國立交通大學

外國語文學系外國文學與語言學碩士班

碩士論文

以框架理論為本之漢語情緒動詞詞彙語意分類研究

A Frame-based Lexical Semantic Categorization of
Mandarin Emotion Verbs

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中 華 民 國 九 十 八 年 六 月

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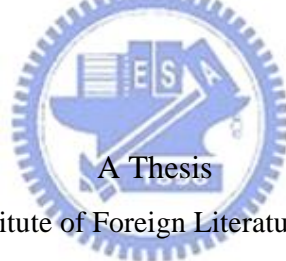
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摘　要

　　本研究以Fillmore和Atkins (1992)所提出的框架語意理論(Frame semantics)及Liu 和Chiang (2008)提出的「中文動詞語意網之架構」為本，探討漢語中的情緒動詞並進行分類。過去的學者從許多不同的角度分析情緒動詞 (例如Levin 1993, Tsai et al 1996, Chang et al 2000, Liu 2002, Lai 2004, and Berkeley FrameNet Project)，皆對情緒動詞的研究奠下了基礎。然而，過去的研究多只著重在數個或小部份的情緒動詞，因此未能盡可能全面廣泛地呈現情緒動詞語意及語法上的表現。此外，對於情緒動詞事件中的主語角色，過去研究大多只提到情緒感知者(Experiencer)及刺激物(Stimulus)這兩種，然而Liu (2009)在研究中，經情緒動詞語意、語法及句式特質提出第三種主要的主語角色: 情緒引動者(Affecter)。

1. Experiencer-oriented (Experiencer as subject)
   a. Transitive:我欣賞/羨慕/討厭他。
   b. Intransitive: 我很害怕/高興/沮喪。
2. Stimulus-oriented (Stimulus as subject)
   a. Intransitive – an attributive property: 這本書很恐怖/枯燥/有趣。
   b. Transitive – an affective impact: 這本書很吸引/感動/激勵我。
3. Affecter-oriented (Affecter as subject)
   他惹火/激怒了我。
   'He infuriates/irritates me.'

　　採用Liu (2009)三個主要參與角色的看法,本研究以中研院現代漢語平衡語料庫為主要語料來源，觀察並考量情緒動詞的參與者角色、語法表現、事件結構、共現特徵及語意訊息等因素，對漢語情緒動詞進行更深入的語法和語義研究，並依Liu (2009)所建構認知動詞的概念基模，對漢語情緒動詞進一步做全面階層性的分類。在分類上，本研究著重語法及語意上的互動，將漢語情緒動詞分類至由上至下最多四層不同層次的框架中。這四個層次分別為「主框架」、「首要框架」、「基本框架」以及「微框架」(Liu and Chiang 2008)。值得注意的是，這些框架有著共同的概念基模。此外，同一階層的框架間雖然相互差異，但每一個次框架都共同繼承上一個母框架的語意及語法句式特質。在此研究之中，漢語情緒動詞所建立的語意框架結構乃由「情緒主框架」以及承繼於其的四個首要框架、九個基本框架和多個微框架所組成。如下圖所示：
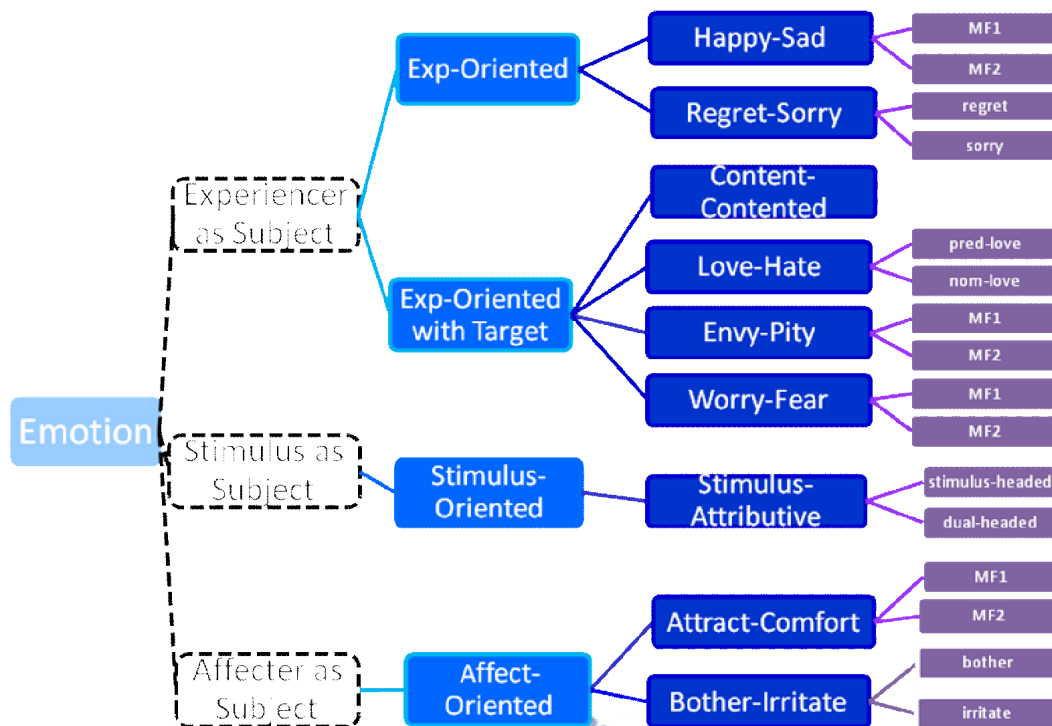
經由上述的分類之後，漢語情緒動詞的特性得以清楚展現，例如情緒事件構成的面向、框架與框架間的階層性與關聯性、每個框架語意及語法上的差異以及情緒近義詞彙的區分等等。

　　簡言之，本研究主要觀察漢語情緒動詞在實際語料中所呈現的語意、語法特點，以情緒動詞共有的概念基模，對漢語情緒動詞做進一步全面的分類，企盼能為漢語情緒動詞的研究提供另一完整清楚的解釋與分析。

A Frame-based Lexical Semantic Categorization of Mandarin Emotion Verbs

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Abstract

Adopting Frame Semantics proposed by Fillmore and Atkins (1992) and the Framework of Mandarin VerbNet by Liu and Chiang (2008), this study aims to explore Mandarin emotion verbs and classify the verbs into a hierarchical structure. A great number of studies have been investigated the behavior of emotion verbs from different perspectives (e.g. Levin 1993, Tsai et al 1996, Chang et al 2000, Liu 2002, Lai 2004, and Berkeley FrameNet Project). However, most of the previous studies only looked at a small portion or part of the whole field of emotion verbs. Additionally, previous researches only mentioned Experiencer and Stimulus as the two main or frequently subject roles of emotion verbs. However, Liu (2009) explored the lexicalization patterns of Mandarin verbs of emotion and proposed a third type of subject: Affecter.

1. Experiencer-oriented (Experiencer as subject)
    a. Transitive:我欣賞/羨慕/討厭他。

    wo xinshang/xianmu/taoyan ta

    'I admire/envy/dislike him.'
    b. Intransitive: 我很害怕/高興/沮喪。

    wo hen haipa/gaoxing/jusang

    'I am very frightened/pleased/depressed.'
2. Stimulus-oriented (Stimulus as subject)
    a. Intransitive – an attributive property: 這本書很恐怖/枯燥/有趣。

    zhe ben shu hen kongbu/kuzao/youqu

'The   book   is   frightening/boring/
                                    interesting.'

b. Transitive – an affective impact: 這本書很吸引/感動/激勵我。

                                    zhe ben shu hen xiyin/gandong/jili wo

                                    'The book attracts/touches/encourages me.'

3. Affecter-oriented (Affecter as subject)

他惹火/激怒了我。

ta rehuo/jinu le wo

'He infuriates/irritates me.'

This study, adopting Liu's (2009) three-way distinction proposal, aims to explain
and interpret the specific and heterogeneous properties in syntax and semantic of Mandarin
emotion verbs and provide a systematical categorization based on the syntax-to-semantics
correlations of Mandarin emotion verbs by applying a frame-based and corpus-based
analysis. The emotion verbs are categorized into four different layers of frames. They are,
from top to down, Archiframe, Primary Frame, Basic Frame, and Micro-frame (Liu and
Chiang 2008). Though the frames show diversities, they all share a same conceptual
schema postulated with a set of core frame elements. Besides, all children or lower
frames inherit the semantic and syntactic properties of the father or upper frame. The
hierarchical frame structure of Mandarin emotion verbs in this study includes one
Emotion archiframe, four primary frames, nine basic frames, and several micro-frames.
The structure is illustrated as below:
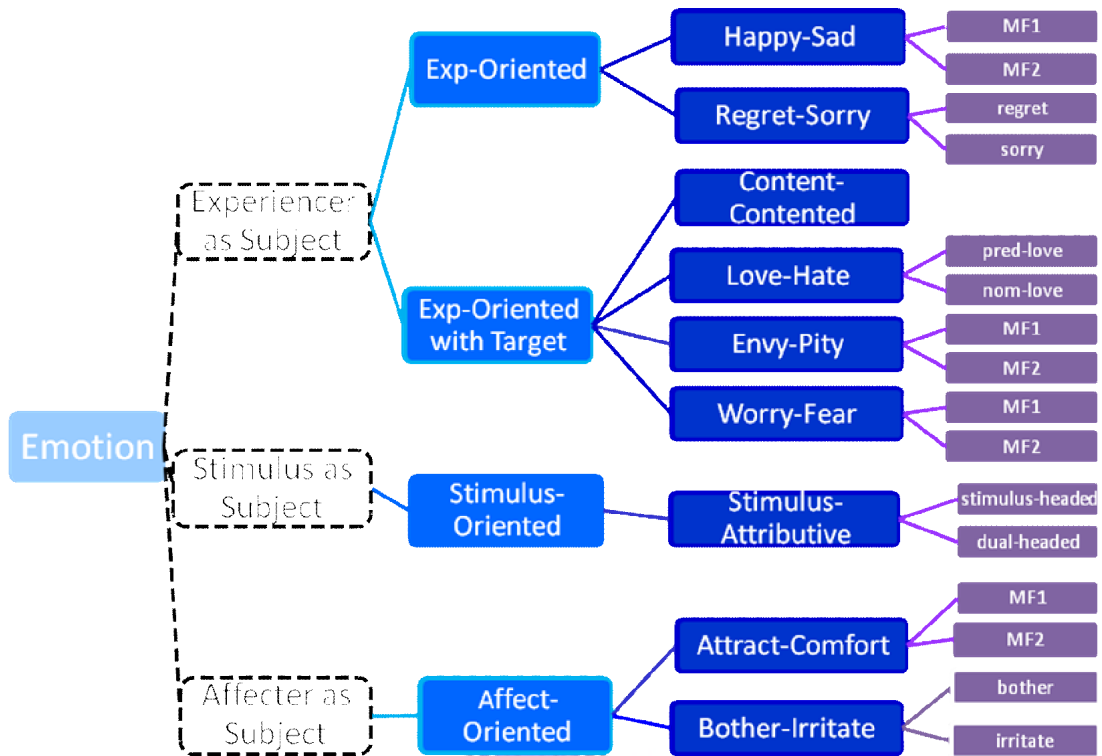
The categorization displays some characteristics of Mandarin Emotion verbs, such as perspectives on viewing emotional events, the interrelationship among the frames, and the distinctions of near-synonym sets of verbs.

Briefly speaking, this study tries to categorize Mandarin Emotion verbs by the conceptual schema and the syntactic and semantic properties s hown through corpus observation and attempts to provide a complete and well -organized explanation and analysis.

致謝

　　時間彷彿仍停留在入學的那一刻，怎知三年一晃眼就過去了，我也順利地完成了碩士論文。攻讀碩士學位的這三年，著實讓我成長了不少！除了知識層面的獲取之外，更令人驚訝的是我在處事及能力上的成長。這一切都得謝謝我的指導老師—劉美君教授。謝謝老師當初邀請我參與國科會研究計畫，讓懵懂無知的我在一次次的會議中真正了解做研究的方法；謝謝老師嚴格的要求，讓我在處理事情時思緒更為周全；謝謝老師深而切的鞭策，讓我在一次次的淚水中面對自我的缺點，勇敢成長！也因為老師的鼓勵與支持，我得以有機會和老師一起出國發表會議論文，甚至完成了從來不敢奢望的留學夢。因此即便跟隨老師的日子中淚水多過於笑容，我仍非常樂意、慶幸自己有機會走過。說再多句謝謝我想都不足以表達我對老師的感謝，但我仍要不免俗的說聲謝謝老師，因為您，所以我得以蛻變成長！也謝謝連金發老師及鄭縈老師，謝謝兩位老師在仔細審閱完論文後給予學生的意見與建議，您們的意見使我的論文更加完善。三位老師的用心與付出，學生由衷感謝。此外，我也要就讀期間所有教導過我的老師們（林若望、劉辰生、許慧娟、潘荷仙、Paul Portner 等教授）誠摯地說聲謝謝，謝謝老師們為我開啟了語言學的大門，讓我看到語言學中各領域的奧妙與可愛之處，也為我的論文打下了根基。

　　除了老師們之外，我也要謝謝辛苦的系辦助理：雅玲、旅櫻、曉玲及怡吟。謝謝妳們在學術甚至是生活上的種種協助。尤其是曉玲還曾在我跌傷時，犧牲自己寶貴的下班時間帶我去看醫生。

　　在學習、研究的過程中，總有許多一起奮鬥的同伴。謝謝老是不吝於幫我解惑的佳音學姊、瓊羽學姊、子玲學姊以及Peter學長；謝謝一同在304努力的同學及學弟妹們：雯靜、Fenny、佩瑜、若梅、蔓婷、彥甫以及柏宏，謝謝你們總在我累到不行時貼心地為我加油打氣。尤其要謝謝與我同甘共苦的舜佳(喵)，那些個兩人一同深夜還留在304打拼的日子，以及那在Boulder四個多月的時光，是我永遠都不會忘記的回憶；謝謝我那群可愛到不行的同學：惠瑜、鈴宓、佳霖、佳芬、縉雯、Joanna還有美玲，因為有妳們，研究所生活才不枯燥；謝謝我可愛的室友們：青樺、佳貞、佳君還有秀，謝謝妳們不時的加油關心，然後總是及時來個寢聚讓我消消課業上的壓力；也謝謝我身邊所有的朋友：複合式的朋友麗筠、其實很貼心的汶珀、體貼溫柔的柏蒼、帶我「趴趴造」紓解壓力的沛宏、一貫溫柔貼心支持鼓勵我的涵宇，以及總是持續關心我的怡碩、阿龍及肥仔。

　　最後，我更要謝謝我最摯愛可愛的家人，謝謝爸爸媽媽無怨無求的付出，即便再如何辛苦也要咬著牙讓我完成學業與夢想；謝謝姊姊與弟弟的支持與陪伴，讓我有傾訴的對象。謝謝我最親愛的家人，在我最疲憊沮喪的時候，你們永遠是我心中的避風港，也是最大的支柱與動力。

　　僅將這本碩士論文獻給我最愛最愛的爸媽及外婆，還有在天上的外公及爺爺。

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Chapter 1

Introduction

1.1 The Background

In recent years, the study of lexical semantics has been paying more and more attention and become a central research area in linguistics. Lexical units are regarded as a platform displaying the interaction between syntax and semantics. Verbs, as the core of lexicon, have drawn especially much attention. A number of studies have investigated and classified verbs in a systematical way via the verbal semantics. (Chiang 2006, Hu 2007, Levin 1993, Liu 1999, Liu 2002, Tsai *et al*. 1998). As two pilots, Levin (1993) classified English verbs with a diathesis alternation approach while Liu (2002) focused on Mandarin verbs. In the field of Mandarin verbal semantics, however, there are still some issues that need more investigations: 1) what is the interdependency between syntactic presentations and semantic properties, i.e. what do syntactic pattern tell us about verbs meaning and 2) is there semantic hierarchy? In other words, is the verbal categorization hierarchical or not? To fill these gaps, this study focuses on Mandarin emotion verbs to provide a frame-based solution to Mandarin verbal semantics.

1.2 The Issue: Emotion Verbs

Emotion verbs are defined in FrameNet (http://framenet.icsi.berkeley.edu/) as *an Experiencer has a particular emotional State, which may be described in terms of a Stimulus that provokes it, or a Topic that categorizes the Stimulus*. Levin (1993:189) mentioned that the most frequently arguments of emotion verbs (psych-verbs) are experiencer and stimulus. In terms of the expression of these two arguments, psychological (or emotion) verbs in English can be divided into four classes: verbs of two classes are transitive and verbs of the other two classes are intransitive. According

to Levin's analysis, subject types (or roles) and transitivity are two main diversities encoded in English emotion verbs, as examples below:

(1) Subject types of English emotion verbs

    a. Expeirencer as Subject

      He admired the painting.

    b. Stimulus as Subject

      The new toys amused the children.

(2) Transitivity of English emotion verbs

    a. Transitive with Experiencer Subject

      He admired <u>the painting</u>.

    b. Transitive with Stimulus Subject

      The new toys amused <u>the children</u>.

    c. Intransitive with Experiencer Subject

      Megan marveled at her beauty.

    d. Intransitive with Stimulus Subject

      The painting appeals to Malinda.

As for Mandarin emotion verbs, the variety of subject roles and transitivity are also equally applicable in Mandarin. However, Mandarin emotion verbs are much more heterogeneous. For example, there shows a great diversity of the subject and the transitivity of Mandarin emotion verbs.

(3) Subject types of Mandarin emotion verbs

    a. Experiencer as Subject

我很生氣他騙我。

wo hen shengqi ta pian wo

I very angry he deceived me

'I am very angry that he deceived me.'

    b.   Stimulus as Subject

這個遊戲很有趣。

zhe-ge youxi hen youqu

this-CL game very interesting

'This game is very interesting.'

    c.   Agent-like role as Subject

他激怒了秀蘭。

ta jinu le Xiulan

he anger PERF Xiulan

'He angered Xiulan.'

(4) Transitivity of Mandarin emotion verbs

    a.   Transitive with Experiencer Subject

我很喜歡他。

wo hen xihuan ta

I very like him

'I like him very much.'

    b.   Intransitive with Experiencer Subject

我很生氣。

wo hen shengqi

I very angry

'I am very angry.'

3

c. Transitive with Stimulus Subject

這個遊戲吸引<u>許多人</u>。

zhe-ge youxi xiyin <u>xuduoren</u>

this-CL game attract <u>many people</u>

'This game attracts many people.'

d. Intransitive with Stimulus Subject

這個廣告太誘人。

zhe-ge guanggao tai youren

this-CL advertisement too alluring

'This advertisement is too alluring.'

e. Transitive with Agent-like Subject

我激怒了<u>他</u>。

wo jinu le <u>ta</u>

I anger PERF <u>him</u>

'I angered him.'

Due to the heterogeneity of Mandarin emotion verbs, some questions arise: ***what are the unique semantic properties lexicalized in Mandarin emotion verbs, i.e. the syntax-to-semantics correlation? What would be a unified approach to distinguish and categorize the different classes of emotion verbs?***

1.3 Scope and Goal

The scope of this study focuses on the verbs depicting emotional states or events. The verbs in question include 生氣 *shengqu* 'angry', 氣 *qu* 'anger or be angry', 惱火 *naohuo* 'be enraged', 煩 *fan* 'annoy and be annoyed', 心煩 *xinfan* 'annoyed', 煩燥

fanzao 'annoyed', 煩悶 *fanmen* 'mopey', 驚訝 *jingya* 'surprise', 失望 *shiwang* 'disappoint', 滿意 *manyi* 'be satisfied', 服氣 *fuqi* 'submit', 不滿 *buman* 'be dissatisfied', 爽 *shuang* 'comfortable', 不爽 *bushuang* 'uncomfortable', 不平 *buping* 'protest', 不捨 *bushe* 'unwilling to give up', 不服 *bufu* 'unwilling to accept', 高興 *gaoxing* 'be glad', 快樂 *kuaile* 'be happy', 尷尬 *ganga* 'be embarrassed', 羞愧 *xiukui* 'be ashamed', 窘困 *jiongkun* 'be embarrassed', 激動 *jidong* 'be flushed', 難過 *nanguo* 'be sad', 悲哀 *beiai* 'be sad', 痛苦 *tongku* 'pain', 悲傷 *beishang* 'be sad', 悲痛 *beitong* 'be painful', 哀痛 *aitong* 'sorrow', 苦惱 *kunao* 'worry', 不安 *buan* 'be discomfort', 吃驚 *chijing* 'be amazed', 振奮 *zhenfen* 'inspire', 消沈 *xiaochen* 'be downhearted', 為難 *weinan* 'be awkward', 洩氣 *xiequ* 'be discouraged', 沮喪 *jusang* 'be depressed', 陶醉 *taozui* 'be intoxicated', 憂愁 *youchou* 'be worried', 著急 *zhaoji* 'be anxious', 感興趣 *ganxingqu* 'be interested in', 安慰 *anwei* 'comfort or be comforted', 無聊 *wuliao* 'be bored', 愛 *ai* 'love', 喜愛 *xiai* 'like', 喜歡 *xihuan* 'like', 愛好 *aihao* 'love', 熱愛 *reai* 'love', 喜好 *xihao* 'like', 討厭 *taoyan* 'detest', 厭惡 *yanwu* 'detest', 恨 *hen* 'hate', 痛恨 *tonghen* 'hate', 羨慕 *xianmu* 'envy', 妒忌 *duji* 'jealous', 嫉妒 *jidu* 'jealous', 同情 *tongqing* 'sympathize with', 憐憫 *lianmin* 'pity', 憐惜 *lianxi* 'take pity on' 後悔 *houhui* 'regret', 懊悔 *aohui* 'repent', 懊惱 *aonao* 'be remorseful', 痛悔 *tonghui* 'regret', 悔恨 *huihen* 'regret', 自責 *zize* 'be remorseful', 惋惜 *wanxi* 'feel sorry', 內疚 *neijiu* 'be guilty', 愧疚 *kuijiu* 'be ashamed', 慚愧 *cankui* 'be shamed', 遺憾 *yihan* 'feel sorry', 擔心 *danxin* 'worry', 擔憂 *danyou* 'be anxious', 憂慮 *youlu* 'be anxious', 焦慮 *jiaolu* 'be anxious', 煩惱 *fannao* 'worry', 苦惱 *kunao* 'worry', 怕 *pa* 'fear', 害怕 *haipa* 'fear', 畏懼 *weiju* 'be afraid of', 懼怕 *jupa* 'be afraid of', 掛心 *guaxin* 'be concerned with', 牽掛 *qiangua* 'be concern about', 掛念 *guanian* 'concern about', 關心 *guanxin* 'be concerned with', 關切 *quanqie* 'be concerned with', 在乎 *zaihu* 'care about', 在意 *zaiyi* 'care about', 吸引 *xiyin*

'attract', 刺激 *ciji* 'stimulate', 引誘 *yinyou* 'seduce', 迷惑 *mihuo* 'confuse', 誘惑 *youhuo* 'seduce', 誘人 *youren* 'alluring', 累人 *leiren* 'exhausting', 有意思 *youyisi* 'interesting', 令人興奮 *ling ren xingfen* 'exciting', 有趣 *youqu* 'interesting', 無趣 *wuqu* 'boring', 煩人 *fanren* 'annoying', 嚇人 *xiaren* 'fearful', 可怕 *kepa* 'terrible', 感人 *ganren* 'touching', 迷人 *miren* 'charming', 吸引人 *xiyinren* 'inviting', 可愛 *keai* 'lovable', 可笑 *kexiao* 'laughable', 可恨 *kehen* 'detestable', 可憐 *kelian* 'pitiable or sympathize with', 惹惱 *renao* 'anger', 安撫 *anfu* 'pacify', 撫慰 *fuwei* 'console', 慰問 *weiwen* 'console', 鼓勵 *guli* 'encourage', 激勵 *jili* 'encourage', 鼓舞 *guwu* 'inspire', 折磨 *zhemo* 'torment', 打擾 *darao* 'disturb', 打攪 *dajiao* 'disturb', 煩擾 *fanrao* 'bother', 擾亂 *raoluan* 'disturb', 折騰 *zheteng* 'torment', 觸怒 *chunu* 'arouse the anger of', 惹火 *rehuo* 'provoke', 激怒 *jinu* 'anger', 感動 *gandong* 'touch', 打動 *dadong* 'move', 嚇 *xi* 'frighten or frightened' and so on.

The goal of this study is to classify the Mandarin emotion verbs into frames on the basis of corpus observation and to represent a systematic analysis and categorization of the verbs from grammatical perspective. Moreover, it aims to depict the interrelationship of different emotion frames in a clear way. This study may lead to a better understanding of Mandarin emotion verbs as well as Mandarin verbal semantics.

1.4 Organization of the Thesis

The thesis is organized as follows. Chapter one is a general introduction of the thesis. Chapter two reviews previous studies related to emotion verbs. Chapter three briefly describes the database and the framework adopted in the study. Chapter four presents the findings motivating this research. Based on the findings, chapter five proposes a frame-based analysis of Mandarin emotion verbs. Finally, chapter six concludes the study and suggests future research topics. Finally, the conclusion of this study and suggestions of future research topics are given in chapter seven.

Chapter 2

Literature Review

This chapter reviews previous studies on emotion verbs as a foundation of the research. A variety of studies have looked at emotion verbs. The verbs discussed, however, are not always referred to as 'emotion verbs' in the literature. Therefore, the terms used in pervious works will be briefly listed in section 2.1 in advance. Researches on emotion verbs from different perspectives with diverse approaches will be introduced in the following sections. Section 2.2 introduces the studies on the typology or categorization of emotion verbs in different approaches (Levin 1993, Tsai *et al* 1996, Chang *et al* 2000, Liu 2002, and Lai 2004, Berkeley FrameNet Project). Section 2.3 summarizes the chapter and points out the direction of this study.

2.1 Terms Used in the Previous Studies

'Emotion verbs' are frequently viewed as a sub-class or sub-type of 'mental verbs', or 'psych verbs' by some researchers. For example, Croft mentioned that "the class of mental verbs (also known as 'psych verbs') includes verbs of perception, cognition and emotion" (1993: 55). Additionally, FrameNet defined the Mental_activity frame: '*In this frame, a Sentient_entity has some activity of the mind op erating on a particular Content or about a particular Topic. The particular activity may be perceptual, emotional, or more generally cognitive.*' As to Mandarin, Mei *et al* (1993) classified mental predicates into three sub-classes: cognition verbs, affectio n or emotion verbs, and will verbs. The related terms used in previous studies are briefly listed: '**mental verbs/predicate**' (Vendler 1972; Huang 1982; Sweetser 1990; Croft 1991, 1993; Wierzbicka 1996; Goddard and Wierzbicka 2002; Su 2002, 2004), '**psychological** or **psych verbs/predicates**' (Belletti and Rizzi 1988, Jan Van Voorst 1992, Levin 1993, Wu 1993,
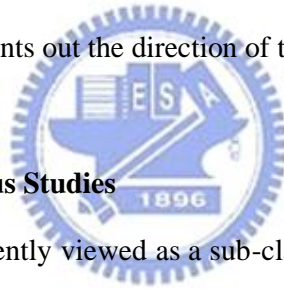
Chen 1994, Hana 1996, Yang 2000, Lai 2004). The terms '**emotion verbs/words/domain**' used in this study are also used in Chang *et al* (2000), Liu (2002), Les Bruce (2003), Lin (2006), Hsiao (2006, 2007), and Berkeley FrameNet Project. In addition to studies explicitly on the whole class of verbs in question, there are also studies focusing on only one or two emotion verbs, for example, Tsai *et al* (1996).

2.2 Typological Studies of Emotion Verbs

Recently, some researchers tried to investigate the typology or categorizations of emotion verbs in different approaches. To introduce these approached in a clear way, the approaches will be organized in divided parts.

2.2.1 Alternation-based Approach

Levin (1993) is a pioneering work on English verb classes and diathesis alternations. Diathesis alternations, by definition, refer to alternations in the expression of arguments, sometimes accompanied by changes of meaning (Levin 1993:2). It is believed that the grammatical construction is encoded in the lexicon, i.e. the meaning of a verb. Therefore, Levin divided English Psych-verbs, verbs of psychological state, into four sub-classes in terms of transitivity and their expressions of arguments.

- *Amuse* verbs: transitive verbs whose object is the experiencer and whose subject is the cause of the change.

- *Admire* verb: transitive verbs with experiencer-subject.

- *Marvel* verb: intransitive, experiencer as subject, express the stimulus/object of emotion in a PP headed by one of a variety of prepositions.

- *Appeal* verb: the least in four subclasses; intransitive, taking the stimulus as subject and expressing the experience in a PP headed by one of a variety of prepositions.

In addition to verbs classes, Levin also presented detailed alternation patterns to test the properties of each class of verbs. Take the Amuse type verbs for example. (Here only part of the used alternations in her study is listed.)

(5) *Causative Alternation (most verbs):

    a. The clown amused the children.

    b. * The children amused (at the clown).

(6) Middle Alternation:

    a. The clown amused the little children.

    b. Little children amuse easily.

(7) PRO-Arb Object Alternation[1]:

    a. That joke never fails to amuse little children.

    b. That joke never fails to amuse.
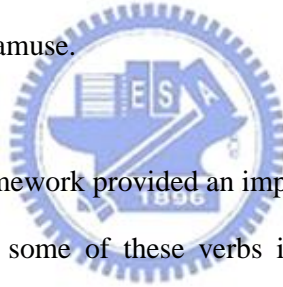
This alternation-based framework provided an important criterion to distinguish the properties of verbs. However, some of these verbs included in this class should be further distinguished, and Levin herself also agreed with the argumentation (Levin 1993:191). She further stated Grimshaw's (1990) argumentation:

For instance, Grimshaw (1990) argues that some of these verbs, such as amuse, allow the subject/stimulus argument to receive an agentive interpretation, while others, such as concern, do not; this distinction could be the basis for further subdivision of these verbs. (Levin 1993:191)

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[1] Levin (1993:38) explained the PRO-arb object alternation:
"In this alternation, the unexpressed object in the intransitive variant receives what has been called an "arbitrary" or "PRO-arb" interpretation. That is, this variant could be paraphrased with the transitive form of the verb taking "one" or "us" or "people" as object."

