

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

情緒的表達：中英文情緒動詞之語意比較

The Expression of Emotion:

A Frame Semantic Comparison in English and Mandarin

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中華民國九十八年六月

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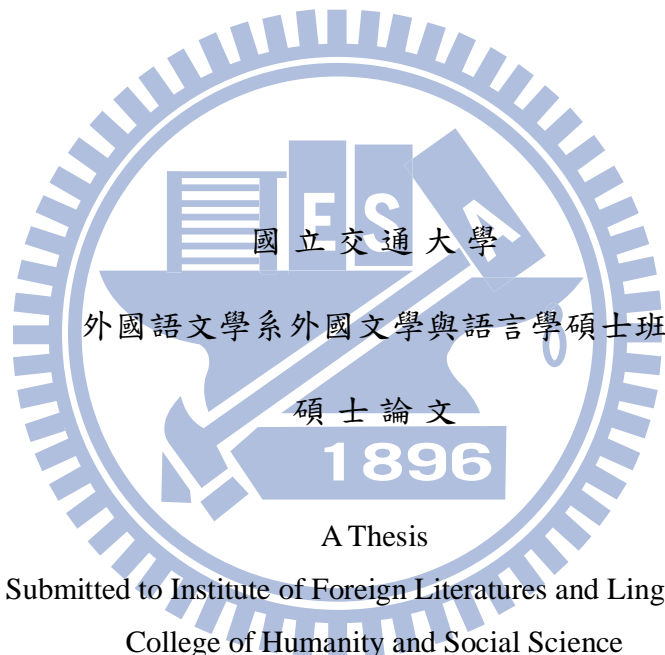
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摘要

本研究旨在瞭解並呈現中英文情緒表達的不同。先前對於英文中的情緒動詞，已有 Belletti & Rizzi (1988)、Grimshaw (1990)、Filip (1996)與 Nelson (1999)等人之研究，中文部分有蔡美惠等(1996)與張麗麗等(2000)之研究，但是這些研究僅將焦點放在代表性的動詞，卻無法將研究範圍含括至整組動詞，也因為如此，我們難以全面性地比較中文與英文之情緒表達，便無法更進一步瞭解中英文的使用者是如何建構情緒的概念。

英文中像(1)、(2)的例句可以用來表達類似的情緒：

(1) He frightens me. (他嚇到我了。)

(2) I fear him. (我很怕他。)

縱使這兩句例子似乎要表達幾乎相同的情緒事件，例句中呈現的兩種不同及物構事 (transitive construction)，刺激物(Stimulus)-動詞-情緒感知者(Experiencer) 構事與情緒感知者-動詞-刺激物構事，乃是從兩種不同的心理途徑(mental path)來表達情緒。中文中可用嚇到和怕來表達類似英文例句(1)和(2)的情緒。

(3) 他嚇到我了。

(4) 我很怕他。

具備相同的及物構事，例句(1)與(2) 似乎分別等同例句(3)和(4)，但是擁有相同的構事是否暗示著，使用英文與中文表達 *fright* 嚇到和 *fear* 怕時，心理途徑的構成是相同的呢？此外，尚有類似的中英文例句可以有力證明此一假設的正確性。

(5) I am happy. (我很開心。)(不及物情緒感知者-動詞構事)

(6) 我很開心。(不及物情緒感知者-動詞構事)

(7) The book is interesting. (這本書很有趣。)(不及物構事)

(8) 這本書很有趣。(不及物構事)

然而，Wierzbicka 於 1991 年與 1992 年分別提出「emotion words reflect certain cultural models」與「emotion terms cannot be neatly matched with concepts in other languages or cultures」的說法，與例句(1)至(8)所呈現出來的構事相似程度似乎有所衝突，究竟中英文又是如何使用情緒謂語(emotion predication)來表達該文化的特色？有鑑於此，本文以 Berkeley FrameNet 對於英文情緒謂語的分析與洪詩楣(2009)對於中文情緒動詞的分析為本，採用框架語意理論(Frame semantics (Fillmore & Atkins, 1992))分析比較中英文的情緒謂語，而能更加瞭解中英文是如何建構情緒的概念。

本文主要有三項發現。首先，情緒謂語可進一步表達動態與靜態，Van Voorst (1996) 認為英文中的心理動詞(psychological verbs)可以被視為「瞬(間達)成動詞 (Achievement verb)」表達動作，我們將中文的情緒動詞以 Van Voorst 提出之理論測試，發現在某些情緒框架下的動詞的確表現得較為動態，有別於以往情緒動詞被普遍認為為一種靜態動詞的看法。第二項發現在於我們能由框架元素 (frame element) 和構詞組合 (morphological make-up) 觀察到語言對於情緒表達上偏好的參與者，刺激物雖不為英文情緒框架中最常出現的框架元素，但是卻是謂語詞彙中所嵌入的語意參與者，也因此我們可得知英文似乎偏好採用刺激物的角度來表達情緒。另一方面，我們觀察到中文情緒框架中最常出現的框架元素為情緒感知者，該元素也常被詞彙化、變成謂語中通性的名詞(generic noun)，此特性也因此暗指中文喜好情緒感知者作為其表達情緒的潛在主詞。最後一項發現即是有些與情緒為低關聯性的英文情緒框架，如評斷 (*Judgment*) 框架也被列為該語言情緒框架的子框架之一，而中文將情緒引動者 (Affecter) 此一新語意參與者運用至情緒範疇 (emotion domain) 中。此外，還比較中英文表達相似情緒的框架，如英文悔恨 *Contrition* 框架與中文 *Regret-Sorry* 框架，會挑選不同的語意框架元素與不同的構事。經由比較中英文的情緒謂語後，最後得到以上三項不同的發現使我們更能了解中英文情緒表達的雷同或相異之處。

簡言之，此論文比較中英文對於情緒的表達，除了能了解中英文使用者表達同一情緒概念時的相同點與差異處，尚可使此二語言的學習者和教育者對於該語言情緒的概念有更深入的認知並了解如何更精確地以其學習語言表達情緒。

The Expression of Emotion: A Frame Semantic Comparison in English and Mandarin

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ABSTRACT

This paper aims to show how English and Mandarin differ from each other on emotion predication. Although many studies have been done to investigate psych-verbs of English (Belletti & Rizzi, 1988; Grimshaw, 1990; Filip, 1996; Nelson, 1999) as well as those of Mandarin (Tsai et al. 1996; Chang et al. 2000), these studies mostly paid attention to the representational verbs and failed to investigate the whole set of verbs. Therefore, it is hard to compare these two languages so as to gain a better understanding of how English and Mandarin speakers conceptualize emotions.

In English, sentences like (1) and (2) can be used to express a similar event.

(1) He frightens me.

(2) I fear him.

The different transitive Stimulus-Verb-Experiencer and Experiencer-Verb-Stimulus constructions are used here to represent two mental paths of a person even if they seem to interpret the same psychological state. In Mandarin, similar emotion of (1) and (2) can be expressed through verbs like *xiadao* 嚇到 and *pa* 怕.

(3) 他嚇到我了。

ta xiadao wo le
he frighten me PART.
'He frightens me.'

(4) 我很怕他。

wo hen pa ta
I very fear him
'I fear him.'

With constructions alike, (1) and (2) may be equivalent to (3) and (4) respectively. However, does the similarity suggest English and Mandarin share the same psychological path when expressing fright and fear? More similar constructions shared in expressing emotions, like (5) and (6), may provide stronger support to such assumption.

(5) I am happy. (Intransitive Experiencer-Verb construction)

(6) 我很開心。(Intransitive Experiencer-Verb construction)

wo hen kaixin

I very happy
'I am happy.'

Nonetheless, according to Wierzbicka (1991), she claimed “emotion words reflect certain cultural models;” moreover, “emotion terms cannot be neatly matched with concepts in other languages or cultures” (Wierzbicka, 1992). Hereof, how do emotion predications differ in English and Mandarin to carry cultural features if (1)-(6) exemplified a great resemblance in the surface construction? Adopting Berkeley FrameNet’s (<http://www.icsi.berkeley.edu/~FrameNet/>) analysis of English emotion expression as well as Hong’s (2009) analysis of Mandarin emotion verbs, we are able to compare the two languages from the perspective of Frame Semantics to obtain more details of how emotion is conceptualized in both languages.

There are three major findings of this paper. First, emotion predication can be further divided into stative and active interpretations in both languages. Van Voorst (1996) discovered that English psychological verbs can also denote an active state and be seen as achievement verbs. Applying the rules Van Voorst provided, we also tested Mandarin emotion verbs and found that some frames may imply an active state and become less stative than they have often been regarded. Second, frame elements and morphological make-ups in both languages provide information to show the preference of each language in terms of construing emotion sentences. Stimulus may not be the most frequent frame element in English emotion frames, but it has been the underlying subject incorporated in the lexicon, which serves as a piece of evidence to indicate that English favors to take the viewpoint of Stimulus as its fundamental perspective when expressing emotions. On the other hand, Experiencer occupies the position of a core element in almost every Mandarin emotion verb frames and it has been often lexicalized as the generic noun within Mandarin lemmas, which entails that Mandarin prefers Experiencer as its underlying subject. Third, English included frames which seem to be lowly related to emotions, e.g. *Judgment* frame, into Emotions while Mandarin introduced an Affecter into its emotion domain. Moreover, even frames expressing the similar emotion, such as *Contrition* frame in English and *Regret-Sorry* frame in Mandarin, may differ in their selection of frame elements and their constructions. All the findings allow us to see how English and Mandarin are different or alike in expressing emotions.

In brief, this paper compares English and Mandarin emotion expressions and shows the similarity and dissimilarity. It can also benefit English and Mandarin learners and educators who wish to understand better how these two languages conceptualize and express emotions.

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Chapter 1

Introduction

Emotion has always been an interesting topic in language studies for it involves interpreting and reading one's mental behaviors. Look at the examples below.

(1) He frightens me.

(2) I fear him.

(1) and (2) seem to express the same event while two different constructions are used. One is Stimulus-Verb-Experiencer transitive in (1). (2) is also a transitive construction with Experiencer-Verb-Stimulus. The two representative sentences present different mental path when an emotion occurs.

In Mandarin, similar sentence patterns can be exemplified by verbs, 吓到 *xiadao* 'frighten' and 怕 *pa* 'fear'.

(3) 他吓到我了。

ta xiadao wo le

he frighten me PART.

'He frightens me.'

(4) 我很怕他。

wo hen pa ta

I very fear him

'I fear him.'

From (3), we see Stimulus-Verb-Experiencer transitive and (4), Experiencer-Verb-Stimulus transitive. Emotion can also be seen in intransitive construction, like (5) and (6).

(5) I am happy.

(6) 我 很 開 心 。

wo hen kaixin

I very happy

'I am happy.'

Throughout the history, how people's psychological state affects their language performance has, too, been widely investigated through many linguistic approaches, including, to name a few, theta-theory (Belletti & Rizzi 1988), syntax-semantics interface (Filip 1996), and argument structures (Grimshaw 1990; Nelson 1999). Contrasts among languages have always been a fascinating topic in linguistics and many studies have done through exploring diverse topics in languages. For example, Kitis (2008) examined *fear* predicates in English and Modern Greek to see how *fear* acts as a motion verb and expresses one's emotion.

Why is Emotion a better topic when comparing different languages? Since Wierzbicka (1992) argued that there are no universal emotion concepts, and that emotion terms cannot be neatly matched with concepts in other languages or cultures, Emotion serves to be a better perspective to examine contrasts when languages are to be compared. Besides, conceptual archetypes include the experience of perceiving, of thinking, and of feeling emotions in mental sphere (Langacker 1999). They are one of the bases for the basic grammatical constructs to have semantic characterizations. As a result, emotion is thus coded differently in different language groups if they may not, as Wierzbicka (1992) suggested, share neatly-matched emotion conceptual archetypes, which build up the foundation of one's linguistic behavior earlier. Wierzbicka (2001) also pointed out that "emotion words reflect certain cultural models and in turn pass on values, preoccupations and frames of reference of the society." With a specific look

into emotion predications of a language, the conceptual background of a language is thus to be understood better.

In this sense, this paper aims to show a thorough investigation and s detailed contrast of emotion in English and Mandarin in terms of semantic properties and syntactic behaviors. With this in mind, I here adopt Berkeley FrameNet Project (<http://www.icsi.berkeley.edu/~FrameNet/>) on English emotions and Hong's (2009) detailed classification of Mandarin emotion verbs.

1.1 Previous studies in emotion predication

1.1.1

Emotion verbs are a sub-category of psych-verbs classified by Levin (1993) to denote psychological states. In her book, she also classified psych verbs in to four subclasses.

- (7) Levin (1993)'s psych-verb classification
- A. Amuse verbs: transitive verbs whose object is the experiencer and whose subject is the cause of the change.
 - B. Admire verb: transitive verbs with experiencer-subject.
 - C. Marvel verb: intransitive, experiencer as subject, express the stimulus/object of emotion in a PP headed by one of a variety of prepositions.
 - D. 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.

She classified these verbs according to their syntactic behavior. She lined out some properties and alternations each verb group owns. For example, *Amuse* verbs contain Middle Alternation, PRO-Arb Object Alternation, Possessor Subject Possessor-Attribute Factoring Alternation, Extraposition of sentential complements, and more. *Admire* verbs also has Possessor Subject Possessor-Attribute Factoring Alternation as well as Attribute Object Possessor-Attribute

Factoring Alternation, Extraposition of Sentential Complements and so on. Some members of *Marvel* verbs can take Passive while all the members of this set are intransitive verbs that take an Experiencer subject and the stimulus/object of emotion in a prepositional phrase. Last, *Appeal* verbs are the smallest group of the four and members in this class are intransitive verbs taking Stimulus as subject.

Levin shed light to us that not only syntactic properties but also semantic properties need to be taken into consideration.

1.1.2

Tsai et al. (1996) showed that syntactic contrasts can be predicated from lexical semantics and emphasizes the importance of interactions between lexical semantic properties and syntactic behaviors. They explored the near-synonym pair of emotional state verbs, 高興 *gaoxing* ‘be happy’ and 快樂 *kuatile* ‘be glad’, and found that the two verbs can be distinguished from each other according to their syntactic distribution.

Table 1: *The syntactic distribution of 高興 gaoxing ‘be happy’ and 快樂 kuaile ‘be glad’*

Verb	<i>gaoxing</i> 高興 (280) ‘be glad’	<i>kuaile</i> 快樂 (365) ‘be happy’
Predicate	224 (80%)	119 (32%)
Complement	8 (3%)	17 (5%)
Adverbial	47 (17%)	30 (8%)
Adjective		116 (33%)
Nominalized	1 (0.3%)	83 (23%)

They have also proposed that these syntactic contrasts can be specified by applying lexical features < \pm change of state> and < \pm control> and concluded that the two verbs are different in the following four aspects.

(8) *The syntactic behavior of 高興 gaoxing ‘be happy’ and 快樂 kuaile ‘be glad’,*

- A. *gaoxing* takes sentential objects while *kuaile* cannot.
- B. *gaoxing* can take the sentential final particle *le* 了 while *kuaile* cannot.
- C. *gaoxing* never occurs in wish sentences but allows evaluative sentences while *kuaile* behaves oppositely.
- D. *gaoxing* can be used in imperative sentences while *kuaile* cannot.

Table 2: *The syntactic behavior of 高興 gaoxing ‘be happy’ and 快樂 kuaile ‘be glad’*

	Sentential obj.	S-final part. le 了	Wish S/ Evaluative S	Imperative
gaoxing 高興	+	+	- / +	+
kuaile 快樂	-	-	+ / -	-

1.1.3

Chang et al. (2000) elaborated Tasi et al.’s paper to extend the near-synonym pair to the whole emotion verb class. They classified Mandarin emotion verbs into seven categories, Happiness, Depression, Sadness, Regret, Anger, Fear, and Worry. Next, they proposed that for each semantic field, there are two covering terms that form a Covering Contrast Pair. By using five distributional criteria, they created bipartite classification of the verbs of emotion in which type A is similar to 高興 *gaoxing* ‘be glad’ while type B is similar to 快樂 *kuaile* ‘be happy’.

(9) Bipartite classification of emotion verbs

A. Type A verbs:

- a. Function mostly as predicate and are seldom used deverbally
- b. Strict selectional restrictions on the head when they function as adjuncts
- c. Can appear in imperative or evaluative constructions
- d. Can represent inchoative state
- e. Can take causes or goals as their direct object

B. Type B verbs:

- a. Are the predominant choice in a deverbal context
- b. Looser selectional restrictions on the head when they function as adjuncts
- c. Seldom used in imperative or evaluative constructions
- d. Rarely represent inchoative state
- e. Seldom take causes or goals as their direct object

Chang et al. generalized that type A verbs are preferred for indicate transition while type B verbs are preferred for homogeneity. Moreover, they came up with a semantic interpretation of the preferred sub-lexical structure, the morphological structures of these compound verbs, and argued that, with type B verbs all being VV compounds, VV compounds are preferred to represent homogeneous states as exemplified in the below.

(10) Morphological make-up of verbs of Type A and B

A. Type A: 高興 *gaoxing* 'be glad'(non-VV), 難過 *nanguo* 'sad'(non-VV)

B. Type B: 快樂 *kuaille* 'be happy'(VV), 痛苦 *tongku* 'suffering'(VV)

In summary, Levin (1993) grouped psych-verbs according to their transitivity, while Tsai et al (1996) and Chang et al (2000) studied both semantic and syntactic properties of Mandarin emotion verbs. The former may successfully comprise most verbs, but such categorization was

rather general. The latter two only provided a preliminary investigation of representative emotion verbs, leaving the rest emotion unstudied. When comparing the emotion verbs in different languages, it is hard to find equivalent data within languages we wish to account for. So, it can never be examined at the same time how languages present the same idea, or psychological state.

1.2 Aims of this thesis

Through comparing the English and Mandarin emotion verbs, we can obtain more details of how emotion is conceptualized in both languages. In English, the FrameNet project conducted by UC Berkeley has provided us a thorough investigation on emotion verbs. FrameNet divided English emotion verbs into 13 categories under semantic and syntactic features. Although it provided probably the most detailed analysis of English emotion verbs, the lack between semantic and syntactic connections opens up a gap in its analysis. On the other hand, Beth Levin in *English Verbs* (1993) showed us that for each verb class it contains an alternation as the basic element of classification. In Hong (2009), she adopted such idea and tried to find out unique alternations for each emotion frame. By exploring the differences in predicating 'emotion' in the two languages, Mandarin and English, this thesis will study the emotion predication by adopting lexical semantics (Fillmore and Atkins 1992) and Construction Grammar (Goldberg 1995). Emotion words are able to carry abundant cultural meanings, of which provides obligatory as well as optional semantic properties of these words anchoring in various frames. Nonetheless, the sentence patterns, i.e. constructions, according to Goldberg (1995), provide the form-meaning correspondence that exists independently of particular verbs.

Moreover, Chapter 2 provides the theoretical background adopted by this paper and explains the methodology. A clear introduction to emotion frames in English and in Mandarin will be presented in Chapter 3. Chapter 4 consists of analysis and contrast and conclusion is drawn in Chapter 5.

Chapter 2

Theoretical Framework and Methodology

2.1 Theoretical Framework: Frame semantics

Frame semantics, proposed by Fillmore and Atkins (1992), is a model of the semantics of understanding. For example, girls, boys in frame semantics suggest frames not just biological sexual discrimination but also different in attitudes and behaviors. Word concept in a lexical semantic level can only denote a sense, like the word *scar* may not just be a feature of one's skin. In a frame-based semantics, *scar* can have a broader meaning as the process of healing. According to them, frame semantics identifies the semantic roles, i.e., frame elements, to provide an overall picture of the frame even if no naturally-occurring sentence possesses all the frame elements at the same time. A group of words build up the frame meaning instead of a mere word. Therefore, words within the same frame may arouse a shared concept. As well as semantic concept, syntactic construction is engaged in constructing a frame. Situated in different syntactic positions, an NP can be realized as different semantic roles.

In a cross-linguistic case, frame semantics can contribute more in interpreting a similar idea carried by words. For example, *eat* in English can take both human and non-human as its eater, while German has two words, *essen* and *fressen* for eat of which the former eater is a human but the latter is a nonhuman eater. Thus, *fressen* in its frame-semantic reading is related to animal-like, rudeness. (Croft & Cruse 2004) Such word can still be used to describe a human eater in German; however, it may lead to an insulting interpreting.

Overall, frame semantic helps to classify words that share similar semantic concept and participants. Fillmore further projected this approach to establish a well-organized web-based interface for user to look up lexical meanings and collocation patterns.

2.2 Methodology

Since there has been research done on the topic of psychological verbs in both English and Mandarin, it is important to decide the source data for comparison. Among all the studies, Berkeley FrameNet Project (<http://framenet.icsi.berkeley.edu/>) has done a thorough investigation on most English content words, including emotion predication. On the contrary, we rarely see a detailed and systematic investigation on Mandarin psychological predications as FrameNet. However, Hong (2009) examined most emotion verbs in Mandarin and provided a complete analysis. Thus, this paper uses FrameNet project and Hong (2009) as the representative studies of the two languages, and follows the next steps.

- (11) Step 1: Present emotion predication categorizations in English and in Mandarin
- Step 2: Observe data
- Step 3: Analyze data
- Step 4: Compare frame-to-frame relations of English and Mandarin emotions

In this paper, Step 1 is as Chapter 3, which presents the description, core frame elements, examples and lexical units of each emotion frame. The core frame elements will be presented in a table with a definition and an explicative example. Step 2 to 4 are completed in Chapter 4. We observe the semantic, Situation type and Participants, and syntactic features of these frames. Then, we analyze our observation and try to conclude the similarity and dissimilarity of English and Mandarin emotion frames. Finally, we make a frame-to-frame comparison to understand what emotion expressions in English and Mandarin may share higher sameness or more differences. By doing so, we become clearer about English and Mandarin conceptualization of emotions.

Chapter 3

Emotion frames in English and Mandarin

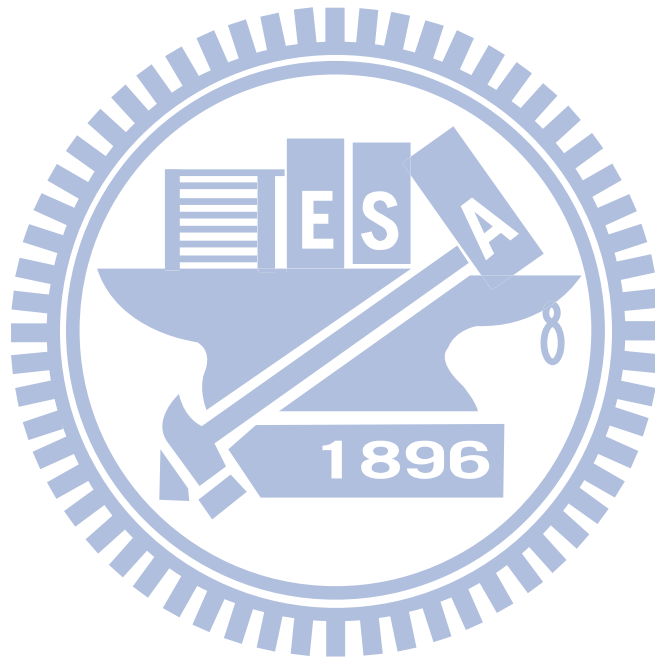
In this chapter, I will present the categorization of both English and Mandarin emotion predication in FrameNet and Hong (2009) respectively. Both projects give a clear layer-relation to show child-frames. Although not only semantic properties but also syntactic behaviors are taken into consideration, morphological features also play an important role in classification.

3.1 Emotion frames in English

The top layer of emotion predication in FrameNet is Emotions. Emotions frame is defined that an Experiencer has a particular emotional State, describing a long-lasting emotion experience provoked by Stimulus, which can be categorized by a Topic. Besides, Emotions may exist in a particular Event of which the participants are Experiencers of the emotion, or be expressed through an Expressor, a body-part of gesture indicating the Experiencer's state to an external observer. These six core frame elements, Experiencer, State, Stimulus, Topic, Event, and Expressor, are shared by its child-frames. In the following paragraphs, child generation of Emotions is introduced in terms of definition, core frame elements and additional frame information.

