Chapter 1

Introduction

1.1 The Background

In recent years, considerable concern has arisen over the interface of semantics and syntax in linguistic research. A growing number of studies are now available to investigate the interaction between the lexical semantic properties and syntactic behaviors. Both of Levin (1993) and Pustejovsky (1995) have tried to explain how lexical meaning predicts syntactic regularities. Moreover, Goldberg (1991, 1995) introduces the interaction between verbs and constructions to figure out a new perspective in lexical semantics. Although much work has been done on the lexical semantics and verbal classification; however, more detailed and corpus-based studies are needed on the analysis of verbs in Mandarin.

While we were working on the analysis of verbal classification in Mandarin, concerning P-C-U (perception-cognition-utterance) verbs and Emotion verbs, we found that some groups of verbs were quite different from those inherent or prototypical types of these verbal frames, both in syntax and semantic; in the Sinica Balanced Corpus, the status or categorization of these verbs in linguistic analysis is still ambiguous and unclear. For example, in the following cases of predicates, the parsing result of constituents may differ even in the same one lexical entry:

- Parsing dilemmas from Sinica Balanced Corpus data:

    1a. 沒有人刻意地**高喊**愛鄉土等口號。

    1b. 陳國平一再高**喊**我沒有打警察。

    2a. 現在她又想**狂喊**了。

    2b. 在這，她可以狂**喊**，可以哭泣。

   3a. 各家旅行社都在**哭窮**。

    3b. 縣長余陳月瑛趁機向李登輝總統**哭窮**。

Among the preceding examples, the bold words represent the parsing units of constituents from the corpus. It is shown that the predicates, such as 高喊/狂喊/哭窮, are analyzed sometimes as an independent predicate, sometimes as a separated verb 喊/哭 with other subcategorized participants. We claim that these groups of verbs are semi-lexicalized lexical entries with the form-and-meaning mapping, defined as *verbs of morphologically open class* in terms of their specific and productive morphological make-ups. Their varied morphological structures in lexicalization may be derived from some syntactic patterns via deconstructionalization and incorporation of the frame-profiled elements via event conflation due to high frequent uses in discourse.

1.2 The Issue

The purpose of this paper aims to explore three intriguing cases of lexicalization among P-C-U verbs and emotion predicates in Mandarin Chinese, including lemmas such as 1) Stimulus-headed predicates 可憐/可愛/迷人/氣人/有趣/有意思/令人興奮/令人高興, 2) Verb-Complement sequences 叫好/叫苦/喊停/喊窮/喊冤/喊話/哭窮/哭累, and 3) Manner-Verb combinations 暗叫/高叫/高喊/狂喊/大哭/痛哭/大笑/冷笑. The examination is focused on figuring out the following questions:

(a) How is the morphological pattern and lexical status of the predicates in lexicalization?

(b) What characteristics do the predicates have in syntax, semantics and pragmatics?

(c) What is the restriction and bridge involved in lexicalization of the predicates?

The corpus-based approach may be of importance in doing more complete and empirical studies in linguistic research. Based on this approach, the remainder of this paper is divided into five sections. The first section is a review of the literature. The second section describes the database and the methodology. The third section presents the observations and findings. And the next section is the frame-based analysis of the Verbs of Morphologically Open class. Finally, conclusions of this paper are presented.
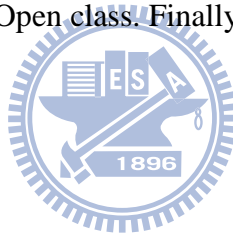
Chapter 2
Literature Review

Lexical semantic studies have drawn much attention in current linguistic research, which claims that the syntactic behavior of a verb, especially its argument expression, is determined by the meaning of the verb, as noted by Atkins *et al*. (1988), Atkins and Levin (1991), Levin (1993), and Pustejovsky (1995), etc. Levin (1993) and Pustejovsky (1995) have tried to explain how lexical meaning predicts syntactic regularities. One approach is to study the differences between near synonyms to identify the minimal semantic attributes that distinguish the differences proposed in Tsai *et al*. (1998), Liu (1997), and Liu *et al*. (1998). Based on this approach, many research results have been increasingly published focused on a certain synonym pair or verbal framework, such as Liu *et al*. (1997) on building verbs *JIAN*, *GAI*, and *ZAO*, Liu *et al*. (1999) on chasing verbs *ZHUI* and *GAN*, Liu *et al*. (2000) on throwing verbs *TOU*, *ZHI*, *DIU*, and *RENG*, Chang *et al*. (2000) on mental verbs, and Chief *et al*. (2000) on verbs meaning "beneficial", *FANGBIAN* and *BIANLI*.

Moreover, Chang, L., K. Chen, et al. (2000) extended the study of lexical semantics in Mandarin emotion verbs and proposed that distributional patterns of grammatical functions from corpus data observation demonstrate the distinctive differences between near synonym pairs in Mandarin emotion verbs such as *GAOXING*/*KUAILE, NANGUO/TONGKU,* and *HAIPA/KONGJU*. Besides, Liu, M. (2002) also explored semantic features of internal or external causes in the case of emotional activity verbs such as *XIANMU/JIDU* and *TONGQING/LIANMIN*. In this study, we base on the methodology of previous studies to analyze verbs of morphologically open class in

Mandarin, in terms of syntactic behaviors, grammatical functions, frame-based semantic features, and morphological patterns.

In Gu's study of "*KEPA/PAREN*" (2002), he found that when the verbal type of 「V 人 rén」transformed to the other type of 「可 kě V」in morphology, syntactic differences between the two types of verbs arise, such as the distinct argument structure and the voice change through backgrounding agent/foregrounding theme. Such a pair of verbs could be the supporting evidence for the interaction among syntax, morphology and semantics. He mentioned that these verbs occupied a position between a derivative and a compound, and correlated with certain syntactic patterns so that he named them "syntactic complex", all of which are composed of a core frame-profiled verb (a potential verb as noted in Gu's paper), either a free morpheme or a bound morpheme.

Liu (2009) also claimed that these semi-lexicalized forms can be viewed as *lexicalized constructions*[1] or *constructionalized lemmas* as they directly map constructional patterns unto lexical patterns, showing the syntactic as well as semantic interdependency between lexical and constructional entities. According to Construction Grammar (Goldberg 1995, 1997, 2005), constructions are considered as form-meaning pairs, similar to lexical entries. The lexical-constructional interplay in Mandarin clearly illustrates that words and constructions may be directly related in form and meaning. They are interconnected along the same continuum as form-meaning mapping constructs, supporting the constructional view of grammar, as shown by the following figure:

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[1] Goldberg (1996) presented a different case of relatively lexicalized construction in English, the 'way' construction.

Figure 1: the Continuum between Lexicon and Construction

Form-and-meaning mapping continuum

Lexical entity ←------------→ Constructional entity
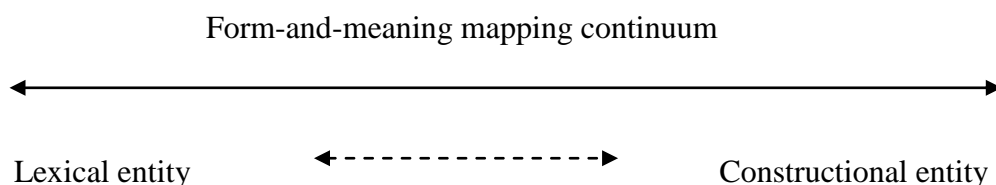
According to the corpus data, we found that Stimulus_Headed verbs in emotion domain consist of four types of morphological make-ups which show the gradation mapping the syntactic structures to syntactic complexes. Indeed, they clearly demonstrate a developing process of the interplay between constructional and lexical structures in Mandarin. We propose that the interaction of lexicalization and deconstructionalization is driven from two reasons: one is sharing the cognitive concept of causal relation for conveying an emotional experience in Mandarin emotion verbs; the other is language-specific in expressing an emotional proposition or voice change in terms of the speaker's perspective.

On the other hand, Verb-Complement predicates such as 叫好/叫苦/哭窮/哭累, and Manner-Verb predicates 暗叫/高叫/高喊/狂喊 are apt to be taken as a unit of a complex event (Hopper and Thompson 1984) through deconstructionalization. The former contains two subevents --- a Message-delivering activity (V) and a Message (Ms); the latter contains a voice-producing activity (V) and a Manner (Mn). Talmy (1991) has proposed in detail about this event structure: within a complex event (noted as a macro-event by Talmy), there are two event-components --- a main, *framing event* and a subordinate, *supporting event*. The framing event determines the overarching conceptual framework or reference frame for the whole macro-event so that it can be referred to as a *domain-schematizing event*. On the other hand, the supporting event provides the aid to fill in, elaborate, add to, or motivate the framing event and can be further specified as Cause, Manner, or Purpose, etc. Talmy also suggests that the framing event and the

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macro-event should be recognized as two components of cognitive-linguistic organization and there are five types of macro-events with each of the five types of framing event in turn in the topological category of English sentences:

(a) Path in an event of motion, as in *The ball rolled in*.

(b) Aspect in an event of temporal contouring, as in *They talked on*.

(c) Changed property in an event of state change, as in *The candle blew out*.

(d) Correlation in an event of action correlating, as in *She sang along*.

(e) Fulfillment or confirmation in an event of realization, as in *The police hunted the fugitive down*.

We found that neither the Verb-Complement sequences nor the Manner-Verb combinations fit in the five categories, but tend to be an independent type. They are needed to be further examined and specified to fulfill the topological category in Mandarin.

Chapter 3
Database and Methodology

3.1 The Database

3.1.1 Natural Data Resources

The data of the study are mainly extracted from the natural corpus data from Academia Sinica Balanced Corpus of Modern Mandarin Chinese (the Sinica Balanced Corpus) and Chinese Word Sketch. The Sinica Balanced Corpus contains a total of five million words of both written and spoken contemporary Mandarin, developed by the CKIP (Chinese Knowledge and Information Processing) group at Academia Sinica, Taiwan. The Chinese Word Sketch Engine provides more abundant data with more than 1.4 billion words from LDC Chinese Gigaword corpus and several useful tools for analyzing the characteristics of each lemma, such as word sketches, grammatical relations, and near synonym set comparison, collocational concordance, etc. Additionally, we also adopt the data from Guanghua newspaper and Chongyang newspaper. When needed, the daily-updated database 'Google Search' was used to verify collocational observations.

3.1.2 Frame-based Analysis Resources

When analyzing the relevant data of certain verbal framework, we utilize the data of frame-based analysis from Mandarin VerbNet (http://verbnet.nctu.edu.tw/verbnet/website) and English FrameNet

(http://framenet.icsi.berkeley.edu). Mandarin VerbNet is constructed by the team of National Chiao Tung University led by Mei-chun Liu, based on the theory of frame semantics by Fillmore. Mandarin VerbNet differentiate the Mandarin predicates into a four-layered hierarchical framework according to their syntactic behaviors, semantic participants, collocational associations, and semantic attributes from natural corpus data. English lexical database FrameNet is constructed by the team of Berkley University led by Charles Fillmore. Based on the theory of frame semantics, FrameNet classify the English lemmas on the specified background knowledge, also called the semantic frame.

3.2 Methodology of Analysis

The distributional tendencies rather than grammaticality were taken as the important evidence for linguistic analysis. Within each class, high-frequency verbs were chosen as the representative lemmas to start with. The corpus data were used primarily for examining the basic syntactic patterns as well as collocational tendencies.

Chapter 4

Observations and Findings

4.1 Stimulus-headed Predicates

4.1.1 Propositional Orientation of Emotion verbs in Mandarin and English

As L. Talmy said in his book "Toward a Cognitive Semantics", English seems to favor lexicalizing the stimulus as subject. On the other hand, as the corpus data presented, Mandarin emotion verbs differ from English ones in the orientation of conveying emotional experiences. For example, English describes the emotional proposition by the active construction in sentences of a Stimulus as a subject, but uses adjective phrases or the passive construction in sentences of an Experiencer as a subject instead. While English primarily takes the Stimulus-oriented perspective, Mandarin Chinese tends to take the Experiencer-oriented perspective predominantly to express an emotional event and uses the causative construction such as 令/讓/使/教 to encode the meaning of sentences with a Stimulus as a subject, as exemplified from (1) to (3):

(1) 我很**快樂**。

Wo hen kuaile

1S DEG happy[2]

'I am happy.'--- Adjective phrases

(2) 他(對新生活)很**滿意**。

Ta (dui xin shenghuo) hen manyi

3S (toward new life) DEG satisfied

'He is satisfied (with his new life).'--- Passive construction

(3) 新生活令他覺得**滿意**。

Xin shenghuo ling ta juede manyi

New life make 3S feel satisfied

'His new life satisfies him.'---Active construction

In Mandarin, a minor subset of emotion verbs takes the Stimulus-oriented perspective, as claimed in Liu (2009) and Liu and Hong (2009). These so-celled "Stimulus_Headed" verbs under the Stimulus_Attributive frame predicate a Stimulus as a subject to code a Stimulus-oriented emotional feeling in the active and intransitive sentences. Furthermore, there are fewer fully-lexicalized lemmas like 枯燥/沉悶/恐怖 as the Stimulus-headed verbs, but variant and productive semi-lexicalized lemmas such as 可憐/可愛/迷人/氣人/有趣/有意思/令人興奮/令人滿意 involved, whose morphological structures are derived by mapping the

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[2] In this paper, we use some glossing abbreviations for the data: 1) 1,2 and 3 for the person; 2) S and P for the number of the person; 3) DEG for the degree adverbs; 4) CL for the Classifiers; 5) PROG for the progressive aspectual marker; 6) SFP for the sentence final particle, and so on. For the detailed and complete list, please see the reference website: http://en.wikipedia.org/wiki/List_of_glossing_abbreviations/.

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specific syntactic patterns to the morphological make-ups; that is, they are all the syntactically derived words. There are at least four types of such morph-syntactic semi-lexicalized verbs found from the corpus data, as exemplified respectively from (4) to (7):

(4) 這個流浪漢很**可憐**。

     Zhei-ge liulanghan hen kelian

     This CL vagrant DEG pitiful

     'This vagrant is pitiful.'

(5) 這支舞很**迷人**。

     Zhei-zh wu hen miren

     This CL dance DEG charming

     'The dance is charming.'

(6) 這部電影很**有趣**。

     Zhei-bu dianying hen youqu

     This CL movie DEG interesting

     'The movie is interesting.'

(7) 這則消息**令人興奮**。

     Zhei-ze xiaoxi lingren-xingfen

     This CL news make people excited

     'The news is exciting.'

4.1.2 Syntactically Basic Patterns & Grammatical Functions

These Stimulus-headed verbs are predicative of a Stimulus which always takes the sentential subject position and serves as the Cause that to a certain degree makes the implicit Experiencer undergo some kind of emotional feeling. Syntactically, the verbs mainly show the active and intransitive usage, and do not have an overt object of Experiencer, the backgrounded perceptual agent as noted in Gu (2002), due to its insignificance for the speaker or the hearer included. We can compare the following sentences from (8) to (11).