Moreover, Liu (1996) mentioned that "a purely alternation-based approach may not be adequate for categorizing and describing Mandarin verbs because of the typological and parametric variations among languages."

2.2.2 Frame-based Approach

In FrameNet (http://framenet.icsi.berkeley.edu/), an on-line English lexical resource based on frame semantics and supported by corpus evidence, shows the hierarchical relationship (i.e. 'generation' in FrameNet) between the parent frame **Emotions** with its children frames. The Emotion frame has 12 children frames with "Using[2]" relationship: Predicament frame, Judgments frame, Feeling frame, Forgiveness frame, Contrition frame, Desiring frame, Subject_stimulus frame, Expereience_subject frame, Experience_object frame, Emotion_heat frame, Emotion_directed frame, and Emotion_active frame. Figure 1 illustrates the relationship schema of the Emotion frame with the twelve children frames; Table 1 presents some lexical units in each child frames.
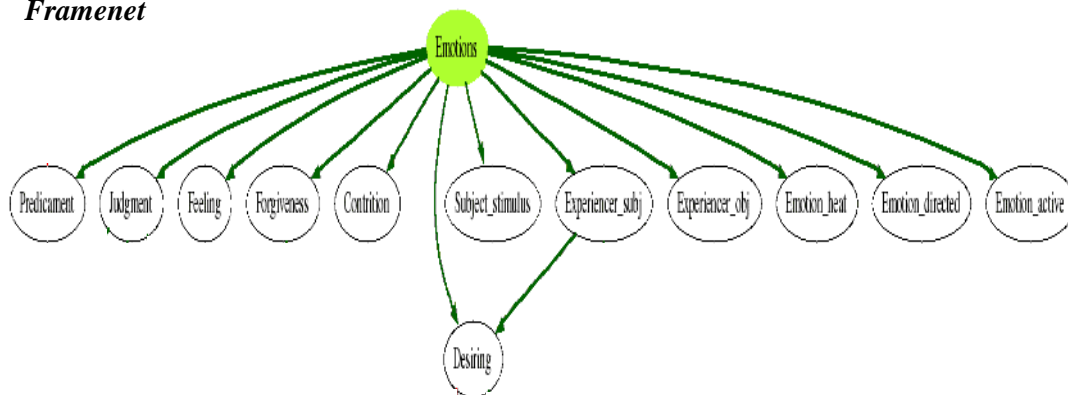
Figure 1. *The Twelve Frames and Their Relations under Emotions Frame in Framenet*

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2 'Using' is one of the 'frame-to-frame relations' given in FrameNet. It is a presupposition relation. 'A using B' means 'A presupposes B as background.' When a frame uses part of background information (E.g. some core semantic frame elements) of another frame, the two frames are having a using relationship.

Table 1: *12 Children Frames of the Emotions Frame and Lexical Units in Each Child Frame*

No.	Frame Name	Lexical Units
1	Predicament	misfortune, problem, trouble, fix, mess, jam…
2	Judgment	admire, disapprove, blame, mock, scorn…
3	Feeling	feel, feelings, emotion, experience …
4	Forgiveness	forgive, forgiveness, pardon, excuse…
5	Contrition	contrition, guilt, guilty, repent, remorse, sorry…
6	Desiring	desire, ambition, eager, hope, long, lust, want…
7	Subject_stimulus	amazing, amusing, annoying, boring, delight, disgusting, dull, enjoyable, sad, scary, tiring, worrying…
8	Experiencer_subj	adore, afraid, dislike, empathy, envy, fear, hate, like, pity, regret, nervous, love…
9	Experiencer_obj	amaze, anger, annoy, bore, cheer, please, sicken, upset, trouble, surprise, shock, shame…
10	Emotion_heat	Boil, burn, simmer… (e.g. *I'm boiling with anger*)
11	Emotion_directed	Agony, anxious, blue, concern, discouraged, distress, furious, grief, mad, sad, upset…
12	Emotion_active	Worry, obsess, agonize, fret…

FrameNet proposed a significant analysis to present the range of semantic and syntactic combinatory possibilities of each word in each of its senses . Moreover, they organized clear frame-to-frame relationships. However, FrameNet did not clarify a explicit hierarchy of the frames. In addition, the analysis based on English lexicon may not be adequate or equivalent to Mandarin Chinese.

2.2.3 Corpus-based Approach

With the development of corpus and data, a number of studies attempted to investigate the properties of Mandarin emotion verbs and categorizing t he verbs from a corpus-based approach.

2.2.3.1 Tsai et al (1996)

In response to the need of fine-tuning verbal semantics, Tsai *et al* (1996) observed and differentiated a near-synonyms pair to manifest the argument that syntactic contrasts can be predicated from lexical semantics and underlines the importance of interactions between semantics (lexical semantic properties) and syntax (syntactic behaviors).

The near-synonyms pair of emotional state verbs, *gaoxing* 高興 and *kuaile* 快樂, are semantically similar. Observing the corpus distribution of these two verbs, however, Tsai *et al* found *gaoxing* and *kuaile* are syntactically distinct in many ways and then proposed that the verbs can be differentiated according to their syntactic distribution:

Table 2: *The Syntactic Distribution of Gaoxing and Kuaile*

Verb \ Function	GAOXING 高興 (280) 'be glad'	KUAILE 快樂 (365) 'be happy'
Predicate	224 (80%)	119 (32%)
Complement	8 (3%)	17 (5%)
Adverbial	47 (17%)	30 (8%)
Adjective		116 (31.7%)
Nominalized	1 (0.3%)	83 (23%)

Gaoxing is typically used as a predicate (*gaoxing* takes sentential objects while *kuaile* cannot.), but barely or never used as adjective (0%) or a noun or nominal modifier (0.3%); contrarily, *kuaile* shows a much higher frequency of nominalization (23%) and adjectival using (32%). As examples below:

(8) Transitive predicate：

他們都很<u>高興</u>/*<u>快樂</u>創刊號終於出來了。

*tamen tu hen gaoxing/*kuaile chuangkanhao zhongyu chu lai le.*

they all very glad/*happy initial issue finally publish PERF/CRS

'They are all very glad/*happy that the initial issue is published finally. '

(9) Adjective:

如何做個*<u>高興</u>/<u>快樂</u>的上班族。

*ruhe zuo ge *gaoxing/kuaile de shangbanzu*

how do CL *glad/happy DE worker

'How to be a *glad/happy worker '

(10) Nominalized:

人有追求*<u>高興</u>/<u>快樂</u>，逃避痛苦的本能。

*ren you zhuiqiu *gaoxing/kuaile, taobi tongku de benneng*

people have seek *glad/happy, evade pain DE instinct

'People have instinct to seek *gladness/happiness and evade pain '

Tsai *et al* proposed that these syntactic contrasts are systematically accounted for with lexical features <change of state> and <control>.

(11) Change-of-state:

    a. 客人<u>高興</u>/*<u>快樂</u>了會賞你錢。

    *keren gaoxing/*kuaile le, hui shang ni qian*

    customers glad/*happy PERF will give you money

    'Customers would give you money if they have become glad/*happy. '

    b. 他們談得正<u>高興</u>/*<u>快樂</u>。

    *tamen tande zheng gaoxing/*kuaile le*

    they chat PROG glad/*happy

    'They are chatting gladly/*happily. '

    c. 從此不再<u>快樂</u>/*<u>高興</u>。

    *congci   buzai kuaile/*gaoxing*

    frome-now-on no-longer happy/*glad

    'No longer being happy/*glad from now on. '

(12) Control:

    a. 生活<u>快樂</u>/*<u>高興</u>最重要。

    *shenghuo kuaile/*gaoxing zui zhongyao*

    life happy/*glad most important

    'Life be happy/*glad is what really matter. '

    b. 別<u>高興</u>/*<u>快樂</u>!

    bei gaoxing/ kuaile*

    don't glad/*happy

    'Don't be glad/*happy!'

    c. 你應該<u>高興</u>/*<u>快樂</u>才對。

    ni yingai gaoxing/ kuaile cai dui*

    you should glad/*happy only:then right

'You should be glad/*happy and only then it is right.'

d. 為他高興/*快樂。

   wei ta gaoxing/ kuaile*

   for he glad/*happy

   'Being glad/*happy for him.'

Hence, they divided emotional stative verbs semantically into two groups: **homogeneous state verbs** which are characterized as <-change of state, -control> and **result state verbs** characterized as <+change of state, +control>.

Tsai *et al* (1996) offered convincing evidence that syntactic behaviors can be predicted based on lexical semantics, but it seems that the dichotomous distinction cannot account for the whole semantic field of emotional predicates by only looking at two verbs. Moreover, the semantic features proposed above are general factors which pertain to eventivity. They are too broad to explain the unique behavior of the particular class of emotional verbs (Liu, 2002:79).

2.2.3.2 Chang et al (2000)

Chang *et al* (2000) followed Tsai *et al*'s dichotomous study mentioned above, and then re-examined a succinct difference over a broader range — the whole semantic field of verbs of emotion. In the study, they first categorized emotional verbs into seven subfields, i.e. Happiness, Depression, Sadness, Regret, Anger, Fear, and Worry; then they revised Grandy's (1992) definition of a semantic field to propose that there are two covering terms that form a Contrast Pair (Type A and B) that define each semantic field. And then they thoroughly examined the seven contrast pairs of subfields of emotional verbs and predicted that the other verbs being members of the field will behave like either type A or type B.

Chang *et al* examined the contrasts between the two types based on five distributional syntactic criteria. They found that type A and type B verbs can be characterized as below:

Table 3: *The Contrastive Distribution of Type A and Type B Verbs*

Criteria \ Verb types	Type A verbs (e.g. *gaoxing* 高興)	Type B verbs (e.g. *kuaile* 快樂)
Grammatical function	Mostly as **predicates**	Mostly as **nominal uses**
Co-occurrence restriction	**Strict** selectional restrictions on the head when the function as adjuncts	**Looser** selectional restrictions on the head when the function as adjuncts
The appropriateness in the imperative and evaluative constructions	**Most** verbs can appear in either type of construction	**Few** verbs cannot appear in either type of construction
Verbal aspect	**Predominantly** represent inchoative state	**Rarely** represent inchoative state
Transitivity	**Can** take causes or goals as their direct objects	**Seldom** take causes or goals as their direct objects

From the above contrast, Chang *et al* generalized that type A verbs are preferred for indicate transition while type B verbs are preferred for homogeneity. What kind of reason drives the grammatical differences? They conclude that the grammatical contrasts derive from their morphological structures. A VV compound is double-headed and does not elaborate. Therefore, in VV compounding, the concept of an event is not so

clear. It is common morpho-lexical strategy in Mandarin to link two antonyms or synonyms to form the concept of 'kind' or 'property', and therefore it is natural for VV compounds to be chosen as the representation of homogeneity.

Hence, verbs of emotion are morphologically separated by Chang *et al* into **Non-VV compound** and **VV compound**. Type A verbs are Non-VV compound, while type B verbs are VV compound.

Type A: *gao xing* 高興(non-VV), *nan guo* 難過(non-VV), *hou hui* 後悔(non-VV), *shang xin* 傷心(non-VV), *sheng qi* 生氣(non-VV), *hai pa* 害怕(non-VV), *dan xin* 擔心 (non-VV)

Type B: *kuai le* 快樂(VV), *tong ku* 痛苦(VV), *yi han* 遺憾(AN or VO), *bei shang* 悲傷 (VV), *fen nu* 憤怒(VV), *kong ju* 恐懼(VV), *fan nao* 煩惱(VV)

Chang *et al* (2000) extended range of the study to seven subfields of emotion verbs, and further proposed a morphological-makeup explanation, but these seven types of verbs were still not enough or adequate to present the heterogeneous properties of Mandarin emotion verbs (see Chapter 4). Besides, there is a flaw in their analysis: the verb *yi han* 遺憾 judged as a AN or VO compound is located in the type B, i.e. VV compound verbs. Liu (2002:79) pointed out "the morphological account is at best an observation associated with and resulted from a deeper semantic relation. It fails to explain the semantic driving force for the paradigmatic variation."

2.2.3.3 Liu (2002)

Different from Tsai *et al* (1996) and Chang *et al* (2000), Liu (2002) looked at near-synonyms pairs of emotion activity verbs, *XIANMU* 羨慕 'envy' and *JIDU* 嫉妒 'be jealous of', and found that CAUSE is a crucial parameter in the event structure of emotional verbs. After observing data, Liu pointed out two possible ways of

conceptualizing emotional activities. The event can be perceived as a self-motivated action with the Expeirencer coded as an actor projecting an internal state towards a Target or Stimulus. (e.g. 我羨慕他。*wo xianmu ta* 'I envy him.') It can also be perceived as a caused state with the Experiencer being coded as a Causee undergoing a change affected by a Causer. (e.g. 他讓我羨慕。*ta rang wo xianmu* 'He makes me envious.')

Figure 2: *Two Conceptual Frames used in describing emotional activities.*

a) SELF-MOTIVATED ACTION

b) CAUSED STATE

Liu mentioned that these two conceptual frameworks may be conflated into a three-stage *causal chain*: Causer arouses an emotional state in the Experiencer toward a Target.

Figure 3: *The Causal Chain of Emotional Activities.*

Based on the causal frameworks, Liu highlighted the crucial role of CAUSE as a semantically essential variable. Liu found that the CAUSE may be encoded as an NP-object, an NP-subject, a preposed NP-Goal, a clausal object, or a preposed clausal-subject and found the CAUSE form is often overtly marked in a sentence (1 3). However, there are also cases where the role CAUSE is not overtly mentioned (1 4).

(13) a.我 非常 嫉妒[NP 他的成功]。

   wo fenchang jidu ta de chenggong

   I unusually JIDU he De success

   'I am very jealous of his success.'

   b.對[NP 他的成功] 我 非常 嫉妒。

   dui ta de chenggong wo fenchang jidu

   to he De success   I unusually JIDU

   'Of his success, I am very jealous.'

   c. 我 羨慕 [CP 他會說不同的語言]。

   wo xianmu ta hui shui butong de yuyan

   I XIANMU he can speak not same De Language

   'I envy that he can speak different languages.'

(14) a. 你 只會 嫉妒。

   ni zhi hui jidu

   you only can JIDU

   'You are only capable of being jealous.'

   b. 被 貪婪 嫉妒所 緊縛

   bei tanlan jidu suo jinfu

   PASS greedy JIDU REL tightly-bind

'Tightly bound by greed and jealousy.'

Examining distribution of CAUSE between the verbs, *XIANMU* 羨慕 'envy' and *JIDU* 嫉妒 'be jealous of', Liu found that an obvious skewing in the frequency of overtly marked CAUSE.

Table 4: *Distribution of CAUSE: XIANMU* 羨慕 *vs. JIDU* 嫉妒

	XIANMU 羨慕 (112) 'envy'	*JIDU* 嫉妒 (38) 'be jealous'
Mention (NP or S)	100% (112)	45% (17)
No Mention	**0% (0)**	**55% (21)**

Hence, Liu proposed that there are two types of Cause, External vs. Internal CAUSE, and classified emotional activity verbs into two groups based on the distinctive role CAUSE. Externally caused verbs are more controllable and more justifiable; internally caused verbs are less control and less justifiable.

Liu also showed that other sets of emotional verbs also support her finding, such as verbs of anger (*SHEGQI* 生氣 vs. *FENNU* 憤怒), verbs of fear (*HAIPA* 害怕 vs. *KONGJU* 恐懼), verbs of sadness (*SHANGXIN* 傷心 vs. *BEISHANF* 悲傷), and verbs of depression (*NANGUO* 難過 vs. *TONGKU* 痛苦). Finally, Liu utilized MARVS (the Module-Attribute Representation of Verb Semantics) (Huang *et al*. 2000, Chang *et al*. 2000) to specify the event module and role module of externally and externally caused emotional activity verbs.

Liu (2002) clearly presented the interaction between syntactic behavior and semantic properties. The three-stage *causal chain* proposed in her study provided a simple and useful cognitive schema of conceptualization of emotion events. Therefore,

following Liu's study, we will propose an extended and elaborated causal schema based on the causal relation established in the study (see section 5.2).

2.2.3.4 Lai (2004)

In this paper, Lai attentively observed the syntactic realizations or constructions of three set of verbs, trying to explore the subtle distinctive features and meaning in Chinese emotion (psychological) predicates. In order to single out representative verbs for convincing investigation, Lai selected verbs with four criteria: the argument structure, the meaning of verbs, the frequency of occurrence, and the morphological structures. Three most frequently used monosyllabic psych verbs and their most-used bi-syllabic counterparts were finally selected for further examination. The selected emotion verbs are 愛 *ai* 'love', 喜歡 *xihuan* 'like', 氣 *qi* 'angry or get angry', 生氣 *shengqi* 'get angry', 怕 *pa* 'fear or be afraid' and 害怕 *haipa* 'be afraid'. Although did not be selected, the verb 嚇 *xia* 'frighten' is put into the following discussion in the study.

Table 5: *Interaction between Criteria and Psych Predicates*

	Predicate	A-structure	Meaning	Frequency	Morpho-structure[3] (Number of variants)
a	*qi* 氣	(Th, Exp; Exp, Th)	negative	**617**	3 (V#, #V, mor-#)
b	*fan* 煩	(Th, Exp; Exp, Th)	negative	54	3 (V#, #V, mor-#)
c	*pa* 怕	(Th, Exp; Exp, Th)	negative	**928**	2 (V#, mor-#)
d	*xia* 嚇	(Th, Exp)	negative	147	2 (V#, #V)

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[3] According to Lai (2004:50), "Morph-structure" is "morphological structure," referring to components of a compound. The symbol "#" stands for the psych predicates listed in the first column. "V" stands for a verb differing from the predicates listed in the first column while the symbol "mor-" stands for the bounded morpheme and non-verb morpheme. For example, 憂煩 *yofan* 'worry' is the structure of "V#".

e	*nu* 怒	(Exp)	negative	68	1 (V#)
f	*hen* 恨	(Exp, Th)	negative	140	2 (V#, mor-#)
g	*ai* 愛	(Exp, Th)	positive	**1925**	3 (V#, #V, mor-#)
h	*teng* 疼	(Exp, Th)	positive	85	2 (#V, mor-#)

Considering a sentence like (15), Lai found that there are two readings deduced from the same clause, as (16) illustrates.

(15) 他氣他媽媽

ta qi ta mama

he anger he mother

(16) a. 'He was angry with his mother.'(Exp, Th)

b. 'He made his mother angry.' (Th, Exp)

The meaning coded in (15) can be either 'he was angry with his mother' or 'he made his mother angry'. Lai proposed that the concept [CAUSE] is the distinguishing factor. The conflation of [CAUSE], more precisely, the incorporating CAUSE into the predicate happens in a construction with Theme as the subject. Therefore, Lai further divided the psychological or emotion verbs into groups by CAUSE:

Table 6: *Three Types of Psychological Predicates in Terms of CAUSE*

	Conflation	Remarks	Examples	Argument Structure
1	No [CAUSE]	-	愛 *ai* 'love', 恨 *hen* 'hate', 怕 *pa* 'fear'	[Experiencer, Theme]

2	[CAUSE]	Free expression	煩 *fan* 'worry', 氣 *qi* 'anger', 嚇 *xia* 'frighten'	[Theme, Experiencer]
3		Fixed expression	怕+人 *pa+ren* 'fear+people'	[Theme, Experiencer]

Lai pointed out that there is an overlap of the verb attributes between the first type and the third type. For example, 怕 *pa* 'fear' is generally a verb with the Experiencer as the subject. When collocating with 人 *ren* 'people', however, it coerces the concept [CAUSE]. The argument structures of the types are also discussed: the argument structure of [-CAUSE] type is [Experiencer, Theme] while the argument structure of [CAUSE] type is [Theme, Experiencer]. What need to be pay more attention is that the argument structure of the first type [-CAUSE]怕 *pa* 'fear' originally is [Experiencer, Theme], but becomes [Theme, Experiencer] in the third type coercively when taking the object 人 *ren* 'people'. Based on the observation, Lai divided emotion verbs into three types: Theme-Subject predicates (e.g. 嚇 *xia* 'frighten'), Experiencer-Subject predicates (e.g. 愛 *ai* 'love', 喜歡 *xihuan* 'like', 生氣 *shengqi* 'get angry', and 害怕 *haipa* 'be afraid'), and amphibious predicates (e.g. 氣 *qi* 'angry or get angry', and 怕 *pa* 'fear'). Verbs of the third type are treated as amphibious predicates because they can be regarded as Theme-Subject or Experiencer-Subject. Verb types and corresponding examples are illustrated in (17):

(17) Three Types of Psychological Predicates

    a.   Theme-Subject predicates

       他嚇了我一跳

       ta xia le wo yi tiao

       he frighten Prt I one jump

'He just frightened me.'

b. Experiencer-Subject predicates

他愛小華

ta ai Xiao Hua

he love Xiao-Hua

'He loved Xiao-Hua.'

c. Amphibious predicates

他氣他媽媽

ta qi ta mama

he angry/ anger he mother

'He was angry with his mother.' (Exp, Th)

'He angered his mother.' (Th, Exp)

他很怕人

ta hen pa ren

he very fear/ make fear people

'He was afraid of people.' (Exp, Th)

'He was very frightening.' (Th, Exp)
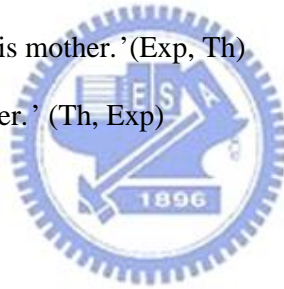
After selecting and categorizing verbs, Lai next presented the syntactic realizations of the seven verbs from corpus observation in detail, and tried to point out the subtle differences on meanings among these verbs by looking into the construction in which verbs can or cannot occur. In other words, they tried to explore the interactions between constructions and meanings of emotion verbs.

Take the agentivity of 愛 *ai* 'love' and 怕 *pa* 'fear' for example. The sentences in (18) may raise a question: what factors can differentiate 愛 *ai* 'love' and 怕 *pa* 'fear' since both of them take gradable adverbials and both have the Experiencer as the subject?

(18) a. 我漸漸(地)愛上貓。

      wo jianjian (di)ai shang mao

      I gradually love up cat

      'The cats grew on me.'

   b. 我漸漸(地)怕貓。

      wo jianjian (di)pa mao

      I gradually fear cat

      'I feel scared of cats gradually.'

To answer the question, Lai found that the diversity of agentivity between the two verbs can be a key. Lai adopted four adverbial phrases, including 全心全意 *chuan-xin chuan-yi* 'dedicatedly', 故意 *gu-yi* 'deliberately', 考慮 *kao-lu* 'intentionaly', and 不自禁地 *bu zi-jin di* 'uncontrollably' or 不由自主地 *bu you zi-zhu di* 'spontaneously', to test the agentivity of verbs. The collocational relation between adverbs and emotion verbs are shown in table (7).

Table 7: *Adverbials for Agentivity*

	Adverbial	愛 *ai*	喜 歡 *xihuan*	怕 *pa*	害 怕 *haipa*	氣 *qi*	生 氣 *shengqi*
1	*chuan-xin chuan-yi*	+	+	—	—	+	—

	Ex.: 小明<u>全心全意</u>愛著小華。 *xiao-ming <u>chuan-xin chuan-yi</u> ai-zhe xiao-hua* 'Xiao-Ming loves Xiao-Hua wholeheartedly.'						
2	*gu-yi*	—	—	—	—	+	—
	Ex.: 他<u>故意</u>要氣小華。 *ta <u>gu-yi</u> yao qi xiao-hua* 'He angered Xiao-Hau on purpose.'						
3	*kao-lu*	—	—	—	—	+	—
	Ex.: 我<u>考慮</u>要氣陳小姐。 *wo <u>kao-lu</u> yao qi chen-xiao-jie* 'I am considering if I will make Miss Chen angry deliberately .'						
4	*bu zi-jin di* *bu you zi-zhu di*	+	+	+	+	—	—
	Ex.: 我<u>不自禁地</u>害怕他。 *wo <u>bu zi-jin di</u> haipa ta* 'I cannot help but fear him.'						

When adding a adverbial phrase 全心全意 *chuan-xin chuan-yi* 'dedicatedly', the sentences with 愛 *ai* 'love' is grammatical while the sentence with 怕 *pa* 'fear' become odd, as (19) presents:

(19) a. 我全心全意愛貓。

    wo chuan-xin chuan-yi ai mao

    I dedicatedly love up cat

    'I love cats dedicatedly.'

  b. *我全心全意怕貓。

    wo chuan-xin chuan-yi pa mao

    I dedicatedly fear cat

    'I feel scared of cats dedicatedly.'

Based on the contrast, Lai claimed that the SubExp (Experiencer as the subject) of 愛 *ai* 'love' is active and capable of taking the initiative in doing something to the ObjTh (Theme as the object) but the SubExp of 怕 *pa* 'fear' lacks this attribute and is passive.

In addition to transitivity, Lai also categorized and observed the patterns exhaustively by characteristics of transitivity (complement variants), modifier, event structure, causative constructions, resultative constructions and so on to figure out the subtle distinctive features and meanings among Mandarin emotion (psychological) predicates.

Lai (2004) tried to off all possible constructions of the seven psychological predicates and to sort out subtle meanings coded in the constructions. This study actually did a detailed and impressive observation and prominently demonstrated the relationship between form and meaning. However, there are still some flaws in the study. First, Lai divided the seven verbs into three types, and included the verb 怕 *pa* 'fear' among the type of amphibious predicates because 怕 *pa* 'fear' is coerced to germinate the concept of [CAUSE] when collocating with an object 人 *ren* 'people'. What arises our question is the two readings of (17b) 他很怕人 *ta hen pa ren* 'he very fear/ make fear people'. Does (17b) actually have the meaning *He was very frightening*? Testing several native speakers of Mandarin, we do not find the reading. Besides, it would have been more persuasive if the author had explained among verbs in first type, why only 怕 *pa* 'fear' could be an amphibious predicate? Second, only seven emotion predicates are observed and examined in this study. Although these verbs are representative to a certain extent, they still cannot represent all emotion verbs and fail to examine a difference and to provide an explanation over the whole semantic field of verbs of emotion. For example, what are the differences in syntactic realizations and semantic

properties between high frequency verb such as 高興 *gaoxing* 'be glad' or 快樂 *kuaile* 'be happy'[4] and the seven discussed verbs in this paper? Third, the study presented all possible syntactic constructions of each verb from a variety of perspectives; however, no **defining pattern or construction**[5] of each type of verbs is provided to capture the distinguishing meanings from type to type, and to establish a criterion for verb classification.

2.3 Summary

Emotion verbs in different languages have been investigated from various perspectives and a number of studies focused on emotion verbs from a typology perspective (Levin 1993, Tsai *et al* 1996, Chang *et al* 2000, Liu 2002, and Lai 2004, Berkeley FrameNet Project). Levin's (1993) study based on a diathesis approach; FrameNet settled the English emotion verbs in a frame-based approach. As to corpus-based approach, Tsai *et al* 1996, Chang *et al* 2000, Liu 2002, and Lai 2004 all provided detailed observation and finding between lexical meaning and syntactic behavior. Though a considerable number of studies have been dedicated to the unique behavior of emotion verbs, most of the previous studies only looked at a small portion or part of the emotion verbs. What needed is a comprehensive and integrated study of the whole class members. This paper takes up the task and aims to explain and interpret the specific and heterogeneous properties in syntax and semantic of Mandarin emotion verbs, and to provide a systematic account for the syntax-to-semantics correlations of Mandarin emotion verbs by applying a frame-based analysis.

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[4] Frequency of 高興 *gaoxing* 'be glad' and 快樂 *kuaile* 'be happy' are both higher than 500. The frequency of 高興 *gaoxing* 'be glad' is 667, and 快樂 *kuaile* 'be happy' is 938.

[5] A defining pattern is a syntactic pattern relevant to a certain frame or type of verbs. Only verbs which can fit into the defining pattern can be classified as belonging to the frame or type. This notion is corresponding to the theoretical assumptions of Construction Grammar (Goldberg 1995, 2006) that regards constructions as form-meaning pairs.

Chapter 3

Database, Theoretical Framework and Methodology

This chapter contains the database, frameworks and methodology which are utilized and adopted in this study. The database from which we obtain corpus is introduced firstly. The frameworks adopted to help the analysis will be presented next. Lastly, the methodology including the steps of research will be briefly described.

3.1 Database

The analysis in this study is based on corpus data. The analyzed data mainly come from **Academia Sinica Balanced Corpus of Modern Chinese**, simplified as Sinica Corpus (http://www.sinica.edu.tw/SinicaCorpus/). Sinica Corpus is a freely online corpus with part-of-speech tagging. It is the first balanced Chinese corpus and the data are extracted from texts with topics in society, life, literature, philosophy, science and art. The size of present corpus (version 4.0) is 7,949,851 million words. Other resources utilized in this research are: the **FrameNet** (http://framenet.icsi.berkeley.edu/), an on-line English lexical resource based on frame semantics and supported by corpus evidence; the **Chinese Word Sketch** (http://wordsketch.ling.sinica.edu.tw/), a corpus management tool and sketch engine which provides grammar-wise co-occurrence statistics; the **Academia Sinica Bilingual Ontological WordNet** (Sinica BOW, http://bow.sinica.edu.tw/), an English-Chinese bilingual wordnet and a bilingual lexical access to SUMO; the web research engine **Google** (http://www.google.com.tw/), and the translation software - **Dr. Eye 8.0**.

3.2 Theoretical Framework

In this study, the analysis is based on the theory of frame semantics by Fillmore and Atkins (1992) and the classification is based on a frame taxonomy proposed in Liu and Chiang (2008).

3.2.1 Frame Semantics

Frame semantics, which is proposed by Fillmore and Atkins (1992), is a semantic theory based on the notion of cognitive frames or knowledge schema. It can be thought of as a concept with a script. As Fillmore and Atkins (1992:76-77) noted:

In such theories, a word's meaning can be understood only with reference to a structured background of experience, beliefs, or practices, constituting a kind of conceptual prerequisite for understanding the meaning. Speakers can be said to know the meaning of the word only by first understanding the background frames that motivate the concept that the word encodes. Within such an approach, words or word senses are not related to each other directly, word to word, but only by way of their links to common background frames and indications of the manner in which their meaning highlight particular elements of such frames.