In the child generation of Emotions are 13 frames (as in Figure 1). Emotions is used by Contrition, Desiring, Emotion_active, Emotion_directed, Emotion_heat, Experiencer_obj, Feeling, Forgiveness, Judgment, and Predicament. They use Emotions as background, which means they describe emotional events or states. In addition to these ten frames, Emotions is inherited by Emotion_by_stimulus while perspectivizing in Experiencer_focus as well as in Stimulus_focus. Since inheritance is the strongest relation in FrameNet, it suggests the semantics of Emotions frame equal to or correspond to a specific fact of the child, Emotion_by_stimulus. Similar to the “using” relation, “perspective_on,” in fact, provides a refined relation between the

Emotions and Experiencer_focus and Stimulus_focus. Such relation normally implies two or more viewpoints from the originally neutral parent frame. The following paragraphs will introduce child frames of Emotions from Emotion_by_Stimulus frame, which is the most strongly related to the parent frame, then to frames of the relation, Using of, of which contains the most frames, and to the two frames of relation, Perspectivized in.



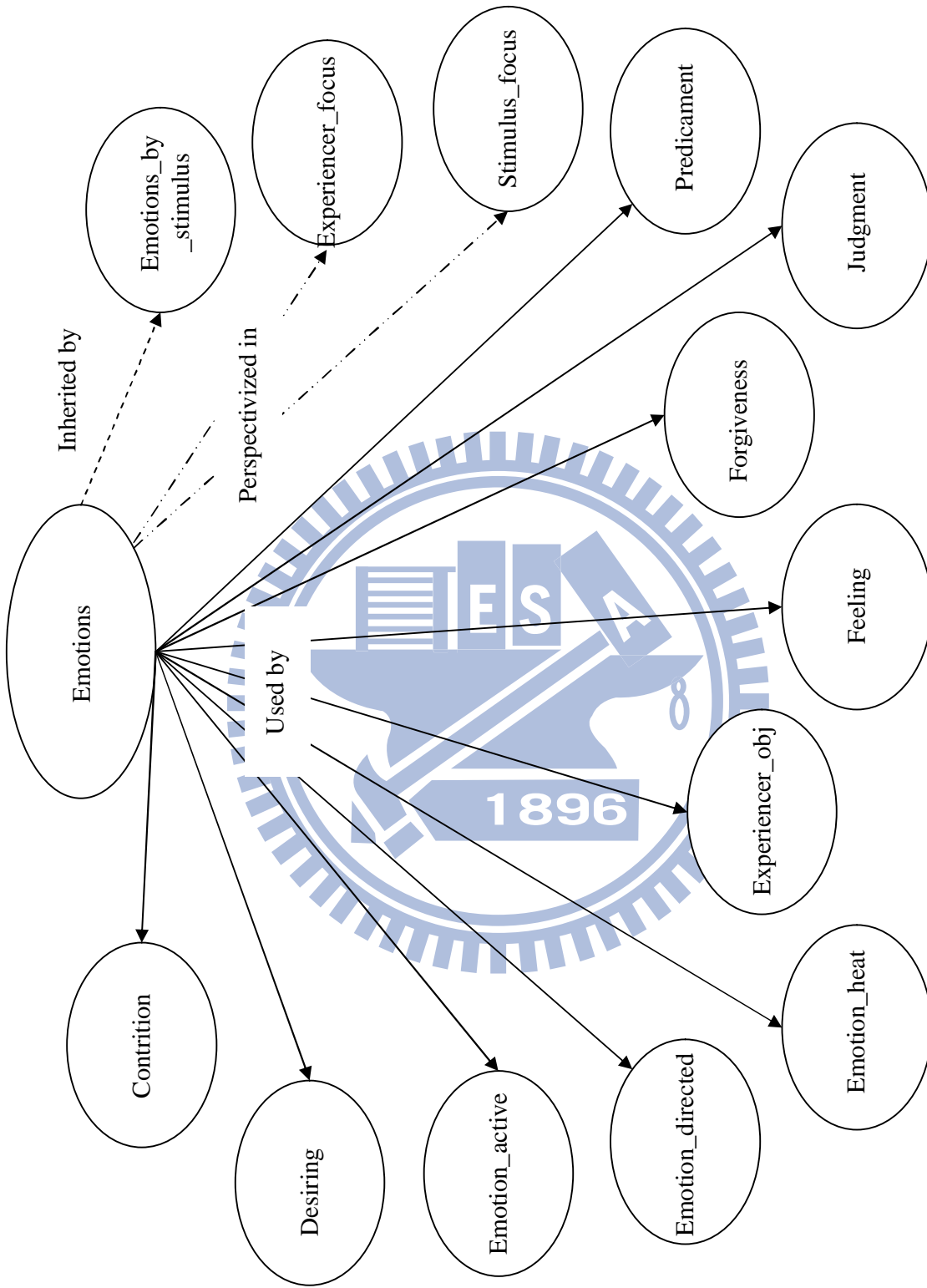


Figure 2. FrameNet's categorization of emotion

3.1.1 Inheritance

3.1.1.1 Emotions_by_stimulus frame

The definition of this frame is that an **Experiencer**¹, **Expressor**, **Event**, or **State** has an emotion as brought on by a **Stimulus** or **Topic**. It contains lexical units of *glad*, *joyful*, and *jubilant*. Below are some examples.

(12) The [joyful_{EMOTIONS_BY_STIMULUS}] reunion took place on Sunday.

(13) The Polish-born Pope was driven past [jubilant_{EMOTIONS_BY_STIMULUS}] [crowds_{EXPERIENCER}].

(14) [I_{EXPERIENCER}] am [glad_{EMOTIONS_BY_STIMULUS}] [about the sheep_{TOPIC}].

This is the inherited frame from Emotions which inherit most features of the parent frame and also has an identical correspondence to it. Figure 2 shows the relationship of Emotion_by_stimulus and its parent frame. Frame elements of this frame are listed in table 3.

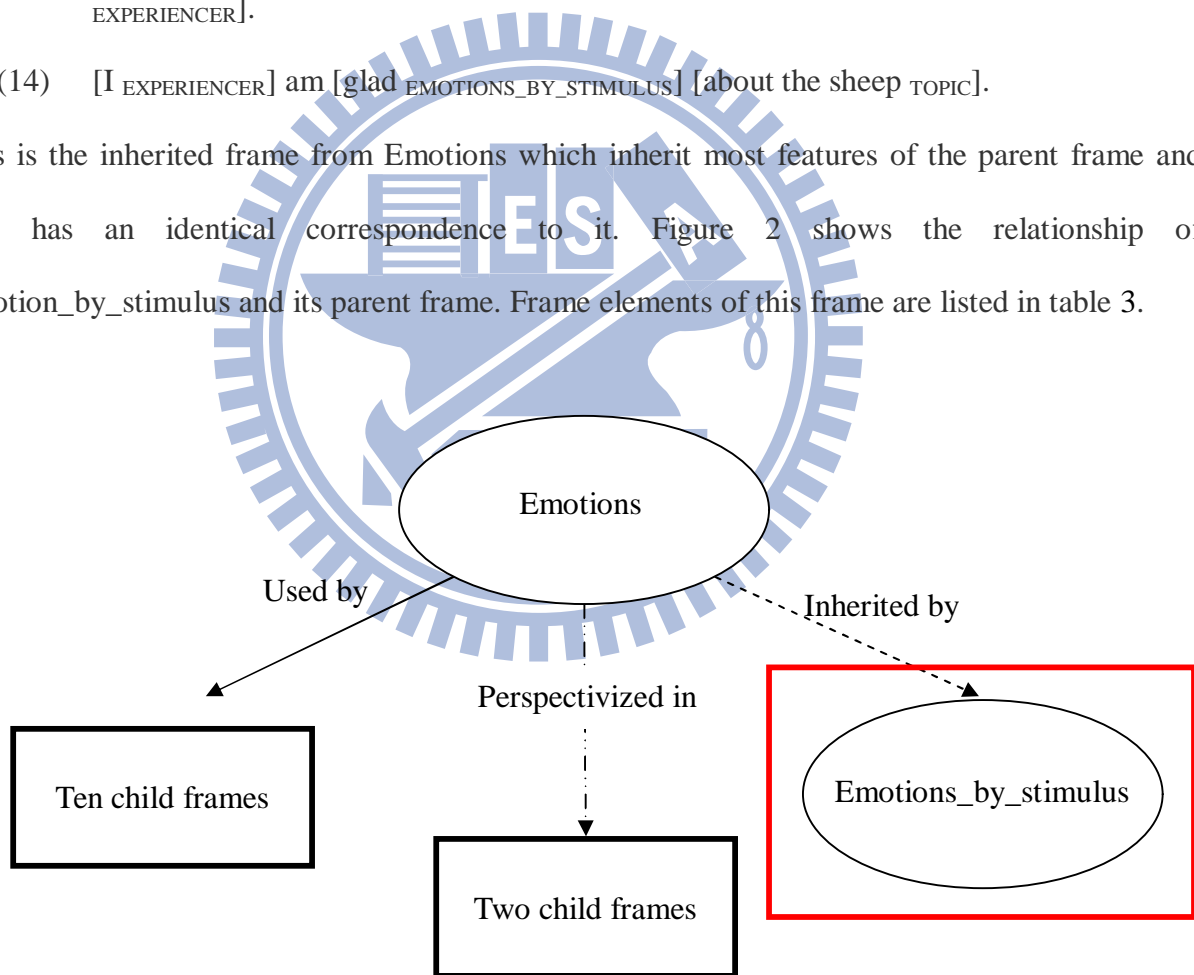


Figure 2. *The Relationship between Emotion_by_stimulus and Emotions*

¹ Greyed words are the frame elements of the discussed frame.

Table 3: List of core frame elements of Emotion_by_stimulus frame (FrameNet)

Core frame elements	Definition and example
Event	<p>The Event is the occasion or happening that Experiencers in a certain emotional state participate in.</p> <p>Example: I am helping them to have the joyful [birth <small>EVENT</small>] they want.</p>
Experiencer	<p>The Experiencer is the person or sentient entity that experiences or feels the emotions.</p> <p>Example: At Medicine Man's ragtime dance contest, a jubilant [girl <small>EXPERIENCER</small>] drove the crowd wild.</p>
Expressor	<p>The body part, gesture, or other expression of the Experiencer that reflects his or her emotional state. They describe a presentation of the experience or emotion denoted by the adjective or noun.</p> <p>Example: He met me with a glad [face <small>EXPRESSOR</small>].</p>
State	<p>The State is the abstract noun that describes a more lasting experience by the Experiencer.</p> <p>Example: Putin's initiative caused joyful [excitement <small>STATE</small>] in Baku on Friday.</p>
Stimulus	<p>The Stimulus is the person, event, or state of affairs that evokes the emotional response in the Experiencer.</p> <p>Example: [Putin's <small>STIMULUS</small>] initiative caused joyful excitement in Baku on Friday.</p>
Topic	<p>The Topic is the general area in which the emotion occurs. It indicates a range of possible Stimulus.</p> <p>Example: Earl is jubilant [about his new swim trunks <small>TOPIC</small>].</p>

3.1.2 Using of

Next, the ten frames of the relation, Using of, are introduced in alphabetical order. They share the same child frame level as Emotion_by_stimulus frame (Figure 3).

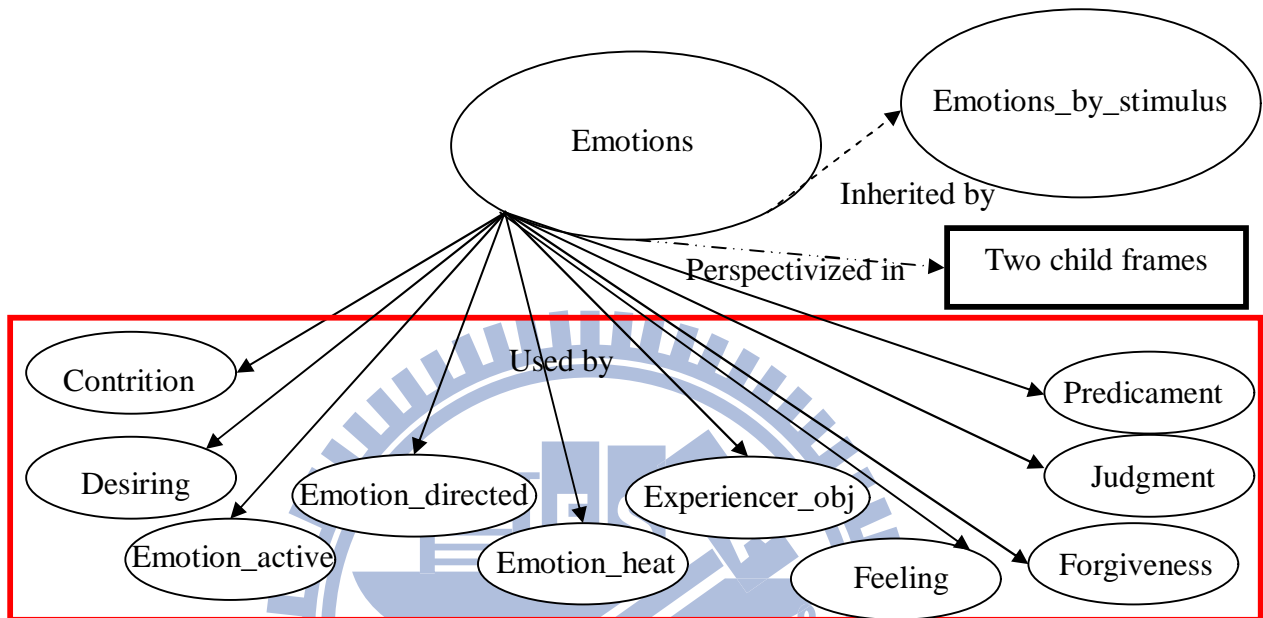


Figure 3. The ten frames of Using-of relation to Emotions

3.1.2.1 Contrition frame

The definition is that an **Experiencer** feels bad about a choice, an **Action**, or a failure to doing something, which they now consider to have been a mistake or wrong. Experiencer may show his or her emotional state in gestures or facial expressions, viz. an **Expressor**. The frame has representative examples,

(15) [Smithers_S EXPERIENCER] did not [repent CONTRITION] [of his crime ACTION]

and

(16) It is God who rejoices at the [repentance CONTRITION] [of his sinner EXPERIENCER].

The lexical units contains *contrite, contrition, guilt, guilty, penitence, penitent, remorse, remorseful, remorseless, repent, repentance, repentant, rue, rueful, sorry,* and *unrepentant*. Core frame elements are not just the grayed words in definition, Experiencer, Action, Expressor, but also **Emotional_state** is the frame element (FE) that is included in this frame (see Table 4).

Table 4: *List of core frame elements of Contrition frame (FrameNet)*

Core frame elements	Definition and example
Action	<p>The FE Action marks expressions that indicate a prior action that the Experiencer has come to feel bad about.</p> <p>Example: They confessed and repented [their actions against the Soviet Union ACTION].</p>
Emotional_state	<p>The FE Emotional_state is modified by an adjective that indicates the Experiencer is contrite.</p> <p>Example: Martha had a guilty [conscience EMOTIONAL_STATE] after selling inferior merchandise.</p>
Experiencer	<p>The FE Experiencer indicates the person who experiences the emotion about their prior action.</p> <p>Example: [Smithers EXPERIENCER] was contrite about his wrongdoings.</p>
Expressor	<p>The FE Expressor marks expressions that indicate a gesture or body part which is displaying the Emotional_state of the Experiencer.</p> <p>Example: Repentant [tears EXPRESSOR] welled to his eyes.</p>

3.1.2.2 Desiring frame

This frame is defined that an **Experiencer** desires that an **Event** occurs. Sometimes, the Experiencer is an active participant in the Event of which the Event itself is often not mentioned, but rather some **Focal_participant** which is involved subordinately. Generally, the lemmas in this frame imply that the Event has not yet happened, but that Experiencer believes that they would be happier if it did. In some cases, the **Time_of_Event**, **Purpose_of_Event**, or the **Location_of_Event** are mentioned without the clear mention of the Event.

(17) [I EXPERIENCER] only [wanted DESIRING] [one piece of candy FOCAL_PARTICIPANT].

(18) [The company EXPERIENCER] was [eager DESIRING] [for him FOCAL_PARTICIPANT] [to leave as soon as possible EVENT].

(19) [Susan EXPERIENCER] really [wishes DESIRING] [that you 'd listen to her EVENT].

Lexical units in this frame are *ache, ambition, aspiration, aspire, covet, covetous, crave, craving, desire, desire (N), desired, desirous, dying, eager, fancy, feel_like, hanker, hankering, hope, hope, hunger, hunger, hungry, in_hopes_of, in_the_hope_of, interested, long, longing, lust, lust, pine, raring, spoiling, thirst, thirst, thirsty, urge, want, wants, will, will, wish (that), wish, wish, yearn, yearning, yen, and yen (N)*.

Table 5: List of core frame elements of Desiring frame (FrameNet)

Core frame elements	Definition and example
Event	The change that the Experiencer would like to see. Example: The company was eager for him [to leave as soon as possible EVENT].
Experiencer	The Experiencer is the person (or sentient being) who wishes for the Event

	to occur. Example: [The company EXPERIENCER] was eager for him to leave as soon as possible..
Focal_participant	This is the entity that the Experiencer wishes to be affected by some Event. Example: The company was eager [for him FOCAL_PARTICIPANT] to leave as soon as possible.
Location_of_Event	The Location_of_Event is the place involved in the desired Event. Example: I want that box [on top of the other one LOCATION_OF_EVENT].

3.1.2.3 Emotion_active frame

Lexical units, *agonize, fret, fuss, lose_sleep, obsess, obsession,* and *worry* define this frame contains a subject Experiencer, but here the verbs are more 'active' in meaning as they often occur in negative imperatives and occur with Topic expressions and can be used in the present progressive:

(20) Pat is still [worrying EMOTION_ACTIVE] [about the exam TOPIC].

Besides, this frame can be thought of as a blend of a basic emotion frame with Cogitation.

Table 6: List of core frame elements of Emotion_active frame (FrameNet)

Core frame elements	Definition and example
Experiencer	The FE Experiencer indicates the one who is actively expressing emotion over the Topic. It usually occurs as the subject of the verb. Example: [Kim EXPERIENCER] worried about the phone bill.
Topic	The Experiencer's emotion generally is about something. This is indicated

	<p>with a Topic which usually occurs in a PP-Complement.</p> <p>Example: Kim fretted [over the exam <small>TOPIC</small>].</p>
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3.1.2.4 Emotion_directed frame

The adjectives and nouns, e.g., *happy*, *sad*, *anger*, *interest*, in this frame describe an **Experiencer** who is feeling or experiencing a particular emotional response to a **Stimulus** or about a **Topic**. The response occurs under a **Circumstances** or there can be a **Reason** that the Stimulus evokes the particular response in the Experiencer.

(21) Mr. Whiskers is [upset EMOTION_DIRECTED] [that there are no more cat treats STIMULUS].

(22) The [furious EMOTION_DIRECTED] parent stormed into the office.

This frame containing more than 150 lemmas is one of the few emotion frames with a massive number of lexical units. The lexical units are *abashed*, *affronted*, *agitated*, *agitation*, *agonized*, *agony*, *alarmed*, *all about*, *amused*, *amusement*, *anger*, *angry*, *anguish*, *anguished*, *annoyance*, *annoyed*, *anxious*, *appalled*, *ashamed*, *astonished*, *astonishment*, *astounded*, *baffled*, *bafflement*, *befuddled*, *bewildered*, *bewilderment*, *blue*, *bored*, *boredom*, *chagrin*, *chagrined*, *concern*, *concerned*, *contented*, *covetous*, *crestfallen*, *cross*, *dejected*, *dejection*, *delight*, *delighted*, *depressed*, *desolate*, *despair*, *despondency*, *despondent*, *devastated*, *disappointed*, *disappointment*, *discomfited*, *discomfiture*, *disconcerted*, *disconcertion*, *disconsolate*, *discouraged*, *discouragement*, *disgruntled*, *disgruntlement*, *disheartened*, *dismay*, *dismayed*, *disorientation*, *disoriented*, *displeased*, *displeasure*, *disquiet*, *disquieted*, *distress*, *distressed*, *downcast*, *downhearted*, *ecstatic*, *elated*, *elation*, *embarrassed*, *embarrassment*, *embittered*, *enraged*, *exasperated*, *exasperation*, *excited*, *excitement*, *exhilarated*, *exhilaration*, *fascinated*, *fed up*, *fed-up*, *flabbergasted*, *flummoxed*, *flustered*, *frightened*, *furious*, *fury*, *glee*, *gleeful*, *glum*, *glumness*, *gratification*, *gratified*, *grief-stricken*, *grief*, *happy*, *harried*, *heartbreak*, *heartbroken*, *horrified*,

horror, humiliated, incensed, inconsolable, indignant, infuriated, interest, interested, into, irate, irked, irritated, jubilant, livid, low-spirited, lugubrious, mad, miffed, miserable, mortification, mortified, mournful, mourning, mystification, mystified, nervous, nettled, nonplussed, offended, overjoyed, overwrought, peeved, perplexed, perplexity, perturbed, petrified, pleased, puzzlement, rattled, relaxed, resentful, revolted, revulsion, riled, ruffled, sad, saddened, sadness, shocked, sickened, sore, sorrow, sorrowful, startled, stressed, stunned, stupefaction, stupefied, sympathetic, sympathize, sympathy, terror-stricken, thrilled, tormented, traumatised, unsettled, unsympathetic, upset, vexation, vexed, woebegone, worried, and wretched.

Table 7: List of core frame elements of Emotion-directed frame (FrameNet)

Core frame elements	Definition and example
Event	<p>The Event is the occasion or happening that Experiencers in a certain emotional state participate in.</p> <p>Example: The end of the film was filled with jubilant [SCENES EVENT].</p>
Experiencer	<p>The Experiencer is the person or sentient entity that experiences or feels the emotions.</p> <p>Example: Nan Ho turned, [his EXPERIENCER] extreme agitation unnoticed by the Prince.</p>
Expressor	<p>The Frame Element Expressor marks expressions that indicate a body part, gesture or other expression of the Experiencer that reflects his or her emotional state. They describe a presentation of the experience or emotion denoted by the adjective or noun.</p> <p>Example: "Can I help you?" she asked, trying not to let him see the</p>

	amusement [in her blue eyes EXPRESSOR].
State	The State is the abstract noun that describes a more lasting experience by the Experiencer. Example: Tracy was in an irritated [mood STATE].
Stimulus	The Stimulus is the person, event, or state of affairs that evokes the emotional response in the Experiencer. Example: Liz's anger [towards Raquel STIMULUS] dates back to a charity dinner this year.
Topic	The Topic is the general area in which the emotion occurs. It indicates a range of possible Stimulus. Example: I was angry [about the war TOPIC].

3.1.2.5 Emotion_heat frame

Emotion_heat frame contains verbs, *boil, burn, chafe, fume, seethe, simmer, smoulder, and stew*, describing emotional experiences and participate in the locative alternation as in (23) and (24).

(23) I was [boiling EMOTION_HEAT] [with anger EMOTION].

(24) [Anger EMOTION] was [boiling EMOTION_HEAT] [inside me SEAT_OF_EMOTION].

While these words act like support verbs for emotion nouns such as *anger*, the same verbs can be used in the absence of such nouns in (25).

(25) His remarks made me boil (inside).

Table 8: List of core frame elements of Emotion_heat frame (FrameNet)

Core frame	Definition and example
------------	------------------------

elements	
Emotion	The Emotion experienced (usually restricted to words such as anger, fury, rage, passion) can occur as the External Argument or in a PP Complement. Alternatively, there may be no expression of Emotion separate from the target verb: Example: [Rage _{EMOTION}] boiled inside him.
Experiencer	The Experiencer is the individual that experiences the Emotion. Example: [Pat _{EXPERIENCER}] seethed with rage.
Seat of emotion	The words in this frame can occur with an overtly expressed Seat of the Emotion. This frame element occurs as a PP Complement: Example: Fury seethed [within her _{SEAT OF EMOTION}].

3.1.2.6 Experiencer_obj frame

It contains the definition of that some phenomenon (the **Stimulus**) provokes a particular emotion in an **Experiencer** as in (26).

(26) [Nightmare on Elm Street_{STIMULUS}] [scared_{EXPERIENCER_OBJ}] [me_{EXPERIENCER}] silly.

