollen)’. This RVC is similar to ‘打死 dǎ-sǐ (hit-die)’: the action is the same, but the result is different. Although the action is the same, the RVC ‘打肿 dǎ-zhǒng (hit-swollen)’ allows its Patient argument to be the Subject without passivisation; therefore, this example disconfirms the hypothesis that the requirement of a highly agentive argument will prevent a Patient argument from being the Subject without passivisation. A similar situation is found with ‘刺瞎 cì-xiā (stab-blind)’.

(36) a. 张三刺破了气球

Zhāngsān cì-pò-le qìqiú

Zhangsan stab-broken-PFV balloon

‘Zhangsan punctured the balloon’

b. 气球刺破了

qìqiú cì-pò-le

balloon stab-broken-PFV

‘the balloon was punctured’

The RVC ‘刺破 cì-pò (stab-broken, puncture)’ in (36) designates the same action as ‘刺瞎 cì-xiā (stab-blind)’, but the result is different. Unlike ‘刺瞎 cì-xiā’, ‘刺破 cì-pò’ allows its patient argument to be the Subject without passivisation.

In the corpus, the following RVCs can be found, which are composed of ‘dǎ (hit)’ and ‘cì (stab)’ with different results.

(37) a. 花瓶打碎了

Huāpíng dǎ-suì-le

vase hit-fragmentary-PFV

‘the vase is broken into piece’

b. 胳膊打残了

gēbó dǎ-cán-le

arm hit-disable-PFV

‘the arm is hit, as a result it becomes disabled’

c. 鸡蛋打匀了

jīdàn dǎ-yún-le

egg hit-equal-PFV

‘the egg liquid is mixed equally’

(38). a. 手刺疼了

shǒu cì-téng-le

hand stab-pain-PFV

‘My hand is stabbed, as a result the hand hurts’

b. 玻璃刺碎了

bōlí cì-suì-le

glass stab-fragmentary-PFV

‘the glass has been stabbed into piece’

(37) and (38) show that the verb ‘打 dǎ (hit)’ and ‘刺 cì (stab)’ can form several RVCs that allow the Patient-like argument to be the Subject without passivisation. However, ‘打死 dǎ-sǐ’ and ‘刺瞎 cì-xiā’ do not allow the argument mismatch (Patient-Subject without passivisation). This may be the case that ‘打死 dǎ-sǐ’ and ‘刺瞎 cì-xiā’ are lexicalized, so that they act more like simple verbs like ‘dǎ (hit)’ and disallow the Patient argument to be the Subject without passivisation

3.5.2 Agent-Object Mapping

The mapping between Agent and Object is not widespread among RVCs. Apart from ‘看累 kàn-lèi (see-tired)’, (39) lists some other RVCs that allow agent-Object mapping, and (40)-(42) presents these RCVs in clauses.

(39) a. 喝醉 hē- zuì ‘drink-drunk (drink something until one gets drunk)’

b. 等急 děng-jí ‘wait-irritable (wait for somebody for a long time and get irritable)’

c. 吃坏 chī-huài ‘eat-bad’ (get ill as a result of eating something)’

(40) a. 张三喝醉了

Zhāngsān hē-zuì-le

Zhangsan drink-drunk-PFV

‘Zhangsan was drunk’

b. 这瓶酒喝醉了张三

zhè-píng jiǔ hē-zuì-le Zhāngsān

this-CL beer drink-drunk-PFV Zhangsan

‘this bottle of beer made Zhangsan drunk as the result of drinking it.’

c. 这瓶酒把张三喝醉了

zhè-píng jiǔ bǎ Zhāngsān hē-zuì-le

this-CL beer BA Zhangsan drink-drunk-PFV

‘Zhangsan got drunk, because he drank this bottle of beer’