(8) *這個流浪漢很可憐[3]我。

    *Zhei-ge liulanghan hen kelian wo

    *This CL vagrant DEG pitiful 1S

    *'This vagrant is pitiful me.'

(9) *這支舞很迷人我。

    *Zhei-zh wu hen miren wo

    *This CL dance DEG charming 1S

    *'The dance is charming me.'

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[3] This sentence could be grammatical in a certain situation because the lexicon "可憐 kělián" shows the property of polysemy, denoting one sense of "to be able to make someone feel pitiful" as in the scope of this paper, and at least another sense of "to feel pitiful for/on someone or something" that makes the example (8) grammatical as exemplified in the following:

  E.g.: 他可憐這個流浪漢無家可歸。 "He pities the vagrant without a home to go back."

(10) *這部電影很**有趣**我。

　　*Zhei-bu dianying hen youqu wo

　　*This CL movie DEG interesting 1S

　　* 'The movie is interesting me.'

(11) *這則消息**令人興奮**我。

　　*Zhei-ze xiaoxi lingren-xingfen wo

　　*This CL news make people excited 1S

　　* 'The news is exciting me.'

　　Every lemma in this group of verbs does not subcategorize a sentential object, i.e. all of them are always intransitive (See the Appendix I[4] and II). More specifically, these verbs can be used as intransitive predicates, nominal modifiers, and verbal complements. Their grammatical functions can be exemplified respectively from (12) to (15):

(12) Intransitive predicate

　　這個流浪漢很**可憐**。　'This vagrant is pitiful.'

　　這支舞很**迷人**。　　　'The dance is charming.'

　　這部電影很**有趣**。　　'The movie is interesting.'

　　這則消息**令人興奮**。　'The news is exciting.'

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[4] There are three examples seeming to be transitive constructions "V＋NP"; however, they can actually be taken as exceptions because their structures are all formed by the verbs plus their cognate nouns or can be analyzed as V＋NP1＋NP2 where NP2 and NP1 have the part-whole relation in these semi-lexicalized verbs with the incorporated generic type-referring NP1 "人 rén".

(13) <u>Nominal modifier</u>

可憐的流浪漢　　　'a pitiful vagrant'

迷人的舞　　　　　'a charming dance'

有趣的電影　　　　'an interesting movie'

令人興奮的消息　　'an exciting news'

(14) <u>Verbal complement</u>

餓得可憐　　　　'to hunger pitiful'

跳得迷人　　　　'to dance charming'

演得有趣　　　　'to perform interesting'

聽得令人興奮　　'to listen excited'

(15) <u>*Verbal modifier</u>

*可憐地餓　　　　*'to pitifully hunger'

*迷人地跳　　　　*'to charmingly dance'

*有趣地演　　　　*'to interestingly perform'

*令人興奮地聽　　*'to excitingly listen'

We summarize the grammatical functions of the representative lemmas in the following table (data from Sinica Balanced Corpus):

Table 1: Grammatical Distributions of the Representative Stimulus-headed Verbs

Lemma	可憐 kělián	可愛 kěài	迷人 mírén	氣人 qìrén	有趣 yǒuqù	有意思 yǒuyìsì
Intransitive predicate	92.3%	45.4%	29.7%	25.0%	41.0%	58.1%
Transitive predicate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Verbal modifier	0.2%	0.1%	0.0%	0.0%	0.3%	0.0%
Nominal modifier	6.7%	52.4%	68.1%	75.0%	58.6%	41.9%
Nominalization	0.8%	2.1%	2.2%	0.0%	0.1%	0.0%
Total	100%	100%	100%	100%	100%	100%

4.1.3 Collocational Associations & Morpho-syntactic Lexicalization

Based on the observation of the corpus data, there are at least four types of morphological make-ups in these Stimulus-headed verbs:

(a) Morphologically lexicalized pattern「可 kě +X」

(b) Morphologically semi-lexicalized pattern「X +人 rén」

(c) Morphologically semi-lexicalized pattern「有 yǒu +X」

(d) Morphologically semi-lexicalized pattern「令人 lìngrén +X」

Moreover, all of them reasonably map the lexical-semantic meanings to the fixed lexicons derived from the syntactic patterns used in discourse. The syntactically derived morphological patterns are highly correlated with their unique lexical semantic functions: they are used to predicate an emotion-arousing Stimulus

or Cause. The first pattern is totally lexicalized from the combination of the auxiliary 「可 kě」 plus an emotion verb 「X」 and cannot insert any word in the middle of the lexicon. The meaning of the morphological make-up 「可 kě + X」 can be derived from its components, i.e.「可(以)令人覺得 X」 --- "be able to make people feel X".

The second pattern is nearly lexicalized from the transitive construction of an emotion verb 「X」 plus its subcategorized type-referring object 「人 rén」, the backgrounded perceptual agent as noted in Gu (2002), and this morphological make-up is much restricted in inserting words, such as 「死 sǐ」 --- "to death", the extremely degree adverbs only (See the Appendix III).

The meaning of the third morphological make-up「有 yǒu + X」inherently denotes that the Stimulus owns some property to evoke one's feeling by incorporating the word 「有 yǒu」 --- "possess" along with a noun phrase 「X」 derived from the transitive construction, and the verbs of this subset can be inserted words such as 「(一)點 yìdiǎn/(一)些 yìxiē」in the middle of the lexicon to describe the degree of the emotional feeling.

Furthermore, the final semi-lexicalized pattern is derived from the causative construction of 令/讓/使/教 plus the generic noun 「人 rén」 and an Experiencer-oriented emotion verb 「X」. It can be taken as the transparent supporting evidence for the morph-syntactic lexicalization of the Stimulus-headed verbs for three significant reasons. Firstly, the morphological make-up 「令人 lìngrén + X」 --- "make people feel X" captures the core cognitive concept of the emotion verbs: the causal chain relation, which is the reason why the causative construction is highly frequent used in discourse and gradually becomes a more and more fixed morphological structure. Secondly, it is much flexible to insert degree adverbs such as 「十分 shífēn/相當 xiāngdāng/非常 fēicháng/很 hěn」 ---

"quite/very (much)" in the middle of the morphological make-up 「令人 lìngrén + X」, which means it is ongoing and immature in the process of the lexicalization. Finally, the role of the Experiencer is incorporated into the lexicon in the form of the type-referring noun 「人 rén」 --- "people" instead of the specific referring object in the causative construction. Based on these observations above, it is seen that the causative construction gradually shifts into the more fixed and regulated morphological structure 「令人 lìngrén + X」, which supplies a reasonable and productive way to fulfill the lack of the Stimulus-oriented emotion predicates in Mandarin. We summarize the collocational associations of the four types of morphological make-ups in the following table:

Table 2: Collocational Associations of the Four Types of Stimulus-headed Verbs

Inserted words	可 kĕ…X	X…人 rén	有 yŏu…X	令人 lìngrén…X
…死…		○		
…很/非常/相當/十分…				○
…(一)點/(一)些…			○	○[*1]
Lexical Status	More lexicalized ◄ - - - - - - - - - ► Less lexicalized			

1: In this case, it is compatible to insert degree adverbs such as 「有點 yŏudiăn/有些 yŏuxiē」 --- "a little bit".

All in all, there are three supporting reasons to argue that the lexical status of the Stimulus-headed verbs tends to be treated as approaching lexicalized predicates in terms of the membership status of the lexical entry in the lexicon. As Liu (2009) mentioned that words may be more or less fully lexicalized depending on the strength or non-compositionality of their form-meaning mapping relations. Two

unique features set them apart from a syntactic construction: 1) When a degree modifier *hěn* occurs, it is more often put in front of the paraphrasic unit, instead of occurring with the incorporated predicate; 2) the impersonal *rén* 'people' in the two subsets represents a generic, non-referring Experiencer, instead of a referring and individuated referent in a transitive or causative construction. It remains fixed as an invariant in the lexical sequence of these morphological templates. The final evidence is shown in the examples (16) to (19), which is consistent of the conclusion in Gu's paper: such syntactically derived and morphologically open predicates do not inherent the argument structure of the incorporated frame-profiled verbs, but lose one argument through backgrounding the agent/foregrounding and preposing the theme to realize the voice change in the utterance.

(16) 這個流浪漢很**可憐**。　　←→ 他**可憐**這個流浪漢。

     Zhei-ge liulanghan hen kelian　　　Ta kelian zhei-ge liulanghan

     This CL vagrant DEG pitiful　　　3S pity this CL vagrant

     'This vagrant is pitiful.'　　　　'He pities this vagrant.'

(17) 這支舞很**迷人**。　　　　←→ 他**迷**這支舞。

     Zhei-zh wu hen miren　　　　Ta mi zhei-zh wu

     This CL dance DEG charming　　3S infatuated this CL dance

     'The dance is charming.'　　　'He is infatuated with the dance.'

(18) 這部電影很**有趣**。　　　←→ 他對這部電影感到**有趣**。

     Zhei-bu dianying hen youqu　　　Ta dui zhei-bu dianying gandao youqu

     This CL movie DEG interesting　　3S to this CL movie feel interested

     'The movie is interesting.'　　　'He feels interested in the movie.'

(19) 這則消息**令人興奮**。　　　←→　他對這則消息感到**興奮**。

　　　Zhei-ze xiaoxi lingren-xingfen　　　Ta dui zhei-ze xiaoxi gandao xingfen

　　　This CL news make people excited 3S to this CL news feel excited

　　　'The news is exciting.'　　　　　　'He feels excited about the news'

4.2　Verb-Complement Sequences

4.2.1　Syntactically Basic Patterns & Grammatical Functions

　　　Verb-Complement sequences, such as 叫好/叫苦/哭窮/哭累, mainly act as intransitive verbs, predicating a Message (Ms)-delivering Speaker. Specifically, the underlined Message that the Speaker focus on is totally incorporated into the verbal lexicon, as exemplified respectively from (20) to (23).

(20) 大家都爲她的表現**叫好**。

　　　Dajia dou wei ta-de biaoxian jiaohao

　　　Everyone all for her performance applaud

　　　'Everyone applauded her for her performance.'

(21) 沒有一個人**叫苦**，沒有人發怨言。

　　　Meiyou yi-ge ren jiaoku，meiyou ren fa yuanyan

　　　No one CL person complain of hardship no one CL person grumble

　　　'Nobody complained of hardship or grumbled.'

(22) 各家旅行社都在**哭窮**。

Ge-jia luxingshe dou zai kuqiong

Every CAL tourist agency all PROG poor-mouth

'All of the tourist agencies poor-mouthed.'

(23) 儘管工作辛苦，卻沒有人**哭累**。

Jinguan gongzuo xinku，que meiyou ren kulei

Despite work toilsome but no one complain of fatigue

'Nobody complained of fatigue despite toilsome working.'

Syntactically, these verbs can be used as intransitive predicates, nominal modifiers, and verbal complements. Their grammatical functions are illustrated individually from (24) to (27):

(24) <u>Intransitive predicate</u>

大家都爲她的表現**叫好**。

'Everyone applauded her for her performance.'

沒有一個人**叫苦**，沒有人發怨言。

'Nobody complained of hardship or grumbled.'

各家旅行社都在**哭窮**。

'All of the tourist agencies poor-mouthed.'

儘管工作辛苦，卻沒有人**哭累**。

'Nobody complained of fatigue despite toilsome working.'

(25) <u>Nominal modifier</u>

叫好的人們   'the people who applauded"'

叫苦的學生   'the students who complained of hardship'

哭窮的政府   'the government who poor-mouthed'

哭累的勞工   'the worker who complained of fatigue'

(26) <u>Verbal complement</u>

高興得叫好   'to be glad to applaud'

累得叫苦   'to be exhausted to complain of hardship'

餓得哭窮   'to be hungry to poor-mouth'

忙得哭累   'to be busy to complain of fatigue'

(27) <u>*Verbal modifier</u>

∗叫好地高興   ∗'to be glad with applauding'

∗叫苦地累   ∗'to be exhausted with complaining of hardship'

∗哭窮地餓   ∗'to be hungry with poor-mouthing'

∗哭累地忙   ∗'to be busy with complaining of fatigue'

We summarize the grammatical functions of these representative lemmas in the following table (data from Sinica Balanced Corpus):

Table 3: Grammatical Distributions of the Representative V-Message Verbs

Lemma	叫好 jiàohǎo	叫苦 jiàokǔ	哭窮 kūqióng	喊冤 hǎnyuān	喊打 hǎndǎ
Intransitive predicate	73.1%	91.7%	66.7%	100.0%	66.7%
Transitive predicate	0.0%	0.0%	0.0%	0.0%	0.0%
Verbal complement	7.7%	8.3%	0.0%	0.0%	0.0%
Verbal modifier	0.0%	0.0%	0.0%	0.0%	0.0%
Nominal modifier	15.4%	0.0%	33.3%	0.0%	33.3%
Nominalization	3.8%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

4.2.2 Collocational Associations & Morpho-syntactic Lexicalization

Based on the observation of the corpus data, it is shown that the syntactically derived morphological patterns are highly correlated with their unique lexical semantic functions: they are used to predicate a Message-delivering Speaker through incorporating the clausal frame-profiled element Message into the verbal unit in the form of a bare noun. Although coming from the same morpho-syntactic templates, they still show slightly different lexical status. The verbs 哭窮/喊冤/喊打 are totally lexicalized and cannot insert any word in the middle of the lexicon. However, the verb 叫好 is nearly lexicalized and much restricted in inserting words, such as 「(一)聲 yìshēng」--- "a", the classifier of sound only. Moreover, the verb 叫苦 can be inserted words such as 「(一)聲 yìshēng/(一)句 yíjù」--- "a" in the middle of the lexicon, or even the aspectual marker 「過 guò」.

We summarize the collocational associations of the representative

Verb-Message Sequences in the following table:

Table 4: Collocational Associations of the Representative V-Message Verbs

Inserted words	哭…窮	喊…冤	喊…打	叫…好	叫…苦
…過…					○
…(一)聲…				○	○
Lexical Status	More lexicalized ◄ - - - - - - - - ► Less lexicalized				

There are two reasons to argue that the lexical status of these verbs tends to be

treated as approaching lexicalized predicates: 1) the incorporated Message is apt to

be in the form of a bare noun and cannot be preceded by any adjective or quantifier;

2) such syntactically derived and morphologically open predicates do not inherent

the argument structure of the incorporated frame-profiled verbs as noted in Gu's

paper.