Fillmore and Atkins suggested that each frame should contain some core frame elements that comprise the concept of this frame. They took the commercial transaction frame for example and pointed that *Buyer*, *Seller*, *Goods*, and *Money* are four essential elements in any commercial event scene. In this way, word senses can be distinguished by their highlighted frame elements and background knowledge.

The concept of frame semantics has been put into practice that Fillmore and others scholars constructed an on-line lexical resource for English based on frame semantics and this database is named FrameNet in which a frame is defined with its essential

Frame Elements and the syntactic patterns with the frame elements are listed in the annotation data of each lemma in the frame.

3.2.2 Framework of Mandarin VerbNet

In this paper, we will mainly adopt the framework proposed in Liu and Chiang (2008). To capture the different scopes of semantic specification and degree of lexical granularity inherent in different frames, a multi-layered hierarchical taxonomy distinguishing the varied scopes of frames according to the syntax-to-semantics correspondence is proposed. There are four layers of frames: Archiframe > Primary frame> Basic frame > Microframe. The lower-layered frames are subframes of the higher-layered frames.

As their illustration, an **archiframe** corresponds to a broad semantic domain that provides a maximal scope of background information for a unique event type. Precisely speaking, an archiframe is distinguished along a relatively broad and self-containing conceptual schema with a default set of participant roles (i.e. frame elements). A **primary frame** represents a major relational subpart of an archi-frame, i.e. a primary frame is defined as a subpart of the archi-schema with a unique set of core frame elements. A **basic frame** highlights a particular participant role or relation within the upper frame, i.e. the primary frame. In order words, basic frames are distingui shed according to syntactically expressed patterns of foregrounding or backgrounding certain frame elements. A basic frame may be further divided into microframes. A **microframe** is distinguished according to role-internal specifications of frame elements.

According to Liu and Chiang, each frame is specified with a definition, a unique set of frame elements, frame-level basic or defining patterns (grammatical expressions of core Frame Elements), a subpart of conceptual schema, and representative lemmas.

3.3 The Methodology

To capture and analyze the interaction between syntactic behaviors and semantics properties of Mandarin emotion verbs, four steps are followed.

Step 1: Finding the Mandarin emotion verbs

We made reference to the English database FrameNet to find the emotion-relevant frames and lexical items included in these frames. Based on the lexical items in FrameNet, equivalent Mandarin lemmas were obtained through Sinica BOW and Dr. Eye. The linguistics intuition then helped to sieve out the unrelated words from the equivalent lemma, and to add some related but neglected lexicons. During the analysis, some emotion verbs which were not found in this step would be put into examination as well.

Step 2: Collecting the corpus data

After determining the lemmas, we searched and collected sentences with targeted emotion predicates in Sinica Corpus and Chinese Word Sketch. Linguistics intuition also did help in this step. Additionally, the search engine Google was used sometimes to prove or verify the intuition.

Step 3: Observing and examining the data

To examine explicitly the syntactic presentations and semantic features of emotion verbs, we observed the verbs particularly in their 1) grammatical function, 2) syntactic categories, 3) frame elements (participant roles of an event), 4) syntactic patterns or structures, and 5) grammatical collocations.

Step 4: Analyzing and categorizing the emotion verbs based on examination

Finally, the previous findings, i.e. the unique frame elements, syntactic patterns and functions of observed verbs, were treated as criteria to analyze and categorize emotion verbs into separated class or groups.

Chapter 4

Findings

This chapter aims to present and describe some findings obtained during corpus observation. Both syntactic and semantic representations of Mandarin emotion verbs will be delineated, including 1) event types, 2) transitivity, 3) alternations, 4) subject roles, 5) participant roles and 6) syntactic patterns of the verbs with the participant roles. The six findings will be introduced respectively in Section 4.1 to Section 4.6. A summary of this chapter will be given in Section 4.7. Based on all the findings, the Mandarin emotion verbs can be further analyzed and categorized into different levels and frames (See Chapter 5).

4.1 Event Types

Tang T.-C. (2000:14-15) suggested a criteria for the distinctions between dynamic verbs and stative verbs: Compatibility with Imperative Sentences, Collocation with Benefactive Role, Collocation with Patient Role, Functioning as Complements of Verbs of Intention, and Functioning as Complements of Verbs of Causation.

Table 8: *The Distinctions between Dynamic Verbs and Stative Verbs*

Verb Types Criteria	Dynamic Verbs	Stative Verbs	Example
Compatibility with Imperative Sentences	Yes	No	請你*生氣/*討厭我/*喜歡我/*羨慕我/*後悔做了這件事。 請你安慰/鼓勵/激怒/誘惑/刺激/嚇 小明。

Collocation with Benefactive Role	Yes	No	替他*生氣/*討厭我/*喜歡我/*羨慕我/*後悔做了這件事。 替他安慰/鼓勵/激怒/誘惑/刺激/嚇 小明。
Collocation with Patient Role	Yes	No	你給我*生氣/*討厭我/*喜歡我/*羨慕我/*後悔做了這件事。 替他安慰/鼓勵/激怒/誘惑/刺激/嚇 小明。
Functioning as Complements of Verbs of Intention	Yes	No	他想要*生氣/*討厭我/*喜歡我/*羨慕我/*後悔做了這件事。 他想要安慰/鼓勵/激怒/誘惑/刺激/嚇 小明。
Functioning as Complements of Verbs of Causation	Yes	No	要他*生氣/*討厭我/*喜歡我/*羨慕我/*後悔做了這件事。 要他安慰/鼓勵/激怒/誘惑/刺激/嚇 小明。

Based on the criteria, Mandarin emotion verbs can be divided into dynamic and stative verbs.

In addition to the criteria proposed by Tang T.-C. (2000), previous literature argued that aspectual properties serve to convey event types of sentences (Vendler 1967, Smith 1997, Van Voorst 1988, Levin & Rappaport 2005). In this study, we notice that Mandarin emotion verbs display a variation of aspectual properties that helps to examine and further verify the event types of verbs. The aspectual variations are illustrated as below:

(20) Collocation with the PROGRESSIVE aspectual marker 正在 *zhengzai*/在 *zai*

    a. *我<u>正在</u>高興你對我吐露心聲。

wo zhengzai gaoxing ni dui wo tulu xinsheng

I PROG glad you to I tell thoughts

'I am glading that you told me your thoughts.'

黃樹剛<u>正在</u>後悔劫機行為但不<u>正在</u>後悔反共。

Shu-Gang Huang zhengzai houhui jieji xingwei dan bu zhengzai houhui fangong

Shu-Gang Huang PROG regret hijack an airplane but not PROG regret Anti-Communism

'Shu-Gang Huang is regretting for his hijacking an airplane but is not regretting for Anti-Communism.'

他<u>在</u>喜歡打網球。

ta zai xihuan da wangqiu

he PROG like play tennis

'He is liking to play tennis.'

爸爸<u>正在</u>害怕坐飛機。

baba zhengzai haipa zuo feiji

father PROG fear travel by airplane

'Father is fearing to fly in an airplane.'

這個運動<u>在</u>累人。

zhe ge yun dong zai leiren

this exercise PROG tiring

'This exercise is tiring people.'

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*票價在很嚇人。

piaojia zai hen xiaren

ticket fare PROG very frightful

'The ticket rare is frightening people very much.'

b. 他現在正在安慰著我。

ta xianzai zhengzai anwei zhao wo

he now PROG comfort I

'He is comforting me now.'

飢餓和勞累在折磨他

jie he laolei zai zhemo ta

hunger and tiredness PROG torment he

'Hunger and tiredness is tormenting him.'

她在引誘我犯罪。

ta zai yinyou wo fanzui

she PROG seduce I commit a crime

'She is seducing me to commit a crime.'

這個小孩正在激怒他的媽媽。

zhege xiaohai zhengzai jinu ta de mam a

this-CL child PROG anger he DE mother

'This child is angering his mother.'

(21) Collocation with the PERFECTIVE aspectual marker 了 *le*

    c. *我高興了你對我吐露心聲。

        wo gaoxing le ni dui wo tulu xinsheng

        I glad PERF you to I tell thoughts

        'I have been glad that you told me your thoughts.'

    *黃樹剛後悔了劫機行為但不後悔了反共。

    Shu-Gang Huang houhui le jieji xingwei dan bu houhui le fangong

    Shu-Gang Huang regret PERF hijack an airplane but not regret PERF

    Anti-Communism

    'Shu-Gang Huang has regretted for his hijacking an airplane but has not

    regretted for Anti-Communism.'

    *他喜歡了打網球。

    ta xihuan le da wangqiu

    he like PERF play tennis

    'He has liked to play tennis.'

    *爸爸害怕了坐飛機。

    baba haipa le zuo feiji

    father fear PERF travel by airplane

    'Father has feared to fly in an airplane. '

    *這個運動很累人了。

    zhe ge yun dong hen leiren le

    this exercise very tiring PERF

'This exercise has been very tiring.'

*票價很嚇人了。

piaojia hen xiaren le

ticket fare very frightful PERF

'The ticket rare is has been very frightful.'

d. 他安慰了我。

ta anwei le wo

he comfort PERF I

'He has comforted me.'

飢餓和勞累折磨了他

jie he laolei zhemo le ta

hunger and tiredness torment PERF he

'Hunger and tiredness has tormented him.'
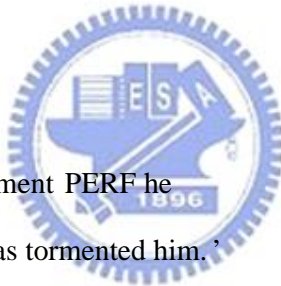
她引誘了我。

ta yinyou le wo

she seduce PERF I

'She has seduced me.'

這個小孩激怒了他的媽媽。

zhege xiaohai jinu le ta de mama

this-CL child anger PERF he DE mother

'This child has angered his mother.'

In the discussion of the aspect, Li and Thompson (1981:202, 218) clearly pointed out that "[Perfective] *le* is never used with verbs expressing states that do not represent bounded events", and "only activity verbs can take *zai* to indicate the durative aspect." Therefore, the above examples show different event types of emotional predicates, i.e. stative and dynamic type verbs. The more stative verbs 高興 *gaoxing* "glad", 後悔 *houhui* "regret", 喜歡 *xihuan* "like", 害怕 *haipa* "fear", 累人 *leiran* "tiring", and 嚇人 *xiaren* "frightful" cannot collocate with the PROGRESSIVE marker 正在/在 *zhengzai/zai* and PERFECTIVE marker 了 *le*. On the contrary, the more dynamic verbs 安慰 *anwei* "comfort", 折磨 *zhemo* "torment", 引誘 *yinyou* 'seduce', and 激怒 *jinu* 'anger' are allowed to collocate with either the PROGRESSIVE marker 正在/在 *zhengzai/zai* or PERFECTIVE marker 了 *le*.

The delimitative aspect is also a distinguishing aspectual property of activity verbs. As Li and Thompson (1981:232-234) mentioned that delimitative aspect is structurally represented by reduplicating the verb form, and only an activity verb can be reduplicated to indicate this aspect[6].

(22) Reduplication of Verbs

   a. *我<u>高興高興</u>你對我吐露心聲。

     wo gaoxing-gaoxing ni dui wo tulu xinsheng

     I glad-glad you to I tell thoughts

     'I am glad that you told me your thoughts a little.'

     *黃樹剛<u>後悔後悔</u>劫機行為。

     Shu-Gang Huang houhui-houhui jieji xingwei

---

[6] Li and Thompson (1981:235) further explained that the function of a resultative verb compound is to signal that a given event leads to a sesult, so a resultative verb compoun d cannot be reduplicated for delimitative aspect.

Shu-Gang Huang regret-regret hijack an airplane

'Shu-Gang Huang regretted for his hijacking an airplane a little.'

*他喜歡喜歡打網球。

ta xihuan-xihuan da wangqiu

he like-like play tennis

'He likes to play tennis a little.'

*爸爸害怕害怕坐飛機。

baba haipa-haipa zuo feiji

father fear-fear travel by airplane

'Father feared to fly in an airplane a little.'

b. 你安慰安慰媽媽。

ni anwei-anwei mama

you comfort-comfort mother

'Try to comforted Mother a little.'

我要折磨折磨這個人。

wo yao zhemo-zhemo zhege ren

I want torment-torment this-CL person

'I want to torment this person a little.'

試著引誘引誘他。

shizhe yinyou-yinyou ta

try seduce-seduce he

'Try to seduce him a little.'

In addition to aspectual variation, some verbs can also be used as distinguishing criteria to indicate the event type of verbs.

(23) collocation with aspectual verbs: 繼續 *jixu* "continue", and 停止 *tingzhi* "stop"

    a. 他<u>繼續</u>安慰媽媽。

        ta jixu anwei mama

        he continue comfort mother

        'He continues to comfort Mother.'

    b. 他<u>停止</u>安慰媽媽。

        ta tingzhi anwei mama

        he stop comfort mother

        'He stop to comfort Mother.'
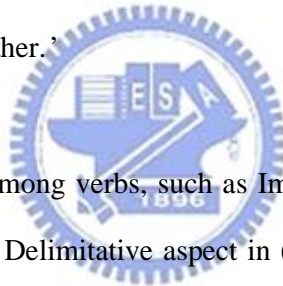
The aspectual variations among verbs, such as Imperfective or Durative asp ect in (20), Perfective aspect in (21), Delimitative aspect in (22) and other criteria in (23) all document that in terms of event types, Mandarin emotion verbs can be separated into stative and dynamic types.

4.2 Transitivity

As to verbs, transitivity is always mentioned because a simple verb is either transitive or intransitive. The syntactic definition of transitivity is, "Verbs that have a direct object will be considered transitive; verbs that don't have a direct object will be considered intransitive." (Givón 1993a: 100) In this study, the transitivity is also focused and treated as a clue for classification of Mandarin emotion verbs. Following examples will document the transitivity of emotion verbs.

(24) Transitive

    a. 姐姐喜歡<u>班上一個男生</u>。

        jiejie xihuan banshang yege nansheng

        older sister like in class one-CL boy

        'My older sister likes a boy in her class.'

        *姐姐喜歡。

        Jiejie xihuan

        older sister like

        'My older sister likes.'

    b. 很多學生討厭<u>英文</u>。

        henduo xuesheng taoyan yingwen

        many students dislike English

        'Many students dislike English.'

        *很多學生討厭。

        henduo xuesheng taoyan

        many students dislike

        'Many students dislike.'

    c. 他嫉妒<u>妻子</u>。

        ta jidu qizi

        he jealous of wife

        'He is jealous of his wife.'

*他嫉妒。

  ta jidu

  he jealous of

'He is jealous of.'

d. 他們擔心<u>那女孩的安危</u>。

  tamen danxin na nuhai de anwei

  they worry that girl DE safety

  'They worried about that girl's safety.'

*他們擔心。

tamen danxin

they worry

'They worried.'

(25) Intransitive

a. 聽到這件事，爸爸非常高興。

  tingdao zhejian shi, baba feichang gaoxing

  hear-arrive this-CL affair, father very glad

  'On hearing this affair, Father is very glad.'

*爸爸非常高興<u>這件事</u>。

tingdao zhejian, baba feichang gaoing zhejian shi

hear-arrive this-CL affair, father very glad this-CL affair

'On hearing this affair, Father is very glad at this affair.'

b. 我並不覺得驚訝。

wo bingbu juede ijngya

I not feel surprised

'I didn't feel surprised.'

*我並不覺得驚訝<u>這個消息</u>。

wo bingbu juede ijngya

I not feel surprised this-CL news

'I didn't feel surprised at this news.'

c. 他感覺非常後悔。

ta ganjue feichang houhui

he feel very regret

'He felt very regret.'

*他感覺非常後悔<u>自己</u>。

ta ganjue feichang houhui ziji

he feel very regret himself

'He felt very regret for himself.'

Examples in (24) and (25) above distinctly illustrate the phenomenon that some verbs are obligated to take a direct object while others are not. Specifically speaking, in terms of the two arguments, Experiencer and Target, both two arguments of verbs 喜歡 *xihuan* 'like', 討厭 *taoyan* 'detest', 嫉妒 *jidu* 'jealous', 擔心 *danxin* 'worry' are profiled and appear obligatorily; however, only one argument (Experiencer) of verbs 高

興 *gaoxing* 'be glad', 驚訝 *jingya* 'surprise', 後悔 *houhui* 'regret' is profiled while the other (target) may be shaded. In this study, the transitivity of emotion verbs will be included as a criterion for verb classification.

4.3 Alternations

Levin (1985b, 1993:2-3) stated that native speakers are able to make subtle judgments which involve the occurrence of verbs with possible combinations of arguments and adjunct in various syntactic patterns and know which diathesis alternations verbs may participate in. Liu and Hong (2008) and Liu (2009) both mentioned that constructional alternation signals semanti c distinctions in emotion verbs and proposed that there are two alternation patterns that involve Mandarin emotion verbs: the stative-causative and active-passive alternations.

4.3.1 Stative-Causative alternation

Emotion verbs, such as 生氣 *shengqi* 'angry', 高興 *gaoxing* 'glad', 驚訝 *jingya* 'surprise', 失望 *shiwang* 'disappointed', 難過 *nanguo* 'sad', 擔心 *danxin* 'worry', 後悔 *houhui* 'regret', 懊惱 *aonao* 'remorseful', 羨慕 *xianmu* 'envy', 嫉妒 *jidu* 'jealous', 滿意 *manyi* 'pleased', 不滿 *buman* 'unpleased, 討厭 *taoyan* 'dislike', 喜歡 *xihuan* 'like' 擔心 *danxin* 'worry', 害怕 *haipa* 'fear', 在乎 *zaihu* 'care', 關心 *guanxin* 'concern', 有趣 *youqu* 'interesting', 無趣 *wuqu* 'boring', and 有意思 youyisi 'interesting' express their arguments normally in a stative way, as patterns below illustrate:

(26) a.　聽到這件事，爸爸非常高興。

　　　tingdao zhejian shi, papa feichang gaoxing

　　　hear-arrive this-CL affair, father very glad

'On hearing this affair, Father is very glad.'

b. 我很擔心你。

wo hen danxin ni

I very worry you

'I worry about you very much.'

c. 這件事很有趣。

zhejian shi hen youqu

this-CL very interesting

'This affair is very interesting.'

The verbs or predicates above can also express their arguments in a causative way, i.e. the events of the verbs can also be expressed in a causative pattern with marker *ling* 令, *rang* 讓, *shi* 使 or *jiao* 教 'make'[7].
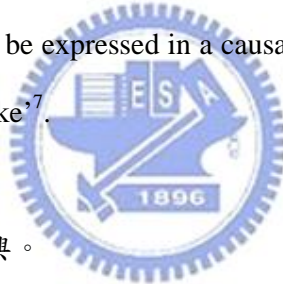
(27) a. 這件事讓爸爸非常高興。

zhejian shi rang baba feichang gaoxing

this-CL affair **make** father very glad

'This affair makes Father feel very glad.'

b. 你讓我很擔心。

ni reng wo hen danxin

you **make** I very worry

'You make me feel very worry.'

---

[7] Love-hate type verbs such as 愛 *ai* 'love', 喜歡 *xihuan* 'like', 討厭 *taoyan* 'dislike', and 恨 *hen* 'hate' seems to be compatible with both causative marker 讓 and passive marker 被：
他被我愛/喜歡/討厭/恨。
他讓我(很)愛/喜歡/討厭/恨。
What leads to the diversity of realization may be the transitivity of verbs. Love -hate type verbs have more transitivity than other stative verbs relatively. (cf. Lai 2004)

c. 這件事讓我覺得很有趣。

　　zhejian shi reng we juede hen youqu

　　this-CL **make** me feel very interesting

　　'This affair make me feel very interesting. '

　　Example (26) and (27) illustrate the stative-causative alternation that a group of Mandarin emotion verbs may participant in to express events in different ways.

4.3.2　Active-Passive alternation

　　Differing from verbs mentioned in section 4.3.1, another group of verbs show an Active-Passive alternation. Verbs in this group includes 安慰 *anwei* 'comfort', 鼓勵 *guli* 'encourage', 折磨 *zhemo* 'torment', 打擾 *darao* 'disturb', 激怒 *jinu* 'anger', 惹惱 *renao* 'anger', 嚇 *xia* 'frighten', 刺激 *ciji* 'stimulate', 誘惑 *youhuo* 'seduce', 引誘 *yinyou* 'seduce' and 吸引 *xiyin* 'attract'. These verbs are regularly expressed in an active pattern, as examples below:

(28) a. 小明老是激怒莉莉。

　　xiaoming laoshi jinu lili

　　Ming always anger Lili

　　'Ming always angers Lili.'

b. 這玩具很吸引小朋友。

　　zhe wanju hen xiyin xiaopengyou

　　this toy very attract children

　　'This toy attracts children very much.'

Similar to English, the verbs can also occur in a passive pattern with a marker 被 *bei* 'by' :

(29) a. 莉莉老是被小明激怒。

   lili laoshi bei xiaoming jinu

   Lili always **by** Ming anger

   'Lili is always angered by Ming.'

   b. 小朋友被這玩具吸引。

   xiaopengyou bei zhe wanju xiyin

   children **by** this toy attract

   'Children are attracted by this toy.'

Example (28) and (29) illustrate how the Active-Passive alternation is used to help expressing an event in different ways. Moreover, all the examples from (26) to (29) document that not all Mandarin emotion verbs involve in the same alternation. Some verbs may participate in Stative-Causative alternation while others may participate in Active-Passive alternation. The diversity of alternations shows how the emotional events are conceptualized in our mind. More specifically, the two alternations illustrate two perspectives on viewing emotional events. It will be shown through the conceptual schema proposed in Chapter 5.

4.4 Subject Roles

The participants in events must occupy one of grammatical roles in the clause, and among these grammatical roles, the subject is the primary topic in a sentence. Therefore we focus on the subject and find that the roles of the subject in emotional event structures are varied.

(30) a. 聽到這件事，<u>爸爸</u>非常高興。

   tingdao zhejian shi, papa feichang gaoxing

   hear-arrive this-CL affair, father very glad

   'On hearing this affair, Father is very glad.'

   b. <u>很多學生</u>討厭英文。

   henduo xuesheng taoyan yingwen

   many students dislike English

   'Many students dislike English.'

(31) a. <u>這本書</u>很有趣。

   zheben shu hen youqu

   this-CL book interesting

   'This book is very interesting.'

   b. <u>他</u>很無聊[8]。

   ta hen wuliao

   he very boring

   'He is very boring.'

(32) a. <u>他</u>激怒了老師。

   ta jinu le laoshi

   he anger PERF teacher

   'He angered the teacher.'

   b. <u>這玩具</u>吸引了小朋友。

   zhe wanju xiyin le xiaopengyou

---

[8] There are two readings of the sentence 他很無聊 *Ta hen wuliao*: 'He is very bored.' and 'He is very boring.' There is an Experiencer as the subject in the former reading, and a Stimulus as the subject in the latter one. They are analyzed in different frames.

this toy attract PERF children

'This toy attracted children.'

Verbs in (30) , are encoded as predicates with **Experiencer** (爸爸 *baba* 'father' and 學生 *xuesheng* 'student') as subject to profile an experiencer in an emotional state. Contrarily, verbs in (31) are predicates with **Stimulus** (書 *shu* 'book' and 他 *ta* 'he') as subject to attribute potential properties of the stimulus to cause an emotional state in the Experiencer. In addition to Experiencer and Stimulus, there is an agnet-like subject role. Liu (2009) proposed this type of subject as an Affecter. The emotional clause can take an **Affecter** (他 *ta* 'he' and 這玩具 *pengyou* 'friends') as the subject to attribute an emotional impact or effect on an **Affectee**, who undergoes the impact and then is provoked an emotional state. The affecter is mostly volitional or intentional like the subject in (32a), although there is also the affecter with a few or no volition, as what shown in (32b).

How can we tell the volitionality of the Affecter? Examples (33) may be evident illustrations.

(33) a. 他的話安慰了我。

   ta de hua anwei le wo

   he DE words comfort I

   'His words comforted me.'

   b. 他安慰了我。

   ta anwei le wo

   he comfort I

   'He comforted me.'

Examples above seems to be similar that the subject phrase 他 *ta* 'he' in (33b) can be regarded as an abbreviation form of another noun phrase 他的話 *ta de hau* 'his words' in (33a). What differentiates the two clauses and the subjects, however, is the *volitional* (or intentional) feature. When (33a) 他的話安慰了我（*ta de hua anwei le wo* 'His words comforted me.') is uttered or wrote out, the speaker may just be comforted because of some words written in a book by someone or some words he uttered long time ago. In these two cases, these words did not 'try to' comfort the speaker. On the contrary, when a speaker said a clause like (33b), he or she was comforted 'by' someone and the person actually did an action to comfort the speaker. The volition or intention encoded in verbs can be tested by several ways.

(34) Means: a. 他用這句話來安慰我。

　　　　　　ta yong zhegou hau lai anwei wo

　　　　　　he use this-CL words to comfort I

　　　　　　'He used these words to comfort me.'

　　　　b. *這句話用食物來安慰我。

　　　　　　zhegou hau yong shiwu lai anwei wo

　　　　　　this-CL words use food to comfort I

　　　　　　'These words comforted me with food.'

(35) Attempt: a. 他試圖安慰我。

　　　　　　ta shizhe anwei wo

　　　　　　he try comfort I

　　　　　　'He tried to comfort me.'

　　　　b. *這句話試圖安慰我。

　　　　　　zhegou hau shizhe anwei wo

this-CL words try comfort I

'These words tried to comfort me.'

(36) Intention: a. 他故意激怒我。

ta guyi jinu wo

he purposely anger I

'He angered me purposely.'

b. *這句話故意激怒我。

zhegou hau guyi jinu wo

this-CL words purposely anger I

'These words angered me purposely.'

(37) Imperative: a. 安慰他一下。

anwei ta yixia

comfort he for-a-while

'Comfort him.'

b. 不要安慰他。

buyao anwei ta

do not comfort he

'Don't comfort him.'

The criteria (34) to (37) all present and distinguish the volitionality of verbs. Some previous studies also thought highly of the volition or intention feature. Huang (1974) mentioned that there are two interpretations of theme (or stimulus in our study). The theme may be an agent who does something and makes the Experiencer has some kind of emotion; however, it could also be a theme that takes part in a condition, making

Experiencer in certain emotion state. Additionally, Van Voorst (1992) divided psychological (emotion) verbs into four groups and treated intention as a criterion as well to divide emotion verbs into class II and class III, as noted in (38):

(38) Class I: From action verb to psych verb.

Class II: Psychological verbs with an intentional subject.

Class III: Psychological verbs with a non-intentional subject.

Class IV: Psychological verbs of the dislike-type.

To sum up, there are three different roles coded as the subject: Experiencer, Stimulus, and Affecter. The subject role coded in an emotional event may be varied according to which participant role or frame element is focused on or emphasized in an event. In the study, the variant of subject roles also plays a significant role in categorizing emotion verbs.
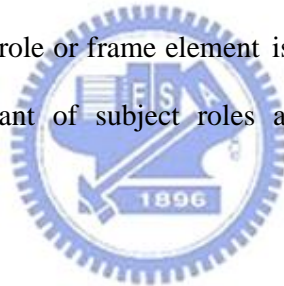
4.5 Participant Roles

After the corpus observation, various participant roles are found to be essential in the events of emotion. The roles will be introduced with syntactic categories, definitions and corresponding examples. The experiencer or causee role in an emotion event is examined in Section 4.5.1; a experienced phenomenon or situation taken as stimulus in emotion events is discussed in Section 4.5.2; an causer which arouses an emotional effect or impact on the experiencer is displayed in Section 4.5.3; the goal where the experiencer's emotion toward presented in Section 4.5.4; the response which the experiencer performs after an emotion state is evoked is mentioned in Section 4.5.5. Finally, some other non-core roles in events are listed in Section 4.5.6.

4.5.1 The Causee of Emotion Events/States: Experiencer, Affectee

　　The semantic role 'experiencer' is an entity or referent which receives, experiences, or undergoes an impact or effect of an action or event. An entity or person which simply feels or experiences the emotion provoked by a stimulus is an Experiencer, while an entity or person which **undergoes an impact or effect of an action** caused by an Affecter and then reacts emotionally or psychologically is an Affectee.

(39) **Experiencer [NP]**

　　Semantic Definition: A person or sentient entity that experiences the emotion state

　　　　　　　　　　　caused by a stimulus.

　　Syntactic Function: Normally, it is surfaced as an NP subject

　　Examples:

　　[我的同學/Experiencer]都很喜歡這位新老師。

　　wo de tongxue du hen xihuan zhe wei xin laoshi

　　my classmates all very like this-CL new teacher

　　'My classmates all like this new teacher very much.'

(40) **Affectee [NP]**

　　Semantic Definition: A person or sentient entity which undergoes an emotional

　　　　　　　　　　　effect of an action caused by the Affecter and then react

　　　　　　　　　　　emotionally or psychologically.

　　Syntactic Function: It is normally surfaced as an NP object.

　　Examples:

　　這些學生一找到機會，就以這個問題去煩[老師/Affectee]。

　　zhexie xuesheng yi zhaodao jihui, jiu yi zhege wenti qu fan laoshi

　　these students once find a chance, solely use this-CL question to bother teacher

'Once getting a chance, these students bother their teacher with t his question.'

4.5.2 The Cause of Emotion Events/States: Stimulus, Reason, Content, Prior Act

In an emotional event, there must be a stimulus which provokes the emotion state on the Experiencer. It could be an entity or an event that initiates the Experiencer's attention, mental agitation, distress, regret, pleasure, sympathy, discontent or fear. Participant roles associating with the cause of an emotional event are Stimulus, Reason, Content and Prior Act.

(42) **Stimulus[NP/VP/CL]**

Semantic Definition: A situation or an entity which arouses a feeling of an Experiencer.

Syntactic Function: Normally, this frame element is realized as a sentence, an NP or a VP in the subject position of a causative construction involving causative verbs 令 *ling* 'make', 讓 *rang* 'make', 使 *shi* 'make', and 叫 *jiao* 'make'. Sometimes, it can also occur in the pattern 一直到 / 等到 … 才 *yizhi dao/dengdao…cai* 'not until'.