(41) a. 张三等急了

zhāngsān dēng-jí-le

Zhangsan wait-irritable-PFV

‘Zhangsan got irritable, because he kept waiting (for somebody)’

b. 李四等急了张三

Lǐsì dēng-jí-le zhāngsān

Lisi wait-irritable-PFV Zhangsan

‘Zhangsan got irritable, because he kept waiting for Lisi’

c. 李四把张三等急了

Lǐsì bǎ zhāngsān dēng-jí-le

Lisi BA Zhangsan wait-irritable-PFV

‘Lisi had Zhangsan waiting for a long time, and Zhangsan got irritable’

(42) a. 张三吃坏了

zhāngsān chī-huài-le

Zhangsan eat-bad-PFV

‘Zhangsan was ill, because he ate something’

b. 那顿饭吃坏了张三

nà-dùn fàn chī-huài-le zhāngsān

that-CL meal eat-bad-PFV Zhangsan

‘that meal made Zhangsan ill as the result of eating it’

c. 那顿饭把张三吃坏了

nà-dùn fàn bǎ zhāngsān chī-huài-le

that-CL meal BA Zhangsan eat-bad-PFV

‘Zhangsan ate that meal and got ill’

In these examples, if the Patient and Agent arguments appear simultaneously, the Patient type arguments have to be the Subject and the Agent type arguments have to be the Object. It is obvious from these examples that the sub-predicates expressing results in these RVCs are predicated of the Agent type arguments that is the initiator of the action in RVC, rather than being predicated of the Patient type arguments. This suggests that the mapping of Agent-Object needs the result to be associated with the Agent argument of RVC. (43) shows two mappings of the RVC ‘喝醉 hē-zuì (drink-drunken)’ as an example of the mappings of these RVCs.

(43) a. 喝醉 hē- zuì < ~~Agent~~-Theme[affectee] Patient[cause]>

‘drink-drunken

transitive

[-r]

[-r]

SUBJ

OBJ

b. 喝醉 hē- zuì < ~~Agent~~-Theme>

‘drink-drunken

intransitive

[-r]

SUBJ

By using the theory in Her (2007), this can be explained as that the C-role of Cause is assigned the Patient argument, and the C-role of Affectee is assigned to the Agent argument. The Cause must be the Subject and the Affectee must be the Object (Y.Li, 1995). Thus, the assignment of C-roles causes the mismatch (Agent-Object) in these RVCs. When the Patient argument is absent, the Agent argument can be linked to the Subject as the traditional LMT predicted.

If V_{res} is not related to the Agent, the RVC cannot have an Agent-Object mapping. Results in RVCs like ‘打死 dǎ-sǐ (hit-die)’ are related to Patient arguments, and these RVCs do not allow the Agent to be mapped onto the Object.

(44) a. 张三打死了李四。

Zhāngsān dǎ-sǐ-le Lǐsì

Zhangsan hit-die-PFV Lisi

‘Zhangsan killed Lisi (by hitting Lisi)’

b. *李四把张三打死了 (Lisi as the Patient)

Lǐsì bǎ Zhāngsān dǎ-sǐ-le

Lisi BA Zhangsan hit-die-PFV

‘intended meaning: Zhangsan killed Lisi (Lisi as the Patient)’

c. 张三把李四打死了 (Lisi as the Patient)

Zhāngsān bǎ Lǐsì dǎ-sǐ-le

Zhangsan BA Lisi hit-die-PFV

‘Zhangsan killed Lisi’

The RVC ‘打死 dǎ-sǐ (hit-die)’ associates the result ‘sǐ (die)’ with the Patient argument. This Patient argument should be Object or preverbal Object marked by BA and it cannot be the Subject, regardless of the information structure role of the Patient argument.

(45) a. 李四怎么了？他和张三之间发生了什么？

Lǐsì zěnmē-le? Tā hé Zhāngsān zhījiān fāshēng-le shénme?

