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中文摘要

　　動詞詞彙語意研究近年來一直是語言學重要的研究議題之一，動詞詞彙語意研究與句法和語意之間的互動有著緊密的關係。此篇研究採用 Liu *et al.* (2004) 提出的多層級研究框架，此研究架構以框架語義為本 (Fillmore and Atkins 1992)，總共包含 5 個層級：領域-框架-次框架-近義詞詞組-詞彙，希望可以對中文動詞語義研究提供完整的分析模式。使用此研究架構，即可以對中文陳述性動詞中包含各種不同動詞類型，提供一完整有系統的分析。在中文裡，陳述性動詞包含非常多詞彙，例如：說、講話、表示、說明、建議等…陳述性動詞是溝通類動詞裡非常重要且也是主要的成員之一。中文陳述性動詞典型的句法表現為：動詞前的主語為說話者，動詞後帶的受詞為說話者說出的內容或訊息，以下例子可以說明此句法表現：

(1) 她[Speaker] **說/表示/解釋/建議/抱怨/透露/提醒** <u>那麼你自由自在的飛吧</u>
　　 [Message]

雖然這些動詞都展現類似的句法形式，但他們卻表達非常不同的溝通事件，於是一項基本的議題成為本研究的主要重點：這些動詞彼此之間有什麼不同？更具體的說，這些動詞在語義上有何區分，句法和語義之間存在著什麼樣的關連關係？

　　採用 5 層級以框架理論為基礎的研究架構 (Liu *et al.* 2004)，中文陳述性動詞在定義上是屬於陳述框架，而這個框架屬於一個更上層、更大的知識本體—溝通領域，陳述性動詞在認知上皆牽涉到一項重要的概念：表達單向性的訊息包裝與傳達之溝通事件，屬於這個 frame 且用來定義這些動詞的框架元素為說話者、訊息本身、主題、聽話者與溝通媒介。這麼多陳述性動詞可以依據框架元素之凸顯和隱藏與否與其在句法上之展現，將這些動詞作次分類，即區分次框架，同時也是在每個次框架裡，可以再進一步區分近義詞詞組，區分中文陳述性動詞的標準總共有 11 項，羅列如下：1)名物化的比例 2)動詞詞彙化包含訊息之句法表現 3)主題使用之不同 4)聽話者出現之差異 5)溝通媒介之使用 6)說話者角色之差異 7)訊息類型之不同 8)說話者和聽話者之間的關係 9)人為溝通事件的主題 10)陳述動詞與其他動詞合用的 V+V 句法表現 11)與時態標記共現的差異。根據以上這 11 個區分標準，可以將 58 個中文陳述性動詞進一步區分為 9 個 subframes。

　　採用這樣的研究架構，對中文陳述性動詞的研究可以大量而且深入，同時，也可以對動詞的語義表徵作比較有系統且精確的分析，此研究顯示動詞語義研究應該是具有階層性的，而且跨語言的動詞語義研究也可以利用此研究框架來進行，此研究最終是希望能對中文與跨語言的動詞詞彙語義研究有所貢獻。

關鍵詞: 框架語義, 中文陳述性動詞, 詞彙語義研究, 中文動詞詞網

English Abstract

Verbal semantics has been an important issue in linguistic research that deals with the interaction between syntax and semantics. This research adopts the frame-based (Fillmore and Atkins 1992) classification hierarchy (Domain > Frame > Subframe > Near-synonym Set > Lemma) proposed by Liu *et al* (2004) and provides a unified solution to the study of Mandarin verbal semantics. As part of the efforts in constructing the Madnarin VerbNet, verbs of the statement frame were analyzed in detail to capture the syntactically-relevant lexical semantic features. With the case of Mandarin statement verbs, the 'five-layered hierarchical model' is shown to be effective and comprehensive in exploring the granularity of verb types. In Mandarin, verbs of statement include a wide variety of verbs, e.g., *shuo* 說 'say', *jianghua* 講話 'talk/speak', *biaoshi* 表示 'express', *shuoming* 說明 'explain', *jianyi* 建議 'suggest'. Prototypically, verbs of statement tend to take a Speaker as the subject and a Message the object, as illustrated below:

(1) 她[speaker subject] 說/表示/解釋/建議/抱怨/透露/提醒 那麼你自由自在的飛吧 [message object]

Although these verbs share the basic surface pattern, they encode very different communicative events. One fundamental question in this research is: how do these verbs differ from each other? More specifically, what are the distinctions in their lexical semantics and syntax-to-semantics correlates?

