

國立交通大學

外國文學與語言學研究所

碩士論文

從漢語「感官-認知-言談」到
「情態」及「操控」動詞：
以框架理論為本之語意研究

Semantic Extension from Perception-Cognition-Utterance to
Modality and Manipulation Verbs in Mandarin:
a Frame-based Account

研究生：謝瓊羽

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中華民國九十七年六月

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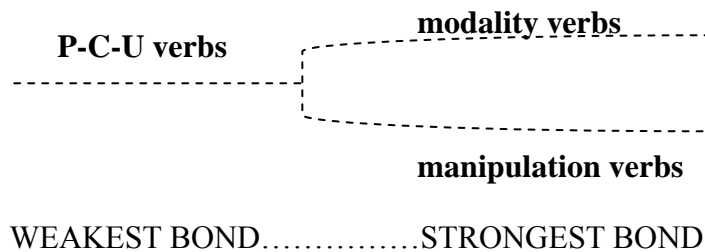
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摘 要

本篇論文旨在探討漢語「感官-認知-言談動詞」向「情態動詞」和「操控動詞」之語意延伸及其背後之認知語意機制。Givón (1993b)曾針對此議題作跨語言之探討並提出「事件整合等級」(如下圖所示)以呈現此三類動詞所展現出與其後補語間的語意聯繫和句法互動關係。



然而，在事件整合等級中有四個層面尚待釐清。

- 第一，為何 Givón 視感官動詞、認知動詞和言談動詞為一整體？
- 第二，感官、認知和言談動詞到情態動詞和操控動詞的語意延伸是否採取相同的語法手段？認知和語意上的動機又各為何？
- 第三，就事件整合而言，感官、認知和言談動詞在語意延伸中所展現的認識情態確定性與操控性是否有語意強弱之區別？
- 第四，情態動詞和操控動詞的平行以及重疊關係如何呈現？

為了釐清上述問題，此研究以 Fillmore and Atkins (1992)提出之「框架語義」(Frame Semantics)為主要理論基礎，輔以隱喻以及推論作為各框架間之延伸機制，將動詞語意角色、「構式語法」(Construction, Goldberg *et al.* 1995, 2006)與「主觀化理論」(Theory of Subjectivity, Tragott 1999)對於語意延伸之影響套用於「概念合成理論」(Conceptual Blending Theory, Fauconnier *et al.* 1985, 1994, 1997, 2002)之四維空間模型，將此三類動詞之參與者角色、語法表現、事件結構、共現特徵及語意信息等納入考量，針對三類動詞間之語意延伸作整合分析。觀察對象以自然產生的語料庫(中研院平衡語料庫和台大口語語料庫)為本，並引述文獻例證及研究者根據語感在網路資料(Google)上查證所獲得之實際語料為論述基礎。

本研究主要有四點發現：

第一點，感官-認知-言談動詞在語料庫中呈現之因果關聯以及共現結果為三者在語法和語意的相似性上提供了適當的詮釋。宏觀地說，人必須藉由對於外在世界的客觀感受以提供心理認知的刺激，最後藉由語言傳達內在的心理感受、想法和意向。

第二點，感官-認知-言談動詞並非透過相同之機制向情態和操控動詞延伸。

感官動詞的延伸方式主要是透過隱喻、虛化成帶有嘗試貌之動詞後綴(VV-看)，以及與‘起來’複合以表達說話者根據外在證據對於事物所持之觀點及判斷。認知動詞則是透過說話者(即認知者)的態度和觀點上與認識情態產生互動，並透過 X CAUSE Y (lai/qiu) DO Z 之構式(即兼語式)之構式語意使得意願動詞產生操控動詞之致使意圖和作用。另外，言談動詞透過語法化歷程，從言談標記延伸至附著於心理動詞之後、句首以及句末之認識情態標記，用以加強說話者對於一命題之觀點或是標示與預期相反之態度。甚者，由於言談動詞在說話者和聽話者的互動之中本身即具有行事語力，因此溝通事件為許多操控動詞(如建議、威脅)提供了隱含的前提，換言之，許多操控動詞必須透過溝通事件才能實現其致使行為。

第三點，由感官、認知和言談動詞延伸而來的情態和操控動詞在表達認識情態之確定性及操控性上的語意強弱呈現不同程度之階段性變化。就認識情態之確定性和操控性而言，「感官動詞」弱於「認知動詞」弱於「言談動詞」。在話語意義的層次，由位於上層語意之「看」、「想」、「說」在說話者和聽話者之語境互動中可以觀察出此趨勢，而在句子意義的層次上，較下層之動詞如「盼望」、「想要」、「叫」、和「要」亦是如此。

第四點，情態動詞和操控動詞之重疊和互動可由「想」和「要」之複合得到解釋。「想要」融合了兩類動詞之語意特性和語法表現，產生框架聚合(frame convergence, Liu& Hsieh 2008)並體現為語意角色之強制結合(role coercion)。

總的來說，本研究試圖探討感官-認知-言談動詞之語意延伸機制和程度上的異同，以及同組之動詞如何產生系統性的語意延伸。再者，在框架語意的架構下，不同層次(話語意義和句子意義)中產生的語意延伸必須以不同的方式和在不同的範圍裡標記、呈現。本研究之最終目的為提供研究語意延伸的整合性分析模式。

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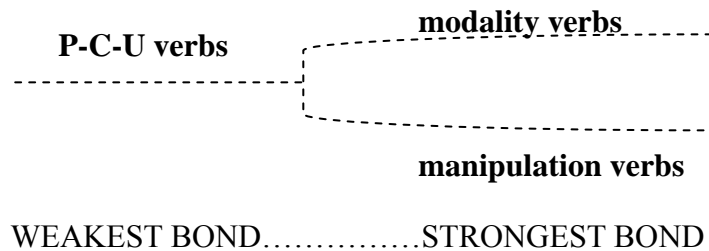
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Abstract

This paper explores the cognitive-semantic motivations of the semantic extension from P-C-U to modality and manipulation verbs in Mandarin Chinese. The issue was tackled cross-linguistically by Givón (1993b) who proposes the event-integration scale (cf. the figure below) which displays the different correlations between semantic bonds and syntactic patterns resulting from the different semantic properties of the three verb classes.



However, given that P-C-U is not differentiated and Modality and Manipulation overlap in the scale, four aspects concerning the topic remain unexplored:

- 1) Why do perception, cognition and utterance verbs form a group?
- 2) Do P-C-U verbs extend to the other verb classes by the same mechanisms?
- 3) Do P-C-U verbs behave the same in their degree of event integration?
- 4) How are modality and manipulation related and in what way they overlap?

In attempt to answer the four questions, this paper offers possible accounts for the extensions among the three verb classes based on the observation of semantic properties, basic syntactic patterns and lexical, aspectual collocations of the three verb classes at issue by integrating Frame Semantics, Construction Grammar and the theory of Subjectivity into the four-space model of Conceptual Blending.

There are four major findings in this study:

- 1) The collocational sequences of cause-effect relations can account for the semantic motivations underlying the grammatical symmetry and the interrelations among P-C-U verbs since one perceives the world via his or her perception and conveys their mental content by means of language.
- 2) The extensions of P-C-U verbs to the other two verb classes are operated by different mechanisms. Verbs of perception extend to the other two by metaphor and undergo grammaticalization resulting in the predicate *V-qilai* expressing the personal judgment or inference of the perceiver relying on external phenomenon as the evidence or the verbal affix *VV-kan /V-kankan* which suggest ‘attempting’ aspect. Verbs of cognition interact with epistemic modality within the attitudes and perspectives held by cognizer and extend their meanings from volition to intended manipulation via the causative construction X CAUSE Y (*lai/qiu*) DO Z. As for utterance verb, such as *shuo*, it functions as an epistemic marker which attaches to mental verb or occupies the sentence-initial and sentence-final position to intensify the perspective or the counter-expectation toward a proposition. Furthermore, utterance verbs exert the illocutionary force in the communication events and thus offer a prerequisite for various manipulation verbs such as *suggest* and *threaten*.
- 3) The extended meanings from P-C-U to modality and manipulation exhibit different degree on expressing epistemic certainty and the force of manipulation (perception < cognition < utterance). This is held true for both *kan*, *xiang* and *shuo* at the utterance meaning level in a speaker-hearer interacting scenario and other verbs such as *panwang*, *xiang*, *xiangyao*, *jiao*, and *yao* at the level of sentence meaning.
- 4) The interaction between modality and manipulation verbs can be exhibited by the combination and blending of *xiang-yao* by the operation of Conceptual Blending with frame convergence and role coercion.

In sum, this paper attempts to clarify the distinctions among P-C-U verbs in their degree and mechanisms of semantic extension and how other members of the same verb class extended to another systematically. Further, the representations of utterance and sentence meaning are construed and tackled with in different scopes within the infrastructure of Frame Semantics. The study ultimately provides a unified framework in analyzing and representing semantic extensions.

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Chapter 1

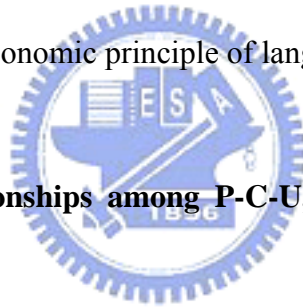
Introduction

1.1. The Background

Lexical polysemy, the ambiguity of an individual word that can be used in different contexts to express two or more different meanings, has long been an interesting area to researchers of various theoretical persuasions, such as Lexical Semantics, Frame Semantics, Construction Grammar, Cognitive linguistics and Pragmatics. Despite the controversy towards polysemy, the consensus on its heterogeneous phenomenon is reached. According to Pustejovsky and Boguraev (1996), there are at least three crucial factors which cause lexical ambiguity, namely, contrastive ambiguity, complementary ambiguity (logical polysemy) and sense extensions. Contrastive ambiguity contributes to the appearance of homonymy (such as bank in ‘river bank’ and ‘financial bank’) and vagueness, for instance, news in ‘I read the news’ (news as press communiqué) and ‘I heard the news’ (news as the information), while logical polysemy is endowed with the meaning which is predictable from logics (e.g. ‘Mary began a book’ can be interpreted as ‘Mary began writing a book’ or ‘Mary began reading a book’). The focus of this study, however, is to investigate meaning extensions of polysemy as well as the cognitive operation and pragmatic properties behind them.

Previous studies concerning polysemy mainly emphasize the disambiguation among different senses (Huang, Ahrens and Chuang 2003, Hsu 2006, and many others). Other works pertaining to the semantic extension of polysemy examine either the process of grammaticalization of individual words chronologically (cf. Traugott 1982, Shen 1994, Chang 2000, Liu 2000, Lien 2001, Lai 2003, Wu 2003) or the subtle distinctions between near-synonym sets by mapping conceptual and syntactic structures within the scope of one language or dialect (see Tsai *et al.* 1999, Huang *et*

al. 2000, Liu 2002 and many others). Following the theoretical foundations laid by previous studies mentioned above, this current study attempts to utilize a unified framework capable of accounting for systematic semantic extensions from a group of verbs to another, i.e. the semantic extensions from Perception-Cognition-Utterance to modality and manipulation verbs, in Mandarin. The extensions were first examined systematically by Givón (1980, 1990a, b, 1993a, b), which will be illustrated in 1.2 later. By observing a group of conceptually and syntactically relevant verbs, we may explore their systematic semantic extensions to other verb classes. This is supposedly induced by verbal semantics, cognitive operation and the pragmatic properties of polysemous verbs. The extensions among senses of polysemy may offer a sound explanation of the fact that lexical polysemy is a universal and cross-linguistic phenomenon resulting from economic principle of language learnability.



1.2. The Issue: Interrelationships among P-C-U, Modality and Manipulation Verbs

The definitions of the three target verb classes shall be firstly clarified in Section 1.2.1 before discussing the interrelationships among P-C-U, Modality and Manipulation verbs shown in Section 1.2.2.

1.2.1 Three Major Classes of Complement-taking Verb: P-C-U, Modality and Manipulation Verbs

To demonstrate the correlations between a verb and its complement, Givón roughly classifies three classes of complement-taking verb¹. The three classes of

¹ According to Givón (1984a and 1993a), verbs with verbal complements also include ‘verbs with clausal subjects (such as *shock* and *astonish* which take a dummy pronoun it as its subject)’ and ‘information verbs (such as *inform* and *announce* which can take both a dative direct object and a verbal complement of the type taken by P-C-U verbs)’.

complement-taking verbs, P-C-U verbs (Perception, Cognition and Utterance Verb), modality verbs and manipulation verbs are defined semantically and syntactically by Givón (1993b), as listed in Table 1 below.

Table 1: Semantic and Syntactic Definitions of P-C-U, Modality and Manipulation Verbs (generalized from Givón 1993b)

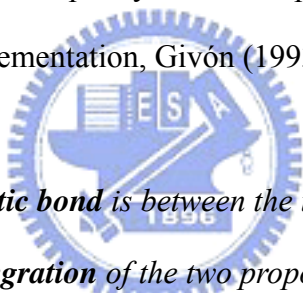
Definition	P-C-U verb	Modality verb ²	Manipulation verb
Semantic	<ul style="list-style-type: none"> a. The main-clause verb codes either the perception, cognition, or verbal utterance by the dative or agent subject. b. The complement clause codes the state or event that is the object of the mental or verbal activity by the main-clause subject. 	<ul style="list-style-type: none"> a. The complement clause is semantically a proposition, coding a state or event. b. The subject of the main clause is co-referent – i.e. refers to the same discourse entity – as the subject of the complement clause. c. The main verb codes either inception, termination, persistence, success, failure, attempt, intent, obligation or ability, by the subject of the main clause, to perform the action or be in the state depicted in the complement clause. 	<ul style="list-style-type: none"> a. The main clause has a human agent that manipulates the behavior of another human, the manipulee. b. The agent of the complement clause is co-referential with the manipulee of the main clause. c. The complement clause codes the target event to be performed by the manipulee.
Syntactic	<ul style="list-style-type: none"> a. No co-reference restrictions hold between the subject or object of the main and the subordinate clause. b. The subordinate clause appears like a full-fledged main clause, with no missing subject. c. The subordinate clause may be preceded by the subordinator morpheme that, or in some cases by if. <p>E.g. 1) She saw that he came out of the theater. 2) John knew that Mary had left. 3) She said: “He might leave later.</p>	<ul style="list-style-type: none"> a. The co-referent subject of the complement clause is left unexpressed. b. The complement-clause verb appears in an infinitive (or ‘nominal’) form, lacking any tense, aspect, modality or verb-agreement morphology. c. The complement clause tends to appear in the characteristic – post-verbal-direct object position, and is normally packed under the same intonation contour with the main clause. <p>E.g. John wanted to leave.</p>	<ul style="list-style-type: none"> a. The agent of the main clauses is its subject. b. The manipulee of the main clause is its direct object. c. The manipulee is also the subject of the complement clause, but is left unexpressed. d. The complement-clause verb appears in an infinitive (or ‘normal’) form, lacking any tense, aspect, modality or verb-agreement morphology. <p>E.g. 1) She made him shave. 2) Mary told John to leave.</p>

² Givón (1993b)’s definition of Modality verb include the commonly known ‘desiderative’ verbs. In addition, examples of ‘epistemic’ and ‘deontic’ modality can be found in his book as well; for instance, ‘Mary wished that he would leave’ codes epistemic uncertainty (Givón 1993b:19).

The three classes seem isolated from one another at the first glance. However, some verbs can be labeled as two or more verb classes which denote different syntactic patterns and meanings. Such multiple memberships, observed by Givón (1993a), are often systematic. Take *tell* for example, it may act like an utterance verb as in ‘She *told* me a story’ or a manipulation verb (more specifically non-implicative verb) as in ‘She *told* him to stop’.

In order to explore how the three verb classes overlap, we need to probe into the semantic bond between the verb and its complement and the manner it is coded in syntactic structure.

The pairing of form and meaning in grammar has always been the conviction of Functional Linguistics. In order to specify the isomorphism between the semantic and syntactic dimensions of complementation, Givón (1993b:2) makes a prediction:



*“The stronger the **semantic bond** is between the two events, the more extensive will be the **syntactic integration** of the two propositions into a single clause”.*

On the one hand, the semantic bond, based on Givón’s analysis, subjects to the semantic properties of a verb and its connection with the complement, such as implicativity, co-temporality, referential cohesion and the subject’s control over the object. On the other hand, the syntactic integration has to do with the types of syntax of complementation clause ranging from quotation (direct/indirect), modal-subjunctive, for-to COMP, infinitive COMP verb, bare-stem COMP verb, to co-lexicalized verb. The prediction is manifested in the degree of integration of complement clauses with their main predicate as illustrated in the English complementation shown in Table 2 in the next page.

Table 2: Semantic Scale and Syntax of Complement Clause in English (Givón 1993b:6)

Semantic Scale of Verbs	Syntax of COMP-clause
a. She let go of the knife	CO-LEXICALIZED VERB
b. She let him go home	BARE-STEM COMP VERB
c. She wanted him to leave	INFINITIVE COMP VERB
d. She'd like for him to leave	FOR-TO COMP
e. She wished that he would leave	MODAL-SUBJUNCTIVE
f. She knew that he left g. She said that he might leave later	INDIRECT QUOTE
h. She said: "He might leave later"	DIRECT QUOTE

It can be observed from this table that the stronger the affinity between matrix verbs and their complement verbs are, the more syntactically dependent the syntax of complement clause would be. For instance, in (a), the manipulation verb *let*, exerting strongest binding force over its complement verb *go*, incurs the predicate-raising and thus forms a co-lexicalized verb *let-go*; whereas in (b), the subject *she* exerts a less strong binding force on the animate object *him* since the manipulator has to compete with the resistance of the manipulee. The two verbs *let* and *go* are accordingly syntactically separated rather than co-lexicalized. Comparatively, in (c), the complement of *want* is coded as infinitive clause and shows more syntactic independence from the verb with weaker binding force owing to the fact that the manipulation of the manipulator was performed but not necessarily successful. Hence, Givón further divided manipulation verbs into two types by: implicative verbs (e.g. *make*, *have*, *cause*, etc) and non-implicative verbs (e.g. *tell*, *allow*, *want*, etc) which can be translate into successful (a-b) and unsuccessful manipulation (c-e) respectively. Jumping to (f-h), the prototypical Perception-Cognition-Utterance verbs (P-C-U)

verbs like *see*, *know* and *say* display the weakest binding relations with their complement clauses because, instead of exerting the subject's influence on the object, their complements codes the state or event that is the object of the mental or verbal activity. Their complement structures are coded as finite clauses and thus the most syntactically independent ones. As a result, in (h), the tense of the verbs in the main and complement clause is not necessarily co-temporal (for instance, she said: "He will leave later.") This indicates the remotest distance between the matrix verb and its complement.

However, for sentence (d) and (e), the semantic categories of their matrix verbs *would like* and *wish* could be vague. Above we have seen the example of successful intended causation (a-b), attempted manipulation (c), and the prototypical use of P-C-U verbs (f-h). Sentence (d) and (e), in fact, codes the transition between preference (even weaker manipulation) and epistemic modality (which creates an interface to P-C-U verbs). To embody the even weaker manipulation, the FOR-TO complement is used in (d) whereas in (e) the manipulative force is getting even weaker since the possibility of the intended event is marked by the modal-subjunctive mood. In addition to sentence (d) and (e), Givón takes two other examples to illustrate the transition between modality and P-C-U verbs:

- (1) She wished that he had arrived on time.
- (2) She hoped that he did arrive on time.

Sentence (1) and sentence (2) codes counter-factual epistemic anxiety, which is termed 'evaluative modality of preferenc' by Givón³, and epistemic modality uncertainty respectively. Semantically, the implications of sentence (1) and sentence

³ The evaluative modality here is different from that defined by Hsieh (2006).

(2) are ‘she wished that he had arrived on time, but she knew he hadn’t.’ and ‘She hoped that he did arrive on time, and she guessed he probably did.’

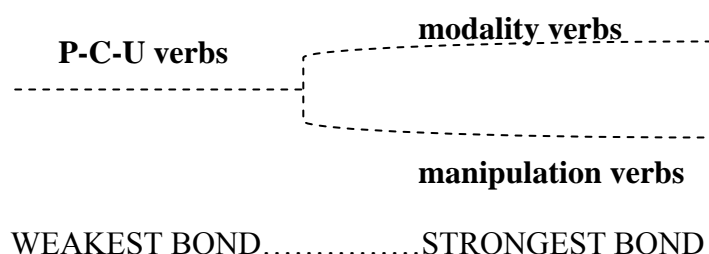
In sum, the more independent of the main verb the complementation is, the less integral the events will be; the semantic bond between the verb and the complementation is thus looser. Furthermore, the boundaries between manipulation verbs and modality verbs, modality verbs and P-C-U verbs are difficult to be clearly cut since the extensions are shown in the graded transition semantically and syntactically. Hence, this makes their overlaps interesting and worthy to be explored.

The transitions of the three target verb classes is posited by Givón (1990b, 1993b) with an overview of the event-integration scale, shown as Figure 1 in the following section.

1.2.2 The Event-integration Scale of Givón (1993b)

By proposing the above tuning-fork shaped event-integration scale (cf. Figure 1), Givón attempts to show the different correlations between semantic bonds and syntactic patterns resulting from the different semantic properties of the three verb classes. The syntactic-semantic mappings confirm the predication mentioned earlier.

Figure 1: Overview of the Event-integration Scale (Givón 1993b)



The scale is a continuum, suggested by Givón, whereby modality verbs and manipulation verbs run in parallel from the top toward the middle, exhibiting roughly

the same semantic and syntactic properties. At the point around the middle, those two classes cease and P-C-U verbs take over, occupying the bottom of the scale.

Examples of multiple memberships among P-C-U, manipulation and modality verbs are illustrated by the different usages of *suggest* (Givón 1993b):

(3) P-C-U + strong manipulation: subjunctive complement

I suggest you leave right away.

(4) P-C-U + weak manipulation: subjunctive complement

She suggested that John leave right away.

(5) P-C-U + deontic modality: modal complement

She suggested that John should leave right away.

(6) P-C-U + epistemic modality: modal complement

She suggested that John may have left right away.

(7) P-C-U: indicative complement

She suggested that John had left earlier.

The different complement types of *Suggest* denote the semantic extension from manipulative speech act to weaker manipulation (stronger preference), then modality and indicative. The prototypical P-C-U verbs *kan*, *xiang* and *shuo* display similar gradation.

(8) P-C-U + Weak manipulation: imperative complement

- a. 我看你還是找別人吧！ (Sinica)
wo kan ni haishi zhao bieren ba
 I see you had better look for others SFP⁴
 ‘I suggest you had better look for others!’

⁴ Abbreviations used in this paper are listed below. CL.: classifier, DE: modifier marker, SFP: sentence final particle, INTR. :interrogative, NEG. : negation marker, GEN : genitive, ASP: aspect.

- b. 我想你馬上到我身邊來，可你做不到， (Google)
wo xiang ni mashang dao wo shen bian lai ,ke ni zuobudao
 I think you right away reach I body side come , but you do-NEG-achieve
 ‘I want you come to my side right away, but you can’t make it.’
- c. 我說你阿~老了就別跑那麼快咩~ (Google)
wo shuo ni a~lao le jiu bie pao name kuai mie
 I say you SFP~old PERF JIU NEG run so fast SFP
 ‘I suggest that since you are so old, don’t run so fast.’

(9) P-C-U + Weak manipulation: subjunctive complement

- a. 我看借給他們點兒吧，大八月節的。 (Liu 1986)
wo kan jie gei tamen dianer ba , dabayuejie de
 I see lend give they a little SFP , moon festival DE
 ‘I suggest that (we) lend them some (money) since it’s moon festival.’
- b. 甲：我決定報考北大了。
 乙：你的成績不大突出，我想還是報低一點的學校吧。(Liu 1986)
jia : wo jueding baokao beida le
yi : ni de chengji bu da tuchu , wo xiang haishi bao di yidiande xuexiao ba
 A: I decide register for an exam PKU PERF
 B: your grades Neg too outstanding , I think had better register lower a little DE school SFP
 ‘A: I decided to register for the entrance exam of PKU.’
 ‘B: Your grades are not good enough. I suggest that you had better register for an entrance exam of a lower level school.’
- c. 我說咱們明天就走，好嗎？ (Liu 1986)
wo shuo zanmen mingtian jiu zou , hao ma?
 I say we tomorrow JIU leave , good SPF
 ‘I suggest that we leave tomorrow. Is that okay?’

(10) P-C-U + Deontic modality: modal complement

- a. 我想/看/說你也該回旅館了。 (Liu 1986)

wo xiang/kan/shuo ni ye gai hui lüguan le
I think/see/say you also should return hotel PERF
'I consider that you should return to the hotel as well.'

- b. 我想/看/說一個人要有點良心。 (Liu 1986)

wo xiang/kan/shuo yigeren yao you dian liangxin
I think/see/say one should have a little conscience
'I consider that one should be consionable.'

(11) P-C-U + Epistemic modality: modal complement

- a. 我想/看/說，這一定是謠言。 (Liu 1986)

wo xiang/kan/shuo , zhe yiding shi yaoyan
I think/see/say , this must COP rumor
'I consider that this must be a rumor.'

(12) P-C-U: indirect quote

- a. 我在想你說的有道理。 (Google)

wo zai xiang ni shuo de youdaoli
I PROG think you say DE reasonable
'I am thinking that what you said was reasonable.'

- b. 昨天我看到你騎著腳踏車， (Sinica)

zuotian wo kan-dao ni qi-zhe jiaotache
yesterday I see-achieve you ride-PROG bicycle
'Yesterday I saw you riding a bike.'

- c. 他對我說他和他女朋友分手了， (Sinica)

ta dui wo shuo ta he ta nupengyou fenshou le
he DUII say he and he girlfriend break up PERF
'He told me that he broke up with his girlfriend.'

The meanings of *kan*, *xiang* and *shuo* in examples (8-11) are departed from their prototypical uses (12 a-c). In (8), the tree verbs take imperative complements and thus induce the weaker manipulative speech act in the speaker-hearer interaction.

In (9), the three verbs take subjunctive complements and impose the weaker manipulation, more specifically suggestion (9 a-b) and invitation (9 c). In (10) and (11), the three verbs take a deontic and epistemic modal complement respectively and suggest the speaker's preference. Finally, in (12), the tense in the complements of the three verbs are incoherent with the matrix verbs and therefore indicating their least control over the event.

However, not every verb in P-C-U class can display the graded meaning transition to both modality and manipulation. Some verbs (14-16) overlap the uses of modality while other verbs (17-19) cover the function of manipulation and still the other verbs transit from modality to manipulation (13). English examples are given below.

(13) Modality <--> Manipulation:

- | | | |
|-----------------|----------------------|----------|
| a. Modality: | I want to leave. | (Google) |
| b. Manipulation | I want him to leave. | (Google) |



(14) Perception <--> Modality:

- | | | |
|-------------|----------------------------------|---------------|
| Perception: | a. I feel cold! | (Google) |
| | b. I feel the house shake a lot. | (Google) |
| | c. I saw Floyd leave. | (Noonan 1985) |

modality:

- | | | |
|-------------|--|---------------|
| (epistemic) | d. I feel that you were wrong in this statement. | (Google) |
| (epistemic) | e. You are wrong, I feel. | |
| (deontic) | f. I feel like to take a break. | (Google) |
| (epistemic) | g. I saw that Flyd left. | (Noonan 1985) |

(15) Cognition <--> Modality:

- Cognition: a. I was thinking about getting two sets of overalls. (BNC)
b. I've been...thinking about what we should do in future.