Lǐsì how-PFV 3SG and Zhangsan between happen-PFV what

‘what about Lisi? what happened between him and Zhangsan?’

b. *李四把张三打死了 (Lisi as the Patient)

[Lǐsì]_{P.Topic} [bǎ Zhāngsān]_{s.Topic} [dǎ-sǐ-le]_{Focus}

Lisi BA Zhangsan hit-die-PFV

Intended meaning: *Zhangsan killed Lisi (Lisi as the Patient)

Acceptable interpretation: Lisi killed Zhangsan

Unacceptable interpretation: Zhangsan killed Lisi

c. 李四被张三打死了 (Lisi as the Patient)

[Lǐsì]_{P.Topic} [bèi Zhāngsān]_{s.Topic} [dǎ-sǐ-le]_{Focus}

Lisi BEI Zhangsan hit-die-PFV

‘Lisi was killed by Zhangsan (Lisi as the Patient)’

The Patient in (45) is the primary Topic, because the discourse is mainly asking about the situation of ‘Lisi’. The other old information ‘Zhangsan’ is the secondary Topic. As discussed in Chapter 2, the result of a RVC updates the information of the secondary Topic (the NP marked by BA) in BA construction

and the primary Topic (the Subject) in BEI construction. In (45b), if the NP ‘Zhangsan’ marked by BA is interpreted as the Agent, it needs the information update of the result denoted by the RVC. However, the RVC ‘dǎ-sǐ’ associates the result with the Patient, not the Agent. This suggests that the Agent as the secondary Topic in BA construction cannot receive the information update of the result from the RVC ‘dǎ-sǐ’. Thus, the RVC ‘dǎ-sǐ’ will not map the Agent as the secondary Topic onto the Object in BA construction.

Unlike (45b), (45c) is an appropriate answer to (45a). In (45c), the passivisation is used to promote the Patient argument as the Subject. The primary Topic ‘Lisi’ has the information update of the result from the RVC, and the secondary Topic ‘Zhangsan’ has the information update of the action denoted by the RVC.

This comparison reveals the fact that the mapping between Agent and Object requires results in RVCs to be designated to the Agent. If this is not possible, then the Agent cannot be mapped onto the Object. The information structure cannot cause the mismatches if the mismatch is not possible in the argument structure initially.

3.6 Conclusion

This chapter discussed the interaction between information structure and the mismatch between arguments and grammatical functions. Sentences with the mapping of Patient-Subject usually have the Patient argument as the primary

Topic or contrastive Topic. Agent as the secondary Topic is usually a preverbal Object marked by BA.

Section 3.5 shows that information structure cannot affect the mapping. The mapping between argument and grammatical functions is built up before the information structure comes in. If the mapping of Patient-Subject or Agent-Object is not available, the information structure cannot change the mapping. From this point of view, we can say that the information structure cannot affect the mapping but can decide which mapping is chosen in the discourse.

Chapter 4: Mappings in BA and BEI construction

As Chapter 1 has shown, the RVC ‘追累 zhuī-lèi’ allows four mappings in canonical structure, but these mappings are not all allowed by BA and BEI constructions. (1)-(3) repeats the example of the RVC ‘追累 zhuī-lèi’ in the canonical structure, BA construction and BEI construction.

(1). 张三追累了李四

Zhāngsān zhuī-lèi-le Lǐsì

Zhangsan chase-tired-PFV Lisi

- a. Zhangsan chased Lisi, as a result Lisi got tired. (Causative)
- b. Zhangsan chased Lisi, as a result Zhangsan got tired. (non-Causative)
- c. Lisi chased Zhangsan, as a result Lisi got tired. (Causative)

(2). 张三把李四追累了

Zhāngsān bǎ Lǐsì zhuī-lèi-le

Zhangsan BA Lisi chase-tired-PFV

- a. Zhangsan chased Lisi, as a result Lisi got tired. (Causative)
- *b. Zhangsan chased Lisi, as a result Zhangsan got tired. (non-Causative)
- c. Lisi chased Zhangsan, as a result Lisi got tired. (Causative)

(3). 李四被张三追累了

Lǐsì bèi Zhāngsān zhuī-lèi-le

Lisi BEI Zhangsan chase-tired-PFV

‘Zhangsan is tired, as the result of being chased by Lisi.’