Lexical units in this frame are more than a hundred, and these lemmas are *abash, aggravate, aggrieve, alarm, amaze, anger, annoy, antagonize, astonish, astound, baffle, beguile, bewilder, bewitch, boggle, bore, calm, captivate, charm, cheer, comfort, conciliate, confuse, console, crush, dazzle, delight, demolish, depress, devastate, disappoint, discomfit, disconcert, discourage, dishearten, displease, distress, disturb, embarrass, embitter, enchant, enrage, entertain, enthrall, exasperate, excite, exhilarate, fascinate, faze, flabbergast, floor, flummox, fluster, frighten, frustrate, fulfill, gall, gladden, gratify, hearten, humiliate, impress, incense, infuriate, interest,*

intimidate, intrigue, irk, irritate, madden, mollify, mortify, mystify, nettle, nonplus, offend, outrage, pacify, perplex, perturb, petrify, placate, please, puzzle, rankle, rattle, reassure, repel, revolt, rile, sadden, satisfy, scare, shake, shame, shock, shocker[N], sicken, sober, solace, soothe, spook, startle, stimulate, sting, stir, stun, stupefy, surprise[N], surprise, terrify, thrill, tickle, torment, traumatize, trouble[N], trouble, unnerve, unsettle, upset, vex, vexation[N], and wow.

Table 9: List of core frame elements of *Experiencer_obj* frame (FrameNet)

Core frame elements	Definition and example
Experiencer	The Experiencer reacts emotionally or psychologically to the Stimulus. Example: Horror films terrify [Edna EXPERIENCER].
Stimulus	The Stimulus is the event or entity which brings about the emotional or psychological state of the Experiencer. Example: [The news STIMULUS] greatly alarms all the women of the village.

3.1.2.7 Feeling frame

In this frame an **Experiencer** experiences an **Emotion** or is in an **Emotional_state**. An **Evaluation** of the internal experiential state is also included.

(27) [John EXPERIENCER] [feels FEELING] [[anger towards his mother EMOTION].

(28) [Martha EXPERIENCER] [feels FEELING] [angry EMOTIONAL_STATE].

Inalienably possessed aspects of the Experiencer frequently stand in for the Experiencer.

(29) [Her heart EXPERIENCER] [felt FEELING] [angry EMOTIONAL_STATE].

This frame only takes *emotion, experience, feel, feelings, and full* as lemmas.

Table 10: *List of core frame elements of Feeling frame (FrameNet)*

Core frame elements	Definition and example
Emotion	The Emotion is the feeling that the Experiencer experiences. Example: Patients experience [high anxiety levels EMOTION] at time of admission to hospital.
Emotional_state	The Emotional_state is the state the Experiencer is in. Example: Her heart was galloping so fast that she felt [quite giddy with happiness EMOTIONAL_STATE].
Evaluation	The Evaluation is a negative or positive assessment of the Experiencer regarding his or her Emotional_state. Example: Max was feeling [worse than he'd ever felt in his life EVALUATION].
Experiencer	The Experiencer experiences the Emotion or is in the Emotional_state. Example: After two pints, [he EXPERIENCER] felt a bit better and Ted arrived.

3.1.2.8 Forgiveness frame

This frame is special for there exists no Experiencer not Stimulus frame elements. It is defined that a **Judge** refrains from imposing, or demanding a punishment for an **Evaluee** who has committed an **Offense**. This frame is exemplified in (30) and (31).

(30) [God JUDGE] [forgive FORGIVENESS] [repentant sinners EVALUEE].

(31) Won't [you JUDGE] [forgive FORGIVENESS] [me EVALUEE] for keeping it a secret?

Similar to Feeling frames, lexical units are few, containing only *condone*, *excuse*, *forgive*, *forgiveness*, and *pardon*.

Table 11: *List of core frame elements of Forgiveness frame (FrameNet)*

Core frame elements	Definition and example
Evaluee	The Evaluee is subject to the judgment of the Judge for having committed the Offense. Example: God forgives [repentant sinners EVALUEE].
Judge	The Judge holds the Evaluee responsible for the Offense. Example: Won't [you JUDGE] forgive me for keeping it a secret?
Offense	The Offense is the illicit or unpleasant act committed by the Evaluee. Example: Won't you forgive me [for keeping it a secret OFFENSE]?

3.1.2.9 Judgment frame

In Judgment frame, a **Cognizer** makes a judgment about an **Evaluee** as in (32).

(32) [She COGNIZER] [admired JUDGMENT] [Einstein EVALUEE] for his character.

The judgment may be positive (e.g. *respect*) or negative (e.g. *condemn*), as this information is stored in the semantic types on the Lexical Units of this frame. A specific **Reason** for the **Cognizer's** judgment and a capacity or **Role** in which the **Evaluee** is judged are included.

The core frame elements are listed as below. Lexical Units are *appreciate*, *appreciation*, *appreciative*, *approbation*, *approving*, *blame*, *blame*, *boo*, *contempt*, *contemptuous*, *critical*, *damnation*, *deify*, *deplore*, *derisive*, *disapproval*, *disapprove*, *disapproving*, *disdain*, *disdain*, *disdainful*, *disrespect*, *esteem*, *esteem*, *exalt*, *exaltation*, *fault*, *fault*, *mock*, *mockery*, *prize*, *reprehensible*, *reproach*, *reproachful*, *respect*, *respect*, *revere*, *reverence*, *scorn*, *scorn*, *scornful*, *set store*, *stigma*, *stigmatize*, *stricture*, *uncritical*, *value*, and *vilification*.

Table 12: List of core frame elements of Judgment frame (FrameNet)

Core frame elements	Definition and example
Cognizer	The Cognizer makes the judgment. This role is typically expressed as the External Argument (or in a by-PP in passives). Example: [The boss COGNIZER] appreciates you for your diligence.
Evaluee	Evaluee is the person or thing about whom/which a judgment is made. With verbs this FE is typically expressed as Object: Example: The boss appreciates [you EVALUEE] for your diligence.
Expressor	Expressor is the body part or action by a body part that conveys the judgment made by the Cognizer. Example: She viewed him with an appreciative [gaze EXPRESSOR].
Reason	Typically, there is a constituent expressing the REASON for the Judge's judgment. It is usually a for-PP, e.g. Example: I admire you [for your intellect REASON].

3.1.2.10 Predicament frame

An **Experiencer** in Predicament frame is in an undesirable **Situation**, whose **Cause** may also be expressed.

(33) [The insurers EXPERIENCER] [ended up in CAUSE] the [bind PREDICAMENT] [of having to pay 15 years' taxes SITUATION].

(34) What a [mess PREDICAMENT] [we EXPERIENCER] 're in now!

Lexical Units in Predicament frame are *bind, fix, jam, mess, misfortune, pickle, pinch, plight, predicament, problem, scrape, and trouble*. The core frame elements of Predicament frame is listed in Table 13.

Table 13: *List of core frame elements of Predicament frame (FrameNet)*

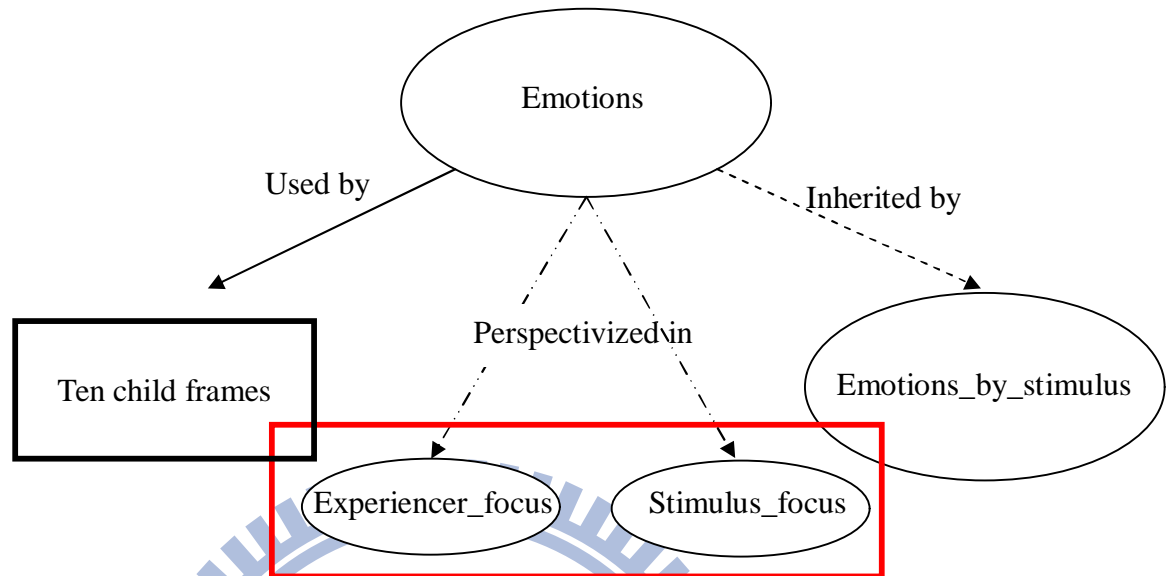
Core frame elements	Definition and example
Experiencer	The Experiencer is in an undesirable Situation. Example: [The insurers EXPERIENCER] ended up in a bind.
Situation	This FE identifies the undesirable Situation the Experiencer is in. Example: They found themselves in a quite [a fix SITUATION].

The previous 10 frames use Emotions as background, which describe emotional events or states. Among them, Emotion_directed has the most lemmas and the second goes to Experiencer_obj frame which contains less than 200 lemmas.

3.1.3 Perspectivized on

The following two frames are perspectivized emotion frames. They are the only frames in Emotions using perspectives. One frame focuses on the participant, Experiencer, and the other, Stimulus, which are the most dominant participants in Emotions. These two frames put their emphasized participant mostly in the position of syntactic subject. Similar to Emotion_by_stimulus frame and Using-of frames, the two Perspectivized-on frames are at the same hierarchy position as them, as exemplified in Figure 4.

Figure 4. *The two frames of Perspectivized-on relation to Emotions*



3.1.3.1 Experiencer_focus frame

The words in Experiencer_focus frame describe an Experiencer's emotions with respect to some Content. A Reason for the emotion may also be expressed. Content may refer to an actual, current state of affairs, or very often it refers to a general situation causing the emotion.

(35) Smoking gives [me EXPERIENCER] extreme [pleasure EXPERIENCER_FOCUS].

With certain verbs, the Circumstances can be expressed in a finite clausal or wh- Complement which may optionally be preceded by a Null NP Object:

(36) [I EXPERIENCER] [hate EXPERIENCER_FOCUS] it [when you do that CIRCUMSTANCES].

Table 14 has listed all the frame elements of this frame with examples. Lexical Units of this frame can take different grammatical forms, including verbs, adjectives, nouns, adjectival passives and adverbs and they are *abhor, abhorrence, abominate, adoration, adore, afraid, agape, antipathy, apprehensive, calm, comfort, compassion, delight, despair, desperation, despise, detest, detestation, dislike, dislike, dissatisfied, dread, dread, empathetic, empathize, empathy, enjoy,*

enjoyment, envy, envy, fazed, fear, fear, fed up, feverish, feverishly, fond, freaked, frightened, fulfilled, fulfillment, grief-stricken, grieve, happily, hate, hatred, interested, intimidated, irritated, like, loathe, loathing, love, luxuriate, mourn, nervous, nettled, pity, pity, pleasure, regret, regret, relish, relish, resent, resentment, rue, rueful, satisfaction, satisfied, savour, scared, solace, taken, terrified, unfazed, upset, worked up, and worried.

Table 14: List of core frame elements of *Experiencer_focus* frame (FrameNet)

Core frame elements	Definition and example
Content	<p>Content is what the Experiencer's feelings or experiences are directed towards or based upon. The Content differs from a stimulus because the Content is not construed as being directly responsible for causing the emotion.</p> <p>Example: Everyone loves [compliments CONTENT].</p>
Event	<p>The Event is the occasion or happening that Experiencers in a certain emotional state participate in.</p> <p>Example: The end of the film was filled with jubilant [scenes EVENT].</p>
Experiencer	<p>The Experiencer experiences the emotion or other internal state.</p> <p>Example: [Everyone EXPERIENCER] loves being complimented.</p>
Expressor	<p>The Frame Element Expressor marks expressions that indicate a body part, gesture or other expression of the Experiencer that reflect his or her emotional state. They describe a presentation of the experience or emotion denoted by the adjective or noun.</p> <p>Example: The delight [on her face EXPRESSOR] was mixed with astonishment.</p>

State	The State is the abstract noun that describes a more lasting experience by the Experiencer. Example: Tracy was in an irritated [mood STATE].
Topic	The Topic is the area about which the Experiencer has the particular experience. Example: Mr. Whiskers was upset [about his cat treats TOPIC].

3.1.3.2 Stimulus_focus frame

In this frame either a **Stimulus** brings about a particular emotion or experience in the **Experiencer** or saliently fails to bring about a particular experience. Some words indicate that the Stimulus is characterized by the experience it is likely to evoke in an Experiencer and the Experiencer may rarely be present. There can be a **Degree** for the gradation of how Stimulus affects the Experiencer and the experience may occur under a **Circumstances**. In addition, a **Comparison_set** is to which the Stimulus is compared and a **Parameter** indicates the area in which the Stimulus has its effect. Typical examples are as exemplified in (37) and (38).

(37) [That movie STIMULUS] was quite [fascinating STIMULUS_FOCUS].

(38) [The report STIMULUS] was very [alarming STIMULUS_FOCUS] [to me EXPERIENCER].

Lexical Units in this frame reached more than 170 words, and they are *abominable, absorbing, aggravating, aggravation, agonizing, agreeable, alarming, alienating, amazing, amusing, annoyance, annoying, appalling, astonishing, astounding, baffling, beguiling, bewildering, bewitching, blood-curdling, boring, bothersome, breathtaking, calming, captivating, charm_((count)), charm_((mass)), charming, cheering, chilling, comforting, comical, confusing, consoling, delight, delightful, depressing, devastating, disagreeable, disappointing, discomfiting, discomfiting, disconcerting, discouraging, disgusting, disheartening, disillusioning, dimaying,*

disorientating, displeasing, distasteful, distressing, disturbing, dreadful, droll, dull, earth-shattering, electrifying, embarrassing, embittering, empty, enchanting, encouraging, engrossing, enjoyable, enraging, entertaining, enthralling, exasperating, exciting, exhilarating, fascinating, formidable, frightening, fulfilling, full, funny, galling, ghastly, gratifying, gripping, hair-raising, harrowing, heart-rending, heart-stopping, heart-warming, heartbreaking, heartening, hilarious, humorous, impressive, infuriating, interesting, intimidating, intriguing, invigorating, irksome, irritating, jaw-dropping, jolly, maddening, mind-boggling, mind-numbing, mortifying, mystifying, nerve-racking, nice, offensive, pacifying, pathetic, perplexing, pitiful, placating, pleasant, pleasing, pleasurable, poignant, reassuring, recreation, relaxation, relaxing, repellent, revolting, rich, rousing, sad, saddening, satisfying, scary, shocking, sickening, side-splitting, sobering, solemn, soothing, spine-chilling, spine-tingling, startling, stimulating, stinging, stirring, stressful, striking, stupefying, surprising, suspenseful, tear-jerking, tedious, terrifying, thorny, thrilling, tiresome, tiring, tormenting, touching, traumatic, traumatising, troublesome, troubling, unexciting, unfulfilling, unfunny, unnerving, unpleasant, unpleasing, unsettling, uplifting, upsetting, vexation, vexatious, vexing, white-knuckle, worrisome, and worrying.

Table 15: *List of core frame elements of Stimulus focus frame (FrameNet)*

Core frame elements	Definition and example
Stimulus	<p>The Stimulus is the object or event which brings about the emotion in the Experiencer.</p> <p>Example: [The view <small>STIMULUS</small>] is breathtaking in January.</p>

From the last two emotion frames in English, it can be seen that Experiencer_focus frame takes adjectival passives as its major lexical units while Stimulus_focus frame mostly take V-ing gerunds. A preference seems to be indicated while we do not go further in this chapter. This issue will be subject to discussion in 4.2.



3.2 Emotion frames in Mandarin

Through corporal observation at Sinica Corpus, Hong (2009) found three major performances of Mandarin emotion verbs.

(39) Type 1- Experiencer as subject

A. Intransitive: without an Object-Target

李華很 高興/生氣/驚訝/失望/安慰/後悔。

li hua hen gaoxing/shengqi/jingya/shiwang/anwei/houhui.

Li Hua very glad/angry/surprise/disappoint/comfort/regret

‘Li Hua is glad/angry/surprised/disappointed/comforted/regretful.’

B. Transitive: with an Object-Target

李華很欣賞/羨慕/喜歡/厭惡/擔心他。

li hua hen xinshang/xianmu/xihuan/yanwu/danxin ta.

Li Hua very appreciate/envy/like/detest/worry him

‘Li Hua appreciates/envies/likes/detests/worries about him’

(40) Type 2 - Stimulus as subject

Intransitive: without an Object-Exp.

這件事很累人/有意思/可惜/令人興奮。

zhe jian shi hen leiren/yousi/kexi/ ling ren xingfen.

this-CL affair very tiring/interesting/pity/exciting

‘This affair is tiring/interesting/a pity/exciting.’

(41) Type 3 - Affecter as subject

Transitive: with an Object- Affectee

我鼓勵/安慰/激怒/吸引他。

wo guli/anwei/jinu/xiyin ta.

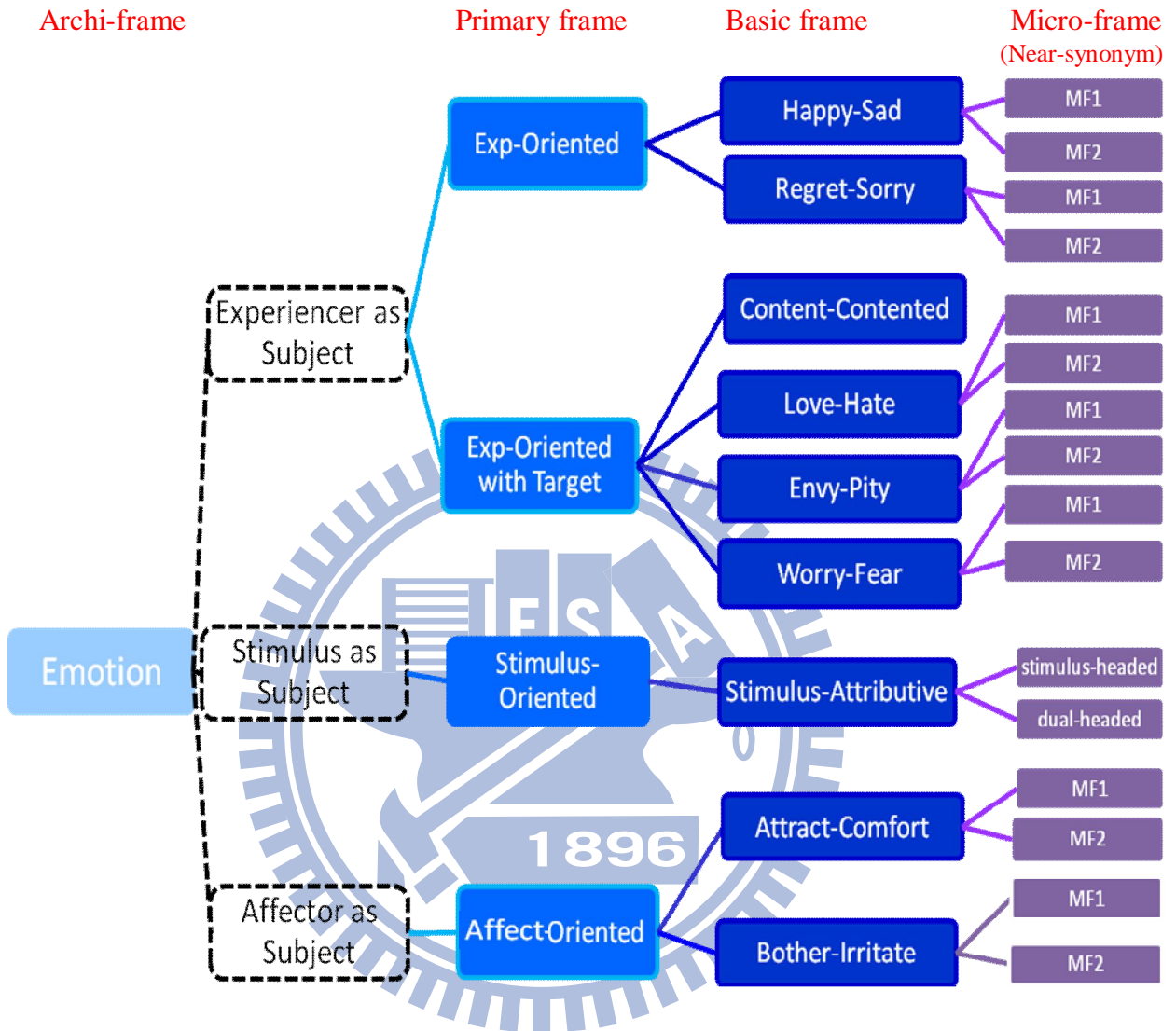
I encourage/comfort/anger/attract him

‘I encourage/comfort/anger/attract him’

She then divided emotion verbs from these three perspectives: Experiencer as Subject, Stimulus as Subject, and Affecter as Subject. Under these three perspectives, primary frames are built up according to their semantic features and syntactic performances. Recalled that FrameNet simply present all the child frames at the same layer, we can clearly see that Mandarin emotion verbs has a more distinguished taxonomy.

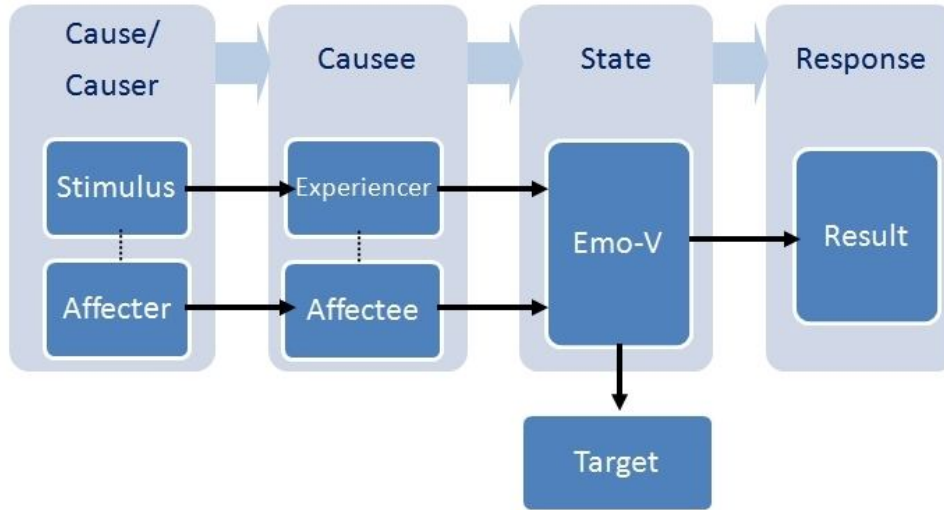
Below these 3 perspectives, Hong classified Mandarin emotion verbs into 4 primary frames adopting Frame semantics (Fillmore and Atkins 1992). Under Experiencer as Subject perspective are Exp-Oriented and Exp-Oriented with Target primary frames. Exp-Oriented primary frame has two basic frames, **Happy-Sad** and **Regret-Sorry** frames but Exp-Oriented with target primary frame contains four basic frames, including **Content-Contented**, **Love-Hate**, **Envy-Pity**, and **Worry-Fear** frames. Under Stimulus as Subject perspective is Stimulus-Oriented primary frame. It contains only **Stimulus-Attributive** frame. Under the perspective of Affecter as Subject, Affect-Oriented primary frame has **Attract-Comfort**, and **Bother-Irritate** basic frames, as in Figure 5.

Figure 5. *Categorization of Mandarin Emotion verbs*



In the following paragraphs, we will introduce the definition, an example, core frame elements and lexical units of each basic frame. Additionally, Hong (2009) proposed an elaborated causal schema (in Figure 6) corresponding to the three perspectives of Emotion archiframe on the basis of the causal relation proposed in Liu (2002).