4.3 Manner-Verb Combinations

4.3.1 Syntactically Basic Patterns & Grammatical Functions

Manner-Verb combinations, such as 暗叫/高叫/高喊/狂喊, predicate a

voice-producing Speaker with a specific <u>Manner</u> (Mn). Specifically, the underlined

<u>Manner</u> in which the Speaker produces voices is to certain degree incorporated into

the verbal lexicon. Syntactically, these verbs can be used as transitive or intransitive

predicates, nominal modifiers, verbal complements, and verbal modifiers where

they seem to be of emphasis in the verbal meaning. Their grammatical functions are illustrated individually from (28) to (32):

(28) Transitive predicate

他雖然膽子大，也不禁暗叫：「媽呀！這麼高！」。

'He couldn't help shouting inwardly: "My God! So high!" even though he was bold.'

一群年輕人高叫/高喊著：「劉德華，我愛你。」

'A crowd of young people shouted loudly: "Andy Liu, I love you."'

(29) Intransitive predicate

一支整齊的軍隊在大聲高喊著，精神抖擻。

'An army is shouting loudly in a loud voice dashingly.'

在這，她可以狂喊，可以哭泣。

'Right here, she can shout madly and cry.'

(30) Nominal modifier

暗叫的女人　　　'the woman who shouted inwardly'

高叫的學生　　　'the students who shouted loudly'

高喊的學生　　　'the students who shouted loudly'

狂喊的勞工　　　'the worker who shouted madly'

(31) <u>Verbal complement</u>

害怕得<u>暗叫</u>　　　'to be afraid to shout inwardly''

興奮得<u>高叫</u>　　　'to be excited to shout loudly''

興奮得<u>高喊</u>　　　'to be excited to shout loudly'

生氣得<u>狂喊</u>　　　'to be irate to shout madly'

(32) <u>Verbal modifier</u>

<u>暗叫</u>地道　　　'to say with shouting inwardly'

<u>高叫</u>地喊　　　'to shout with shouting loudly'

<u>高喊</u>地叫　　　'to shout with shouting loudly'

<u>狂喊</u>地叫　　　'to shout with shouting madly'

We summarize the grammatical functions of these representative lemmas in the following table (data from Chinese Word Sketch Engine):

Table 5: Grammatical Distributions of the Representative Manner-V Verbs

Lemma	暗叫 ànjiǎo	高叫 gāojiào	高喊 gāohǎn	狂喊 kuánhǎn	痛哭 tònkū	傻笑 shǎxiào
Intransitive predicate	0.0%	34.4%	5.3%	41.9%	84.5%	80.4%
Transitive predicate	100.0%	65.6%	89.5%	30.2%	1.1%	5.9%
Verbal complement	0.0%	0.0%	0.0%	7.0%	1.6%	2.0%
Verbal modifier	0.0%	0.0%	0.0%	0.0%	2.1%	0.0%
Nominal modifier	0.0%	0.0%	4.4%	14.0%	10.7%	5.9%
Nominalization	0.0%	0.0%	0.9%	7.0%	0.0%	5.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

4.3.2 Collocational Associations & Morpho-syntactic Lexicalization

Based on the observation of the corpus data, it is shown that the syntactically derived morphological patterns are highly correlated with their unique lexical semantic functions: they are used to predicate a sound-producing Speaker with a specific marked Manner through incorporating the frame-profiled element Manner into the verbal unit in the form of a bare noun. Almost all of them in this group cannot insert any word in the middle of the lexicon. But there are some verbs of the subset such as 細看/偷看/細聽/偷聽 showing the form of the repeated Manner plus the verb, like 細細看/偷偷看/細細聽/偷偷聽.

Chapter 5

Frame-based Analyses

5.1 Frame-based Analysis of the Stimulus-headed Predicates

5.1.1 Conceptual Schema & Verbal Framework of Emotion Predicates

According to Liu and Hong (2009), the conceptual schema of Emotion verbs in Mandarin can be considered as a causal chain, presented as the following figure in which the Stimulus-headed verbs highlight the frame element of 'Stimulus'.

Figure 2: the Conceptual Schema of Mandarin Emotion Verbs (Liu and Hong, 2009)

Conceptual Schema:
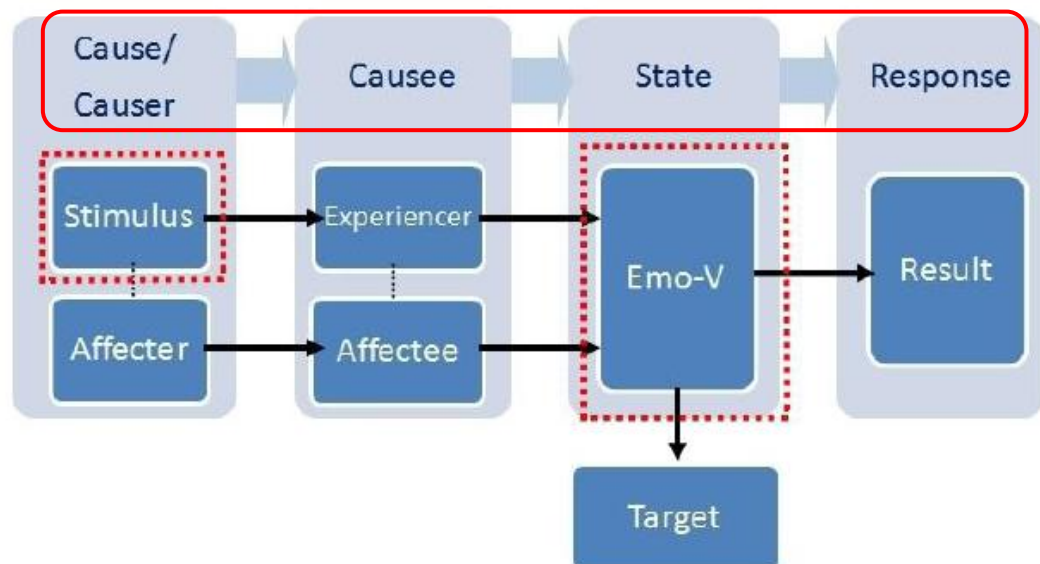
The four layers of hierachical framework are composed of archiframe, primary frame, basic frame, and microframe. The association of the whole Emotion

archiframe and the Stimulus_Attributive basic frame containing the

Stimulus-headed verbs is shown as following:

Figure 3: the Hierarchical Frame Relations of Mandarin Emotion Verbs (Liu and

      Hong, 2009)
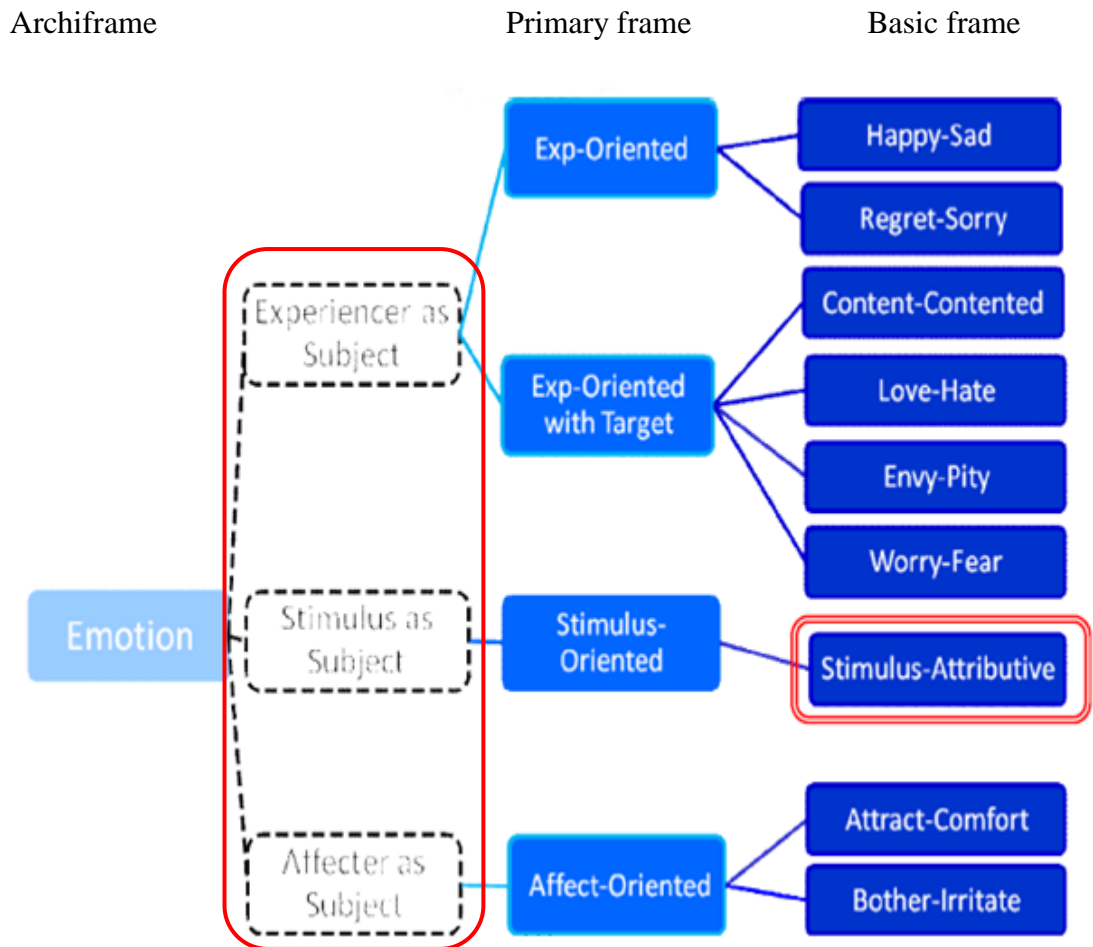
What is interesting is that the four types of morphological make-ups play an

essential role to supply the templates of lexicalization for expressing the

Stimulus-oriented perspective in emotional experience in Mandarin: almost all of

the verbs in Experiencer-focused verbs can develop to the verbs of morphologically

open class "令人 lìngrén +X" and Affecter-focused verbs can develop to the verbs

of morphologically open class "X +人 rén", both of which contain a

non-specified/type-referring noun "人" rather than a specified/referring noun in the morphological patterns. The parallel correlations are illustrated as the following:

i.   template of lexicalization --- "令人 lìngrén + X"

快樂 kuàilè "be happy"   → 令人快樂 lìngrén-kuàilè "make people happy"

傷心 shāngxīn "be sad"   → 令人傷心 lìngrén-shāngxīn "make people sad"

後悔 hòuhuǐ "regret"   → 令人後悔 lìngrén-hòuhuǐ "make people regret"

遺憾 yíhàn "be sorry"   → 令人遺憾 lìngrén-yíhàn "make people sorry"

滿意 mǎnyì "content"   → 令人滿意 lìngrén-mǎnyì

"make people content"

滿足 mǎnzú "be contented" → 令人滿足 lìngrén-mǎnzú

"make people contented"

喜愛 xǐāi "love"   → 令人喜愛 lìngrén-xǐāi "make people love"

討厭 tǎoyàn "hate"   → 令人討厭 lìngrén-tǎoyàn "make people hate"

羨慕 xiànmù "envy"   → 令人羨慕 lìngrén-xiànmù "make people envy"

惋惜 wànxí "pity"   → 令人惋惜 lìngrén-wànxí "make people pity"

擔心 dānxīn "worry"   → 令人擔心 lìngrén-dānxīn "make people worry"

害怕 hàipà "fear"   → 令人害怕 lìngrén-hàipà "make people fear"

ii.   template of lexicalization --- "X + 人 rén"

吸引 xīyǐn "attract"   → 吸引人 xīyǐn-rén "make people attracted"

誘惑 yòuhùo "allure"   → 誘人 yòu-rén "make people allured"

安慰 ānwèi "comfort"   → 安慰人 ānwèi-rén "make people comforted"

感動 gǎndòng "touch"   → 感人 gǎn-rén "make people touched"

動人 dòng-rén "make people touched"

打擾 dǎrǎo "bother"   → 擾人 rǎo-rén "make people bothered"

煩擾　fánrǎo "harry"　→　煩人　fán-rén "make people harried"

惹惱　rěnǎo "irritate"　→　惱人　nǎo-rén "make people irritated"

氣　qì "anger"　→　氣人　qì-rén "make people anger"

We figure out the two processes of lexicalization from the constructional

pattern to the morphological pattern in the following:

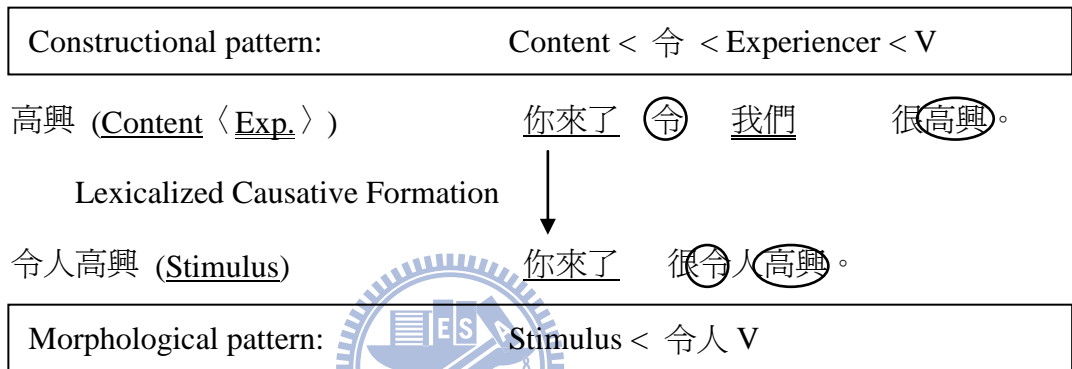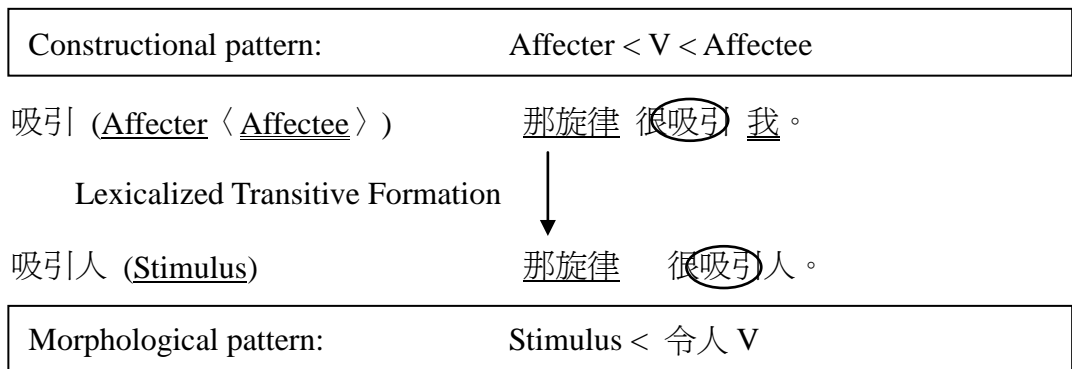Figure 4: the Process of Lexicalized Causative Formation (1)

Constructional pattern:	Content < 令 < Experiencer < V
高興 (<u>Content</u>〈<u>Exp.</u>〉)　　　你來了 令 我們 很高興。	
Lexicalized Causative Formation	
令人高興 (<u>Stimulus</u>)　　　你來了 很令人高興。	
Morphological pattern:	Stimulus < 令人 V

Figure 5: the Process of Lexicalized Transitive Formation

Constructional pattern:	Affecter < V < Affectee
吸引 (<u>Affecter</u>〈<u>Affectee</u>〉)　　那旋律 很吸引 我。	
Lexicalized Transitive Formation	
吸引人 (<u>Stimulus</u>)　　　那旋律 很吸引人。	
Morphological pattern:	Stimulus < 令人 V

As soon as these emotion verbs develop to the verbs of morphologically open

class, the semantic shift occurs. The verbs of morphologically open class and their

core-profiled verb (a potential verb as noted in Gu, 2002) have their own participant

roles of events respectively and belong to different verbal frame in emotion domain

in Mandarin. Next, we are going to focus on the specific frame-profiled elements

and the defining syntactic patterns involved in the Stimulus_Attributive verbs.