The sub-predicate ‘累 lèi’ in (1a) and (1b) can be predicated of either the Subject or the Object, and the argument ‘Zhangsan’ can be the chaser (Agent) in (1a) and (1b) or chasee (Patient) in (1c). The various mappings are limited in BA and BEI construction. These morpho-lexical operations prevent certain mappings of RVCs. The example in (2) involves BA construction. In this example, the sub-predicate ‘累 lèi’ is predicated of ‘Lisi’, the NP marked by BA. This sub-predicate cannot be predicated of the Subject ‘Zhangsan’. (3) gives the example of BEI construction. In this example, there is only one mapping allowed: ‘Lisi’ is the chasee (Patient) and the argument of the sub-predicate ‘累 lèi’. The sub-predicate ‘累 lèi’ cannot be predicated of the Agent argument ‘Zhangsan’.

These examples show that when the morpholexical operations (BEI and BA) take place, some mappings are not possible any more. This chapter will provide an explanation for this from the perspective of information structure.

4.1 BA construction

Chapter 1 has shown that the Theme argument of the sub-predicate ‘累 lèi’ can be combined with either the Agent or the Patient argument of ‘追 zhuī’. Hence, the RVC ‘追累 zhuī-lèi’ have four possible mappings onto the grammatical functions. (4) repeats the mapping of the RVC ‘追累 zhuī-lèi’ shown in Chapter 1.

(40). 张三追累了李四

Zhāngsān zhuī-lèi le Lǐsì

Zhangsan chase-tired PFV Lisi

a. Zhangsan chased Lisi, as a result Lisi got tired. (Causative)

i.	< Agent,	Patient-Theme >
Intrinsic Classification	[-o]	[-r]
Possible GF	(SUBJ)	(SUBJ, OBJ)
	SUBJ	OBJ
ii.	< Agent[caus],	Patient-Theme[af] >
Intrinsic Classification	[-o]	[-r]
Possible GF	(SUBJ)	(SUBJ, OBJ)
	SUBJ	OBJ

b. Zhangsan chased Lisi, as a result Zhangsan got tired. (non-Causative)

iii.	< Agent-Theme,	Patient >
Intrinsic Classification	[-o]	[-r]
Possible GF	(SUBJ)	(SUBJ, OBJ)
	SUBJ	OBJ

c. Lisi chased Zhangsan, as a result Lisi got tired. (Causative)

iv.	< Agent-Theme[af],	Patient[caus] >
Intrinsic Classification	[-r]	[-r]
Possible GF	(SUBJ, OBJ)	(SUBJ, OBJ)
	OBJ	SUBJ

In the mappings (4a.i) and (4a.ii), the Theme argument is combined with the Patient and then mapped onto the Object. In the mapping (4b.iii), the Theme argument is combined with the Agent and then mapped onto the Subject. In sentence (4), the Theme argument is related to either Subject in (4b) or Object in (4a). This reflects the fact that the sub-predicate ‘累 *lèi*’ can be predicated of either grammatical functions. However, these alternative relations of Theme argument with different grammatical functions are not possible in BA construction. As discussed in Chapter 2, the NP marked by BA is usually the secondary Topic in a sentence and bears the information update of the result denoted by the sub-predicate V_{res} of a RVC. If the BA construction occurs in the sentence, the V_{res} of the RVC cannot be predicated of the Subject (in contrast to (4b.iii)). This means that the Theme argument of ‘累 *lèi*’ must be predicated of the preverbal Object marked by BA.

The sentence containing BA construction as (2) is an appropriate answer for a question asking what Zhangsan has done to Lisi. (5) shows the information structure of (2), when it is used to answer this question.