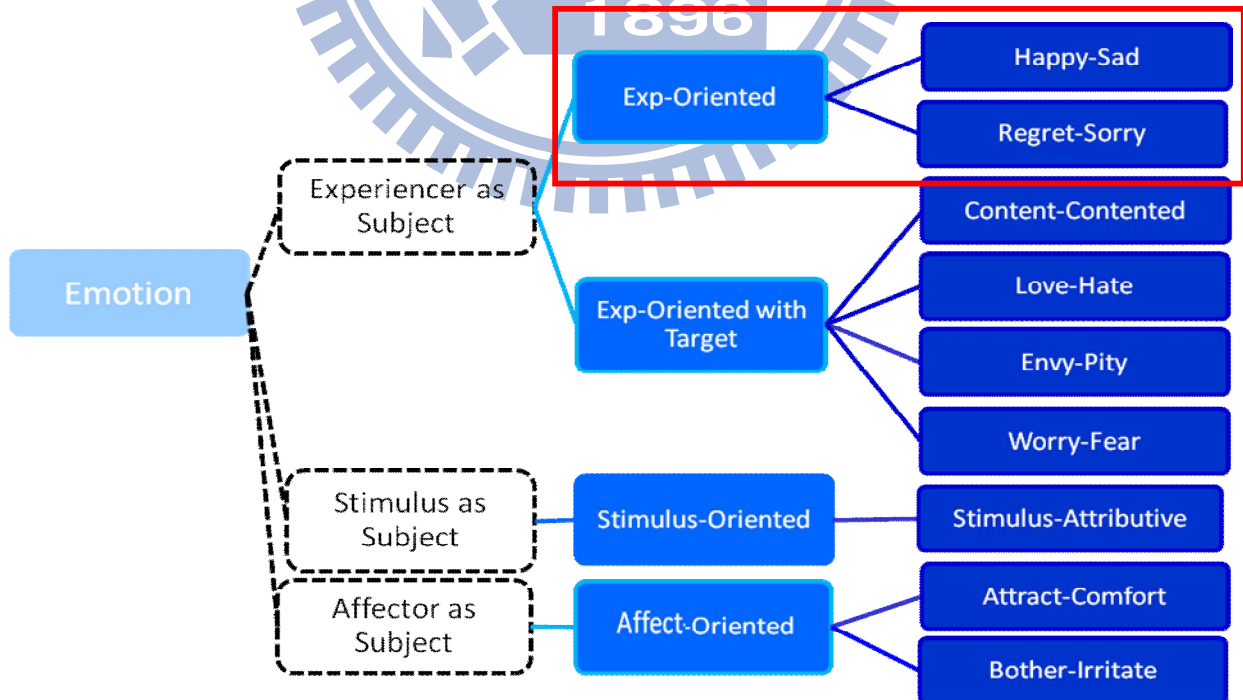
Figure 6. Conceptual schema of Emotion Archiframe in Mandarin



3.2.1 Exp-Oriented

Exp-Oriented primary frame contains two basic frames, Happy-Sad and Regret-Sorry. Both basic frames do not take a direct object Target, and each of them highlights a different frame element, which may help to identify the lemmas they will take.

Figure 7. Exp-Oriented frame and its basic frames (revised from Hong 2009)



3.2.1.1 Happy-Sad frame

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’.

(42) 當 你 現在 很 悲傷， [你 EXPERIENCER]就是 很 [悲傷 HAPPY-SAD]。

dang ni xian zai hen beishang, ni jiu shi hen beishang.

when you now very sad you JIU-SHI very sad

‘When you feel sad at the present moment, it means you ARE sad.’

Table 16 shows the core frame elements of this frame, Experiencer, Target_empathy, Stimulus, and Content.

Table 16: *List of core frame elements of Happy-Sad frame (Hong)*

Core frame elements	Definition and example
Content	<p>The specific reason or detailed account underlying the emotional state.</p> <p>Example:</p> <p>我非常高興[你們要來我家 CONTENT]。</p> <p><i>wo feichang gaoxing nimen yao lai wo jia</i></p> <p>I very glad you will come I house</p> <p>‘I am very glad that you guys are going to come to my house.’</p>
Experiencer	<p>The Experiencer is the person or sentient entity that experiences or feels the emotions.</p> <p>Example:</p>

	<p>[我 EXPERIENCER]很高興，</p> <p><i>wo hen gaoxing</i></p> <p>I very glad</p> <p>‘I am very glad.’</p>
Stimulus	<p>A situation or an entity which arouses a feeling of an Experiencer.</p> <p>Example:</p> <p>[看到成績不好的考卷 STIMULUS]令我很生氣。</p> <p><i>kan-dao chengji bu hao de kaojuan ling wo hen shengqi</i></p> <p>watch-reach grade not good DE test paper make me very angry</p> <p>‘Seeing the bad grade on the test paper makes me very angry.’</p>
Target_empathy	<p>An individual or individuals with which the Experiencer identifies emotionally and thus shares their emotional response.</p> <p>Example:</p> <p>我真是為[她 TARGET_EMPATHY]高興！</p> <p><i>wo zhenshi wei ta gaoxing</i></p> <p>I really for her glad</p> <p>‘I am so glad for her.’</p>

This frame foregrounded Target_empathy. Lemmas in this frame contain 生氣 *shengqi* ‘angry’, 驚訝 *jingya* ‘surprise’, 失望 *shiwang* ‘disappoint’, 高興 *gaoxing* ‘be glad’, 快樂 *kuai* ‘be happy’, 難過 *nanguo* ‘be sad’, 尷尬 *ganga* ‘be embarrassed’, 慚愧 *cankui* ‘be shamed’, 羞愧 *xiukui* ‘be ashamed’, 激動 *jidong* ‘be flushed’, 煩躁 *fanzao* ‘annoyed’, 悲哀 *beiai* ‘be sad’, 痛苦 *tongku* ‘pain’, 悲傷 *beishang* ‘be sad’, 哀痛 *aitong* ‘grief’, 苦惱 *kunao* ‘worry’, 不安 *buan* ‘be

discomfort’, 惱火 *naohuo* ‘be annoyed’, 悲痛 *beitong* ‘grieved’, 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’, and 著急 *zhaoji* ‘be anxious’. It is a similar frame to English Emotion_directed, and they both contain the most lexical units than other frames.

3.2.1.2 Regret-Sorry frame

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.

Table 17: *List of core frame elements of Regret-Sorry frame (Hong)*

Core frame elements	Definition and example
Experiencer	<p>The person who experiences the emotion about a self-initiate prior act by the Experiencer.</p> <p>Example:</p> <p>[佩 EXPERIBNCER]很後悔告訴她自己的事，</p> <p><i>Pei hen houhui gaosu ta ziji de shi</i></p> <p>Pei very regret tell she herself-affair</p> <p>‘Pei regretted telling her her own affairs.’</p>
Prior Act	<p>A prior act that the Experiencer has come to feel bad about.</p> <p>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.</p>

	<p>Example:</p> <p>佩很後悔[告訴她自己的事 PRIOR ACT]，</p> <p><i>Pei hen houhui gaosu ta ziji de shi</i></p> <p>Pei very regret tell she herself-affair</p> <p>‘Pei regretted telling her her own affairs.’</p>
Prior Act_Description	<p>The nominal description of a self-initiate prior act that the Experiencer has come to feel bad about.</p> <p>Example:</p> <p>我很後悔[這個決定 PRIOR ACT_DESCRIPTION]，</p> <p><i>wo hen houhui zhege jue ding</i></p> <p>I very regret this decision</p> <p>‘I regret this decision.’</p>
Stimulus	<p>A situation or an entity which arouses a feeling of an Experiencer.</p> <p>Example:</p> <p>一直到[他最疼愛的兒子曹沖夭折 STIMULUS]他才後悔。</p> <p><i>yizhi dao ta zui tengai de erzi caochong yaozhe ta cai houhui</i></p> <p>till he most love son Chong Cao die young he finally regret</p> <p>‘Not until his lovest son’s early death does he regret.’</p>

This frame foregrounded Prior Act. Lexical units contains 後悔 *houhui* ‘regret’, 懊惱 *aonao* ‘be remorseful’, 懊悔 *aohui* ‘repent’, 悔恨 *huihen* ‘regret’, 痛悔 *tonghui* ‘regret’, 遺憾 *yihan* ‘feel sorry’, 慚愧 *cankui* ‘be shamed’, 愧疚 *kuijiu* ‘be ashamed’, 惋惜

wanxi ‘feel sorry’, 內疚 *neijiu* ‘be guilty’, and 自責 *zize* ‘be remorseful’. (43) is an example of this frame with frame elements tagged.

(43) [佩 EXPERIBNCER]很[後悔 REGRET-SORRY][告訴 她 自己的 事 PRIOR ACT]，

Pei hen houhui gaosu ta ziji de shi

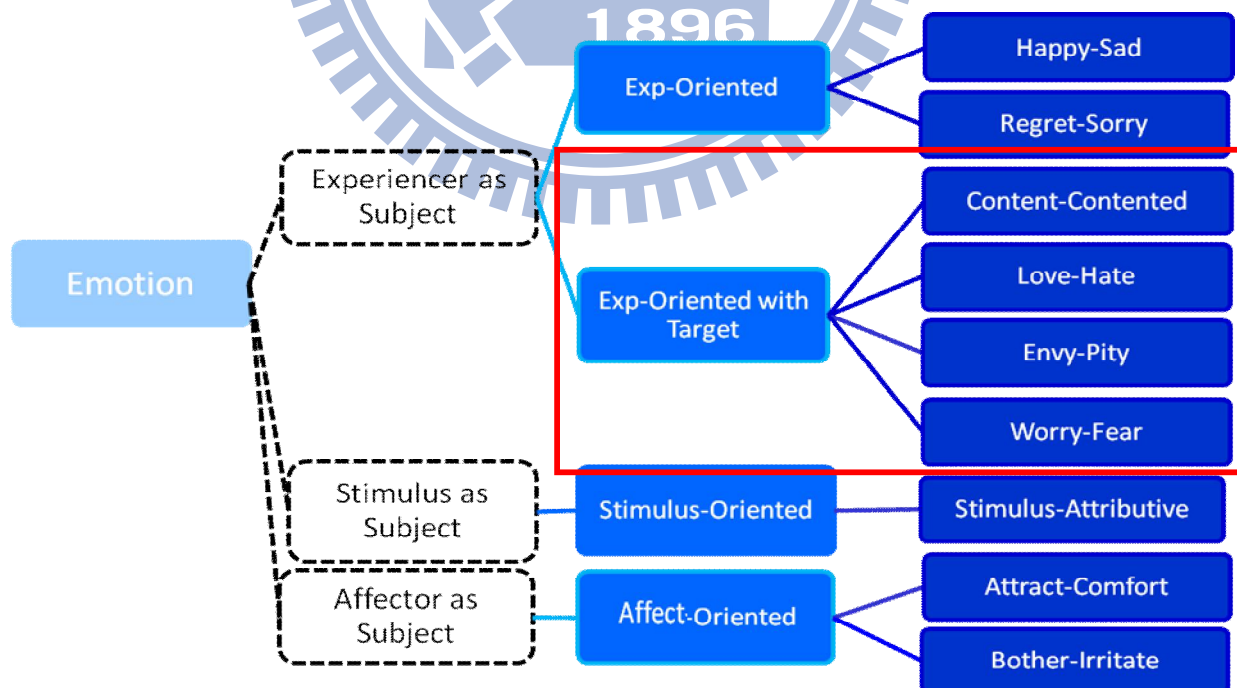
Pei very regret tell she herself-affair

‘Pei regretted telling her her own affairs.’

3.2.2 Exp-Oriented with Target

The primary frame, Exp- Oriented with Target, contains four frames, Content-Contented frame, Love-Hate frame, Envy-Pity frame, and Worry-Fear frame. These frames are normally accompanied by a target, which can be the syntactic noun phrasal, verb phrasal or clausal complement. Therefore, transitive Experiencer-Verb-Target construction is the most common syntactic behavior for these frames.

Figure 8. *Exp-Oriented with Target* frame and its basic frames (revised from Hong 2009)



3.2.2.1 Content-Contented frame

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. (44) and (45) are two examples describing the cross-frame syntactic feature.

(44) 生活 幸福 美滿 [我 EXPERIBNCER]就很 [滿足 CONTENT-CONTENTED]了,

shenghuo xingfu meiman wo jiu hen manzu le.
 life happy satisfying I JIU very satisfy PART

‘As long as my life is happy, I am satisfied.’

(45) 因此公共 空間 的開放 應 先 [滿足 CONTENT-CONTENTED]小 區域

yinci gonggong kongjian de kaifang ying xian manzu xiao quyu
 hence public space DE open should first satisfy small area

多 核心 的社區 空間

duo hexin de shequ kongjian

multiple core DE neighborhood space

‘Hence, the opening of a public space should firstly satisfy the need of a heighborhood space with multiple functions in a small area.’

In order to fulfill these requirement, only 6 lemmas can enter this frame, i.e., 滿足 *manzu* ‘satisfied’, 服氣 *fuqi* ‘submit’, 爽 *shuang* ‘comfortable’, 氣 *qi* ‘anger’, 不滿 *buman* ‘be dissatisfied’, 不捨 *bushe* ‘unwilling to give up’, and 不服 *bufu* ‘unwilling to accept’.

The following table exhibits how each frame element performs in a Content-Contented sentence.

Table 18: *List of core frame elements of Content-Contented frame (Hong)*

Core frame elements	Definition and example
Experiencer	<p>The person who experiences the emotion about a self-initiate prior act by the Experiencer.</p> <p>Example:</p> <p>[他_{EXPERIENCER}]很 [滿意_{CONTENT-CONTENTED}]這個未來的媳婦。</p> <p><i>ta hen manyi zhege weilai de xifu</i></p> <p>he very satisfy this-CL prospective DE daughter -in-law</p> <p>‘He is very satisfied with this prospective daughter -in-law.’</p>
Target_entity	<p>An entity which an Experiencer’s feeling is based on or directly toward. It may be a particular person, group, or inanimate object.</p> <p>Example:</p> <p>他很滿意[這個未來的媳婦_{TARGET_ENTITY}]。</p> <p><i>ta hen manyi zhege weilai de xifu</i></p> <p>he very satisfy this-CL prospective DE daughter -in-law</p> <p>‘He is very satisfied with this prospective daughter -in-law.’</p>
Target_act	<p>An act which is what the Experiencer's would like to do or to avoid.</p> <p>Example:</p> <p>妳 不捨 [離開他_{TARGET_ACT}]。</p> <p><i>ni bushe likai ta</i></p> <p>you unwilling-to-give-up leave him</p>

	‘You are unwilling to leave him.’
Target_situation	<p>A situation which an Experiencer’s feeling is based on or directly toward.</p> <p>Example:</p> <p>吉兒非常滿意[我(要)放棄那無聊的堅持 TARGET_SITUATION] °</p> <p><i>jier feichang manyi wo (yao)fangqi na wuliao de jianchi</i></p> <p>Jill very satisfy I (will) give up that boring DE insistence</p> <p>‘Jill is very satisfied that I will give up/gave up that boring insistence.’</p>
Stimulus	<p>A situation or an entity which arouses a feeling of an Experiencer.</p> <p>Example:</p> <p>[看到這個結果 STIMULUS] 讓我很不爽。</p> <p><i>kan-dao zhege jieguo rang wo hen bushuang</i></p> <p>watch-reach this-CL result make I very uncomfortable</p> <p>‘Seeing the result makes me feel uncomfortable.’</p>

3.2.2.2 Love-Hate frame

The words in Love-Hate 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 a prior event.

Typical construction is as in (46).

(46) [我 EXPERIENCER][愛 LOVE-HATE][數星星 TARGET_ACT]

wo ai shu xingxing

I love count stars

‘I love to count stars.’

The backgrounded frame element is Stimulus besides Experiencer, Target_entity, Target_situation, and Target_act. Stimulus is not the core frame elements as listed in table 19.

Table 19: *List of core frame elements of Love-Hate frame (Hong)*

Core frame elements	Definition and example
Experiencer	<p>The person who experiences the emotion about a self-initiate prior act by the Experiencer.</p> <p>Example:</p> <p>[我 EXPERIENCER]愛數星星</p> <p><i>wo ai shu xingxing</i></p> <p>I love count stars</p> <p>‘I love to count stars.’</p>
Target_entity	<p>An entity which an Experiencer’s feeling is based on or directly toward. It may be a particular person, group, or inanimate object.</p> <p>Example:</p> <p>我愛[爸爸 TARGET_ENTITY]</p> <p><i>wo ai baba</i></p> <p>I love father</p> <p>‘I love my father.’</p>
Target_act	<p>An act which is what the Experiencer's would like to do or to avoid.</p> <p>Example:</p> <p>我愛 [數星星 TARGET_ACT]</p> <p><i>wo ai shu xingxing</i></p>

	I love count stars 'I love to count stars.'
Target_situation	A situation which an Experiencer's feeling is based on or directly toward. Example: 這位年輕人痛恨[主管不公平 TARGET_SITUATION] , <i>zhewei nianqingren tonghen zhuguan bu gong ping</i> this-CL young man detest boss unfair 'This young man detests his boss's unfairness.'

This frame contains lemmas, 愛 *ai* 'love', 喜愛 *xiai* 'like', 喜歡 *xihuan* 'like', 愛好 *aihao* 'love', 熱愛 *reai* 'love', 恨 *hen* 'hate', 痛恨 *tonghen* 'hate', 討厭 *taoyan* 'detest', and 厭惡 *yanwu* 'detest'.

3.2.2.3 Envy-Pity frame

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. Canonical example is like (47).

- (47) 旁人 [羨慕 ENVY-PITY][他 官場 平步青雲 TARGET_SITUATION],

pangren xianmu ta guanchang pingbuqingyun.

others envy he political career going-well

'Other people envy that his political career is going well.'

Besides, among the core frame elements (in Table 20), Stimulus is foregrounded. This frame contains 羡慕 *xianmu* ‘envy’, 嫉妒 *jidu* ‘jealous’, 妒忌 *duji* ‘jealous’, 同情 *tongqing* ‘sympathize with’, 怜悯 *lianmin* ‘pity’, 怜惜 *lianxi* ‘take pity on’, and 可憐 *kelian* ‘sympathize with’.

Table 20: List of core frame elements of Envy-Pity frame (Hong)

Core frame elements	Definition and example
Experiencer	<p>The person who experiences the emotion about a self-initiate prior act by the Experiencer.</p> <p>Example:</p> <p>[旁人 EXPERIENCER]羡慕他官場平步青雲， <i>pangren xianmu ta guanchang pingbuqingyun.</i> others envy he political career going-well ‘Other people envy that his political career is going well.’</p>
Target_entity	<p>An entity which an Experiencer’s feeling is based on or directly toward. It may be a particular person, group, or inanimate object.</p> <p>Example:</p> <p>我很羡慕[你 TARGET_ENTITY] <i>wo hen xianmu ni</i> I very envy you ‘I envy you very much.’</p>
Target_situation	<p>A situation which an Experiencer’s feeling is based on or directly toward.</p> <p>Example:</p>

	<p>旁人羨慕[他官場平步青雲 TARGET_SITUATION],</p> <p><i>pangren xianmu ta guanchang pingbuqingyun.</i></p> <p>others envy he political career going-well</p> <p>‘Other people envy that his political career is going well.’</p>
Stimulus	<p>A situation or an entity which arouses a feeling of an Experiencer.</p> <p>Example:</p> <p>[有錢有閒 STIMULUS]讓人很羨慕。</p> <p><i>you qian you xian rang ren hen xianmu</i></p> <p>have money have free-time make people very envy</p> <p>‘Those who have money and free-time make me feel jealous.’</p>

3.2.2.4 Worry-Fear frame

Lemmas 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. This frame is like English Emotion_active frame since both of them can take progressive aspect.

Lemmas in Worry-Fear frame include 擔心 *danxin* ‘worry’, 擔憂 *danyou* ‘be anxious’, 憂慮 *youlu* ‘be anxious’, 牽掛 *qiangua* ‘be concern about’, 掛心 *guaxin* ‘be concerned with’, 掛念 *guanian* ‘concern about’, 焦慮 *jiaolu* ‘be anxious’, 不安 *buan* ‘be discomfort’, 苦惱 *kunao* ‘worry’, 煩惱 *fannaoy* ‘worry’, 發愁 *fachou* ‘be worried’, 焦急 *jiaoji* ‘anxious’, 不放心 *bu fangxin* ‘feel worry’, 怕 *pa* ‘fear’, 害怕 *haipa* ‘fear’, 懼怕 *jupa* ‘be afraid of’, 畏懼 *weiju* ‘be afraid of’, 恐懼 *kong ju* ‘fear’, 畏 *wei* ‘fear’, 懼 *ju* ‘fear’, 怯 *qie* ‘nervous’, 生怕 *sheng pa* ‘so as

not to’, 關心 *guanxin* ‘be concerned with’, 關切 *quanqie* ‘be concerned with’, 在乎 *zaihu* ‘care about’, 在意 *zaiyi* ‘care about’, and 顧慮 *gulu* ‘scruple’.

(48) is the example of this frame.

(48) 我很 [擔心 WORRY-FEAR][他的健康 問題 TARGET_ENTITY] 。

wo hen danxin ta de jiankang wenti.

I very worry he DE health problem

‘I worry about his health problem.’

Among the core frame elements, Target_possible situation is foregrounded in this frame.

Table 21: List of core frame elements of Worry-Fear frame (Hong)

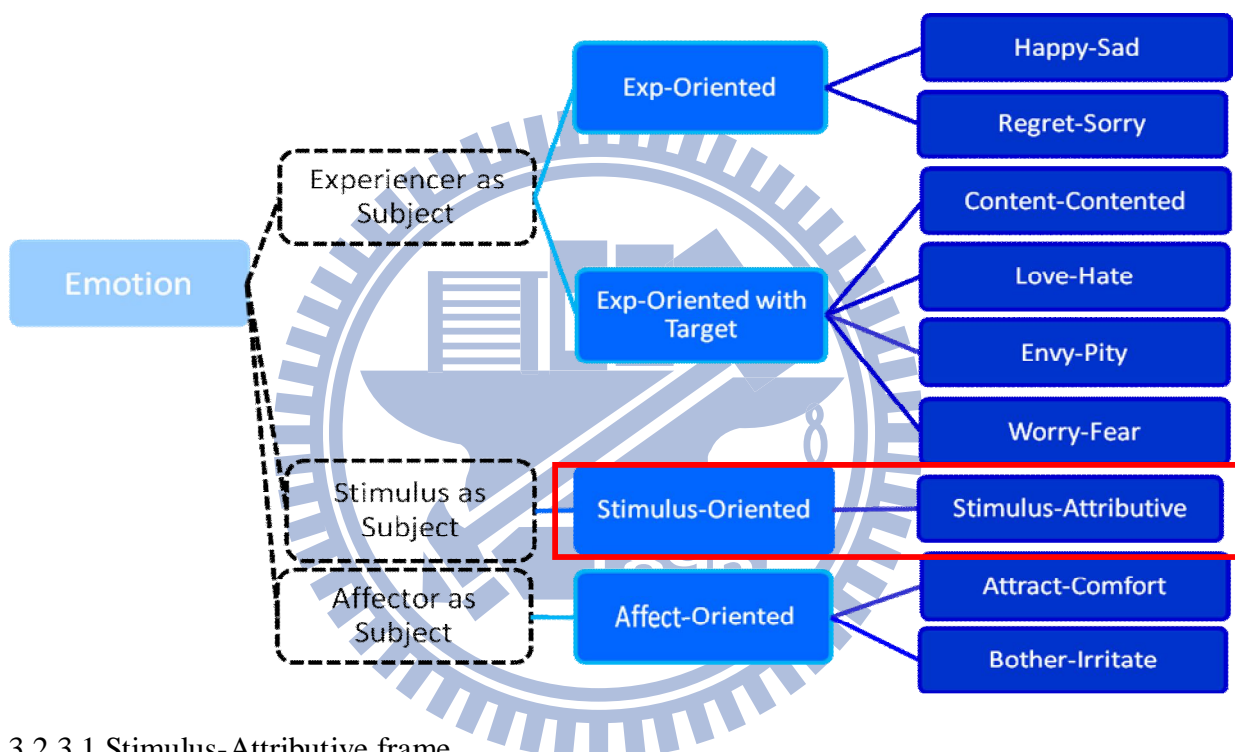
Core frame elements	Definition and example
Experiencer	<p>The person who experiences the emotion about a self-initiate prior act by the Experiencer.</p> <p>Example:</p> <p>[我 EXPERIENCER]很擔心他的健康問題。</p> <p><i>wo hen danxin ta de jiankang wenti.</i></p> <p>I very worry he DE health problem</p> <p>‘I worry about his health problem.’</p>
Target_entity	<p>An entity which an Experiencer’s feeling is based on or directly toward. It may be a particular person, group, or inanimate object.</p> <p>Example:</p> <p>我很擔心 [他的健康問題 TARGET_ENTITY] 。</p> <p><i>wo hen danxin ta de jiankang wenti.</i></p>

	<p>I very worry he DE health problem</p> <p>‘I worry about his health problem.’</p>
Target_possible situation	<p>A situation which an Experiencer’s feeling is based on or directly toward.</p> <p>Example:</p> <p>我擔心[他不再回來 TARGET_POSSIBLE SITUATION]，</p> <p><i>wo danxin ta bu zai huilai</i></p> <p>I worry he not ever come back</p> <p>‘I worry that he will never come back.’</p>
Beneficiary	<p>A human for whom the Experiencer feels the emotion indirectly. It only occurs when the target, either Target_entity or Target_possible situation, of Worry-Fear verbs has existed.</p> <p>Example:</p> <p>我替[他 BENEFICIARY]擔心他的未來。</p> <p><i>wo ti ta danxin ta de weilai</i></p> <p>I for he worry he DE future</p> <p>‘I worry about his future for him.’</p>

3.2.3 Stimulus-Oriented

Since six frames taking Experiencer as Subject have been introduced, the following frames will jump out of the perspective of Experiencer. Next primary frame we are going to launch is Stimulus-Oriented frame. It is the frame taking Stimulus as the syntactic subject and holding only one basic frame, Stimulus-Attributive frame, as in Figure 9.