　　Predicates in Stimulus_Atttributive frame denote an emotional state triggered by a stimulus. And the defining pattern of this frame is the intransitive construction with the stimulus as the subject and optional degree adverbs to modify the Stimulus_Attributive verbs, illustrated individually as the following:

　(a) Stimulus [NP][VP][CL]＜(Degree [ADV])＜*

　　　E.g.1 [這老人/Stimulus]也實在**可憐**，

　　　E.g.2 [小碗盛著的涼粉豆腐/Stimulus][很/Degree]**誘人**。

　　　E.g.3 [問題/Stimulus][挺/Degree]**有意思**，但不好回答。

　　　E.g.4 [這則消息/Stimulus]**令人興奮**。

　　Here, Stimulus is defined as a cause evokes an emotional feeing, which can be an entity, a proposition, or an event and Degree means the extent to which the stimulus causes the covertly experiencer to undergo some emotion. Another frequently occuring pattern is the usage of the nominal modifier:

　(b) *＜Stimulus [NP][VP][CL]

　　　E.g.1 **可憐**的[吉弟/Stimulus]，頭上跌破了一大塊，

　　　E.g.2 月亮像一根**誘人**的[香蕉/Stimulus]，想吃卻吃不到；

　　　E.g.3 這是一種很古老，[很/Degree]**有意思**的[語言/Stimulus]。

　　　E.g.4 這是一個既複雜，又**令人興奮**的[挑戰/Stimulus]。

　　Based on this framework, the lemmas derived from the template a and b in lexicalization exactly fit in the same syntactically defining patterns with those in the Stimulus_Attributive frame, as examplified in (33) and (34) respectively:

(33) Stimulus [NP][VP][CL]＜(Degree [ADV])＜<u>*</u>

這項消息「**令人快樂**又驚喜」。

Zhe-xiang xiaoxi lingren-kuaile you jingxi

This CL news make people happy and surprised

'The news "made people happy and surprised".'

賀伯颱風所帶來的損害**令人傷心**，

Hebo taifeng suo dailai de sunhai lingren-shangxin

Hebo typhoon bring DE damage make people sad

'The damage caused by Typhoon Herb made people sad.'

歌聲甜美，曲韻**動人**，

Gesheng tianmei，quyun dong-ren

Voice sweet, rhyme touching

'The voice is sweet and the rhyme is touching.'

接著而來的細節問題更是**煩人**，

Jie-zhe er lai de xijie wenti geng shi fan-ren

Following detail problem more annoying

'The following details are more annoying.'

(34) <u>*</u>＜Stimulus [NP][VP][CL]

那才是**令人快樂**的事。

Na cai-shi lingren-kuaile de shi

That just is make people happy DE thing

'It would be an experience which makes people happy.'

這誠然是一件**令人傷心**的事，

Zhe chengran shi yi-jian lingren-shangxin de shi

This truly is a CL make people sad DE thing

'This is truly such a thing that makes people sad.'

數百名華僑小學學童參加這項**動人**的典禮，

Shu-bai ming huaqiao xiaoxue xuetong canjia zhe-xiang dong-ren de dianli

Several hundred CL Huaqiao primary school student attend this CL touching DE ceremony

'Hundreds of Huaqiao primary school students attended the touching ceremony.'

這是最**煩人**的問題了。

Zhe shi zui fan-ren de wenti le

This is most annoying DE problem SFP

'This is the most annoying problem.'

5.1.2 Frame Relations in Cognition Verbal Framework

Another extended case can be seen in Mandarin cognition verbs. According to the analysis in VerbNet, the semantic frame relations of cognition verbs in Mandarin are presented as the following figure in which the predicates in Remembering_Process frame have core frame elements, Cognizer, Mental_Content, and Experience, donoting a cognative event of information-retrieval process.

Figure 6: the Frame Relations of Mandarin Cognition Verbs (VerbNet, 2010)
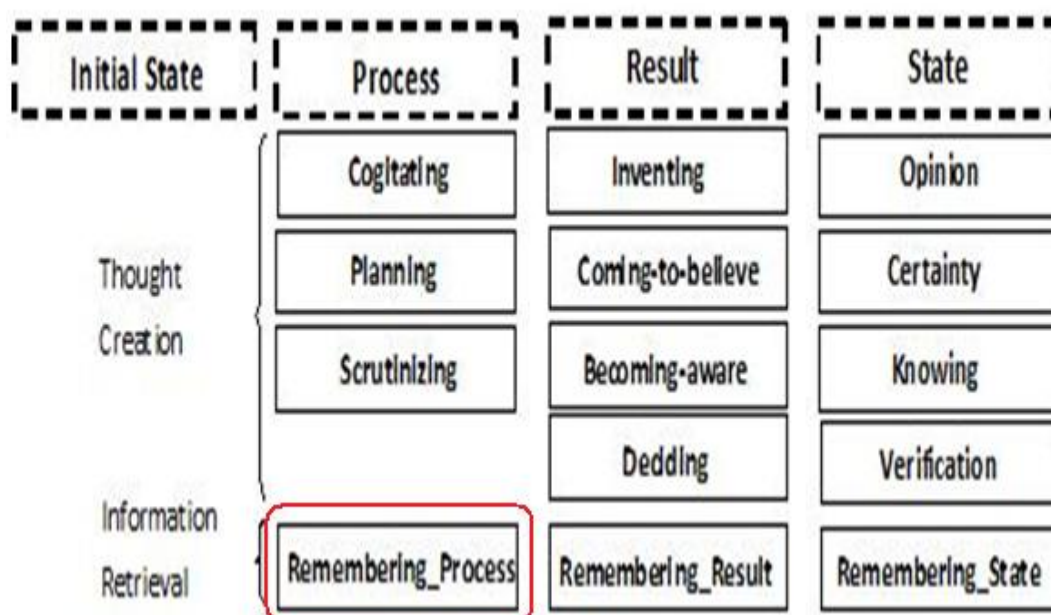
The defining patterns of syntactic behaviors in this frame can be exemplified in the following two examples:

(a) Cognizer [NP] < * < Mental_Content [NP][VP][CL]

   E.g. [那個可憐的小孩子/Cognizer]難忘[媽媽說的話/Mental_Content]。

(b) Cognizer [NP] < * < Experience [NP] [VP][CL]

   E.g. [我/Cognizer]開始懷念[從前的種種/Experience]，

Here, the Cognizer is defined as a person whose intellectual activities/states are of concern; Mental_Content indicates a past event or a salient entity while Experience means the past experience happening on the Cognizer.

What is amazing is that some predicates in cognition frame, such as 懷念/想念/思念/掛念/難忘, mainly among the Remembering_Process frame, can develop to the verbs of morphologically open class "令人 lìngrén +X" by means of the

template of the causative construction in lexicalization. The parallel correlations are illustrated as the following:

i. template of lexicalization --- "令人 lìngrén +X"

懷念 huáiniàn "cherish the memory"

→ 令人懷念 lìngrén-huáiniàn "make people cherish the memory"

想念 xiǎngniàn "miss"

→ 令人想念 lìngrén-xiǎngniàn "make people miss"

思念 sīniàn "miss"

→ 令人思念 lìngrén-sīniàn "make people miss"
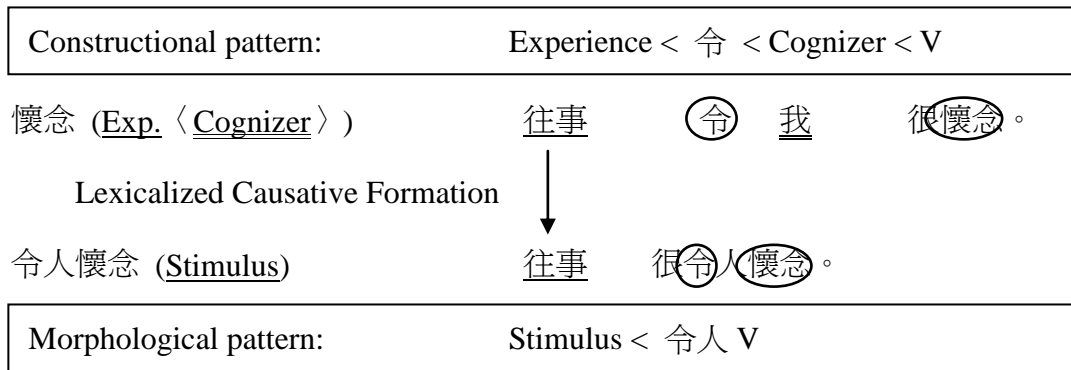
掛念 guàniàn "concern about"

→ 令人掛念 lìngrén-guàniàn "make people concern about"

難忘 nánwàng "hardly forget"

→ 令人難忘 lìngrén-nánwàng "make people hardly forget"

It is proposed that the mechanism which licenses the development of the lemmas from the Remembering_Process frame to the Stimulus_Attributive frame may be the semantic bridge built by the deconstructionalization of the causative construction due to the frequent language usage. That is, these lemmas usually have the usage of the causative construction frequently: S < 令/讓/使/教 < O < 懷念/想念/思念/掛念/難忘, in which the object is a specified/referring noun, differing from the non-specified/type-referring noun "人" in the lemmas of "令人 lìngrén +X" template. In this process, not only the frame-based semantic meaning shifts, but the verbal complements of participants (arguments structure) change.

Figure 7: the Process of Lexicalized Causative Formation (2)

Constructional pattern:	Experience < 令 < Cognizer < V

懷念 (Exp.〈Cognizer〉)　　　　　往事　　(令)　我　　　很(懷念)。

　　　Lexicalized Causative Formation

令人懷念 (Stimulus)　　　　　　往事　　很(令)人(懷念)。

Morphological pattern:	Stimulus < 令人 V

As illustrated above, the predicates of morphologically open class and their core-profiled verb (a potential verb as noted in Gu, 2002) have their own participant roles of verbal events respectively and belong to different frame-based verbal classification in Mandarin. The lemmas driven from the template of the causative construction in lexicalization indeed fit in the syntactically defining patterns of the Stimulus_Attributive frame rather than those in the Remembering_Process frame, as examplified in (35) and (36) respectively:

(35) Stimulus [NP][VP][CL]＜(Degree [ADV])＜*

偉大的人物，永遠**令人懷念**。

Weida de renwu，yongyuan lingren-huainian

All-time great, forever make people cherish the memory

'All-time greats make people cherish the memory of them forever.'

這趟法國之旅**令人難忘**。

Zhe-tang faguo zhi lu lingren-nanwang

This CL France DE tour make people hardly forget

'This tour in France is unforgettable.'

(36) *＜Stimulus [NP][VP][CL]

他是個**令人懷念**的人才，

Ta shi ge lingren-huainian de rencai

3S is CL make people cherish the memory DE person of talent

'He is a person of talent and makes people cherish the memory of him.'

紐約是一個**令人難忘**的地方。

Niuyue shi yi-ge lingren-nanwang de defang

New York is a CL make people hardly forget DE place

'New York is an unforgettable place.'

5.1.3 Frame Relations in Communication Verbal Framework

In Madarin communication verbs, there can be a similar situation. According to the analysis in VerbNet, the semantic frame relations of communication verbs in Mandarin are presented as the following figure in which the predicates in Statement_Judgment frame have core frame elements, Speaker, Addresee, Evaluee, Topic, Message+evaluative, Reason, donoting a communicative event with Speaker's evaluation.

Figure 8: the Hierarchical Frame Relations of Mandarin Communication Verbs
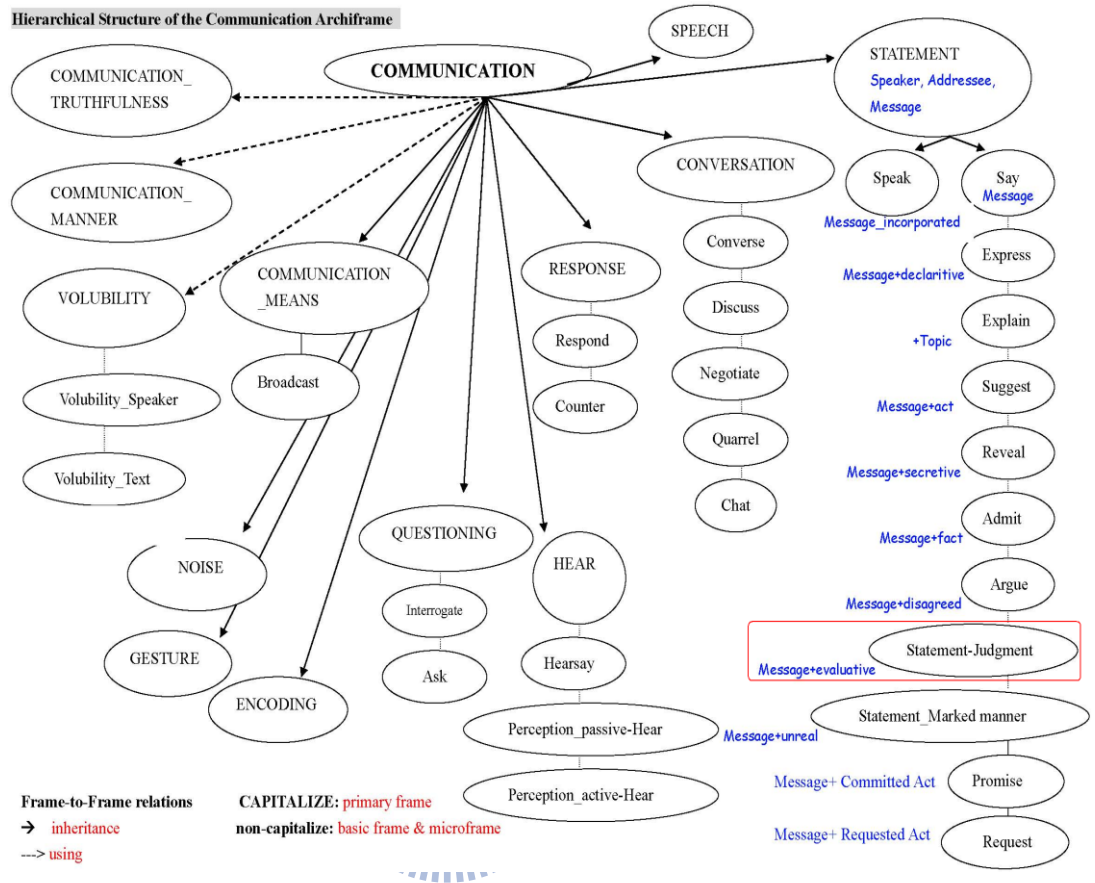
(VerbNet, 2010)