Following the five-layered frame-based framework (Liu *et al.* 2004), a large set of Chinese statement verbs is first characterized with a cognitive schema of the Statement frame and linked to the upper semantic ontology, the Communication domain. Verbs in the Statement frame all involve "unidirectional message-transferring" and can be defined initially with a set of core frame elements: Speaker, Message, Topic, Addressee, Means. Corpus observations of the major syntactical realizations of the frame elements (Basic Patterns) and collocational associations are then analyzed to categorize verbs into several subtypes, i.e., subframes. Under the frame level, syntactic foregrounding and backgrounding of certain core frame elements and their syntactic manifestations were taken as the basis for further categorizing verbs into nine subframes. It is also at the subframe level that all the near-synonym sets are anchored. The eleven criteria for further distinguishing the statement subframes are as follows: 1) Frequency of nominalization 2) Incorporated Message 3) Distributional contrasts of Topic 4) Distributional contrasts of Addressee 5) Overt marking of Medium_Means 6) Variation of Speaker role 7) Variations of Message types 8) Relation between Speaker and Addressee 9) Topic as Human 10) V+V pattern 11) Collocational variations of aspectual modifications. Based on the above eleven criteria, fifty-eight verbs of statement are further

categorized into **nine** subframes, each with a unique set of highltighted frame elements, basic patterns, collocational associations, and semantic features.

The research attempts to identify syntactically-motivated manifestations of verbal behavior that may be attributed to their lexical semantic properties. It is shown that verbal semantics should be represented and linked to a well-structured hierarchical framework. Ultimately, it shows that the model adopted in constructing the Manarin VerbNet can capture a fine-grained semantic representation (much as Pustejovsky (1995) has claimed—the semantic well-formedness) in Mandarin and can also help to explore verbal semantics in a cross-linguistic perspective.

Keywords: Frame Semantics, Mandarin verbs of statement, lexical semantics, Mandarin VerbNet

目錄

1. The task: construction of the Mandarin VerbNet

Verbal semantics has been an important issue in linguistic research that has to do with the interaction between syntax and semantics. The meanings of verbs are syntactically realized and therefore, the task in verbal semantics is to identify lexically specified semantic distinctions that are syntactically motivated. In an early series of works, our research group has attempted to explore the key semantic attributes that are crucial for the verbal lexicon by studying pairs or sets of near-synonyms (cf. Liu 1999, Liu et al. 2000, Liu 2002a, 2002b, 2002c, Liu 2003a, 2003b, 2003c). Recently, our research focus has been on the development of a comprehensive lexical database for delimiting and representing the Mandarin verbal lexicon, i.e., the construction of the Mandarin VerbNet.

Different from most existing lexical databases that distinguish word senses without detailed grammatical considerations, the Mandarin VerbNet is designed to provide lexical semantic information based on grammatical descriptions and framed in linguistic theories. It looks for systematic correlations between syntax and semantics and classifies verbs according to crucial syntax-to-semantics correspondences (cf. Levin 1993). Overall speaking, it resembles the English FrameNet in that it utilizes the theory of Frame Semantics (Fillmore and Atkins 1992), but differs from FrameNet in that it adopts a hierarchical design by augmenting its structure to include subframes and near-synonym comparisons (Liu and Chang 2004, Liu 2002). In short, Mandarin VerbNet bases all its semantic analysis on syntactic behaviors and attempts to provide linguistic motivations for its semantic classifications.

As mentioned in Liu *et al.* (2004), the Mandarin VerbNet is constructed according to the following six principles:

1) It is hierarchically structured with five levels: Domain > Frame > Subframe > Near-synonym Set > Lemma (Liu and Chang 2004). Each level is specified with Definition, Frame Elements, Conceptual schema, Basic patterns (grammatical expression of core arguments), Collocational Associations (grammatical or lexical collocations of non-core arguments), Semantic Attributes (distinctions pertaining to event structure, participant roles or discourse context).

2) It provides conceptual motivations to characterize the cognitive bases for individual frames and the interrelations between frames (Liu and Wu 2003).

3) All the semantic classifications of verbs (frames, subframes, near-synonyms) are made according to syntactic distinctions in Basic Patterns or Collocational Associations.

4) Sense distinction of polysemy follows the principle: one frame, one sense.

Therefore, verbs with multiple senses belong to multiple frames.

5) Frame are distinguished according to syntactically expressed core frame elements; subframes are distinguished according to syntactic foregrounding or backgrounding of certain frame elements; near-synonyms sets are distinguished according to syntactically revealed specifications of frame attributes.