Figure 9. *Stimulus-Oriented and its basic frame (revised from Hong 2009)*



3.2.3.1 Stimulus-Attributive frame

This frame is the only basic frame in Stimulus-Oriented primary frame. 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. With lemmas as 誘人 *youren* ‘alluring’, 累人 *leiren* ‘exhausting’, 氣人 *qiren* ‘irritating’, 惱人 *naoren* ‘annoying’, 動人 *dongren* ‘touching’, 感人 *ganren* ‘touching’, 迷

人 *miren* ‘charming’, 吸引人 *xiyinren* ‘inviting’, 煩人 *fanren* ‘annoying’, 駭人 *hairen* ‘scaring’, 嚇人 *xiaren* ‘fearful’, 可愛 *keai* ‘lovable’, 可憐 *kelian* ‘pitiable or sympathize with’, 可恨 *kehen* ‘detestable’, 可笑 *kexiao* ‘laughable’, 可悲 *kebei* ‘deplorable’, 可惜 *kexi* ‘pity’, 有趣 *youqu* ‘interesting’, 無趣 *wuqu* ‘boring’, 有意思 *youyisi* ‘interesting’, and 令人興奮 *ling ren xingfen* ‘exciting’, a typical example, (49) denotes Experiencer’s absence .

(49) 這部 電影 很 [感人 STIMULUS-ATTRIBUTIVE] 。

zhe-bu dianying hen gan-ren

this-CL movie very touch-people

‘This movie is touching.’

The core frame element is the one and only Stimulus.

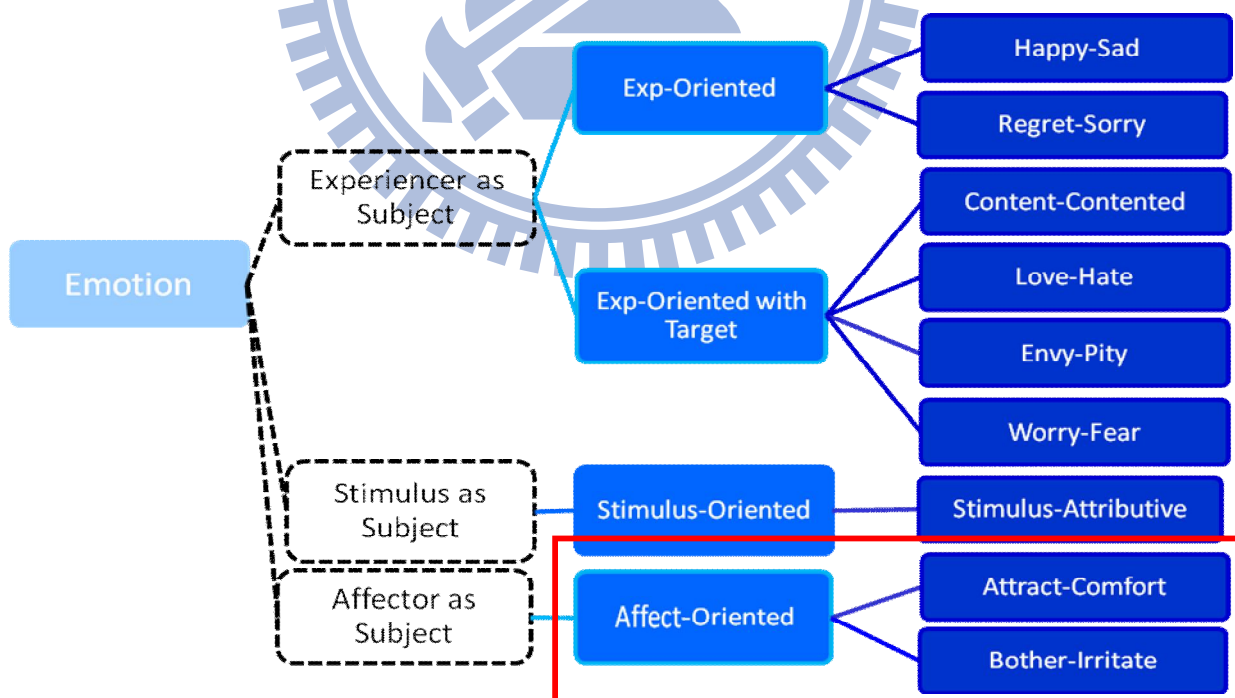
Table 22: *List of core frame elements of Stimulus-Attributive frame (Hong)*

Core frame elements	Definition and example
Stimulus	<p>A situation or an entity which arouses a feeling of an Experiencer.</p> <p>Example:</p> <p>[這部電影 STIMULUS]很感人。</p> <p><i>zhe-bu dianying hen gan ren</i></p> <p>this-CL movie very touch-people</p> <p>‘This movie is touching.’</p>

3.2.4 Affect-Oriented

The last primary frame of Mandarin emotion frames is Affect-Oriented frame. Because the verbs of this primary frame, such as 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’, 折磨 *zhemo* ‘torment’, 打擾 *darao* ‘disturb’, 打攪 *dajiao* ‘disturb’, 惹惱 *renao* ‘anger’, 激怒 *jinu* ‘anger’, 觸怒 *chunu* ‘arouse the anger of’, 惹火 *rehuo* ‘provoke’, emphasizes on the relationship between Experiencer and Stimulus, this frame focuses on an emotional effect or impact between the two elements, which are re-named as Affectee and Affecter. The Affecter is normally a volitional agent, so the effect of the feeling-initiating action is influential, which causes Mandarin emotions to become more active and to translate higher activity.

Figure 10. *Affect-Oriented and its basic frames (revised from Hong 2009)*



3.2.4.1 Attract-Comfort frame

These verbs describe an event whereby an **Affector** 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**. This frame contains 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', and 迷惑 *mihuo* 'confuse'. A typical example of this frame is like (50).

- (50) 我 [鼓勵 ATTRACT-COMFORT] [他們 AFFECTEE] 多 學習，
wo guli tamen duo xuexi
 I encourage them more learn
 'I encourage them to learn more.'

Table 23: List of core frame elements of Attract-Comfort frame (Hong)

Core frame elements	Definition and example
Affector	<p>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.</p> <p>Example:</p> <p>[我 AFFECTER] 鼓勵他們多學習， <i>wo guli tamen duo xuexi</i> I encourage them more learn 'I encourage them to learn more.'</p>

Affectee	<p>A person or sentient entity which undergoes an emotional effect of an action caused by the Affecter and then react emotionally or psychologically.</p> <p>Example:</p> <p>我鼓勵 [他們 AFFECTEE] 多學習，</p> <p><i>wo guli tamen duo xuexi</i></p> <p>I encourage them more learn</p> <p>‘I encourage them to learn more.’</p>
Act	<p>A behavior urged by the Affecter and may or maynot taken by the Affectee after undergoing the emotion impact.</p> <p>Example:</p> <p>我鼓勵 他們 [多學習 ACT]，</p> <p><i>wo guli tamen duo xuexi</i></p> <p>I encourage them more learn</p> <p>‘I encourage them to learn more.’</p>

3.4.2.2 Bother-Irritate frame

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. The volitionality or intention coded in these verbs is stronger than those in Attract-Comfort frame. Lemmas in this frame are 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’, and 氣 *qi* ‘anger’. These lemmas indicate a dynamic event as (51) exemplifies.

(51) [他真摯 的話語 AFFECTER][感動 BOTHER-IRRITATE]了 [大家 AFFECTEE]°

ta zhengzhi de huayu gandong le daijia

his sincere DE words touch PART everyone

‘His sincere words touched everyone.’

Table 24: List of core frame elements of Bother-Irritate frame (Hong)

Core frame elements	Definition and example
Affecter	<p>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.</p> <p>Example:</p> <p>[他真摯的話語 <small>AFFECTER</small>]感動了 大家°</p> <p><i>ta zhengzhi de huayu gandong le daijia</i></p> <p>his sincere DE words touch PART everyone</p> <p>‘His sincere words touched everyone.’</p>
Affectee	<p>A person or sentient entity which undergoes an emotional effect of an action caused by the Affecter and then react emotionally or psychologically.</p> <p>Example:</p> <p>他真摯的話語感動了[大家 <small>AFFECTEE</small>]°</p> <p><i>ta zhengzhi de huayu gandong le daijia</i></p> <p>his sincere DE words touch PART everyone</p>

	‘His sincere words touched everyone.’
Reason	<p>This frame element either refers to a situation or an entity which affects the Affectee to make the result realized or explains why the affecter provokes certain emotional impact on the Affectee.</p> <p>Example:</p> <p>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。</p> <p><i>guoqu ta ceng yin gongji li zongtong de jingji gaige zhengce, jinu ziyou pai renshi</i></p> <p>in-the-past he once because attack Li president DE economic reform policy, anger liberalist</p> <p>‘He once provoked the liberalist because he attacked the economic reform policy proposed by the president Li.’</p>

In Hong (2009), the taxonomy of Mandarin emotion verbs are well-categorized and each frame has a clear sense how to welcome a lexical unit. Previous studies (Levin 1993; Tsai 1996; Chang 2000) applied either semantic features or syntactic performance to classify verbs, which created insufficiency to cover all the verbs or predication in discussion. To sum up, Hong has set up a standard to establish Mandarin frame adopting both Frame semantics and Construction Grammar so as to lay a solid foundation when classifying verbs.

After a detailed survey on English and Mandarin emotion frames, we will compare these two languages semantically and syntactically in the next chapter.

Chapter 4

Analysis and Comparison

Since English and Mandarin emotion predication vary in many ways, the following section will compare the two languages from two major points of view, semantic properties, and syntactic behaviors, blending with the exploration in morphological features. In the first part, the generalization of semantic properties of emotions in both languages is introduced.

4.1 Semantics

4.1.1 Situation

Emotion verbs are more stative (Saeed 2000) because they describe a situation unchanged for its duration. Predications like *love*, *hate*, *glad*, may imply a longer emotional state of an Experiencer and encode a more stative meaning than verbs like *worry*, *disappoint*, *desire*. The latter are capable of using progressive form to denote an on-going process. Their emotion is initiated at the time-point of the stative event.

The predications in Emotions_by_stimulus, Contrition, Emotion_directed, Experiencer_focus, Stimulus_focus and Predicament frames illustrate the quality or essence of a Stimulus or the emotional states aroused by Stimulus in an Experiencer. The massive use of adjectives in these frames implies their lower activity.

(52) Emotions_by_stimulus frame:

I am *glad* about the sheep. (FrameNet)

(53) Contrition frame:

She is *sorry* she broke your vase. (FrameNet)

(54) Emotion_directed frame:

Mr. Whiskers is *upset* that there are no more cat treats. (FrameNet)

(55) Experiencer_focus frame:

John *likes* that I cook him lunch. (FrameNet)

(56) Stimulus_focus:

The view is breathtaking in January. (FrameNet)

(57) Predicament frame:

In Rome I was in the similar *predicament*. (FrameNet)

Similarly, Mandarin Emotion frames, Happy-Sad, Regret-Sorry, Love-Hate, and Stimulus-Attribute, describe the nature of a Stimulus or the emotion in an Experiencer. Three of the four frames, Happy-Sad, Regret-Sorry, and Stimulus-Attribute, tend to be targetless. As a result, they need a prepositional marker 對(於) *dui(yu)* / 向 *xiang* (toward) to lead a Target.

(58) Happy-Sad frame:

掌管動物保育的農委會, 對外國保育團體的控訴很生氣, (Sinica corpus)

zhangguan dongwu baoyu de nongweihui, dui waiguo baoyu tuanti de kongsu hen shengqi

control animal conservation DE Council of Agriculture toward foreign-country conservation group DE accusation very angry

Council of Agriculture which is in charge of animal conservation is angry about the accusation from other conservation groups of foreign countries.

(59) Regret-Sorry frame:

對於這個決定, 我很後悔

duiyu zhege jueding wo hen houhui

toward this decision I very regret

'I regret this decision.'

(60) Love-Hate frame:

我愛爸爸

wo ai baba

I love father

‘I love my father.’

(61) Stimulus-Attribute frame:

這部電影很感人。

zhe-bu dianying hen gan-ren

this-CL movie very touch-people

‘This movie is touching.’

English lemmas in Desiring, Emotion_active, Emotion_heat, Experiencer_obj, Feeling, Forgiveness, and Judgment are more likely to take a verbal form, and to denote an event-like state.

(62) Desiring frame:

I only *wanted* one piece of candy. (FrameNet)

(63) Emotion_active frame:

Pat is still *worrying* about the exam. (FrameNet)

(64) Emotion_heat frame:

He *boiled* with rage. (FrameNet)

(65) Experiencer_obj frame:

Horror films *terrify* Edna. (FrameNet)

(66) Feeling frame:

Martha *feels* angry. (FrameNet)

(67) Forgiveness frame:

God *forgives* repentant sinners. (FrameNet)

(68) Judgment frame:

I *admire* you for your intellect. (FrameNet)

Some of these frames, Emotion_active, Emotion_heat, and Feeling have more chances to use Progressive forms. The duration of these frames seems to be relatively short for the event-like emotional states are achievement (Van Voorst 1996). “He BOILED with rage” from Emotion_heat frame may last a shorter period of time than “He was angry” from Emotion_directed frame because the starting point begins only at the moment “He boiled.” On the other hand, the starting point of “He was angry” can suggest a process leading up to the time point of the speech.

Mandarin frames, Content-Contented, Envy-Pity, Worry-Fear, Attract-Comfort, and Bother-Irritate, encode a dynamic emotion “state.” These frames have also verbal lemmas and are with high transitivity, which leads to a strong requirement of both Experiencer and Target² or Affecter and Affectee to appear in a sentence.

(69) Content-Contented frame:

因此公共空間的開放應先滿足小區域多核心的社區空間

yinci gonggong kongjian de kaifang ying xian manzu xiao quyu duo hexin de shequ kongjian

hence public space DE open should first satisfy small area multiple core DE neighborhood space

‘Hence, the opening of a public space should firstly satisfy the need of a neighborhood space with multiple functions in a small area.’

(70) Envy-Pity frame:

² This strong requirement may not fully apply to Content-Contented frame because it is a frame crossing over primary frames of Exp-Oriented without Target and of Exp-Oriented with Target.

旁人羨慕他官場平步青雲，

pangren xianmu ta guanchang pingbuqingyun.

others envy he political career going-well

‘Other people envy that his political career is going well.’

(71) Worry-Fear frame:

我擔心他不再回來，

wo danxin ta bu zai huilai

I worry he not ever come back

‘I worry that he will never come back.’

(72) Attract-Comfort frame:

我鼓勵他們多學習，

wo guli tamen duo xuexi

I encourage them more learn

‘I encourage them to learn more.’

(73) Bother-Irritate fame:

他真摯的話語感動了大家。

ta zhengzhi de huayu gandong le daijia

his sincere DE words touch PART everyone

‘His sincere words touched everyone.’

We can conclude a comparison between stative and dynamic emotion frames and their representative lemmas.

Table 25: *Semantic situation type in English and Mandarin emotion frames*

Situation	English frames: <i>representative lemmas</i>	Mandarin frames: <i>representative lemmas</i>
Stative	Emotions_by_stimulus: <i>glad</i>	Happy-Sad: 高興 <i>gaoxing</i> ‘happy’
	Contrition: <i>sorry</i>	Regret-Sorry: 悔恨 <i>huihen</i> ‘regret’
	Emotion_directed: <i>happy</i>	Love-Hate: 喜愛 <i>xiai</i> ‘like’
	Predicament: <i>predicament</i>	Stimulus-Attributive: 感人 <i>ganren</i> ‘touching’
	Experiencer_focus: <i>like, interested</i>	
	Stimulus_focus: <i>interesting, exciting</i>	
Dynamic	Desiring: <i>want</i>	Content-Contented: 滿足 <i>manzu</i> ‘satisfied’
	Emotion_active: <i>worry</i>	Envy-Pity: 羨慕 <i>xianmu</i> ‘envy’
	Emotion_heat: <i>burn, boil</i>	Worry-Fear: 擔心 <i>danxin</i> ‘worry’
	Experiencer_obj: <i>scare, frighten</i>	Attract-Comfort: 安慰 <i>anwei</i> ‘comfort’
	Feeling: <i>feel</i>	Bother-Irritate: 打擾 <i>darao</i> ‘disturb’
	Forgiveness: <i>forgive</i>	
	Judgment: <i>admire</i>	

4.1.2 Participants

Another semantic property, Participants, devotes itself to categorizing emotion frames as well. Each frame owns different semantic roles to interpret an emotion. Some roles occur in more

than one frame and cross-frame roles may sometimes be the core elements while Emotions is merely used as the background of these child frames.

Table 26: *Core Frame Elements of English emotion frames*

Frame	Core Frame Elements (Core FEs)
Emotions_by_stimulus	Experiencer, State, Stimulus, Topic, Event, and Expressor
Contribution	Experiencer, Expressor, Action, Emotional_state
Desiring	Experiencer, Event, Focal_participant, Location_of_Event
Emotion_active	Experiencer, Topic
Emotion_directed	Experiencer, State, Stimulus, Topic, Event, and Expressor
Emotion_heat	Experiencer, Emotion, Seat of emotion
Experiencer_obj	Experiencer, Stimulus
Feeling	Experiencer, Emotional_state, Emotion, Evaluation
Forgiveness	Evaluee, Judge, Offense
Judgment	Cognizer, Expressor, Evaluee, Reason
Predicament	Experiencer, Situation
Experiencer_focus	Experiencer, State, Topic, Event, and Expressor, Content
Stimulus_focus	Stimulus

It is observed from the table that each frame includes either Experiencer or Stimulus while only two frames, Forgiveness and Judgment fail. It is not indicated from FrameNet how these two frames use Emotions as background without having either Experiencer or Stimulus as one of their core/non-core frame elements. Additionally, more can be seen from the table that FrameNet intends to use the same name for common frame elements (FEs) in different frames to create coherence, while some elements are frame-sensitive and become distinctly important. In the table

below, frame-sensitive elements are listed as distinct FEs; yet, some common FEs are selected because of their significance in determining whether a predication can be grouped into the frame.

Table 27: *Distinct Frame Elements (FEs) of English emotion frames*

Frame	Distinct FEs:
Emotions_by_stimulus	Experiencer, Stimulus,
Contrition	Action
Desiring	Event, Focal_participant
Emotion_active	Topic
Emotion_directed	Experiencer, Stimulus, Topic
Emotino_heat	Emotion, Seat of Emotion
Experiencer_obj	Experiencer, Stimulus
Feeling	Emotional_state
Forgiveness	Evaluee, Judge
Judgment	Cognizer, Reason
Predicament	Situation
Experiencer_focus	Experiencer, Content
Stimulus_focus	Stimulus

In addition to situation types, these participants of emotion frames provide a standard for emotion predication to be included in a specific frame. For example, verb, *feel*, when taking an Emotional_state as its complement, falls into the category of Feeling frame. If *feel* takes a Phenomenon, it will be grouped to Perception_experience frame.

Many of frames have paid attention to the element Experiencer while it can never be the single distinct frame element. Stimulus, on the contrary, can play the only and vital FE, as in Stimulus_focus frame. This evidential phenomenon leads to the assumption that Stimulus triumphs Experiencer when coding emotions in English. Therefore, we further move on to investigate Mandarin to see if this language favors any particular participant as English does.

Mandarin emotion frames contain recurring FEs in different frames which reflect the same semantic roles and also other core frame-sensitive elements named after its role in the sentences, as different from FrameNet. These frame-specific elements play a crucial role to define each frame and its group members.

Table 28: *Core Frame Elements of Mandarin emotion frames*

Frame	Core Frame Elements (Core FEs)
Happy-Sad	Experiencer, Target_empathy, Stimulus, Content
Regret-Sorry	Experiencer, Prior Act, Prior Act_Description, Stimulus
Content-Contented	Experiencer, Target_entity, Target_act, Target_situation, Stimulus
Love-Hate	Experiencer, Target_entity, Target_act, Target_situation
Envy-Pity	Experiencer, Target_entity, Target_situation
Worry-Fear	Experiencer, Target_entity, Target_possible situation, Beneficiary
Stimulus-Attributive	Stimulus
Attract-Comfort	Affecter, Affectee, Act
Bother-Irritate	Affecter, Affectee, Reason

Very often does Experiencer exist in every frame and the significance of Stimulus in emotions in Mandarin is greatly downward. Although in a Stimulus-oriented frame, Stimulus-Attributive, Experiencer still can be seen. Furthermore, in the Affect-oriented primary frames,

both Comfort-Attract and Irritate-Bother basic frames lose FEs of emotion Experiencer and Stimulus. Alternatively, Affecter and Actor denote a more important role in this “emotional effect.” They are capable to do something to affect Affectee/Undergoer; hence, the emotional state is incorporated within the process of the effect rather than merely in either Actor/Affecter or Undergoer/Affectee’s psychological state.

Different from FrameNet, Hong (2009) delicately proposes foregrounded frame elements to display the uniqueness and clear distinction of each Mandarin emotion frames. The foregrounded FEs are elements deciding frame lemmas and how each frame is conceptualized. With different foregrounded elements, it is easier to clarify the conceptual emphasis of different emotional state in Mandarin.

Table 29: *Foregrounded Frame Elements (FEs) of Mandarin emotion frames*

Frame	Foregrounded Frame Elements (Foregrounded FEs)
Happy-Sad	Target_empathy, Content
Regret-Sorry	Prior Act
Content-Contented	N/A
Love-Hate	N/A (backgrounded Stimulus)
Envy-Pity	Stimulus
Worry-Fear	Target_possible situation
Stimulus-Attributive	N/A
Attract-Comfort	Act
Bother-Irritate	Reason

The foregrounded FEs in Mandarin emotion frames show a high tendency of frame-sensitive elements instead of commonly-shared FEs. Even though the Target is highlighted in many frames,

it is actually the unified named for Targets as nouns, verb phrases or in a clausal form, depending on each frame. What is worthy of discussion here is the Stimulus-Attributive frame. Although Stimulus is the core element selected between Experiencer and Stimulus in Stimulus-Attributive frame, much alike with Stimulus_focus frame in English, the Experiencer is somehow backgrounded and invisible most of the time. We can look at the morphological make-ups of lemmas in this frame.

(74)

A. Subtype 1

VO (verb- people): 誘人 *youren* ‘alluring’, 累人 *leiren* ‘exhausting’, 氣人 *qiren* ‘irritating’, 惱人 *naoren* ‘annoying’, 動人 *dongren* ‘touching’, 感人 *ganren* ‘touching’, 迷人 *miren* ‘charming’, 吸引人 *xiyinren* ‘inviting’, 煩人 *fanren* ‘annoying’, 嚇人 *hairen* ‘scaring’, 嚇人 *xiaren* ‘fearful’

B. Subtype 2

VO (have-NP; not have-NP): 有趣 *youqu* ‘interesting’, 無趣 *wuqu* ‘boring’, 有意思 *youyisi* ‘interesting’, 無聊 *wuliao* ‘bored or boring’

C. Subtype 3

DV (able-verb): 可愛 *keai* ‘lovable’, 可憐 *kelian* ‘pitiable or sympathize with’, 可恨 *kehen* ‘detestable’, 可笑 *kexiao* ‘laughable’, 可悲 *kebei* ‘deplorable’, 可惜 *kexi* ‘pity’

D. Subtype 4

V- O-V (Causative-people-verb): 令人興奮 *ling ren xingfen* ‘exciting’

Almost these lemmas lexicalize a generic noun, people 人. In a typical data of Stimulus-Attributive frame (75), we do not see the Experiencer tagged along while it is incorporated in to the predication 累人.

- (75) [長達六十公里的路途，一路跑下來 STIMULUS]還真的[累人 STIMULUS-ATTRIBUTIVE]呢，

chang da liushi gongli de lutu, yi lu pao xialai haizhen de leiren ne

long reach 60 kilometer DE roadtrip one way run down HAI really tire-people PART

‘Running for 60-kilometer can be really tiring.’