The defining patterns of syntactic behaviors in this frame can be exemplified in the following five examples:

(a) Speaker [NP] < * < Evaluee [NP]

E.g. [老闆/Speaker]不一定會在眾人面前大大地稱讚[妳/Evaluee]一番,

(b) Speaker [NP] < * < {有關/關於} [Prep] < Topic [NP]

E.g. [學生們/Speaker]都在抱怨有關[學費上漲的問題/Topic],

(c) Speaker [NP] < 向 < Addressee < * < Topic

E.g. [妹/Speaker]開始向[我/Addressee]抱怨[自己的外表/Topic],

(d) Speaker [NP] < * < (Message marker[V]) < Message+evaluative [CL]

E.g. [有部份攤販/Speaker]**抱怨**[說/Message marker][蔡鎮長不通人情
/Message+evaluative]。

(e) Speaker [NP] < * < Evaluee [NP] < Reason [VP] < Message+evaluative [CL]

E.g. [彭德懷/Speaker]在盧山會議上**批評**過[江西省委/Evaluee][吹牛
/Reason]：「[江西現在還講去年增產百分之六十七，這是脫了外褲，
留了襯褲/Message+evaluative]。」

Here, the Speaker is defined as a person who states a Message+evaluative
concerning a Topic or an Evaluee out of some Reason in which Message+evaluative
is the message which involves a subjective judgment, and Topic is the theme which
a Message+evaluative focuses on, and Reason is the cause which motivates a
statement of judgment; Evaluee means a person whom a Message+evaluative
focuses on; Addresee denotes a person whom a Message+evaluative is stated to.

Through the causative template of lexicalization, these predicates among the
Statement_Judgment frame in communication frame, such as 讚賞/讚美/稱讚/批評
/抱怨, can develop to the verbs of morphologically open class "令人 lìngrén +X",
illustrated as the following:

i. template of lexicalization --- "令人 lìngrén + X"

讚賞 zánshăng "appreciate " →令人讚賞 lìngrén-zánshăng

"make people appreciate"

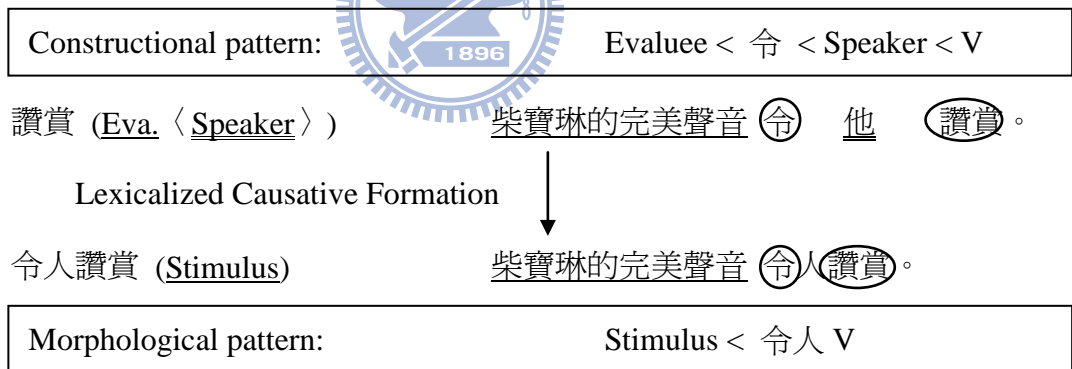讚美 zánmĕi "praise"   →令人讚美 lìngrén-zánmĕi "make people praise"

稱讚 chēngzán "admire" →令人稱讚 lìngrén-chēngzán "make people admire"

批評 pīpíng "criticize"   →令人批評 lìngrén-pīpíng "make people criticize"

抱怨 bàoyuàn "grumble" →令人抱怨 lìngrén-bàoyuàn "make people grumble"

As mentioned in the preceding section, the mechanism which licenses the transformation of lemmas from the Statement_Judgment frame to the Stimulus_Attributive frame may be the semantic bridge (or deconstructionalization) of the causative construction due to the frequent language usage. That is, these lemmas usually have the usage of causative construction frequently: S < 令/讓/使/ 教 < O < 讚賞/讚美/稱讚/批評/抱怨, in which the object is a specified/referring noun, differing from the non-specified/type-referring noun "人" in the lemmas of "令人 lìngrén +X" template. Again, we also see that in this process of transformation, not only the frame-based semantic meaning shifts, but the verbal complements of participants (arguments structure) change.

Figure 9: the Process of Lexicalized Causative Formation (3)

Constructional pattern:	Evaluee < 令 < Speaker < V

讚賞 (Eva.〈Speaker〉)　　　　　柴寶琳的完美聲音 令　他　　讚賞。

　　Lexicalized Causative Formation

令人讚賞 (Stimulus)　　　　　柴寶琳的完美聲音 令人讚賞。

Morphological pattern:	Stimulus < 令人 V

As illustrated above, this is the supporting evidence that the predicates of morphologically open class and their core-profiled verb (a potential verb as noted in Gu, 2002) have their own participant roles of verbal events respectively and belong to different frame-based verbal classification in Mandarin. The lemmas derived from the template of the causative construction in lexicalization again fit in the syntactically defining patterns of the Stimulus_Attributive frame rather than those in the Statement_Judgment frame, as examplified in (37) and (38) respectively:

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(37) Stimulus [NP][VP][CL]＜(Degree [ADV])＜*

台灣的民主演進**令人讚賞**，

Taiwan de minzhu yanjin lingren-zanshang

Taiwan DE democratic evolution make people appreciate

'Taiwan's democratic evolution makes people appreciate.'

柯玉鳳各方面表現仍**令人稱讚**，

Keyufeng ge-fangmian biaoxian reng lingren-chengzan

Keyufeng all respect performance still make people praise

'Ke-Yufeng's performances in all respects still make people praise.'

(38) *＜Stimulus [NP][VP][CL]

雙方已激盪出不少**令人讚賞**的智慧火花。

Shuangfang yi jidang-chu bushao lingren-zanshang de zhihui huohua

Both side already inspire lots of make people appreciate DE wisdom
spark

'Both sides inspired lots of wisdom sparks which make people
appreciate.'

幫助一個或幾個殘疾人，應是**令人稱讚**的義舉，

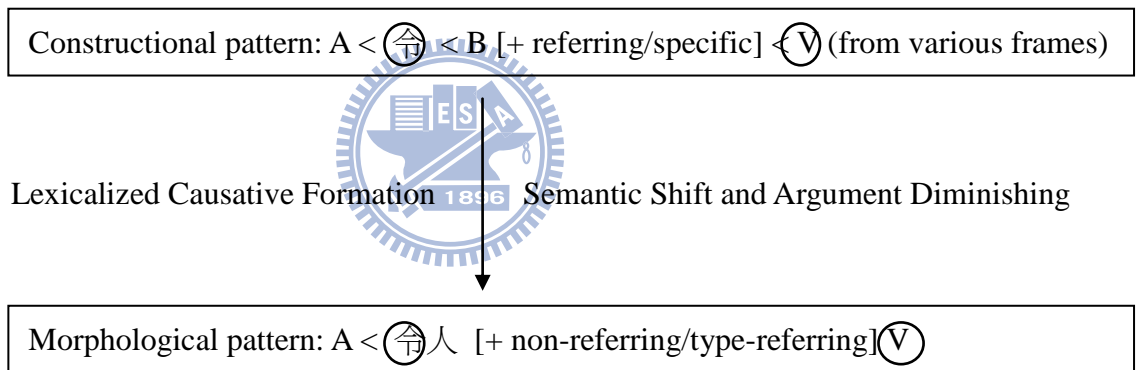Bangzhu yi-ge huo ji-ge canjiren，ying shi lingren-chengzan de yiju

Help a CL or several CL person with disabilities, should be make people
praise DE great act

'Helping one or several persons with disabilities should be a great act of
praise.'

5.1.4 Brief Summary

The morphological template of the verbs of morphologically open class "令人 lìngrén +X" can be seen as a complex event composed of a causative event and a frame-profiled event of X. These predicates comes from a causative construction, being the process of gragual lexicaliztion throuth the deconstuctionalization. The frame-profiled verbs "V" may come from various frames which either have a causal relation in frame-based cognitive concept, or have the usage of the causative contruction syntactically. We figure out the summary in the following:

Figure 10: the Process of Lexicalized Causative Formation

Constructional pattern: A < 令 < B [+ referring/specific] < Ⓥ (from various frames)

Lexicalized Causative Formation Semantic Shift and Argument Diminishing

Morphological pattern: A < 令人 [+ non-referring/type-referring] Ⓥ

5.2 Frame-based Analysis of the Verb-Complement Sequences

5.2.1 Verb-Message Sequences in the Speak Frame of the Communication Frame

This morphological template of Verb-Complement Sequences is quite productive in lexicalization of Chinese Mandarin. According to the anylasis in VerbNet, the communication frame contains a subframe named Speak frame which

has hiarachical relations corellated with other communication subframes in

Mandarin are presented as the following figure:

Figure 11: the Hierarchical Frame Relations of Mandarin Communication Verbs

(VerbNet, 2010)
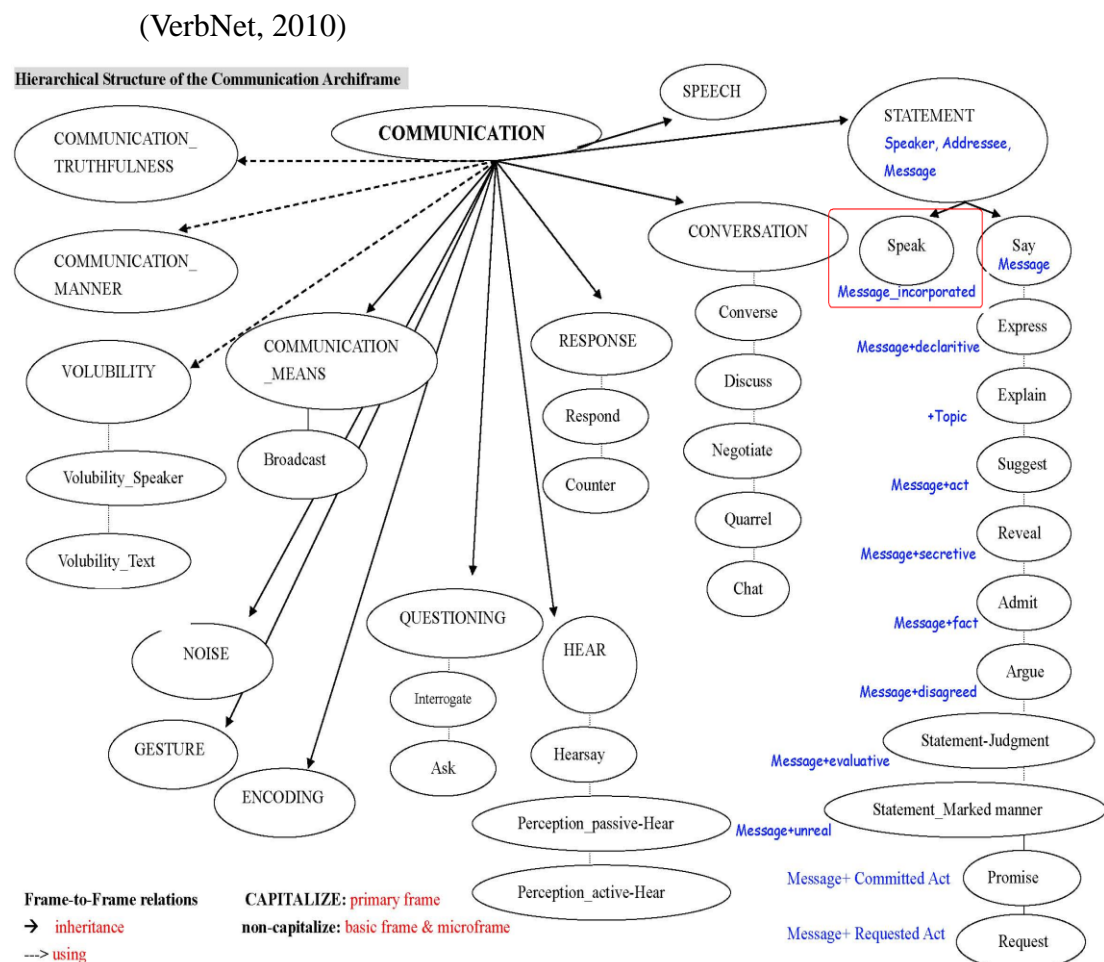
Verbs in the Speak frame, such as 說話/講話/訓話/傳道/誦經, have core

frame elements, Speaker and Addresee, donoting a special Message-delivering

communicative event by means of totally incorporaing the Message into the verb as

a VO coompound.The syntactic patterns in the Speak frame are mainly the

intransitive usage and the dative construction, illustrated in the following two

examples:

(a) Speaker [NP] < *

    E.g. [我們學校五年級的一位同學/Speaker]，到臺上**說話**。

(b) Speaker[NP] < 和/對/向 [Prep] + Addressee [NP] < *

    E.g. [他/Speaker]不敢跟[外國人/Addressee]**說話**，

Here, Speaker means the person who speaks, and Addressee denotes the person to whom the Speaker is spoken. In cognitive conceptual schema, the Message is a core frame element of the communicative event, but it is realized as an incorporated component of the predicate itself in the Speak frame rather than as an independent verbal complement in the sentences.

In Mandarin Chinese, it is very productive and general case that incorporating the Message into a communicative frame-profiled verb to form a VO compound. There are some examples of the communicative verbs, such as 說/講/道, also denoting such a message-delivering event by means of incorporating the Message into the lemma itself, presented as the following: [5]

  i. Verb-Complement Sequences form the frame-profiled verb "說" [6]

說話	shuōhuà	"to talk"
說謊	shuōhuǎng	"to lie"
說教	shuōjiào	"to preach"
說笑	shuōxiào	"to joke"
說夢話	shuōmènghuà	"to talk in one's sleep"

---

[5] There are some minor cases in which the frame-profiled verbs take another core frame element "Topic" of the communication frame by means of incorporating the Topic into the predicates themselves, such as 說媒 shuōméi "to act as matchmaker", 說情 shuōqíng "to intercede", and 講古 jiǎnggǔ "to tell stories".