Examples:

(a) [這件事/Stimulus]讓我很擔心。

zhejianshi rang wo hen danxin

this-CL affair make me very worry

'This affair worries me.'

(b) [看到成績不好的考卷/Stimulus]令我很生氣。

kan-dao chengji bu hao de kaojuan ling wo hen shengqi

watch-reach grade not good DE test paper make me very angry

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'Seeing the bad grade on the test paper makes me very angry.'

(c) 一直到[他最疼愛的兒子曹沖夭折/Stimulus]他才後悔。

yizhi dao ta zui tengai de erzi caochong yaozhe ta cai houhui

till he most love son Chong Cao die young he finally regret

'Not until his lovest son's early death does he regret.'

(d) [這玩意兒/Stimulus]很有意思。

zhe wanyier hen youyisi

this plaything very interesting

'This plaything is very interesting.'

(43) **Reason[NP/VP]**

Semantic Definition: This frame element either refers to a situation or an entity which affects the Affectee to make the result realized or explanes why the affecter provokes certain emotional impact on the Affectee.

Syntactic Function: Syntactically, this frame element is realized as a VP or an NP following the cause marker 因為 *yinwei* 'because (of)' or 由於 *youyu* 'due to' in the BEI passive construction.

Examples:

過去他曾因[攻擊李總統的經濟改革政策/Reason]，激怒自由派人士。

guoqu ta ceng yin gongji li zongtong de jingji gaige zhengce, jinu ziyou pai renshi

in-the-past he once because attack Li president DE economic reform policy, anger liberalist

'He once provked the liberalist because he attacked the economic reform policy proposed by the president Li.'

(44) **Content[CL]**

Semantic Definition: The specific reason or detailed account underlying the emotional state. It can be either a realis event that happened (a) or an irrealis event that has not happened (b).

Syntactic Function: This frame element is normally in the object position.

Examples:

(a) 我很高興[我們的縣長，為我們爭取這麼多的建設經費/Content]。

wo hen gaoxing women de xianzhang, wei women zhengqu zhemeduo de jianshe jingfei

I very glad we DE county magistrate for we shoot for so much DE construction funds

'I am very glad that our county magistrate shot for so much construction funds for us.'

(b) 我非常高興[你們要來我家/Content]。

wo feichang gaoxing nimen yao lai wo jia

I very glad you will come I house

'I am very glad that you guys are going to come to my house.'

(45) **Prior Act[VP/CL]**

Semantic Definition: A prior act that the Experiencer has come to feel bad about. Sometimes the prior act can be describe as a regretting state of the Experiencer on which he shows deontic judgement or a regretting state presented in complete proposition form.

Syntactic Function: This frame element is normally in the object position.

Examples:

我後悔[告訴她自己的事/ Prior Act],

wo houhui gaosu ta ziji de shi

I regret tell she myself-affair

'I regret telling her my own affairs.'

4.5.3 The Causer of Emotion Events/States: Affecter

In addition to Stimulus, an emotional state could be also arous ed by an external impact (on the Affectee), which is mostly volitionally evoked by an Affecter. Liu (2009) highlighted the relation between a cause and a cause. However, in terms of volitionality, the role causer is further distinguished in this study with higher volitionality.

(46) **Affecter[NP]**

Semantic Definition: A cause/person evokes an emotional impact on an Affecter. Normally, the Affecter is a volitional human. However, inanimate entities can also transferred metaphorically as an Affecter.

Syntactic Function: It usually occurs in the subject position.

Examples:

[丁守中/Affecter]激怒立法院會的程建人。

dingshouzhong jinu lifayuanhui de chengjianren

Shou-Zhong Ding anger the Legislative Yuan DE Jian -Ren Cheng

'Shou-Zhong Ding angered Jian-Ren Cheng who works in the Legislative Yuan.'

4.5.4 The Target of Emotion Events/States: Target_entity, Target_situation, Target_act, Target_empathy, Target_possible situation, Beneficiary

After the corpus observation, we found that an emotional state that the Experiencer experiences or feel might be toward a Target directly or indirectly. The concerned Target may be persons, groups, inanimate entities, or some particular situations.

(47) **Target_entity[NP]**

Semantic Definition: An entity which an Experiencer's feeling is based on or directly
toward. It may be a particular person, group, or inanimate object.

Syntactic Function: This frame element tends to be syntactically realized as a generic
NP in object position.

Examples:

(a). 我不愛[爸爸/Target_entity]，我不愛[媽媽/Target_entity]，我愛[毛主席/Target_entity]。

　wo bu ai baba, wo bu ai mama, wo ai mao zhuxi

　I not love father, I not love mother, I love president Mao

　'I like neither my father nor my mother. I love president Mao.'

(b). 我真羨慕[他的才華/Target_entity]

wo zhen xianmu ta de caihua

I really envy he DE talent

'I really envy at his telent.'

(48) **Target_situation[CL]**

Semantic Definition: A situation which an Experiencer's feeling is based on or
directly toward.

Syntactic Function: It is uaually realized as a clausal complement in the direct
object position.

Examples:

這位年輕人痛恨 [主管不公平，同事對他冷漠/Target_situation]，

zhewei nianqingren tonghen zhuguan bu gong ping, tongshi dui ta lengmo

this-CL young man detest boss unfair, fellows to he indifferent

'This young man detests his boss's unfairness and fellows' indifference to him.'

(49) **Target_act[VP]**

Semantic Definition: An act which is what the Experiencer's would like to do or to avoid. (This frame element is unique to the Love-Hate frame.)

Syntactic Function: It syntactically realized as a verbal complement of the Love-Hate verbs.

Examples:

他特別喜愛 [收集模型汽車/ Target_act]，

ta tebie xiai shouji moxing qiche

he specially like collect model car

'He likes to collect car models specially.'

(50) **Target_emphathy[NP]**

Semantic Definition: An individual or individuals with which the Experiencer identifies emotionally and thus shares their emotional response.

Syntactic Function: It is syntactically expressed as an NP object of Prepositions 為 *wei* 'for', and 替 *ti* 'for'.

Examples:

姍姍這次科展獲得首獎，我真是為[她/Target_empathy]高興！

shanshan zheci kezhan huode quanguo shoujiang, wo zhenshi wei ta gaoxing

Shan-Shan this-CL science fair win the first prize, I really for she glad

'Shan-Shan won the first prize in the Science Fair, I am so glad for her.'

(51) **Target_possible situation[VP/CL]**

Semantic Definition: A possible or uncertain act or event that may potentially happen, i.e. the possibility, serves as the complement of the set of Worry-Fear verbs. It can be realized as an interrogative sentence taking an epistemic marker, such a s 可能 *keneng* 'may'or 會 *hui* 'will' or an A-not-A question.

Syntactic Function: It is usually surfaced as the direct object of verbs.

Examples:

我害怕 [他永遠不再回來/Target_possible situation]，

wo haipa ta yongyuan bu zai huilai

I fear he ever not come back

'I fear that he will never come back.'

(52) **Beneficiary[NP]**

Semantic Definition: A human for whom the Expeirencer feels the emotion indirectly. It only occurs when the target, either Target_entity or Target_possible situation, of Worry-Fear verbs has existed.

Syntactic Function: It is syntactically expressed as an NP object of Prepositions 為 *wei* 'for', and 替 *ti* 'for'.

Examples:

我替[他/Beneficiary]擔心 [他的未來/Target_entity]。

wo tit a danxin ta de weilai

I for he worry he DE future

'I worry his future for him.'

4.5.5 The Response of Emotion Events/States: Result

In an emotion event, a response or resultative action may be performed by the Experiencer or the Affectee after the Experiencer's or the Affectee's experiencing the emotional state or undergoing an emotional impact.

(53) **Result[VP]**

Semantic Definition: The reaction performed by the Expereiencer or Affectee
spontaneously after their experiencing the emotional state or
undergoing the impact caused by an Affecter.

Syntactic Function: It is surfaced as a VP as a resultative state or action.

Examples:

各級指揮官都受到鼓舞，[即時採取行動/Result]。

geji zhihuiguan du shoudao guwu, jishi caiqu xingdong

all-levels commandant all receive inspire, immediately take action

'Commandants of all levels are all inspired and then take action immediately. '

4.5.6 Other Attributes or Non-core roles of Event Events: Topic, Expressor, Act, Degree

The participant roles or frame elements discussed above are all more necessary or important in an emotional event, i.e., core frame elements. In addition to the core frame elements, we also found some non-core frame elements associating with emotion verbs or events: Topic, Expressor, Act, and Degree. They will be presented one by one.

(54) **Topic[NP]**

Semantic Definition: The Topic is the general or vague area in which the emotion occurs. It indicates a range of possible causes. Often occurs in sentence-initial (topicalized) position and co-occurs with topic markers.

Syntactic Function: Normally expressed as an NP object of Prepositions such as 對於 *duiyu* 'about' and 關於 *guanyu* 'about'.

Examples:

關於[這次失敗/Topic]，沒有人會生氣。

quanyu zheci shibai, meiyou ren hui shengqi

about this-CL failure, no one will angry

'About this failure, no one will be angry.'

(55) **Expressor[NP]**

Semantic Definition: A gesture or body part which is displaying or reflecting the emotional state of the Experiencer.

Syntactic Function: It is usually expressed as a NP subject.

Examples:

[他的表情/Expressor]很痛苦，

ta de biaoquing hen tongku

he DE facial expression very suffering

'His facial expression looks very suffering.'

(54) **Act[VP]**

Semantic Definition: A behavior urged by the Affecter and may or maynot taken by the Affectee after undergoing the emotion impact.

Syntactic Function: It is surfaced as a VP object of the Attract-Comfort verbs.

Examples:

蕭先生極力鼓勵筆者[將經驗寫出來跟大家分享/Act]。

xiao xiansheng jili guli bizhe jiang jingyan xie chulai gen dajia fenxiang

Mr. Xiao give-every-effort encourage author to experience wirte down with everyone share

'Mr. Xiao tried his best encouraging the author to write do wn his experience to share with everyone.'

(57) **Degree[ADV]**

Semantic Definition: This frame element describes the degree of the Experiencer's feeling. Syntactically, the frame element is realized as a degree adverb, such as 很 *hen* 'very', 非常 *feichang* 'very', 十分 *shifen* 'extremely', 蠻 *man* 'pretty',最 *zui* 'most', 好 *hao* 'very' and so on.

Syntactic Function: It is typically expressed as a degree adverb.

Examples:

我[非常/Degree]高興你們要來我家。

wo feichang gaoxing nimen yao lai wo jia

I very glad you will come my house

'I am very glad that you guys are going to come to my house.'

4.6 Syntactic Patterns of the Verbs with the Participant Roles

On observing the corpus data, we found that there are a number of syntactic patterns formed by the the emotion verbs and their corresponding participant roles (See Section 4.5). Some groups of verbs are found to share the same set of specific or defining syntactic patterns. The syntactic patterns will be listed orderly with participant

roles; moreover, verbs share the same set of defining syntactic patterns would be presented, too.

(58) Verbs Sharing the Same Syntactic Patterns:

生氣 *shengqu* 'angry', 失望 *shiwang* 'disappoint', 高興 *gaoxing* 'be glad', 快樂 *kuaile* 'be happy', 難過 *nanguo* 'be sad', 尷尬 *ganga* 'be embarrassed', 激動 *jidong* 'be flushed', 煩 *fan* 'annoyed', 心煩 *xinfan* 'annoyed', 不平 *buping* 'protest', 痛苦 *tongku* 'pain', 悲傷 *beishang* 'be sad', 苦惱 *kunao* 'worry', 不安 *buan* 'be discomfort', 為難 *weinan* 'be awkward', 沮喪 *jusang* 'be depressed', 著急 *zhaoji* 'be anxious' and so on.

The Shared Syntactic Patterns:

a. Experiencer[NP]<(Degree[Adv])<*< Content [CL]

　Ex.:[我/Experiencer][非常/Degree][高興/Happy-Sad] [你們來我家/Content]。

　　wo feichang gaoxing nimen lai wo jia

　　I very glad you come my house

　　'I am very glad that you guys come to my house. '

b. Experiencer[NP] <{為/替}+Target_empathy[NP]< *

　Ex.:姍姍這次科展獲得首獎，[我/Experiencer]真是為[她/Target_empathy]﹝高興/Happy-Sad]！

　　shanshan zheci kezhan huode quanguo shoujiang, wo zhenshi wei ta gaoxing

　　Shan-Shan this-CL science fair win the first prize, I really for she glad

　　'Shan-Shan won the first prize in the Science Fair, I am so glad for her. '

c. {關於}+Topic[NP]<Experiencer[NP]< *

　Ex.:關於[這次失敗/Topic]，[沒有人/Experiencer]會[生氣/Happy-Sad]。

　　quanyu zheci shibai, meiyou ren hui shengqi

　　about this-CL failure, no one will angry

'About this failure, no one will be angry.'

(59) Verbs Sharing the Same Syntactic Patterns:

後悔 *houhui* 'regret', 懊悔 *aohui* 'repent', 懊惱 *aonao* 'be remorseful', 自責 *zize* 'be remorseful', 惋惜 *wanxi* 'feel sorry', 內疚 *neijiu* 'be guilty', 愧疚 *kuijiu* 'be ashamed', 慚愧 *cankui* 'be shamed', 遺憾 *yihan* 'feel sorry' and so on.

The Shared Syntactic Patterns:

a. Experiencer[NP]< *< Prior Act[VP/CL]

　Ex.: [我/Experiencer] [後悔/ Regret-Sorry] [告訴她自己的事/ Prior Act],

　　wo houhui gaosu ta ziji de shi

　　I regret tell she myself-affair

　　'I regret telling her my own affairs. '

b. {等到/一直到}< Stimulus[VP/CL]< Experiencer[NP]< (才)< *

　Ex.: 一直到 [他最疼愛的兒子曹沖夭折 /Stimulus][他/Experiencer] 才 [後悔 /Regret-Sorry]。

　　yizhi dao ta zui tengai de erzi caochong yaozhe ta cai houhui

　　till he most love son Chong Cao die young he finally regret

　　'Not until his lovest son's early death does he regret.'

(60) Verbs Sharing the Same Syntactic Patterns:

愛 *ai* 'love', 喜愛 *xiai* 'like', 喜歡 *xihuan* 'like', 喜好 *xihao* 'like', 討厭 *taoyan* 'detest', 厭惡 *yanwu* 'detest', 恨 *hen* 'hate', 痛恨 *tonghen* 'hate' and so on.

The Shared Syntactic Patterns:

a. Experiencer[NP]< *< Target_Entity[NP]

Ex.: [我/Experiencer]不[愛/Love-Hate][爸爸/Target_Entity]，[我/Experiencer]

不 [愛 /Love-Hate][媽 媽 /Target_Entity] ， [我 /Experiencer][愛

/Love-Hate][毛主席/Target_Entity]。

wo bu ai baba, wo bu ai mama, wo ai mao zhuxi

I not love father, I not love mother, I love president Mao

'I like neither my father nor my mother. I love president Mao.'

b. Experiencer[NP] <(Degree[Adv])<*<Target_Act[VP]

Ex.: [我/Experiencer][愛/Love-Hate][數星星/Target_Act]。

wo ai shu xingxing

I love count stars

'I love to count stars.'

c. Experiencer[NP]< *<Target_Situation[S]

Ex.: [這位年輕人/Experiencer][痛恨/Love-Hate][主管不公平，同事對他冷

漠/Target_Situation]，

zhewei nianqingren tonghen zhuguan bu gong ping, tongshi dui ta lengmo

this-CL young man detest boss unfair, fellows to he indifferent

'This young man detests his boss's unfairness and fellows' indifference to

him.'

d. Experiencer[NP]<對 Target_Entity[NP]< *

Ex.: [我/Experiencer]對[這種好吃懶做的人/Target_Entity]感到[很/Degree][厭

惡/Love-Hate]。

wo dui zhezhong haojilanzuo de ren gandao hen yanwu

I to this-CL like-eat-hate-work DE person feel very sick of

'I am very sick of people who dream of rich lives but never w ork hard.'

(61) Verbs Sharing the Same Syntactic Patterns:

羨慕 *xianmu* 'envy', 妒忌 *duji* 'jealous', 嫉妒 *jidu* 'jealous', 同情 *tongqing* 'sympathize with', 憐憫 *lianmin* 'pity', 憐惜 *lianxi* 'take pity on', 可憐 *kelian* 'sympathize with' and so on.

The Shared Syntactic Patterns:

a. Experiencer[NP]< *< Target_Entity[NP]

Ex.: [我/Experiencer][真/Degree][羨慕/Envy-Pity][他們/Target_Entity]

wo zhen xianmu tamen

I really envy they

'I really envy them.'

b. Experiencer[NP]<(Degree[Adv])<*<Target_Situation[S]

Ex.: [大家/Experiencer][很/Degree][羨慕/Envy-Pity][他擁有這項才藝/Target_Situation]

dajia hen xianmu ta yongyou zhexiang caiyi

every one very envy he own this-CL skill

'Every one envies his talent and skill.'

c. Stimulus[NP/S]<｛令／讓／使／教｝+Experiencer[NP]<*<Target_Entity[NP]/Target_Situation[S]

Ex.: [警方的行為/Stimulus]只會讓[民眾/Experiencer]更[同情/Envy-Pity][新黨/Target_Entity]

jingfang de xingwei zhi hui rang minzhong geng tongqing xindang

police DE behavior just can make the public more sympathize with Xin Party

'The police's behavior will make the public be more sympathetic with Xin Party.

d. Experiencer[NP] <{對}+Target_Entity[NP] <(表示/深表)<*

Ex.: ［東歐國家/Experiencer] 對 [我國經濟發展/Target_Entity] 十分 [羨慕
/Envy-Pity]

dongou guojia dui wo guo jingjifazhen shifen xianmu

East Europe country at we country economic development very envy

'Countries in the East Europe quite envy at our country's economic
development.

(62) Verbs Sharing the Same Syntactic Patterns:

擔心 *danxin* 'worry', 擔憂 *danyou* 'be anxious', 煩惱 *fannao* 'worry', 怕 *pa* 'fear',
害怕 *haipa* 'fear', 畏懼 *weiju* 'be afraid of', 掛心 *guaxin* 'be concerned with', 牽掛
qiangua 'be concern about', 關心 *guanxin* 'be concerned with', 關切 *quanqie* 'be
concerned with', 在乎 *zaihu* 'care about', 在意 *zaiyi* 'care and so on.

The Shared Syntactic Patterns:

a. Experiencer[NP] <(Degree[Adv]) <*<Target_entity[NP]

Ex.: [我/Experiencer][擔心/Worry-Fear][你/Target_entity]，

wo danxin ni

I worry you

'I worry about you.'

b. Experiencer[NP] <*< Target_possible situation[S]

Ex.: ［我/Experiencer][害怕/Worry-Fear][他永遠不再回來/Target_possible
situation]，

wo haipa ta yongyuan bu zai huilai

I fear he ever not come back

'I fear that he will never come back.'

c. **Experiencer[NP]<{ 替 / 為 }Beneficiary[NP]<*< Target_Entity[NP]/ Target_Possible situation[S, VP]**

Ex: [我 /Experiencer] 替 [他 /Beneficiary][擔 心 /Worry-Fear][他 的 未 來 /Target_Entity]。

wo tit a danxin ta de weilai

I for he worry he DE future

'I worry his future for him.'

(63) Verbs Sharing the Same Syntactic Patterns:

有趣 *youqu* 'interesting', 無趣 *wuqu* 'boring', 有意思 *youyisi* 'interesting', 令人興奮 *ling ren xingfen* 'exciting', 誘人 *youren* 'alluring', 累人 *leiren* 'exhausting', 煩人 *fanren* 'annoying', 嚇人 *xiaren* 'fearful', 氣人 *qiren*, 感人 *ganren* 'touching', 迷人 *miren* 'charming', 吸引人 *xiyinren* 'inviting', 可愛 *keai* 'lovable', 可笑 *kexiao* 'laughable', 可恨 *kehen* 'detestable', 可憐 *kelian* 'pitiable or sympathize with', 可悲 *kebei* 'deplorable' and so on.

The Shared Syntactic Pattern：

a. Stimulus[NP][VP][CL]＜*

Ex.:[問題/Stimulus][挺/Degree][有意思/Stimulus-Attributive]，但不好回答。

wenti ting youyisi, dan bu hao huida

question very interesting, but not easy to answer

'The question is very interesting, but is not easy to answer.'

(64) Verbs Sharing the Same Syntactic Patterns:

安慰 *anwei* 'comfort'，安撫 *anfu* 'pacify'，鼓勵 *guli* 'encourage'，激勵 *jili* 'encourage'，鼓舞 *guwu* 'inspire'，吸引 *xiyin* 'attract'，刺激 *ciji* 'stimulate'，引誘 *yinyou* 'seduce'，誘惑 *youhuo* 'seduce' and so on.

The Shared Syntactic Pattern：

a. Affecter[NP] <*(了)< Affectee[NP]

Ex.: [老闆娘/ Affecter]優雅地坐在沙發上[安撫/Attract-Comfort][等候的客人/Affectee]。

laobanniang youyadi zuo zai shafa shang anfu denghou de keran

boss elegantly sit on sofa-top pacify wait DE customer

'The boss sits elegantly on a sofa pacifying those waiting customers.'

b. Affecter[NP]<*<Affectee[NP]<Act[VP]

Ex.: [蕭先生/Affecter][極力/Degree][鼓勵/Attract-Comfort][筆者/Affectee][將經驗寫出來跟大家分享/Act]。

xiao xiansheng jili guli bizhe jiang jingyan xie chulai gen dajia fenxiang

Mr. Xiao give-every-effort encourage author to experience wirte down with everyone share

'Mr. Xiao tried his best encouraging the author to write down his experience to share with everyone.'

c. Affectee[NP]< {受/受到}<(Affecter[NP])<* <Result[VP/CL]

Ex.: [各級指揮官/Affectee]都受到[鼓舞/Attract-Comfort]，[即時採取行動/Result]。

geji zhihuiguan du shoudao guwu, jishi caiqu xingdong

all-levels commandant all receive inspire, immediately take action

'Commandants of all levels are all inspired and then take action immediately.'

(65) Verbs Sharing the Same Syntactic Patterns:

折磨 *zhemo* 'torment', 打擾 *darao* 'disturb', 擾亂 *raoluan* 'disturb', 折騰 *zheteng* 'torment', 惹惱 *renao* 'anger', 激怒 *jinu* 'provoke', 惹火 *rehuo* 'provoke', 感動 *gandong* 'touch', 打動 *dadong* 'move', 嚇 *xi* 'frighten', 煩 *fan* 'annoy', 氣 *qi* 'anger' and so on.

The Shared Syntactic Pattern:

a. Affecter[NP]<*(了)< Affectee[NP]<(Result[VP])

Ex.: [丁守中/Affecter][激怒/Bother-Irritate][立法院會的程建人/Affectee]。

dingshouzhong jinu lifayuanhui de chengjianren

Shou-Zhong Ding anger the Legislative Yuan DE Jian-Ren Cheng

'Shou-Zhong Ding angered Jian-Ren Cheng who works in the Legislative Yuan.'

b. Affecter[NP]<{把}+Affectee[NP]<*(了)

Ex.: [他/Affecter]寫那篇宣言把[我/Affectee][打動/Bother-Irritate]了。

ta xie napian xuanyan ba wo dadong le

he write that-CL declaration BA I touch PERF

'The declaration that he writed touched me.'

c. {不要/別/勿}<*<Affectee[NP]

Ex.: 不要[激怒/Bother-Irritate][科比/Affectee]！

buyao jinu kebi

do not anger Kebi

'Don't provoke Kebi!.'

d. Affecter[NP]<{因/因為}Reason[NP/VP]<*<Affectee[NP]

Ex.: 過去[他/ Affecter]曾因[攻擊李總統的經濟改革政策/ Reason]，[激怒/Bother-Irritate][自由派人士/ Affectee]。

guoqu ta ceng yin gongji li zongtong de jingji gaige zhengce, jinu ziyou pai

renshi

in-the-past he once because attack Li president DE economic reform policy,

anger liberalist

'He once provked the liberalist because he attacked the economic reform

policy proposed by the president Li .'

e. Affecter[NP]<Means<*<Affectee[NP]

Ex.: ［他們/Affecter][用關愛和溫暖/Means]［感動/Bother-Irritate]［他

/Affectee]，

tamen yong guanai he wennuan gandong ta

they use love and warm move he

'They moved him with love and warm .'

From (58) to (65), it shows clearly that there are several groups of ve rbs that share

a same and specific set of defining patterns. In other words, there is a correspondence

between lexicons, i.e. verbs, in the same semantic frame and constructions, i.e.,

syntactic patterns, in the same frame. More specifically, it is found t hat there is an

intersection between lexical semantics and construction grammar which are always

thought to be contrasting or conflicting theories. The emotion verbs can therefore be

divided into different frames according to their lexical meaning s and the corresponding

defining patterns with particular participant roles.

4.7 Summary

This chapter displays the findings which demonstrate differences among Mandarin

emotion verbs. These distinctions are shown in event types, verb transitivity,

alternations that verbs participate in, subject roles, participant roels and syntacitic

patterns of verbs. These distinctions or findings all provide a transparent and firm basis of verb categorization. In this way, Chapter five shall show a frame-based analysis of emotion verbs based on the findings. The detailed information of each group of verbs and the layered categorization will be illustrated exhaustively in the next chapter.

Chapter 5

Analysis

This chapter aims to present a frame-based analysis of Mandarin emotion verbs preliminarily. Section 5.1 introduces the conceptual schema postulated to capture the cognitive essence of emotional events. Section 5.2 will specify frames under the emotion archiframe one by one. Section 5.3 provides an overview of the frames and the frame categorization. A Summary of this chapter will be given in Section 5.4.

5.1 Conceptual Schema of Emotion Archiframe

Liu and Chiang (2008) mentioned that the archiframe provides an overarching conceptual schema as the semantic prerequisite for the individual frames within the relatively large and independent domain. The schematic representation can show and characterize the cognitive basis for a specific frame and the interrelations between its subframes. Adopting the analysis, this study defines and distinguishes frames not only with a set of frame elements and defining patterns but also with a conceptual schema.

Liu (2009) have proposed the variation of subject roles coded in the emotion verbs. The subject of an emotion event may be an Experiencer, a Stimulus, or an Affecter as what illustrated in (66):

(66) Subjects roles of Mandarin emotion verbs

a. Experiencer as Subject

　Ex.:聽到這件事，<u>爸爸</u>非常高興。

　　　tingdao zhejian shi, papa feichang gaoxing

　　　hear-arrive this-CL affair, father very glad

'On hearing this affair, Father is very glad.'

b. Stimulus as Subject

Ex.:這本書很有趣。

 zheben shu hen youqu

 this-CL book interesting

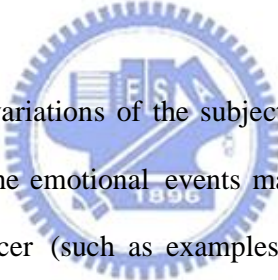 'This book is very interesting.'

c. Affecter as Subject

Ex.:他激怒了老師。

 ta jinu le laoshi

 he anger PERF teacher

 'He angered the teacher.'

According to Liu (2009), the variations of the subject roles mark two perspectives or focuses of emotional events. The emotional events may focus on the relation between the Stimulus and the Experiencer (such as examples 66a and 66b), or focus on the emotional impact aroused by an Affecter on the Affectee (such as example 1c). More specifically, in (66a) and (66b), the emotion predicates attribute **a status or a relationship between Experiencer and Stimulus**. In (66c), however, the emotion verb attributes **an emotional impact or effect** on the Affecter. The proposal that there are two perspectives in viewing emotional events can be further reinforced by alternations shown in syntactic presentations when describing emotional events. As what we discussed in Section 4.3, the alternation patterns that involve Mandarin emotion verbs are stative-causative and active-passive alternations (Liu and Hong 2008, Liu 2009). The **stative-causative** alternation involves verbs that describe a state or relationship of participant roles, that is, Experiencer as Subject verbs and Stimulus as Subject verbs in (66a) and (66b), while the **active-passive** alternation involves verbs that attribute an

impact or effect in the emotional event, i.e., Affecter as Subject verbs in (66c). It is obvious to figure out the features of the two different groups of verbs from the alternations. The stative-causative alternation shows that events coded in Experiencer as Subject verbs and Stimulus as Subject verbs are described as states, that focus on a relationship or status in the emotional events. On the contrary, the active-passive alternation presents the affectedness feature of the Affecter as Subject verbs that the Affectee is an affected patient undergoes the impact or effect made by the acting agent, i.e., Affecter.