Furthermore, without incorporating the Experiencer, lemmas of subtype 2 may cause confusion in the construction with a single argument, as exemplified in (76).

- (76) 他很無聊，
ta hen wuliao
he very bored/boring
‘He is bored/boring.’

(76) is ambiguous in terms of two readings: one is “he feels bored;” the other is “he is a boring person.” Neither incorporating a generic NP, subtype 3 has no such problem causing ambiguous reading in such construction.

4.2 Syntax

4.2.1 English constructions

In this part we summarize the constructions of English frames in FrameNet. For each frame, we have selected some examples to identify their syntactic behavior.

- (77) Emotions_by_stimulus frame:

The Polish-born Pope was driven past *jubilant* crowds. (FrameNet)

I am *glad* about the sheep. (FrameNet)

An adjective lemma, *jubilant*, predicates the noun, *crowds*, and also another adjective lemma, *glad*, describes the Experiencer's emotional state. From these two examples, we can make an initial summary of the construction in this frame, Intransitive.

(78) Contrition frame:

Smithers did not *repent* of his crime. (FrameNet)

She is *sorry* she broke your vase. (FrameNet)

This frame takes an Intransitive construction that when an action or a noun is added to the verbs, it requires a preposition.

(79) Desiring frame:

I only *wanted* one piece of candy. (FrameNet)

He *craved* to ask for more. (FrameNet)

From the examples, it is seen that Desiring frame favors a transitive construction.

Emotion_active frame takes an Experiencer as sentential subject with its Topic led by a preposition, resulting the intransitive reading.

(80) Emotion_active frame:

Pat is still *worrying* about the exam. (FrameNet)

Kim *fretted* over the exam. (FrameNet)

Emotion_directed contains most adjectives and nouns as frame lemmas. Examples in (81) describe an intransitive construction this frame prefers.

(81) Emotion_directed frame:

Mr. Whiskers is *upset* that there are no more cat treats. (FrameNet)

I am *happy* for Sara. (FrameNet)

Emotion_heat is a metaphorical derived frame in which the lemmas are not typical. Yet they denote a locative alternation of the Seat_of_emotion.

(82) Emotion_heat frame:

I was *boiling* with anger. (FrameNet)

Anger was *boiling* inside me. (FrameNet)

Experiencer_obj frame takes, obviously seen from the title of the frame, Experiencer as its sentential object while its sentential subject can only be the Stimulus.

(83) Experiencer_obj frame:

Horror films *terrify* Edna. (FrameNet)

Nightmare on Elm Street *scared* me silly. (FrameNet)

However, lemmas in Emotion_active frame may be applied to this transitive construction when Stimulus occupies the sentential subject position and a direct object of Experiencer is required.

(84) illustrates *worry* used in a transitive construction.

(84) He *worries* me. (i.e., He makes me *worried* about him.)

In Feeling frame, an emotion or an emotional state follows the verbs and leads to a transitive construction.

(85) Feeling frame:

Martha *feels* angry. (FrameNet)

Lindsey *experienced* a sharp pang of guilt. (FrameNet)

Forgiveness frame also takes a direct object while its subject is of the role as Judge instead of Experiencer.

(86) Forgiveness frame:

God *forgives* repentant sinners. (FrameNet)

The House *condones* homosexuality. (FrameNet)

In (87) are examples of Judgment frame, which receives a direct object.

(87) Judgment frame:

I *admire* you for your intellect. (FrameNet)

The boss *appreciates* you for your diligence. (FrameNet)

Predicament frame contains only nouns as lemmas and favors an intransitive construction.

(88) Predicament frame:

In Rome I was in the similar *predicament*. (FrameNet)

They found themselves *in quite a fix*. (FrameNet)

In Experiencer_focus frame, lemmas are consisted of different grammatical types, including verbs, adjectives, and so on. For verbal lemmas, a transitive construction is favored, while intransitive construction is also used.

(89) Experiencer_focus frame:

John *likes* that I cook him lunch. (FrameNet)

Bob was still *interested* in the young Republicans. (FrameNet)

Last frame is Stimulus_focus. Lemmas in this frame are all gerunds predicating Stimulus. Since Stimulus is highly-respected in this frame, the appearance of Experience is insignificant and usually comes with a prepositional head.

(90) Stimulus_focus frame:

That movie was quite *fascinating*. (FrameNet)

The report was very *alarming* to me. (FrameNet)

Constructions used in English emotion frames are summarized in the Table 30. It can be seen that many intransitive construction has Experiencer as its sentential subject. Moreover, intransitive reading may result from the usage of adjectives like adjectival passives (e.g.

interested), which exists in different emotion frames. This kind of adjectives can be analyzed as the derivation of verbal passives.

Table 30: *Construction of different frames in English*

Frame	Construction observed
Emotions_by_stimulus	Intransitive: Experiencer < *
Contribution	Intransitive: Experiencer < *
Desiring	Transitive: Experiencer < * < {Event, Focal_participant}
Emotion_active	Intransitive: Experiencer < * < Topic (in PP)
Emotion_directed	Intransitive: Experiencer < *
Emotion_heat	Locative Alternation Intransitive1: Emotion < * Intransitive2: Experiencer < * < Emotion (in PP)
Experiencer_obj	Transitive: Stimulus < * < Experiencer
Feeling	Transitive: Experiencer < * < {Emotional_state, Emotion}
Forgiveness	Transitive: Judge < * < Evaluee
Judgment	Transitive: Cognizer < * < Evaluee
Predicament	Intransitive: Experiencer < *
Experiencer_focus	Transitive: Experiencer < * (Verbs) < Content Intransitive: Experiencer < *
Stimulus_focus	Intransitive: Stimulus < *

In Kroeger (2004), several reasons are proposed to explain the derivation of adjectival passives from verbal passives. Firstly, the two forms shares the same phonological shape, which indicates that the same morphological process is involved. Secondly, past participle of a transitive

verb can be used actively in a Perfect tense and passively in a Passive voice. Nevertheless, when the past participle is used as an adjective, it can only be interpreted in the passive sense. Such phenomenon suggests that the rule of adjective passive formation can only apply to passive verbs. In other words, adjectival passives must be originated from verbal passives. Last, transitive verbs fail to apply the verbal passive rule also cannot form adjectival passives. In (91) we can see how Kroeger’s adjective formation is applied to emotion verb, *interest*.

- (91) Base form [interest]_v
 Verbal passive [interested]_v
 Adj. Formation [interested]_{Adj}

Besides explaining the derivation of an adjectival passive, the formation rule Kroeger (2004) proposed also helps us realize the possible subject information adjectival passives carry. Talmy (2000) has explained that a verb with a Stimulus subject can generally be placed in the construction “BE V-en P” to bring the Experiencer in to subject position. And verbs with an Experiencer subject can often figure in the construction “BE V-Adj to,” which leaves the Stimulus as the sentential subject.

Table 31: *Derivational patterns for affect verbs focused on the Stimulus or the Experiencer (Talmy 2000)*

Stimulus as subject	⇒	Experiencer as subject
It frightens me		I am frightened of it
It pleases me		I am pleased with it
It interests me		I am interested in it
Experiencer as subject	⇒	Stimulus as subject
I fear it		It is fearful to me
I like it		It is likable to me
I loathe it		It is loathsome to me

Talmy (2000), therefore, concluded that English seems to favor lexicalizing the Stimulus as subject. Even though English nowadays contains more transitive or intransitive constructions using Experiencer-subject, this language used to favor Stimulus-subject, as *like* used to take the Experiencer as grammatical object but now takes it as subject (Lightfoot 1991).

4.2.2 Mandarin constructions

The second part of syntactic behavior presents the patterns of Mandarin emotion frames. The patterns in Mandarin are highly regarded because they are more rigid and specific than English emotion frames.

Despite that lemmas in Happy-Sad frame normally do not take an object, Experiencer can emotionally identify with a Target_empathy led by markers like 為 *wei* or 替 *ti* 'for'.

(92) Happy-Sad frame:

我很高興，

wo hen gaoxing

I very glad

'I am very glad.'

我真是為她高興！

wo zhenshi wei ta gaoxing

I really for her glad

'I am so glad for her.'

Regret-Sorry may take a VP or a clause which denotes not only a prior act that Experiencer feels bad about, but a prior act in an irrealis form.

(93) Regret-Sorry frame:

佩很後悔告訴她自己的事，

Pei hen houhui gaosu ta ziji de shi

Pei very regret tell she herself-affair

‘Pei regretted telling her her own affairs.’

我很抱歉明天不能和你去台北

wo hen baoqian mingtian buneng han ni qu Taipei

I very sorry tomorrow not-able with you go Taipei

‘I am sorry that I cannot go to Taipei with you tomorrow.’

Content-Contented frame crosses two primary frames, i.e., Exp-Oriented and Exp-Oriented with Target, and results in two discrete syntactic behaviors. One is intransitive; the other is transitive.

(94) Content-Contented frame:

他很滿意。

ta hen manyi

he very satisfy

‘He is very satisfied.’

他很滿意這個未來的媳婦。

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.’

Love-Hate frame does not have intransitive interpretation and the targets in the transitive construction can be various. It can take an act as its complement as well as a sentential complement as in (95).

(95) Love-Hate frame:

我愛數星星

wo ai shu xingxing

I love count stars

‘I love to count stars.’

這位年輕人痛恨主管不公平，

zhewei nianqingren tonghen zhuguan bu gong ping

this-CL young man detest boss unfair

‘This young man detests his boss’s unfairness.’

Similar to Love-Hate frame, Envy-Pity frame can also takes clausal and nominal complements but an act always fails to be added in.

(96) Envy-Pity frame:

旁人羨慕他官場平步青雲，

pangren xianmu ta guanchang pingbuqingyun.

others envy he political career going-well

‘Other people envy that his political career is going well.’

我很羨慕你

wo hen xianmu ni

I very envy you

‘I envy you very much.’

*我很羨慕有錢

wo hen xianmu you qian

I very envy have money

‘*I envy to have money.’

[有錢有閒 STIMULUS]讓人很羨慕。

you qian you xian rang ren hen xianmu

have money have free-time make people very envy

‘Those who have money and free-time make me feel jealous.’

旁人對他官場平步青雲很羨慕，

pangren dui ta guanchang pingbuqingyun hen xianmu

others toward he political career going-well very envy

‘Other people envy that his political career is going well.’

Worry-Fear frame denotes an interesting syntactic behavior by introducing another argument, a Beneficiary [NP], when the object position is occupied by either Target_entity or Target_possible situation. It is different from Target_empathy in Happy-Sad frame since Beneficiary can be an inanimated NP without experiencing the emotional state.

(97) Worry-Fear fram:

我很擔心他的健康問題。

wo hen danxin ta de jiankang wenti.

I very worry he DE health problem

‘I worry about his health problem.’

我替他擔心他的未來。

wo ti ta danxin ta de weilai

I for he worry he DE future

‘I worry about his future for him.’

Lemmas in Stimulus-Attributive describe the essence or quality of a Stimulus; what is more, the backgrounded Experiencer is lexicalized into its morphological feature and cannot be separated from the lexicon to indicate Experiencer as a distinct frame element.

(98) Stimulus-Attributive frame:

這部電影很感人。

zhe-bu dianying hen gan-ren

this-CL movie very touch-people

‘This movie is touching.’

Due to different conceptualization, Attract-Comfort frame has Affecter and Affectee instead of emotional Experiencer and Stimulus. The effect-like relation causes an external impact onto the Affectee, resulting in the unique active-passive alternation in an emotion frame.

(99) Attract-Comfort frame:

我鼓勵他們多學習，

wo guli tamen duo xuexi

I encourage them more learn

‘I encourage them to learn more.’

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.’

Categorized as a basic frame of Affect-Oriented primary frame, Bother-Irritate frame also possesses an active-passive alternation, but a transitive-permissive construction can only be observed in this frame.

(100) Bother-Irritate frame:

他真摯的話語感動了大家。

ta zhengzhi de huayu gandong le daijia

his sincere DE words touch PART everyone

‘His sincere words touched everyone.’

他真摯的話語把大家感動了。

ta zhengzhi de huayu bai daijia gandong le

his sincere DE words BA everyone touch PART

‘His sincere words touched everyone.’

From all the instances above, we listed out each Mandarin emotion frame and its defining construction in Table 32.

Table 32: *Construction of different frames in Mandarin*

Frame	Defining Constructions
Happy-Sad	Intransitive: Experiencer < Degree < * Experiencer < { 為 <i>wei</i> ‘for’/替 <i>ti</i> ‘for’ } Target_empathy <(Degree) < *
Regret-Sorry	Transitive: Experiencer < * < Prior Act
Content-Contented	Transitive: Experiencer < * < Target
	Intransitive: Experiencer < *
Love-Hate	Transitive: Experiencer < * < {Target_entity, Target_act, Target_situation}
Envy-Pity	Transitive: Experiencer (<Degree) < * < {Target_entity, Target_situation}

	<p>Causative: Cause[NP/S] < {讓 rang ' allow' /令 ling' order' }</p> <p>Experiencer (<Degree) < * (<{Target_entity, Target_situation})</p>
	<p>Dative: Experiencer < 對 <i>dui</i> 'toward' Target_entity <({表示 <i>biaoshi</i> 'to show'/深表 <i>shenbiao</i> 'to sincerely show' })*</p>
Worry-Fear	<p>Transitive Experiencer < * < Target</p> <p>Alternation: Experiencer < {對 <i>dui</i> 'toward'/為 <i>wei</i> ' for' } Target < *</p> <p>Beneficiary: Experiencer < 替 <i>ti</i> ' for' /為 <i>wei</i> ' for' Beneficiary < * < Target</p>
Stimulus-Attributive	<p>Intransitive: Stimulus < (Degree) < *</p>
Attract-Comfort	<p>Transitive: Affecter<*(了)< Affectee</p> <p>Passive 被 passive 得 Result: Affectee<被<Affecter<*<得<Result</p> <p>Alternation:</p>
Bother-Irritate	<p>Transitive: Affecter [NP] < * (了 <i>le</i> 'PERF') < Affectee [NP] < (Result [VP])</p> <p>Permissive: Affecter[NP]<{把 <i>ba</i>}-Affectee[NP]<*(了 <i>le</i> 'PART')</p>

By studying these defining constructions of Mandarin emotion frames, we have made the following observation. First, Experiencer is the major role in these constructions and almost always occupies the subject position. In the Stimulus-foregrounded frame, Experiencer does not disappear completely but somehow is incorporated into the lexicon inseparably. Second, when the emotion-arousing stimulus has become the interactivity between subject and object, the

defining construction may show a great similarity to a prototypical active-passive alternation rather than the common causal relation in an emotional state proposed by Grimshaw (1991) and Liu (2002). Third, with so many constructions, it is no longer easy to randomly categorize a lemma denoting an emotional state into any of these frames. By adopting Frame Semantics and Construction Grammar, Mandarin emotion lexicon must match both semantic and syntactic properties to enter a frame.

4.3 Comparison

There are thirteen frames in English on the basis of the classification of FrameNet while Hong (2009) only divided nine frames from Emotions, shown as Table 33. We here examine how English frames and Mandarin frames are classified.

Table 33: *English and Mandarin emotion frames*

English frames	Mandarin frames
Emotion_by_stimulus	Happy-Sad
Contribution	Regret-Sorry
Desiring	Content-Contented
Emotion_active	Love-Hate
Emotion_directed	Envy-Pity
Emotion_heat	Worry-Fear
Experiencer_obj	Stimulus-Attributive
Feeling	Attract-Comfort
Forgiveness	Bother-Irritate
Judgment	
Predicament	

Experiencer_focus	
Stimulus_focus	

4.3.1 Frame-naming

First, we can see that the frame-naming in both languages can provide different semantic or syntactic meanings. Many of frames use representative lemmas as their frame names. It is easier to relate our knowledge of these lemmas to frame properties. For example, *feel* in English Feeling frame must take an emotion rather than a body part as its object so as to stay in Emotions. In other words, we are able to predict that there exists an indispensable frame element to indicate the emotion. As a result, the core elements of Feeling frame have included Emotional_state to specify the adjectival complements in (101) and Emotion to indicate nominal complements in (102).

(101) [I EXPERIENCER] still [feel FEELING] [sad EMOTIONAL_STATE] for her and [angry EMOTIONAL_STATE] at you. (FrameNet)

(102) [John EXPERIENCER] [feels FEELING] [anger towards his mother EMOTION]. (FrameNet)

In Mandarin, worry and fear in Worry-Fear frame can occur in (103) and (104).

(103) [我 EXPERIENCER][擔心 WORRY-FEAR][他明天不能來 TARGET_POSSIBLE SITUATION]

(104) [我 EXPERIENCER][怕 WORRY-FEAR] [明天下雨 TARGET_POSSIBLE SITUATION]

The clausal complements point out senses of possibility and undesirability. Therefore, we may assume that this Mandarin emotion frame denotes the possible and undesirable meaning.

From examples above, we see that the lemma-incorporated frame names function to initiate our general picture of a frame. Even though lemma-incorporated frame names are mostly used, sometimes syntactic semantic features can be introduced in frame-naming in both

languages. Emotion_active and Experiencer_obj frames in English take lemmas which can be used “actively” or occupy the object position in a sentence. For instance, verbs in Emotion_active frame, like *worry* and *fret*, can take a progressive form as in (#).

(105) Pat **is** still *worry**ing*** about the exam. (FrameNet)

(106) Americans **are** *fret**ting*** again that their economic recovery is frail. (FrameNet)

Verbs in Experiencer_obj frame, like *terrify* and *alarm*, take an Experiencer as their object.

(107) Horror films terrify [Edna EXPERIENCER]. (FrameNet)

(108) The news greatly alarms [all the women of the village EXPERIENCER]. (FrameNet)

Instead of naming the frame “Stimulus_subj,” FrameNet avoids the confusing situation caused by examples like (109).

(109) [That movie STIMULUS] was quite fascinating. (FrameNet)

In Mandarin, Stimulus-Attributive frame name can give us some clue that lemmas in this frame predicate and attribute Stimulus as in (110). The naming also reveals the highlighted status of Stimulus.

(110) 這部 電影 很 感人。

zhe-bu dianying hen ganren

this-CL movie very touch-people

‘This movie is touching.’

Other than syntactic features, semantic features may be taken into consideration when naming a frame in English. Five out of thirteen English frames use semantic features, including Emotion_by_stimulus, Emotion_directed, Emotion_heat, Experiencer_focus, and Stimulus_focus frames. It is easy to learn how they choose their frame members but hard to recognize what they will choose. For example, Emotion_by_stimulus seems to include most of the emotion

predication initiated by any stimuli while the information given by FrameNet does not correspond to such prediction. Since Emotion_by_stimulus frame only contains very few lemmas and is on the same level as other frames, it fails to include other lemmas which fulfill such criterion and are classified into other frames. Besides, it can hardly provide representative lemmas. Although Emotion_by_stimulus is the father frame of six other frames, FrameNet does not assemble the lemmas in each child frames to be the frame members of Emotion_by_stimulus as how Hong (2009) has done to classify Mandarin emotion verbs and to create the hierarchy between father frames and child frames.

Moreover, using semantic features when naming frames can tell us the qualities which English emphasizes when classifying emotion predication. For example, Experiencer_focus and Stimulus_focus frames allow English to have a focus in expressing emotions. In these two frames, lemmas are primarily adjectives, which may indicate a monotonous selection of construction. In addition, Emotion_directed and Emotion_heat frames remind us respectively that there are emotions which are directed by a particular response and that heat can be a crucial metaphor in revealing emotions.

Contrastively, no semantic features are taken into consideration when naming Mandarin emotion frames. There are two possibilities to explain such phenomenon. First, in order not to show any confusion in picking frame members, Mandarin primarily uses lemma-incorporated frame names, and then tries to introduce syntactic features when more classifying criteria are needed. The second possibility is that Mandarin emotion frames using lemma-incorporated naming can provide sufficient semantic information.

Table 34: Naming Categorization of *English and Mandarin emotion frames*

	English frames	Mandarin frames
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Lemma-incorporated	Contrition	Happy-Sad
	Desiring	Regret-Sorry
	Feeling	Content-Contented
	Forgiveness	Love-Hate
	Judgment	Envy-Pity
	Predicament	Worry-Fear
		Attract-Comfort
	Bother-Irritate	
Syntactic feature	Emotion_active	Stimulus-Attributive
	Experiencer_obj	
Semantic feature	Emotion_by_stimulus	
	Emotion_directed	
	Emotion_heat	
	Experiencer_focus	
	Stimulus_focus	

4.3.2 Similarity and Dissimilarity

Second, some frames in English and Mandarin can denote similar ideas as exemplified in Table 35.

Table 35: *Pairs of similar frames between English and Mandarin*

English frames	Mandarin frames
Contrition	Regret-Sorry

Emotion_active, Predicament	Worry-Fear
Emotion_directed	Happy-Sad
Experiencer_obj	Attract-Comfort, Bother-Irritate
Experiencer_focus	Love-Hate, Envy-Pity, Content-Contented
Stimulus_focus	Stimulus-Attributive

These English and Mandarin frames are similar to each other because they may express same emotions. Besides, they are alike semantically while these frames contain different frame elements according their different syntactic behavior. Syntactically, English and Mandarin frames do not entirely share same constructions. In the following paragraphs, we will compare frames which express same emotions in both languages and try to make a frame-to-frame comparison.

English Contrition frame and Mandarin Regret-Sorry frame can both denote a sense of bad-feeling as in examples (111) and (112).

(111) [Smithers EXPERIENCER] did not [repent CONTRITION] [of his crime ACTION]

(112) [佩 EXPERIBNCER]很 [後悔 REGRET-SORRY][告訴她自己的事 PRIOR ACT],

Pei hen houhui gaosu ta ziji de shi

Pei very regret tell she herself-affair

‘Pei regretted telling her her own affairs.’

The two frames both reveal some act about which they feel regretful. Both frame elements, Action in English and Prior Act in Mandarin, indicate a prior action which triggers the Experiencer to feel bad about. In Mandarin, a nominal prior action is been separated as a new element to deliver syntactic information. From the frame element comparison table as below, we can see English includes Expressor as one of the core elements of Contrition frame, which may

result from its higher frequency of collocation with Contrition frame lemmas or its importance in expressing contrition.

Table 36: *Core Frame Elements of Pair of Contrition and Regret-Sorry frames*

Language	Frame	Core Frame Elements
English	Contrition	Experiencer, Action, Emotional_state, Expressor
Mandarin	Regret-Sorry	Experiencer, Prior Act, Prior Act_Description, Cause

The second pair we are going to compare is English Emotion_active and Predicament frames versus Mandarin Worry-Fear frame. Mandarin Worry-Fear frame can correspond to two English frames because it possesses syntactic and semantic features of these two respectively. Similar to Emotion_active frame, Worry-Fear is allowed to use a progressive to express an ongoing event. However, it also expresses a sense of undesirability as Predicament frame does.

(113) Pat is still [worrying EMOTION_ACTIVE] [about the exam TOPIC]. (FrameNet)

(114) 我 一直 在 担心 你, (Sinica Corpus)

wo yizhi zai danxin ni

I continuously be-ing worry you

'I have been worrying about you.'

In (113) and (114), the progressive marker *-ing* and 在 *zai* can co-occur with *worry* and 担心 *danxin* 'worry' to indicate an ongoing event. These two frame share the property of [+Progressive]. However, there are also emotion verbs with this property but not included in these frames. For example, the verb *disturb* is classified in Experiencer_obj frame while it can take a progressive marker to express a continuing event, too.

(115) He is disturbing me.

Such verb seems to be highly related to Emotion_active if [+Progressive] is the main criterion of this frame. The construction of *disturb* is totally the opposite from Emotion_active, which takes Experiencer as its subject. In this way, *disturb* cannot be included in Emotion_active even if it can co-occur with [+Progressive].

Mandarin Worry-Fear frame has another property shared by its lexical units. Similar to English Predicament frame, Worry-Fear frame also expresses a sense of undesirability.

(116) [The insurers EXPERIENCER] [ended up in CAUSE] the [bind PREDICAMENT] [of having to pay 15 years' taxes SITUATION]. (FrameNet)

(117) 我又 擔心 他會 遇到 危險。(Sinica Corpus)

wo yo danxin ta hui yudao weixien

I even worry he will encounter danger

'I even worry that he will encounter any danger.'