(BNC)

- Modality: a. I think she's there. (Givón 1993b)
b. She's there, I think.

(16) Utterance <--> Modality:

Utterance: a. He promised, "I will go with you." (Google)

b. I promise you it won't happen again. (BNC)

Modality: c. I promise to be there for you. (Google)

(17) Perception <--> Manipulation:

(BNC)

a. Perception: They listen to the music.

b. Manipulation: He didn't listen to any of the people.

(18) Cognition <--> Manipulation:

(Givón 1993b)

a. Cognition: I expect that you should be done by noon, if everything goes on schedule.

b. Manipulation: I expect you to be done by noon, so get on with it!

(19) Utterance <--> Manipulation:

(Givón 1993b)

Utterance: a. She told him a story.

b. She told him that his timing was a bit off.

Manipulation: c. She told him to bug off.

Some Chinese examples are found complying with the transitions mentioned above.

(20) Modality <--> Manipulation:

Modality: (deontic)

a. 我想要幫助他。 (Sinica)

wo xiangyao bangzhu ta

I want help he

‘I want to help him.’

b. 我想要他可以一直開朗的生活著。 (Google)

wo xiangyao ta keyi yizhi kailang de shenghuo zhe

I want he can always happily live ASP

‘I want him to be able to live happily all the time.’

Manipulation: c. 我想要你帶它回家。 (Google)

wo xiangyao ni dai ta hui jia

I want you take it return home

‘I want you to take it home.’

(21) Perception <--> Modality:

Perception: a. 我覺得冷， (Sinica)

wo juede leng

I feel cold

‘I feel cold.’

b. 昨天我看到你騎著腳踏車。 (Sinica)

zuotian wo kan-dao ni qi-zhejiaotache

yesterday I see-achieve you ride-ASP bicycle

‘Yesterday I saw you riding a bike.’

- c. 雖然他坐著，但我**看得出**他很高， (Google)
suiran ta zuo zhe , dan wo kan-de-chu ta
hen gao
 although he sit ASP , but I see-DE-out he very tall
 ‘Although he sits, I can recognize that he is very tall.’

Modality:

- d. **我覺得**這，…這是一個很不錯的領導方式。

(Liu & Chiang 2006)

[wo juede] zhe,...zhe shi yige hen bucuo de lingdao
fangshi

I feel this this is one-CL3 very not-bad DE guide way
 ‘I feel (that) this is a good style of leadership.’

- e. 這個東西**我覺得**很好耶，_ (Liu & Chiang 2006)

zhege dongxi [wo juede] hen hao ye.

this-CL thing I feel very good SFP

‘This thing, I feel, is quite good.’

- f. 他整個房子啊，_還有規劃都非常的…，比日本，_... 還要

漂亮，...**我覺得**

(Liu & Chiang 2006)

ta zheng-ge fangzi a, _ haiyou guihua dou feichang
de,...bi Riben _...haiyao biaoaliange...[wo juede]

it whole house SPE and design both very DE more

Japan more beautiful PART I feel

‘That house, and also the design, are both very..., even
 more beautiful than (the ones in) Japan, I felt.’

- g. **我看**問題不大。 (Sinica)

wo kan wenti bu da

I see problem NEG big

‘I don’t think it’s a big problem.’

- h. 牠的卵**看起來**是橙紅色球形， (Sinica)
tade luan kanqilai shi chenghong se qiuxing
 its egg see-QILAI COP orange-red color ball shape
 ‘The color of its egg looks orange and red and the shape
 of it looks like a ball.’
- i. 這樣的想法**看起來**是對的。 (Google)
zheyangde xiangfa kan-qilai shi dui de
 such thoughts see-QILAI COP correct DE
 ‘Such thoughts seem to be correct.’

(22) Cognition <--> Modality:

- Cognition: a. 他一直在**想**這件事。 (Google)
ta yi zhi zai xiang zhe jian shi
 he always ASP think this CL matter
 ‘He has been always thinking about this matter.’
- b. 我**想著**該如何處置這些垃圾， (Google)
wo xiang zhe gai ruhe chuzhi zhexie lese
 I think ASP should how deal with these trash
 ‘I am thinking how to deal with the trash.’

Modality:

- (epistemic) a. 我**想**你也該回旅館了。 (Liu 1986)
wo xiang ni ye gai hui luguang le
 I think you also should return hotel ASP
 ‘I consider that you should return to the hotel as well.’
- (epistemic) b. 講不出來的話，用寫的可能效果更好，我**想**。 (Sinica)
jiang-bu-chulai dehua , yong xie de keneng
xiaoguo geng hao , wo xiang
 speak-NEG-out if , use write DE might effect more
 good , I think
 ‘If you can’t put it into words, it might be better to write
 it down, I think.’

- (deontic) c. 我想吃泡麵。 (Google)
wo xiang chi paomian
 I want eat instant noodles
 ‘I want to eat instant noodles.’

(23) Utterance <--> Modality:

- Utterance: a. 他對母親說：媽，我還得睡一會兒， (Sinica)
ta dui muqin shuo : ma , wo hai de shui yihuie
 he facing mother say: mom , I still have to sleep a while
 ‘He told his mother: mom, I still need to sleep for a while.’
- b. …我…，就答應了他一聲：“好，我聽你的！(Google)
...wo... , jiu daying le ta yisheng : “hao , wo ting ni de !”
 ...I...JIU answer he one-CL: “good , I listen yours.’
 ‘...I...then anwer him: okay, I listen to your words.’

Modality:(deontic)

- c. 我答應會準時到達。 (Google)
wo daying hui zhunshi daoda
 I promise will on time arrive
 ‘I promise that I will arrive on time.’
- d. 他答應爸爸三年就回來， (Sinica)
ta daying baba san nian jiu huilai
 he promise father three year JIU come back
 ‘He promised his father that he will come back in three years.’

(24) Perception <--> Modality:

- a. Perception: 他聽著外面的蟲聲， (Sinica)
ta ting zhe waimian de chong sheng
 he listen ASP outside GEN insect sound
 ‘He is listening to the sounds of insects from outside.’

b. Manipulation: 他很聽媽媽的話。 (Google)

ta hen ting mama de hua

he very listen mother GEN words

‘He is very obedient to his mom.’

(25) Cognition <--> Manipulation:

Cognition: a. 他一直在想這件事。 (Google)

ta yi zhi zai xiang zhe jian shi

he always ASP think this CL matter

‘He has been always thinking about this matter.’

b. 我想著該如何處置這些垃圾， (Google)

wo xiang zhe gai ruhe chuzhi zhexie lese

I think ASP should how deal with these trash

‘I am thinking how to deal with the trash.’

Manipulation: a. 他生病了，我很想他去看病。 (Google)

ta shengbing le , wo hen xiang ta qu kanbing

he sick ASP , I very think he go see the doctor

‘He is sick. I want him to see the doctor very much.’

b. 我很想你看我，可以嗎？ (Google)

wo hen xiang ni lai kan wo , keyi ma

I very think you come see me, can INTR

‘I want you to come to see me, can you?’

c. 我想你做個溫柔、可愛、聽話的好姑娘， (Sinica)

wo xiang ni zuo ge wenrou, keai, tinghua de hao guniang

I think you DO CL tender, cute, obedient GEN good girl

‘I want you to be a tender, cute, obedient and good girl.’

(26) Utterance <--> Manipulation:

Utterance: a. 我叫著：媽媽！小白呢？ (Sinica)

wo jiao zhe : mama ! xiaobai ne

I cry ASP: mom! Xiaobai INTR

‘I cry out: Mom! Where is Xiaobai?’

Manipulation: b. 他媽媽叫他去買紅糖， (Google)

ta mama jiao ta qu mai hong tang

he mother call he go buy red sugar

‘His mother asks him to buy black sugar.’

The above examples has proved that Mandarin Chinese exhibits similar multiple memberships among P-C-U verbs, manipulation verbs and modality verbs.

By providing examples from English and many other languages such as Spanish, Finnish, Hebrew, Persian, Ute, Bemba, etc. (Givón 1973, 1980, 1984, 1990a, b, 1993a, b), Givón generalizes four coding-means which are most likely used in the syntax of complementation as the evidence for iconicity mapping between form and function of the grammar. The four coding-means are list as follows: co-lexicalization (so called ‘predicate-raising’) (27), case-marking (28 i-iii), verb-form (29 i-iii) and physical separation (subordinator, (30) or physical pause, (31))

■ Co-lexicalization:

(27) Mary **let-go** of his arm.

■ Case-marking:

(28) a. She let-go of **him**. (GEN)

b. She told **him** to go. (DO)

c. She wished that **he** would go. (SUBJ)

■ Verb-form:

(29) a. She made him **leave**. (BARE STEM)

b. She told him **to leave**. (INFINITIVE)

c. She wished that he **would leave**. (MODAL)

■ Physical separation:

i. subordinator *that*

(30) She said **that** he might go.

ii. intonational break

(31) She said: “He’s gone”.

By observing cross-linguistic phenomenon and providing semantic accounts for the surface syntactic coding, Givón properly and systematically makes some generalizations and predications about the semantic and syntactic pairing of complementation overall. However, none of the linguistic corpora reviewed in Givón’s studies belongs to the Sino-Tibetan language family which is analytic (characterized by ideographic) rather than synthetic (characterized by alphabetic writing system). This distinction accordingly contributes to the different morpho-syntactic coding of Mandarin; for instance, in Mandarin, the semantic relations between the subject and the verb are not shown by morphological changes of, for example, dative and accusative due to the lack of a case-marking system. Givón (1990b:516) himself further states that individual languages may make differential use of particular coding means and display differential coding density along a semantic continuum. Hence, it would be interesting and crucial to find out in what ways Mandarin P-C-U verbs extend their meanings to the Modality and Manipulation verbs.

As observed by Givón (1993), multiple memberships among the three classes are often systematic and may possibly result in grammaticalization (Bybee & Pagliuca 1985, 1987, Li and Thompson 1974) (cf. the co-lexicalization, or compounding, of

example 27). Since semantic extension of verbs may possibly lead to grammaticalization, the grammaticalizational paths of the relevant extended senses of the verbs at issue will be discussed in this paper.

Moreover, given that P-C-U verbs are not differentiated and Modality and Manipulation overlap in the scale, four aspects concerning this topic remain unexplored:

- 1) **Why do perception, cognition and utterance verbs form a group?**
- 2) **Do P-C-U verbs extend to the other verb classes by the same mechanisms?**
- 3) **Do P-C-U verbs behave the same in their degree of event integration?**
- 4) **How are modality and manipulation related and in what way they overlap?**

Therefore, this current study intends to tackle the four questions above and attempts to account for the cognitive and pragmatic motivations which may cause the semantic extension among the three classes of complement-taking verbs with the most appropriate theoretical frameworks which are listed below.


1.3. Theoretical Foundations

In order to answer the questions above, this study integrates three theoretical foundations, which are found applicable in dealing with the issues of semantic extensions among P-C-U verbs, manipulation verbs and modality verbs in Mandarin, into the four-space model of Conceptual Blending (Fauconnier 1985, 1997, Fauconnier and Turner 2002). The three theoretical foundations are: Frame Semantics (Fillmore 1968, 1976, Fillmore & Atkins 1992), Construction Grammar (Fillmore, Kay & Connor 1988, Fillmore & Kay 1993, Jackendoff 1997, Goldberg 1995, 2006), and the theory of Subjectivity (Traugott 1999, Shen 2001).

Frame Semantics will be taken as the major framework for the consideration of argument structure. With the contribution of Construction Grammar, the dynamic meaning coerced by the construction can be accounted for. Pragmatics influences, the theory of subjectivity in particular, play an important role on the semantic change induced in intra- and inter-personal interactions. The model of Conceptual Blending combines the mental spaces of ‘frame’, ‘subjectivity’ and ‘the meaning coerced by construction’ into the new mental space, i.e. the blend, which is the representation of the extended or newly-coined meaning. More detailed discussions with respect to the four theoretical foundations will be given in 2.1.

1.4. Scope and Goal

The range of semantic extension in this paper covers two levels:

- 
- Level 1: meaning depending on context which is accompanied by sentence collocation and verbal complement
 - Level 2: meaning shifted within the polysemous lexical verb and meaning coerced by construction itself⁵

Level 1 concerns the utterance (contextual) meaning, defined as ‘a sentence-context pairing’ which requires the pragmatic inference based on speaker-intentions and the general expectations about how language is normally conventionalized while level 2 deals with the sentence (abstract) meaning, commonly known as lexical meaning or de-contextualized meaning, which concerned with the

⁵ The definition of level 2 of meanings confirm to the claim of Givón (1990b530) that the overlap-or graded transition-at the mid-portion of the scale is not confined to lexical verbs, but it also shows up in the syntactic form of the complement.

meaning of a word and phrase in the dictionary and the overall meaning of the constructions (cf. Levinson 1995, Thomas 1995 for the discussion of utterance meaning and sentence meaning.)

As for extension of lexical meanings, among the heterogeneous phenomenon of polysemy, this study focuses on the semantic extension, with respect to the relatedness of polysemy, rather than other aspects such as contrastive ambiguity and complementary ambiguity.

The scope of verb types tackled in this paper is in fact the overlap part among the P-C-U, modality and manipulation exhibited in the following figures (2-4). The criteria for defining the overlaps will be discussed in Section 2.2.

Figure 2: the Overlap Part and Frames among Perception, Modality and Manipulation

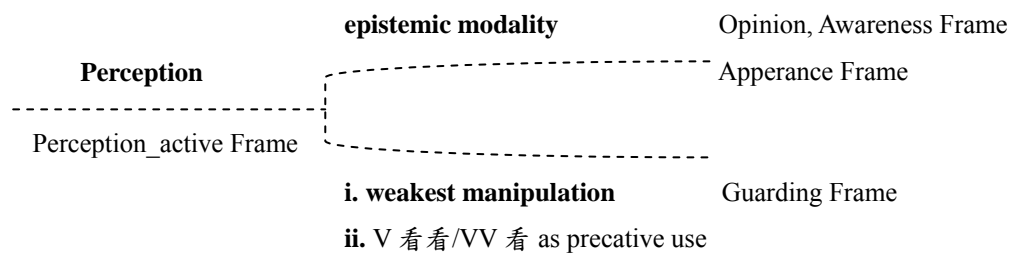


Figure 3: the Overlap Part and Frames among Cognition, Modality and Manipulation

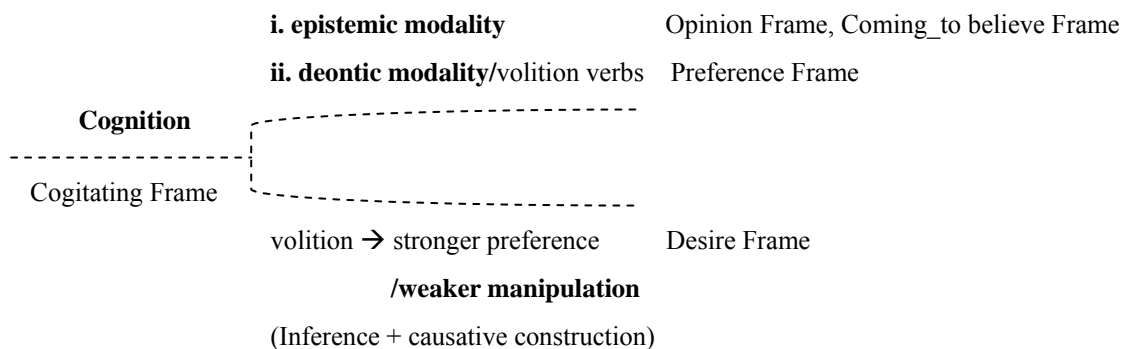


Figure 4: the Overlap Part and Frames among Utterance, Modality and Manipulation

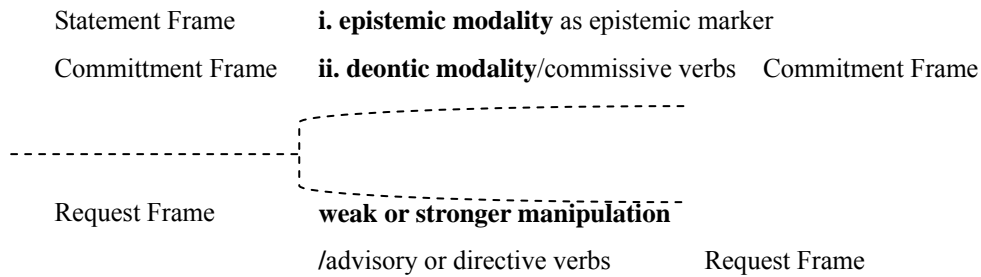
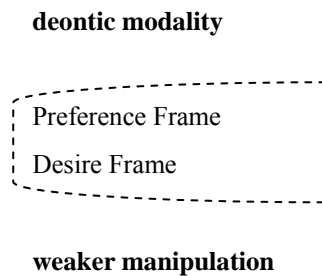


Figure 5: the Overlap Part and Frames between Modality and Manipulation



The goal of this paper is to investigate the semantic extension and the motivations which may cause the semantic extension among the three classes of complement-taking verbs, namely ‘P-C-U verbs’, ‘manipulation verbs’ and ‘modality verbs’ in Mandarin Chinese (the classification and criteria will be provided in 2.2).

1.5. Organization of the Thesis

This paper is organized as follows. Chapter one introduces the issues which motivate the author to explore the relevant phenomenon of the transition from P-C-U to Modality and manipulation verbs in Mandarin as well as the questions remain unsolved in terms of the event-integration scale. Chapter two defines the scope of the three target verb classes in this study and reviews the literature related to semantic extension as well as the studies relevant to the multi-membership among the three

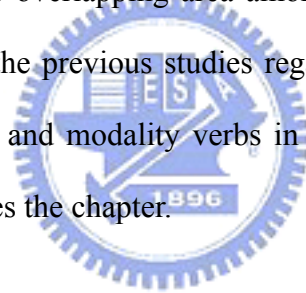
target verb classes. The theories discussed in this chapter serve as the theoretical background and analytic framework of the present research. Chapter three describes the database and the methodology. Then, chapter four presents the findings. Based on the findings, the analyses and accounts of the data and will be given in chapter five. Finally, chapter six concludes the paper and suggests the possible topics for future research.



Chapter 2

Literature Review

This chapter reviews previous studies focusing on topics concerning the semantic extensions among ‘P-C-U’, manipulation and modality verbs as a foundation of the research. A considerable number of studies have been dedicated to the semantic extensions of polysemy in general from a number of theoretical perspectives. Among those theoretical persuasions, four of them are singled out and introduced in section 2.1. Next, since the verbs in question are not always referred to as ‘P-C-U’, ‘Manipulation’ and ‘Modality’ or the sub-categorizations remain discrepant in the literature, section 2.2 briefly compares the classifications made in the previous studies and confines the scope as the overlapping area among the three target verbs in this paper. Section 2.3 reviews the previous studies regarding semantic extension from P-C-U verbs to manipulation and modality verbs in Mandarin and other languages. Finally, section 2.4 summarizes the chapter.



2.1 Theoretical Persuasions concerning the Semantic Extension among Different Senses of the Polysemy

In the recent trends of studies on semantic extensions concerning polysemy, there are four widely discussed approaches: Frame Semantics, Construction Grammar, the theory of Subjectivity operating with inference and Conceptual Blending. Some brief introduction and correlations among the three approaches are given below.

2.1.1 Frame Semantics

Frames refer to a structured background of experiences or beliefs, constituting a conceptual prerequisite for understanding the meaning of a word (Fillmore and Atkins 1992). In the infrastructure of FrameNet (<http://framenet.icsi.berkeley.edu/>), which is

constructed by University of Berkeley providing a frame-based analysis of the English lexicon based on the theory of Frame Semantics (cf. Fillmore 1968, 1976, Fillmore & Atkins 1992), polysemous⁶ words are put into different frames which highlight different frame elements, that is, participant role or arguments. The relations among the frames, and thus word senses, are not connected to one another directly, but are associated with the amount of shared frame elements and with the manner in which each frame highlights particular frame elements. For instance, if A frame inherits most of the core frame elements from B frame, the relation between A and B is called Inheritance. In addition to Inheritance, there are seven other frame-to-frame relations in FrameNet (Ruppenhofer et al. 2006:8, 103-111), namely using, perspective_on, subframe, precedes, inchoative_of, causative_of and see_also (cf. Appendix I). Following the observation of Liu and Chiang (2008), semantic inheritance exists from top to bottom in the hierarchical structure. To account for multiple inheritances of a frame from other source frames, e.g., a given micro-frame may inherit features from a number of basic, larger-scope frames, the inheritance relation could be realized as syntactically revealed specifications of frame attributes (role-internal specifications of frame elements). For instance, the Suggest Frame is inherited by Statement Frame and Request Frame since the Speaker makes a suggestion and intends the Addressee to perform certain action by following the suggestion. Hence, the complement of the verb suggest is given the tag of frame element 'Message+act' to mark the attribute of its semantic role. The 'inheritance' relation discussed above will be the most relevant to account for the sense relatedness, background prerequisites and semantic extensions from one frame to another.

⁶ The relations of polysemous word corresponding to different frames is then named as 'One sense, one frame' principle by Liu and Chiang 2008.

The Frame Semantics provides sound semantic background for the analysis of the argument structure of verbs; however, in order to show a uniform representation for the meanings of words, sentences, and texts, Construction Grammar was later developed by Fillmore and his colleagues (Fillmore 1976:28). Petrucci (1996) claimed that the connections between Frame Semantics and Construction Grammar go beyond the matter of representations. In Construction Grammar, the semantic frame associated with a lexical item provides some semantic information required for the sentence interpretation. As with lexical items and texts, semantic descriptions and explanations of grammatical constructions often depend on frames for background information about the scene schematized by the construction. The relations between the two complementary theories bring us to the section of Construction Grammar.

2.1.2 Construction Grammar

Construction Grammar (CG) (Fillmore, Kay & Connor 1988, Fillmore & Kay 1993, Jackendoff 1997, Goldberg 1995, 2006) is in fact partially derived from Frame Semantics. CG differs from other semantic theories in that in addition to word meanings, it emphasizes the meaning derived from the syntactic pattern, i.e. construction, itself. Constructions which are defined as form-meaning correspondences that exist independently of particular verbs carry meaning themselves, independently of the words in the sentence. Take the intransitive verbs *sneeze* and *bake* for instance, they are coerced to become transitive verbs due to the placement in the following construction (34-35):

(32) He sneezed the napkin off the table. → CAUSE Y to MOVE Z by sneezing

(33) She baked him a cake. → INTENDS TO CAUSE Y to HAVE Z by baking

The advantage of CG is that it can be applied to account for the dynamic or temporary meaning (Huang *et al* 2003) coerced by the construction itself. However, as what Fillmore, Kay and O'Connor (1988) had mentioned, Construction Grammar aims at accounting for pragmatic knowledge besides the knowledge of words, grammatical rules and semantic interpretation. To grasp the pragmatic knowledge, according to Sacks, Schegloff, Jefferson (1974) and Sacks (1992), pragmatic methods, especially conversation Analysis ought to be emphasized. There will be more description concerning the data collection in chapter 3.

2.1.3 Subjectivity

To deal with the issues of grammaticalization and semantic change, five pragmatic mechanisms are often utilized: metaphor, inference (or the conventionalization of implicature), generalization, harmony, and absorption of contextual meaning (Bybee, Perkins and Pagliuca 1994). Those five mechanisms are neither arbitrary nor exclusive. They may occur in different stages during the process of meaning development or when some or one of them is in operation. Among the five mechanisms, 'inference' has drawn my special attention due to its correlation with the notion of subjectification, proposed by Traugott (1999), which operates with 'subjectivity.' Traugott suggests that subjectification is able to account for the overall tendency for meanings to become more subjective with the passage of time: propositional > textual > interpersonal (expressive). Traugott (1999) proposes three semantic-pragmatic tendencies, listed below:

1) Semantic-pragmatic tendency 1:

Meanings based in the external described situation > meanings based in the internal (evaluative/perceptual/cognitive) situation.

Spatial > temporal, e.g. *going to* future

Object > space, e.g. body-part metaphors such as *head, back, foot, face*

2) Semantic-pragmatic tendency 2:

Meanings based in the described external or internal situation > meanings based in the texture situation

e.g. the emergence of connectives such as *since*.

3) Semantic-pragmatic tendency 3:

Meanings tend to become increasingly situated in the speaker's subjective belief state/ attitude towards the situation:

e.g. *may* (ability > permission > possibility)

Among the three semantic-pragmatic tendencies Tragott proposes, the third one, which demonstrates the development of epistemic modality by the grammaticalization of *may*, is most relevant to the focus of this study and found adequate for explaining the cognitive mechanism behind the semantic extension of the target classes of verbs.

2.1.4 Conceptual Blending

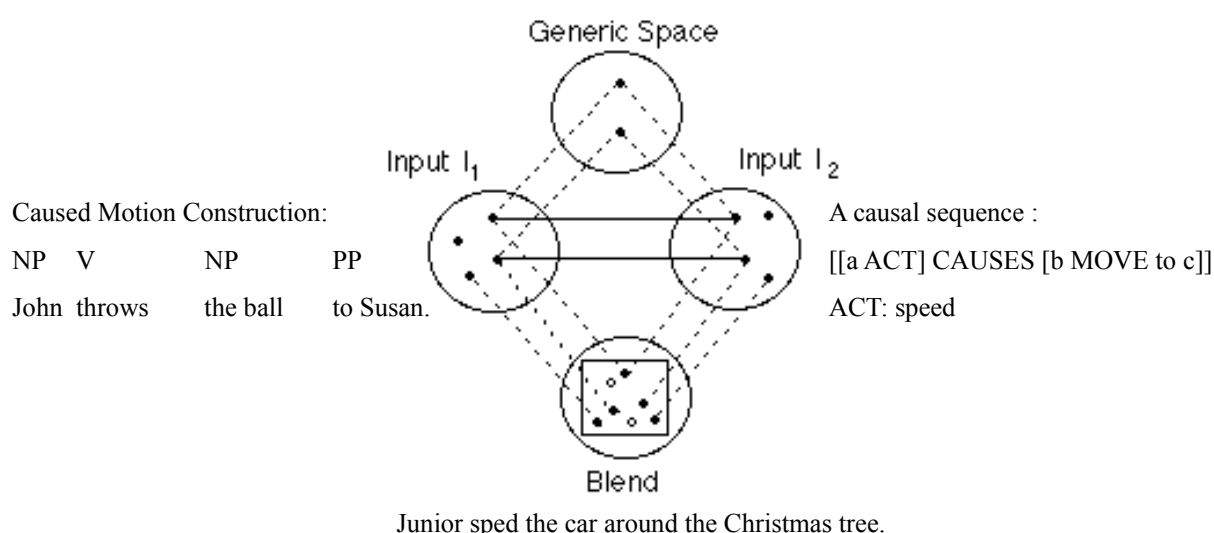
The theory of Conceptual Blending (Fauconnier 1985, 1994, 1997, Fauconnier and Turner 2002) is at work in many areas of cognition and action, including metaphor, and conceptual change. It is suggested by this theory that meaning is not understood compositionally but by the formal expression promoting hearer and reader to assemble and develop mental spaces operating by conceptual blending.