6) Semantic inheritance exists from top to bottom in the hierarchical structure. Subframes are the level that multiple inheritance may happen (i.e., a given subframe may inherit features from two different frames).

A preliminary model of Mandarin VerbNet is constructed using verbs of conversation as illustrations (Liu *et al*. 2004). This project aims to expand the existing scope of VerbNet by analyzing another important group of communication verbs – verbs of the statement frame.

1. The target of study: verbs of statement:

Liu (2003) pointed out that communication verbs constitute a basic domain, i.e., the Communication Domain and encode the most fundamental aspect of human activities. Verbs of statement include a wide variety of verbs and form a major group in the communication domain, e.g., *shuo* 說 'say', *jianghua* 講話 'talk/speak', *biaoshi* 表示 'express', *shuoming* 說明 'explain', *jianyi* 建議 'suggest', and other words.   They are verbs that express a communicative event whereby the Speaker conveys a Message to an Address. According to Givón's (1993) classification, these verbs are related to "utterance verbs" used for expressing a proposition related to some events. Prototypically, they tend to take a Speaker as the subject and a Message the object. The Message can be coded as directly following the verb or introduced by a colon and quotation marks, as illustrated in the following examples:

(1) 她[speaker subject] 說/表示/解釋/建議/抱怨/透露/提醒 那麼你自由自在的飛吧 [message object]

(2) 我[speaker subject] 說/表示/解釋/建議/抱怨/透露/提醒：「把傘打開吧。」。[message object]

Although these verbs share the basic surface pattern, they encode very different communicative events. One fundamental question in our research is: how do these verbs differ from each other? More specifically, what are the distinctions in their lexical semantics and syntax-to-semantics correlates?

As pointed out by Liu and Chang (to appear), the flat structure of frames as adopted in FrameNet may be inadequate for exploring the granularity of verb types in

Mandarin. Therefore, the analysis of the statement frame follows the 'five-layered hierarchical model' as mentioned above, trying to distinguish verbs into different subframes, then to near-synonym sets. The basic structure can be represented in the following figure:

(3) Frame-based Hierarchy for Statement Frame

Domain

Frame

Subframe

Near-synonym Set
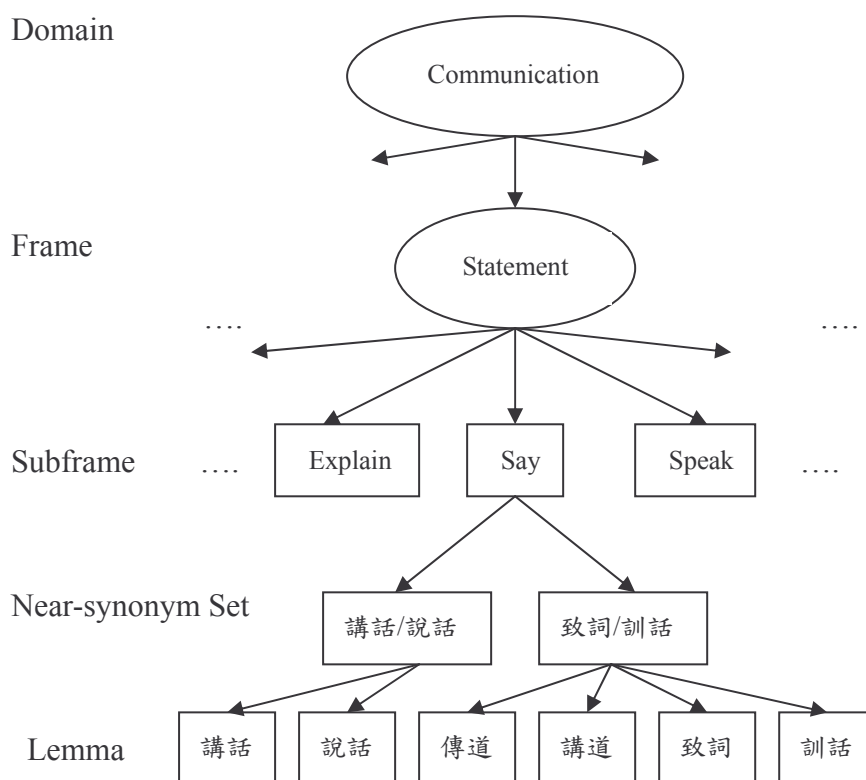
Lemma

As can be seen, this model is hierarchically structured with five levels: Domain > Frame > Subframe > Near-synonym Set > Lemma (Liu and Chang In press, Liu *et al* (2004). It also follows the "one frame, one sense" principle proposed by Liu *et al* (2004). In each frame, some polysemous words, i.e., words with the same morphological forms but different conceptual frames may be found. Since polysemous words share different conceptual frames and can be defined with different sets of core FEs[1], the different senses are treated as belonging to different frames. In the statement frame, some polysemous words are *jianghua* 講話 'talk/speak', *biaoshi* 表示 'express', *shuoming* 說明 'explain', or *jianyi* 建議 'suggest', and other words. Take *jianghua* 講話 'talk/speak' as an illustration, one of its senses is 'to talk with someone' and the other is 'to speak to an audience'. The former profiles the bidirectional communicative event while the later profiles the unidirectional