The situation, “of having to pay 15 years' taxes,” is the undesirable situation of *bind* and “他會遇到危險” (that he will encounter danger) is that of *worry*. By using an irrealis clause, Worry-Fear conveys a possible situation which is **undesirable** to the Experiencer. Because of these two cross-frame criteria, Mandarin Worry-Fear frame is semantically similar to English Predicament frame and syntactically similar to Emotion_active frame.

Emotion_active and Worry-Fear are different besides the similarity they share. From the core frame elements each frame takes, we get a clearer picture of how these two frames differ from each other.

Table 37: Core Frame Elements of Pair of Emotion_active and Worry-Fear frames

Language	Frame	Core Frame Elements
English	Emotion_active	Experiencer, Topic

	Predicament	Experiencer, Situation
Mandarin	Worry-Fear	Experiencer, Target_entity, Target_possible situation, Beneficiary

English Emotion_active frame takes Topic to refer to the things an Experiencer’s emotion is generally about. Mandarin, as shown in the table, includes many different frame elements. For instance, Target_possible situation specifies an irrealis property. Moreover, a Beneficiary frame element led by 替 *ti* ‘for’ or 為 *wei* ‘for’ points out that this Worry-Fear emotion can be felt by an Experiencer who is not involved in the event, such as #.

(118) [我EXPERIENCER] 替[他BENEFICIARY][擔心WORRY-FEAR][他的未來Target_entity]°

wo ti ta danxin ta DE weilai

I for him worry he DE future

‘I worry about his future for him.’ (Hong 2009)

The Experiencer does not necessarily take part in the event “他的未來” (his future) but still is capable of feeling the worries. This semantic criterion can also be seen in Mandarin Happy-Sad frame with slight differences.

(119) 我 為 [她 TARGET_EMPATHY]高興°

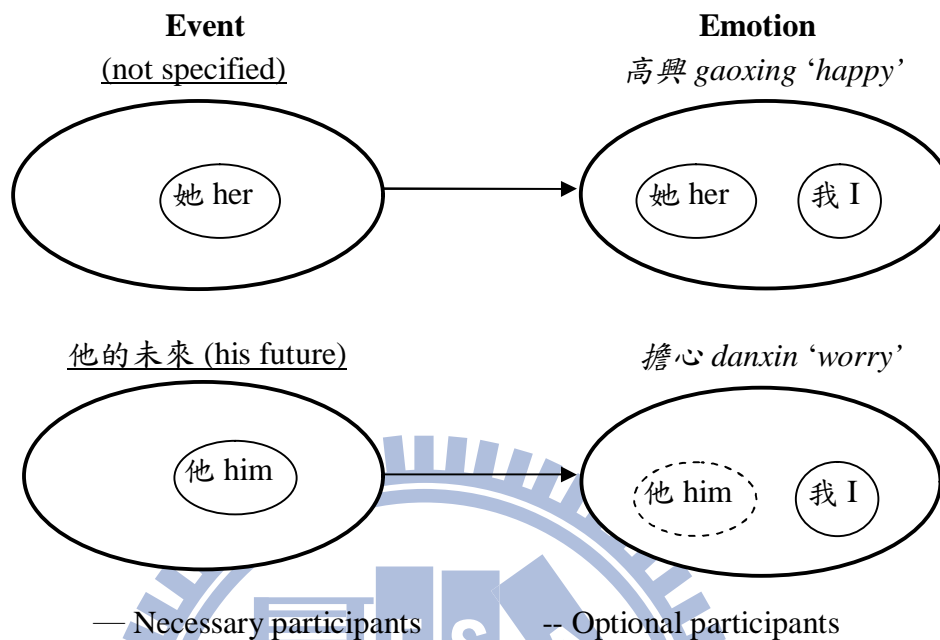
wo wei ta gaoxing

I for her happy

‘I am happy for her.’

The Target_empathy 她 *ta* ‘her’ is the primary Experiencer of the 高興 *gaoxing* ‘happy’ state. 我 *wo* ‘I’ is the outsider who feels the same emotion as the primary Experiencer; meanwhile, the primary participant of the event “他的未來” (his future) does not have to feel the worries, as Figure 11 shows.

Figure 11. *The Relationship between Emotion_by_stimulus and Emotions*



Mandarin Worry-Fear frame, hence, possesses Beneficiary to be its unique frame element that Topic of English Emotion_active frame does not reveal such property, let alone Predicament frame. We also redefine this element so as not to confuse with Target_empathy of Mandarin Happy-Sad frame.

Next, English Emotion_directed frame and Mandarin Happy-Sad frame are alike. In definition, Emotion_directed frame lemmas describe an Experiencer who is feeling or experiencing a particular emotional response to a Stimulus or about a Topic. Happy-Sad frame describes an Experiencer who feels or experiences a particular emotion evoked by a Cause or about a Topic. In brief, a Stimulus/Cause, or a Topic may “direct” an emotion in both frames. Thus, these two frames share many similar frame elements, including Experiencer, Stimulus, Topic/Content.

Table 38: *Core Frame Elements of Pair of Emotion_directed and Happy-Sad frames*

Language	Frame	Core Frame Elements
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English	Emotion_directed	Experiencer, State, Stimulus, Topic, Event, Expressor
Mandarin	Happy-Sad	Experiencer, Target_empathy, Stimulus, Content

Although it seems that English Emotion_directed frame does not have a core element like Target_empathy in Mandarin Happy-Sad frame, this frame takes Empathy_target, “the individual or individuals with which the Experiencer identifies emotionally and thus shares their emotional response,” as a non-core element.

Table 39: *Core and Non-core Frame Elements of Emotion_directed frame*

Frame	Frame Elements	
Emotion_directed	Core	Experiencer, State, Stimulus, Topic, Event, Expressor
	Non-core	Circumstances, Degree, Empathy_target , Frequency, Manner, Parameter, Reason

Also, since Emotion_directed frame primarily chooses adjectives and nouns as its lexical units, intransitive construction is as frequently used as in Happy-Sad frame. Nevertheless, these two frames are different in a critical construction. # is an example of Emotion_directed frame.

- (120) You 're angry I 'm here.
 Subject Predicate CL-Adjunct
 Experiencer Emotion Stimulus

We can see the clausal adjunct serves as a Stimulus to arouse the emotion of the Experiencer while the meaning of the sentence may already be sufficient without it. Mandarin defines this kind of clause as a Content which is, on the contrary, the complement of the whole sentence as exemplified in (121).

- (121) 我 非常 高興 你 來 我家。
 wo feichang gaoxing ni lai wo jia

I very glad you come my house

Subject Verb CL-complement

Experiencer Emotion Content

‘I am very glad that you come to my house.’

The Content is the specific reason or detailed account underlying the emotional state but, different from Stimulus in English, it is a complement of the emotion verb, not an adjunct, specifying a stronger relationship with the verb.

The fourth pair to be compared is English Experiencer_obj frame versus Mandarin Attract-Comfort and Bother-Irritate frames. Experiencer_obj frame only contains two core frame elements and mainly uses Stimulus-Verb-Experiencer transitive construction.

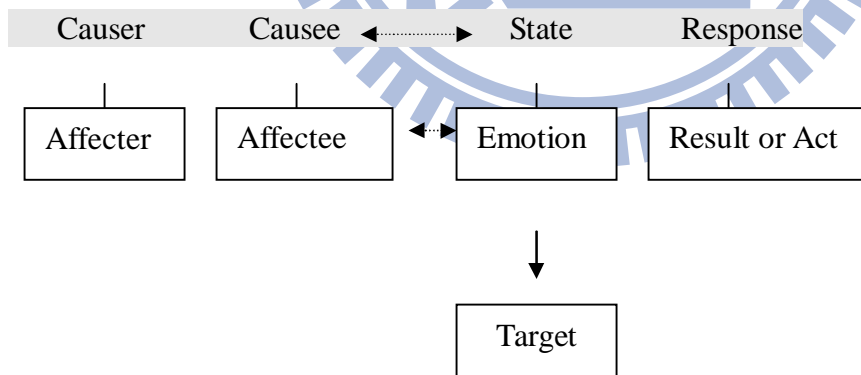
Table 40: *Core Frame Elements of Pair of Experiencer_obj and Attract-Comfort and Bother-Irritate frames*

Language	Frame	Core Frame Elements
English	Experiencer_obj	Experiencer, Stimulus
Mandarin	Attract-Comfort	Affecter, Affectee, Act
	Bother-Irritate	Affecter, Affectee, Reason

In Mandarin, a transitive construction is also preferred in these two frames but in the chain of Affecter-Verb-Affectee. Affecter functions as the Stimulus causing an emotional affect on the Affectee. Experiencer_obj defines Stimulus as “the event or entity which brings about the emotional or psychological state of the Experiencer,” which is very much similar to the definition of Affecter, “a cause/person which evokes an emotional impact on an Affecter”. Yet, the Affecter in Mandarin, the agent-like subject proposed in Liu (2009), is more likely a volitional human, and sometimes an inanimate entity transferred metaphorically.

In English, lemmas in Experiencer_obj frame, though, may denote an event-like state, they still take Experiencer and Stimulus participants. In Mandarin, Liu and Hong (2008) first invited “Actor” into these two frames so as to reveal the impact this participant can impose on an Experiencer. Later on, Liu (2009) revised the early version and introduced Affecter in to Mandarin emotions and also re-identified the role of Experiencer to be Affectee in Attract-Comfort and Bother-Irritate frames. Both Experiencer and Affectee roles are referred to the participant whose emotion is been initiated by an entity, an event or an action, but with the name, Affectee, along with Affecter, this participant is, able to demonstrate a relationship between the Stimulus and Experiencer in Attract-Comfort and Bother-Irritate frames. What is more, Affecter may be given volitionality than Stimulus (Hong 2009: 51-53). Therefore, although the main participants of English Experiencer_obj, Mandarin Attract-Comfort and Bother-Irritate frames may be named differently to carry similar semantic properties, a new emotion schema is proposed to reveal the internal impact between Affecter and Affectee (Liu 2009).

Figure 12. *Conceptual schema with alternative mapping relations (Liu 2009)*



Other than the four pairs above, English Experiencer_focus and Mandarin Love-Hate, Envy-Pity and Content-Contented frames are similar in the syntactic position their Experiencer takes. Lemmas of Experiencer_focus frame in English can appear in two kinds of construction.

One is intransitive Experiencer-Verb construction in (122), as one construction Content-Contented frame requires, and the other is transitive Experiencer-Verb-Content construction in (124), as the primary construction of Mandarin Love-Hate, Envy-Pity and Content-Contented frames.

(122) I am nervous/afraid/calm/terrified/worried/interested.

(123) 她很滿足/氣/不捨。

ta hen manzu/qi/bushe

she very satisfy/anger/be unwilling to give up

‘She is satisfied/angry/unwilling to give up.’

(124) I love/hate/pity/envy/fear/resent him.

(125) 我愛/討厭/忌妒/憐憫/同情/不滿他。

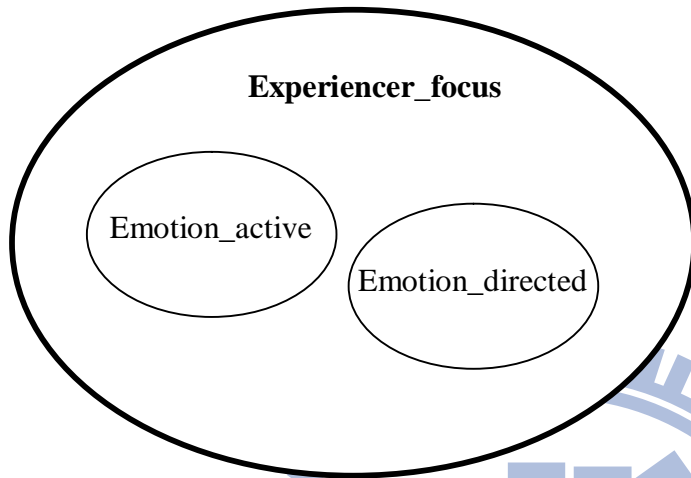
wo ai/taoyan/jidu/tongqing/buman ta

I love/detest/jealous/pity/sympathize with/be dissatisfied him

‘I love/detest/am jealous of/pity/sympathize with/am dissatisfied with him.’

In English, Experiencer occupies the syntactic subject position which is similar to other English emotion frames like Emotion_active with representative lemma, *worry*, and Emotion_directed with representative lemma, *happy*. The relationship among these frames seems to suggest a set relationship as exemplified in Figure 13.

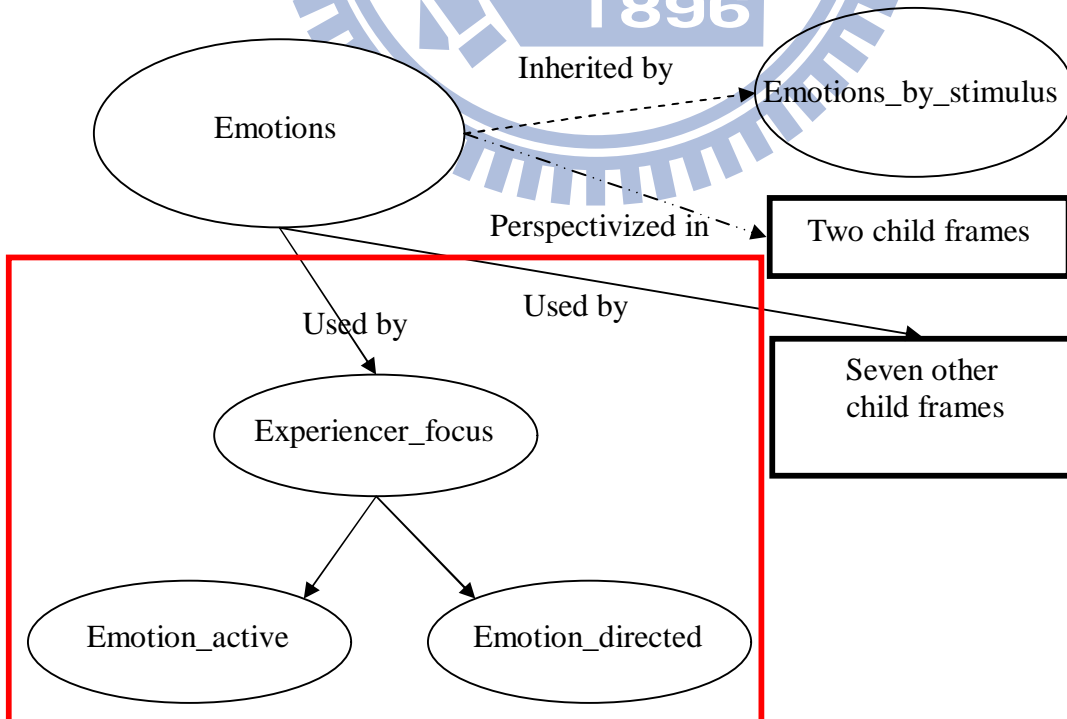
Figure 13. Set relationship among *Experiencer_focus*, *Emotion_active* and *Emotion_directed* frames



— Superset — Subset

Hereof, I propose a new hierarchy under Emotions of FrameNet as Figure 14.

Figure 14. A *new hierarchy of English Emotions*



In this way, we can see the original Emotion layers proposed by FrameNet should be problematic. At the mean time, since Hong specifically pointed out that 1) Content-Contented frame must own both the syntactic patterns of Exp-Oriented primary frame and Exp-Oriented with Target primary frame, 2) Love-Hate frame backgrounds Stimulus while Envy-Pity foregrounds this element, none of the three basic frames overpowers the others. Hence, through comparing English Experiencer_focus and Mandarin Content-Contented, Love-Hate, and Envy-Pity frames, it is understandable that Experiencer_focus frame can be syntactically similar to three Mandarin emotion frames, even if its core frame elements may be very different from the three Mandarin frames, because it plays the role of the parent frame, Exp-Oriented with target frame, of Content-Contented, Love-Hate, and Envy-Pity frames in Mandarin.

Table 41: *Core Frame Elements of Pair of Experiencer_focus and Love-Hate, Envy-Pity and Content-Contented frames*

Language	Frame	Core Frame Elements
English	Experiencer_focus	Content, Event, Experiencer, Expressor, State, Topic
Mandarin	Love-Hate	Experiencer, Target_entity, Target_act, Target_situation
	Envy-Pity	Experiencer, Target_entity, Target_situation
	Content-Contented	Experiencer, Target_entity, Target_act, Target_situation, Stimulus

Last pair of comparison between English and Mandarin is English Stimulus_focus and Mandarin Stimulus-Attributive frame. The two frames are very similar in two ways, intransitive construction and the absence of Experiencer.

Table 42: *Core Frame Elements of Pair of Stimulus_focus and Stimulus-Attributive frames*

Language	Frame	Core Frame Elements
English	Stimulus_focus	Stimulus
Mandarin	Stimulus-Attributive	Stimulus

From the list of their core frame elements, we find that both frame lack Experiencer as exemplified in (126) and (127).

(126) [That movie STIMULUS] was quite [fascinating STIMULUS_FOCUS].

(127) 她好煩人。

ta hao fanren

she so annoy-people

‘She is so annoying.’

Both frames like to predicate the Stimulus with adjectives and include many into their frames. The role Experiencer can be seen in a non-object position in both languages. English introduces Experiencer in a preposition phrase and Mandarin lexicalizes this participant into its lemmas as discussed in 4.1. With these characteristics, the two frames are the most similar among the six pairs.

Still, some English frames do not correspond to any present Mandarin emotion frames, including Emotion_by_stimulus, Desiring, Emotion_heat, Feeling, Forgiveness, and Judgment. The direct child frame of Emotions in English is Emotion_by_stimulus but there is no such frame in Mandarin to inherit from Emotions directly. This frame is semantically correspondent to the Mandarin frames, Exp-Oriented, Exp-Oriented with Target, Stimulus-Oriented, and Affect-Oriented frames. The inheritance includes the frame elements, most semantic types, frame

relations to other frames, and so on. There is no such a unique primary frame under the categorization of Mandarin Emotion.

Other frames like Desiring, Emotion_heat, Feeling, Forgiveness and Judgment frames do not correspond to any Mandarin emotion frames may result from several reasons. For instance, the representative lemma of Feeling frame, *feel*, can be observed in multiple kinds of frames, including Perception, Sensation and Emotion. Hong does not provide an individual basic frame under emotion for it, but the significance of *feel* verb can be well seen in the collocation patterns of Mandarin emotion verbs. Emotion_heat frame basically introduces metaphorical lemmas to describe *anger*. Mandarin Emotions categorizes metaphorical lemmas under the nine basic frames according their semantic meaning. In this case, Emotion_heat frame may show similarity to Mandarin Happy-Sad frame. With the asymmetric correspondence between English and Mandarin emotion frames, we realize there are frames created by FrameNet under Emotions for the cross-frame lemmas and need to further investigate the reasons why there are still English emotions fail to correspond to Mandarin emotions.

Chapter 5

Conclusion

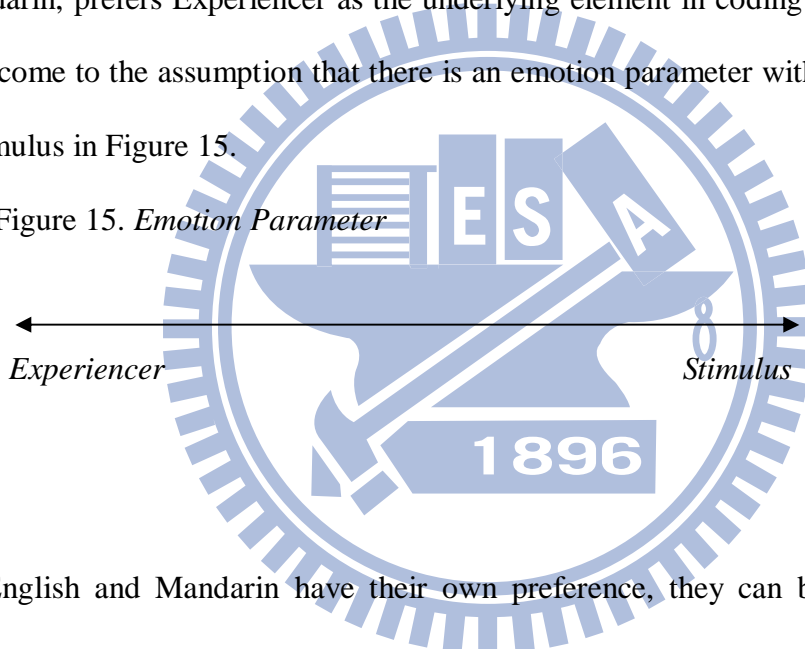
This thesis intends to thoroughly investigate emotion predication in English and Mandarin by looking into their semantic properties, especially participant roles, and main syntactic constructions. At first, we reviewed some emotion verb classification proposed by Levin (1993), Tsai et al (1996) and Chang et al (2000). Levin's proposal failed to offer a more detailed description. On the hand, Tais et al. and Chang et al. both provided a comprehensive methodology to study emotion verbs, yet they limited their research to only representative lexicons. With these incomplete works, we found it hard to contrast emotion verbs in English and Mandarin. However, Berkeley FrameNet has conducted an overall study on emotion predication and Hong (2009) has fully investigated emotion verbs in Mandarin. Based on these two studies, I adopted frame semantics to do a comparison of the two languages.

Semantically, emotion verbs denote a psychological state. However, even within these states, emotion verbs can be distinguished into two readings: one is stative, the other is dynamic. Figuring out semantic situation type contributes to identifying the transitivity of each emotion frame. Moreover, the activity of participants in an emotion frame outlined the preferable element of English and Mandarin. Stimulus seems to be favored by English because it is interpretively active when predicated by gerund adjectives. Besides, adjectival passives can serve to certify Stimulus the inherent subject of the original verb base. English is proved to code emotions more likely through the perspective of Stimulus than through that of Experiencer. While Mandarin codes emotions by using primarily Experiencer-Oriented viewpoints, it also intends to lexicalize Experiencer into the lexical units to specify the backgrounded Experiencer of which is absent in Stimulus-Attributive frame. Accordingly, not only the high frequency of Stimulus-as-subject construction but the lexicalized Stimulus as subject in adjectival passives provide evidence to

support that English prefers Stimulus to code emotions whereas Mandarin favors Experiencer by syntactically showing a high proportion expressing emotions through Experiencer-Oriented perspective as well as morphologically lexicalizing Experiencer into lexical units.

Other languages may also suggest a preference in coding emotions. In Dąbrowska's (1997, cf. Rozas 2006), Polish codes Experiencer nominative or dative in emotion based on the two ways of conceptualizing mental experience. According to Dąbrowska, for Polish, it is interpreted the default option of coding Experiencer through the nominative. For this reason, Polish, similar to Mandarin, prefers Experiencer as the underlying element in coding emotion state. As a result, we can come to the assumption that there is an emotion parameter with endpoints as Experiencer and Stimulus in Figure 15.

Figure 15. *Emotion Parameter*



Since English and Mandarin have their own preference, they can be put to the ends of this parameter.

Figure 16. *Emotion Parameter revised*



What is more, we can put Polish into the parameter as in Figure 17.

Figure 17. *Emotion Parameter second revised*



By proposing this emotion parameter, we can see how languages take their interest in coding emotions. In this way, we provide more possibility to examine different languages in coding emotions. It also allows languages to occupy any point on the parameter to indicate their tendency instead of being situated at the two very ends as merely Experiencer or Stimulus.

I hope this thesis can be a preliminary study to contrast languages in coding emotions. Through a detailed frame-based investigation, English and Mandarin are projected to the newly-proposed emotion parameter. More future works on other languages are expected to manifest the tendency of coding emotions. Last, any suggestion is welcomed for there must be room for improvement, and hopefully this thesis offers helpful discussion in studying language contrast and emotion-coding.