The mental space can be understood as a frame, a socio-cultural scenario or a skeletal conceptual structure set up by grammatical constructions, i.e. the meaning coerced by the construction itself. Mental spaces can be introduced either by grammatical expression (so-called space-builder) or by means of pragmatic information projected onto the input. In oral languages, based on Pascual 2002, in addition to meaning carried by construction, space-builders may take on a variety of grammatical forms, such as: i) subject verb complexes (e.g. Ursula wants, Sally believes, The child thought); ii) prepositional phrases (e.g. in her dream, in cold

climates, behind bars); iii) adverbials (e.g. perhaps, actually, theoretically); iv) conjunctions (e.g. if, when, because); and v) some morphemes such as evidential particles (e.g. -la in Haviland 1987, 1996).

These input either open up a new mental space, corresponding to the ‘frame convergence’ which is accompanied with role coercion that allows the different frame elements in the same position get transferred and conflated into a new role (Liu & Hsieh 2008) or shift the focus to some existing ones, i.e. the semantic extension to another mental space. Figure 6 below illustrates how blending operates.

Figure 6: Conceptual Blending (Fauconnier 1997)



In Conceptual Blending Theory, the four-space model is typically made use of. The four spaces are: two ‘input’ spaces, a ‘generic’ space, and the ‘blend’ space. Blending is generally described as involving two input mental spaces that, according to a given structure mapping, will generate a third one, called Blend. For instance, as shown in Figure 6, the Input I₁, carrying the space builder, the caused motion construction, fuses with the Input I₂, carrying the frame of causal sequence to yield a new space, i.e. the blend, leading to the transitive use of a prototypical intransitive

verb *speed* in the caused motion construction. It's noticeable that the new blend maintains partial structure from the both inputs and adds emergent structure of its own. This is compatible with the analysis of multiple inheritances of frames suggested by Liu & Chiang (2008). Therefore, the four-space model of Conceptual Blending theory is adequate for integrating the above three theoretical foundations, i.e. Frame Semantics, Construction Grammar and the theory of subjectivity. The space-builders, such as metaphorical extension, inference and the grammatical coding means (e.g. affix) can be incorporated into the model as the link between each mental space.

In summary, the four approaches shed light on different aspects of polysemy and sense extension and may adequately account for some facets of the surface syntactic coding of verbs. Hence, in this study, Frame Semantics will be taken as the major framework for the consideration of argument structure. With the contribution of Construction Grammar, the dynamic meaning coerced by a construction can be accounted for. Finally, the four-space model of Conceptual Blending will be applied to incorporate the inputs of meanings from frames and construction and the space-builders, such as the inference induced by subjectification and metaphor as a possible cognitive base for explaining the semantic extension among the target verb classes.

2.2 Classification of P-C-U, Manipulation and Modality Verbs in English

2.2.1 Classification of P-C-U Verbs in English

Table 3 below summarizes the corresponding classification of P-C-U verbs by Noonan, Givón, Levin and FrameNet. The categories they classified seem to be parallel except for Noonan (1985) further divided the Cognition verbs into two sub-categories. The two subcategories he divided into are in fact so-called factive and semi-factive predicates. The semi-factive predicate was single out since it emphasizes

on the manner of acquisition of knowledge (e.g. through perception to get to know some knowledge.) However, Noonan's criteria of classification rely on the uses, i.e. grammatical behaviors, of complement-taking verbs in English; some criteria are not applicable to Mandarin, such as the non-finite/finite form and case. As for Givón's definitions which have been mentioned in Chapter one earlier, encounter similar problems. As for the classification of Levin, in addition to the problems like the previous two, only some semantic roles rather than a complete semantic background are offered in descriptions of each verb class. Since the sources of verbs Levin collected come mostly from previous literatures, there are probably lots of verbs belonging to the same verb classes remained out of place. In addition, for perception verbs, there are five frames which are not included in the other three classifications, i.e. Appearance Frame, Perception_body Frame, Attention Frame, Detect Frame and Scrutiny Frame. For cognition verbs, there are five frames which are excluded in the other three classifications, i.e. Evoking Frame, Invention Frame, Remembering_experience Frame, Remembering_information Frame and Remembering_to_do Frame. For utterance verbs, there are seven frames which are not included in the other three classifications, i.e. Discussion Frame, Chatting (Conversation) Frame, Encoding Frame, Communication_Manner Frame, Communication_Noise Frame, Questioning Frame and Response Frame. Due to the wider range covered by the definition of FrameNet, this paper adopts the definition of FrameNet, which selects Perceiver, Cognizer and Speaker as the subject to scrutinize the lemmas in each frame as the basis for finding equivalent Mandarin P-C-U verbs (cf. Appendix 2). Those P-C-U verbs mentioned in the literatures will be taken into accounts for complements as well. The process of obtaining the Chinese equivalent lemmas will be specified in Section 3.2.

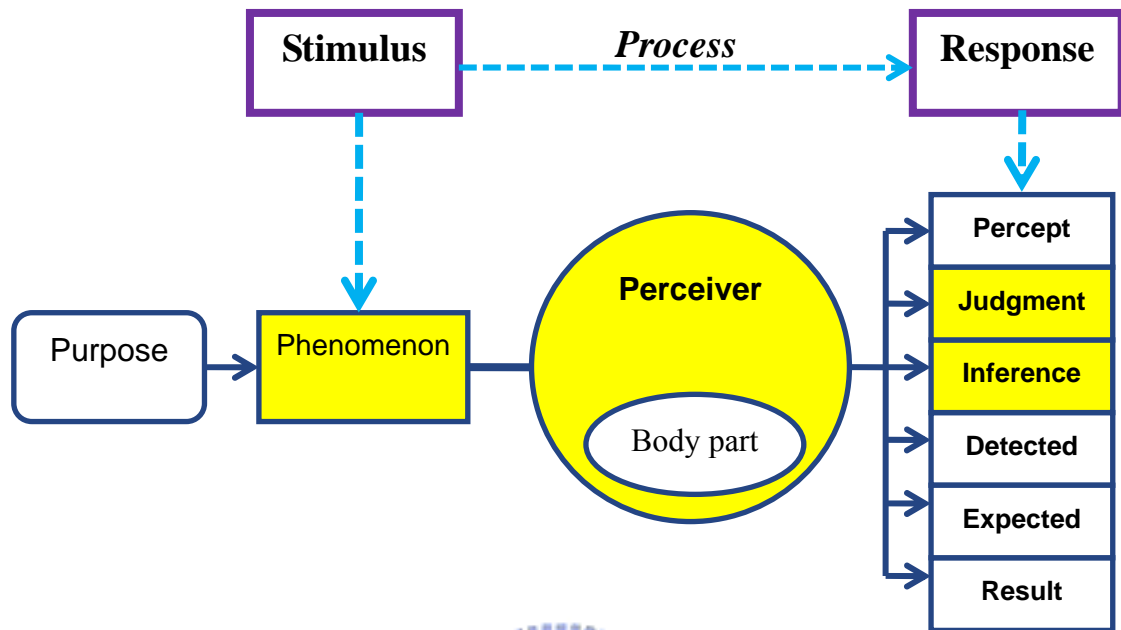
Table 3: Corresponding Classification of P-C-U Verbs of Noonan, Givón, Levin and FrameNet

Givón (1993) P-C-U verbs	Noonan (1985)	Levin (1993)	FrameNet
Perception Verbs	Immediate perception predicate	Verbs of Perception	Perception Frame (parent frame) Perceiver-related 8 child frames
Cognition Verbs	Propositional attitude predicates	Verbs of Assessment, Searching, Declare, and conjecture	Cogitation Frame (parent frame) Cognizer-related 12 child frames
	Predicates of knowledge and acquisition of knowledge		
Utterance Verbs	Utterance predicates	Verbs of transfer of message	Communication Frame (parent frame) Speaker-related 10 child frames
		Tell	
Say verbs	Verbs of manner of speaking		
Verbs of Instreument of Communication			
Talk verbs			
Chitchat verbs			
Complain verb Advise berbs			

The definitions of Perception, Cognition and Communication Frame⁷ are illustrated by the conceptual schema (Figure 7-9) below.

⁷ The three domains have been redefined as archi-frames in Liu & Chiang 2008.

Figure 7: Conceptual Schema of Perception-related Frame (Chiu 2008)

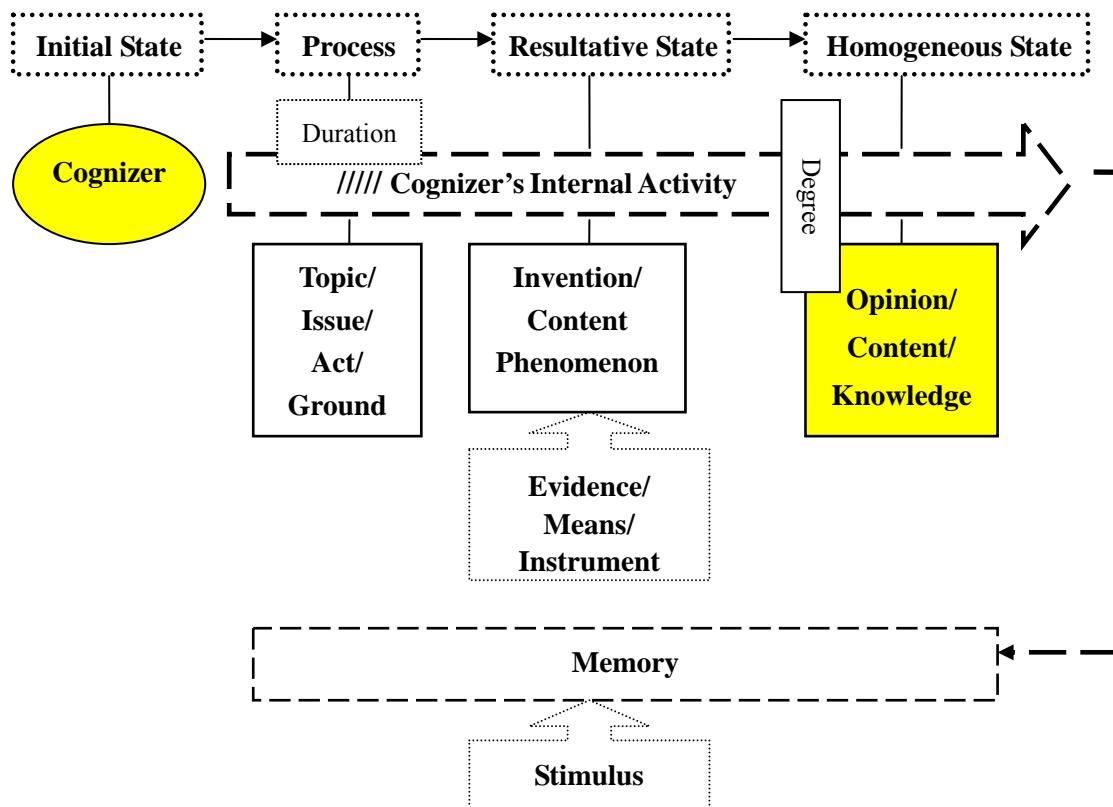


According to Chiu (2008), the relation between the participant roles and the argument structures of perceptual event is defined as ‘a Perceiver perceives a Phenomenon through his or her Body part with or without a Purpose’. Due to the perceptual experience, the Perceiver may respond with various kinds of response, such as Judgment and Inference. Among those participant roles, i.e. frame elements, Perceiver, Phenomenon, Judgment and Inference (which are highlighted in yellow) are most relevant to this study.

Similarly, based on Hu (2007), the Cognitive related events are defined by a conceptual schema (Figure 8) and the following descriptions: *A Cognizer with an initial mental state undergoes a process of cogitation on a Topic, and with the input of external Evidence, a new state with a mental Content appears, which afterwards stays in the Cognizer's mind, and a Memory is formed by the existed mental Content. The Memory may get disconnected from the mind. Due to an external Stimulus, the link is*

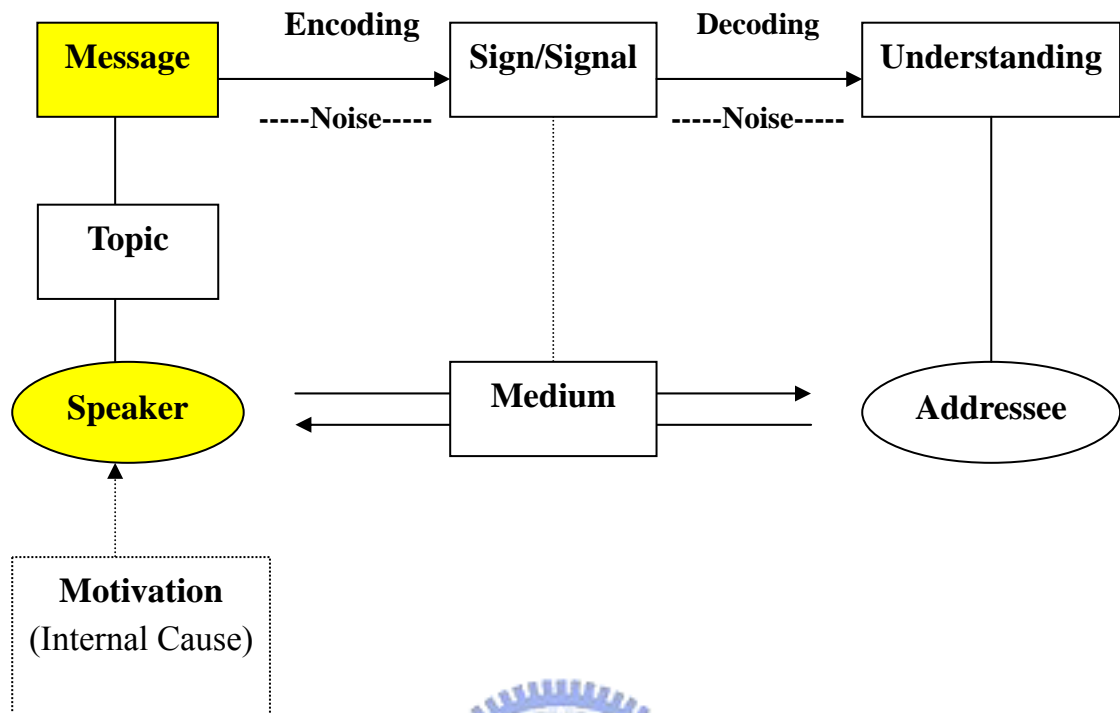
re-connected again, and the Memory afterwards stays in the Cognizer's mind. Among those frame elements, Cognizer, Opinion, and Content (which are highlighted in yellow) are most relevant to this study.

Figure 8: Conceptual Schema of Cognition-related Frame (Hu 2007)



Finally, referring to Liu and Wu (to appear), the communication related events are specified by Figure 9 along with the description of the participant roles below: *A Speaker, out of certain motivation, sends a Message on a given Topic, through a process of packaging (Encoding), and a Addressee receives the package, decodes it, and reaches a certain understanding. The process is reciprocal and is carried out via a Medium (face-to-face, phone, TV, or email, etc.).* Among those frame elements, Speaker and Message (which are highlighted in yellow) are most relevant to this study.

Figure 9: Conceptual Schema of Cognition-related Frame (Liu and Wu, to appear)



2.2.2 Classification of Manipulation Verbs in English

The corresponding classification of Manipulation verbs of Noonan, Givón, Levin and FrameNet is shown in Table 4 below.

Table 4: Corresponding Classification of Manipulation Verbs of Noonan, Givón,

Levin and FrameNet

Givón (1993)	Noonan (1985)	Levin (1993)	FrameNet
Manipulation verbs	Manipulative predicates	Tell	Request Frame
		Verbs of transfer of message	
		Amuse verbs	Suasion
		Engender verbs	Commitment
			Grant_Permission Frame
			Manipulated_into_doing Frame Manipulator-related
			Compliance Frame

Based on Noonan (1985), Givón (1993), and Bybee et al (1994), the range of the manipulation verbs in this paper includes both lexical level and utterance level. On the one hand, under the scope of lexical level, an agent (manipulator) causes an affectee (manipulee) to perform certain event as a resulting situation. The manipulation is either successful (implicative) or unsuccessful (non-implicative). On the other hand, under the scope of utterance level⁸, imperative, prohibitive and hortative uses which signal what the speaker wants to accomplish with the utterance are involved.

2.2.3 Classification of Modality Verbs in English

The definitions and classifications regarding Modality verbs are truly controversial (cf. Hsieh 2006, Peng 2007 and many others). The discrepancies among some scholars are summarized in Table 5 in the next page.

From Table 5, we notice that the definition of Givón is the widest, except for the English auxiliaries, such as *may*, which denotes possibility and probability are excluded. However, his inclusion of both verbs of phasal predicates and achievement predicates into modality conform to neither the definitions of Noonan (1985) and Bybee et al. (1991, 1994) nor the definition of modality commonly accepted in Mandarin (e.g. Hsieh 2006). Thus, Givon's definition of modality verbs is not adopted in this paper. As for Levin's classification, since he deals only with verbs rather than auxiliaries, the commonly known modality meanings such as probability and obligation are not mentioned in his book. Noonan's definition, again, didn't take the possibility and probability into account. The definitions of Bybee *et al.* (1991; 1994) cover both the epistemic and deontic modality. Nevertheless, a part of the

⁸ The definition of manipulation verbs in this paper include the speaker-oriented modality defined by Bybee et al. 1994.

speaker-oriented modality in fact overlaps the range of manipulation verbs. Hence, based on studies of Lyons 1977, Coates 1983, Plamer 1990, Givon 1993, Noonan 1985, and Bybee *et al.* 1994, the definitions of modality verbs in this study are concluded and divided into two major types: epistemic and deontic. The epistemic modality codes possibility and probability. It conveys matters of knowledge, belief, assertion, and judgment about the proposition. As for deontic modality (i.e. Agent-oriented modality according to Bybee *et al.* 1994), it codes 1) obligation, necessity, ability, necessity, ability, and 2) desire and volition of the agent to perform some acts (so-called desiderative). Deontic modality is often used in directives-utterances that are intended to elicit action.



Table 5: Comparisons among Classification of Modality Verbs of Noonan, Givón, Levin, FrameNet and Bybee *et al.* in English

Givón (1993) modality verbs	Noonan (1985) modal predicates	Levin (1993)	FrameNet (Frame)	Bybee, Perkins and Pagliuca(1991; 1994)
N/A	N/A	N/A	Likelihood	(possibility, probability)
(propositional modality)	(propositional attitude predicate)	Verbs of Declare	Opinion Frame Coming_to_believe Appearance	Epistemic
		Verbs of conjecture		
(ability)	(Predicates of ability)	N/A	Capability	Agent-oriented modality
(obligation)	(predicate of moral obligation and necessity)	N/A	Being_obligated Desirable_event	
(attempt, intention)	desiderative predicate	verbs of desire	Desiring Preference Commitment	Speaker-oriented modality
(inception, termination, persistence, success, failure)	phasal predicates (aspectuals)	aspectual verbs	Activity_start Activity_ongoing Activity_stop	
(accomplishment)	achievement predicate	avoid verbs	Avoiding	
			Attempt	
			Remember_to_do	

The corresponding frames in FrameNet paralleling with the definition and categories of modality verbs are bolded above. To compare the classification of modality verbs in Mandarin, the analysis of Hsieh (2006) is taken into consideration.

Hsieh (2006) divided the Mandarin Modals, including auxiliary, verb and adverb, etc, in to four categories: epistemic, deontic, dynamic, and evaluation. Each category

can be sub-categorized by its usages. Her classifications and examples in Mandarin are summarized in Table 6.

Table 6: Classification of Mandarin Modals (Hsieh 2006)

Modality Type	Modality Subtype	Usage	Lemma
Epistemic	Judgmental	Conjecture	可能、或許、要 ₁ 、可想、難說、說不定、想、預料、懷疑、恐怕
		Assertive	應該、一定、想必、想當然、認為、相信、推斷
	Evidential	Alethic	的確、真的、確定
		Reportive	聽說、據報、據說、據聞、據悉、聽說、聽聞、耳聞
Deontic	Directive	Sensory	好像、顯得、看來、看似、感覺、覺得、看
		Permissive	可以、能夠、准許、允許、同意、讓
	Commissive	Obligative	應該 ₂ 、要 ₂ 、要 ₃ 、必須、要求、命令、強迫、叫
Dynamic	Capacity	Promise	包准、包管、保證、擔保、承諾、允諾
		threat	
	Volition	VP	會 ₂ 、可以 ₂ 、能夠 ₂
Non-finite		足夠、配、堪	
Evaluative	Presupposition	VP	想 ₂ 、決意、執意、試圖
		Non-finite	要 ₄ 、想要、願、盼望、企望、希望、渴望、堅持
	Wish	Convergence	難怪、怪不得、料到、料中
		Divergence	竟然、原來、不料、不想、未料、想不到、沒想到
		Convergence	幸虧、幸好、還好、慶幸
		Divergence	無奈、可惜、後悔、遺憾

The bolded part indicates the intersections among the classification of Modality defined by Hsieh and Bybee et al. Hence, referring to the verbs list given by Hsieh, the coverage of the semantic frames and verbs which is likely to suggest the overlap among the three target groups of verbs are summarized below. Since the focus of this

paper is not on the classification of the three target verbs, the details of the discussion about the classification are not specified here.

Table 7: Overlapping Frames among P-C-U, Modality and Manipulation Verbs

P-C-U	Modality	Manipulation
Commitment Frame 答應、承諾、允諾	Commitment Frame 答應、承諾、允諾、保證	Commitment 同意、贊成、威脅、恐嚇
Perception_active Frame 盼望	Desiring Frame 渴望、希望、盼望、 期待、期望、熱望、 嚮往、想要、願、 要、需要…	Manipulated_into_doing Frame 脅迫、威嚇、誘騙、 引誘、誘惑、操縱、 要求、要、命令
Cogitation Frame 想	Preference Frame 寧可、寧願、偏愛、 偏好、想	
Request Frame 呼籲、吩咐、告訴、建議、 叫		Request Frame 指揮、要/乞/請/懇求、 慫恿、呼籲、吩咐、告訴、 建議、叫
Perception_active Frame 看、聽、聞、嚐、摸 Feel Frame 感覺	Appearance Frame 感覺/看/聽/聞/嚐/摸起 來、看/聽來、看/聞/摸 上去	
Perception_active Frame 聽		Compliance Frame 順從、遵從、服從、聽、 聽話、聽從、遵造、遵守、 屈服
Opinion Frame 想、認為、以為、覺得、 看、感覺 Cogitation Frame 想 Coming_to_believe Frame 想、猜	Opinion Frame 想、認為、以為、覺得、 看、感覺 Awareness Frame 想、猜	

2.3 Previous Studies with respect to Semantic Extension from P-C-U Verbs to Manipulation and Modality Verbs

2.3.1 Extension from P-C-U to Modality

By giving rising to the cognitive interpretation, verbs of perception show the metaphorical extension linking the physical sight and knowledge and intellection. This is explicitly explained by Sweetser (1990: 38, Diagram 1). The fact that ‘the objective, intellectual side of our mental life seems to be regularly linked with the sense of vision’ (Sweetser 1990:37) can be attributed to the viewpoint that vision is the primary source of objective data about the world (ibid., 39). Other perception verbs, such as *juede* ‘to feel’, demonstrate similar extensions. Interestingly, the perception verb *juede* is not only associated with opinion expression and epistemic assertion but also often collocated with the first person pronoun ‘I’ and thus *wo juede* ‘I feel’ becomes a fixed expression to mark the speaker’s epistemic stance (Tsai 2001). The fixed expression can be found in not merely sentence-initial but also sentence-medial and sentence-final position (34a-c).

(34) a. [我覺得]這, …這是一個很不錯的領導方式。

[*wo juede*] *zhe*,...*zhe shi yige hen bucuo de lingdao fangshi*

I feel this this is one-CL₃ very not-bad DE guide way

‘I feel (that) this is a good style of leadership.’

b. 這個東西[我覺得]很好耶, _

zhege dongxi [*wo juede*] *hen hao ye*.

this-CL thing I feel very good SFP

‘This thing, I feel, is quite good.’

c. 他整個房子啊, _還有規劃都非常的..., 比日本, _... 還要漂亮, ..., [我覺得]

*ta zheng-ge fangzi a, _ haiyou guihua dou feichang de,..bi Riben _...haiyao
biaoliang e...[wo juede]*

it whole house SPF and design both very DE more Japan more beautiful
SFP I feel

‘That house, and also the design, are both very.., even more beautiful than
(the ones in) Japan, I felt.’

According to the analysis of Liu and Chiang (2006), *wo juede* ‘I feel’ serving its expressive function in discourse (to avoid oppositional confrontation and present a euphemistic disagreement) by coding subjectivity as well as intersubjectivity. The study of Liu and Chiang sheds light on the interaction between pragmatics and semantics by probing into the perception verb *juede*. Hence, following their studies, what this paper could do is trying to examine whether other perception verbs exhibit similar grammaticalization through the coding of subjectivity and intersubjectivity.

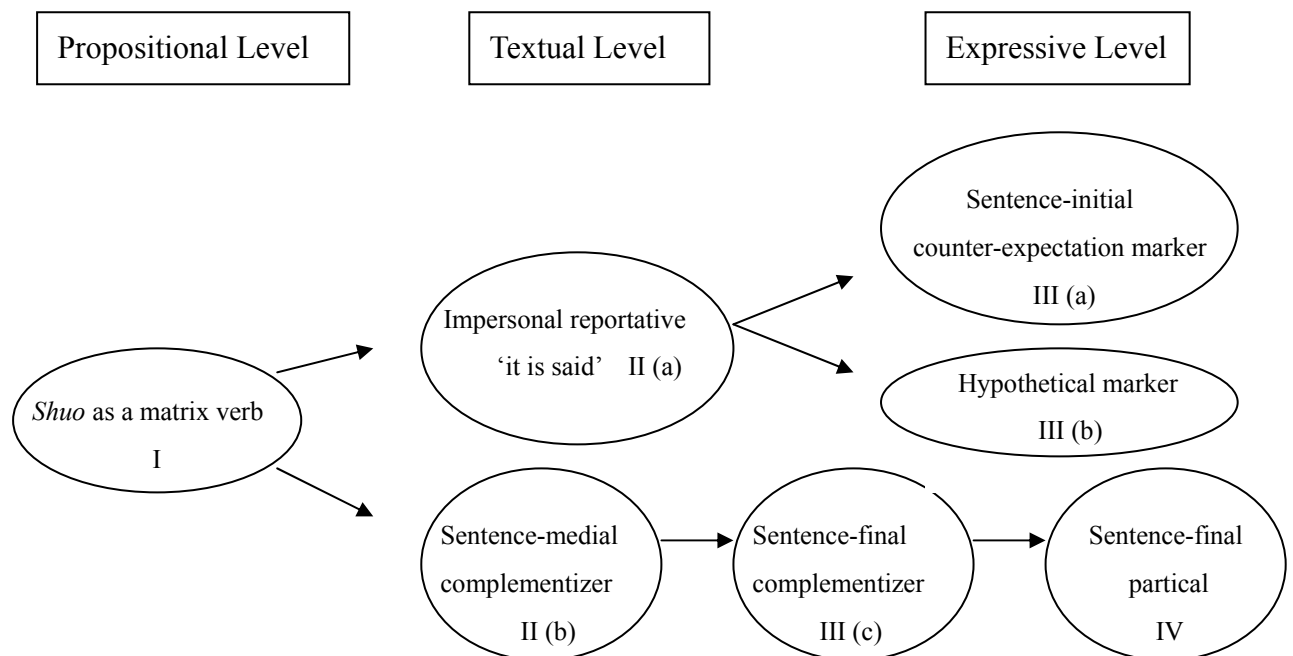
In English, perception and cognition verbs behave the same. According to Noonan (1985:114), predicates expressing positive propositional attitude, which includes verbs of perception (such as *see*) and cognition (such as *think*, *guess*, *suppose*, and *believe*), are the most likely predicates to be used parenthetically. Givón (1993b:37), Thompson and Mulac (1991), McHoul and Rapley (2003:509) had discussed the grammaticalization of ‘epistemic phrases’, defined as one kind of chunks composed by a certain personal pronoun⁹, with cognition verbs. Syntactically, this kind of parenthetical phrases can occur either in the sentence-initial, sentence-middle or sentence-final position; semantically, they serve as an ‘epistemic

⁹ The pronouns that can form this kind of ‘epistemic phrases’ are restricted to first or second singular person pronouns.

quantifier on the information in the complement clause’ (Givón 1993b:37) and is likely to become a discourse marker to ‘tone down the speaker’s disagreement or opposition from others’ (Chiang 2004:1).