[6] The verbs "說/講/道" all come from the Say frame under the Communication frame in Mandarin VerbNet (2010).

說大話　　shuōdàhuà　　　　　　"to boast"

說風涼話　shuōfēngliánghuà　　"to speak the discouraging or sarcastic words"

ii.　Verb-Complement Sequences form the frame-profiled verb "講"[6]

講話　　jiǎnghuà　　　　"to speak"

講理　　jiǎnglǐ　　　　　"to reason things out"

講道　　jiǎngdào　　　　"to sermonize"

講課　　jiǎngkè　　　　　"to lecture"

講價　　jiǎngjià　　　　　"to bargain"

講道理　jiǎngdàolǐ　　　　"to reason things out"

iii.　Verb-Complement Sequences form the frame-profiled verb "道"[6]

道謝　dàoxiè　　　　　"to say thanks"
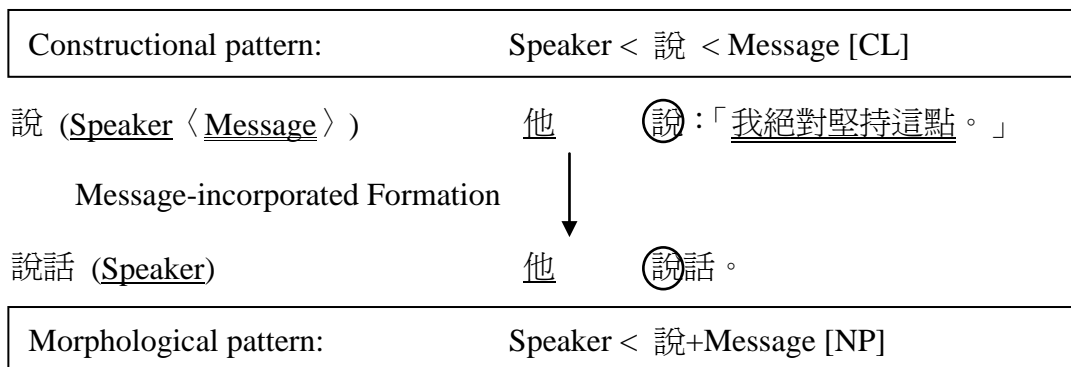
道喜　dàoxǐ　　　　　　"to express congratulations"

道賀　dàohè　　　　　　"to congratulate"

道別　dàobié　　　　　"to say goodbye"

道歉　dàoqiàn　　　　　"to apologize"

We figure out the process of lexicalization of the Message-incorporated

Formation by taking the example (i):

Figure 12: the Process of Message-incorporated Formation (1)

Constructional pattern:	Speaker < 說 < Message [CL]

說（Speaker〈Message〉）　　　　　他　　　說：「我絕對堅持這點。」

　　　Message-incorporated Formation　　　↓

說話（Speaker）　　　　　　　　　　他　　　說話。

Morphological pattern:	Speaker < 說+Message [NP]

5.2.2 Verb-Message Sequences from the Noise Frame of the Communication Frame

In VerbNet, the communication frame contains a subframe named Noise frame which has hiarachical relations corellated with other communication subframes in Mandarin are presented as the following figure:

Figure 13: the Hierarchical Frame Relations of Mandarin Communication Verbs (VerbNet, 2010)
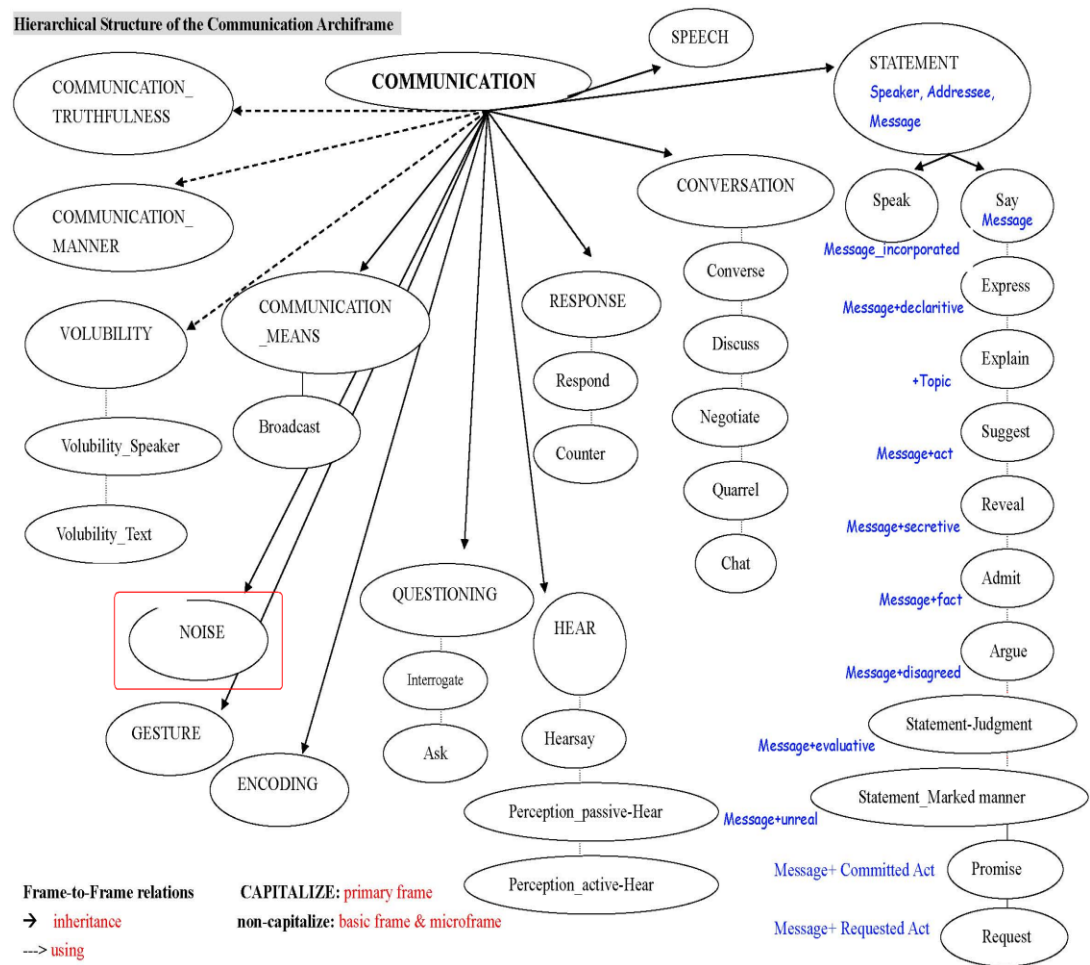
Verbs in the Noise frame, such as 叫/喊, have core frame elements, Sound producer, Addresee, Onomatopoeia, donoting a special way of sound-producing communicative event. The defining patterns of syntactic behaviors in this frame can be exemplified in the following three examples:

(a) Sound producer [NP] < Onomatopoeia [Adj])+(的/地) < *

E.g. [地上的小狗/Sound producer][汪汪/Onomatopoeia]叫。

(b) Sound producer [NP] < 向/朝/對(著) [Prep] + Addressee [NP] (<

Onomatopoeia [Adj] + (的/地)) < * < (個)不停/(了)起來

E.g. [一條狗/Sound producer]對著[我/Addressee][汪汪/Onomatopoeia]叫了

起來。

(c) Sound_Source [NP] (< Onomatopoeia [Adj])+(的/地)) < * < (個)不停/(了)起

來

E.g. [肚子/Sound_Source]開始[咕嚕咕嚕/Onomatopoeia]叫了起來。

Here, the Sound producer is defined as an animate or inanimate being that produces sounds by verbal communication; Addressee denotes a person toward whom the Noise is directed and Onomatopoeia means the words which resembles the sound.

In the Noise frame, the verbs usually serve as intransitive verbs and do not take a realized complement delivering a Massage. However, these frame-profiled verbs in Noise frame can develop to the verbs of morphologically open class "Verb-Complement Sequences" which incorporate a flexible one-way message-packing object into the predicates themselves similar to those VO compounds in the Speak frame, illustrated as the following:

iv.   Verb-Complement Sequences form the frame-profiled verb "叫"[7]

叫好 jiàohǎo   "to applaud"

叫苦 jiàokǔ   "to complain of hardship"

叫窮 jiàoqióng   "to poor-mouth"

叫停 jiàotíng   "to call to stop"

叫屈 jiàoqū   "to bemoan against an injustice"

叫春 jiàochūn   "to caterwaul"

v.   Verb-Complement Sequences form the frame-profiled verb "喊"[7]

喊冤 hǎnyuān   "to protest against an injustice "

喊累 hǎnlèi   "to complain of fatigue"

喊窮 hǎnqióng   "to poor-mouth"

喊停 hǎntíng   "to call to stop"

喊話 hǎnhuà   "to shout propaganda at enemy soldier"

喊價 hǎnjià   "to bid"

喊打 hǎndǎ   "to shout "hit""

喊殺 hǎnshā   "to shout "kill""

喊口號 hǎnkǒuhào "to shout the slogan"

Interestingly, these Verb-Message Sequences noted above no longer denote a

special voice-producing action, but convey a message-delivering event instead.

Actually, they show consistent syntactic patterns with those in the Speak frame of

communication frame in Mandarin, mainly the intransitive usage and the dative

construction, as exemplified in (39) and (40):

---

[7] Both of the verbs "叫/喊" are classified into the Noise frame under the Communication frame in Mandarin
   VerbNet (2010).

(39) Speaker [NP] < *

比賽過程高潮迭起，八千多觀眾**叫好**不已。

Bisai guocheng gaochaodieqi，ba-qian duo guanzhong jiaohao buyi

Race process wonderful, 8000 more spectator applaud endlessly

'More than 8000 spectators applauded endlessly for the wonderful race.'

新台幣大幅升值，出口廠商不斷**叫苦**，

Xintaibi dafu shengzhi，chukou changshang buduan jiaoku

NT dollar sharp appreciation, exporter continuously complain of hardship

'The exporters complained of hardship for the sharp appreciation of NT

dollars.'

在聆聽宣判後，邱和順頻頻**喊冤**，

Zai lingting xuanpan hou，qiuheshun pinpin hanyuan

PREP listen sentence after, Qiuheshun repeatedly protest against an

injustice

'Qiu-heshun repeatedly claimed his innocence after listening to the

sentence'

他雖不**喊口號**，但他是台獨的執行者。

Ta sui bu hankouhao，dan ta shi taidu de zhixingzhe

3S though not shout slogans, but 3S is Taiwan's independence DE

executor

'He does not shout slogans, but he is the executor of Taiwan's

independence.'

(40) Speaker[NP] < 和/對/向 [Prep] + Addressee [NP] < *

憤怒的議員對這位發言人高聲叫好。

Fennu de yiyuan dui zhe-wei fayanren gaosheng jiaohao

Angry DE member of the parliament to this CL spokesman loudly

applaud

'The angry member of the parliament applauded loudly to the

spokesman.'

不少企業向政府叫苦，

Bu-shao qiye xiang zhengfu jiaoku

Many business to government complain of hardship

'Many businesses complained of hardship to the government.'

被告則對媒體喊冤，

Beigao ze dui meiti hanyuan

Defendant then to media protest against an injustice

'The defendant then protested against his injustice to the media.'

大約二千名示威者向大約八百名警察喊口號。

Dayue er-qian ming shiweizhe xiang dayue ba-bai ming jingcha

hankouhao

About 2000 CL demonstrator to about 800 CL police officer shout slogans

'About 2,000 demonstrators shouted slogans to about 800 police officers.'

The semantic bridge that licenses the transformation of lemmas from the

frame-profiled verbs to the Verb-Message compounds may be through the process

of event conflation by combining the sound-producing event (framing event) and

the message-delivering event (supporting event) in terms of the communicative

schema in cognitive concept. When non-message-delivering verbs are apt to

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correlate with the core participant role "Message" of the communication frame, one way is that they take up the Message by means of incorporating the Message as their lexicalized part to form the VO predicates, like Verb-Message compounds in the Speak frame; moreover, there have to be the marked forms, for example the direct-quote usages, if these predicates of Verb-Complement Sequences take the more detailed statement of message which is overtly realized syntactically. We illustrate the syntactically marked usages of the Verb-Message compounds from frame-profiled verbs 叫/喊 in the example (41):

(41) The Marked Form with Indirect-quote of Verb-Message compounds

消費者**叫好**：豆奶新鮮、好喝、有營養；

Xiaofeizhe jiaohao：dounai xinxian、haohe、youyingyang

Consumer applaud: bean milk fresh, tasty, nutritious

'The consumers said applausively: The bean milk was fresh, tasty, and nutritious.'

農民紛紛**叫苦**：今年養路費太高，養不起小四輪拖拉機。

Nongmin fenfen jiaoku：jinnian yanglufei tai gao，yangbuqi xiao si-lun tuolaji

Farmer all complain: this year toll too high, afford not small four-wheel tractor

'The farmers complained: The cost of the toll this year was too high so that we can't afford a small four-wheel tractor.'

蔡一傑大聲**喊冤**：「簡直是無中生有，我是認識 Kenneth，很多人都認

識！…

Caiyijie dasheng hanyuan：「jianzhi shi wuzhongshengyou，wo shi renshi

Kenneth，henduo ren dou renshi！…

Caiyijie loudly protest against an injustice: fairly be something out of

nothing, 1S be know Kenneth, many people all know

'Cai-Yijie strongly protested against his injustice and said: "It was like

something out of nothing. I did know Kenneth as many people did!.'

遊行隊伍邊行進邊**喊口號**：「阿拉法特，我們歡迎你回來！」

Uxing duiwu bian xingjin bian hankouhao：「alafate，women huanying ni

huilai！」

March procession side progress side shout the slogan: Arafat, 1P welcome

2S back

'The procession of marchers marched forward and shouted the slogan:

"Arafat, welcome back!".'