In addition to the two variant focuses of emotional events, a number of core participant roles or frame elements in emotion-related events discussed in Section 4.6 can also be reflected upon the conceptual schema of emotional events. Therefore, adopting the causal relation proposed in Liu 2002 (Figure 3) and taking the findings in the subject roles and the essential Frame Elements into consideration, an elaborated causal schema corresponding to Emotion archiframe is proposed by Liu (2009) as below:
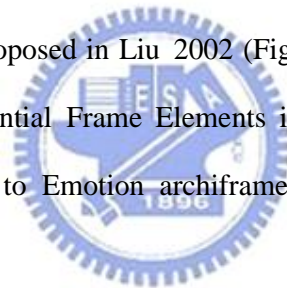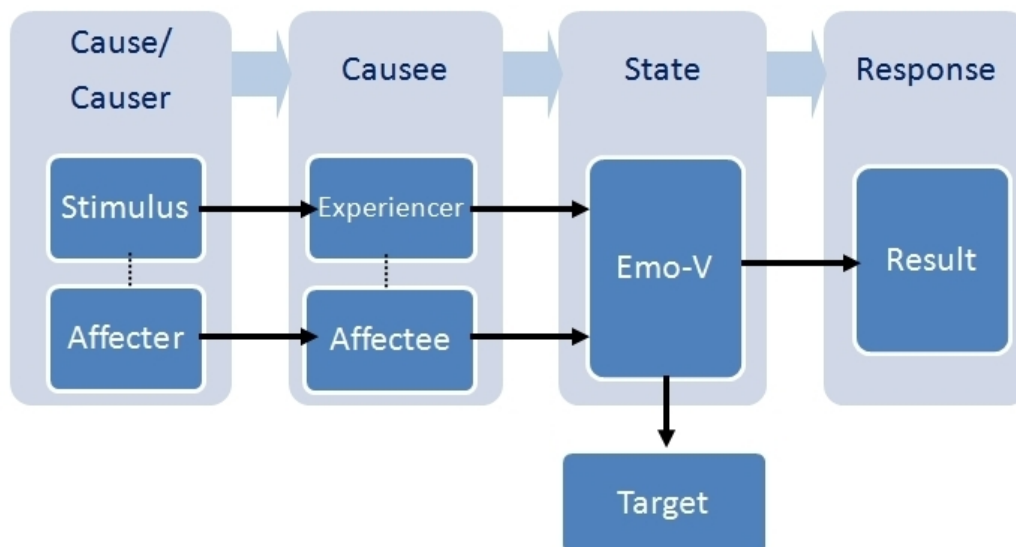
Figure 4. *Conceptual Schema of the Emotion Archiframe*

From the schema, the sequential process of an emotion event is shown clearly by the order of light blue rectangles. There must be a **Cause** or **Causer** which arouses an **emotional state** in a **Causee** and then causes a following **Response**. The emotion may or may not be directed toward a **Target**. In addition, the schema clearly captures the two different perspectives or tiers on expressing an emotion event. Briefly speaking, an emotion state may be evoked either by a **Stimulus** which takes part in a condition, causing an **Emotion** state in the **Experiencer** (What focused is the relation or status between Stimulus and Experiencer), or by an **Affecter** which does an action that causes an impact on an **Affectee**, and then leads to an **Emotion** state (what focused is the emotional impact caused by the Affecter on the Affectee).

5.2 Taxonomy of the Frames

As what mention in section 3.2, the analysis is based on the theory of frame semantics (Fillmore and Atkins 1992) and the frame taxonomy proposed by Liu and Chiang (2008). Based on the findings presented in Chapter four, verbs of Mandarin emotion can be categorized into varied frames, and the frames can be further analyzed into different layers. In this section, all the frames in the emotion domain will be specified individually and orderly. What we will pay attention to is the frame-corresponding conceptual schema, frame definition, lemma in the frame, core frame element, and defining pattern of the frame. What needs more attention here is that all children or lower frames inherit the semantic and syntactic properties of the father or upper frame. The frames will be introduced sequentially according to the layer system which is proposed by Liu and Chiang (2008) and discussed in Section 3.2.2. The discussion of frames is structured systematically from top to down: Archiframe > Primary frame> Basic frame > Microframe. The archiframe is dealt with in Section

5.2.1, the primary frame in Section 5.2.2, the basic frame in Section 5.2.3, and the micro-frame in Section 5.2.4.

5.2.1 Layer 1: Archiframe (Emotion frame)

The Emotion frame is the highest-layered frame in the semantic hierarchy, and is called to be an archiframe. An archiframe is defined as the maximal scope of an eventive background. As what specified in Liu and Chiang (2008), "It corresponds to a relatively large and independent semantic domain, similar to a higher-level node in a semantic ontology. An archiframe provides an overarching conceptual schema as the semantic prerequisite for the individual frames within a relatively large and independent domain." Liu and Chiang (2008) further mentioned that an archiframe can be represented in a conceptual schema with a set of frame-specific elements (i.e., prototypical participants) and the default relations between them. The information of the Emotion archiframe is given as below:
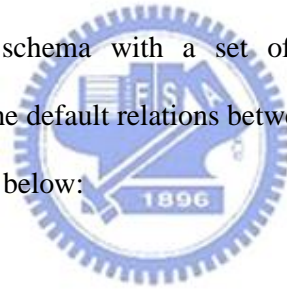
Definition: An Experiencer or Affectee has a particular emotional state, which may be provoked by a stimulus or caused volitionally by an affecter. The emotional state may toward a target and leads to a following response or result.

Representative Lemma: 情緒 *qing xu* 'Emotion'

Frame Elements: Experiencer, Stimulus, Affecter, Affectee, Target, Result

Conceptual Schema:
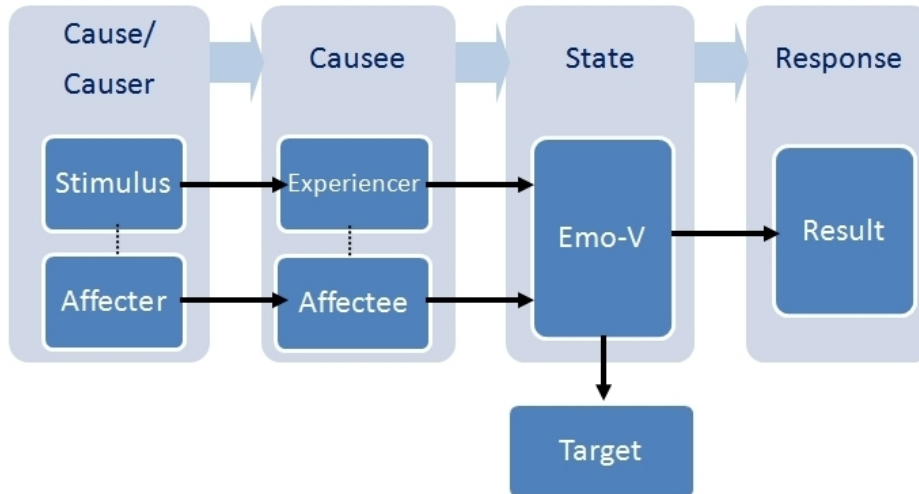
Defining Patterns:

a. Experiencer[NP]<(感/感到/感覺/覺得) <*

 Ex.:[李文秀/Experiencer]覺得又是[高興/Happy-Sad]，又是淒涼。

  liwenxiu juede you shi gaoxing, you shi qiliang

  Wen-Xiu Li feel not only be happy but also lonesome

  'Wen-Xiu Li feels not only happy but also lonesome.'

b. Stimulus[NP]＜(Degree[ADV])＜*

 Ex.:[問題/Stimulus][挺/Degree][有意思/Stimulus-Attributive]，但不好回答。

  wenti ting youyisi, dan bu hao huida

  question very interesting, but not easy to answer

  'The question is very interesting, but is not easy to answer.'

c. Affecter[NP]<*<Affectee[NP]

 Ex.:[丁守中/Affecter][激怒/Irritate-Attract][立法院會的程建人/Affectee]。

  dingshouzhong jinu lifayuanhui de chengjianren

  Shou-Zhong Ding anger the Legislative Yuan DE Jian-Ren Cheng

  'Shou-Zhong Ding angered Jian-Ren Cheng who works in the Legislative Yuan.'

5.2.2 Layer 2: Primary Frame

The second-layer frame in the hierarchy of verbs is primary frame. As what mentioned in Section 3.2.2, a primary frame is defined as **a subpart of the archi-schema with a unique set of core frame elements (FEs)**. Liu (2009) proposed three perspectives or orientations underlying the lexicalization pattern s of emotion verbs: Experiencer oriented (Experiencer-as-Subject), Stimulus oriented (Stimulus-as-Subject) and Affective result oriented (Affecter-as-Subject). Under the proposal and base on the transitivity of verbs found in Section 4.2[9], two sub-classes can be distinguished under the Experiencer oriented perspective. It means that four primary frames of emotion verbs can be distinguished. The four primary frames under the scope of Emotion archiframe are **Exp-Oriented**, **Exp-Oriented with Target**, **Stimulus-Oriented**, and **Affect-Oriented**. The Exp-Oriented frame focus on the Experiencer's experiencing an emotion state which might be aroused by a stimulus; the Exp-Oriented with Target frame profiles the emotion state that the Experiencer experiences directly toward a Target; the Stimulus-Oriented frame focus on the Stimulus causing an emotion state; the Affect-Oriented frame focus on an emotional effect or impact on the Affectee caused by an Affecter.

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[9] Two sub-classes under Experiencer oriented (Expeiriencer-as-Subject) type verbs can be distinguished by the transitivity found in Section 4.2. Some experiencer subjects followed by a direct object and others do not:

a. Intransitive:因為[他的離去/Stimulus]，[李文秀/Experiencer][十分/Degree][失望/Happy-Sad]。
　　　　　*[李文秀/Experiencer][十分/Degree][失望/Happy-Sad]**[他/Target_entity]**。
b. Transitive: [我/Experiencer][真/Degree][羨慕/Envy-Pity][他們/Target_entity]。
The two sub-classes are Exp-Oriented, and Exp-Oriented with Target primary frames. It means that t he experience that the experiencer feels may d irectly toward a target or not.

Figure 5. *The Primary Frames under Emotion Archiframe*
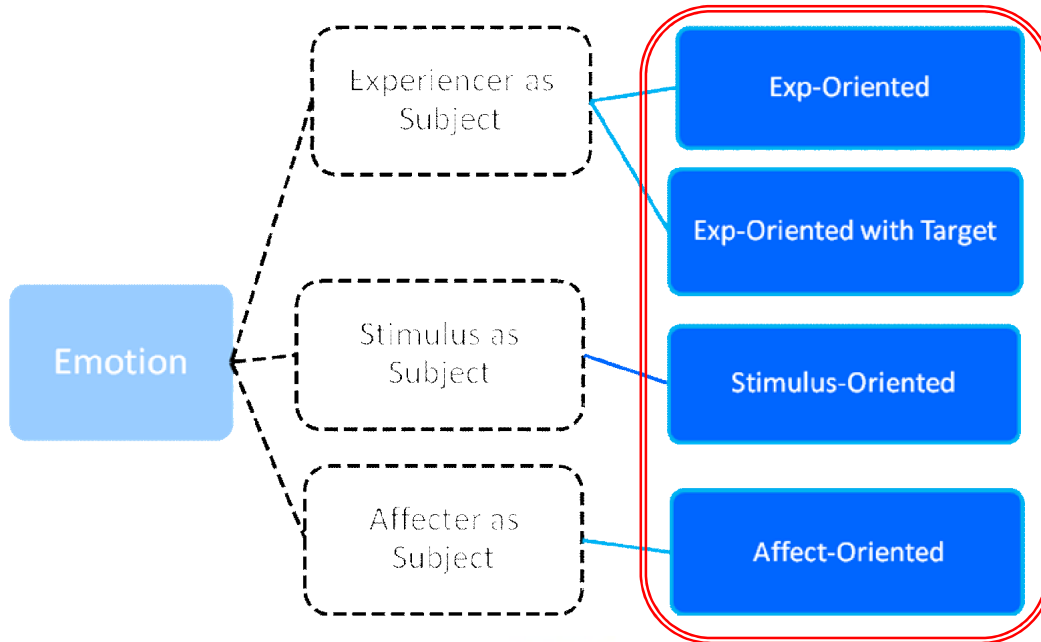
Following the three perspectives proposed by Liu (2009), detailed difinitions and examples with syntactic and collocational behavior of the four primary frames, which highlight different sets of core frame elements correspond ing to different portions of the archi-schema, will be presented in order from Section 5.3.2.1 to 5.3.2.4.

5.2.2.1 Exp-Oriented Frame

Definition: In this frame, because of certain Stimulus, the Experiencer experiences an emotional state. This frame describes a status between the Stimulus and the Experiencer.

Representative Lemma: 高興 *gaoxing* 'be glad', 快樂 *kuaile* 'be happy', 生氣 *shengqu* 'angry', 難過 *nanguo* 'be sad', 後悔 *houhui* 'regret', 遺憾 *yihan* 'feel sorry', 煩 *fan* 'be annoyed'

Core Frame Elements: Stimulus, Experiencer

Conceptual Schema:
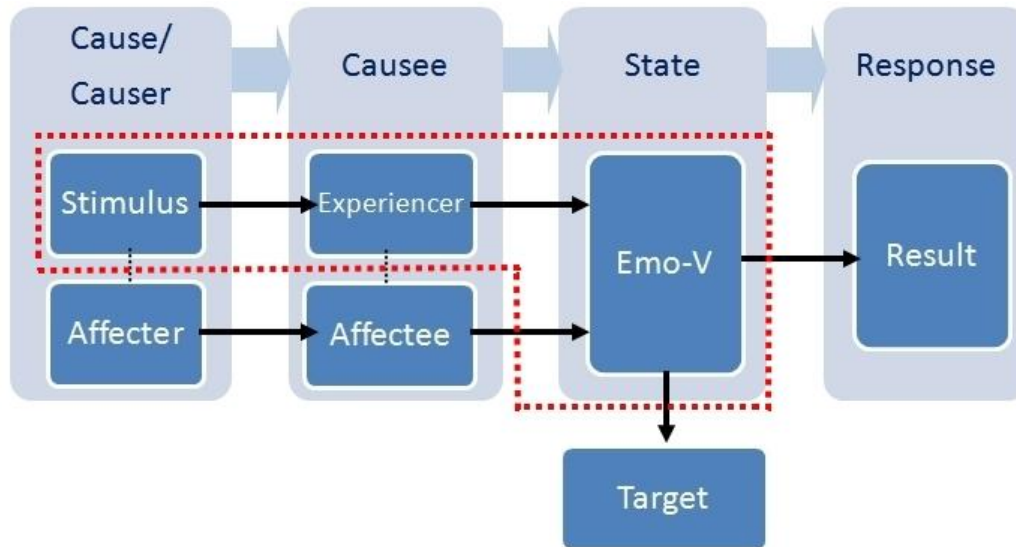
Defining Patterns:

a. Experiencer[NP]<(感/感到/感覺/覺得)<Degree[Adv] <*

Ex.:因為他的離去，[李文秀/Experiencer][十分/Degree][失望/Happy-Sad]。

yinwei ta de liqu, liwenxiu shifen shiwang

because of he DE leaving, Wen-Xiu Li very disappointed

'Because of his leaving, Wen-Xiu Li is very disappointed.'

b. Stimulus[NP][VP][CL]<{令/讓/使/教}+ Experiencer [NP]<*

Ex.:[看到成績不好的考卷/Stimulus] 令 [我/Experiencer][很/Degree][生氣/Happy-Sad]。

kan-dao chengji bu hao de kaojuan ling wo hen shengqi

watch-reach grade not good DE test paper make me very angry

'Seeing the bad grade on the test paper makes me very angry .'

c. Experiencer[NP]<Degree[Adv]<*<Content/Prior Act[VP/CL]

Ex.: [我/Experiencer] [非常/Degree] [高興/Happy-Sad] [你們要來我家/Content]。

wo feichang gaoxing nimen yao lai wo jia

I very glad you will come my house

'I am very glad that you guys are going to come to my house.'

Ex.: [我/Experiencer] [後悔/ Regret-Sorry] [告訴她自己的事/ Prior Act]，

  wo houhui gaosu ta ziji de shi

   I regret tell she myself-affair

  'I regret telling her my own affairs.'

d. Experiencer[NP]<{對}+ Content/Prior Act[NP/VP/CL]<(感/感到/感覺/覺得)<*

 Ex.:思前想後，[我/ Experiencer]對[自己放棄這個機會/Prior Act]又感到[後悔/Regret-Sorry]，與她同房豈不更好？

  siqianxianghou, wo dui ziji fangqi zhege jihui you gandao houhui, yu ta tongfang qibu genghao

  think, I to myself give up this chance also feel regret, with she sleep -together isn't that better

  'After thinking, I regretted at my giving up the chance. Isn't that better to sleep with her?'

5.2.2.2 Exp-Oriented with Target Frame

Definition: This frame also describes a status between the Stimulus and the Experiencer. Because of certain Stimulus, the Experiencer feels an emotion with regard to a Target, what the Experiencer's feelings or experiences are directed towards or based upon.

Representative Lemma: 愛 *ai* 'love', 恨 *hen* 'hate', 羨慕 *xianmu* 'envy', 嫉妒 *jidu* 'jealous', 同情 *tongqing* 'sympathize with', 憐憫 *lianmin* 'pity', 擔心 *danxin* 'worry', 害怕 *haipa* 'fear', 關心 *guanxin* 'be concerned with', 在乎 *zaihu* 'care about', 滿意 *manyi* 'be satisfied'

Core Frame Elements: Stimulus, Experiencer, Target

Conceptual Schema:
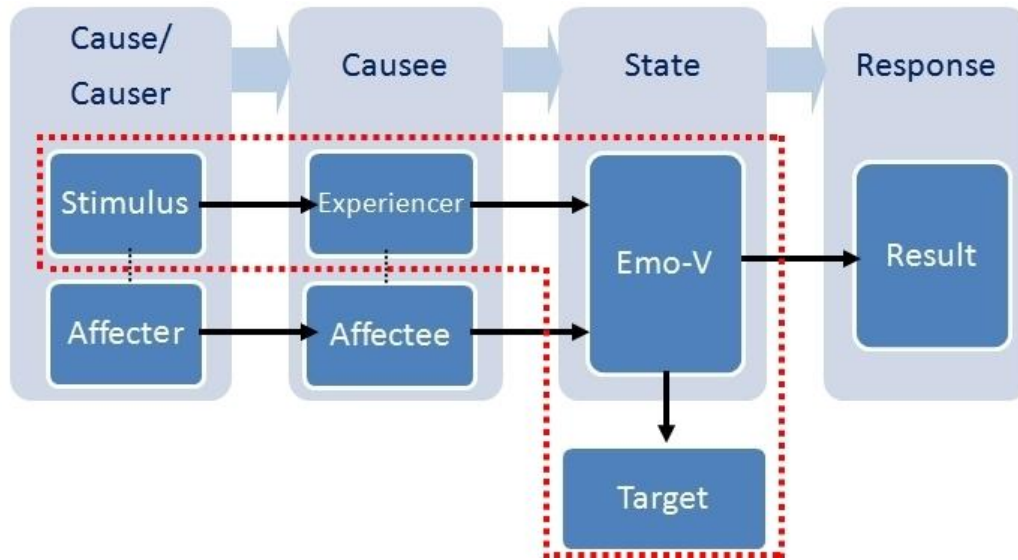
Defining Patterns:

a. Experiencer[NP]<(Degree[Adv])<*<(Target [NP/VP/S])

Ex.: [我/Experiencer][真/Degree][羨慕/Envy-Pity][他們/Target_entity]

  wo zhen xianmu tamen

  I really envy they

  'I really envy them.'

Ex.: [我/Experiencer][愛/Love-Hate][數星星/Target_act]。

  wo ai shu xingxing

  I love count stars

  'I love to count stars.'

Ex.: [大家/Experiencer][很/Degree][羨慕/Envy-Pity][他擁有這項才藝/Target_situation]

  dajia hen xianmu ta yongyou zhexiang caiyi

  every one very envy he own this-CL skill

  'Every one envies his talent and skill.'

b. Experiencer[NP] <{對} Target [NP/VP/S]<*

Ex.: [我/Experiencer]對[這種好吃懶做的人/Target_entity]感到[很/Degree][厭　惡
/Love-Hate]。

wo dui zhezhong haojilanzuo de ren gandao hen yanwu

I to this-CL like-eat-hate-work DE person feel very sick of

'I am very sick of people who dream of rich lives but never work hard. '

c. Stimulus[NP/S]< {令/讓/使/教}+Experiencer[NP]<*<(Target[NP/VP/S])

Ex.: [這個事件/Stimulus]讓[我/Experiencer][很/Degree][擔心/Worry-Fear][他的健
康問題/Target_entity]。

zhege shijian rang wo hen danxin ta de jiankang wenti

this-CL accident make I very worry he DE healthy problem

'Because of this accident, I worry about his health very much. '
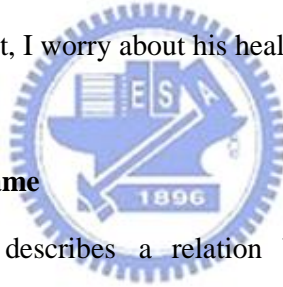
5.2.2.3 Stimulus-Oriented Frame

Definition: This frame also describes a relation between the Stimulus and the
Experiencr. However, it focuses on the Stimulus's unintentional causing an emotional
experience, and therefore the Experiencer is always backgrounded in the frame.

Representative Lemma: 誘人 *youren* 'alluring', 可愛 *keai* 'lovable', 有意思 *youyisi*
'interesting', 令人興奮 *ling ren xingfen* 'exciting', 無趣 *wuqu* 'boring'

Core Frame Elements: Stimulus

Conceptual Schema:
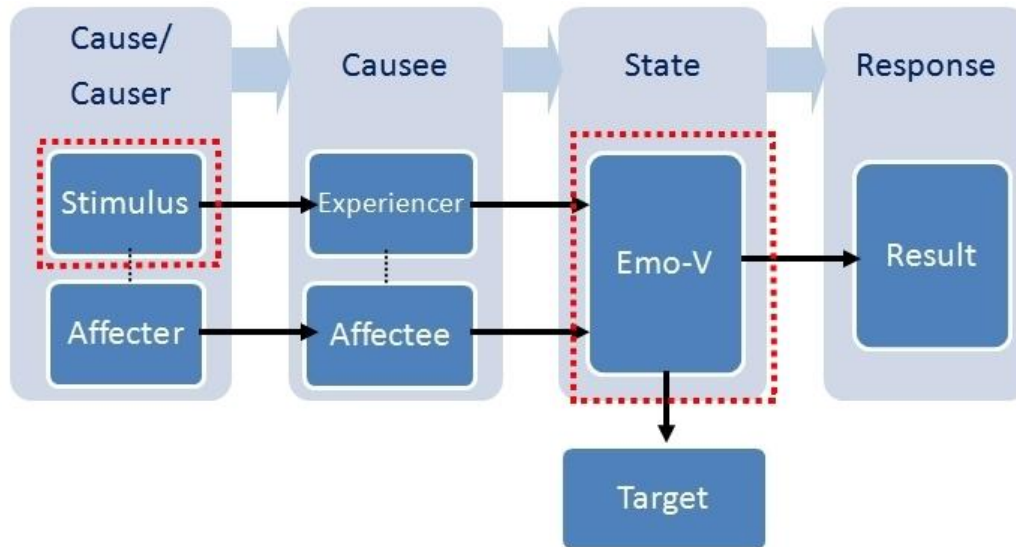
Defining Patterns:

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

Ex.: [問題/Stimulus][挺/Degree][有意思/Stimulus Attribute]，但不好回答。

wenti ting youyisi, dan bu hao huida

question very interesting, but not easy to answer

'The question is very interesting, but is not easy to answer. '

5.2.2.4 Affect-Oriented Frame

Definition: This frame focuses on an emotional effect or impact, which is caused by an Affecter, on the Affectee and then leads to a following result or response . The Affecter is typically an acting agent, i.e., a human with volition or intention. However, in a small number of cases, inanimate entities can be transferred metaphorically as the Affecter.

Representative Lemma：折磨 *zhemo* 'torment', 打擾 *darao* 'disturb', 惹惱 *renao* 'anger' , 激怒 *jinu* 'provoke', 感動 *gandong* 'touch', 打動 *dadong* 'move',安慰 *anwei* 'comfort', 鼓勵 *guli* 'encourage', 吸引 *xiyin* 'attract', 刺激 *ciji* 'stimulate', 誘惑 *youhuo* 'seduce'

Core Frame Elements: Affecter, Affectee, Result

Conceptual Schema:
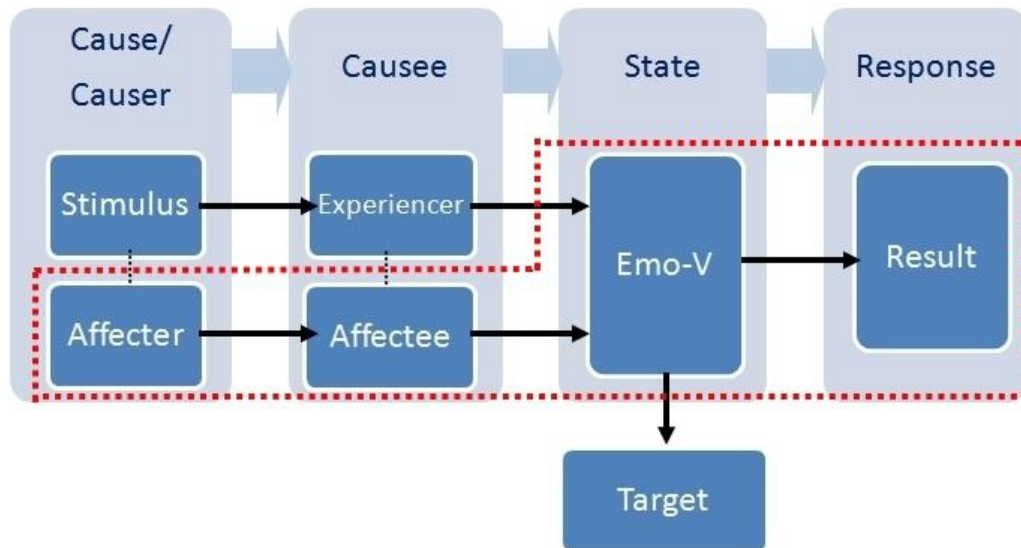
Defining Patterns:

a. Affecter[NP]<(Degree[ADV])<*(了)< Affectee[NP] <(Result[VP])

Ex.: [老闆娘/ Affecter]優雅地坐在沙發上[安撫/Attract-Comfort][等候的客人/

Affectee]。

laobanniang youyadi zuo zai shafa shang anfu denghou de keran

boss elegantly sit on sofa-top pacify wait DE customer

'The boss sits elegantly on a sofa pacifying those waiting customers. '

b. Affectee[NP]< {被}< Affecter[NP]<*<(Result[VP])

Ex.: [我/Affectee]一時被[那原始的律動/Affecter][吸引/Attract-Comfort]，於是[即

興地舞動起來/Result]！

wo yishi bei na yuanshi de ludong xiyin, yushi jixingdi wudong qilai

I momentary BEI that original DE rhythm attract, thus impromptu dance -start

'I was attracted by that original rhythm momentary, so I started to dance

imprompu.'

5.2.2.5 Brief Summary

The illustration of conceptual schema with a marked set of core frame elements and the presentation of defining patterns show diverse perspectives on viewing emotional events and the differences among the four primary frames clearly and obviously. Experiencer and Stimulus are two important frame elements in the Exp-Oriented, Exp-Oriented with Target, and Stimulus-Oriented primary frames. It presents that verbs in the three primary frames all attribute a status or a relationship between the Experiencer and the Stimulus. On the contrary, the frame elements cored in Affect-Oriented frame are Affecter and Affectee. That reveals that verbs in this frame attribute an emotional impact or effect on an Affectee in an event.

The differences among the Exp-Oriented, Exp-Oriented with Target, and Stimulus-Oriented primary frames can also be clarified by the core frame elements marked in every frame. Verbs in the Exp-Oriented with Target frame express an experiencer's feeling based on or directly toward a Target, but verbs in the Exp-Oriented frame do not. That is why the Exp-Oriented with Target frame has one more core frame element (i.e., Target) than the Exp-Oriented frame. As to the Stimulus-Oriented frame, there is only one core frame element, Stimulus, in this frame, because verbs in this primary frame focus on the Stimulus's unintentional causing an emotional experience, and therefore the Experiencer is always backgrounded and never be presented overtly.

After the analysis of the four primary frames, the basic frames will be introduced in the next section.

5.2.3 Layer 3: Basic Frame

Under the primary frames, more restricted classes are necessary if they exhibit particularized differences for expressing a narrower meaning. Liu and Chiang (2008) called the more restricted classes as Basic Frames and delineated them clearly:

Under each primary frame, semantically more restricted classes, called Basic Frames (BFs), may be further distinguished as they specify an even narrower scope of meaning. Basic frames correspond to the cognitively salient categories or the so-called basic-level categories (Rosch 1973, 1975). They are semantically more informative, distributionally more frequent and common, and acquisitionally easier and earlier, are associated with foregrounded or backgrounded frame elements, within the set of primary-selected elements. (Liu and Chiang 2008:10)

Basic frames can, therefore, be distinguished according to syntactically expressed patterns of **foregrounding or backgrounding certain frame elements**. According to the different sets of syntactic patterns in Section 4.6, basic frames under primary frames can be divided. Let us briefly list the defining patterns with foregrounded frame elements to provide the differences between each basic frame under the same primary frame.

(67) **Foregrounded frame elements of verbs under Exp-Oriented primary frame**

1a. [我/Experiencer][非常/Degree]高興[你們來我家/Content]。

wo feichang gaoxing nimen lai wo jia

I very glad you come my house

'I am very glad that you guys come to my house.'

1b.姍姍這次科展獲得首獎，[我/Experiencer]真是為[她/Target_empathy]高興！

shanshan zheci kezhan huode quanguo shoujiang, wo zhenshi wei ta gaoxing

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Shan-Shan this-CL science fair win the first prize, I really for <u>she</u> glad

'Shan-Shan won the first prize in the Science Fair, I am so glad for <u>her</u>.'

2.[我/Experiencer]後悔[告訴她自己的事/ Prior Act],

wo houhui gaosu ta ziji de shi

I regret <u>tell she myself-affair</u>

'I regret <u>telling her my own affairs</u>.'

(68)   **Foregrounded and backgrounded frame elements of verbs under Exp-Oriented with Target primary frame**

1a. [我/Experiencer][真/Degree][羨慕/Envy-Pity][他們/Target_entity]

wo zhen xianmu tamen

I really envy they

'I really envy them.'

1b. [他說的話/Stimulus] 讓 [我/Experiencer] 更 [羨慕/Envy-Pity][你/Target_entity] 了。

ta shui de hua rang wo geng xianmu ni le

he <u>say DE words</u> make I more envy you

'Because <u>what he said</u>, I am more envy you.'

2. [我/Experiencer]不愛 [爸爸/Target_entity],[我/Experiencer]不愛 [媽媽/Target_entity],[我/Experiencer]愛[毛主席/Target_entity]。

wo bu ai baba, wo bu ai mama, wo ai mao zhuxi

I not love father, I not love mother, I love president Mao

'I like neither my father nor my mother. I love president Mao. '

3. [我/Experiencer]害怕[他永遠不再回來/Target_possible situation]，

wo haipa <u>ta yongyuan bu zai huilai</u>

I fear <u>he ever not come back</u>

'I fear that <u>he will never come back</u>.'