Su (2002, 2004) further examined the epistemic use of utterance verb *shuo*. She proposes a model of grammaticalization paths of *shuo* by applying to the three tendencies of Subjectivity (Traugott 1989):

Figure 10: Model of Grammaticalization Paths of *Shou* (Su 2002)



Based on the ratiocination of Su (2002), the development of the root meaning ‘to utter speech through the mouth’, of the utterance verb can be cut into two folds: First it develops functions from an impersonal reportative marker to a sentence-initial counter-expectation marker or hypothetical marker. Second, it develops from a quote marker to a complementizer, and then fixes its place in the sentence-final position (35) which conveys epistemic modality. It’s noticeable that since Su (2002) suggests that speech act verbs are a more common source of grammaticalization than mental

process verbs, it would be interesting to examine whether other utterance or speech act verbs display similar path of grammaticalization or the meaning extensions.

- (35) 我 覺得 徐淑媛 好 可憐 說...
Wo juede Xushuyuan hao kelian shuo
 I think Xushuyuan very poor say
 ‘Xushuyuan is so poor, I think.’

Moreover, Su (2002) accounts for the frequent co-occurrences of *wo xiang shuo* ‘I think say’ in spoken Chinese, on the basis of the general agreement on the semantic affinity between verbs of saying and verbs of thinking (e.g. Vendler 1972; Leech 1983; Traugott and Dasher 1987; Li 2003; Shinzato 2004). However, the interaction of the semantic affinity among *shuo*, *xiang* and *kan* remains to be explored.

In addition to the parenthetical use, the cognition verbs are found to extended its meaning to deontic modality in other languages. Take Ilya Talyev for example, the meaning of the cognition verb *òkòbbí* ‘to think’ which takes an indicative complement (36a) can be extended to ‘to intend’ (36b) which takes a subjunctive complement. In (36a), the indicative is inflected for tense whereas the subjunctive (36b) shows agreement between the tense of the complement verb and the matrix verb. The two different complementizer *če* and *da* also indicates that their complements has different semantic binding relations with each other.

- (36) a. Misli, če vie ste umoren (Noonan, 1985:94)
 think(3SG) COMP you COP tired
 ‘He thinks that you’re tired’
- b. Mislja da ida
 think(1SG) COMP go (1SG SJNCT)
 ‘I intend to go’

2.3.2 Extension from P-C-U to Manipulation

As for the metaphorical use of perception verbs, Sweetser (1990) pointed out another universal path: Visual monitoring → control. She suggested that the event of guarding or keeping control usually involves visual monitoring of the controlled entity and thus the visual monitoring is analogous to the domain of personal influence or control.

For the extension of utterance, the meaning of the utterance verb *òkòbbí* ‘to tell’(37a) in Lango is extended to ‘to request someone to perform some action’(37b). In (37a), there is an obligatory complementizer *ní* which can not occur with paratactic complements such as (37b). Thus, apparently, the in (37b), the syntactic integration and the semantic bond is strong that in (37a). In paratactic construction, both *Dákó òkòbbí* ‘the woman said it to the man’ and *ìcò òkwòrò kál* ‘he sifted the millet’ can serve as independent clauses without altering the meanings though.

(37) a. *Dákó òkòbbí ìcò ní àtín òkwòrò kál*

Woman told(3SG DAT) man COMP child sifted (3SG) millet

‘The woman told the man that the child sifted millet’

b. *Dákó òkòbbí ìcò òkwòrò kál*

Woman told(3SG DAT) man sifted (3SG) millet

‘The woman said it to the man, he sifted millet’

(The woman told the man to sift millet and (he did)) (Noonan, 1985:55)

2.3.3 Extension from Modality to Manipulation

The case agreement of the following three examples in Finnish supports the Givón’s prediction about the correlations between modality and manipulation verbs. In (38a), the manipulative force of *haluta* ‘to want somebody to do something’ exerts

on its complement and thus causes the agreement of accusative case. In (38b), the binding force gets weaker so that there shows no case agreement (partitive vs. nominative). The manipulation is stronger in (38a) compared that in (38b) since in the former one, man is present right there whereas in the latter one, the man is not present directly. In (38c) and (38d), the syntactic integration of complement and its matrix verb gets looser. In (38d), there is the complementizer *että* which separates the two events.

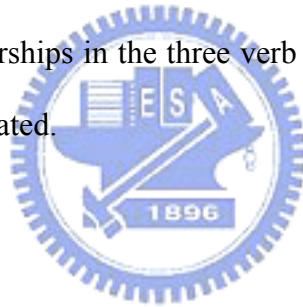
- (38) a. Hän halus-I miehe-n syö-vä-n
 He want-PAST man-ACC eat-PP-ACC
 ‘He wanted the man to eat’
- b. Hän halus-I mies-tä syö-mä-än
 He want-PAST man-PART eat-NOM-into
 ‘He liked the man to eat’
- c. Hän halus-I syö-mä-än
 He want-PAST eat-NOM-into
 ‘He wanted to eat’
- d. Hän halus-I että mies sö-isi/syö
 He want-PAST that man-NOM eat-COND/eat
 ‘He wished that the man could eat’

(Givón 1980)

Mandarin utterance verbs, such as *jiao*, demonstrate similar extension. For instance, *jiao* as a verb of contact extend to a verb of request (cf. Huang 2008). This will be discussed in detail in Section 4.5.

2.4 Summary

Previous studies noted the relatedness and extensibility between P-C-U verbs and manipulation verbs (speech act verbs in particular), P-C-U verbs and modality verbs, and Modality and manipulation verbs. Some studies have shown that the extensions of the verbs from one class to another are likely to undergo grammaticalization unidirectionally motivated by subjectivity of the speaker. However, it seems that there has not yet a systematic examination of groups of verbs for exploring their semantic extensibility and grammatical similarities among verb classes in questions. Moreover, the different statuses of P-C-U verbs in the extension as well as the parallel correlation between modality and manipulation verbs are not clarified yet. Hence, by following what has already been done earlier, this paper aims to clarify what the verbs which shows multiple memberships in the three verb classes in question and how the semantic extensions are motivated.



Chapter 3

The Database and the Methodology

3.1 The Database

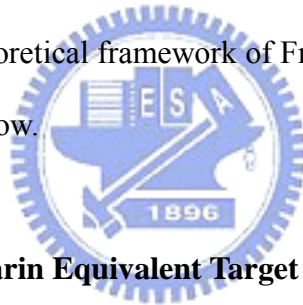
The database collected in this study includes both written and colloquial data of real language usages. The written data are extracted from Academia Sinica Balanced Corpus of Modern Chinese (Sinica Corpus, <http://www.sinica.edu.tw/SinicaCorpus/>) and the on-line word database 搜文解字 *souwenjiezi* (<http://words.sinica.edu.tw/>) developed by the CKIP (Chinese Knowledge and Information Processing) group at Academia Sinica, Taiwan while the colloquial data are taken from the NTU Spoken Chinese Corpus and the web sources, mainly, Google(<http://www.google.com.tw/>). In Sinica corpus and *souwenjiezi*, over 200 entries for most lemmas in question are found for each target Mandarin lemma; however, due to the limited time, after selecting the entries by the individual part-of-speech, only 200 entries are tagged in this paper. Since the Academic Sinica Corpus, whose sources are mainly books, press communiqué and public documents, is limited in terms of the lack of conversational data, the NTU Spoken Chinese Corpus, with all record files (including face-to-face conversations, telephone conversations and radio interviews) lasting 803 minutes and 50 seconds in total, and other online archives are utilized to supplement the database. The colloquial data are highly emphasized by Sacks, Schegloff, Jefferson (1974) and Sacks (1992) due to its spontaneousness. When native speakers utter the sentences spontaneously without trying to modify the grammar as people usually do in written texts, the language use itself is supposed to reflect more pragmatic influences such as the subjectivity of the speaker.

Supporting data from other languages are taken from the literature on a similar topic (mainly from Givón 1980, 1984, 1990a, b, 1993a, b, Noonan, 1985, Liu 1986,

Hsieh 2006) and the web resources such as the English lexical database FrameNet (<http://framenet.icsi.berkeley.edu/>).

3.2 Method of Analysis

As an attempt to explore the semantic extensions among P-C-U verbs, manipulation and Modality verbs, English verbs relating to the above three classes in FrameNet are collected according to the research results of the three participant roles, i.e. Perceiver, Cognizer and Speaker, which are obligatory in the event structures of P-C-U verbs. By utilizing the Academia Sinica Bilingual Ontological WordNet (Sinica BOW, <http://bow.sinica.edu.tw/>), the translated equivalent target verbs in Mandarin are obtained. Then, the syntactic and semantic properties of the target verbs are examined by using the theoretical framework of Frame Semantics. The steps taken are described successively below.



Step 1: Finding Mandarin Equivalent Target Verbs

By the search engine of the English database, FrameNet, potential research target verbs are found. Take perception verbs for instance, since it is generally agreed that the most important participant role in any perceiving states/events is the perceiver, the author searched for the frames containing the frame element 'Perceiver', and found 7 frames.

The English lemmas in these frames then serve as the input to the Academia Sinica Bilingual Ontological WordNet (Sinica BOW), a bilingual database to obtain the equivalent Mandarin lemma. Moreover, 搜文解字 *souwenjiezi* is consulted so as to exhaust the target lemmas. The equivalent Mandarin perception verbs are listed in the table below.

Table 8: Perception Related Verbs

Verb Class	English Lemmas from FrameNet II	Equivalent Chinese Lemmas
Perception related verbs	(1) <u>Perception experience</u> Frame: detect, feel, hear, overhear, perceive, see, sense, smell, taste	看見、看到、見到、瞥見、瞟見、聞到、嗅到、聽見、聽到、感覺到、感到
	(2) <u>Perception active</u> Frame: admire, attend, eavesdrop, eye, feel, gape, gawk, gaze, glance, goggle, listen, look, observe, palpate, peek, peep, peer, pry, savour, smell, sniff, spy, squint, stare, taste, view, watch	看、瞧、盯、瞪、窺、注視、審視、凝視、掃視、瞥視、觀察、觀看、觀測、端詳、監視、查看、察看、眺望、偵察、視察、察看、看護、看守、窺視、窺見、窺探、欣賞、觀賞、瀏覽、檢視、目擊、聽、偷聽、傾聽、聆聽、竊聽、打聽、嚐、吃、品味、品嚐、摸、觸、撫摸、觸摸、嗅、聞
	(3) <u>Appearance</u> Frame: appear, feel, look, reek, seem, smell, sound, stink, taste	感覺起來、看起來、聽起來、聞起來、嘗起來、嚐起來、吃起來、摸起來、看來、聽來、看上去、聞上去、摸上去
	(4) <u>Perception body</u> Frame: ache, ail, burn, hurt, itch, pain, prickle, smart, sting, tickle, tingle	(感到)疼、痛、痠、癢、刺痛
	(5) <u>Perception</u> Frame: Perceive	感覺、覺得、感到、感知
	(6) <u>Attention</u> Frame: attend	警覺、注意、留神
	(7) <u>Detect (Locating)</u> : find, locate	找到、找出、看出、聽出、聞出、嗅出、摸出、吃出、察覺(出)、覺察(出)、尋得、發現
	(8) <u>Scrutinize (Scrutiny)</u> Frame: Check, examine, eyeball, look, monitor, scrutinize, skim...	檢視、檢查、偵察、觀察、視察、查看、審視...

Step 2: Obtaining Sentences Containing Target Mandarin Verbs

By looking up the target verbs in the Academia Sinica Balanced Corpus of Modern Chinese (Sinica Corpus), the sentences containing the verbs in question would be obtained.

Step 3: Observing the Semantic and Syntactic Properties of Target Verbs

In the database, the following characteristics of the target Mandarin verbs were paid special attention to: 1) syntactic patterns of the verbs; 2) grammatical functions and positions of the verbs; 3) collocates, such as aspectual markers of the verbs 4) semantic roles of the verbs; and 5) interactions between semantic roles and syntactic patterns of the verbs.

Step 4: Offering Possible Accounts and Analysis for the Semantic Relations among the Verbs Belonging to Different Verb Groups

By applying the theoretical framework of Frame Semantics and Construction Grammar, the verbs are examined and analyzed with its connection to other frames either by metaphorical extension or subjective inference in the four-space model of Conceptual Blending Theory.

To sum up, by utilizing the database constructed, following the four steps and applying the theoretical frameworks described above, this paper aims to account for the semantic extensions among P-C-U verbs, manipulation and modality verbs.

Chapter 4

Findings and Analysis

This chapter examines how the three types of complement-taking verbs, P-C-U, manipulation and modality verbs, in Mandarin show multiple memberships as the event-integration scale (Givón 1984b, 1993b) suggests as well as attempts to offer an integrated account of the mentioned semantic extensions by incorporating the three theoretical foundations, i.e. Frame Semantics, Construction Grammar and Theory of Subjectivity into the four-space model of Conceptual Blending.

This chapter is organized as follows: Section 4.1 discusses semantic extensions of the three lemmas, *kan*, *xiang* and *shuo*, which occupies the superstratum of P-C-U related frames. Then, after comparing the similarities and differences among the three verbs, Section 4.2 probes into the utterance (contextual) meanings yielded by the most prototypical P-C-U verbs *kan*, *xiang* and *shuo* and offers the frame-based accounts for the representation of the utterance meaning in the interaction with subjectivity. Section 4.3 illustrates the combination of *xiang* and *yao* which reflects the parallel relations between modality and manipulation by frame convergence accompanied with role-coercion as well as the influence of onstruction within the four-space model of Conceptual Blending. Next, except for the most prototypical P-C-U verbs *kan*, *xiang* and *shuo*, Section 4.4 deals with the semantic extension from other P-C-U verbs to modality verbs whereas Section 4.5 tackles that from other P-C-U verbs to manipulation verbs by applying the four-space model of Conceptual Blending without frame convergence and role coercion in accounting for their multiple-inheritance relations. Finally, a brief summary will be given in section 4.6.

4.1 Prototypical P-C-U Verbs: *Kan*, *Xiang* and *Shuo*

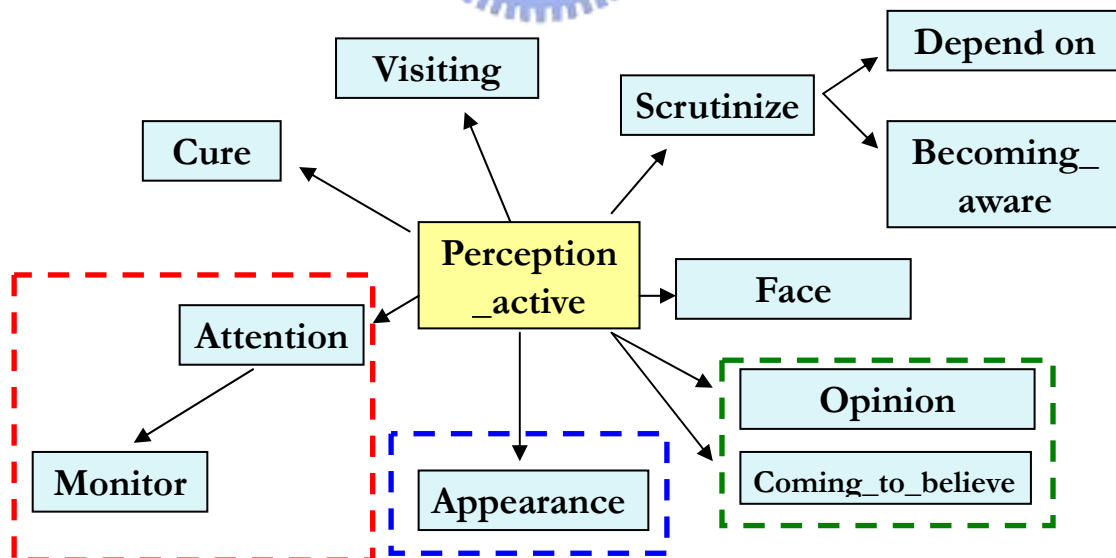
According to Hopper and Traugott (1993:97), verbs undergoing grammaticalization tend to be superordinate terms, e.g. *say*, instead of specialized terms (e.g. *whisper*, *chortle*, *assert*, *squirm*, *writhe*) in lexical fields. Thus, it would be worth to explore the most superordinate and generic concept of P-C-U verbs, i.e. *kan* ‘to look’, *xiang* ‘to think’ and *shou* ‘to say’ which stand in the position of primary frame in the relative four-layered hierarchy proposed by Liu and Chiang (2008).

4.1.1 The Polysemous *Kan*

By observing the data in the corpora and referring to the classification of *kan* ‘to see’ in Mandarin by Lu (1999) and Chang (2004), and that of *Khoann3* ‘to see’ in Taiwanese Southern Min by Lien (2005), the extended path of Mandarin *kan* are illustrated in Figure 11 below.



Figure 11: Extended Path of *Kan* (based on Lu 1999, Chang 2004 and Lien 2005)



The meanings of Mandarin *Kan* can be divided into ten different frames which represent different senses in FrameNet (Cf. Table 9). Besides, by adding suffixes or

resultative makers, the meaning of *kan* can be extended to other semantic frames as listed in Table 10.

Table 9: Semantic Frames of Polysemous *Kan* (based on Lu 1999, Chang 2004 and Lien 2005)

Sense ¹⁰	Frame ¹¹	Semantic Roles & Syntactic Category	Example
1 look, watch	Perception_active	a. Perceiver_agentive[NP] < (Aspect marker) * (Aspect marker) < Phenomenon_entity[NP]/ Phenomenon_event[CL] b. Perceiver_agentive[NP] < (Aspect marker) * (Aspect marker) < Medium [NP]	a. 我 <u>看著</u> 那隻 <u>小狗</u> 我 <u>看著</u> 他打籃球。 b. 我在看電視。
2 look after	Attention	Cognizer[NP] < * < Ground[NP]	別跑，看車！ 許多父母無暇看小孩。
3 guard	Monitor	Monitor[NP] < * < Ground[NP] < 以免/防止/別 Prevented_event[CL]	你 <u>看著</u> 他，別 <u>讓他</u> 跑了！
4 read	Reading	Reader[NP] < (Aspect marker) * (Aspect marker) < Text[NP]	他正在看報紙。
5 visit	Visiting	Agent[NP] < * < Entity[NP]	我去看他的父母。
6 cure, see the doctor	Cure	Patient [NP] < * < Healer[NP] Healer [NP] < * < Affiliation[NP]	他去看醫生。 醫生看他的病。
7 face	FACE ¹²	Entity [NP] < * < Direction [NP]	這房子背山看海。
8 observe	Scrutinize	Perceiver [NP] < * < Phenomenon_entity [NP]	看問題要全面。
9 suppose	Opinion	Cognizer[NP] < * < Opinion[CL]	我看問題不大。
10 guess, infer	Coming_to_believe	Cognizer[NP] < * < Content[NP]	我看明天可能會下雨喔！

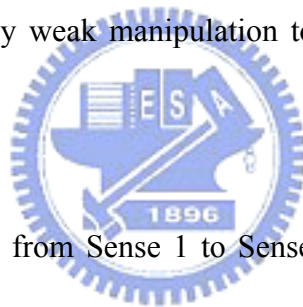
¹⁰ The senses of P-C-U verbs discussed in this paper are marked by gray bottom color.

¹¹ The frames belong to different level relatively. For instance, comparing to Perception_active frame, Attention Frame and Monitor Frame occupy the lower level. However, since the relative four-layered hierarchy proposed by Liu and Chiang (2008) is for frames under the same archi-frame, the hierarchy of frames is not applicable in the frames for the polysemous frames due to the fact that they may originate from different archi-frames.

¹² The frame is capitalized because it is peculiar to Chinese rather than commonly shared between both Chinese and English.

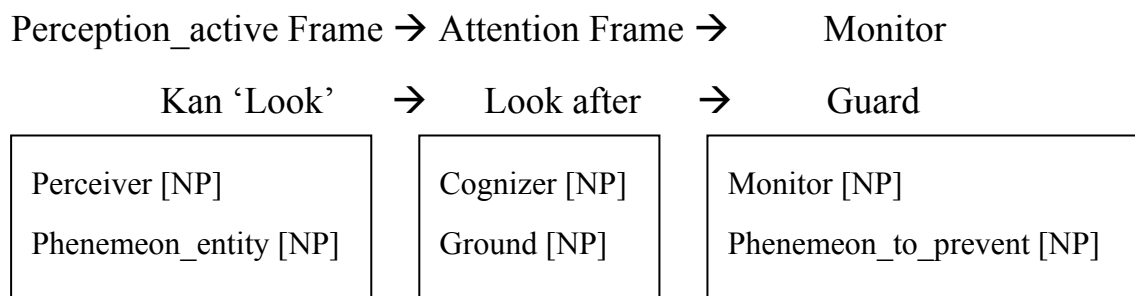
Since the focus of this paper is on the extensions from perception to modality and manipulation, this paper explores merely on three extended path of *kan*: Perception_active Frame → Attention Frame → Monitor Frame, Perception_active Frame → Appearance Frame, and Perception_active Frame → Opinion Frame and Coming_to_believe Frame.

Among the various frames, Sense 1 of *kan* ‘to look, watch’ represents the generic use of *kan* in Mandarin. It can be extended to Sense 2 ‘to look after’ and Sense 3 ‘to guard’ by ‘focusing’ or ‘imposing’ the attention through visual perception towards the Phenomenon. With different degree of perceiving the Phenomenon, the semantic role of the agent transits from Perceiver, Cognizer to Monitor. The Monitor Frame can be viewed as fairly weak manipulation to prevent from certain event to occur.



The inheritance relations from Sense 1 to Sense 2 and Sense 2 to Sense 3 are observed and illustrated below.

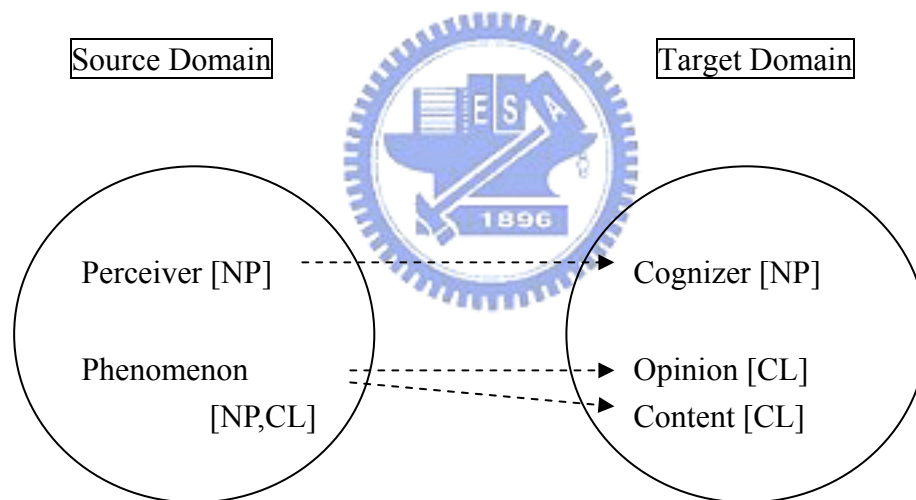
Figure 12: Inheritance and Gradation of Semantic Roles in *Kan* ‘to look, look after and guard’



Sense 9 and 10 of *Kan*, however, demonstrate a metaphorical linking (cf. Sweetser 1990) by mapping of the frame elements from concrete to abstract rather

than inheritance from one to the other (cf. Figure 13). The evidence is indicated by the syntactic constraint of cognitive *kan*. Giving rise to the meaning of ‘to suppose’ and ‘to guess,’ *kan* functions as a homogeneous state verb which is incompatible with the aspect markers, such as *le*, *zhe*, *guo* and progressive maker *zai*, *zhengzai* given the fact that the concrete and durative *kan* ‘to see’ is an activity verb which takes the physical phenomenon or ground as its complement. This extension explains how *kan* is able to encode epistemic meaning, as well.

Figure 13: Metaphorical Extension from *Kan₁* ‘to look’ to *Kan₉* ‘to suppose’ and *Kan₁₀* ‘to guess’



Besides, by adding suffixes or VR-compounding, the meaning of *kan* can be extended to other semantics frames as listed in Table 10.

The extended Sense 2 of *kan* suggests a conceptual blending from the input 1 *kan* ‘look’ and input 2 *qilai* to create a new blend *kanqilai* ‘look, seem’. Based on Liu. and Gu (1996), the root meaning of *qilai* refers to making the object moving from lower position to higher position by certain action but then extended its meaning to indicate the evaluation or judgment of the speaker upon certain aspect of an object or an event.