Another case is the sound-producing verb "哭". Syntactically, the verb "哭"

usually serve as an intransitive verb and can be followed by the aspectual markers

了/著/過. The main patterns of syntactic behaviors are exemplified in the following

three examples:

(a) <u>Intransitive Predicate</u>

E.g. 她從來不**哭**。

E.g. 她悄悄地**哭**了…

(b) <u>Verb + Aspectual markers 了/著/過</u>

    E.g. 胡女昨晚在看守所內**哭**了一整晚。

    E.g. 若干示威者**哭**著，並相互擁抱，

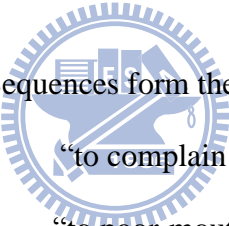   E.g. 一發現他有外遇，我也**哭**過、吵過，還試圖自殺過，

(c) <u>Verbal Complement</u>

    E.g. 病人感動得**哭**了，

    E.g. 我們激動得**哭**了。

The frame-profiled verb "哭" can extend to the verbs of morphologically open class "Verb-Complement Sequences" in the same way, illustrated as the following:

vi.   Verb-Complement Sequences form the frame-profiled verb "哭"

哭累	kūlèi	"to complain of fatigue"
哭窮	kūqióng	"to poor-mouth"
哭餓	kūè	"to cry for hunger"
哭無聊	kūwúliáo	"to cry for being bored"

Thus, these Verb-Complement Sequences do not denote a voice-producing action, but convey a message-delivering communicative event instead. Additionally, they show the same syntactic patterns with those in the Speak frame of communication frame in Mandarin, as exemplified in (42) and (43):

(42) Speaker [NP] < *

各家旅行社都在**哭窮**。

Ge-jia luxingshe dou zai kuqiong

Every CL tourist agency all PROG poor-mouth

'All of the tourist agencies poor-mouthed.'

(43) Speaker[NP] < 和/對/向 [Prep] + Addressee [NP] < *

縣長余陳月瑛則趁機向李登輝總統**哭窮**，

Xianzhang yuchenyueying ze chenji xiang lidenghui zongtong kuqiong

County magistrate Yuchenyueying then take the opportunity to Lidenghui

President poor-mouth

'The county magistrate, Yu Chen-Yueying, then took the opportunity to
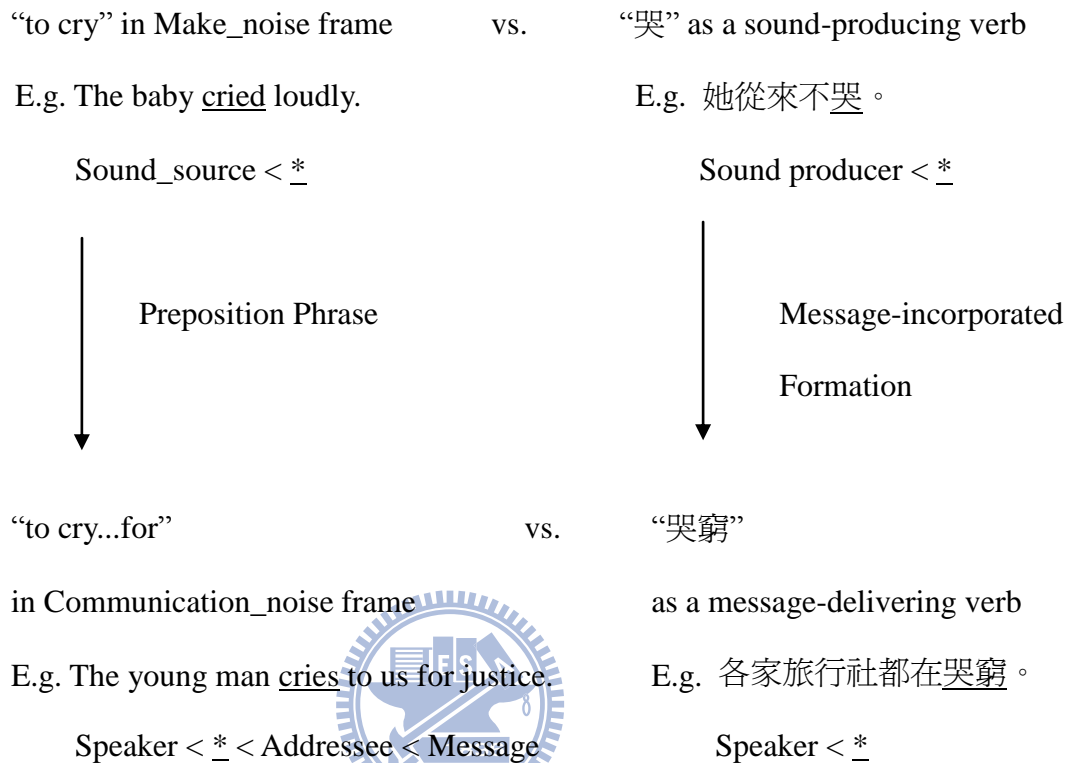
poor-mouth to President Denghui Lee.'

The corresponding English example can be found in the analysis of

FrameNet. The verb "to cry" is polysemous and belongs to the Make_noise

frame and the Communication_noise frame respectively under the

Communication frame. In the former frame, the sense of "to cry" is defined:

"A physical entity, construed as a point-Sound_source, emits a Sound. This

includes animals and people making noise with their vocal tracts"; in the latter

frame, the sense of "to cry" is defined: "This frame contains words for types of

noise which can be used to characterize verbal communication. It involves a

Speaker who produces noise and thus communicates a Message to an

Addressee". Different senses belong to different classified frames; that is, as

the semantic shift happens, syntactic patterns with the frame-profiled

participants must change on the other hand. We compare the parallel contrasts

in English and in Chinese Mandarin, illustrated as the following:

Figure 14: the Comparison between English FrameNet and Mandarin VerbNet

"to cry" in Make_noise frame   vs.   "哭" as a sound-producing verb

 E.g. The baby <u>cried</u> loudly.   E.g. 她從來不<u>哭</u>。

        Sound_source < <u>*</u>   Sound producer < <u>*</u>

        Preposition Phrase   Message-incorporated

                                                    Formation

"to cry...for"   vs.   "哭窮"

in Communication_noise frame   as a message-delivering verb

E.g. The young man <u>cries</u> to us for justice.   E.g. 各家旅行社都在<u>哭窮</u>。

        Speaker < <u>*</u> < Addressee < Message   Speaker < <u>*</u>

5.2.3 Brief Summary

The morphological template of the verbs of morphologically open class "Verb-Complement Sequences" can be seen as a complex event composed of a frame-profiled event and a its core frame component event. For example, the predicates of Verb-Message Sequences consist of the sound-producing event and a Message-delivering event as VO compounds by incorporating the Message into the lemmas themselves. These predicates comes from a transitive construction, being the process of gragual lexicaliztion throuth the deconstuctionalization (V + Obj.). The frame-profiled verbs "X" may come from various frames and the incorporated

complement plays a essential participant role in the cognitive concept of the

corresponding verbal frame. We figure out the summary in the following:

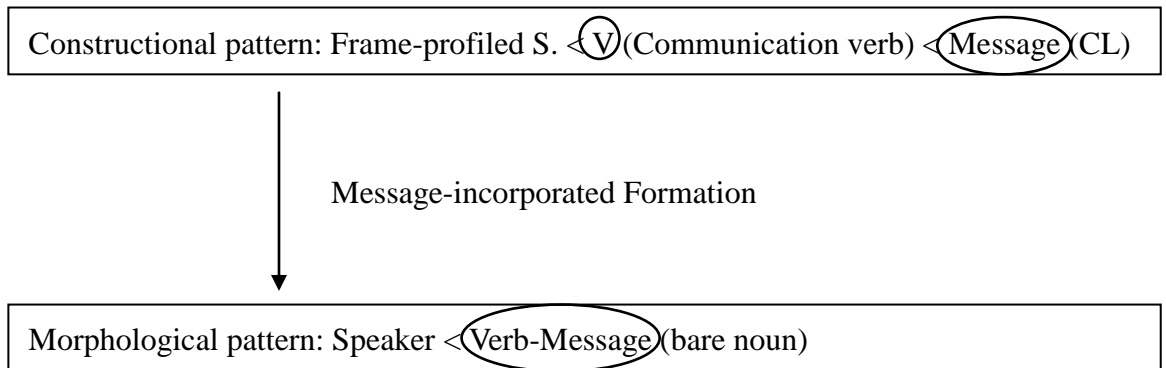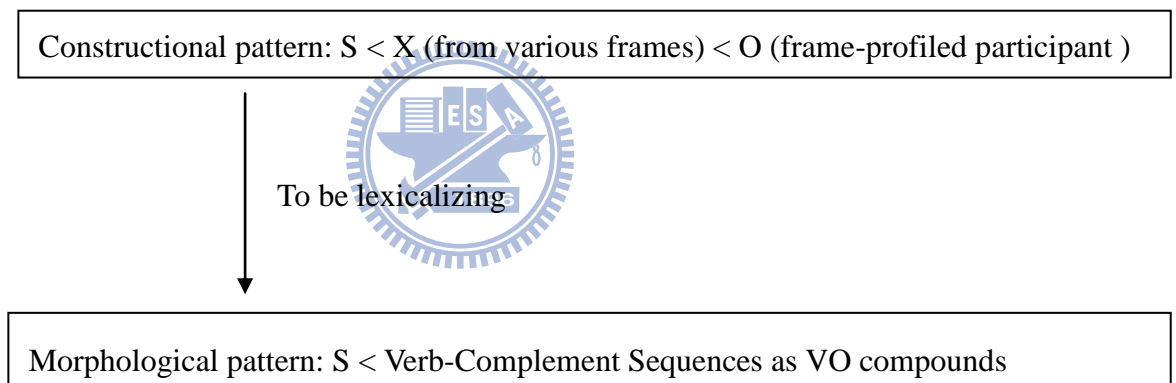Figure 15: the Process of Message-incorporated Formation

Constructional pattern: Frame-profiled S. < V (Communication verb) < Message (CL)

Message-incorporated Formation

Morphological pattern: Speaker < Verb-Message (bare noun)

Figure 16: the Generalization of the Message-incorporated Formation Process

Constructional pattern: S < X (from various frames) < O (frame-profiled participant)

To be lexicalizing

| |
|---|
| Morphological pattern: S < Verb-Complement Sequences as VO compounds |

5.3 Frame-based Analysis of the Manner-Verb Combinations

5.3.1 Manner-Verb Combinations in the Perception Frame

The high frequency of collocatoinal usage makes great contribution in

lexicalizaiton. In the analysis of VerbNet, the Perception frame contaings two

subframes – Perception_Active frame and Perception_Experience frame, whose

frame relations are presented as the following figure:

Figure 17: the Hierarchical Frame Relations of Mandarin Perception Verbs

(VerbNet, 2010)

Hierarchical Structure of the Perception Archiframe (990425 revised)
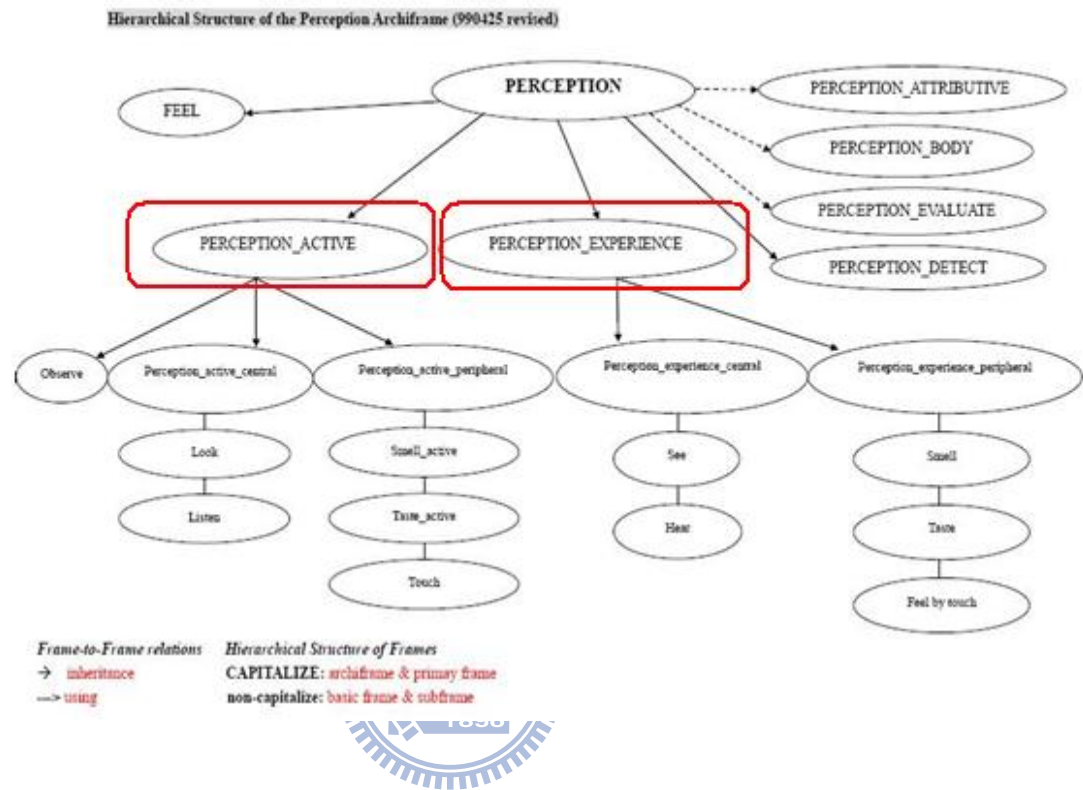
While the Perception_Experience frame is defined that a Perceiver has

perceptual experiences under some stimulation of Phenomenon through his or her

Body part without any volition or intention, the definition of the Perception_Active

frame is that for certain purpose, the Perceiver volitionally and even intentionally

directs his or her attention to some Phenomenon for a period of duration in order to

have a perceptual experience or confirm an issue through his/her Body part. The

crutial difference between the two frames lies in the Manner in which the Perceiver

experiences a perceptual experence. In terms of the usage of discourse, we found

that such a differenciation makes verbs in these two frames always collocate with

different Manner adverbs, as illustrated in the following two examples respectively:

(a) Perceiver_Agentive [NP] < {仔細地/細心地[Manner Adv]} < ** <

　　Phenomenon_Entity [NP] (in the Perception_Active frame)

　　E.g. [他/Perceiver_Agentive]仔細地**看著**[這個古董花瓶

　　　　/Phenomenon_Entity]。

(b) Perceiver_Experiencer [NP] < {恰好/不小心/無意間/偶然[Manner Adv]} <

　　** < Phenomenon_Entity [NP] (in the Perception_Experience frame)

　　E.g. [記者/Perceiver_Experiencer]在排練房恰好**看到**正在刻苦訓練舞蹈

　　　　「情思」的姑娘們/Phenomenon_Entity]，

　　Because of the frequent collocation with the Manner adverbs, the frame-profiled verbs in the Perception_Active frame can transfom to the verbs of morphologically open class "Manner-Verbs Combination" by means of incorporating the frame-profiled Manner into the predicates themselves to form the MV compounds, illustrated as the following:

i. Manner-Verb Combinations form the perception verb "看"[8]

　　偷看　tōukàn　　　"to peep"

　　細看　xìkàn　　　"to look carefully"

　　俯看　fǔkàn　　　"to look down at"

ii. Manner-Verb Combinations form the perception verb "視"[8]