(5). a. 张三呢？他对李四做了什么？

Zhāngsān ne? Tā duì Lǐsì zuò-le shénme

Zhangsan Q 3SG to Lisi do-PFV what

‘what about Zhangsan? What did he do to Lisi’

b. 张三把李四追累了

[Zhāngsān]_{p.Topic} [bǎ Lǐsì]_{s.Topic} [zhuī-lèi-le]_{Focus}
 Zhangsan BA Lisi chase-tired-PFV

- i. Zhangsan chased Lisi, as a result Lisi got tired.
- ii. Lisi chased Zhangsan, as a result Lisi got tired.

The question-answer pair shows that the primary Topic is Zhangsan, and the secondary Topic is Lisi. In the answer (5b), there are two pieces of new information that the RVC ‘追累 zhuī-lèi’ provides: the action (chasing) and the result (being tired). The new information of the result updates the state of ‘Lisi’ after being chased.

This new information of the result cannot be interpreted as the description of Zhangsan’s state. A sentence containing BA construction semantically indicates that the element marked by BA undergoes the event that the predicate in this sentence denotes, and the Subject is responsible for the change or result that this event causes to the element marked by BA (Zhang, 2000). This semantic property of BA construction assigns the result in RVC to the secondary Topic, the preverbal Object marked by BA, and this assignment of result prevents the argument in the position of Subject from being the argument of V_{res} . Thus, the V_{res} of the RVC in BA construction is predicated of the preverbal Object marked by BA.

The discussion above shows that the new information of the result denoted by the RVC in BA construction updates the state of the element marked by BA, not

the Subject. The mapping (4b.iii) has the result associated with the Subject ‘Zhangsan’. Hence, the RVC ‘追累 *zhuī-lèi*’ in BA construction does not allow the mapping of (4b.iii), and interpretation of (2b) is not possible.

4.2 BEI construction

Chapter 2 has shown that a BEI NP can be a secondary Topic, but the information update of this secondary Topic is the action of the RVC. (6) shows a discourse in which the sentences containing BEI construction are used appropriately.

(6). a. 张三 (被) 怎么了

Zhāngsān (bèi) zěnmē-le

Zhangsan BEI how-PFV

‘What happened to Zhangsan? / What Zhangsan has undergone?’

b. 张三被李四打死了

[Zhāngsān]_{p.Topic} [bèi Lǐsì dǎ-sǐ-le]_{com.Focus}

Zhangsan BEI Lisi hit-die-PFV

‘Zhangsan was killed by Lisi’

c. 张三被打死了

[Zhāngsān]_{p.Topic} [bèi dǎ-sǐ-le]_{com.Focus}

Zhangsan BEI hit-die-PFV

‘Zhangsan was killed’

(6a) is a question asking what Zhangsan has undergone. The morpheme BEI is optional. If the morpheme is not expressed, this sentence indicates that the speaker does not know that ‘Zhangsan’ is the undergoer of some action and asks for the general situation of ‘Zhangsan’. If the morpheme BEI is expressed, the speaker is aware of that ‘Zhangsan’ has undergone some event and wants to know what the event is. The morpheme BEI can be considered as a verb which has the meaning of ‘undergoing (an event)’ and it takes an NP as its Subject and a complement (Huang, 2009, p121). Thus, (6a) has the option of expressing the BEI as the main verb of the sentence or just having ‘zěnmě-le’ in the sentence.

Both (6b) and (6c) are passive sentences. The difference is that (6b) has an expressed Agent ‘Lisi’, while this Agent is not expressed in (6c). In both sentences, ‘Zhangsan’ is the primary Topic bearing the new information update which clarifies what Zhangsan has suffered. The NP ‘Lisi’ after BEI in (6b) is not a Topic but belongs to the completive Focus, because it is new information in the discourse.