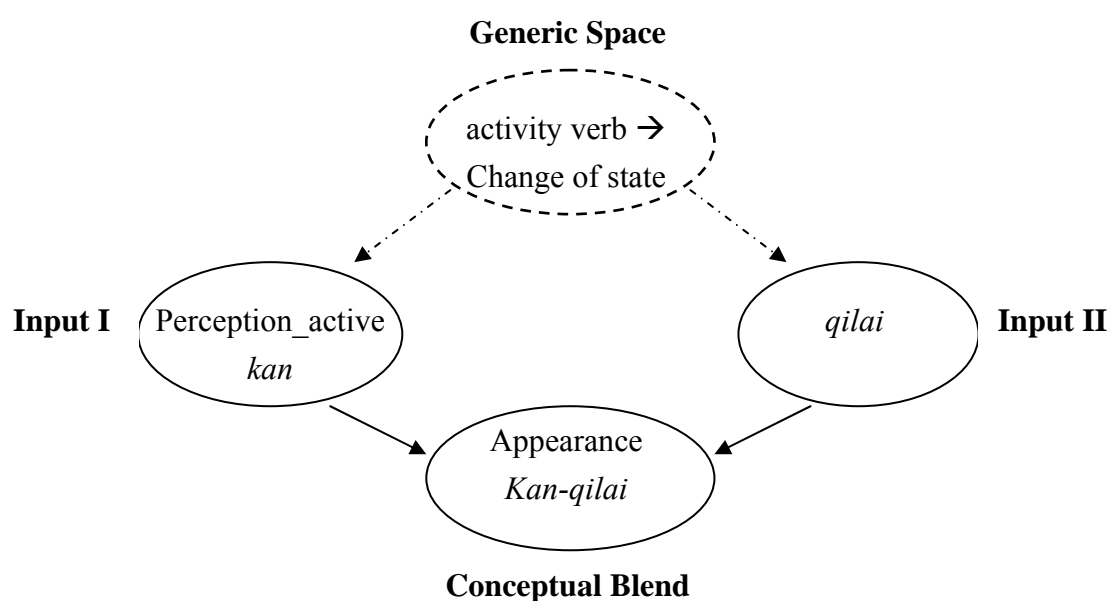
As attaching by *qilai*¹³, *kanqilai* functions as a modal adverb in the sentence-initial position (cf. Gao 2007) and thus accounts for the link between perception and modality verbs. The operation of the blending is shown below.

Table 10: Semantic Frames Extended from *Kan* (based on Lu 1999, Chang 2004 and Lien 2005)

Sense	Frame	Semantic Roles & Syntactic Category	Example
1 see	Perception_passive	Perceiver[NP] < * < Phenomenon_entity[NP]	昨天我看到你騎著腳踏車。
2 look, seem	Appearance	Phenomenon[NP] < * < Judgement[AP] /Characterization[VP] /Inference[CL]	a. 他看起來很高。 b. 牠的卵看起來是橙紅色球形。 c. 保護這兩個字，看起來好像是某人受到保護，而沒有人受到傷害。
3 look up to, look down upon	JUDGING	a. Cognizer[NP] < * < Evaluee[NP] b. Evaluee[NP] < 被 Cognizer[NP] < *	a. 我很看不起插隊的人。 b. 我這個兒子被爸爸看不起。
4 classified	CLASSIFICATION	Cognizer < 把 Item[NP] < * < Category[NP, CL]	他把台灣的經濟看做跟大陸的經濟是一樣的。
5 see as condition	CONDITION	* < Entity[NP] < Sate[VP] < Evaluation[CL]	看他這麼高興，還好有等他回台灣才請客。
6 precative use	TENTATIVE MARKER		a. 我常常把字典拿起來，隨便翻翻看。 b. 我想去吃看看新開的摩斯漢堡。

¹³ Morphemes, such as *-la* in Haviland 1987, 1996, can serve as space-builders which set up a mental spac, i.e. a frame. *Qilai* here corresponds to the activity_start Frame in FrameNet.

Figure 14: Conceptual Blending of *Kan* and *Qilai*



The new blend inherits the features from the both inputs. From Perception_active *kan*, it inherits the frame element Phenomenon as its subject while from *qilai*, the evaluation or judgment of the speaker is realized as the frame elements: Judgement [AP], Characterization [VP] and Interference [CL]. The generic space which makes the blending of Perception_active *kan* and *qilai* possible is the connection between activity verb and the potentiality to be changed of state. Other perception verbs, such as *ting* ‘listen’, *wen* ‘smell’ can blend with *qilai* for the same reason.

The status of the extended Sense 5 of *kan* as a verbal suffix in the form of VV-*kan* (suffix of VV) or V-*kan kan* (duplicated suffix of V) is quite controversial in the literature. Basically, the consensus is that *kan* serves as an aspect marker in the verbal suffix position which indicates the meaning of ‘attempt’ (Tsao 2001, Lien 2005). However, two different perspectives are held toward the forming of the suffix *kan*:

- 1) VV-*kan* is formed by a duplicable activity verb which is likely to suggest the attempting meaning itself and the suffix *kan* as the intensifier. (Chang 2004)

- 2) *VV-kan* is the real construction giving rise to the attempting meaning. The form *VV* which has similar function is the deletion of *VV-kan* in the historical perspective. (Lu 1959, Chang 2000, and Yao 2002)

To support the second perspective, Lu (1959) illustrated the deletion by the following synchronic examples:

- (39) a. 他還沒想通，你再跟他談談，看怎麼樣。
ta hai mei xiang-tong , ni zai gen ta tantan , kan zenmeyang
he still NEG think-clear, you again with he talk, see how
'He has not realized yet. (You) Talk to him and see how it's going.'
- b. 他還沒想通，你再跟他談談看。
ta hai mei xiang tong , ni zai gen ta tantan-kan
he still NEG think-clear, you again with he talk-see
'He has not realized yet. (You) Try to talk to him.'
- (40) a. 我不騙你，這很好吃，不信你嘗一下，看味道如何。
wo bu pian ni , zhe hen haochi , bu xin ni chang yixia , kan weidao ruhe
I NEG cheat you, this very delicious, NEG believe you taste a while,
see flavor how
'I didn't lie to you. This is very delicious. If you don't trust me, taste it to see how the flavor is.'
- b. 我不騙你，這很好吃，不信你嘗一下看。
wo bu pian ni , zhe hen haochi , bu xin ni chang yixia kan
I NEG cheat you, this very delicious, NEG believe you taste a while
see
'I didn't lie to you. This is very delicious. If you don't trust me, try to taste it.'

In Lu's view, example (39 b) and (40 b) is the form deletion from example (39 a) and (40 a). In (39 a) and (40 a), the meaning of *kan* resembles that the Sense 5 'see as

condition' which takes a clausal complement as the judgment of the speaker. As for diachronic evidences, according to Li (2007), the earliest usage of *kan* as a suffix expressing 'attempting' was found before Tang Dynasty. However, no forms of VV-*kan* were found then. Not until Yuan and Ming Dynasty were the reduplicated verbs attaching by the suffix *kan* available, e.g. *ni zai qu xunxun-kan* 'You go and try to look for it again' (*Xiyouji* 'The Journey to the West'). Furthermore, few examples of V-*kankan* were discovered in Tang, Song, Yuan and Ming Dynasty, e.g. *yi shi xiang wo shuoshuokan* 'Try to tell me the truth' (*Dunhuang Bianwen Ji* 'Anthology of Dunhuang Bianwen').

To account for the semantic extension, Chang (2000) considers the meaning of verbal suffix *kan* is extended from perception *look* to cognition *estimate*. Since estimation requires the extension and repetition of activity, it confirms to the function of verbal duplication. That explains why *kan* tends to duplicate more frequently than other verbs, especially when they are in the position of suffix. In addition, *kankan* also exhibits the meaning of *gradually* functioning as a time adverb from the diachronic point of view (Chang 2000, Li 2007).

The author adopts the later viewpoint which regards the verbal suffix *kan* as extending from other sense of *kan* and thus later undergoing the grammaticalization and deleting process. Despite of the controversies held concerning the attempting meaning of VV-*kan* and V-*kankan*, Chang (2004) terms this useage as speaker's answer-seeking intention (cf. 41). The point in this paper, however, is that, when the agent of VV-*kan* or V-*kan kan* is a speaker, it indicates the intention and volition of the speaker . The intention use is then included into part of the deontic modality. On the contrary, in the speaker-hear interacting scenario, it induces the precative and advisory perspective of the speaker to suggest the hearer to perform certain action (c.42). This use yields the weak manipulation meaning of the construction.

(41) 我 拿起 字典， 隨便 翻翻看 / 翻看看。
Wo naqi zidian , suibian fanfan-kan/ fan-kan-kan
 I take-Qi dictionary casually turn over-turn over-look/ turn-look-look
 ‘I take out the dictionary and turn it over casually.’ (Google)

(42) 你 吃吃看/吃吃看 嘛！
ni chichi-kan/chi-kan-kan ma
 you eateat-see/eat-see-see SFP
 ‘You can/may/should/shall try to eat it!’ (Google)

Evidences from other languages, such as Yaqui (43 a-d), show that elements expressing modality can be attached to verb as suffix as well.

(43) Yaqui: modality in suffixes and sentence-final position

a. aapo yi'i-taite
 he dance-start
 ‘He is starting to dance’

b. bempo bwik-su-k
 they sing-finish-PERF
 ‘They have finished singing’

c. itepo yooko aman kat-vae
 we tomorrow there go-intend
 ‘We plan to go there tomorrow’

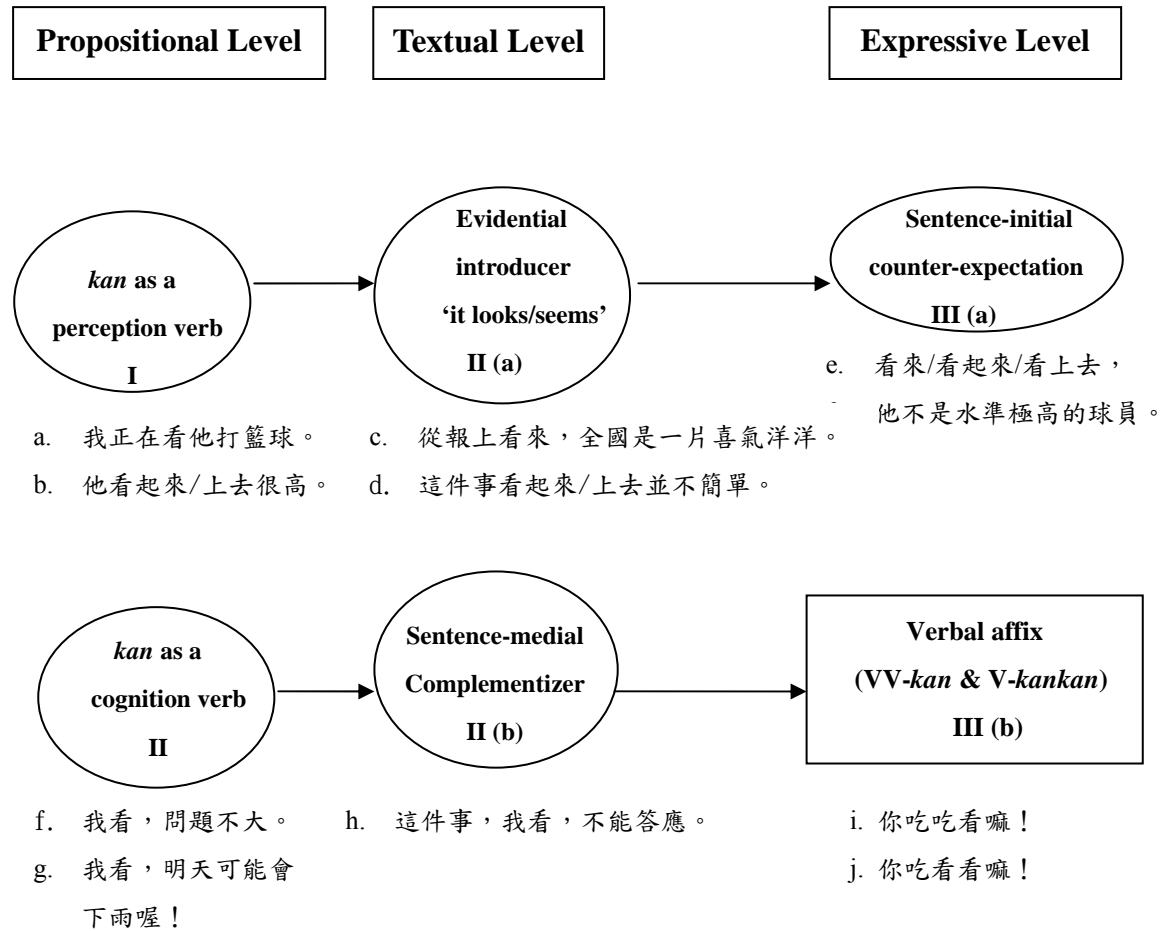
d. inepo siim-pea
 I leave-wish
 ‘I want to leave’

(Givón 1990b:539-41)

In (43 a, b), the modal verbs ‘*start*’ and ‘*finish*’ are lexicalized with the main verb to form its modality while in (43 c, d), similarly, the modal meaning of ‘*intend* and *wish*’ is suffixed to the main verb.

To sum up, the grammaticalization path of *kan* is illustrated below.¹⁴

Figure 15: Grammaticalization Path of *Kan*



Among the three semantic-pragmatic tendencies Tragott proposes, the third one, which demonstrates the development of epistemic modality by the grammaticalization of *may*, is found adequate for explaining the semantic extension of *Kan*.

Along the first Path, *kan* functions as a perception verb which means 'to look' (a) and 'to look like (perceptually)' (b) in stage I. Then, *kan* becomes an evidential introducer 'it looks (according to a certain evidence)' (c-d) in stage II since the absence of the Perceiver 'I' reveals the fact that the inference or judgment is made

¹⁴ The senses of *Kan* discussed in Figure 15 correspond to the sense 1, 9 and 10 in Table 9 and the sense 2 and 6 in Table 10.

from other sources rather than the speaker's perception in order to evade responsibility; while in stage III, it turns out to be a counter-expectation marker in sentence-initial position (e).

Along the second Path, *kan* functions as a cognition verb which means 'to suppose' (f) and 'to infer' (g) in stage I. Then, *kan* occupies the sentence-medial position and serves as a complementizer conveying epistemic meaning and euphemistic disagreement (h). Finally, in stage III, it turns out to be a verbal suffix which codes 'attempt' (i-j). It is found that other languages, such as Ute (Givón 1990b:539-41), adopt the same strategy of coding modality by verbal suffix as well. According to the third tendency proposed by Traugott, the two grammaticalization paths of *kan* which goes from the process of propositional and textual, to interpersonal (expressive) conform to Traugott's predication that meanings tend to become increasingly situated in the speaker's subjective belief state/ attitude towards the situation.

Another perception verb, *juede* 覺得, shows a similar grammaticalization path. According to the analysis of Liu and Chiang (2006), *wo juede* 'I feel' serving its expressive function in discourse (to avoid oppositional confrontation and present euphemistic disagreement) by coding subjectivity as well as intersubjectivity. The study of Liu and Chiang sheds light on the interaction between pragmatics and semantics by probing into the perception verb *juede*. It's noticeable that both *kan* and *juede* extend their root meanings 'to look perceptually' and 'to feel perceptually' to 'to suppose' and 'to feel mentally' by metaphorical extensions. This conforms to the study of Sweetser (1990) that perception is often viewed as cognition within and across languages.

4.1.2 The Polysemous *Xiang*

By observing the data in the corpora and referring to the analysis of *xiang* ‘to think’ in Mandarin by Liu and Wu (2001) and Liu and Hu (2007), *xiang* is divided into seven different frames which represent different senses in FrameNet listed in the Table 11 below.

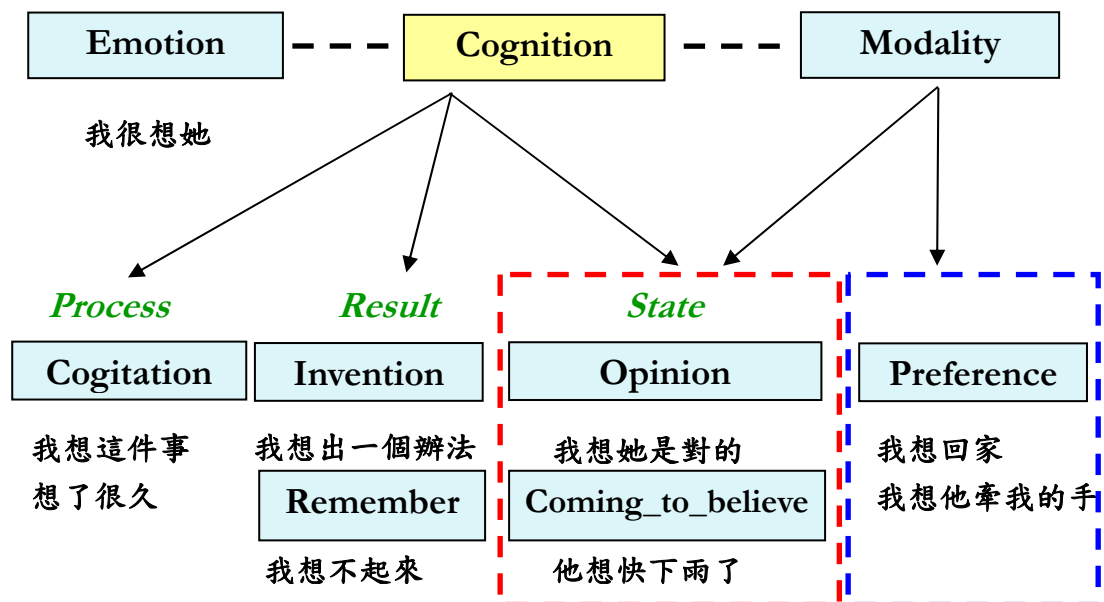
Table 11: Semantic Frames of Polysemous *Xiang* (based on Liu & Wu 2001, Liu and Hu 2007)

Sense	Frame	Semantic Roles & Syntactic Category	Example
1 ponder	Cogitation	Cognizer[NP] < * < Topic [NP] Cognizer[NP] < * < Issue [CL]	他一直在想這件事情。 我想著該如何處置這些垃圾。
2 conceive	Invention	Cognizer[NP] < * < Creation[NP]	他想了一個好辦法。
3 suppose	Opinion	Cognizer [NP] < * < Opinion[CL]	我想她是對的。
4 guess	Coming_to_believe	Cognizer [NP] < * < Content[NP]	我想，明天應該會下雨。
5 wish, hope	Preference	Experiencer [NP] < * < Focal_Event [VP] Experiencer [NP] < * < Focal_participant [NP] < Focal_Event [VP]	他想吃泡麵。 我很想他牽我的手。
6 miss	Emotion	Experiencer < * < Target [NP]	我好想她。
7 remember	Remember	Cognizer [NP] < * < (NEG) < (+起來) Memory [NP/CL]	他想不起來這件事。 他想不起來到底有沒有去。

Since the focus of this paper is on the extension from perception to modality and manipulation, this paper explores merely on three frames of the polysemous *xiang*: Opinion Frame (sense 3), Coming_to_believe Frame (sense 4) and Preference Frame (sense 5). The frames of polysemous *xiang* are illustrated under the three different domain, i.e. emotion, cognition and modality, in Figure 16. In Figure 16, the two

frames, Opinion and Coming_to_believe, overlap with the epistemic modality whereas the Preference Frame overlap with the deontic modality (or so-called desiderative or dynamic modality). Discussions will follow the two veins of modality later.

Figure 16: Semantic Frames of Polysemous *Xiang* under Emotion, Cognition and Modality Domain (based on Liu & Wu 2001, Liu and Hu 2007)



On the one hand, the Sense 3 and 4 of *xiang* are in fact verbs overlapping with epistemic modality as well as what Noonan (1985) termed ‘propositional attitude predicates’. As the name suggests, those predicate expresses the experiencer’s attitudes with respect to the truth condition of the proposition in the complement position. Therefore, the verbs, such as *cai* 猜 ‘to guess’、*caixiang* 猜想 ‘to guess’、*liaoxiang* 料想 ‘to suppose’、*duanding* 斷定 ‘to make a judgment’、*tuiduan* 推斷出 ‘to infer’、*tuilun(chu)* 推論出 ‘to infer’、*xiang* 想 ‘to think’、*renwei* 認為 ‘to consider’、*yiwei* 以為 ‘to consider’、*juede* 覺得 ‘to feel’、*kan* 看 ‘to see’、

ganjue 感覺 ‘to feel’, belonging to the Coming_to_believe Frame and Opinion Frame, are all cognition verbs which overlap the function and uses of epistemic modality verbs.

On other hand, Sense 5 of *xiang* ‘to wish, hope’ is relevant to deontic modality. According to the definition of Bybee *et al* (1994), the verbs of agent-oriented modality encode necessity, obligation, permission, root possibility, desire and ability. Hence, the Preference Frame here is associated with the desire of the agent. It can be viewed as the volitive verbs expressing hoping and wishing, suggested by Alain Peyraube (2001).

Interestingly, Sense 5 of *xiang* ‘to wish and hope’ can be viewed as the inheritance by Sense 1 of *xiang* ‘to ponder.’ The semantic extension is illustrated below (44-45).



(44) Cognition:

我 一直 在 想 這件 事。
Wo yizhi zai xiang zhejian shi
 I always ASP think this-CL matter
 ‘I have always been thinking about this matter.’

(45) Modality:

我 想 吃 泡麵。
Wo xiang chi paomian
 I think eat instant noodles
 ‘I want to eat instant noodles.’

The root meaning of *xiang* 想 is ‘to ponder on certain topic.’ The meaning is then extended to ‘to want something or to desire some irrealis event to happen. Other languages, such as Ilya Talyev (46a, b) and Hebrew (47a, b), show similar tendency. For instance, the meaning of ‘*think*’ in Ilya Talyev has changed from ‘to think’ to ‘to

intend’ (20a, b) whereas that of ‘*think*’ in Hebrew has changed from ‘to think’ to ‘to plan’.

(46) Ilya Talyev: ‘to think’ → ‘to intend’

a. Misli, če vie ste umoren
 think(3SG) COMP you COP tired
 ‘He thinks that your’re tired’

b. Mislja da ida
 think(1SG) COMP go(1SG SJJCT)
 ‘I intend to go’

(Noonan, 1985:94)

(47) Hebrew (data from Ora Leivant): ‘to think’ → ‘to plan’

a. Ani xošev še-ha-iš ganav et ha-kesef
 I think COMP-ART-man stole OBJ ART-money
 ‘I think that the man stole the money’

b. Ani xošev lignov et ha-kesef
 I plan steal(INF) OBJ ART- money
 ‘I plan to steal the money’

(Noonan, Michael. 1985:125)

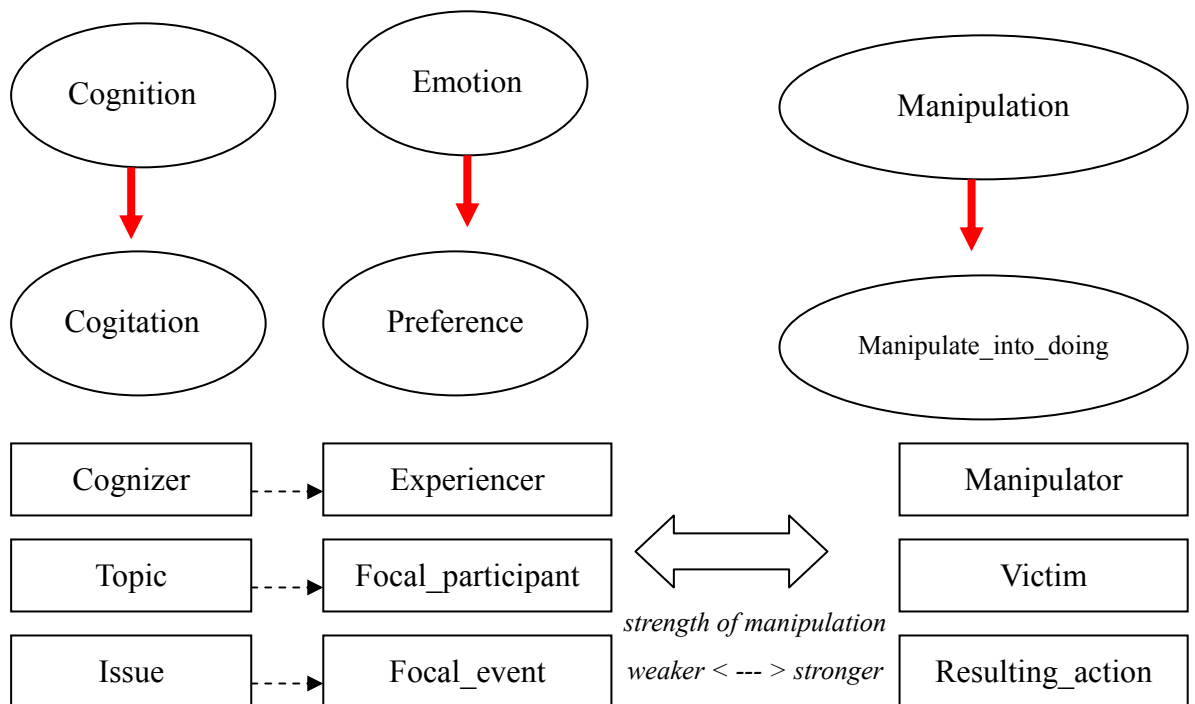
The volitive use of *xiang* ‘to wish, hope’ can be further extended to the use of weak manipulation via the causative construction: X CAUSE Y DO Z. The example is exemplified in (48).

(48) Manipulation: (*want* in Desiring Frame)

我 很 想 他 牵 我的 手。
Wo hen xiang ta qian wode shou
 I very think him hold I-DE hand
 ‘I want him to hold my hand very much.’

The syntactic patterns of (44) and (48) are distinct. In (44), the Topic which a Cognizer ponders upon is realized as a NP syntactically. On the contrary, in (48), the Forcal_event which an Experiencer wishes to occur is realized as a verb phrase (VP) via the causative construction: X CAUSE Y DO Z. *Xiang*₆ ‘to wish, hope’ codes strong volition that may exert different strength of weak manipulation and control upon the Focal_participant. It’s called Foral_participant rather than manipulee due to the fact that the manipulative strength of the agent is weaker (not to the extent of a manipulator but experiencer) and thus the patient behaves less patient_like (not to the extent of a Victim but a Focal_participant). (see Figure 17 below)

Figure 17: Relations and Inheritance of Frame Elements among Cogitation and Preference and Manipulate_into doing Frame



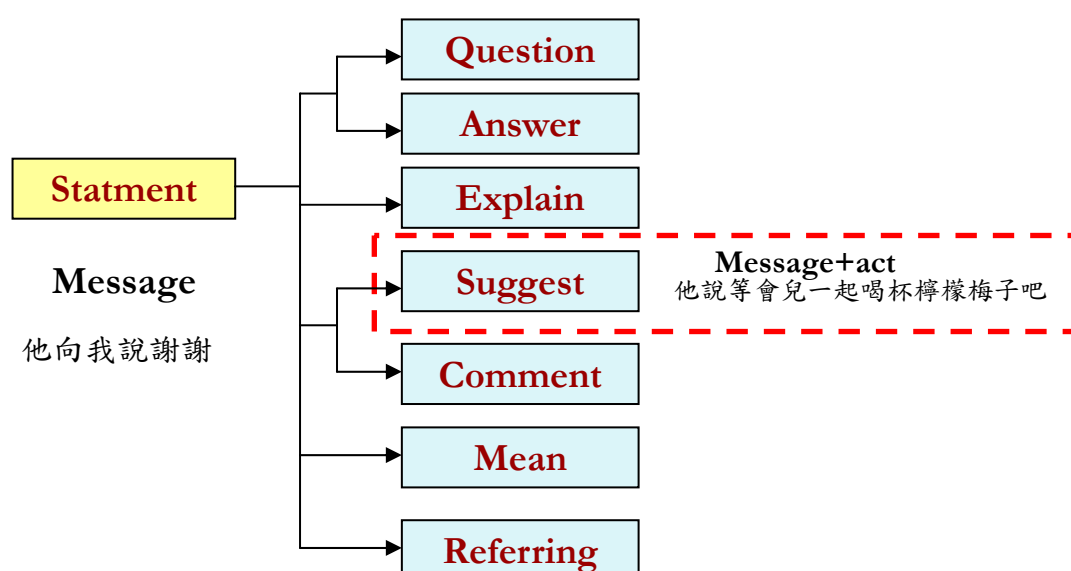
他一直在想這件事情。 Experiencer [NP] < * < Focal_participant Manipulator < * < Victim < Resulting_action
 我想著該如何處置這些 [NP] < Focal_Event [VP] 我要他(來)牽我的手。
 垃圾。 我很想他(來)牽我的手。
mapping via construction: X CAUSE Y (lai/來) DO Z

4.1.3 The Polysemous *Shuo*

Based on the data in the corpora and the classifications of the senses of polysemous *shuo* ‘to say’ in Mandarin by Liu (1986), Chang (2000), Su (2002) and Chiang (2006), *shuo* is divided into eight different frames which represent different senses in FrameNet illustrated in Figure 18 and listed in the Table 12 below.