(69) **Foregrounded frame elements of verbs under Affecter-Oriented primary frame**

1. [蕭先生/Affecter][極力/Degree]鼓勵[筆者/Affectee][將經驗寫出來跟大家分享/Act]。

xiao xiansheng jili guli bizhe <u>jiang jingyan xie chulai gen dajia fenxiang</u>

Mr. Xiao give-every-effort encourage <u>author to experience wirte down with everyone share</u>

'Mr. Xiao tried his best encouraging <u>the author to write down his experience to share with everyone</u>.'

2. 過去[他/Affecter]曾因[攻擊李總統的經濟改革政策/Reason]，[激怒/Bother-Irritate][自由派人士/ Affectee]。

guoqu ta ceng yin gongji li zongtong de jingji gaige zhengce, jinu ziyou pai renshi

in-the-past he once because attack Li president DE economic reform policy, anger liberalist

'He once provked the liberalist because he attacked the economic reform policy proposed by the president Li.'

Some types of verbs foregrounds or backgrounds certain frame element. Take the verbs 羨慕 *xianmu* 'envy' and 愛 *ai* 'love' for example. When talking an event of 羨慕 *xianmu* 'envy', a stimulus is usually mentioned. However, when talking an love (愛 *ai*) event, a stimulus does not occur as frequently as the evny event does, i.e., the Stimulus element is foregrounded in evny events and backgrou nded in love events. We can briefly observe the fine differences between types of verbs in the same primary frame from examples (67- 69) above. Under the Exp-Oriented primary frame, verbs like 高興 *gaoxing* 'be glad' foregrounds the elements Content and Target_emphathy while verbs like 後悔 *houhui* 'regret' foregrounds the Prior Act element. Under the Exp-Oriented with Target primary frame, verbs like 羨慕 *xianmu* 'envy' foregrounds the Stimulus element; verbs like 愛 *ai* 'love' backgrounds the Stimulus element and verbs l ike 害怕 *haipa* 'fear' foregrounds the Target_possible situation. Under the Affect-Oriented primary frame, verbs like 鼓勵 *guli* 'encourage' foregrounds a Act while verbs like 激怒 *jinu* 'provoke' foregrounds a Reason. As for the Stimulus-Oriented primary frame, there is only one defining pattern without any distinctions, so only one possible basic frame is listed under this frame.

In addition to verbs mentioned above, there is a group of verbs which perform quite differently from others in syntactic behaviors and pa tterns. They are, mentioned in Liu (2009), verbs that may take either a Stimulus or an Experiencer as subject without any corresponding formal changes. Take the verb 滿意 *manyi* 'be satisfied' for example. It can perform either as an Exp-Oriented type verb or as an Exp-Oriented with Target type verb:

(70) Exp-Oriented-like

a. 同樣一件事情發生在你的身上時，年輕時[你/Experiencer]會覺得[很/Degree]滿意，年老時[你/Experiencer]就會覺得不滿意了。

tongyang yijian shiqing fasheng zai ne de shenshang shi, nianqing shi ni hui juede hen manyi, nianlao shi ni jiu hui bu manyi le

the same one-CL affair happen on you DE body, young-when you would feel very satisfy, old-when you would feel not satisfy

'When this affair happened to you, you would be very satisfied when you are young but not satisfied when you are old.'

b. 同樣一件事情發生在你的身上時，年輕時[你/Experiencer]會覺得[很/Degree]滿意*[它/**Target_entity**]，年老時[你/Experiencer]就會覺得不滿意*[它/**Target_entity**]了。

*tongyang yijian shiqing fasheng zai ne de shenshang shi, nianqing shi ni hui juede hen manyi *it, nianlao shi ni jiu hui juede bu manyi *it le*

the same one-CL affair happen on you DE body, young-when you would feel very satisfy *it, old-when you would feel not satisfy *it PERF

'When this affair happened to you, you would be very satisfied with it when you are young but not satisfied with it when you are old.'

(71) Exp-Oriented with Target-like

[他/Experiencer][很/Degree]滿意[這個未來的媳婦 /Target-entity]。

ta hen manyi zhege weilai de xifu

he very satisfy this-CL prospective DE daughter-in-law

'He is very satisfied with this prospective daughter-in-law.'

It is shown that verbs like 滿意 *manyi* 'be satisfied' seems to be plotted cross two separated primary frames, Exp-Oriented and Exp-Oriented with Target.

All the basic frames under the Emotion archiframe are illustrated as below:

Figure 6. *The Basic Frames under Emotion Archiframe*
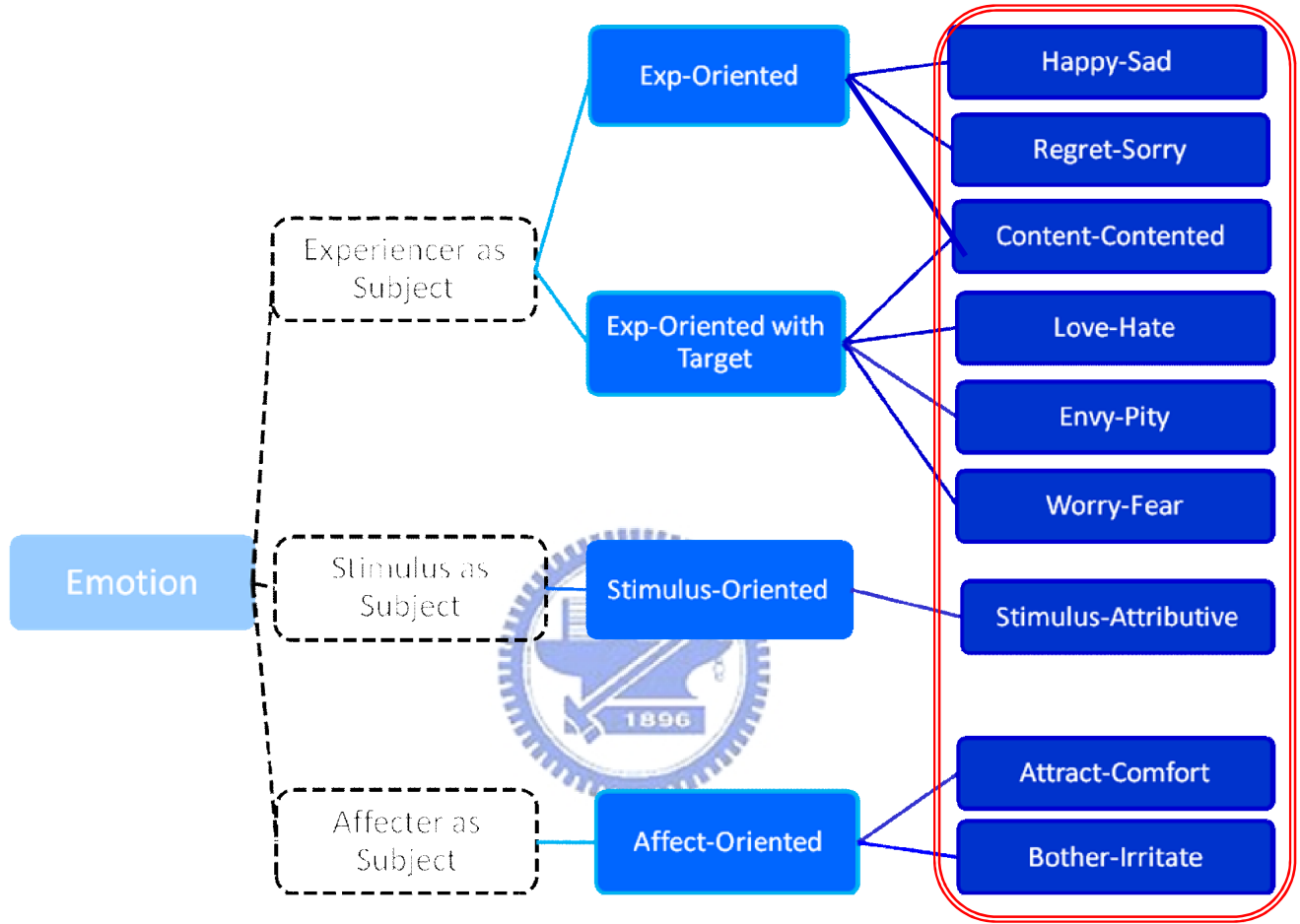
The basic frames under Exp-Oriented primary frame is presented in Section 5.2.3.1, basic frames under Exp-Oriented with Target primary frame in Section 5.2.3.2, basic frames under Stimulus-Oriented primary frame in Section 5.2.3.3 and basic frames under Affect-Oriented primary frame in Section 5.2.3.4.

5.2.3.1 The Basic Frames under Exp-Oriented Frame

Figure 7. *The Basic Frames under Exp-Oriented Primary Frame*
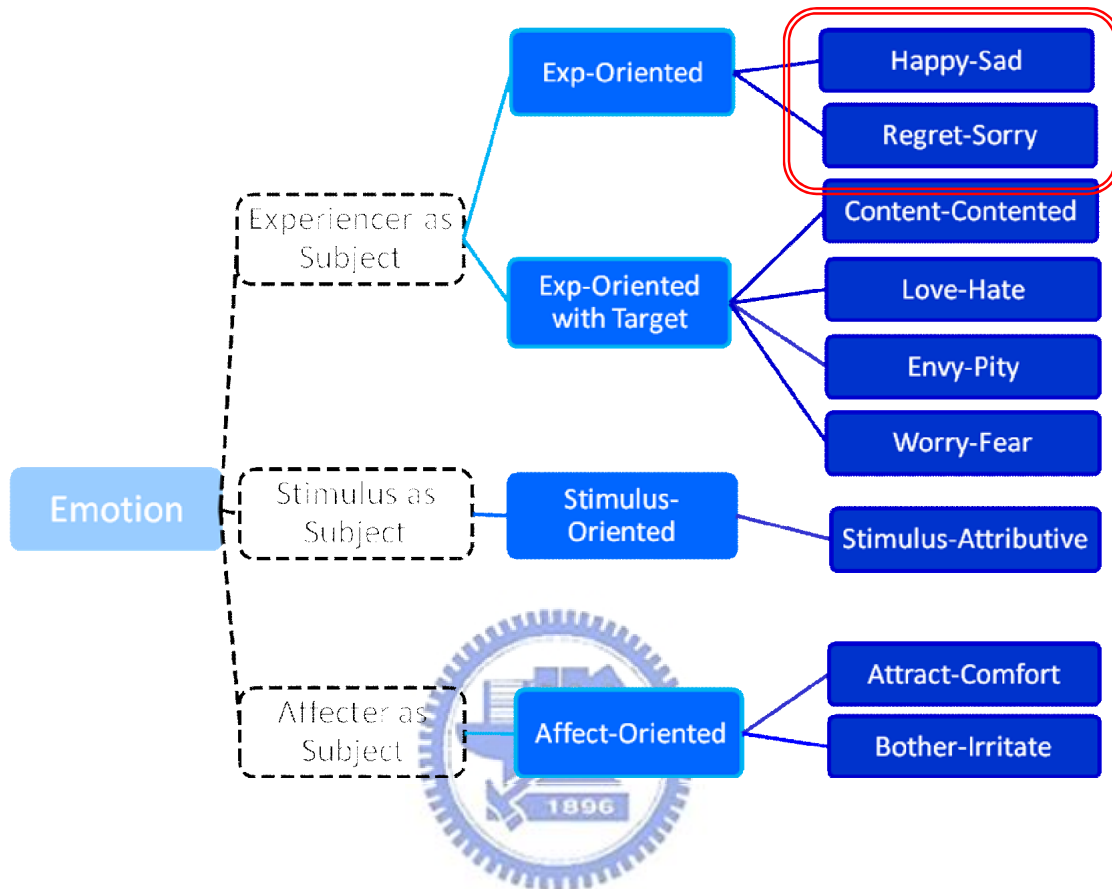
In Section 5.2.2.1, we have mentioned that the Exp-Oriented primary frame describes an Experiencer's experiencing an emotional state because of certain Stimulus. The frame is specifically defined as a subpart of the archiframe-schema with the Experiencer and the Stimulus frame elements. Additionally, four defining patterns that help distinguishing this frame from others are also provided. A number of verbs, we found in the research, share the event types, the set of core frame elements, and the defining patterns of the Exp-Oriented frame, such as 生氣 *shengqu* 'angry', 驚訝 *jingya* 'surprise', 失望 *shiwang* 'disappoint', 高興 *gaoxing* 'be glad', 快樂 *kuaile* 'be happy', 難過 *nanguo* 'be sad', 悲哀 *beiai* 'be sad', 悲傷 *beishang* 'be sad', 痛苦 *tongku* 'pain', 尷尬 *ganga* 'be embarrassed', 羞愧 *xiukui* 'be ashamed', 吃驚 *chijing* 'be amazed', 振奮 *zhenfen* 'inspire', 消沈 *xiaochen* 'be downhearted', 為難

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weinan 'be awkward', 洩氣 *xiequ* 'be discouraged', 沮喪 *jusang* 'be depressed', 陶醉 *taozui* 'be intoxicated', 憂愁 *youchou* 'be worried', 不安 *buan* 'be discomfort', 煩躁 *fanzao* 'annoyed', 煩悶 *fanmen* 'mopey', 激動 *jidong* 'be flushed', 苦惱 *kunao* 'worry', 後悔 *houhui* 'regret', 懊悔 *aohui* 'repent', 懊惱 *aonao* 'be remorseful', 痛悔 *tonghui* 'regret', 悔恨 *huihen* 'regret', 自責 *zize* 'be remorseful', 惋惜 *wanxi* 'feel sorry', 內疚 *neijiu* 'be guilty', 愧疚 *kuijiu* 'be ashamed', 慚愧 *cankui* 'be shamed', 遺憾 *yihan* 'feel sorry' and so on. The verbs, however, can be divided into two basic frames because of the asymmetrical presentation of certain frame elements, i.e., forgrounding or backgrounding certain frame elements, for expressing a narrower meaning. The two basic frames are Happy-Sad frame and Regret-Sorry frame. The Happy-Sad frame foregrounds the Content and Target-empathy while the Regret-Sorry frame foregrounds the Prior Act. The complements of Happy-Sad verbs could be events that have not happened, i.e., irrealis complements. The complements of Regret-Sorry verbs, however, can only be a self-initiate prior act that the Experiencer has come to feel bad about. The Content versus Prior Act comparison displays the asymmetry. Besides, an Experiencer can only regret an act done by himself or herself but not regret for others. That is why there is not a Target_empathy role in the Regret-Sorry frame. The foregrounding or backgrouding of frame elements reveals the narrower meanings of verbs in each basic frame. The detailed information of the two basic frames will be presented particularly in Section 5.2.3.1.1 and 5.2.3.1.2.

5.2.3.1.1 Happy-Sad Frame

Definition: Verbs in this frame describe an Experiencer who feels or experiences a particular emotion evoked by a Stimulus. Such emotion is sometimes shown through an Expressor. In some particular cases, an Experiencer may feel an emotion indirectly for a

Target_empathy; the indirection of emotion is syntactically marked by 為 *wei* 'for', and 替 *ti* 'for'.

Lemma: 生氣 *shengqu* 'angry', 失望 *shiwang* 'disappoint', 高興 *gaoxing* 'be glad', 快樂 *kuaile* 'be happy', 難過 *nanguo* 'be sad', 尷尬 *ganga* 'be embarrassed', 激動 *jidong* 'be flushed', 煩躁 *fanzao* 'be annoyed', 煩 *fan* 'annoyed', 心煩 *xinfan* 'annoyed', 煩悶 *fanmen* 'mopey', 惱火 *naohuo* 'be enraged', 不平 *buping* 'protest', 窘困 *jiongkun* 'be embarrassed', 悲哀 *beiai* 'be sad', 痛苦 *tongku* 'pain', 悲傷 *beishang* 'be sad', 悲痛 *beitong* 'be painful', 哀痛 *aitong* 'sorrow', 苦惱 *kunao* 'worry', 不安 *buan* 'be discomfort', 吃驚 *chijing* 'be amazed', 驚訝 *jingya* 'surprise', 振奮 *zhenfen* 'inspire', 消沈 *xiaochen* 'be downhearted', 為難 *weinan* 'be awkward', 洩氣 *xiequ* 'be discouraged', 沮喪 *jusang* 'be depressed', 陶醉 *taozui* 'be intoxicated', 憂愁 *youchou* 'be worried', 著急 *zhaoji* 'be anxious'

Frame Elements: Experiencer, Stimulus, Content, Target_empathy, Expressor, Topic, Degree

Foregrounded Frame Elements: Content, Target_empathy

Defining Patterns:

a. Experiencer[NP]< (感/感到/感覺/覺得)<(Degree[Adv])<*

  Ex.: 因為 [他 的 離去 /Stimulus] ，[李 文 秀 /Experiencer][十 分 /Degree][失望 /Happy-Sad]。

  y*inwei ta de liqu, liwenxiu shifen shiwang*

  because of he DE leaving, Wen-Xiu Li very disappointed

  'Because of his leaving, Wen-Xiu Li is very disappointed.'

 b. Stimulus[NP][VP][CL]<{令/讓/使/教}+ Experiencer[NP]< (Degree[Adv])<*

  Ex.:[這件事/Stimulus]讓[我/Experiencer][很/Degree][生氣/Happy-Sad]。

  zhejian shi rang wo hen shengqi

  this-CL affair make me very angry

'This affair makes me very angry.'

c. Experiencer[NP] <{為／替}+Target_empathy[NP]<(Degree [Adv])<*

Ex.:姍姍這次科展獲得首獎，[我/Experiencer]真是為[她/Target_empathy] [高興
/Happy-Sad]！

shanshan zheci kezhan huode quanguo shoujiang, wo zhenshi wei ta gaoxing

Shan-Shan this-CL science fair win the first prize, I really for she glad

'Shan-Shan won the first prize in the Science Fair, I am so glad for her.'

d. Experiencer[NP]<(Degree[Adv])<*< Content [CL]

Ex.:[我/Experiencer] [非常/Degree] [高興/Happy-Sad] [你們來我家/Content]。

wo feichang gaoxing nimen lai wo jia

I very glad you come my house

'I am very glad that you guys come to my house.'

e. Expressor[NP]<(Degree[Adv])<*

Ex: [他的表情/Expressor][很/Degree][痛苦/Happy-Sad]，

ta de biaoquing hen tongku

he DE facial expression very suffering

'His facial expression looks very suffering.'

f. {關於}+Topic[NP]<Experiencer[NP]<(Degree[Adv])<*

Ex.:關於[這次失敗/Topic]，[沒有人/Experiencer]會[生氣/Happy-Sad]。

quanyu zheci shibai, meiyou ren hui shengqi

about this-CL failure, no one will angry

'About this failure, no one will be angry.'

5.2.3.1.2 Regret-Sorry Frame

Definition: An Experiencer feels bad about a past Prior Act or Prior Act_Description that has happened and now is considered to be a mistake or wrong due to a Stimulus. The emotional state of the Experiencer may be showing in gestures or facial expressions, viz. an Expressor.

Lemma: 後悔 *houhui* 'regret', 懊悔 *aohui* 'repent', 懊惱 *aonao* 'be remorseful', 痛悔 *tonghui* 'regret', 悔恨 *huihen* 'regret', 自責 *zize* 'be remorseful', 惋惜 *wanxi* 'feel sorry', 內疚 *neijiu* 'be guilty', 愧疚 *kuijiu* 'be ashamed', 慚愧 *cankui* 'be shamed', 遺憾 *yihan* 'feel sorry'

Frame Elements: Experiencer, Prior Act, Prior Act_Description, Expressor, Degree

Foregrounded Frame Elements: Prior Act

Defining Patterns:

a. Experiencer[NP]< (Degree[Adv])<*< Prior Act[VP/CL]

  Ex.: [我/Experiencer] [後悔/ Regret-Sorry] [告訴她自己的事/ Prior Act],

  wo houhui gaosu ta ziji de shi

  I regret tell she myself-affair

  'I regret telling her my own affairs.'

b. {等到/一直到}< Stimulus[VP/CL]< Experiencer[NP]< (才) < *

  Ex.:一直到 [他最疼愛的兒子曹沖天折/Stimulus][他/Experiencer] 才 [後悔/Regret-Sorry]。

  yizhi dao ta zui tengai de erzi caochong yaozhe ta cai houhui

  till he most love son Chong Cao die young he finally regret

  'Not until his lovest son's early death does he regret.'

c. Experiencer[NP]<{為/對}<Prior Act[VP/CL]<(感/感到/感覺/覺)< *

Ex.:思前想後，[我/Experiencer]對[自己放棄這個機會/Prior Act]又感到[後悔/Regret-Sorry]，與她同房豈不更好？

siqianxianghou, wo dui ziji fangqi zhege jihui you gandao houhui, yu ta tongfang qibu genghao

think, I to myself give up this chance also fe el regret, with she sleep-together isn't that better

'After thinking, I regretted at my giving up the chance. Isn 't that better to sleep with her?'

d. Experiencer[NP]< *<Prior Act_Description[NP]

Ex. [周文璣/Experiencer]從未[懊悔/Regret-Sorry][當初的決定/ Prior Action_Description]；

zhouwenji congwei aohui dangchu de jueding

Wen-Ji Zhou never regret at-that-time DE decision

'Wen-Ji Zhou never regretted the decision she made at that time .'

e. Experiencer[NP]<Expressor[NP]< *

Ex.: [杜映月/ Experiencer]一[臉/Expressor][悔恨/Regret-Sorry]，恨不得剁了自己的手。

duyingyue yi lian huihen, henbude duo le ziji de shou

Ying-Yue Du whole-face regret, wish-he-could chop PERF himself hand

'Ying-Yue Du looks full of regret over her face, wishing she could chop her own hands.'

5.2.3.2 The Basic Frames under Exp-Oriented with Target Frame

Figure 8. *The Basic Frames under Exp-Oriented with Target Frame*
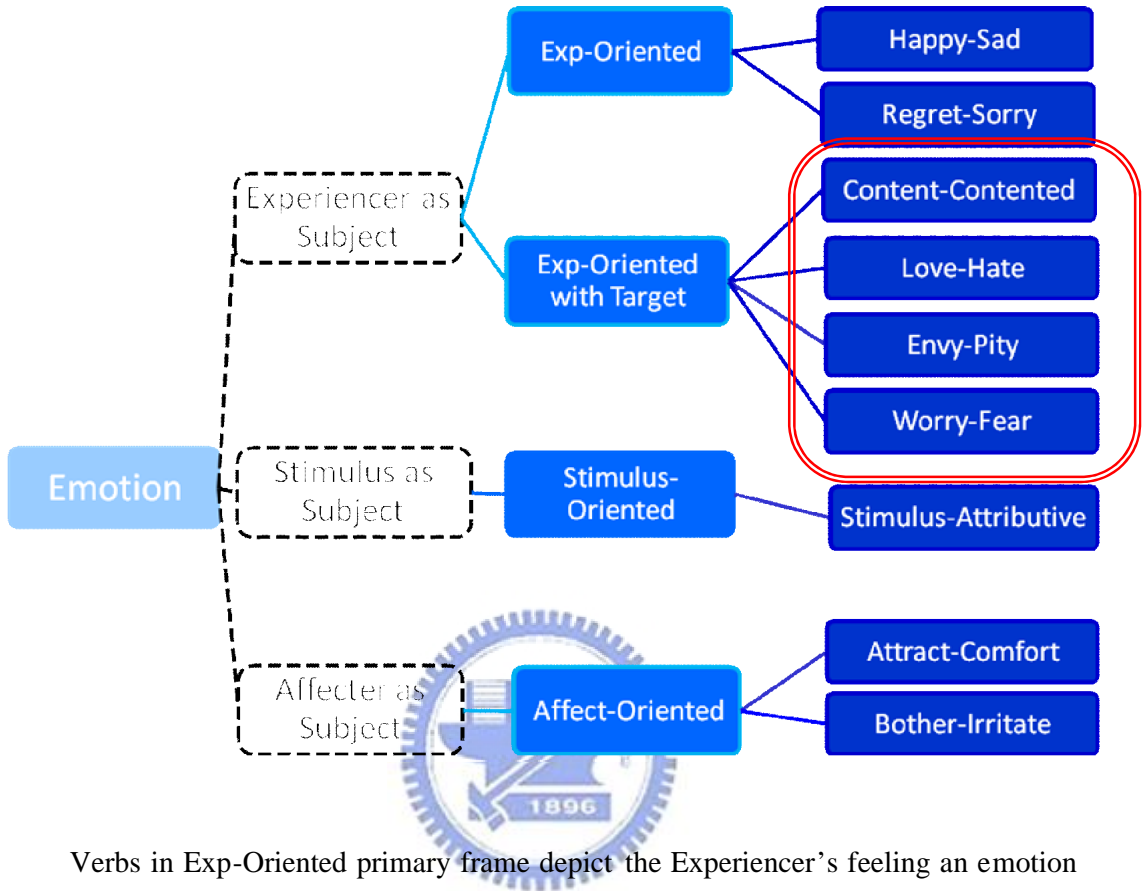
Verbs in Exp-Oriented primary frame depict the Experiencer's feeling an emotion which are directed toward or based upon a Target be cause of certain Stimulus. The highlighted core frame elements in this frame are the Experiencer, Stimulus and Target. Verbs like 愛 *ai* 'love', 喜歡 *xihuan* 'like', 討厭 *taoyan* 'detest', 厭惡 *yanwu* 'detest', 恨 *hen* 'hate', 羨慕 *xianmu* 'envy', 妒忌 *duji* 'jealous', 嫉妒 *jidu* 'jealous', 同情 *tongqing* 'sympathize with', 憐憫 *lianmin* 'pity', 擔心 *danxin* 'worry', 煩惱 *fannao* 'worry', 苦惱 *kunao* 'worry', 害怕 *haipa* 'fear', 畏懼 *weiju* 'be afraid of', 掛心 *guaxin* 'be concerned with', 關心 *guanxin* 'be concerned with', 在乎 *zaihu* 'care about', 在意 *zaiyi* 'care', 滿意 *manyi* 'be satisfied', 不滿 *buman* 'be dissatisfied' and 氣 *qu* 'be angry' share the event types, the set of core frame elements, and the

defining patterns of the Exp-Oriented with Target frame. These verbs can be further separated into four basic frames because of the fine diversity of meanings.

5.2.3.2.1 Content-Contented Frame

Definition: The lemmas in this frame are stative verbs expressing an emotional state of an Experiencer who feels satisfaction/dissatisfaction with a Target_Situation, which may be the situation that the Experiencer is in, or a Target_ entity, which may be someone or something that is involved in certain situations. This frame owns both the syntactic patterns of Exp-Oriented primary frame and Exp-Oriented with Target primary frame.

Lemma: 滿意 *manyi* 'be satisfied', 不滿 *buman* 'be dissatisfied', (不)爽 *(bu)shuang* '(un)comfortable, 不捨 *bushe* 'unwilling to give up', 不服 *bufu* 'unwilling to accept', 氣 *qu* 'be angry' 服氣 *fuqi* 'submit'

Frame Elements: Experiencer, Target_entity, Target_act, Target_situation, Stimulus, Degree

Foregrounded or backgrounded Frame Elements: N/A

Defining Patterns:

A. The shared syntactic patterns with Exp-Oriented frame

Experiencer[NP]<(感/感到/感覺/覺得)<Degree[Adv] <*

a. 同樣一件事情發生在你的身上時，年輕時[你/Experiencer]會覺得[很/Degree][滿意/Content-Contented]，年老時[你/Experiencer]就會覺得不[滿意/Content-Contented]了。

tongyang yijian shiqing fasheng zai ne de shenshang shi, nianqing shi ni hui juede hen manyi, nianlao shi ni jiu hui bu manyi le

the same one-CL affair happen on you DE body, young-when you would feel very satisfy, old-when you would feel not satisfy

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'When this affair happened to you, you would be very satisfied when you are young but not satisfied when you are old.'

b. 同樣一件事情發生在你的身上時，年輕時[你/Experiencer]會覺得[很/Degree][滿意/Content-Contented] *[它**/Target_entity**]，年老時[你/Experiencer]就會覺得不[滿意/Content- Contented] *[它**/Target_entity**]了。

tongyang yijian shiqing fasheng zai ne de shenshang shi, nianqing shi ni hui juede

*hen manyi *it, nianlao shi ni jiu hui juede bu manyi *it le*

the same one-CL affair happen on you DE body, young-when you would feel

very satisfy *it, old-when you would feel not satisfy *it PERF

'When this affair happened to you, you would be very satisfied with it whe n you are young but not satisfied with it when you are old.'

B. The shared syntactic patterns with Exp -Oriented with Target frame

1. Experiencer[NP]<(Degree[Adv])<*< Target_entity[NP]

Ex.: [他/Experiencer][很/Degree][滿意/Content-Contented][這個未來的媳婦/Target-entity]。

ta hen manyi zhege weilai de xifu

he very satisfy this-CL prospective DE daughter -in-law

'He is very satisfied with this prospective daughter -in-law.'

2. Experiencer[NP] <{對} Target_entity[NP]<*

Ex.: [毛澤東/Experiencer]對[此/Target_Entity][非常/Degree][滿意/Content-Contented]

maozedong dui ci feichang manyi

Ze-Dong Mao with it very satisfy

'Ze-Dong Mao is very satisfied with it.'

C. The shared syntactic patterns with both Exp-Oriented and Exp-Oriented with Target frame

1. Stimulus[NP][VP][CL]<{令/讓/使/教}+ Experiencer [NP]<*<(Target-entity)

Ex.: [看到這個結果/Stimulus] 讓 [我/Experiencer][很/Degree][不爽/Content-Contented]。

kan-dao zhege jieguo rang wo hen bushuang

watch-reach this-CL result make I very uncomfortable

'Seeing the result makes me feel uncomfortable.'

2. Experiencer[NP]<(Degree[Adv])<*<Target_ situation[CL]/Content[CL]

Ex.: [吉兒/Experiencer] [非常/Degree][滿意/Content-Contented] [我(要)放棄那無聊的堅持/Target_situation/Content]。

jier feichang manyi wo (yao)fangqi na wuliao de jianchi

Jill very satisfy I (will) give up that boring DE insistence

'Jill is very satisfied that I will give up/gave up that boring insistence.'