If the Agent (the NP following BEI) appears in the question, it can be a secondary Topic in the answer, which bears the information update of the action, but the result does not update the information of the Agent. (7) shows the information structure of (6b) and (6c) when the question includes an expressed Agent, the NP after BEI.

(7). a. 张三被李四怎么了

Zhāngsān bèi Lǐsì zěnmē-le

Zhangsan BEI Lisi how-PFV

‘What has done to Zhangsan by Lisi?’

b. 张三被李四打死了

[Zhāngsān]_{p.Topic} [bèi Lǐsì]_{s.Topic} [dǎ-sǐ-le]_{com.Focus}

Zhangsan BEI Lisi hit-die-PFV

‘Zhangsan was killed by Lisi’

c. 张三被打死了

[Zhāngsān]_{p.Topic} [bèi dǎ-sǐ-le]_{com.Focus}

Zhangsan BEI hit-die-PFV

‘Zhangsan was killed’

The NP after BEI in (7b) is old information in this discourse and bears the new information update of the action designated by the RVC, giving the information of what ‘Lisi’ has done. ‘Lisi’ is the secondary Topic, and the primary Topic in this discourse is the Subject ‘Zhangsan’, which is mainly what the interlocutors talk about. This differentiates it from (6b) in which ‘Lisi’ is not a secondary Topic. Unlike the secondary Topic marked by BA, this BEI marking secondary Topic does not bear the information update of the result denoted by the RVC. In (7), the result denoted by the RVC updates the information of the Subject, the primary Topic. This primary Topic also bears the new information update of the action denoted by the RVC, which gives the information of what ‘Zhangsan’ has undergone. (7c) does not have the expressed Agent. Hence, the whole

completive Focus updates the information state of the primary Topic, telling the listener what ‘Zhangsan’ has undergone.

The discussion above shows that an NP after BEI can be either part of the completive Focus (like (6b)) or a secondary Topic (like (7b)), but the new information about the result denoted by the RVC does not update the information of the Agent. The same situation happens with the RVC ‘追累 *zhuī-lèi*’ with passive. (8) repeats the example of ‘追累 *zhuī-lèi*’ in the BEI construction.

(8). 李四被张三追累了

Lǐsì bèi Zhāngsān zhuī-lèi-le

Lisi BEI Zhangsan chase-tired-PFV

a. Lisi was chased by Zhangsan, as a result Lisi got tired.

*b. Lisi was chased by Zhangsan, as a result Zhangsan got tired

*c. Lisi chased Zhangsan, as a result Lisi got tired.

The RVC ‘追累 *zhuī-lèi*’ with BEI construction can be normally interpreted as (8a), in which the result of being tired updates the information of the Subject ‘Lisi’. (8) cannot be understood as the Agent ‘Zhangsan’ being tired as in (8b). This is because the Agent does not bear the information update of the result denoted by the RVC. (9) shows that (8) can be used to answer a question asking for the state of ‘Lisi’.

(9). a. 李四怎么了

Lǐsì zěnmē-le

Lisi how-PFV

‘What happened to Lisi’

b. 李四被张三追累了

[Lǐsì]_{p.Topic} [bèi Zhāngsān zhuī-lèi-le]_{com.Focus}

Lisi BEI Zhangsan chase-tired-PFV

‘Lisi was chased by Zhangsan, as a result Lisi got tired.’

(8) can be used as (9b) to answer the question asking for the state of ‘Lisi’, and the result denoted by RVC updates the information state of ‘Lisi’. (8) cannot be used to answer a question asking Zhangsan’s state. (10) shows the conversation in which (8) is used as an answer to a question asking Zhangsan’s state, and this discourse is not a natural conversation.

(10). a. 张三怎么了

Zhāngsān zěnmē-le

Zhangsan how-PFV

‘What happened to Zhangsan’

b. * 李四被张三追累了

Lǐsì bèi Zhāngsān zhuī-lèi-le

Lisi BEI Zhangsan chase-tired-PFV

‘Lisi was chased by Zhangsan, as a result Lisi got tired.’