Among the eight lexical senses, only senses 1 and 3 in Table 12 concerning the manipulative force will be discussed in this paper.

Figure 18: Semantic Frames of Polysemous *Shuo* under Communication Frame (based on Liu 1986, Chang 2000, Su 2002, Chiang 2006)



The use of Sense 3 of *Shuo* ‘to suggest’ is in fact inherited from Sense 1 of *Shuo* ‘to state.’ If it occurs in the speaker-hearer interacting scenario, the illocutionary force will be more obvious and thus the Message which the Speaker produces is characterized by the feature: ‘+act’ to show that deontic modality, i.e. the obligation, or speech-act, imposed by the speaker on the hearer. Liu (2002: 15-16) indicated that the meaning of deontic modality has often to be interpreted in the context of

speaker-hear interaction. In addition to the speaker, circumstance or natural law appears to be the deontic source acting upon the addressee. To impose an obligation on somebody or to grant permission are speech acts since the addressee must recognize the speaker's authority and other felicity conditions are met (cf. Kiefer 1998:595). Therefore, the overlap of utterance verbs and modality verbs can be viewed as the function of 'directive' which used to characterize the semantic domain of modality seems to mix up with the semantic and pragmatic notions.

Table 12: Semantic Frames of Polysemous *Shuo* (based on Liu 1986, Chang 2000, Su 2002, Chiang 2006)

Sense	Frame	Semantic Roles & Syntactic Category	Example
1 narrate, state	Statement	Speaker [NP] < 向/對/跟 Addressee < * < Message [NP/CL]	a. 他對小朋友說故事。 b. 他向我說謝謝。
2 explain	Explain	Speaker[NP] < * (< Topic[NP])	A: 真複雜。 B: 我也很難說啊。
3 suggest	Suggest	Speaker [NP] < * < Message+act [CL]	他說等會兒一起喝杯檸檬梅子吧。
4 comment	Judgment_ Communication	a. Communicator [NP] < * < Evaluee[NP] b. Communicator [NP] < * < (Evaluee[NP]) < Message+Evaluative [VP/ CL]	a. 聽你說說我的音樂。 b. 如果你是女生，我就說你漂亮啊。
5 ask	Questioning	Speaker [NP] < * < (Addressee[NP]) < Question	他說他可以打這支電話嗎？
6 answer	Response	Speaker [NP] < * < (Addressee[NP]) < Trigger[NP/CP/CL]	T: 那子莉到底接受他了沒？ I: 你說，曾國城，這是你的事情，幹麻我幫你扛？
7mean	Linguistic_meaning	Speaker [NP] < * < Meaning [CL]	我是說，可以去套一個小朋友。
8 mention	REFERRING	Speaker [NP] < * < REFFERENT [NP/VP/CL]	剛剛才說到你，你就來了。

In addition to the lexical meanings of *Shuo* (cf. Chang 2001), some other usages of *Shuo* which exhibits the result of grammaticalization have been widely discussed (Vygotsky 1962, Liu 1986, Su 2002, Chang 2002, Wang .et al 2003, Chiang 2006, and many others). The non-lexical meanings of *Shuo* are summarized as four types: i) impersonal reportative marker (49), ii) quote marker (50 a, b), iii) sentence-initial discourse marker¹⁵ (51), and iv) sentence-final discourse marker (52 a, b).

- (49) 老車，我聽人家說過的，說你有個女兒， (Su 2000)
laoche , wo ting renjia shuoguo de , shuo ni you ge nuer
 Laoche, I hear people say-PREF DE, say you have CL daughter
 ‘Laoche, I heard people say, saying that you have a daughter.’

- (50) a. 他建議說："要不要到我們公司的樓上...我請你喝咖啡!" (Wang 2003)
ta jianyi shuo: "yao-bu-yao dao women gongsi de lou-shang ...wo qing ni he kafei!"
 he suggest say want-NEG-want to we company stair-up...I invite you drink coffee
 ‘He suggests: ‘How about going upstairs to our company? I treat you a cup of coffee.’

- b. 你很可能就不會再堅持說這些作品平淡無奇了。 (Su 2000)
ni hen keneng jiu buhui zai jianchi shuo zhexie zoupin ping-dan-wu-qi le
 ‘It is possible that you would no longer insist that these works are plain.’

- c. 王小姐來信說：我有一個男友，... (Su 2000)
wang xiaojie lai xien shuo: wo you yige nanyou
 ‘Letter from Miss Wang says: I have a boyfriend.’

¹⁵ Su (2000) further defines 如果說 *ruguo shuo*, 比如說 *biru shuo* as hypothetical marker.

- (51) 對，只是說，四個人情緒上的控制不太一樣。 (Wang 2003)
dui , zhishi shuo , sige ren qingxu shang de kongzhi bu tai yiyang
 right, only say, four-CL person emotion up DE control NEG too same
 ‘Right, it’s just that the emotional control of the four persons is not exactly the same.’
- (52) a. 這家麵包店的西點很好吃說¹⁶。... (Su 2000)
zhe jia mianbao-dian de xidian hen haochi shuo
 ‘The cakes of this bakery are rather delicious *shuo*.’
- b. 不會吧~!!我以為他25、6歲說 (Wang 2003)
buhui ba~!! wo yiwei ta 25、6 sui shuo
 NEG-will SFP~!! I consider he 25、6 years old say
 ‘It can’t be! I thought he’s only 25 or 26 years old.’

The semantic extension of *shuo* 說 from utterance verb to modality verb results in the suffix of other verbs in the form of *V-shuo* or sentence-final complementizer. According to Su (2000), the occurrence of *shuo* after *xiang* is mainly used to introduce reported thought. However, interestingly, no other verbs have a similar function to the suffix *shuo* in this case. Thus, the role of *shuo* in this syntactic construction remains to be clarified. As for the usage of (52a), Su (2000) suggests that it seems to incorporate more vividness into the subjective descriptions of the speaker’s feelings or attitudes which expresses the epistemic type of modality.

Although scholars held different perspectives on the naming of the discourse marker which *Shuo* functions in different sentence position, this study would like to roughly separate the above uses of *Shuo* into two types: message marker (49, 50a, c) and epistemic marker (other instance). Message marker introduces a more message-like sentence by attaching to other utterance verbs as its suffix (50 a) or take

¹⁶ Su (2002) regards the *shuo* in (52a) as the marker coding epistemic modality while Wang (2003) condiers this use of *shuo* in (52a) as an intensifier of the mood and that of (52 b) as an counter-expectation discourse marker.

a metaphorical speaker (e.g. the Text says...) whereas epistemic marker function as a thought-reporting introducer linking the epistemic thought or attitude of the speaker in spite of the syntactic position it is construed. The linking between the event of speaking and that of thinking and the homogeneity of speech and thought indicated by the occurrence of *Shuo* following mental verbs observed by Su (2002) and Vygotsky (1962) confirm to the distinction between the message marker and epistemic marker mentioned above.

The taggings for the message marker *Shuo* and the epistemic marker *Shuo* are demonstrated below.

(53) Message Marker *shuo*:

- a. 老車，我聽人家說過的，[說/Message marker]你有個女兒，
- b. [他/Speaker][建議/Suggest][說/Message marker]:["要不要到我們公司的樓上...我請你喝咖啡!"/Message+act]



(54) Epistemic Marker *shuo*:

- a. [我/Cognizer][想/Cogitating][說/Epistemic marker][是不是我聽錯了/Content]。
- b. [我/Cognizer][覺得/Opinion][徐淑媛好可憐/Opinion][說/Epistemic marker] (Wang, Katz and Chen 2000)
- c. 我以為他 25、6 歲[說/Epistemic marker]。
- d. 如果/比方/就是/只是/或者[說/Epistemic marker] ...

4.2 Utterance Meanings Yielded by *Kan*, *Xiang* and *Shuo*

To compare the similarities among *kan*, *xiang* and *shuo*, the examples mentioned in Chapter 1 are illustrated here and replaced as (55)-(58) for convenience.

(55) **P-C-U + Weak manipulation: imperative complement**

- a. 我看你還是找別人吧！ (Sinica)
wo kan ni haishi zhao bieren ba
I see you had better look for others SFP
'I suggest you had better look for others!'
- b. 我想你馬上到我身邊來，可你做不到， (Google)
wo xiang ni mashang dao wo shen bian lai ,ke ni zuobudao
I think you right away reach I body side come , but you do-NEG-achieve
'I want you come to my side right away, but you can't make it.'
- c. 我說你阿~老了就別跑那麼快咩~ (Google)
wo shuo ni a~lao le jiu bie pao name kuai mie
I say you SFP~old ASP JIU NEG run so fast SFP
'I suggest that since you are so old, don't run so fast.'

(56) **P-C-U + Weak manipulation: subjunctive complement**

- a. 我看借給他們點兒吧，大八月節的。 (Liu 1986)
wo kan jie gei tamen dianer ba , dabayuejie de
I see lend give they a little SFP , moon festival DE
'I suggest that (we) lend them some (money) since it's moon festival.'
- b. 甲：我決定報考北大了。
乙：你的成績不大突出，我想還是報低一點的學校吧。(Liu 1986)
jia : wo jue ding baokao beida le
yi : ni de chengji bu da tuchu , wo xiang haishi bao di yidiande xuexiao ba
A: I decide register for an exam PKU PERF
B: your grades Neg too outstanding , I think had better register lower a little DE school SFP
'A: I decided to register for the entrance exam of PKU.'
'B: Your grades are not good enough. I suggest that you had better register for an entrance exam of a lower level school.'

- c. 我說咱們明天就走，好嗎？ (Liu 1986)
wo shuo zanmen mingtian jiu zou , hao ma?
 I say we tomorrow JIU leave , good INTR
 ‘I suggest that we leave tomorrow. Is that okay?’

(57) **P-C-U + Deontic modality: modal complement**

- a. 我想/看/說你也該回旅館了。 (Liu 1986)
wo xiang/kan/shuo ni ye gai hui luguan le
 I think/see/say you also should return hotel ASP
 ‘I consider that you should return to the hotel as well.’
- b. 我想/看/說一個人要有點良心。 (Liu 1986)
wo xiang/kan/shuo yigeren yao you dian liangxin
 I think/see/say one should have a little conscience
 ‘I consider that one should be consionable.’

(58) **P-C-U + Epistemic modality: modal complement**

- a. 我想/看/說，這一定是謠言。 (Liu 1986)
wo xiang/kan/shuo , zhe yiding shi yaoyan
 I think/see/say , this must COP rumor
 ‘I consider that this must be a rumor.’

(59) **P-C-U: indirect quote**

- a. 我在想你說的有道理。 (Google)
wo zai xiang ni shuo de youdaoli
 I ASP think you say DE reasonable
 ‘I am thinking that what you said was reasonable.’
- b. 昨天我看到你騎著腳踏車， (Sinica)
zuotian wo kan-dao ni qi-zhe jiaotache
 yesterday I see-achieve you ride-ASP bicycle
 ‘Yesterday I saw you riding a bike.’

c. 他對我說他和他女朋友分手了， (Sinica)

ta dui wo shuota he ta nupengyou fenshou le
he DUII say he and he girlfriend break up ASP
'He told me that he broke up with his girlfriend.'

Syntactically, in the advisory use, *kan/xiang/shuo* behave like a verb of homogenous state and thus can not be reduplicated (e.g. *wo *Kankan/*xiangxiang/*shuo shuo/xiangxiangkan/shuoshoukan ni haishi zhao bieren ba!* '*I suggest suggest you go find somebody else!'), be repeated (e.g. *wo *Kan-le-you-kan/*xiangn-le-you-xiang/*shuo n-le-you-shuo ni haishi zhao bieren ba!* '*I suggest and suggest you go find somebody else!') nor collocate with progressive aspect markers such as 在 *zai* and 著 *zhe*, aspect verbs 開始 *kaishi* 'begin to do something', 繼續 *jixu* 'continue doing something' and 停止 *tingzhi* 'stop doing something', the verb 一直 *yizhi* 'keep (doing something)', durational phrases such as 一個小時 *yi-ge-xiaoshi* 'an hour' and the perfective aspect markers such as 了 *le*. (Those are criteria for the distinction of lexical aspects given in Tang T.-C 2000:15 and Chang *et al.* 2000.)

Semantically, as Liu (1986) suggest, they all express the opinion or suggestion of the speaker which is restrict to be construed as the first or second person pronoun.

To compare the differences among *kan*, *xiang* and *shou*, we may compare the following sentences.

- (60) 你*看/*想/說，這身衣服我穿著不錯吧？(Liu 1986)
*ni *kan/*xiang/shuo , zheshen yifu wo chuanzhe bucuo ba*
you *see/*think/say, this-CL clothes I wear-ASP nice INTR
'What do you *see/*think/say, doesn't this dress look nice on me?
(hinting others to praise and admire)'

Semantically, the meaning of *ni shuo* ‘you say’ can be interpreted at the level of perlocution whereas that of *ni kan* ‘you see’ and *ni xiang* ‘you think’ can be only interpreted at the level of illocution or locution only. Locution concerns the actual words uttered whereas illocution refers to the force or intention behind the words. Hence, *ni kan* ‘you see’ and *ni xiang* ‘you think’ can be interpreted as the meaning that the speaker asks the hearer to think and to look about whether the clothes are good-looking on the speaker by imposing the illocution force. However, as for *ni shuo* ‘you say’, the speaker doesn’t really want the hearer to answer whether the clothes are good-looking on the speaker but trying to prove that the perspective of the speaker is correct and expect to reach the agreement with the hearer by showing the perlocution (the effect of the illocution on the hearer).

As for sentence (57 b), Liu (1986) indicates that it would be more appropriate to replace the verb *yao* ‘must’ in the complement clause by modal auxiliary *yingai* ‘should’ to collocate with *xiang* and *kan* since the force of suggestion of *wo xiang* and *wo kan* is much weaker than *wo shuo*. Thus *kan* and *xiang* can be replaced by *renwei* ‘to consider’ in this use but *shuo* probably could not. The manipulative force of *wo kan*, *wo xiang*, and *wo shuo* display a gradation: *wo kan* < *wo xiang* < *wo shuo*. In other words, *wo shuo* demonstrate the strongest force of suggestion while *wo kan* shows the weakest. That explains why *wo shuo ni* ‘I blame on you’ can be interpreted as scolding but not *wo kan* and *wo xiang*. It is also said that ‘*wo kan*’ and ‘*ni kan*’ is grammaticalized as an idiomaticized expression to function as an attention-getting device (Chang 2001). Anyhow, it supports the different status between *wo kan*, *ni kan* and *wo shuo* and *ni shuo*. This is also in line with the argument of Liu (1986) that in the use of first person pronoun, to arrange the tone of the speaker, the order would be put: *kan* < *xiang* < *shou*. In another word, the use of *kan* is the most euphemistic where as that of *shou* is the toughest. Similarly, comparing their collocation with *hui*

‘will’ coding lower epistemic certainty and *yiding yao* ‘certainly must’ expressing higher epistemic certainty, it’s obvious that the degree of epistemic certainty of *shuo* ‘to say’ is higher than *xiang* ‘to think’ and *kan* ‘to see’ and that of *xiang* ‘to think’ is higher than *kan* ‘to see.’

- (61) a. 我看你會/*一定要來求我(的)
*wo kan ni hui/*yiding yao lai qiu wo (de)*
 I see you will/*certainly must come beg I DE
 ‘I suppose you will/*definitely must come to beg me.’
- b. 我想你會/?一定要來求我(的)
wo xiang ni hui/?yiding yao lai qiu wo (de)
 I think you will/?certainly must come beg I DE
 ‘I think you will/?definitely must come to beg me.’
- c. 我說你會/一定要來求我(的)
wo shuo ni hui/yiding yao lai qiu wo (de)
 I say you will/certainly must come beg I DE
 ‘I say you will/*definitely must come to beg me.’

Syntactically, as Liu (1986) suggest, in the use of second person pronoun, to show that the perspective of the speaker is correct, *ni shou* ‘you say’ usually takes a interrogative sentential complement while *ni xiang* ‘you think’ and *ni kan* ‘you look’ can take either interrogative or non-interrogative ones (62 a, b).

- (62) a. 你想/看/想想看/說/想說/說說看，我(wa)不認真一點替他拉票，...，
 這樣可以嗎？ (NTU)
ni xiang/kan/xiangxiangkan/shuo/xiangshuo/shuoshuokan , wo
(wa)bu renzhen yidian ti ta lapiao , ... , zheyang keyi ma
 ‘You thnk/see/try to think/say/think/say, could I solicit advocate and resources for him playfully?’

- b. 你想/看/想想看/*說/*想說/*說說看，在銀行當個小職員，一天累到死， ... (Liu 1986)
*ni xiang/kan/xiangxiangkan/*shuo/*xiangshuo/*shuoshuokan* , *zai yinxing dang ge xiaozhiyuan* , *yitian leidao si* , ...
 ‘You thnk/see/try to think/*say/*think/*say, to be an insignificant office employee and tired to death all day long...’

Futhermore, by observing the cocurrenence of *kan*, *xiang* and *shuo* found in the corpus (63), it is of interest that the syntactic status and relatedness among the three lemmas are distinct.

- (63) a...我想說看你還要不要再修補, (NTU)
wo xiang shuo kan ni hai yao-bu-yao zai xiubu
 I think say see you still want-NEG-want again mend
 ‘I am thinking whether you still want to mend it again.’
- b. ?我想看你還要不要再修補說
?wo xiang kan ni hai yao-bu-yao zai xiubu shuo
- c. ?我想(要)看說你還要不要再修補
?wo xiang (yao)kan shuo ni hai yao-bu-yao zai xiu bu
- d. 我說(：)想(要)看你還要不要再修補
wo shuo(：)xiang(yao)kan ni hai yao-bu-yao zai xiubu
- e. 我*說看想你還要不要再修補
*wo *shuo kan xiang ni hai yao- bu-yao zai xiubu*
- f. 我*看想說你還要不要再修補
*wo *kan xiang shuo ni hai yao-bu-yao zai xiubu*
- g. 我*看說想你還要不要再修補
*wo *kan shuo xiang ni hai yao-bu-yao zai xiubu*

In (63 a), the meaning of *kan*, *xiang* and *shuo* are all epistemic in nature. In (63 b-c), the meaning of *xiang* has been changed to preference *xiang* ‘to want’. In (63 c),

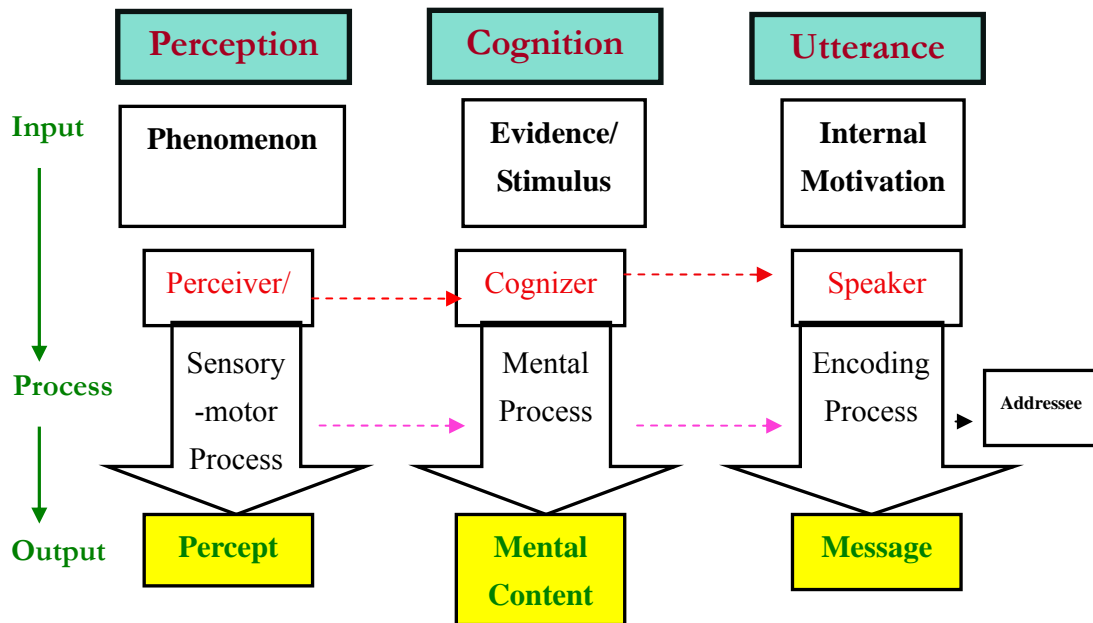
shuo is an utterance verb ‘to say’ whereas *xiang* is a preference verb. Sentences (63 d-g) are ungrammatical. Sentence (63 a) shows that, as used in expressing epistemic, the order of the occurrence of the three verbs is: *xiang* = *kan* < *shuo*. *Shuo* can be attached to the metal verb (*xiang* and *kan*) or stays in the sentence-final position, which is the freest comparing to the other two. It indicates the distinct syntactic constraints held by the three verbs and confirms to the claim of Hopper and Traugott (1993) that the degree of the grammaticalization of individual lemma is different. Furthermore, it implies that the distance in semantic properties of *kan* and *xiang* are closer in comparison to the two with *shuo*.

The discussions above examine the similarities and differences among *kan*, *xiang* and *shuo* semantically and syntactically, the motivations which cause the similarities and differences have not been clear yet. One may wonder what P-C-U verbs form a group. The study of Liu and Hu (2007) offers a possible account for this question. According to Liu and Hu (2007), there are semantic motivations underlying the grammatical symmetry among the three types of verbs. By postulating a domain-specific conceptual schema which serves as a semantic link to bind the three classes of verbs, the correlation among the three verb classes is manifested in the collocational sequences of cause-effect relations found in the corpora (cf. Figure 19):

As shown in Figure 19, after perceiving the external objective Phenomenon, the Perceiver yields a Percept. Then, the Percept serves as a stimulus which leads to the mental process of certain mental content of the Cognizer. The content in turn brings about the internal motivations of the Speaker’s utterance. The three different semantic roles, Perceiver, Cognizer and Speaker, refer to the same agent. They are interrelated since one perceives the world via his or her perception and conveys their mental content (including opinion, volition, and intention, etc.) by means of language. The study also indicates that 1) among the three, perception is most primary in human

conceptualization and thus serves as the prerequisite for the other two domains, but not vice versa; 2) Cognition and Utterance may have a mutual feeding relation, since they may serve as the prerequisite for each other.

Figure 19: Conceptual Correlation among P-C-U Verbs (Hu 2007)

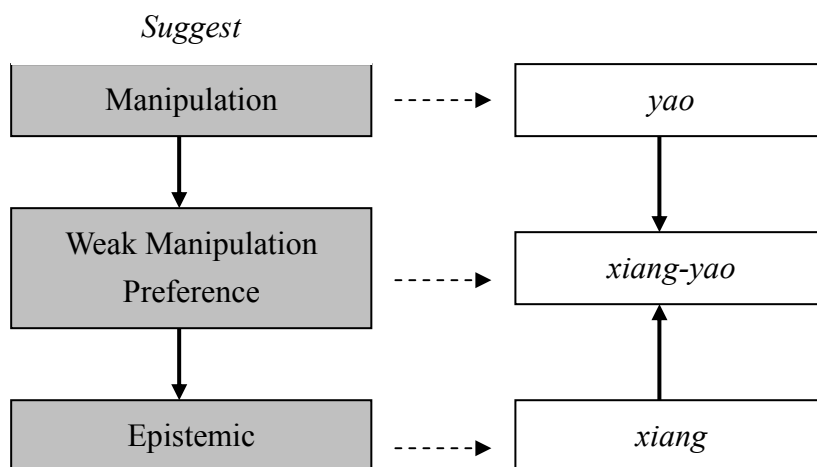


我看見烏雲密佈 我看/想(說)快下雨了吧... 我說：要下雨了...
 我對他說：“要下雨了！”
 我說，帶把傘吧。

4.3 Interaction between Modality and Manipulation: the combination of *xiang* and *yao*

The mandarin verbs *xiang*, *yao* and *xiangyao* demonstrate similar transition between manipulation and modality as the English verb *suggest* exhibits (3)-(7). The transition can be illustrated in Figure 20.

Figure 20: An Attested Semantic Path of *Xiang* and *Yao* (Liu and Hsieh 2008)



Semantically, *xiang* and *yao* represent the two ends of the path and meet in the middle, giving a preference or weak manipulation sense to yield the combination of *xiang-yao*. Syntactically, *xiang*, *yao*, and *xiang-yao* behaves differently (64-69).