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[1] The abbreviation FEs represents 'Frame Elements'.

message-transferring activity (cf. Liu *et al* 2004), as presented in example (4a) and (4b), respectively:

(4)a. 他們父子[Interlocutors]高聲講話

   b. 前一陣子，我[Speaker]在慈濟紀念堂對大家[Addressee]講話

     Following the 'one frame, one sense' principle, the two senses are defined in different cognitive frames (Conversation frame vs. Statement frame) with different sets of core frame elements.

3. Database and Methodology

     According to FrameNet (http://framenet.icsi.berkeley.edu/), verbs of statement are verbs used for communication by a Speaker to perform the act of addressing a Message to some Addressees by using language. Liu and Wu (2003) further defined the statement event as unidirectional, with an emphasis on the process of information/message packaging by the Speaker to the Addressee. In Mandarin, verbs such as *shuo* 說 'say', *biaoshi* 表示 'express', *biaoda* 表達 'express', *fabiao* 發表 'announce', *toulu* 透露 'reveal', *baogao* 報告 'report' all belong to the statement frame. A complete set of statement verbs are shown below:

(5) Chinese Lemmas in the Statement frame

W_C	Count	Zhuyin	Hanyu Pinyin
報告	930	ㄅㄠˋ ㄍㄠˋ	bao4 gao4
抱怨	190	ㄅㄠˋ ㄩㄢˋ	bao4 yuan4
報導	1146	ㄅㄠˋㄉㄠˇ	bao4 dao3
保證	276	ㄅㄠˇ ㄓㄥˋ	bao3 zheng4
表達	667	ㄅㄧㄠˇ ㄉㄚˊ	biao3 da2
表露	18	ㄅㄧㄠˇ ㄌㄨˋ	biao3 lu4
表示	5000	ㄅㄧㄠˇ ㄕˋ	biao3 shi4
辯解	12	ㄅㄧㄢˋ ㄐㄧㄝˇ	bian4 jie3
批評	357	ㄆㄧ ㄆㄧㄥˊ	pi2 ping2
評論	95	ㄆㄧㄥˊ ㄌㄨㄣˋ	ping2 lun4
埋怨	42	ㄇㄞˊ ㄩㄢˋ	mai2 yuan4
發表	671	ㄈㄚ ㄅㄧㄠˇ	fa1 biao3
否認	190	ㄈㄡˇ ㄖㄣˋ	fou3 ren4
吩咐	30	ㄈㄣ ㄈㄨˋ	fen1 fu4
複述	1	ㄈㄨˋ ㄕㄨˋ	fu4 shu4
道	1521	ㄉㄠˋ	dao
透露	239	ㄊㄡˋ ㄌㄨˋ	tou4 lu4
坦承	97	ㄊㄢˇ ㄔㄥˊ	tan3 cheng2