5.2.3.2.2 Love-Hate Frame

Definition: The words in this frame are stative verbs describing an emotional state of an Experiencer who finds a Target_entity or a Target_ situation or conducting a Target_act (un)pleasant or (dis)agreeable. The Target_situation is either a habitual event or an prior event.

Lemma: 愛 *ai* 'love', 喜愛 *xiai* 'like', 喜歡 *xihuan* 'like', 愛好 *aihao* 'love', 熱愛 *reai* 'love', 喜好 *xihao* 'like', 討厭 *taoyan* 'detest', 厭惡 *yanwu* 'detest', 恨 *hen* 'hate',痛恨 *tonghen* 'hate'

Frame Elements: Experiencer, Target_entity, Target_act, Target_situation, Degree

Backgrounded Frame Elements: Stimulus

Defining Patterns:

a. Experiencer[NP]<(Degree[Adv])<*< Target_entity[NP]

Ex.: [我/Experiencer] 不 [愛/Love-Hate][爸爸/Target_entity]，[我/Experiencer] 不 [愛/Love-Hate][媽媽/Target_entity]，[我/Experiencer][愛/Love-Hate][毛主席/Target_entity]。

wo bu ai baba, wo bu ai mama, wo ai mao zhuxi

I not love father, I not love mother, I love president Mao

'I like neither my father nor my mother. I love president Mao.'

b. Experiencer[NP] <(Degree[Adv])<*<Target_act[VP]

Ex.: [我/Experiencer][愛/Love-Hate][數星星/Target_act]。

wo ai shu xingxing

I love count stars

'I love to count stars.'

c. Experiencer[NP]<(Degree[Adv])<*<Target_situation[S]

Ex.: [這位年輕人/Experiencer][痛恨/Love-Hate][主管不公平，同事對他冷漠/Target_situation]，

zhewei nianqingren tonghen zhuguan bu gong ping, tongshi dui ta lengmo

this-CL young man detest boss unfair, fellows to he indifferent

'This young man detests his boss's unfairness and fellows' indifference to him.'

d. Experiencer[NP]<對 Target_entity[NP]<(Degree[Adv])<*

Ex.: [我/Experiencer]對[這種好吃懶做的人/Target_entity]感到[很/Degree][厭　惡/Love-Hate]。

wo dui zhezhong haojilanzuo de ren gandao hen yanwu

I to this-CL like-eat-hate-work DE person feel very sick of

'I am very sick of people who dream of rich lives but never work hard.'

5.2.3.2.3 Envy-Pity Frame

Definition: The lemmas in this frame are stative verbs expressing an emotional state of an Experiencer who feels discontent/ distressing with regard to a Target_entity, which may be someone with superior/inferior abilities, (dis)advantages, or a Target_situation, which describes a superior/inferior situation.

Lemma: 羨慕 *xianmu* 'envy', 妒忌 *duji* 'jealous', 嫉妒 *jidu* 'jealous', 同情 *tongqing* 'sympathize with', 憐憫 *lianmin* 'pity', 憐惜 *lianxi* 'take pity on', 可憐[10] *kelian* 'sympathize with'

Frame Elements: Experiencer, Target_entity, Target_situation, Stimulus, Degree

Foregrounded Frame Elements: Stimulus

Defining Patterns:

a. Experiencer[NP]<(Degree[Adv]) <*< Target_entity[NP]

Ex.: [我/Experiencer][真/Degree][羨慕/Envy-Pity][他們/Target_entity]!

wo zhen xianmu tamen

I really envy they

'I really envy them.'

b. Experiencer[NP]<(Degree[Adv])<*<Target_situation[S]

Ex.: [大家 /Experiencer][很 /Degree][羨慕 /Envy-Pity][他 擁 有 這 項 才 藝 /Target_situation]

dajia hen xianmu ta yongyou zhexiang caiyi

every one very envy he own this-CL skill

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[10]可憐 *kelian* 'sympathize with' can also be a attributive or predicate adjective which depicts the attribution of Stimulus (e.g. 她很可憐 *ta hen kelian* 'She is very pitiful.') The usage above is not included in the scope of Envy-Pity frame but in the Stimulus-Attributive basic frame under Stimulus-Oriented primary frame. The syntacitic presentation of 可憐 *kelian* 'sympathize with' in Envy-Pity frame must fit in with the defining pattern (e.g. 我可憐他的處境 *wo kelian ta de chujing* 'I sympathize with his unfavorable situation.'):

 "Experiencer <*< Target_Entity/Target_Situation "

'Every one envies his talent and skill.'

c. **Stimulus[NP/S]< { 令／讓／使／教 }+Experiencer[NP]<*<Target_entity[NP]/ Target_situation[S]**

Ex.: a. [警方的行為/Stimulus]只會讓[民眾/Experiencer]更[同情/Envy-Pity][新黨 /Target_entity]

jingfang de xingwei zhi hui rang minzhong geng tongqing xindang

police DE behavior just can make the public more sympathize with Xin Party

'The police's behavior will make the public be more sympathetic with Xin Party.'

b. [從我身上冒出的那種活力/Stimulus]，讓[她們/Experiencer][非常/Degree] [羨慕/Envy-Pity][我能在異國他鄉活得這麼有滋有味/Target_situation]。

cong wo shenshang mao chu de nazhong huoli, rang tamen feichang xianmu

won eng zai yiguotaxiang huode zheme youziyouwei

from my body ooze DE that-CL vigor, make they very envy I can in foreign

country live DE so splendid

'My vigor makes them quite envy that I can have such a splendid life in a foreign country.'

d. **Stimulus[NP/S]<{令/讓/使/教}+Experiencer[NP]< ***

Ex.: [清幽的校園和廣大的操場/Stimulus]令[我們/Experiencer][非常/Degree] [羨慕/Envy-Pity]。

qingyou de xianyuan he guangda de caochang ling women feichang xianmu

quiet-beautiful DE campus and wide playground make we very envy

'The quiet and beautiful comapus and the wide playground make us very envy.'

e. **Experiencer[NP] <{對}+Target_entity[NP] <(表示/深表)<***

Ex.: [東歐國家/Experiencer]對[我國經濟發展/Target_entity]十分[羨慕/Envy-Pity]

dongou guojia dui wo guo jingjifazhen shifen xianmu

East Europe country at we country economic development very envy

'Countries in the East Europe quite envy at our country's economic development.

5.2.3.2.4 Worry-Fear Frame

Definition: Verbs in this frame express the Experiencer's concern, anxiety or fear towards a human or non-human Target_entity or a potential happening, Target_possible situation, which is uncertain to the Experiencer, for a Beneficiary marked by the beneficial marker. The lemmas are also able to take progressive aspectual marker to denote an ongoing emotion.

Lemma: 擔心 *danxin* 'worry', 擔憂 *danyou* 'be anxious', 憂慮 *youlu* 'be anxious', 焦慮 *jiaolu* 'be anxious', 煩惱 *fannao* 'worry', 苦惱 *kunao* 'worry', 怕 *pa* 'fear', 害怕 *haipa* 'fear', 畏懼 *weiju* 'be afraid of', 懼怕 *jupa* 'be afraid of', 掛心 *guaxin* 'be concerned with', 牽掛 *qiangua* 'be concern about', 掛念 *guanian* 'concern about', 關心 *guanxin* 'be concerned with', 關切 *quanqie* 'be concerned with', 在乎 *zaihu* 'care about', 在意 *zaiyi* 'care

Frame Elements: Experiencer, Target_entity, Target_possible situation, Beneficiary, Stimulus, Degree

Foregrounded Frame Elements: Target_possible situation

Defining Patterns:

a. Experiencer[NP] <(Degree[Adv]) <*<Target_entity[NP]

  Ex.: [我/Experiencer][擔心/Worry-Fear][你/Target_entity]，跟著大夥兒來瞧瞧。

   wo danxin ni, gen zhe dahuoer lai qiaoqiao

     I worry you, follw everybody to check

     'I worry about you, so I come here with everybody .'

b. Experiencer[NP] <(Degree[Adv]) <*< Target_possible situation[S]

Ex.: [我 /Experiencer][害 怕 /Worry-Fear][他 永 遠 不 再 回 來 /Target_possible situation]，

wo haipa ta yongyuan bu zai huilai

I fear he ever not come back

'I fear that he will never come back.'

c.   **Stimulus   [NP]<{ 令 / 讓 / 使 / 教 }+Experiencer   <*<Target_entity[NP]/ Target_possible situation[S]**

Ex.: a. [這個事件/Stimulus]讓[我/Experiencer][很/Degree][擔心/Worry-Fear][他的 健康問題/Target_entity]。

zhege shijian rang wo hen danxin ta de jiankang wenti

this-CL accident make I very worry he DE healthy problem

'Because of this accident, I worry about his health very much.'

b. [這學期的功課更難了/Stimulus]，[我/Experiencer][害怕/Worry-Fear][自己 沒辦法應付/Target_possible situation]。

zhe xueqi de gongke geng nan le, wo haipa ziji meibanfa yingfu

this semester DE study more hard PERF, I fear myself can not handle

'The study of this semester is much harder and I fear that I would be overloaded.'

d. Stimulus[S]<({令/讓/使/教})+Experiencer < *

Ex: [這件事/Stimulus]讓[我/Experiencer]很[擔心/Worry-Fear]。

zhejian shi rang wo hen danxin

this-CL affair make I very worry

'This affair worried me.'

e. Experiencer[NP] <{對} Target_entity[NP]<*

Ex: [他/Experiencer] 回去以後，對 [齊桓侯的病/Target_entity] 很 [擔心/Worry-Fear]。

ta huiqu yihou, dui qihuanhou de bing hen danxian

he come back afterward, at Qi-Huan marquis DE disease very worry

'After leaving, he worried about Qi-Huan marquis's disease very much.'

f.   Experiencer[NP]<{ 替 / 為 }Beneficiary[NP]<*< Target_entity[NP]/ Target_possible situation[S, VP]

Ex: [我/Experiencer] 替 [他/Beneficiary][擔心/Worry-Fear][他的未來/Target_entity]。

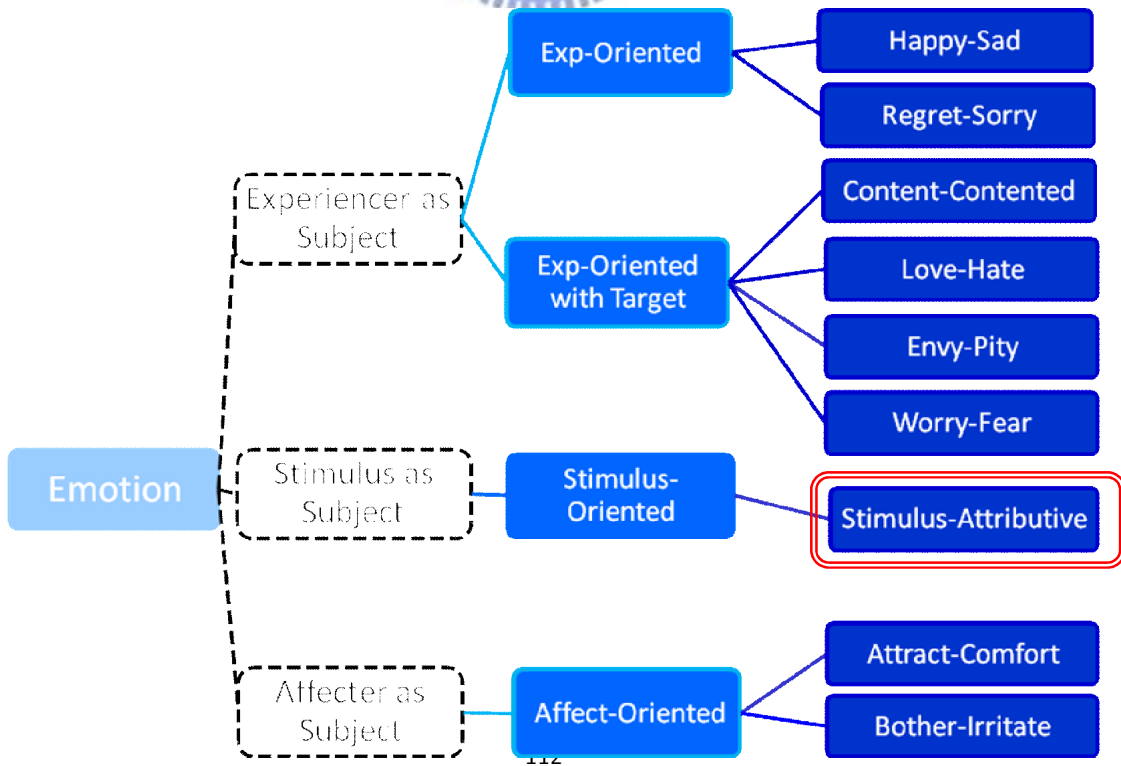*wo tit a danxin ta de weilai*

I for he worry he DE future

'I worry his future for him.'

5.2.3.3 The Basic Frames under Stimulus-Oriented Frame

Figure 9. *The Basic Frames under Stimulus-Oriented Primary Frame*

Stimulus-Oriented frame focuses on the Stimulus's unintentional causing an emotional experience and therefore the Experiencer is always backgrounded in the frame. That is, only the Stimulus role is highlighted in the frame. There is simply one basic frame under Stimulus-Oriented frame.

5.2.3.3.1 Stimulus-Attributive Frame

Definition: Verbs in this basic frame are predicative of a Stimulus which is traditionally taken as a theme but specially takes the subject position and presents the cause of a certain emotion in Emo-Stimulus frame. Syntactically, Stimulus Attribute verbs involve the intransitive usage without an object of Experiencer, describing the proposition of the attribute of certain stimulus which is not volitional to cause the emotional experience.

Lemma: 煩 *fan* 'annoying', 無聊 *wuliao* 'boring' [11],有趣 *youqu* 'interesting', 無趣 *wuqu* 'boring', 有意思 *youyisi* 'interesting', 令人興奮 *ling ren xingfen* 'exciting', 誘人 *youren* 'alluring', 累人 *leiren* 'exhausting', 動人 *dongren* 'touching', 煩人 *fanren* 'annoying', 嚇人 *xiaren* 'fearful', 駭人 *hairen* 'scaring', 氣人 *qiren* 'irritating', 惱人 *naoren* 'annoying', 感人 *ganren* 'touching', 迷人 *miren* 'charming', 吸引人 *xiyinren* 'inviting', 可愛 *keai* 'lovable', 可笑 *kexiao* 'laughable', 可恨 *kehen* 'detestable', 可憐 *kelian* 'pitiable or sympathize with', 可悲 *kebei* 'deplorable'

Frame Elements: Stimulus, Degree

Foregrounded or Backgrounded Frame Elements: N/A

Defining Patterns:

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

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[11]煩 *fan* 'annoy, annoyed, or annoying', and 無聊 *wuliao* 'bored or boring' both have multiple senses across frames. 無聊 *wuliao* 'bored or boring' is either in the Happy-Sad or Stimulus-Attributive frame while 煩 *fan* 'annoy, annoyed, or annoying' has multiple senses across Happy-Sad, Stimulus-Attributive, and Bother-Irritate frame.

Ex.:[問題/Stimulus][挺/Degree][有意思/Stimulus-Attributive]，但不好回答。

wenti ting youyisi, dan bu hao huida

question very interesting, but not easy to answer

'The question is very interesting, but is not easy to answer. '

5.2.3.4 The Basic Frames under Affect-Oriented Frame

Figure 10. *The Basic Frames under Affect-Oriented Primary Frame*
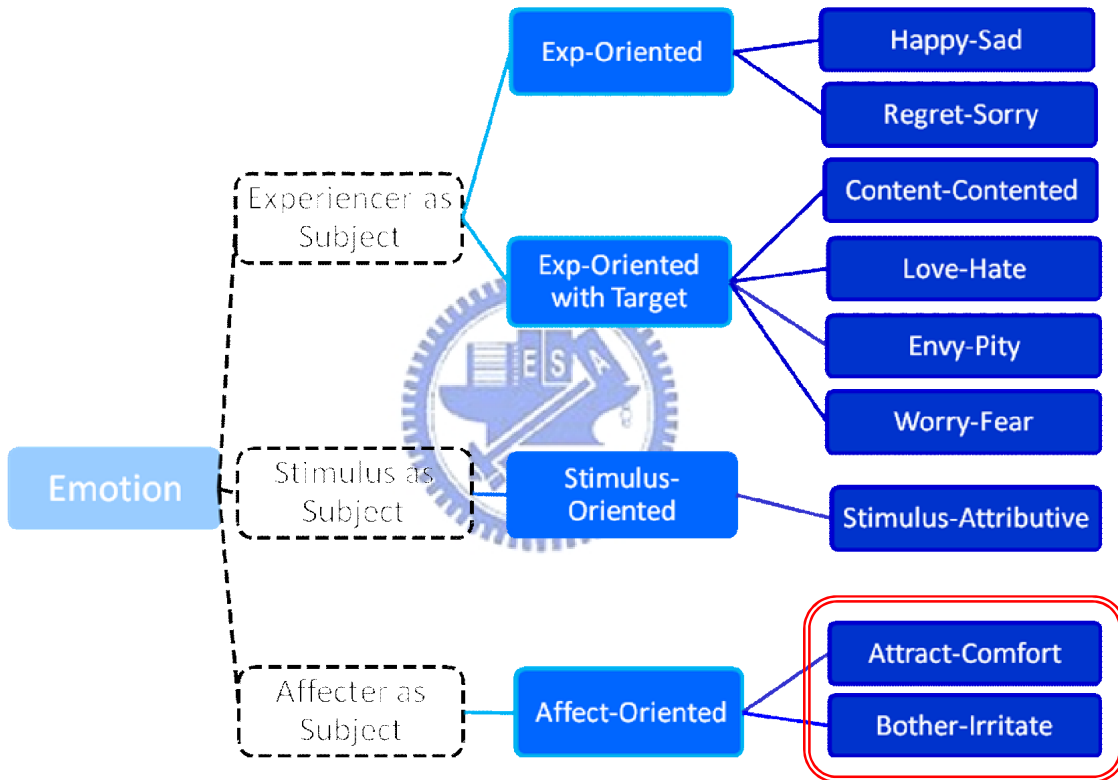
The Affect-Oriented primary frame is different from the other three primary frames in perspectives of depicting emotional event. This frame focuses on an emotional affect, which is caused by an Affecter, on the Affectee and then leads to a following result or response. Therefore, the highlighted frame elements in the frame are Affecter, Affectee, and Result. There are two basic frames under the Affect-Oriented frame:

Attract-Comfort and Bother-Irritate frame. They will be illustrated separately in Section
5.2.3.4.1 and 5.2.3.4.2.

5.2.3.4.1 Attract-Comfort Frame

Definition: These verbs describe an event whereby an Affecter causes an emotional
impact on the Affectee normally by speaking as well as acting, and then accompanying
a possible outcome or Result on the Affectee's part which is sometimes a caused or
suggested Act.

Lemma: 安慰 *anwei* 'comfort', 安撫 *anfu* 'pacify', 撫慰 *fuwei* 'console', 慰問
weiwen 'console', 鼓勵 *guli* 'encourage', 激勵 *jili* 'encourage', 鼓舞 *guwu* 'inspire',
吸引 *xiyin* 'attract', 刺激 *ciji* 'stimulate', 引誘 *yinyou* 'seduce', 誘惑 *youhuo*
'seduce', 迷惑 *mihuo* 'confuse'

Frame Elements: Affecter, Affectee, Act, Means, Result, Degree

Foregrounded Frame Elements: Act

Defining Patterns:

a. Affecter[NP]<(Degree[ADV])<*(了)< Affectee[NP]

　Ex.: [老闆娘/ Affecter]優雅地坐在沙發上[安撫/Attract-Comfort][等候的客人/

　　　Affectee]。

　　laobanniang youyadi zuo zai shafa shan g anfu denghou de keran

　　boss elegantly sit on sofa-top pacify wait DE customer

　　'The boss sits elegantly on a sofa pacifying those waiting customers .'

b. Affectee[NP]< {被}< Affecter[NP]<*

　Ex.: [我/Affectee]一時被[那原始的律動/Affecter][吸引/Attract-Comfort]，於是[即

　　　興地舞動起來/Result]！

　　wo yishi bei na yuanshi de ludong xiyin, yushi jixingdi wudong qilai

　　I momentary BEI that original DE rhythm attract, thus impromptu dance-start

'I was attracted by that original rhythm momentary, so I started to dance imprompu.'

c. Affecter[NP]<*<Affectee[NP]<Act[VP]

Ex.: [蕭先生/Affecter][極力/Degree][鼓勵/Attract-Comfort][筆者/Affectee][將經驗寫出來跟大家分享/Act]。

xiao xiansheng jili guli bizhe jiang jingyan xie chulai gen dajia fenxiang

Mr. Xiao give-every-effort encourage author to experience wirte down with everyone share

'Mr. Xiao tried his best encouraging the author to write down his experience to share with everyone.'

d. Affectee[NP]<{受/受到}<(Affecter[NP])<* <Result[VP/CL]

Ex.: [各級指揮官/Affectee]都受到[鼓舞/Attract-Comfort]，[即時採取行動/Result]。

geji zhihuiguan du shoudao guwu, jishi caiqu xingdong

all-levels commandant all receive inspire, immediately take action

'Commandants of all levels are all inspired and then take action immediately.'

5.2.3.4.2 Bother-Irritate Frame

Definition: Verbs in this frame describe an Affecter provokes a deliberate act with certain Means to arouse an emotional response of the Affectee as a volitional result. Th e volitionality or intention coded in these verbs is stronger than those in Attract-Comfort frame.

Lemma: 折磨 *zhemo* 'torment', 打擾 *darao* 'disturb', 打攪 *dajiao* 'disturb', 煩擾 *fanrao* 'bother', 擾亂 *raoluan* 'disturb', 折騰 *zheteng* 'torment', 惹惱 *renao* 'anger', 激怒 *jinu* 'anger', 觸怒 *chunu* 'arouse the anger of', 惹火 *rehuo* 'provoke', 感動

gandong 'touch', 打動 *dadong* 'move',嚇 *xi* 'frighten', 煩 *fan* 'annoy', 氣 *qi* 'anger'[12]

Frame Elements: Affecter, Affectee, Reason, Result, Degree, Means

Foregrounded Frame Elements: Reason

Defining Patterns:

a. Affecter[NP]<*(了)< Affectee[NP]<(Result[VP])

Ex.: [丁守中/Affecter][激怒/Bother-Irritate][立法院會的程建人/Affectee]。

dingshouzhong jinu lifayuanhui de chengjianren

Shou-Zhong Ding anger the Legislative Yuan DE Jian -Ren Cheng

'Shou-Zhong Ding angered Jian -Ren Cheng who works in the Legislative

Yuan.'

b. Affectee[NP]<{被}<Affecter[NP]<*

Ex.: [媽媽/Affectee]也被[我/Affecter][惹火/Bother-Irritate]了。

mama ye bei wo rehuo le

mother also BEI I provoke PERF

'Mother is also provked by me.'

c. Affecter[NP]<{把}+Affectee[NP]<*(了)

Ex.: [他/Affecter]寫那篇宣言把[我/Affectee][打動/Bother-Irritate]了。

ta xie napian xuanyan ba wo dadong le

he write that-CL declaration BA I touch PERF

'The declaration that he writed touched me.'

d. {不要／別／勿}<*<Affectee[NP]

Ex.: 不要[激怒/Bother-Irritate][科比/Affectee]！

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[12]嚇 *xi* 'frightened or frighten', 煩 *fan* 'annoy, annoyed, or annoying', and 氣 *qi* 'anger or angry' are all memberships of multiple frames, i.e., have multiple senses across frames. 嚇 *xi* 'frightened or frighten' and 氣 *qi* 'anger or angry' have multiple senses across Happy-Sad frame and Bother-Irritate frame; 煩 *fan* 'annoy, annoyed, or annoying' has multiple senses across Happy-Sad, Stimulus-Attributive, and Bother-Irritate frame.

buyao jinu kebi

do not anger Kebi

'Don't provoke Kebi!.'

e. Affectee[NP]< {被}< Affecter<*<Result[VP]

Ex.: [她/Affectee] 常常被[鄰居/Affecter][煩/Bother-Irritate]得[整夜失眠/Result]，

ta changchang bei linju fan de zhengye shimian

she often BEI neighbor annoy DE whole night sleepless

'She is often annoyed by her neighbor and not able to sleep.'

f. Affecter[NP]<{因/因為}Reason[NP/VP]<*<Affectee[NP]

Ex.: 過去[他/ Affecter]曾因[攻擊李總統的經濟改革政策/ Reason]，[激怒/Bother-Irritate][自由派人士/ Affectee]。

guoqu ta ceng yin gongji li zongtong de jingji gaige zhengce, jinu ziyou pai renshi

in-the-past he once because attack Li president DE economic reform policy, anger liberalist

'He once provked the liberalist because he attacked the economic reform policy proposed by the president Li.'

g. Affecter[NP]<Means<*<Affectee[NP]

Ex.: [他們/Affecter][用關愛和溫暖/Means] [感動/Bother-Irritate] [他/Affectee]，

tamen yong guanai he wennuan gandong ta

they use love and warm move he

'They moved him with love and warm.'

5.2.3.5 Summary of Basic Frames

This section summarizes the discussions of all the basic frames introduced previously. The foregrounded or backgrounded frame elements and the defining patterns will be listed to present the distinction of basic frames under the same primary frame.

Table 9: *Summary of the Basic Frames under the Emotion Archiframe*

Primary frames	Basic frames	Foregrounded frame element	Foregrounded frame element	Lemma and defining patterns
Exp-Oriented	Happy-Sad	Prior Act		Lemma:後悔, 悔恨, 慚愧, 遺憾, 自責, 內疚 Ex.:[我/Experiencer][後悔/ Regret-Sorry][告訴她自己的事/ **Prior Act**],
	Regret-Sorry	Target_empathy		Lemma: 生氣, 高興, 快樂, 難過 Ex.:姍姍這次科展獲得首獎，[我/Experiencer]真是為[她/**Target_empathy**][高興/ Happy- Sad]！
Exp-Oriented with Target	Content-Contented (Own both syntactic patterns of Exp-Oriented and Exp-Oriented with Target frame)	N/A	N/A	Lemma: 滿意, 不滿,(不)爽, 氣 Ex.: 同樣一件事情發生在你的身上時，年輕時[你/Experiencer]會[很/Degree][滿意/Content-Contented]*[它/**Target_entity**]，年老時[你/Experiencer]就會不[滿意/Content-Contented]*[它/**Target_entity**]了。 Ex.: [他/Experiencer][很/Degree][滿意/Content-Contented][這個未來的媳婦/**Target-entity**]。
	Love-Hate		Stimulus	Lemma:愛, 喜歡, 討厭, 恨 Ex.: [這位年輕人/Experiencer][痛恨/Love-Hate][主管不公平,同事對他冷漠/Target_Situation],

				Ex.: [我/Experiencer] 對 [這種好吃懶做的人/Target_Entity] 感 到 [很/Degree][厭惡/Love-Hate]。 (**Without Stimulus**)
	Envy-Pity	Stimulus		Lemma: 羨慕, 妒忌, 嫉妒, 同情, 憐憫 Ex.:[警方的行為/**Stimulus**] 只會讓 [民眾/Experiencer] 更 [同情/Envy-Pity][新黨/Target_Entity]
	Worry-Fear	Target_possible situation		Lemma:擔心,煩惱,怕,害怕,掛念,關心,在乎,在意 Ex.: [這學期的功課更難了/Stimulus]，[我/Experiencer][害怕/Worry-Fear][自己沒辦法應付/**Target_possible situation**]。
Stimulus-Oriented	Stimulus-Attributive	N/A	N/A	Lemma:有趣,有意思,令人興奮,誘人,累人,煩人,嚇人,氣人,感人,可愛,可笑,可恨 Ex.: [問題/Stimulus][挺/Degree][有意思/Stimulus-Attributive]，但不好回答。
Affect-Oriented	Attract-Comfort	Act		Lemma: 安慰, 激勵, 鼓舞, 吸引, 刺激, 誘惑 Ex.: [蕭先生/Affecter][極力/Degree][鼓勵/Attract-Comfort][筆者/Affectee][將經驗寫出來跟大家分享/**Act**]。
	Bother-Irritate	Reason		Lemma: 折磨,打擾,惹惱,激怒,感動,打動,嚇,煩,氣 Ex.: 過去[他/ Affecter]曾因[攻擊李總統的經濟改革政策/ **Reason**]，[激怒/Bother-Irritate][自由派人士/ Affectee]。

5.2.4 Layer 4: Micro-frame

Liu and Chiang's assertion (2008) proposed that smaller classes might be required under a basic frame if the verbs are varied in t erms of role-internal features. Following Liu and Chiang's claim, Micro-frames can be viewed as **near-synonyms sets** under Basic frames. Therefore, in this paper, different from Liu and Chiang's analysis, an integrated solution is adopted to distinguish Micro-frames that any one of the criteria provided in previous study about near-synonyms of emotion verbs (Chang et al 2000, Liu's 2002, and Tasi et al 1996) can be used to distinguish Micro-frames. The criteria are listed as (71):

(71) The Criteria Used to Distinguish Micro-frames under Basic frames

   a. **Semantic attributes (syntactic distribution)** proposed by Tsai et al (1996)

      Ex.: Micro-frame A:快樂<-change of state, -control>

         Micro-frame B: 高興<+change of state, +control>

   b. **Morphological makeup** proposed by Chang et al (2000)

      Ex.: Micro-frame A: 快樂(VV compound)

         Micro-frame B: 高興(Non-VV compound)

   c. **Frame elements** (role-internal features) proposed by Liu (2002)

      Ex.: Micro-frame A: 快樂(Internal cause)

         Micro-frame B: 高興(External cause)

There may be micro-frames under most basic frames. However, in this paper, only eight micro-frames (The micro-frames under the Regret-Sorry frame, Love-Hate frame, Stimulus-Attributive frame, and Bother-Irritate frame) will be discussed and analyzed to provide a direction and demonstration of the principle s or criteria of the micro-frame dinstinction. They shall be introduced with examples in Section 5.2.4.1, Section 5.2.4.2, Section 5.2.4.3, and Section 5.2.4.4.