(64) +NP: 我 ?想/想要/要 一枝筆
wo ?xiang/xiangyao/yao yizhi bi
 I ?prefer/want/desire a-CL pen

(65) +VP:
 a. 我 想/想要/要 去台北 [-modal]
wo xiang/xiangyao/yao qu taibei
 I prefer/want/desire go Taipei

b. 我 想/*想要/*要 應該去台北 [+modal]
*wo xiang/*xiangyao/*yao yinggai/qu taibei*
 I prefer/*want/*desire should go Taipei

(66) Degree/Comparative+VP:
 我 很/比較 想/想要/*要 放假
*wo hen/bijiao xiang/xiangyao/*yao fangjia*
 I very/comparative prefer/want/*desire be on holiday

- (67) +CL:
- a. 我 想/想要/要 他馬上離開 [-modal]
wo xiang/xiangyao/yao ta mashang likai
 I prefer/want/desire he right away leave
- b. 我 想/*想要/*要 他應該可能馬上離開 [+modal]
*wo xiang/*xiang yao/*yao ta yinggai keneng mashang likai*
 I prefer/*want/*desire he should maybe right away leave
- c. 我 想/想要/*要 明天放晴。 [+Uncontrollable event]
*wo xiang/xiangyao/*yao mingtian fangqing*
 I prefer/want/*desire tomorrow (the weather) clear up
- d. 我 想/想要/*要 這件事沒有發生。 [+Counterfactual event]
*wo xiang/xiangyao/*yao zhejianshi meiyoufasheng*
 I prefer/want/*desire this matter NEG happen

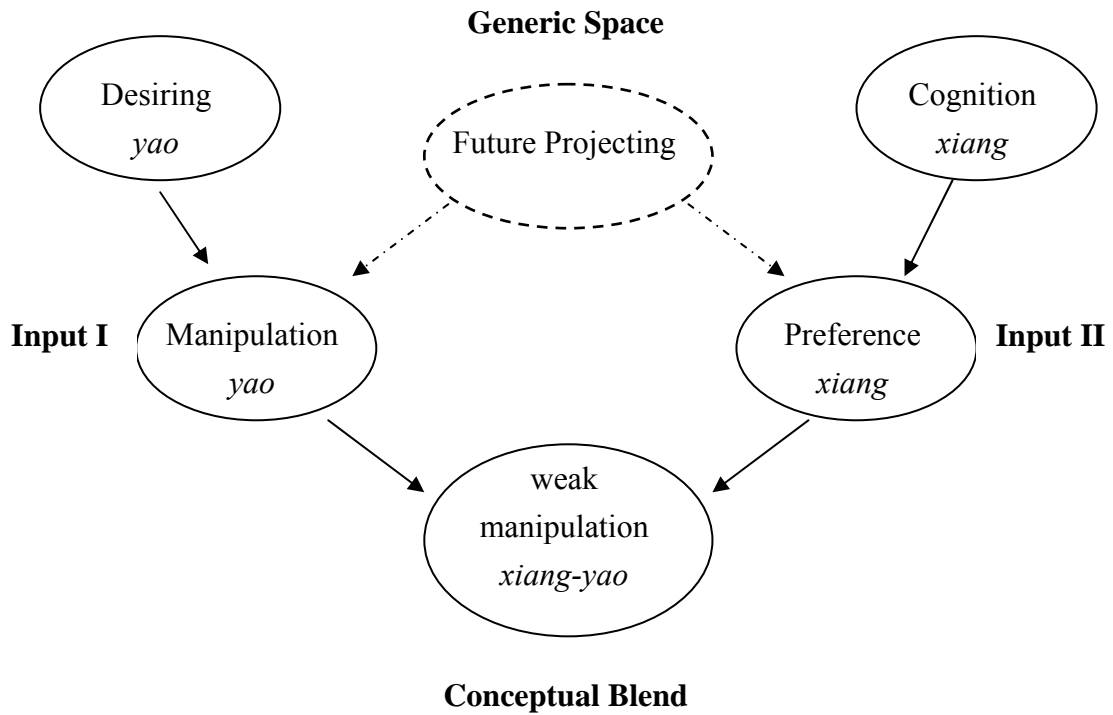
As a transitive subject control and object control verb, *yao* and *xiang-yao* can take nominal, verbal and clausal complements whereas *xiang* can take only verbal and clause complement rather than NP complement due to its epistemic property. As for the discrepancies between *xiang* and *yao*, *xiang* can take sentential complements which code epistemic certain/uncertainty, uncontrollable event and counterfactual event and can be modified by degree or comparative modifiers such as 很 *hen* ‘very’ and 比較 *bijiao* ‘comparatively’ while *yao* can not.

By attempting to account for their distinction, the four-space model of Conceptual Blending which incorporates the frame semantic analysis of *xiang* and *yao* is utilized. The combination of *xiang-yao* is illustrated in Figure 21 in the next page.

As we can see from Figure 21, Input I, the verb of manipulation *yao* and Input II, the verb of preference *xiang* both share the feature of future projecting. By blending with the two inputs, a new space, i.e. the blend, a verb of Intended_manipulate which code a weak manipulation is created. We could see the inheritance relations between

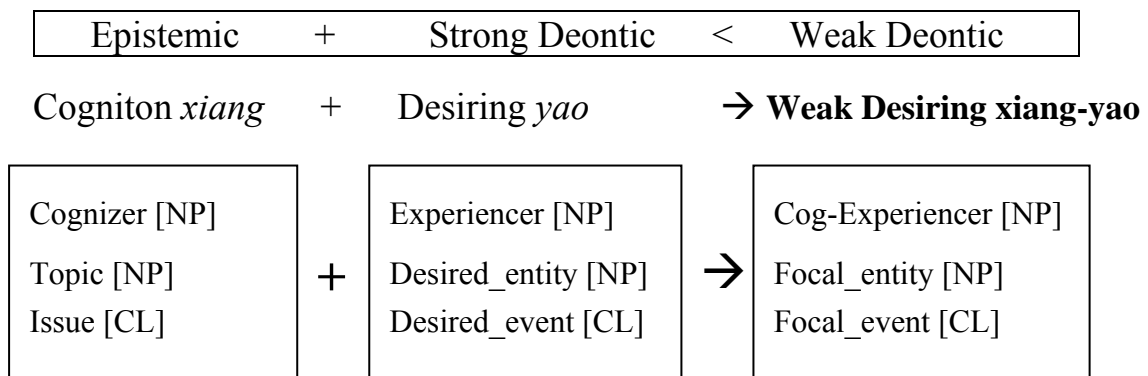
the generic desiring *yao* and the manipulative *yao*, and that between the cogitating *xiang* and the preference *xiang*.

Figure 21: Semantic Blending of *Xiang-yao* (Liu and Hsieh 2008)



We specify what are exactly blended will be accounted for by showing the frame convergence 1 and 2 and role coercion below.

Figure 22: Frame Convergence 1 with Role Coercion (Liu and Hsieh 2008)

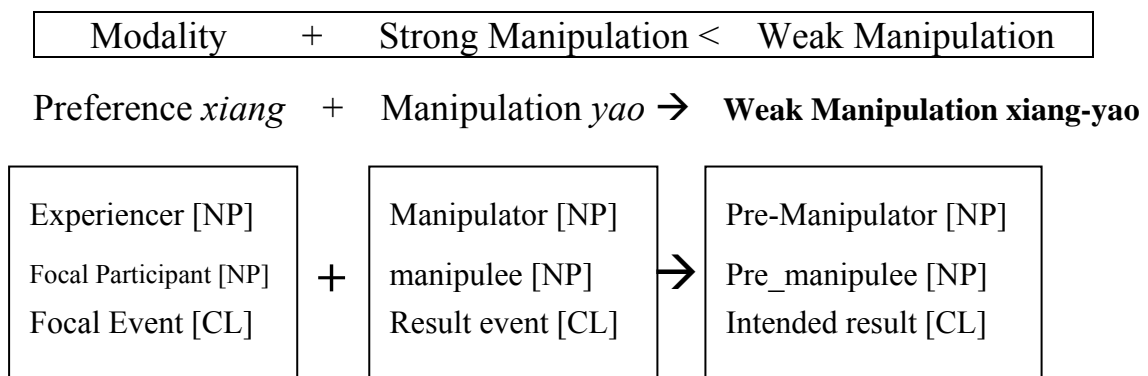


It can be observed from Figure 22 above that coercion of Frame Elements among the two frames follows the following veins:

- i. Cognizer + Experiencer → Cog-Experiencer (68 c, f)
- ii. Topic + Desired_entity → Focal_entity (68 c)
- iii. Issue + Desired_event → Focal event (68 f)

- (68) a. [他/Cognizer]在想 [這件事情/Topic]。 ‘He is thinking about this matter.’
- b. [他/Experiencer]要 [一個開罐器/Desired_entity]。 ‘He desires a can-opener.’
- c. [他/Cog-Experiencer]想要[這個電動玩具/Focal_entity]很久了。 ‘He longs for this game-boy for a long time.’
- d. [我/Cognizer]想[明天應該會下雨/Content]。 ‘I think it is supposed to rain tomorrow.’
- e. [我/Experiencer]要 [明天交作業/Desired_Event]。 ‘I desired to hand in the homework tomorrow.’
- f. [我/Cog-Experiencer]想要[明天回家/Focal_Event]。 ‘I want to go home tomorrow.’

Figure 23: Frame Convergence 2 with Role Coercion (Liu and Hsieh 2008)



It can be observed from Figure 23 above that coercion of Frame Elements among the two frames follows the following veins:

- i. Experiencer + Manipulator → Pre-Manipulator (69 c)
- ii. Focal Participant + manipulee → Pre_manipulee (69 c)
- iii. Focal Event + Result event → Intended result (69 c)

(69) a. [我/Experiencer]想[他/Focal_Participant] [牽我的手/Focal_Event]。
 ‘I want him to hold my hand.’

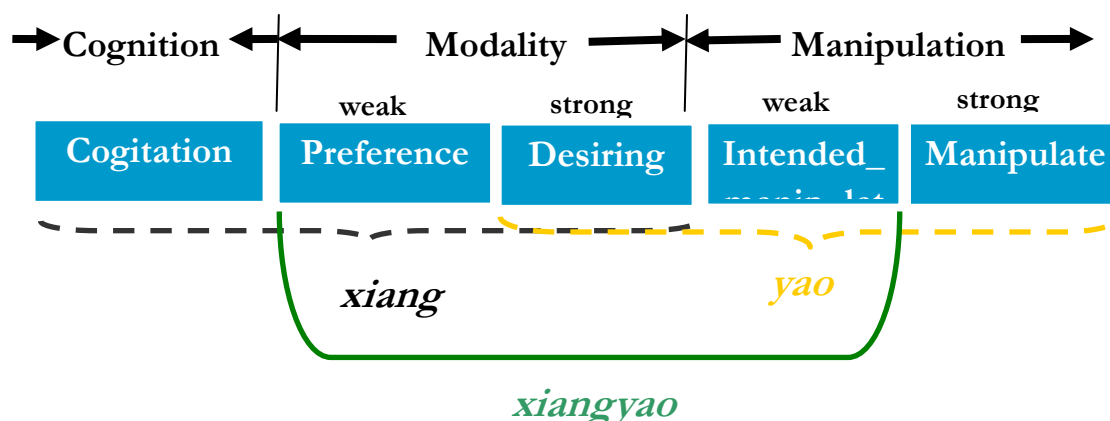
b. [老師/Manipulator]要[我們/Manipulee] [寫完作業/Resulting_event]，
 才肯讓大家放學。
 ‘The teacher asks everyone to finish writing the homework; otherwise we can not go home.’

c. [我/Pre-manipulator]想要[他/Pre-manipulee][牽我的手/Intended result]。
 ‘I desire him to hold my hand.’



When *xiangyao* behaves like *yao*, it codes strong modality to weak manipulation while when *xiangyao* behaves like *xiang*, it codes weak modality as a verb of preference. The overlap of the semantic properties and grammatical behaviors of *xiangyao* exhibit the interaction between modality and manipulation verbs. The semantic polarity can be shown in the Figure 24 below.

Figure 24: Semantic Polarity of *Xiang*, *Yao* and *Xiangyao*



To conclude, by anchoring lexical senses in semantic frames, the more lexicalized sequence *xiang-yao* is analyzed as a case of semantic blending with frame convergence. Frame Convergence is defined as coining two distinct frames in creating a new, converging frame with obligatory role coercion. Due to frame convergence, *xiang-yao* in Mandarin balances or averages out the modality strengths of its components: the strong deontic strength of *yao* is weakened by adding the epistemic uncertainty of *xiang*. The analysis confirms to the study of Chang (2003) with respect to the the features of “iconicity” in Chinese V-V compounds. Based on Chang, when the two verbs in the V-V compound share similar concept (such as *guan-shu* ‘to restrain, control’), it will develop as a coordinate construction by blending. Chang’s predication is in line with the study of *xiang-yao* in this paper. The combination of *xiang* and *yao* in Mandarin ultimately demonstrate the interaction between modality and manipulation.

4.4 Semantic Extension from Other P-C-U Verbs to Modality Verbs in Mandarin

By observing the syntactic behaviors of *kan*, *xiang*, *shuo* and those verbs listed in Table 7 (Overlapping Frames among P-C-U, Modality and Manipulation Verbs), the

verbs which probably display multiple memberships of P-C-U and modality are listed in Table 13 below.

Table 13: Verbs Extending from P-C-U to Modality

Verb Class	Modality Verb
Perception	看 <i>kan</i> 、感覺 <i>ganjue</i> 、覺得 <i>juede</i> 盼望 <i>panwang</i> 、盼 <i>pan</i>
Cognition	想 <i>xiang</i> 、猜 <i>cai</i> 、認為 <i>Renwei</i> ...
Utterance	說 <i>shuo</i> 答應 <i>dayin</i> 、承諾 <i>chengnuo</i> 、允諾 <i>yunnuo</i> 、應允 <i>yingyun</i>

Since the modality properties of *kan*, *xiang*, *shuo*, *ganjue*, *juede*, *cai*, and *renwei* has been discussed in Section 4.1, this section will take *panwang* ‘to look forward to’ and *dayin* ‘to promise’ which show the most frequent counts in the corpora for illustration and comparison.

By observing the data of *panwang* in the corpora, the author sorted the syntactic basic patterns as shown in the following examples.

(70) V+NP:

a. 它也盼望您的佇足參觀。 (Sinica)

ta ye panwang ninde zhuzu cangan
it also look forward to your stay visit
‘It also looks forward to your stay and visit.’

b. 我們永遠不會老，只要我們往前看，並愉快地盼望將來， (Sinica)

women yongyuan buhui lao , zhiyao women wangqian kan ,
bing yukuaidi panwang jianglai
we forever NEG-will old, as long as we toward front see, and happily
look forward to future
‘We will never be old as long as we look forward and expect the
future happily.’

- (71) V+VP: (Sinica)
 大家都**盼望**趕快到達目的地，
dajia dou hen panwang gankuai daoda mudedi
 everyone all very expect soon arrive destination
 ‘Everybody looks forward to arrive the destination very much.’
- (72) V+CL: (Sinica)
 a. 大家都**盼望**牠趕快長大。
dajia dou panwang ta gankuai zhangda
 everyone all expect it soon grow up
 ‘Everyone looks forward to seeing that it grows up soon.’
- b. 我很**盼望**您能重新考慮， (Sinica)
wo hen panwang nin neng zhongxin kaolu
 I very hope you could again consider
 ‘I hope that you could reconsider.’
- (73) V+nominalization: (Sinica)
 人若失去**盼望**，就容易自棄，
ren ruo shi qu panwang , jiu rongyi ziqi
 people if lose hope, JIU easy self-give up
 ‘Once losing hopes, people give up easily.’

Comparing to the syntactic behavior of the perception verbs *kan/kanjian* and the preference verb *xiwang* and *xiang*, the grammatical asymmetries are illustrated below.

- (74) V+NP:
- a. 它也**盼望**/***看**/?**看見**/***想**/***希望**您的佇足參觀。
*ta ye panwang/*kan/?kanjian/*xiang/*xiwang ninde zhuzu canguan*
- b. 我們永遠不會老，只要我們往前看，
 並愉快地**盼望**/***看**/***看見**/***想**/***希望**將來，
women yongyuan buhui lao , zhiyao women wangqian kan ,
*bing yukuaidi panwang/*kan/*kanjian/*xiang/*xiwang jianglai*

- (75) V+VP:
 大家都**盼望**/***看**/***看見**/***想**/***希望**趕快到達目的地，
*dajia dou hen panwang/*kan/*kanjian/xiang/xiwang gankuai daoda mudedi*
- (76) V+CL:
 a. 大家都**盼望**/***看**/***看見**/***想**/***希望**牠趕快長大。
*dajia dou panwang/*kanjian/xiang/xiwang ta gankuai zhangda*
 b. 我很**盼望**/***看**/***看見**/***想**/***希望**您能重新考慮，
*wo hen panwang/*kanjian/*xiang/xiwang nin neng zhongxin kaolu*
- (77) V+nominalization:
 人若失去**盼望**/***看**/***看見**/***想**/***希望**，就容易自棄，
*ren ruo shi qu panwang/*kanjian/*xiang/xiwang , jiu rongyi ziqi*

From the examples above, it is noticeable that *panwang* inherits the feature of perception verb (taking a nominalized complement) and preference verb (taking irrealis and modal complements). The metaphorical mapping is illustrated below.

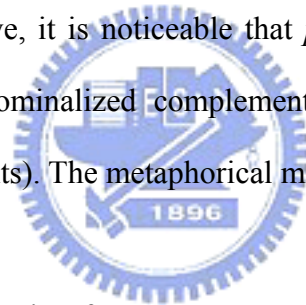
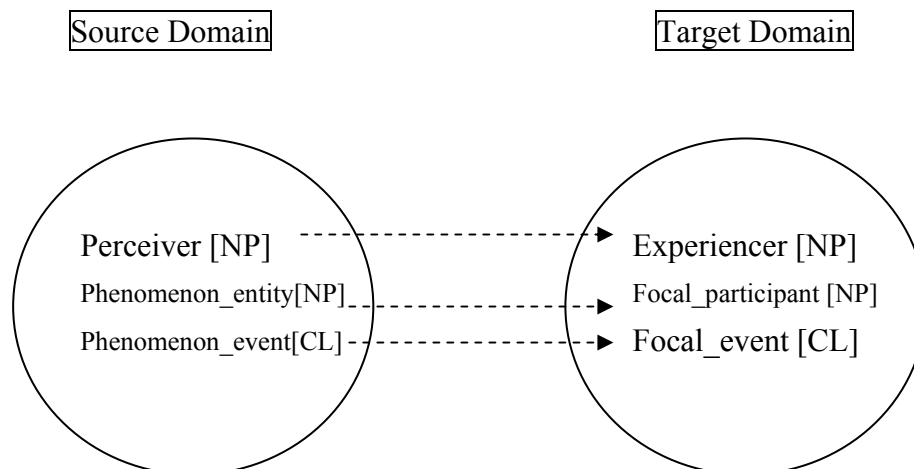


Figure 25: Metaphorical Extension from *Panwang* ‘to look forward to’ to *Panwang* ‘to hope’



As for the semantic extension from verb of utterance *dayin* to verb of modality *daiyin* can be exemplified in (23 b-d) which are replaced as (78 a-c) here for convenience.

- (78) a. …我…，就**答應**了他一聲：“好，我聽你的！” (Google)
...wo... , *jiu daying le ta yisheng* : “hao , wo ting ni de ! ”
...I...JIU answer he one-CL: “good , I listen yours.’
‘...I...then anwer him: okay, I listen to your words.’
- b. 我**答應**會準時到達。 (Google)
wo daying hui zhunshi daoda
I promise will on time arrive
‘I promise that I will arrive on time.’
- c. 他**答應**爸爸三年就回來， (Sinica)
ta daying baba san nian jiu huilai
he promise father three year JIU come back
‘He promised his father that he will come back in three years.’

In (78 a), *dayin* 答應 is an utterance verb which takes a message as its complement while in (78 b and c), the same verb takes a verbal or sentential complement encoding an event which the Speaker promises and is obligated to perform in the future. Furthermore, *dayin* in (78 a) and (78 b and c) are distinct phonologically. The former is pronounced as *dáyìn* while the latter is *dāyìn*. In Frame Net, the English verb promise belongs to the Commitment Frame. The definition of the frame states: ‘A Speaker makes a commitment to an Addressee to carry out some future action. This may be an action desirable (as with promise) or not desirable (as with threaten) to the Addressee.’ In other words, the deontic modality and the manipulation sense is not separated according to the definition. However, I shall distinguish between the two that promise and verbs alike tend to belong to the category of deontic modality since the subject of matrix and complements are

co-referent although to some extent it could be interpreted as the speaker causes him/herself to perform some action in the future. The commonality between the two groups is that the intention, no matter forcing oneself or others to do something, has to be conveyed by speaking. In other words, those verbs are speech act verbs which take speaking as their prerequisite.

4.5 Semantic Extension from Other P-C-U Verbs to Manipulation Verbs in Mandarin

The verbs which probably display multiple memberships of P-C-U and manipulation are listed in Table 14 below.

Table 14: Verbs Extending from P-C-U to Manipulation

Verb Class	Manipulation Verbs
Perception	聽 <i>ting</i> , 看 <i>kan</i> , 盯 <i>ding</i>
Cognition	想 <i>xiang</i> , 計劃 <i>jihua</i> , 打算 <i>dasuan</i> , 主張 <i>zhuzhang</i> ,
Utterance	叫 <i>jiao</i> , 喊 <i>han</i> , 呼喊 <i>huhuan</i> , 呼叫 <i>hujiao</i> , 呼籲 <i>huyu</i> , 吩咐 <i>fenfu</i> , 命令 <i>mingling</i> , 告訴 <i>gaosu</i> , 建議 <i>jianyi</i> , 提議 <i>tiyi</i>

Since the manipulative uses of *kan*, *xiang* and *shuo* has been discussed in Section 4.1, this section will take *ting* ‘to listen to’ and *jiao* ‘to call out’ which show the most frequent counts in the corpora for illustration and comparison.

The polysemous verb *ting* belongs to two different frames, i.e. Perception_active Frame and Compliance Frame in FrameNet (cf. Table 15).

Table 15: Senses and Semantic Frames of Polysemous *Ting*

Sense	Frame	Semantic Roles & Syntactic Category	Example
1 listen	Perception_active	Perceiver_agentive [NP] < * < Phenomenon [NP, VP]	我們聽著外面的蟲聲。 我們聽小鳥鳴叫。
		Imperative: Perceiver_agentive [NP] < (Manner) < * (Phenomenon)	你(仔細地)聽(那聲音)!
2 obey	Compliance	Protagonist[NP] < * < Norm[NP]	他很聽媽媽的話。

The semantic extension from perception to least manipulation for *ting* can be illustrated by the instance of *ting* 聽 shown in (79 a, b).

(79) a. perception: (*listen* in Perception_active Frame)

我們 聽₁ 著 外面 的 蟲聲。
Women ting zhe waimian de chongsheng
 we listen ASP outside DE insect-sound
 ‘We are listening to the sounds of the insects from outside!’

b. least manipulation: (*obey* in Compliance Frame)

他 很 聽₂ 媽媽 的 (話)。
Ta hen ting mama de hua
 He very listen mom DE words
 ‘He obeys his mom(his mom’s instruction).’

Comparing sentences (79 a) and (79 b), although the subject and complement of *ting*₁ and *ting*₂ are both noun phrase (NP), we found they differ in their semantic roles. The frame elements, i.e. participant roles, of (79 a) are Perceiver and Phenomenon_entity while those of (79 b) are Protagonist and Norm. Besides, the sense of *ting*₁ is compatible with aspectual marker, such as *zai* 在, *le* 了, *zhe* 著, and *guo* 過 whereas *ting*₂ is not. From (79 a) and (79 b), we notice that the root meaning

of *ting*₁ ‘to listen to’ is extended to *ting*₂ ‘to obey’ which codes submission—the reverse or least degree of manipulation. This confirms to the metaphorical linking suggested by Sweetser (1990): HEARING IS OBEDIENCE. The passive reception of phenomenon is analogous to the obedience to the authority and manipulation of others. Other perception verbs, such as *kan* 看 and *ding* 盯 show the reverse metaphorical extension: SEEING IS MONITORING.

As for the polysemous verb *jiao*, it belongs to three different frames, i.e. Communication_noise Frame, Name_conferral Frame, Request Frame and Commerce_buy Frame in FrameNet (cf. Table 16).

The semantic extension from utterance to manipulation for *jiao* can be displayed in (80 a, b).

- (80) a. Utterance: (*cry* in Communication_noise Frame)

我叫著：媽媽！小白呢？

(Sinica)

wo jiao zhe : mama ! xiaobai ne

I cry ASP: mom! Xiaobai INTR

‘I cry out: Mom! Where is Xiaobai?’

- b. Manipulation: (*request* in Request Frame)

他媽媽叫他去買紅糖，

(Google)

ta mama jiao ta qu mai hong tang

he mother call he go buy red sugar

‘His mother asks him to buy black sugar.’

Among the four senses, the meaning of ‘to cry’ extends to ‘to request’ as it changes from a verb of utterance to a verb of manipulation by sharing the common background frame, i.e. Communication Frame, and by receiving the meaning coerced by the construction X CAUSE Y (qiu/去) DO Z¹⁷, suggesting the Manipulator’s force

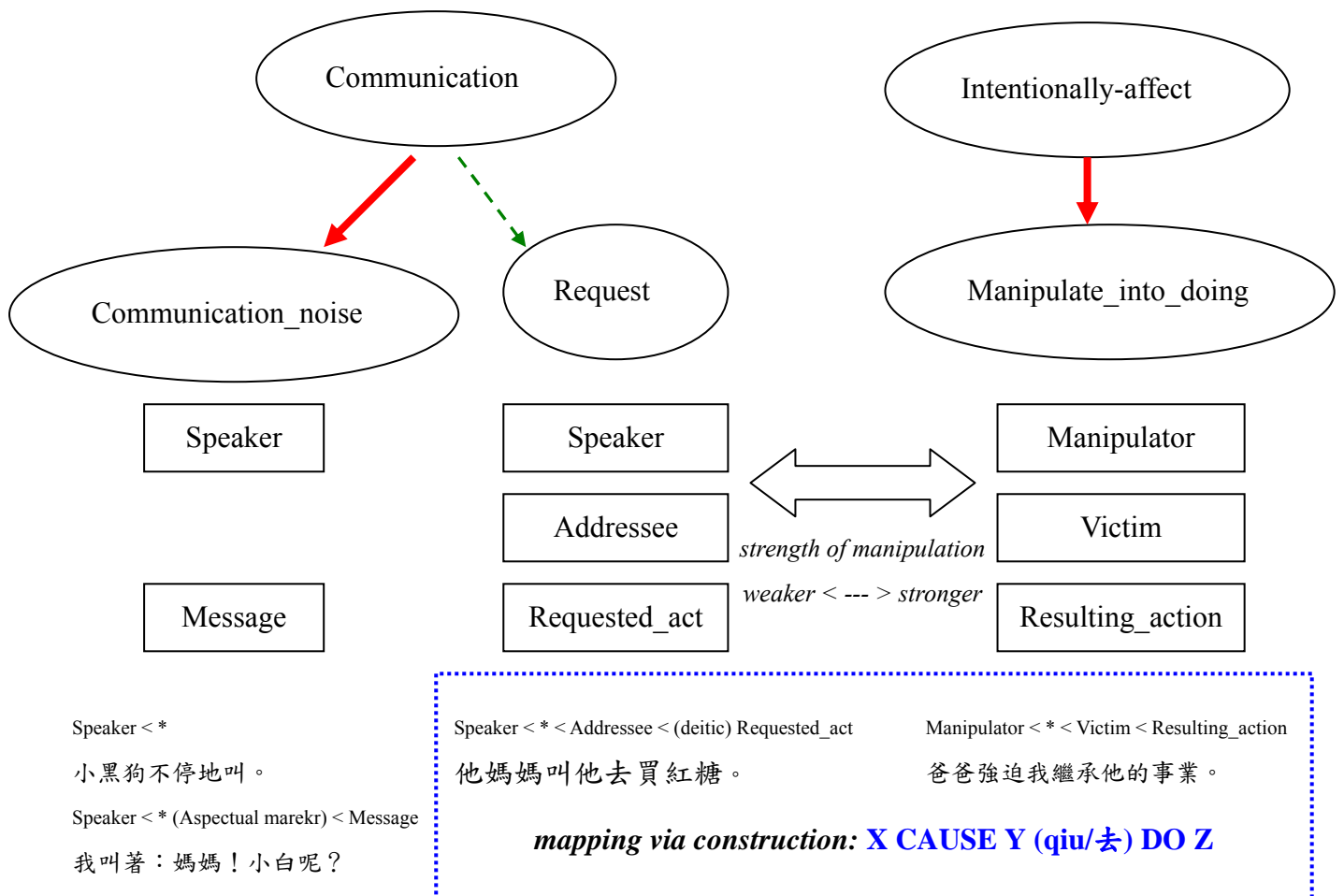
¹⁷ Another possibility to account for the manipulative use of *jiao* 叫 is that *jiao* 叫 might be the misuse of the causative verb *jiao* 教 in the archaic form due to their same pronunciation.

exerting on the Victim (see Figure 26 below).