The speaker of (10a) expects the information about ‘Zhangsan’, but (10b) talks about what happened to Lisi. Although ‘Zhangsan’ occurs in (10b), the result denoted by the RVC can be only interpreted as the state of ‘Lisi’. The listener cannot interpret (10b) as meaning that ‘Zhangsan’ is tired

The discussion above shows that the interpretation (8b) is not possible, because the Agent following BEI does not have the information update of the result denoted by RVC, and this new information updates the state of the Subject ‘Lisi’.

The final interpretation (8c) is marginal. Her (2007) discusses its acceptability, arguing that ‘Lisi’ receives the C-roles of the Affectee and ‘Zhangsan’ receives the C-role of Cause. In the passive, the argument receiving the C-role of Cause is ‘suppressed’ and the Affectee is selected as the Subject. His analysis is shown in (11).

(11). the mapping of (8c) in Her (2007)

追累 zhuī-lèi (passive)	< Agent-Theme (affectee)	Patient (cause)
IC	[-r]	∅
Possible GF	SUBJ, OBJ	
SUBJ		

Her (2007) admits that it is difficult for native speakers to get the reading of (8c) without an appropriate context. For example, (12) has the same structure with (8) and is odd without an appropriate context.

(12) 他的眼睛被看坏了

Tā-de yǎnjīng bèi kàn-huài-le

3SG-DE eye BEI see-bad-PFV

‘his eye went bad, caused by reading (something)’ (Her, 2007)

< Stimulus[caus] ~~Experiencer~~-Theme[af]>

∅

[-r]

|

SUBJ

|

eyes

In the argument structure, the more prominent semantic role (Experiencer, seer) in the combined semantic roles is suppressed, and this combined argument receives the C-role of Affectee. The Stimulus (what he reads) argument receives the C-role of Cause and is suppressed in this passive sentence. This argument structure and mapping of (12) is similar to (11). When this sentence appears in a context like (13), it becomes more acceptable.

(13). 他的眼睛就是这样被看坏的

Tā-de yǎnjīng jiù shì zhèyàng bèi kàn-huài de

3SG-DE eye exactly COP this.way BEI see-bad DE

‘his eyes went bad, precisely caused by reading this way’

Her (2007) argues that once the passive like (12) is placed in the clefted structure ‘shi...de’, which put the sentence focus on the constituent in the clefted structure, it becomes more acceptable. However, this clefted structure cannot make the reading of (8c) more acceptable. (14) shows (8) in the clefted structure.

(14). 李四就是这样被张三追累的

Lǐsì jiù shì zhèyàng bèi Zhangsan zhuī-lèi de

Lisi exactly COP this.way BEI Lisi chase-tired DE

a. Lisi was chased by Zhangsan, as a result Lisi got tired.

*b. Lisi was chased by Zhangsan, as a result Zhangsan got tired

*c. Lisi chased Zhangsan, as a result Lisi got tired.

I think the Subject ‘Lisi’ in (14) still cannot be understood as the Agent of the action ‘chasing’ as the reading (14c) suggests. C.-T. J. Huang et al. (2009, p. 121) suggests that the verb BEI means that the Subject NP undergoes an event. This indicates that when the verb appears with the passive, it is difficult to say that the argument in the Subject position of BEI is still the initiator of the action. It is more appropriate to understand the Subject of the passive sentence as the entity that the action is acted upon. However, it should be noticed that (13) is acceptable, which has an initiator as the Subject with passivisation and clefted structure. Further research is necessary to explain the acceptability of (13).

4.3 Conclusion

This chapter has shown that the information structure can prevent some mappings of RVC in BA construction and BEI construction. In BA construction, the NP marked by BA can be the secondary Topic, and the information update of the result denoted by the V_{res} of RVC goes to the secondary Topic; therefore, the result denoted by the RVC cannot be the updated information of the Subject (primary Topic) in the sentence with BA construction.