5.2.4.1 The Micro-frames under Regret-Sorry Frame

Verbs in Regret-Sorry frame can be distinguished by the role-internal feature of the frame element Prior Act. In example (72), it is shown that a prior act may be self-initiated or not:

(72) Differences in Role-internal Features among Verbs of Regret-Sorry Frame

    A. [+ self-initiated]

        a. 思前想後，[我/ Experiencer]對[<u>自己</u>放棄這個機會/Prior Act]又感到[後悔 /Regret-Sorry]，與她同房豈不更好？

          siqianxianghou, wo dui ziji fangqi zhege jihui you gandao houhui, yu ta tongfang qibu genghao

          think, I to myself give up this chance also feel regret, with she sleep-together isn't that better

          'After thinking, I regretted at my giving up the chance. Isn't that better to sleep with her?'

        b. *思前想後，[我/ Experiencer]對[<u>他</u>放棄這個機會/Prior Act]又感到[後悔 /Regret-Sorry]，與她同房豈不更好？

          siqianxianghou, wo dui ta fangqi zhege jihui you gandao houhui, yu ta tongfang qibu genghao

          think, I to he give up this chance also feel regret, with she sleep -together isn't that better

          'After thinking, I regretted at his giving up the chance. Isn't that better to sleep with her?'

    B. [± self-initiated]

a. *[所有的朋友/Experiencer] 對 [三毛去世/Prior Act] 一致感到 [後悔 /Regret-Sorry]。

   suoyou de pengyou dui sanmao qushi yizhi gandao houhui

   all DE friends about Shan-Mao die identically feel regretful

   'The friends all felt regretful about Shan-Mao's death.'

b. [所有的朋友/Experiencer] 對[三毛去世/Prior Act]一致感到[遺憾與惋惜 /Regret-Sorry]。

   suoyou de pengyou dui sanmao qushi yizhi gandao yihan yu wanxi

   all DE friends about Shan-Mao die identically feel regret and sorry

   'The friends all felt regretful and sorry about Shan-Mao's death.'

Table 10. *Two Micro-frames under the Regret-Sorry Frame*

MFs	lemma	Frame Element feature
Regret	後悔 *houhui* 'regret', 懊惱 *aonao* 'be remorseful', 懊悔 *aohui* 'repent', 悔恨 *huihen* 'regret', 痛悔 *tonghui* 'regret'	Prior Act(+ self initiated)
Sorry	遺憾 *yihan* 'feel sorry', 慚愧 *cankui* 'be shamed', 愧疚 *kuijiu* 'be ashamed', 內疚 *neijiu* 'be guilty', 惋惜 *wanxi* 'feel sorry'	Prior Act (±self initiated)

5.2.4.2 The Micro-frames under Love-Hate Frame

The syntactic distribution, i.e., the distribution of grammatical functions, is used to sub-classify the verbs in the Love-Hate frame.

Table 11. *The Distribution of Grammatical Functions of Love-Hate Verbs*

Lemma	Predicate	Head Noun	Nominal Modifier	Adverbial
愛	75% (1441/1925)	25% (479/1925)	0.05%(1/1925)	0.2%(4/1925)
喜愛	72% (196/274)	28% (77/274)	0.3% (1/274)	0% (0/274)
恨	75% (104/139)	24% (33/139)	1% (2/139)	0% (0/274)
熱愛	73% (66/91)	25% (23/91)	2% (2/91)	0% (0/91)
厭惡	87% (33/38)	13% (5/38)	0% (0/38)	0% (0/38)
痛恨	96% (24/25)	4% (1/25)	0% (0/25)	0% (0/25)
討厭	100% (148/148)	0% (0/148)	0% (0/148)	0% (0/148)
喜歡	99.7%(1979/1984)	0.2% (5/1984)	0%(0/1984)	0%(0/1984)
愛好	46% (50/108)	26% (28/108)	28% (30/108)	0% (0/108)
喜好	51% (35/69)	48% (33/69)	1% (1/69)	0% (0/69)

The above ratios reveal that verbs like 愛 *ai* 'love', 喜愛 *xiai* 'like', 恨 *hen* 'hate', 熱愛 *reai* 'love', 厭惡 *yanwu* 'detest', 痛恨 *tonghen* 'hate', 討厭 *taoyan* 'detest' and 喜歡 *xihuan* 'like' have a dominate predicative function while verbs like 愛好 *aihao* 'love' and 喜好 *xihao* 'like' have a predominant nominal function. Therefore, they can be distinguished into two sub-frames: pred-love and nom-love. The pred-love verbs are heterogeneous and the nom-love verbs are more homogeneous.

Table 12. *Micro-frames under the Love-Hate Basic Frame*

Micro-frames	Feature	Lemma
Pred-love	Verbs mostly function as predicate; heterogeneous	愛 *ai* 'love', 喜愛 *xiai* 'like', 恨 *hen* 'hate', 熱愛 *reai* 'love', 厭惡 *yanwu* 'detest', 痛恨 *tonghen* 'hate', 討厭 *taoyan* 'detest' and 喜歡 *xihuan* 'like'

Nom-love	Verbs have a predominant nominal function; homogeneous	愛好 *aihao* 'love' and 喜好 *xihao* 'like'

5.2.4.3 The Micro-frames under Stimulus-Attributive Frame

Among verbs in the Stimulus-Attributive frame, a small number of verbs are found to have multiple senses, such as 煩 *fan* 'annoyed, or annoying' and 無聊 *wuliao* 'bored or boring'. 煩 *fan* 'annoy, annoyed, or annoying' has multiple senses across Happy-Sad, Stimulus-Attributive and Bother-Irritate frame while 無聊 *wuliao* 'bored or boring' is either in the Happy-Sad or Stimulus-Attributive frame.

Table 13. *Multiple Frames of* 煩 *fan*

Basic Frame	Example	Syntactic Pattern
Happy-Sad	我覺得好煩！ *wo juede hao fan* I feel very annoyed 'I feel very annoyed!'	Experiencer[NP]<(感/感到/感覺/覺得)<(Degree[Adv])<*
Stimulus-Attributive	他很煩！ *ta shi hen fan* he very annoying 'He is very annoying!'	Stimulus [NP][VP][CL] < (Degree [ADV])<*
Bother-Irritate	a.他一直煩我。 *ta yizhi fan wo* he all the while annoy I	a. Affecter[NP]<* <Affectee[NP] b. { 不要 / 別 / 勿 }<*<Affectee [NP]

	'He is annoying me all the while!'	
	b. 不要煩我!	
	buyao fan wo	
	do not annoy I	
	'Don't annoy me!'	

Table 14. *Multiple Frames of* 無聊 *wuliao*

Basic Frame	Example	Syntactic Pattern
Happy-Sad	他很無聊。 *ta hen wuliao* he very bored 'He is very bored.'	Experiencer[NP]<(感/感到/感覺/覺得)<(Degree[Adv])<*
Stimulus-Attributive	他很無聊! *ta hen wuliao* he very boring 'He is very boring!'	Stimulus [NP][VP][CL] < (Degree [ADV])<*

When expressing a sentence like 他很煩! *ta shi hen fan*, there are two different readings: 'he is bored' or 'he is boring'. The subject 他 *ta* 'he' is an Expreiencer in the first reading, and a Stimulus in the second reading. Therefore, verbs like 煩 *fan* and 無聊 *wuliao* (in the **[Experiencer/Stimulus]<*** pattern) having more than one role as Subject are sorted out to form one micro-frame called **dual-headed** and the others form the other micro-frame called **stimulus-headed**.

Table 15. *Micro-frames under the Stimulus-Attributive Basic Frame*

Micro-frames	Feature	Lemma

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Dual-headed	Verbs are multi-frames and multi-senses; there are two different subject role: Experiencer and Stimulus	煩 *fan* 'annoying' and 無聊 *wuliao* 'boring'
Stimulus-headed	Verbs have only one sense; there is only one subject role: Stimulus	誘人 *youren* 'alluring', 累人 *leiren* 'exhausting', 動人 *dongren* 'touching', 煩人 *fanren* 'annoying', 嚇人 *xiaren* 'fearful', 駭人 *hairen* 'scaring', 氣人 *qiren* 'irritating', 惱人 *naoren* 'annoying', 感人 *ganren* 'touching', 迷人 *miren* 'charming', 吸引人 *xiyinren* 'inviting', 可愛 *keai* 'lovable', 可笑 *kexiao* 'laughable', 可恨 *kehen* 'detestable', 可憐 *kelian* 'pitiable or sympathize with', 可悲 *kebei* 'deplorable', 有趣 *youqu* 'interesting', 有意思 *youyisi* 'interesting', 令人興奮 *ling ren xingfen* 'exciting

According to Liu and Chang (2008), the morphological make-up of verbs in the stimulus-headed micro-frame shows symmetry and can be further distinguished into four sub-classes:

Table 16. *Morphological Make-up of Verbs in Stimulu-headed Micro-frame*

Morphological	Lemma	Morphological

Make-up		Inheritance
令人 X	令人興奮 *ling ren xingfen* 'exciting'	Causative
X 人	誘人 *youren* 'alluring', 累人 *leiren* 'exhausting', 動人 *dongren* 'touching', 煩人 *fanren* 'annoying', 嚇人 *xiaren* 'fearful', 駭人 *hairen* 'scaring', 氣人 *qiren* 'irritating', 惱人 *naoren* 'annoying', 感人 *ganren* 'touching', 迷人 *miren* 'charming', 吸引人 *xiyinren* 'inviting'	Transitive
可 X	可愛 *keai* 'lovable', 可笑 *kexiao* 'laughable', 可恨 *kehen* 'detestable', 可憐 *kelian* 'pitiable or sympathize with', 可悲 *kebei* 'deplorable'	Semi-causative
有 X	有趣 *youqu* 'interesting', 有意思 *youyisi* 'interesting'	

5.2.4.4 The Micro-frames under Bother-Irritate Frame

The morphological criterion is adopted to separate micro-frames under the Bother-Irritate basic frame. Verbs in the frame are either VV-compounds or VR-compounds:

VV-compound (Bother type): 折磨 *zhemo* 'torment', 打擾 *darao* 'disturb', 打攪 *dajiao* 'disturb', 煩擾 *fanrao* 'bother', 折騰 *zheteng* 'torment'

VR-compound (Irritate type): 惹惱 *renao* 'anger', 激怒 *jinu* 'anger', 觸怒 *chunu* 'arouse the anger of', 惹火 *rehuo* 'provoke', 感動 *gandong* 'touch', 打動 *dadong* 'move'

In this way, the verbs in the Bother-Irritate frame can be divided into two micro-frames: bother in which verbs are VV-compound and irritate in which the verbs are VR-compound.

5.2.4.5 The Micro-frames under Emotion Archiframe

Although a complete or overall discussion is not given here, t he analysis in Section

5.2.4 provides a guide for the distinctions of Micro -frames. The Micro-frames under the

Emotion Archiframe is briefly illustrated in Figure 1 1:

Figure 11. *The Micro-frames under the Emotion Archiframe*
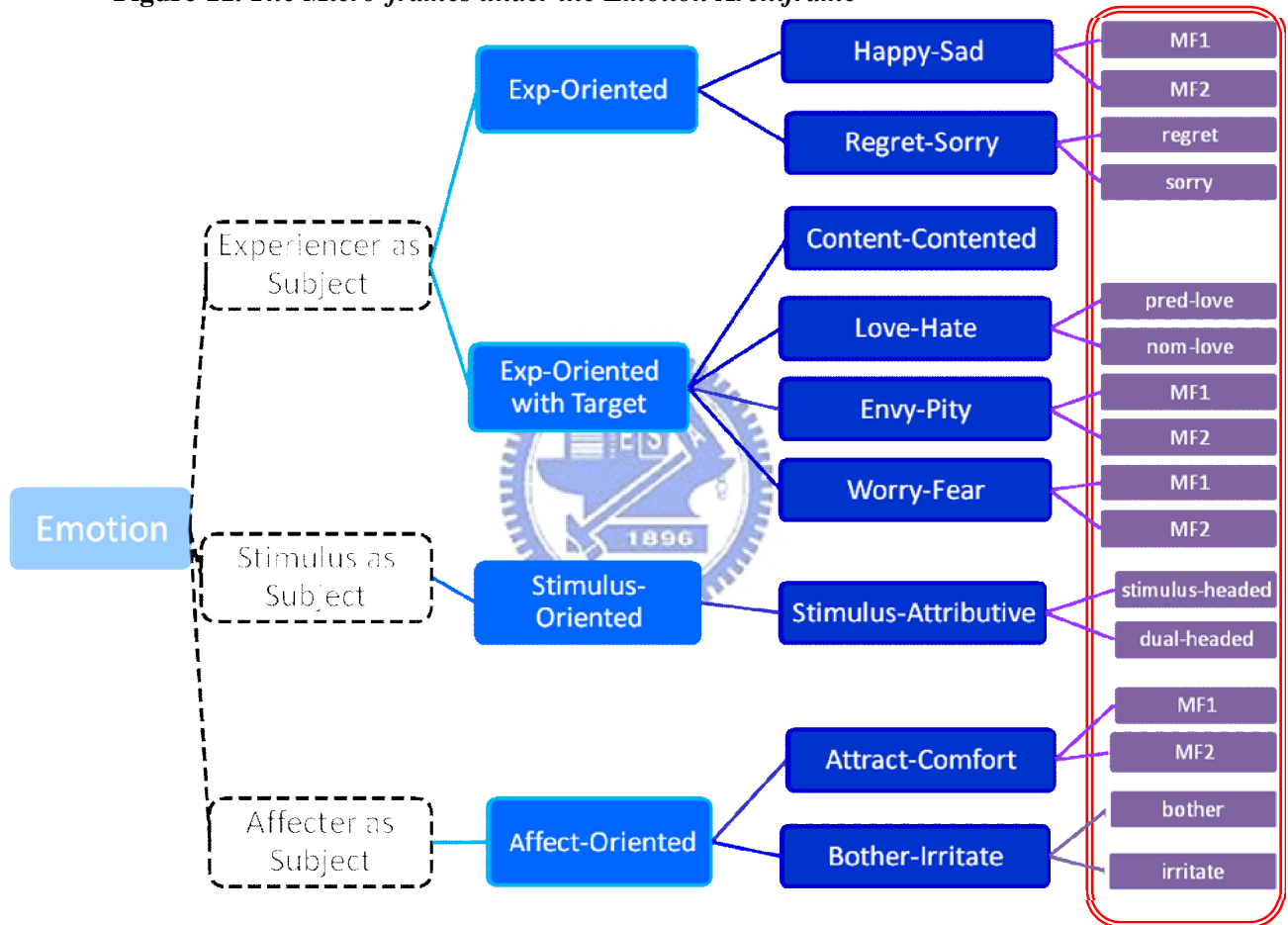
5.3 Overview of the Frames

This section provides an overview of the frames under the scope of Mandarin

emotion verbs, shown in the table below.

**Table 17.** *Overview of the Frames in Mandarin Emotion Archi-frame*

Layer	Frame Name
Archiframe	Emotion
Primary Frame	Exp-Oriented
	Exp-Oriented with Target
	Stimulus-Oriented
	Affect-Oriented
Basic Frame	Happy-Sad
	Regret-Sorry
	Content-Contented
	Love-Hate
	Envy-Pity
	Worry-Fear
	Stimulus-Attributive
	Attract-Comfort
	Bother-Irritate
Micro-frame[13]	regret
	Sorry
	pred-love
	nom-love
	stimulus-headed
	multi-headed
	bother
	irritate

In the emotion domain, there are one archi-frame (Emotion), four primary frames (Exp-Oriented, Exp-Oriented with Target, Stimulus-Oriented, and Affect-Oriented), nine basic frames (Happy-Sad, Regret-Sorry, Content-Contented, Love-Hate, Envy-Pity, Worry-Fear, Stimulus-Attributive, Attract-Comfort and Bother-Irritate), and several

---

[13] There should be more micro-frames under the Emotion archiframe. In this paper, however, only eight micro-frames are discussed to provide a demonstration of criteria or principles of mic ro-frame distinguish.

micro-frames in this study. Figure 12 exhibits the hierarchical interrelationship between the frames.

Figure 12. *Hierarchical Interrelationship between the Frames of Emotion*
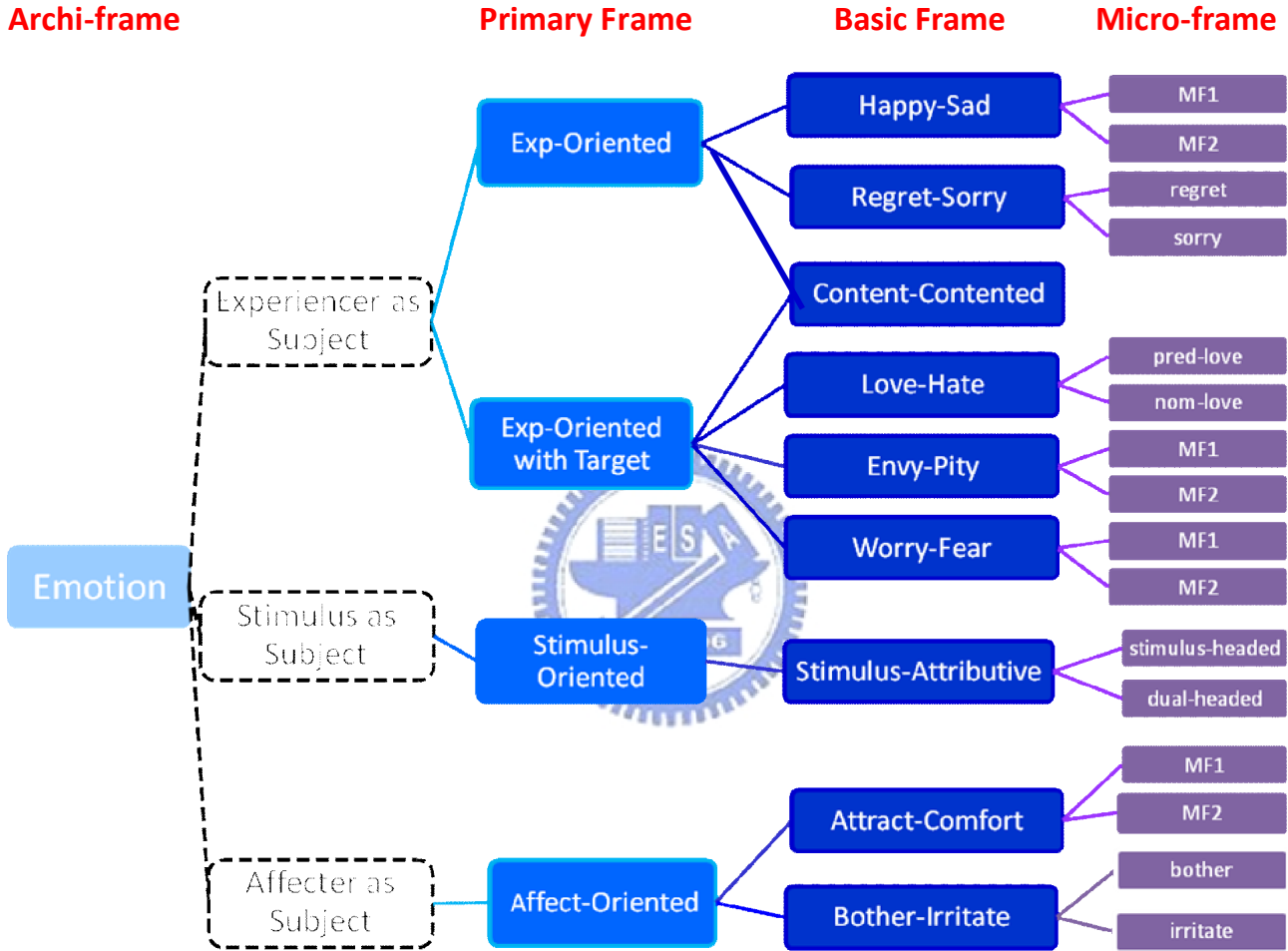
Moreover, as what is mentioned previously, all children or lower frames inherit the semantic and syntactic properties of the father or upper frame. Therefore, the syntactic patterns (i.e., defining patterns) in archiframe, primary frames, and basic frames will be listed to show the inheritance. The colored syntactic patterns in grids are defining patterns inherited from the upper or father frame. For example, the blue pattern '**Experiencer[NP]<(感/感到/感覺/覺得)<Degree[Adv]<***' in Exp-Oriented primary frame, and the pattern '**Experiencer[NP]<(Degree[Adv])<*< (Target_entity[NP])**' in Exp-Oriented with Target primary frame are both inherited from the pattern '**Experiencer[NP]<(感/感到/感覺/覺得)< ***' in the father or upper frame, i.e., Emotion archiframe.

Table 18. *Defining patterns in archiframe, primary frames, and basic frames*

Defining patterns in Emotion archiframe			
Experiencer[NP]<(感/感到/感覺/覺得)<*		Stimulus[NP] < (Degree[ADV]) <*	Affecter[NP]<*<Affectee[NP]

Defining patterns in the four primary frames			
Exp-Oriented	Exp-Oriented with Target	Stimulus-Oriented	Affect-Oriented
a. Experiencer[NP]<(感/感到/感覺/覺得)<Degree[Adv] <* b. Stimulus[NP][VP][CL]<{令/讓/使/教}+ Experiencer [NP]<* c.Experiencer[NP]<Degree[Adv]< *<Content/Prior Act[VP/CL] d.Experiencer[NP]<{對}+Content/ Prior Act[NP/VP/CL]<(感/感到/感覺/覺得)<*	a.Experiencer[NP]<(Degree[Adv])<*<(Target [NP/VP/S]) b.Experiencer[NP]<{ 對 }Target [NP/VP/S]<* c.Stimulus[NP/S]<{ 令 / 讓 / 使 / 教 }+Experiencer[NP]<*<(Target_entity[NP]/Target_situation[S])	a.Stimulus[NP][VP][CL] <(Degree [ADV]) <*	a.Affecter[NP]<(Degree[ADV])<*(了)< Affectee[NP] <(Result[VP]) b.Affectee[NP]<{被}<Affecter[NP]<*<(Result[VP])

Defining patterns in the basic frames under each primary frame			
I. Happy-Sad	I. Love-Hate	I.Stimulus-Attributive	I. Attract-Comfort
a.Experiencer[NP]< (感/感到/感覺/覺得)<(Degree[Adv])<* b.Stimulus[NP][VP][CL]<{令/讓/使/教}+Experiencer[NP]<(Degree[Adv])<* c.Experiencer[NP]<{為/替}+Target_empathy[NP]<(Degree[Adv])<* d.Experiencer[NP]<(Degree[Adv])<*< Content [CL] e. Expressor[NP]<(Degree[Adv])<* f.{關於}+Topic[NP]<Experiencer[NP]<(Degree[Adv])<*	a.Experiencer[NP]<(Degree[Adv])<*< Target_entity[NP] b.Experiencer[NP]<(Degree[Adv])<*<Target_act[VP] c.Experiencer[NP]<(Degree[Adv])<*<Target_situation[S] d.Experiencer[NP]<對 Target_entity[NP]<(Degree[Adv])<*	a.Stimulus[NP][VP][CL] <(Degree [ADV]) <*	a.Affecter[NP]<(Degree[ADV])<*(了)< Affectee[NP] b.Affectee[NP]<{被}<Affecter[NP]<* c.Affecter[NP]<*<Affectee[NP]<Act[VP] d.Affectee[NP]<{受/受到}<(Affecter[NP])<* <Result[VP/CL]
II. Regret-Sorry	II. Envy-Pity		II. Bother-Irritate
a.Experiencer[NP]<(Degree[Adv])<*< Prior Act[VP/CL] b.{等到/一直到}<Stimulus[VP/CL]	a.Experiencer[NP]<(Degree[Adv])<*<Target_entity[NP] b.Experiencer[NP]<(Degree[Adv])<		a.Affecter[NP]<*(了)<Affectee[NP]<(Result[VP]) b.Affectee[NP]<{被}<Affecter[NP

<Experiencer[NP]<（才)<* c.Experiencer[NP]<{為/對}<Prior Act[VP/CL]<(感/感到/感覺/覺)< * d. Experiencer[NP]< *<PriorAct_ Description[NP] e.Experiencer[NP]<Expressor[NP]< *	*<Target_situation[S] c.Stimulus[NP/S]<{ 令 / 讓 / 使 / 教}+Experiencer[NP]<*<Target_ entity[NP]/ Target_situation[S] d.Stimulus[NP/S]<{ 令 / 讓 / 使 / 教}+Experiencer[NP]< * e.Experiencer[NP]<{對}+Target_en tity[NP] <(表示/深表)<*		]<* c.Affecter[NP]<{把}+Affectee[NP] <*(了) d.{不要/別/勿}<*<Affectee[NP] e.Affectee[NP]<{ 被 }< Affecter<* <Result[VP] f.Affecter[NP]<{ 因 / 因 為 }Reason [NP/VP]<*<Affectee[NP] g.Affecter[NP]<Means<*<Affectee [NP]

	III. Worry-Fear
	a.Experiencer[NP]<(Degree[Adv]) <*<Target_entity[NP] b.Experiencer[NP]<(Degree[Adv]) <*< Target_possible situation[S] c.Stimulus[NP]<{ 令 / 讓 / 使 / 教 }+Experiencer<*<Target_entity[NP]/ Target_possible situation[S] d.Stimulus[S]<({ 令 / 讓 / 使 / 教 })+ Experiencer <* e.Experiencer[NP]<{ 對 } Target_ entity[NP]<* f.Experiencer[NP]<{ 替 / 為 } Beneficiary[NP]<*<Target_entity[N P]/ Target_possible situation[S, VP]

Content-Contented (Cross two frames)	
a.Experiencer[NP]<(感/感到/感覺/ 覺得)<Degree[Adv] <* b.Stimulus[NP][VP][CL]<{ 令 / 讓 / 使/教}+Experiencer [NP]<* c.Experiencer[NP]<(Degree[Adv])< *<Target_situation[CL]/Content[CL]	a.Experiencer[NP]<(Degree[Adv])< *<Target_entity[NP] b.Experiencer[NP]<{ 對 } Target_ entity[NP]<* c.Experiencer[NP]<(Degree[Adv])< *<Target_situation[CL]/Content[CL] d.Stimulus[NP][VP][CL]<{ 令 / 讓 / 使/教}+Experiencer[NP]<*<(Target -entity)

5.4 Summary

In this chapter, a conceptual schema of the Emotion is provided to help understanding the process of an emotion event. Moreover, two perspectives on regarding an emotional event are proposed. Based on all the findings, Mandarin emotion verbs are classified and analyzed into a hierarchical structure from the perspective of frame semantics (Fillmore and Atkins 1992). Four-layered working taxonomy illustrates the semantic and grammatical features of verbs in an organized and systematic way.

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Conclusion

Adopting the theory of Frame Semantics (Fillmor e and Atkins 1992) and the construction of Mandrain VerbNet (Liu and Chiang 2008), this study strives to capture the correlation between syntax and semantics. A multi-layered hierarchical toxonamy is worked out to distinguish the varied scopes of frames for the classification of verbs. Frames in a broad domain, i.e., archiframe, share the same conceptual schema but highlight diverse subparts of the schema. Verbs under a frame share the same frame elements and display the similar constructional and collocational patterns. A frame which is composed of lexicon with similar semantic property owns a set of frame element and defining patterns that helps to distinguished it from other frames. It shows an interaction between lexical semantics and construction grammar.

According to Liu (2009), this study investigates verbs of emotion in Mandarin, analyzing the verbs from two perspectives which illustrate how the event structure s are encoded in emotion verbs and how unique the semantic properties lexicalized in Mandarin emotion verbs. An Experiencer or Affectee may experience an emotional state because of a non-intentional Stimulus or because of an emotional effect or impact which is aroued by a volitional Affecter. Just like what Kovecses (1990) mentioned, an experiencer may respond to the emotion by undergoing a behavior or emotional impact, rather than acting as a willful agent. The study also reinforces the finding that the majority of Mandarin emotion verbs are Experiencer prominent (Liu 2009 and Liu & Hong 2008), i.e., Experiencer-oriented, with an active vs. causative alternation, which is different from the typical active vs. passive alternation found in English (e.g. *interesting* vs. *interested*.) By examining the grammatical characteristics of different frames of Mandarin emotion verbs, the study provides the answer of the questions: *what are the*

unique semantic properties lexicalized in Mandarin emotion verbs, i.e. the syntax-to-semantics correlation? What would be a unified approach to distinguished and categorize the different classes of emotion verbs? Ultimately, the study offers a well-organized framework in analyzing and representing verbal semantics.

Although this study tries to examine the whole field of Mandarin emotion verbs, there are still some questions or issues that are not discussed here and needed to be investigated in the future:

A. The metaphorical extension of emotion verbs are not discussed in this study. However, the issue is worthy to be paid attention.

B. To apply the analysis to the whole field of emotion verbs, only more general patterns or constructions are observed in this study, the more special or specific pattern such as 羨慕死我了 *xianmu si wo le* is not included in this study.

C. Idioms or more idiomatic using of verbs are not taken into consideration. They also need more attention and investigations.
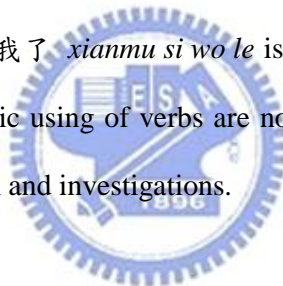
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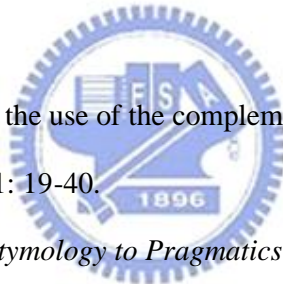
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Website Resources

Academia Sinica Bilingual Ontological WordNet (Sinica BOW)

　　　　　　　http://bow.sinica.edu.tw/

Academa Sinica Balanced Corpus of Modern Chinese (Sinica Corpus)

http://www.sinica.edu.tw/SinicaCorpus/

Chinese Wordnet　　　　http://cwn.ling.sinica.edu.tw/

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

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

搜文解字 souwenjiezi　　http://words.sinica.edu.tw/