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Websites

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

Academa Sinica Balanced Corpus of Modern Chinese (Sinica Corpus):

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



Appendix I

English emotion frame information

	Frame	Description	
1	Emotions_by_stimulus	Definition:	An Experiencer, Expressor, Event, or State has an emotion as brought on by a Stimulus or Topic.
		Core FEs:	Event, Experiencer, Expressor, Stimulus, State, Topic
		Lemmas:	<i>glad, joyful, jubilant</i>
		Construction:	Intransitive: Experiencer < *
2	Contrition	Definition:	An Experiencer feels bad about a choice, an Action, or a failure to do something, which they now consider to have been a mistake or wrong. The emotional state of the Experiencer may be showing in gestures or facial expressions, viz. an Expressor.
		Core FEs:	Experiencer, Action, Emotional_state, Expressor
		Lemmas:	<i>contrite, contrition, guilt, guilty, penitence, penitent, remorse, remorseful, remorseless, repent, repentance, repentant, rue, rueful, sorry, unrepentant.</i>
		Construction:	Intransitive: Experiencer < *
3	Desiring	Definition:	An Experiencer desires that an Event occur. (Note that commonly a resultant state of the Event will stand in for the Event.) In some cases, the

			<p>Experiencer is an active participant in the Event, and in such cases the Event itself is often not mentioned, but rather some Focal_participant which is subordinately involved in the Event. Generally, the use of a word in this frame implies that the specific Event has not yet happened, but that the Experiencer believes that they would be happier if it did. Sometimes the Time_of_Event, Purpose_of_Event, or the Location_of_Event are mentioned without the explicit mention of the Event</p>
		<p>Core FEs:</p>	<p>Event, Experiencer, Focal_participant, Location_of_Event</p>
		<p>Lemmas:</p>	<p><i>ache, ambition, aspiration, aspire, covet, covetous, crave, craving, desire, desire (N), desired, desirous, dying, eager, fancy, feel_like, hanker, hankering, hope, hope, hunger, hunger, hungry, in_hopes_of, in_the_hope_of, interested, long, longing, lust, lust, pine, raring, spoiling, thirst, thirst, thirsty, urge, want, wants, will, will, wish (that), wish, wish, yearn, yearning, yen, and yen (N)</i></p>
		<p>Construction:</p>	<p>Transitive: Experiencer < * < {Event, Focal_participant}</p>

4	Emotion_active	Definition:	This frame has similarities to Experiencer_subject, but here the verbs are more 'active' in meaning. (For example, they often occur in negative imperatives, e.g. "Don't worry!"). They also differ from Experiencer_subject verbs in that they occur with Topic expressions and can be used in the present progressive.
		Core FEs:	Experiencer, Topic
		Lemmas:	<i>agonize, fret, fuss, lose_sleep, obsess, obsession, worry</i>
		Construction:	Intransitive: Experiencer < * < Topic (in PP)
5	Emotion_directed	Definition:	The adjectives and nouns in this frame describe an Experiencer who is feeling or experiencing a particular emotional response to a Stimulus or about a Topic. There can also be a Circumstances under which the response occurs or a Reason that the Stimulus evokes the particular response in the Experiencer.
		Core FEs:	Experiencer, State, Stimulus, Topic, Event, Expressor
		Lemmas:	<i>abashed, affronted, agitated, agitation, agonized, agony, alarmed, all about, amused, amusement, anger, angry, anguish, anguished, annoyance,</i>

		<p> <i>annoyed, anxious, appalled, ashamed, astonished, astonishment, astounded, baffled, bafflement, befuddled, bewildered, bewilderment, blue, bored, boredom, chagrin, chagrined, concern, concerned, contented, covetous, crestfallen, cross, dejected, dejection, delight, delighted, depressed, desolate, despair, despondency, despondent, devastated, disappointed, disappointment, discomfited, discomfiture, disconcerted, disconcertion, disconsolate, discouraged, discouragement, disgruntled, disgruntlement, disheartened, dismay, dismayed, disorientation, disoriented, displeased, displeasure, disquiet, disquieted, distress, distressed, downcast, downhearted, ecstatic, elated, elation, embarrassed, embarrassment, embittered, enraged, exasperated, exasperation, excited, excitement, exhilarated, exhilaration, fascinated, fed up, fed-up, flabbergasted, flummoxed, flustered, frightened, furious, fury, glee, gleeful, glum, glumness, gratification, gratified, grief-stricken, grief, happy, harried, heartbreak, heartbroken, horrified, horror, humiliated, incensed, inconsolable, indignant, infuriated, interest,</i> </p>
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			<p><i>interested, into, irate, irked, irritated, jubilant, livid, low-spirited, lugubrious, mad, miffed, miserable, mortification, mortified, mournful, mourning, mystification, mystified, nervous, nettled, nonplussed, offended, overjoyed, overwrought, peeved, perplexed, perplexity, perturbed, petrified, pleased, puzzlement, rattled, relaxed, resentful, revolted, revulsion, riled, ruffled, sad, saddened, sadness, shocked, sickened, sore, sorrow, sorrowful, startled, stressed, stunned, stupefaction, stupefied, sympathetic, sympathize, sympathy, terror-stricken, thrilled, tormented, traumatised, unsettled, unsympathetic, upset, vexation, vexed, woebegone, worried, and wretched.</i></p>
		Construction:	Intransitive: Experiencer < *
6	Emotino_heat	Definition:	<p>This frame contains verbs that describe emotional experiences and participate in the locative alternation. For example: I was BOILING with anger. Anger was BOILING inside me. While these words might seem to be like support verbs for emotion nouns such as anger, the same verbs can be used in the absence of such nouns, e.g. His remarks made me boil (inside).</p>

		Core FEs:	Emotion, Experiencer, Seat of Emotion
		Lemmas:	<i>boil, burn, chafe, fume, seethe, simmer, smoulder, stew</i>
		Construction:	Locative Alternation Intransitive1: Emotion < * Intransitive2: Experiencer < * < Emotion (in PP)
7	Experiencer_obj	Definition:	Some phenomenon (the Stimulus) provokes a particular emotion in an Experiencer.
		Core FEs:	Experiencer, Stimulus
		Lemmas:	<i>abash, aggravate, aggrieve, alarm, amaze, anger, annoy, antagonize, astonish, astound, baffle, beguile, bewilder, bewitch, boggle, bore, calm, captivate, charm, cheer, comfort, conciliate, confuse, console, crush, dazzle, delight, demolish, depress, devastate, disappoint, discomfit, disconcert, discourage, dishearten, displease, distress, disturb, embarrass, embitter, enchant, enrage, entertain, enthrall, exasperate, excite, exhilarate, fascinate, faze, flabbergast, floor, flummox, fluster, frighten, frustrate, fulfill, gall, gladden, gratify, hearten, humiliate, impress, incense, infuriate, interest, intimidate, intrigue, irk, irritate, madden, mollify, mortify, mystify, nettle,</i>

			<p><i>nonplus, offend, outrage, pacify, perplex, perturb, petrify, placate, please, puzzle, rankle, rattle, reassure, repel, revolt, rile, sadden, satisfy, scare, shake, shame, shock, shocker[N], sicken, sober, solace, soothe, spook, startle, stimulate, sting, stir, stun, stupefy, surprise[N], surprise, terrify, thrill, tickle, torment, traumatize, trouble[N], trouble, unnerve, unsettle, upset, vex, vexation[N], wow</i></p>
		Construction:	Transitive: Stimulus < * < Experiencer
8	Feeling	Definition:	In this frame an Experiencer experiences an Emotion or is in an Emotional_state. There can also be an Evaluation of the internal experiential state.
		Core FEs:	Emotion, Emotional_state, Evaluation, Experiencer
		Lemmas:	<i>emotion, experience, feel, feelings, full</i>
		Construction:	Transitive: Experiencer<* < {Emotional_state, Emotion}
9	Forgiveness	Definition:	A Judge refrains from imposing, or demanding a punishment for an Evaluatee who has committed an Offense.
		Core FEs:	Evaluatee, Judge, Offense
		Lemmas:	<i>condone, excuse, forgive, forgiveness, pardon</i>
		Construction:	Transitive: Judge < * < Evaluatee
10	Judgment	Definition:	A Judge refrains from imposing, or demanding a

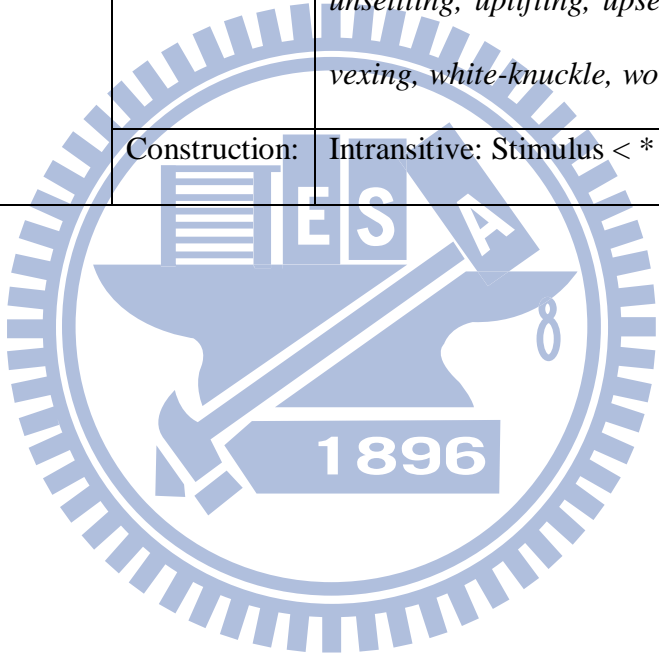
			punishment for an Evaluee who has committed an Offense.
		Core FEs:	Cognizer, Evaluee, Expressor, Reason
		Lemmas:	<i>appreciate, appreciation, appreciative, approbation, approving, blame, blame, boo, contempt, contemptuous, critical, damnation, deify, deplore, derisive, disapproval, disapprove, disapproving, disdain, disdain, disdainful, disrespect, esteem, esteem, exalt, exaltation, fault, fault, mock, mockery, prize, reprehensible, reproach, reproachful, respect, respect, revere, reverence, scorn, scorn, scornful, set store, stigma, stigmatize, stricture, uncritical, value, vilification</i>
		Construction:	Transitive: Cognizer < * < Evaluee
11	Predicament	Definition:	An Experiencer is in an undesirable Situation, whose Cause may also be expressed.
		Core FEs:	Experiencer, Situation
		Lemmas:	<i>bind, fix, jam, mess, misfortune, pickle, pinch, plight, predicament, problem, scrape, trouble</i>
		Construction:	Intransitive: Experiencer < *
12	Experiencer_focus	Definition:	The words in this frame describe an Experiencer's emotions with respect to some Content. A Reason for the emotion may also be expressed. Although

			the Content may refer to an actual, current state of affairs, quite often it refers to a general situation which causes the emotion.
		Core FEs:	Content, Event, Experiencer, Expressor, State, Topic
		Lemmas:	<i>abhor, abhorrence, abominate, adoration, adore, afraid, agape, antipathy, apprehensive, calm, comfort, compassion, delight, despair, desperation, despise, detest, detestation, dislike, dislike, dissatisfied, dread, dread, empathetic, empathize, empathy, enjoy, enjoyment, envy, envy, fazed, fear, fear, fed up, feverish, feverishly, fond, freaked, frightened, fulfilled, fulfillment, grief-stricken, grieve, happily, hate, hatred, interested, intimidated, irritated, like, loathe, loathing, love, luxuriate, mourn, nervous, nettled, pity, pity, pleasure, regret, regret, relish, relish, resent, resentment, rue, rueful, satisfaction, satisfied, savour, scared, solace, taken, terrified, unfazed, upset, worked up, worried</i>
		Construction:	Transitive: Experiencer < * (Verbs) < Content Intransitive: Experiencer < *
13	Stimulus_focus	Definition:	In this frame either a Stimulus brings about a

			<p>particular emotion or experience in the Experiencer or saliently fails to bring about a particular experience. Some words indicate that the Stimulus is characterized by the experience it is likely to evoke in an Experiencer and for this, the Experiencer may rarely be present. There may also be a Degree to which the Stimulus affects the Experiencer and Circumstances under which the experience occurs. There may also be a Comparison_set to which the Stimulus is compared and a Parameter that indicates the area in which the Stimulus has its effect.</p>
	Core FEs:	Stimulus	
	Lemmas:		<p><i>abominable, absorbing, aggravating, aggravation, agonizing, agreeable, alarming, alienating, amazing, amusing, annoyance, annoying, appalling, astonishing, astounding, baffling, beguiling, bewildering, bewitching, blood-curdling, boring, bothersome, breathtaking, calming, captivating, charm_((count)), charm_((mass)), charming, cheering, chilling, comforting, comical, confusing, consoling, delight, delightful, depressing, devastating, disagreeable,</i></p>

			<p> <i>disappointing, discomfiting, discomforting, disconcerting, discouraging, disgusting, disheartening, disillusioning, dimaying, disorientating, displeasing, distasteful, distressing, disturbing, dreadful, droll, dull, earth-shattering, electrifying, embarrassing, embittering, empty, enchanting, encouraging, engrossing, enjoyable, enraging, entertaining, enthralling, exasperating, exciting, exhilarating, fascinating, formidable, frightening, fulfilling, full, funny, galling, ghastly, gratifying, gripping, hair-raising, harrowing, heart-rending, heart-stopping, heart-warming, heartbreaking, heartening, hilarious, humorous, impressive, infuriating, interesting, intimidating, intriguing, invigorating, irksome, irritating, jaw-dropping, jolly, maddening, mind-boggling, mind-numbing, mortifying, mystifying, nerve-racking, nice, offensive, pacifying, pathetic, perplexing, pitiful, placating, pleasant, pleasing, pleasurable, poignant, reassuring, recreation, relaxation, relaxing, repellent, revolting, rich, rousing, sad, saddening, satisfying, scary, shocking, sickening, side-splitting, sobering, solemn, soothing, spine-</i> </p>
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		<p><i>chilling, spine-tingling, startling, stimulating, stinging, stirring, stressful, striking, stupefying, surprising, suspenseful, tear-jerking, tedious, terrifying, thorny, thrilling, tiresome, tiring, tormenting, touching, traumatic, traumatising, troublesome, troubling, unexciting, unfulfilling, unfunny, unnerving, unpleasant, unpleasing, unsettling, uplifting, upsetting, vexation, vexatious, vexing, white-knuckle, worrisome, worrying.</i></p>
		<p>Construction: Intransitive: Stimulus < *</p>



Appendix II

Mandarin emotion frame information

	Frame	Description	
1	Happy-Sad	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 <i>wei</i> ‘for’, and 替 <i>ti</i> ‘for’.
		Core FEs:	Experiencer, Target_empathy, Stimulus, Content
		Lemmas:	生氣 <i>shengqi</i> ‘angry’, 驚訝 <i>jingya</i> ‘surprise’, 失望 <i>shiwang</i> ‘disappoint’, 高興 <i>gaoxing</i> ‘be glad’, 快樂 <i>kuaile</i> ‘be happy’, 難過 <i>nanguo</i> ‘be sad’, 尷尬 <i>ganga</i> ‘be embarrassed’, 慚愧 <i>cankui</i> ‘be shamed’, 羞愧 <i>xiukui</i> ‘be ashamed’, 激動 <i>jidong</i> ‘be flushed’, 煩躁 <i>fanzao</i> ‘annoyed’, 悲哀 <i>beiai</i> ‘be sad’, 痛苦 <i>tongku</i> ‘pain’, 悲傷 <i>beishang</i> ‘be sad’, 哀痛 <i>aitong</i> ‘grief’, 苦惱 <i>kunao</i> ‘worry’, 不安 <i>buan</i> ‘be discomfort’, 惱火 <i>naohuo</i> ‘be annoyed’, 悲痛 <i>beitong</i> ‘grieved’, 吃驚 <i>chijing</i> ‘be amazed’, 振奮 <i>zhenfen</i> ‘inspire’, 消沈 <i>xiaochen</i> ‘be

			downhearted’, 為難 <i>weinan</i> ‘be awkward’, 洩氣 <i>xiequ</i> ‘be discouraged’, 沮喪 <i>jusang</i> ‘be depressed’, 陶醉 <i>taozui</i> ‘be intoxicated’, 憂愁 <i>youchou</i> ‘be worried’, and 著急 <i>zhaoji</i> ‘be anxious’
		Alternation:	Experiencer [NP] < Degree[Adv] < * Experiencer [NP] < { 替 <i>ti</i> ‘for’/ 為 <i>wei</i> ‘for’}[P] + Target_empathy[NP] < (Degree [Adv]) < *
2	Regret- Sorry	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.
		Core FEs:	Experiencer, Prior Act, Prior Act_Description, Stimulus
		Lemmas:	後悔 <i>houhui</i> ‘regret’, 懊惱 <i>aonao</i> ‘be remorseful’, 懊悔 <i>aohui</i> ‘repent’, 悔恨 <i>huihen</i> ‘regret’, 痛悔 <i>tonghui</i> ‘regret’, 遺憾 <i>yihan</i> ‘feel sorry’, 慚愧 <i>cankui</i> ‘be shamed’, 愧疚 <i>kuijiu</i> ‘be ashamed’, 惋惜 <i>wanxi</i> ‘feel sorry’, 內疚 <i>neijiu</i> ‘be guilty’, 自責 <i>zize</i> ‘be remorseful’
		Alternation:	Experiencer[NP] < * < Prior Act[VP/CL]
3	Content- Contented	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.
		Core FEs:	Experiencer, Target_entity, Target_act, Target_situation, Stimulus
		Lemmas:	滿足 <i>manzu</i> 'satisfied', 服氣 <i>fuqi</i> 'submit', 爽 <i>shuang</i> 'comfortable', 氣 <i>qi</i> 'anger', 不滿 <i>buman</i> 'be dissatisfied', 不捨 <i>bushè</i> 'unwilling to give up', 不服 <i>bufu</i> 'unwilling to accept'
		Alternation:	Transitive: Experiencer < * < Target Intransitive: Experiencer < *
4	Love-Hate	Definition:	The words in Love-Hate 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 a prior event.
		Core FEs:	Experiencer, Target_entity, Target_act, Target_situation
		Lemmas:	愛 <i>ai</i> 'love', 喜愛 <i>xiai</i> 'like', 喜歡 <i>xihuan</i> 'like', 愛好

			<p><i>aihao</i> ‘love’, 熱愛 <i>reali</i> ‘love’, 恨 <i>hen</i> ‘hate’, 痛恨 <i>tonghen</i> ‘hate’, 討厭 <i>taoyan</i> ‘detest’, 厭惡 <i>yanwu</i> ‘detest’</p>
		Alternation:	<p>Experiencer < * < {Target_entity, Target_act, Target_situation}</p>
5	Envy-Pity	Definition:	<p>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.</p>
		Core FEs:	<p>Experiencer, Target_entity, Target_situation</p>
		Lemmas:	<p>羨慕 <i>xianmu</i> ‘envy’, 嫉妒 <i>jidu</i> ‘jealous’, 妒忌 <i>duji</i> ‘jealous’, 同情 <i>tongqing</i> ‘sympathize with’, 憐憫 <i>lianmin</i> ‘pity’, 憐惜 <i>lianxi</i> ‘take pity on’, 可憐 <i>kelian</i> ‘sympathize with’</p>
		Alternation:	<p>Transitive:</p> <p>Experiencer (<Degree) < * < {Target_entity, Target_situation}</p> <p>Causative:</p> <p>Cause[NP/S] < {讓 <i>rang</i> /令 <i>ling</i> ‘make’} Experiencer (<Degree) < * (<{Target_entity, Target_situation})</p>

			<p>Dative:</p> <p>Experiencer <對 <i>dui</i> ‘toward’ Target_entity <({ 表示 <i>biaoshi</i> ‘to show’/深表 <i>shenbiao</i> ‘to sincerely show’ })*</p>
6	Worry-Fear	Definition:	<p>Lemmas 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.</p>
		Core FEs:	<p>Experiencer, Target_entity, Target_possible situation, Beneficiary</p>
		Lemmas:	<p>擔心 <i>danxin</i> ‘worry’, 擔憂 <i>danyou</i> ‘be anxious’, 憂慮 <i>youlu</i> ‘be anxious’, 牽掛 <i>qiangua</i> ‘be concern about’, 掛心 <i>guaxin</i> ‘be concerned with’, 掛念 <i>guanian</i> ‘concern about’, 焦慮 <i>jiaolu</i> ‘be anxious’, 不安 <i>buan</i> ‘be discomfort’, 苦惱 <i>kunao</i> ‘worry’, 煩惱 <i>fannaofu</i> ‘worry’, 發愁 <i>fachou</i> ‘be worried’, 焦急 <i>jiaoji</i> ‘anxious’, 不放心 <i>bu fangxin</i> ‘feel worry’, 怕 <i>pa</i> ‘fear’, 害怕 <i>haipa</i> ‘fear’, 懼怕 <i>jupa</i> ‘be afraid of’, 畏懼 <i>weiju</i> ‘be afraid of’, 恐懼 <i>kong ju</i> ‘fear’, 畏 <i>wei</i> ‘fear’, 懼 <i>ju</i> ‘fear’, 怯 <i>qie</i></p>

			<p>‘nervous’, 生怕 <i>sheng pa</i> ‘so as not to’, 關心 <i>guanxin</i> ‘be concerned with’, 關切 <i>quanqie</i> ‘be concerned with’, 在乎 <i>zaihu</i> ‘care about’, 在意 <i>zaiyi</i> ‘care about’, and 顧慮 <i>gulu</i> ‘scruple’</p>
		Alternation:	<p>Target Extraposition Alternation:</p> <p>Experiencer < * < Target</p> <p>Experiencer < 對 <i>dui</i> ‘toward’/為 <i>wei</i> ‘for’ Target < *</p> <p>Beneficiary Dative Alternation:</p> <p>Experiencer < 替 <i>ti</i> ‘for’/為 <i>wei</i> ‘for’ Beneficiary < * < Target</p>
7	Stimulus-Attributive	Definition:	<p>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.</p>
		Core FEs:	Stimulus
		Lemmas:	<p>誘人 <i>youren</i> ‘alluring’, 累人 <i>leiren</i> ‘exhausting’, 氣人 <i>qiren</i> ‘irritating’, 惱人 <i>naoren</i> ‘annoying’, 動人 <i>dongren</i> ‘touching’, 感人 <i>ganren</i> ‘touching’, 迷人</p>

			<p><i>miren</i> ‘charming’, 吸引人 <i>xiyinren</i> ‘inviting’, 煩人 <i>fanren</i> ‘annoying’, 駭人 <i>hairen</i> ‘scaring’, 嚇人 <i>xiaren</i> ‘fearful’, 可愛 <i>keai</i> ‘lovable’, 可憐 <i>kelian</i> ‘pitiable or sympathize with’, 可恨 <i>kehen</i> ‘detestable’, 可笑 <i>kexiao</i> ‘laughable’, 可悲 <i>kebei</i> ‘deplorable’, 可惜 <i>kexi</i> ‘pity’, 有趣 <i>youqu</i> ‘interesting’, 無趣 <i>wuqu</i> ‘boring’, 有意思 <i>youyisi</i> ‘interesting’, 令人興奮 <i>ling ren xingfen</i> ‘exciting’</p>
		Alternation:	Stimulus<(Degree)<*
8	Attract- Comfort	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.
		Core FEs:	Affecter, Affectee, Act
		Lemmas:	<p>安慰 <i>anwei</i> ‘comfort’, 安撫 <i>anfu</i> ‘pacify’, 撫慰 <i>fuwei</i> ‘console’, 慰問 <i>weiwen</i> ‘console’, 鼓勵 <i>guli</i> ‘encourage’, 激勵 <i>jili</i> ‘encourage’, 鼓舞 <i>guwu</i> ‘inspire’, 吸引 <i>xiyin</i> ‘attract’, 刺激 <i>ciji</i> ‘stimulate’, 引誘 <i>yinyou</i> ‘seduce’, 誘惑 <i>youhuo</i> ‘seduce’, 迷惑 <i>mihuo</i> ‘confuse’</p>
		Alternation:	<p>Transitive: Affecter<*(了)< Affectee</p> <p>Passive: 被 passive 得 Result: Affectee<被<Affecter<*<</p>

			得<Result
9	Bother- Irritate	Definition:	Verbs in this frame describe an actor provokes a deliberate act to arouse an emotional response of the undergoer as a volitional result.
		Core FEs:	Affecter, Affectee, Reason
		Lemmas:	折磨 <i>zhemo</i> ‘torment’, 打擾 <i>darao</i> ‘disturb’, 打攪 <i>dajiao</i> ‘disturb’, 煩擾 <i>fanrao</i> ‘bother’, 擾亂 <i>raoluan</i> ‘disturb’, 折騰 <i>zheteng</i> ‘torment’, 惹惱 <i>renao</i> ‘anger’, 激怒 <i>jinu</i> ‘anger’, 觸怒 <i>chunu</i> ‘arouse the anger of’, 惹火 <i>rehuo</i> ‘provoke’, 感動 <i>gandong</i> ‘touch’, 打動 <i>dadong</i> ‘move’, 嚇 <i>xi</i> ‘frighten’, 煩 <i>fan</i> ‘annoy’, 氣 <i>qi</i> ‘anger’
		Alternation:	Transitive: Affecter [NP] < * (了 <i>le</i> ‘PERF’) < Affectee [NP] < (Result [VP]) Permissive: Affecter[NP] < {把 <i>ba</i> } + Affectee[NP] < * (了 <i>le</i> ‘PART’)