Table 16: Senses and Semantic Frames of Polysemous *Jiao* (based on Huang 2008)

Sense	Frame	Semantic Roles & Syntactic Category	Example
1 cry	Communication_ noise	Sound_producer[NP] < *	小黑狗不停地叫。
		Speaker[NP] < * < Message[NP, VP, CL]	他叫著：「地震/搶錢阿/任何人都 不准來！」
		communicator[NP] < * < addressee [NP]	主人叫牠時能聽音 辨位找到主人
2 request	Request	Speaker[NP] < * < Addressee[NP] < Message[VP]	老師叫我們寫作 業。
3 purchase	Purchase	Buyer [NP] <向+ Seller [NP] < * < Goods [NP]	那位客人向老闆叫 了碗麵。
4 Claim	Claim ownership	Claimant [NP] < * <Property	那小鬼說要叫律師
5 name	Name_conferral (Referring_by_name)	Speaker[NP] < * < Entity[NP] <Name[NP]	他叫那隻狗小白。
6 Being_named	Be_named	Entity [NP] < * < Name [NP]	他的名字叫尼古拉
7 Being_labeled	Referring_by_label	Entity [NP] < * < Label [NP]	什麼叫無私奉獻， 什麼叫對黨的忠誠
8 Complain	Complain	Speaker[NP] < * < Message	有人叫錢不夠

Figure 26: Relations and evolvement of frame elements and syntactic patterns among Communication_noise Frame, Request Frame and Manipulation_into_doing Frame



It can be observed from Figure 26 above that coercion of Frame Elements among the tree frames follows the following three veins:

- i. Speaker → Manipulator
- ii. Addressee → Victim
- iii. Message → Requested_act → Resulting_action

On the one hand, the semantic extension from Request to Manipulation Frame shows a gradation of manipulative strength. The Request Frame codes a weaker manipulation since ‘X requests Y to do something’ doesn’t imply the successfulness of the manipulation whereas the Manipulate_into_doing Frame codes stronger

manipulation since ‘X manipulates Y to do something’ implies that the manipulation and obligation imposed on the manipulee have been exerted. On the other hand, the different meanings of *jiao* are accompanied by distinct syntactic features. The sense of *jiao*₁ is compatible with aspectual markers, such as *zai* 在, *le* 了, *zhe* 著, and *guo* 過 whereas *jiao*₃ is not. Other utterance verbs, such as *fenfu* 吩咐 shows similar semantic extension to manipulation verbs via construction.

4.6 Concluding Remarks

Attempting to answer the four questions concerning the degree of event integration displayed by P-C-U verbs in their semantic extension and the manner modality and manipulated related and overlap, this chapter examines and analysis the different mechanisms operated by P-C-U verbs in their extension. It has been shown that P-C-U verbs exhibit different degree on expressing epistemic certainty and the force of manipulation as shown by the collocational restriction with *neng* ‘can’ and *yao* ‘must’ (shown in 81 a-c). The overlap between modality and manipulation verbs can be verified by the combination of *xiang-yao*.

- (81) a. 我盼望他明天能/*要來
*wo panwang ta mingtian neng/*yao lai*
 I look forward to he tomorrow could/*must come
 ‘I expect that he could/(**must*) come tomorrow.’
- b. 我想要他明天*能/*要來
*wo xiangyao ta mingtian *neng/*yao lai*
 I want he tomorrow could/*must come
 ‘I want him (**could/*must*) to come tomorrow.’
- c. 我叫他明天*能/要來
*wo jiao ta mingtian *neng/yao lai*
 I call he tomorrow **could/must* come
 ‘I request him that he (**could*)/*must* come tomorrow.’

The study has shown that, although at the first glance, P-C-U, modality and manipulation seem to be three distinct verb classes. P-C-U codes one's stative perceptual experiences, mental process and utterance produced. None of the other party is gotten involved; Modality codes either one's opinions, assumptions or one's intention or volition to perform certain act; Manipulation codes one's desire or intention of forcing the other party to exert certain event. However, the three are interrelated and sometimes could not be clearly cut. By adapting a frame-based approach along with the compatible four-space model of Conceptual Blending, metaphor and inference of speaker's subjectivity, the semantic extensions of the three target verb classes are accounted for in an appropriate manner.

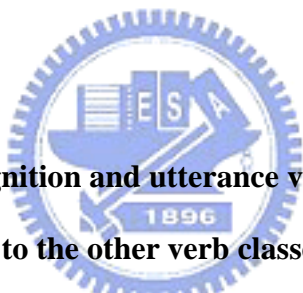


Chapter 5 Conclusion

This chapter consists of two parts. 5.1 summarizes the current study. Then, 5.2 pinpoints aspects for further study.

5.1 Summary

By applying Frame Semantics, Construction Grammar, the theory of Subjectivity and the four-space model of Conceptual Blending to the verbs displaying multiple memberships among P-C-U, manipulation and modality verbs, possible accounts based on the observation of both semantic properties, basic syntactic patterns and lexical, aspectual collocations are provided to the four questions raised in the Introduction:

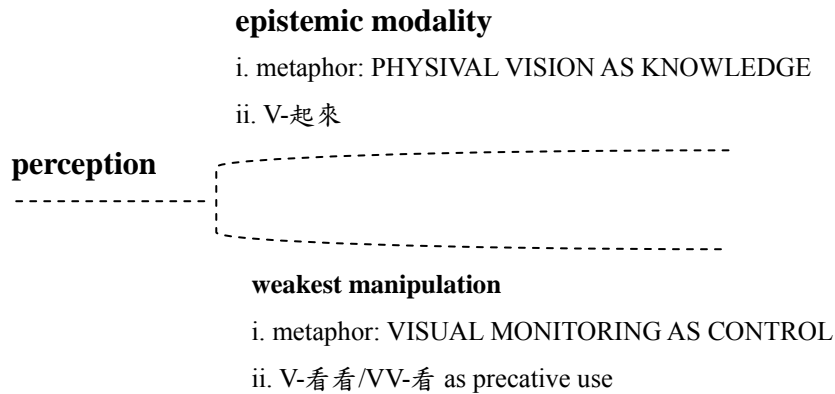
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- 1) **Why do perception, cognition and utterance verbs form a group?**
 - 2) **Do P-C-U verbs extend to the other verb classes by the same mechanisms?**
 - 3) **Do P-C-U verbs behave the same in their degree of event integration?**
 - 4) **How are modality and manipulation related and in what way they overlap?**

From the general findings and frame-based analysis of the extension among the P-C-U, modality and manipulation verbs, it is shown clearly that

- 1) The collocational sequences of cause-effect relations can account for the semantic motivations underlying the grammatical symmetry and the interrelations among verbs of perception, cognition and utterance. To put it in a macroscopic way, one perceives the world via his or her perception and conveys their mental content (including opinion, volition, and intention, etc.) by means of language.

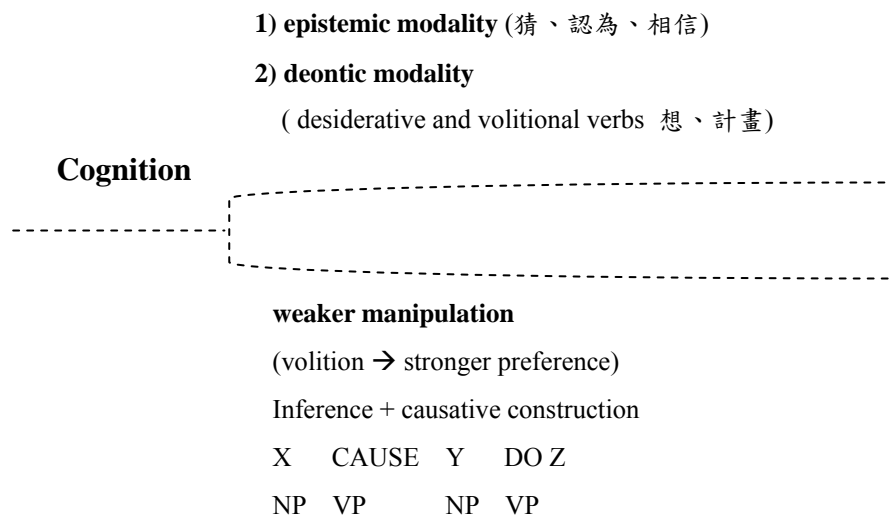
- 2) The extensions from P-C-U to the other two verb classes are operated by different mechanisms (illustrated in Figure 27-29 individually).

Figure 27: Mechanisms of the Extensions from Perception to Modality and Manipulation



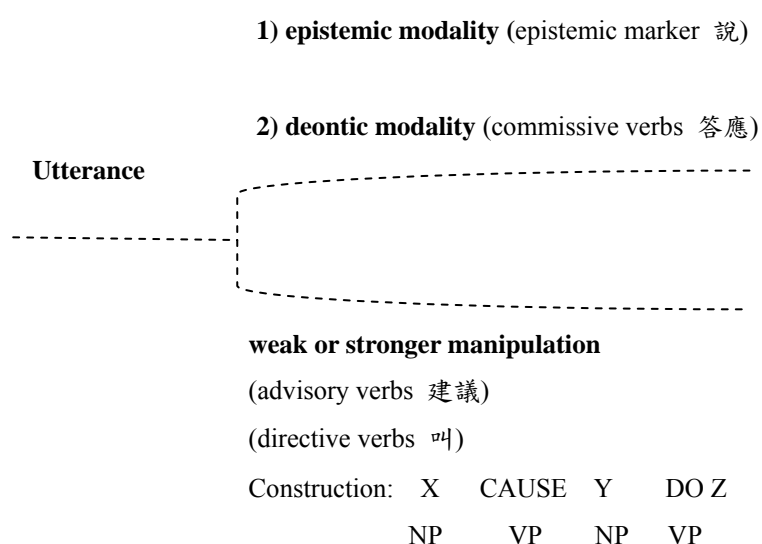
Verbs of perception extend to the other two by metaphor and undergoing grammaticalization resulting in the predicate *V-qilai* expressing the personal judgment or inference of the perceiver relying on external phenomenon as the evidence or the verbal affix *VV-kan /V-kankan* which suggest 'attempting' aspect.

Figure 28: Mechanisms of the Extensions from Cognition to Modality and Manipulation



Verbs of cognition interact with epistemic modality within the attitudes and perspectives held by cognizer and extend their meanings from volition to intended manipulation via the causative construction X CAUSE Y (lai/qiu) DO Z. As for verbs of utterance, it functions as an epistemic marker which attaches to mental verb or occupies the sentence-initial and sentence-final position to intensify the perspective or the counter-expectation toward a proposition.

Figure 29: Mechanisms of the Extensions from Utterance to Modality and Manipulation



Furthermore, utterance verbs exert the illocutionary force in the communication event and thus offer a prerequisite for various manipulative verbs such as *suggest* and *threaten*.

2) The extended meanings from P-C-U to modality and manipulation exhibit different degree on expressing epistemic certainty and the force of manipulation: perception < cognition < utterance. This is held true for both *kan*, *xiang* and *shuo* at the utterance meaning level in a speaker-hearer interacting scenario and other verbs

such as *panwang*, *xiang*, *xiangyao*, *jiao*, and *yao* at the level of sentence meaning. Representation of meanings at different level is construed and tackled within distinct scope under the infrastructure of Frame Semantics. Utterance meaning is specified by the role-internal specifications of FEs while lexical meaning follows the ‘one sense, one frame’ principle and is dealt within the individual frame.

3) The interaction between modality and manipulation verbs can be exhibited by the combination and blending of *xiang-yao* by the operation of Conceptual Blending with frame convergence and role coercion.

In attempt to probe into the the continuum among P-C-U, modality and manipulation suggested by Givón (1993b), this paper helps to clarify the distinctions among P-C-U verbs in their degree of epistemic certainty of modality use and the force of manipulation in their semantic extension by applying distinct coding means and motivations and how other members of the same verb class extended to another systematically by the integrated framework of Frame Semantics, Construction Grammar, the theory of Subjectivity in the Four-space model of Conceptual Blending.

Further, the representation of utterance and sentence meaning is construed and tackled with at different scopes within the infrastructure of Frame Semantics. The study ultimately provides a unified framework in analyzing and representing semantic extensions.

5.2 Questions for Future Research

The above descriptions about the semantic extension from P-C-U verbs to manipulation and modality verbs in Mandarin remain immature in two ways. First of all, since this study takes a synchronic approach, data of diachronic source might be helpful in account for or supporting for the semantic extensions of the verbs at issue. Secondly, some peripheral uses of the P-C-U verbs, such as the phrases listed in the Table 17 below, reveals the fact that the morphological make-up of verbs is likely to have influence on the semantic extension. Those aspects mentioned above may be worth studying in the future.

Table 17: P-C-U Verbs Attached with Modality Affix (Hsieh 2006)

Verb Class	Modality Type	Verb Attached with Modal Affix
Perception	epistemic	<u>可望</u> <i>kewang</i> 、 <u>傳聞</u> <i>chuanwen</i> 、 <u>據聞</u> <i>juwen</i> 、 <u>看似</u> 、 <i>kansi</i> (fixed phrase) <u>不見得</u> <i>bujiande</i>
Cognition	epistemic	<u>可想</u> <i>kexiang</i> 、 <u>想必</u> <i>xiangbi</i> 、 <u>想當然</u> <i>xiangdangran</i> 、 <u>據悉</u> <i>juxi</i>
	deontic	<u>休想</u> <i>xiuxiang</i>
	evaluative	(fixed phrase) <u>不想</u> <i>buxiang</i> 、 <u>未料</u> <i>weiliao</i> 、 <u>不料</u> <i>buliao</i> 、 <u>想不到</u> <i>xiangbudao</i> 、 <u>沒想到</u> <i>meixiangdao</i>
Utterance	epistemic	<u>說來</u> <i>shuolai</i> 、 <u>據說</u> <i>jushuo</i> 、 <u>據報</u> <i>jubao</i> 、 <u>難說</u> <i>nanshuo</i> 、 <u>難講</u> <i>nanjiang</i> 、 <u>難道</u> <i>nandao</i> 、 <u>說不定</u> <i>shuobuding</i> (fixed phrase) <u>傳說</u> <i>chuanshuo</i> 、 <u>傳言</u> <i>chuanyan</i>

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Website Resources

Sinica Corpus (中研院平衡語料庫): <http://www.sinica.edu.tw/SinicaCorpus/>

Chinese Wordnet (中文詞彙網路): <http://cwn.ling.sinica.edu.tw/>

Google (online archive): www.google.com

On-line Chinese Dictionary of Ministry of Education: <http://140.111.34.46/dict/>

British National Corpus <http://www.natcorp.ox.ac.uk/>



Appendix I: The Frame-to-frame Relations in FrameNet (Ruppenhofer *et al.*
2006:8, 103-111)

Frame-to-Frame Relations	Definition	Example
Inheritance	An 'is-a' relation. A is a subtype of B.	Revenge frame inherits from the Rewards_and_punishments frame.
Perspective_on	A provides a particular perspective on an un-perspectivized frame.	Hiring frame and Get_a_job frame perspectivize on the Empolyment_start frame.
Subframe	A (a simple event) is a subpart of B(a complex event).	Arrest frame, Arraignment frame, Trial frame and Sentencing frame are subframes of Criminal_process frame.
Precedes	A precedes B.	Being_aware frame precedes Fall_asleep frame, which precedes Waking_up or Getting_up frame, which in turn precedes the Being_aware frame.
Inchoative_of	A is inchoative of B.	Change_position_on_a_scale frame is inchoative of Position_on_a_scale frame.
Causative_of	A is causative of B.	Cause_change_position_on_a_scale frame is causative of Change_position_on_a_scale frame.
Using	A presupposes B as background.	Speed frame uses Motion frame.
See_also	A and B are similar and should be carefully differentiated, compared and contrasted.	When seeing Scrutiny frame, one should also see Seeking frame.

**Appendix II: English and Chinese equivalent Lemmas Belonging to P-C-U Verbs,
Manipulation Verbs and Modality Verbs in FrameNet**

Verb Class	English Lemmas from FrameNet II	Equivalent Chinese Lemmas
Perception related verbs	(3) <u>Perception_experience</u> Frame: detect, feel, hear, overhear, perceive, see, sense, smell, taste	看見、看到、見到、 瞥見、瞟見、聞到、 嗅到、聽見、聽到、 感覺到、感到
	(4) <u>Perception_active</u> Frame: admire, attend, eavesdrop, eye, feel, gape, gawk, gaze, glance, goggle, listen, look, observe, palpate, peek, peep, peer, pry, savour, smell, sniff, spy, squint, stare, taste, view, watch	看、瞧、盯、瞪、窺、 注視、審視、凝視、 掃視、瞥視、觀察、 觀看、觀測、端詳、 監視、查看、察看、 眺望、偵察、視察、 察看、看護、看守、 窺視、窺見、窺探、 欣賞、觀賞、瀏覽、 檢視、目擊、 聽、偷聽、傾聽、聆聽、 竊聽、打聽、 嘗、吃、品味、品嚐、 摸、觸、摸索、撫摸、 觸摸、嗅、聞
	(3) <u>Appearance</u> Frame: appear, feel, look, reek, seem, smell, sound, stink, taste	感覺起來、看起來、 聽起來、聞起來、 嘗起來、嚐起來、 吃起來、摸起來、 看來、聽來、看上去、 聞上去、摸上去
	(4) <u>Perception_body</u> Frame: ache, ail, burn, hurt, itch, pain, prickle, smart, sting, tickle, tingle	(感到)疼、痛、痠、癢、 刺痛
	(5) <u>Perception</u> Frame: Perceive	感覺、覺得、感到、 感知
	(6) <u>Attention</u> Frame: attend	警覺、注意、留神

	(7) <u>Detect (Locating)</u> : find, locate	找到、找出、看出、聽出、聞出、嗅出、摸出、吃出、察覺(出)、覺察(出)、尋得、發現
	(8) <u>Scrutinize (Scrutiny) Frame</u> : Check, examine, eyeball, look, monitor, scrutinize, skim...	檢視、檢查、偵察、觀察、視察、查看、審視...
Cognition related verbs	(1) <u>Awareness Frame</u> : aware, believe, comprehend, conceive, imagine, know, presume, reckon, suspect, think, understand	想、知道、理解、瞭解、了解、清楚、明白、懂(得)、曉得
	(2) <u>Becoming aware Frame</u> : chance_(across), chance_(on), come_(across), come_(upon), descry, detect, discern, discover, encounter, espy, fall_(on), find, find_out, happen_(on), learn, locate, note, notice, observe, perceive, pick up, recognize, register, spot, spy out	發現、察覺(到)、發覺、學會、認識到、得知、獲悉、注意到、意識到
	(3) <u>Certainty Frame</u> : believe, doubt, trust, certain, sure, uncertain	相信、懷疑、確定、確信、堅信、深信
	(4) <u>Cogitation Frame</u> : brood, consider, contemplate, deliberate, dwell, meditate, mull_over, muse, ponder, reflect, ruminate, think, wonder	沈思、考慮、思忖、思量、思索、計劃、打算、衡量、考量、思考、想
	(5) <u>Coming to believe Frame</u> : ascertain, conclude, deduce, determine, figure out, find out, find, guess, infer, learn, puzzle out, realize, surmise, work out	猜、猜想、料想、斷定、推斷出、推論出、推論、領悟、領會
	(6) <u>Evoking Frame</u> : bring to mind, call to mind, conjure, evoke, put in mind_(of), recall, remind, ring a bell	想起、想到、記起

	(7) <u>Invention Frame</u> : coin, come up, conceive, concoct, contrive, cook_up, create, design, devise, formulate, hatch, improvise, invent, think up	創造、創作、構思、構想出、發明、想出、想到
	(8) <u>Memory Frame</u> : bethink_oneself, forget, recall, recollect, remember, retain	想起、回憶起、回想起、想到、記起、記住、不記得、忘、忘記
	(9) <u>Opinion Frame</u> : expect, feel, figure, suppose, think	想、認為、以為、覺得、看、感覺
	(10) <u>Remembering experience Frame</u> : forget, look back, recall, remember, reminisce	想起、回想起、想到、記起、不記得、忘、忘記、追憶、回想
	(11) <u>Remembering information Frame</u> : forget, remember	想起、回想起、想到、記起、忘、忘記
	(12) <u>Remembering to do Frame</u> : forget, remember	忘記、記得
Utterance (communication) related verbs	(1) <u>Statement Frame</u> : acknowledge, add, address, admit, affirm, allege, announce, assert, attest, aver, avow, caution, claim, comment, concede, confirm, conjecture, contend, declare, deny, describe, exclaim, explain, gloat, hazard, insist, maintain, mention, note, observe, pout, preach, proclaim, profess, propose, reaffirm, recount, refute, reiterate, relate, remark, report, say, smirk, speak, state, suggest, talk, venture	說、講、道、說話、講話、演說、承認、斷言、宣稱、宣佈、聲稱、表示、告誡、主張、批評、解釋、說明、評論、宣告、聲明、提議、建議、評述、讚揚、稱頌、敘述、講述、反駁、談論、報告、報導、陳述、揭露...
	(2) <u>Discussion Frame</u> : communicate, confer, debate, discuss, negotiate, parley	溝通、商談、協商、協調、商量、討論、爭論、商談、談判、洽談、會談
	(3) <u>Chatting (Conversation) Frame</u> : chat, converse, gab, gossip, joke, shoot the breeze, speak, talk, yak	談、閒聊、閒談、談天、聊天、瞎扯

	(4) <u>Commitment Frame</u> : commit, promise	答應、承諾、允諾
	(5) <u>Encoding Frame</u> : cast, couch, express, formulate, frame, misword, phrase, put, word	表達、表示、表述
	(6) <u>Communication Manner Frame</u> : babble, bluster, chant, chatter, drawl, gabble, gibber, jabber, lisp, mouth, mumble, mutter, natter, prattle, rant, rave, shout, simper, sing, slur, stammer, stutter, whisper	吵嚷、吟誦、誦讀、 喋喋不休、嘮嘮叨叨、 瞎扯、嘮叨、嘀咕、 咕噥、嚙囁、發牢騷、 吟詠、結巴、支吾、 耳語、低語
	(7) <u>Communication Noise Frame</u> : bark, bawl, bellow, bleat, bray, burble, cackle, chirp, chirrup, chuckle, cluck, coo, croak, croon, crow, cry, drone, gasp, grate, groan, growl, grunt, gurgle, hiss, hoot, howl, moan, murmur, purr, rap, rasp, rattle, roar, rumble, scream, screech, shriek, shrill, snarl, snort, splutter, sputter, squawk, squeak, squeal, thunder, titter, trill, trumpet, twitter, wail, warble, wheeze,...	呼、叫、喊、大叫、 慘叫、驚叫、高叫、 高呼、疾呼、高喊、 大笑、怒吼、怒號、 哀號、吼叫、哭叫、 呼叫、喊叫、叫喊、 呼喊、叫嚷、吶喊、 哭喊、叫囂、嘶叫、 呻吟、咆哮、咕噥...
	(8) <u>Questioning Frame</u> : ask, grill, inquire, interrogate, query, question, quiz	問、詢問、拷問、盤問、 審問、質問、訊問、 提問
	(9) <u>Request Frame</u> : appeal, ask, beg, beseech, call, command, demand, entreat, implore, invite, order, plead, request, summon, tell, urge	指揮、要求、乞求、 請求、懇求、哀求、 邀請、催促、力勸、 慫恿、命令、呼籲、 吩咐、告訴、叫、建議
	(10) <u>Response Frame</u> : react, respond	答、回答、回應、回覆

Manipulation related verbs	(1) <u>Manipulation into doing Frame</u> : badger, blackmail, bully, cajole, cheat, con, deceive, defraud, dupe, flatter, fool, harass, lure, manipulate, trick	困擾、糾纏、敲詐、勒索、脅迫、威嚇、欺侮、勾引、誘騙、欺騙、騙取、詐取、哄騙、欺詐、愚弄、諂媚、奉承、騷擾、引誘、誘惑、操縱、要求、要、命令
	(2) <u>Causation Frame</u> : bring on, bring, bring_about, cause, induce, lead_(to), leave, make, mean, precipitate, put, raise, render, result_(in), send, wreak	導致、促使、誘發、引起、引出、使得、喚起、造成、迫使、施加、施行
	(3) <u>Suasion Frame</u> : convince.v, dissuade.v, motivate.v, persuade.v, sway.v	說服、勸服、勸阻、激發、支配、統治、影響
	(4) <u>Request Frame</u> : appeal, ask, beg, beseech, call, command, demand, entreat, implore, invite, order, plead, request, summon, tell, urge	指揮、乞求、請求、懇求、哀求、邀請、催促、力勸、慫恿、呼籲、吩咐、告訴、建議、叫
	(5) <u>Commitment Frame</u> : consent, covenant, pledge, threaten	同意、贊成、威脅、恐嚇
	(6) <u>Grant Permission Frame</u> : allow, approve, clear, greenlight, let, okay, permit, restrict, sanction, suffer	允許、准許、容許、許可、認可、批准、贊成、同意、讓、限制、限定、約束
	(7) <u>Compliance Frame</u> : abide_(by), adhere, breach, break, circumvent, comply, conform, contravene, flout, follow, honor, keep, obey, observe, play by the rules, submit, transgress, violate	依從、順從、遵從、服從、聽從、聽話、遵造、遵守、屈服、違反、違背、違法、違犯、規避

Modality related verbs	(1) <u>Desiring Frame</u> : ache, aspire, covet, crave, desire, fancy, feel_like, hanker, hope, hunger, long, lust, pine, thirst, want, will, wish (that), wish, yearn, yen	渴望、希望、盼望、 期待、期望、熱望、 嚮往、想要、願、 貪求、貪圖、垂涎、 要、需要
	(2) <u>Preference</u> : disprefer, favor, prefer	寧可、寧願、偏愛、 偏好、偏袒、想
	(3) <u>Capability Frame</u> : can	能、會
	(4) <u>Being obligated Frame</u> : got_to, gotta, hafta, have to, must, ought to, oughta, should	必須、得、應該、應當
	(5) <u>Desirable event Frame</u> : ought to, should	必須、得、應該、應當
	(6) <u>Likelihood Frame</u> : can, may, might, tend	能、會、可能、也許
	(7) <u>Opinion Frame</u> : expect, feel, figure, suppose, think	想、認為、以為、覺得、 看、感覺
	(8) <u>Commitment Frame</u> : commit, promise	答應、承諾、保證、 允諾
	(9) <u>Appearance Frame</u> : appear, feel, look, reek, seem, smell, sound, stink, taste	感覺起來、看起來、 聽起來、聞起來、 嘗起來、嚐起來、 吃起來、摸起來、 看來、聽來、看上去、 聞上去、摸上去