On the other hand, the NP after BEI can also be a secondary Topic, but the information update of this NP is the action denoted by the RVCs. In BEI construction, the result denoted by the RVCs updates the information of the primary Topic, rather than the secondary Topic. Moreover, the Subject of the sentence with BEI construction should be the Patient of the action. Thus, the sentence containing RVC and BEI construction has only one mapping.

The discussion in this chapter shows that if the argument mapping is not in accord with the information structure, this mapping will not be allowed. For example, Agent in the Subject position of the BA construction as the primary Topic will not bear the information update of the result denoted by the RVC. The mapping like (4b.iii) in which the V_{res} of the RVC is predicated of the Subject will not appear in the BA construction.

Chapter 5 Conclusion

This thesis has investigated the relation between information structure and argument mapping onto the grammatical functions of resultative verb constructions (RVC) in Mandarin Chinese. The argument mapping of RVCs is not in accord with the prediction by Lexical Mapping Theory (LMT), and so Her (2007) introduces Cause roles proposed by Y. Li (1995) into LMT to address this problem. This thesis has shown the interaction between these mappings and the information structure.

Previous work has defined the information structure in terms of two dimensions: Newness and Prominence. The feature of Newness divide information structure into two major groups: new information with the feature of [+ NEW] and given information with the feature of [- NEW]. The elements in the same group of Newness differ in the Prominence. The Prominence in Mandarin Chinese is not a bipartite feature. In this thesis, I propose that the given information can be divided into Topic and Background. Topics bear information updates from the discourse, while Background does not possess this property of bearing information update. There are 4 types of Topics: primary Topic, secondary Topic, contrastive Topic and continuing Topic. Thus, I have argued that Prominence is not a bipartite feature. Table (1) repeats the table in chapter 2, which shows the components of the information structure in Mandarin.

(1) Components of information structure (Mandarin)

	Newness	
	Given information	New information
Prominence	Contrastive Topic	Contrastive Focus
	Secondary Topic	
	Primary Topic	
	Continuing Topic	
	Background	Completive Focus

This thesis has focused on the interaction between Topics and argument mappings of RVCs. The information structure functions of primary Topic and contrastive Topic motivate a Patient-type argument of some RVCs to be mapped onto the Subject without passivisation. If an Agent-type argument acts as a secondary Topic in an RVC, then it can be expressed as the preverbal Object marked by BA. However, the influence of information structure on the argument mapping is limited. Argument structures and mappings are not decided by the information structure, but the information structure will affect people's choice of the mappings. If one mapping is not in accord with the information structure, this mapping will not appear in the discourse.

Not all possible mappings in the canonical structure are allowed in BA and BEI construction. The NPs after BA and BEI can be a secondary Topic, but they differ in the type of information update that they bear. The secondary Topic in BA construction bears the information update of the result of the event denoted

by the RVC, while the secondary Topic in BEI construction bears the information update of the action denoted by the RVC. The requirement of bearing information update causes some mappings that are available in canonical to be disallowed in BA and BEI construction.

Two important areas for further research concern lexicalisation and new information. In Chapter 3 lexicalization was proposed as a possible explanation for the fact that some verbs like ‘打 dǎ’ can form RVCs allowing Patient-Subject without passivisation and the same verbs can also form RVCs that disallow Patient-Subjects without passivisation. Information structure seems not to be the key to explain this problem.

Given information and topicality, rather than Focus, have been the subject of this thesis. As Her (2007) suggests, the clefted structure ‘shi...de’ which usually indicates the Focus in the sentence will make a sentence with one unexpected mapping of RVC more acceptable. A question arises from this: what property of Focus causes this change of acceptability of a sentence? Further research on information structure in Mandarin is needed to address the behavior of new information in discourse.

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