　　凝視　níngshì　　"to contemplate"

　　怒視　nùshì　　　"to glower at"

　　俯視　fǔshì　　　"to look down at"

　　仰視　yǎngshì　　"to look up at"

---

[8] The verbs "看/聽/視" all come from the Perception_Active_Central frame under the Perception frame in Mandarin VerbNet (2010).

iii. Manner-Verb Combinations form the perception verb "聽"[8]
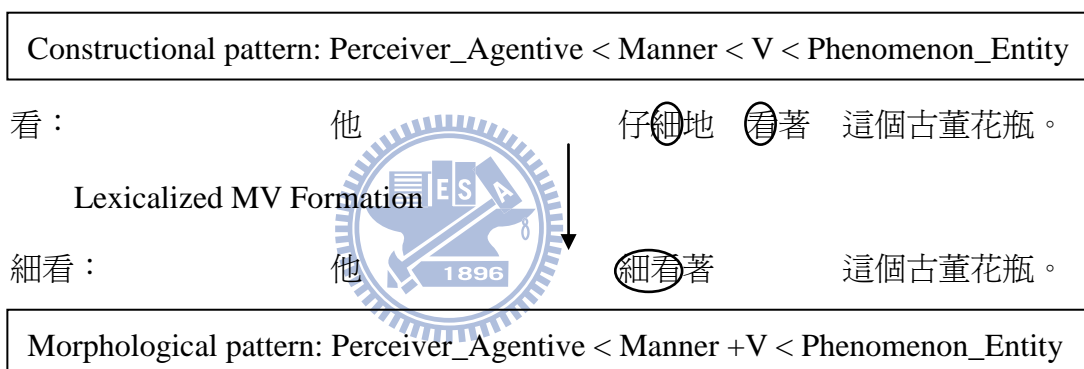
偷聽 tōutīng "to eavesdrop"

竊聽 qiètīng "to eavesdrop"

凝聽 níngtīng "to listen attentively"

細聽 xìtīng "to listen carefully"

We figure out the process of lexicalization of the Lexicalized MV Formation by taking the example (i):

Figure 18: the Process of Lexicalized MV Formation (1)

| Constructional pattern: Perceiver_Agentive < Manner < V < Phenomenon_Entity |

看： 他 仔細地 看著 這個古董花瓶。

Lexicalized MV Formation

細看： 他 細看著 這個古董花瓶。

| Morphological pattern: Perceiver_Agentive < Manner +V < Phenomenon_Entity |

Here come two interesting and important things: 1) the reason why these predicates in group a, b and c all belong to the Perception_Active frame may be that taking a specific Manner in doing a perceptual event means that the Perceiver must do this event with volition or intention; 2) the reason of the closer combination in lexicalization may be that the Manner itself is the frame-profiled element in the perception frame, no matter in VerbNet's framework or in FrameNet's framework; that is, a perceptual event can basically be differentiated into two event types: a) volitional or active perception and b) non-volitional or experienced perception in human cognitive conceptual schema. Based on the two observations, the relationship between the active perception verbs and their frame-profiled role

"Manner" is overwhelmingly much closer so that we indeed found that the volitional perception verbs in Mandarin can take the morphological template of Manner-Verb Combinations to form the MV compounds while the non-volitional perception verbs cannot.

5.3.2 Manner-Verb Combinations in the Communication Frame

In lexicalization, the morphological template of Manner-Verb Combinations is quite productive and general in Mandarin Chinese. In communication frame, the verbs of sound-producing, such as 叫/喊/哭/笑, often collocate with the Manner adverbs in discourse, as illustrated in the following example respectively:

(a) Sound producer [NP] < Manner [Adv] + (的/地) < *
    E.g.1　突然[妹妹/Sound producer]就大聲地**叫**。
    E.g.2　[她/Sound producer]大聲地唱大聲地**喊**，露水濕透了衣服她都沒有覺
        察。
    E.g.3　[這些十幾歲的姑娘們/Sound producer]圍抱著郝振生痛快地**哭**了。
    E.g.4　[他/Sound producer]想著，不禁冷冷地**笑**了。

Such a high frequent collocational association triggers the transformation of the predicates from the frame-profiled verbs to the Manner-Verb Combinations, as illustrated in the following:

iv.　Manner-Verb Combinations form the emotion verb "叫"
    大叫　dàjiào　　　"to bawl"
    高叫　gāojiào　　　"to shout loudly"

狂叫　kuángjiào　　　"to shout madly"

尖叫　jiānjiào　　　"to scream"

驚叫　jīngjiào　　　"to exclaim"

暗叫　ànjiào　　　　"to shout inwardly"

  v.　Manner-Verb Combinations form the emotion verb "喊"

大喊　dàhǎn　　　　"to bawl"

高喊　gāohǎn　　　　"to shout loudly"

狂喊　kuánghǎn　　　"to shout madly"

 vi.　Manner-Verb Combinations form the emotion verb "哭"

大哭　dàkū　　　　　"to cry loudly"

痛哭　tòngkū　　　　"to cry loudly"

乾哭　gānkū　　　　　"to cry without tears"

假哭　jiǎkū　　　　　"to pretend crying"

號哭　háokū　　　　　"to cry loudly"

慟哭　tòngkū　　　　"to wail"
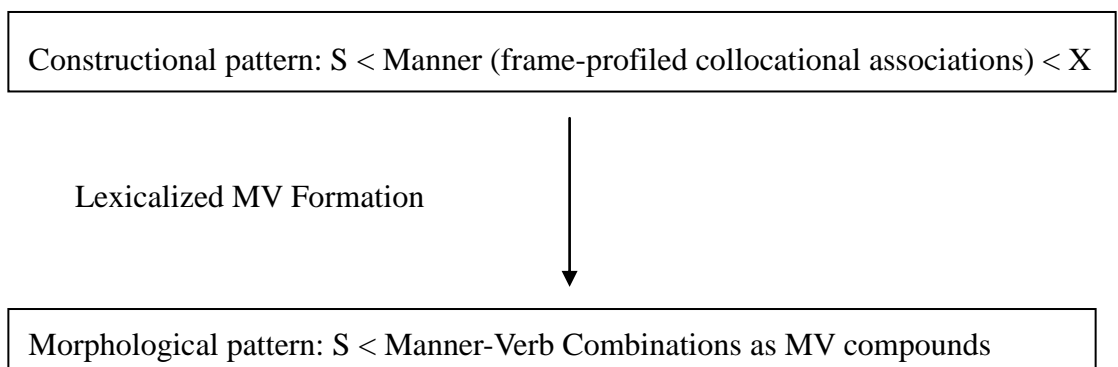
vii.　Manner-Verb Combinations form the emotion verb "笑"

大笑　dàxiào　　　　"to laugh loudly"

苦笑　kǔxiào　　　　"to laugh wryly"

冷笑　lěngxiào　　　　"to laugh grimly"

奸笑　jiānxiào　　　　"to smile trickily"

傻笑　shǎxiào　　　　"to laugh foolishly"

暗笑　ànxiào　　　　"to laugh in one's heart"

偷笑　tōuxiào　　　　"to snigger"

竊笑　qièxiào　　　　"to snicker"

Most of the predicates of group d, e, f, and g are semi-lexicalized. The relationship between the sound-producing verbs and their incorporated Manner seems looser than that between the Perception_Acitve verbs and their frame-profiled component Manner. This is empirically reasonable because a frame-profiled element has to be subcategorized by its verb, not only frequently collocated with its verb.

5.3.3 Brief Summary

The morphological template of the verbs of morphologically open class "Manner-Verb Combinations" can broadly be seen as a complex event composed of a frame-profiled event of verbs and the frequent collocated component event of Manner by incorporating the Manner into the verb itself. These predicates come from a high frequent collocation of the frame-profiled verbs and their specific Manner in language use, being the process of gragual lexicalization throuth the deconstuctionalization (Manner Adv. + V). The frame-profiled verbs "X" may come from various frames and the incorporated complements have to be collocated with them very often in discourse. We figure out the summary in the following:

Figure 19: the Process of Lexicalized MV Formation

Constructional pattern: S < Manner (frame-profiled collocational associations) < X

Lexicalized MV Formation

Morphological pattern: S < Manner-Verb Combinations as MV compounds

Chapter 6

Conclusions

6.1 Implication and Significance of the Study

It is known that lexical entries are the form-and-meaning mapping conventionally. In this paper, it is claimed that the continuum between lexicon and constructions contributes to the varied morphological templates for the meaning-and-form mapping entries. In this continuum, the more toward the left the entry goes, the more full-fledged it is in lexicalization; vice versa, the more toward the right the entry goes, the more constructional it is in syntax. The verbs of morphologically open class are one of the major categories spreading out on the continuum of this dynamic and emergent lexicalizational-line so that they are the representative one of the groups of semi-lexicalized predicates, figured out in the following:

Figure 19: the Form-and-meaning Mapping Continuum between Lexicon and

Construction

Lexicon   Form-and-meaning mapping continuum   Construction

Lexical entity   ◄-►   Morphologically open class   ◄-►   Constructional entity
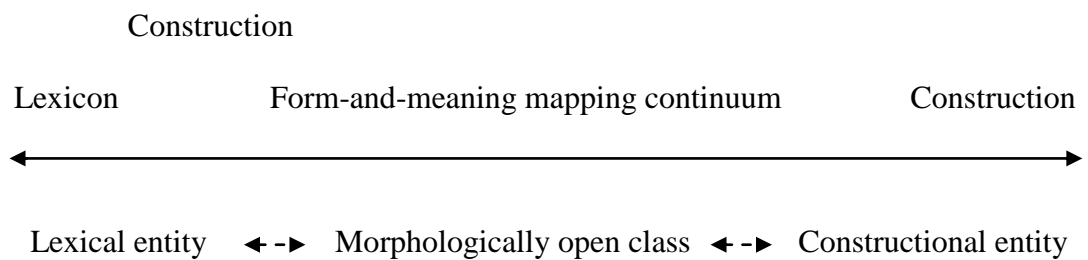
There are four important factors relevant to the forming of the verbs of morphological open class generalized in this study:

1) Cognitive conceptual schema in one's brain plays an essential role for human communication with language. Therefore, the core components (core participant roles) and their relations involved in the schema are apt to be lexicalized as a word gradually. For example, the transformation from the Expeirencer-oriented verbs to the Stimulus-oriented verbs is due to the causal relations with the core participant role "Experiencer" in the conceptual schema of the emotion verbs.

2) Syntactically defining patterns are remarkable in lexicalization through "deconstructionalization". For instance, the transformation from certain cognition or communication verbs to the Stimulus-oriented emotion verbs "令人 lìngrén +X" is bridged by the causative construction shared in these three groups of different verb classes.

3) Verbal-subcategorized core participants are noticeable in lexicalization. They may be incorporated into the verbs to form a complex event with specific way or information delivering. For, example, the verbs of morphologically open class "Verb-Complement Sequences" is formed by incorporating the core elements into the verbs to express the whole new complex event, such as a Message-delivery communicative event of "Verb-Message Compounds".

4) Collocational associations of verbs in linguistic use are a clue of influence in lexicalization. The high frequent usage of collocation may result in the lexicalization of the verbs with their collocated words. For instance, the specific adverbs of Manner are incorporated into the verbs to form the verbs

of morphologically open class "Manner-Verb Combinations" triggered from the high frequent collocation in discourse.

All in all, it is showed that the process of lexicalization should be concerned in the perspective of the frame-based analysis in verbal classification. The frame-profiled elements, syntactic patterns, frequent collocational associations in discourse of the verbs can be the component parts or important factors for supporting the formation of those morphological templates. In terms of the frame-based analysis, we do capture the differences and similarities among various kinds of verb classes which supply the restrictions and orientations in the lexicalization of verbs of morphologically open class as proved by means of the assistance of the corpus data and analysis tools.

Finally, there are three significant points noted in this paper. Firstly, there can be a dynamic continuum between the lexicons and constructions for the form-and-meaning mapping in which the major one of the semi-lexicalized categories is the verbs of morphologically open class. Secondly, frame-based analyses contribute to verbal classifications and restricts the semantic shift and transformation or lexicalization of cross-framed verbs in terms of the cognitive schema, the semantic participants, the syntactic behaviors and the pragmatic collocations. Thirdly, the grammar is the routinized patters and usages in discourse. The high frequency of linguistic use directs the tendency or orientation of the lexicalization in language.

6.2 Questions for Future Research

In this paper, we explore three cases of verbs of morphologically open class, which are unique in that they demonstrate multiple-faceted interactions among syntax,

semantics, morphology and pragmatics in Mandarin. The first case is focused on the Stimulus_Headed emotion verbs in Mandarin emotion verbs, such as 可憐/可愛/迷人/氣人/有趣/有意思/令人興奮/令人高興. They show syntactically derived morphological structures through deconstructionalization as well as language-specific orientation in expressing emotional feelings towards a speaker: there are at least four fixed templates of morphological make-ups that are directly derived from certain syntactic patterns, including modal VP (Modal + V), transitive VP (V$_{transitive}$ + NP), possessive VP ('have'+ NP), and causative VP (causative + NP + V). Moreover, there are still other subtypes of morphological make-ups involved in these templates, such as 討喜/討厭/討打/討罵 of the transitive VP (V$_{transitive}$ + NP) pattern, 教人傷心/教人羨慕/讓人愉快/讓人難忘 of the causative VP (causative + NP + V) pattern, which need to be further studied.

In addition, there are other subtypes of the verbs of morphologically open class "Verb-Complement sequences", such as 跑操場/跑校園 denoting a motion event with its complement "Path" and 跑龍套/跑生意 denoting a motion event with its complement "Goal". And lots of the "Manner-Verb combinations" should be further explored, such as 狂喜/竊喜/大怒/狂怒. Finally, a special case in the perception verbs, such as 重視/輕視/看重/看輕/小看/大看/看扁/看漲 can be viewed as the "Measure-Verb or Verb-Measure Combinations" in which the measure is not only the prototypical properties by seeing, such as length, but the properties by other measurements, like weight especially.

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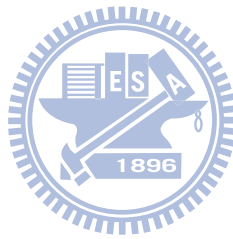
Website Resources

中央研究院平衡語料庫 Sinica Balanced Corpus: http://dbo.sinica.edu.tw/SinicaCorpus/

中文詞彙特性素描系統 Chinese Word Sketch Engine:

http://wordsketch.ling.sinica.edu.tw/

中文動詞詞彙語意網 Mandarin VerbNet: http://verbnet.nctu.edu.tw/verbnet/website/

FrameNet: http://framenet.icsi.berkeley.edu/

教育部重編國語辭典修訂本 Online Chinese Dictionary of Ministry of Education:

http://dict.revised.moe.edu.tw/index.html

Google Search Engine: http://www.google.com.tw/