提醒	270	ㄊㄧˊ ㄒㄧㄥˇ	ti2 xing3
提議	101	ㄊㄧˊ ㄧˋ	ti2 yi4
吐露	17	ㄊㄨˇ ㄌㄨˋ	tu3 lu4
揭發	31	ㄐㄧㄝ ㄈㄚ	jie1 Fa1
揭露	20	ㄐㄧㄝ ㄌㄨˋ	jie1 lu4
解釋	619	ㄐㄧㄝˇ ㄕˋ	jie3 shi4
交代	85	ㄐㄧㄠ ㄉㄞˋ	jiao1 dai4
堅稱	10	ㄐㄧㄢ ㄔㄥ	jian1 cheng1
建議	1167	ㄐㄧㄢˋ ㄧˋ	jian4 yi4
簡報	112	ㄐㄧㄢˇ ㄅㄠˋ	jian3 bao4
講	2084	ㄐㄧㄤˇ	jiang3
講道	7	ㄐㄧㄤˇ ㄉㄠˋ	jiang3 dao4
講話	259	ㄐㄧㄤˇ ㄏㄨㄚˋ	jiang3 hua4
警告	152	ㄐㄧㄥˇ ㄍㄠˋ	jing3 gao4
勸	154	ㄑㄩㄢˋ	quan4
勸勉	1	ㄑㄩㄢˋ ㄇㄧㄢˇ	quan4 mian3
勸誡	2	ㄑㄩㄢˋ ㄐㄧㄝˋ	quan4 jie4
勸說	10	ㄑㄩㄢˋ ㄕㄨㄛ	quan4 shuo1
敘述	153	ㄒㄩˋ ㄕㄨˋ	xu4 shu4
宣佈	188	ㄒㄩㄢ ㄅㄨˋ	xuan1 bu4
宣告	104	ㄒㄩㄢ ㄍㄠˋ	xuan1 gao4
宣稱	110	ㄒㄩㄢ ㄔㄥ	xuan1 cheng1
訓話	17	ㄒㄩㄣˋ ㄏㄨㄚˋ	xun4 hua4
致詞	73	ㄓˋ ㄘˊ	zhi4 ci2
證明	444	ㄓㄥˋ ㄇㄧㄥˊ	zheng4 ming2
證實	146	ㄓㄥˋ ㄕˊ	zheng4 shi2
主張	466	ㄓㄨˇ ㄓㄤ	zhu3 zhang1
陳述	55	ㄔㄣˊ ㄕㄨˋ	chen1 shu4
承諾	119	ㄔㄥˊ ㄋㄨㄛˋ	cheng2 nuo4
承認	347	ㄔㄥˊ ㄖㄣˋ	cheng2 ren4
吹牛	30	ㄔㄨㄟ ㄋㄧㄡˊ	chui1 niu2
傳達	110	ㄔㄨㄢˊ ㄉㄚˊ	chuan2 da2
傳道	11	ㄔㄨㄢˊ ㄉㄠˋ	chuan2 dao4
重申	39	ㄔㄨㄥˊ ㄕㄣ	chong2 shen1
聲明	164	ㄕㄥ ㄇㄧㄥˊ	sheng1 ming2
聲稱	54	ㄕㄥ ㄔㄥ	sheng1 cheng1
說	5000	ㄕㄨㄛ	shuo1
說明	1031	ㄕㄨㄛ ㄇㄧㄥˊ	shuo1 ming2
說話	521	ㄕㄨㄛ ㄏㄨㄚˋ	shuo1 hua4
言	385	ㄧㄢˊ	yan

The analysis of the present study is corpus-based. All the data and statistics of this paper were mainly based on "Academia Sinica Balanced Corpus of Modern Mandarin Chinese (Sinica Corpus)", which is a tagged Mandarin corpus containing a total of five million words. The distributional tendencies rather than grammaticality were taken as the important evidence for linguistic analysis.

(6) Intuitive classification of statement verbs

	Morphological Make-up	Lemmas
說類	V	**說**、講、道、言
說話類	V + N	**說話**、**講話**、傳道、講道、訓話、致詞
表示類	V + V, V + R	**表示**、表達、表露、陳述、敘述、**發表**、**主張**、傳達、宣佈、宣稱、宣告、聲明、聲稱、堅稱、吹牛
解釋類	V + R, V+V	**說明**、**解釋**、辯解、重申、複述
建議類	V, V + V	**建議**、提議、**提醒**、警告、勸、勸說、勸誡、勸勉
透露類	V + V	**透露**、**揭露**、吐露、揭發、
抱怨類	V + V	**抱怨**、埋怨、批評、**評論**
承認類	V + V, V + R	**承認**、否認、**坦承**、保證、承諾、證明、證實
報告類	V + R	**報告**、報導、簡報、**交代**、吩咐

Within each subclass, high-frequency verbs were chosen as the representative lemmas for this study. They are 說, 說話, 講話, 表示, 發表, 主張, 說明, 解釋, 建議, 提醒, 透露, 揭露, 抱怨, 評論, 承認, 坦承, 報告, 交代. For each verb, the first 200 tokens of examples were thoroughly investigated if the occurrence is more than 200 tokens. The data from Sinica Corpus were primarily used for examining the basic syntactic patterns of the verbs. Considering that data in Sinica Corpus may be limited, two popular daily-updated search engines 'Google' and 'Yahoo' were used for double-checking each verb's collocational associations.

4. Frame-based Analysis of Statement Verbs
4.1 Frame-level definition, Core Frame Elements, and Basic Patterns
Def.: Statement verbs profile one-way Message-packaging communicative events, focusing on the Speaker's delivering a Message on a Topic to the Addressee by using a certain Means.
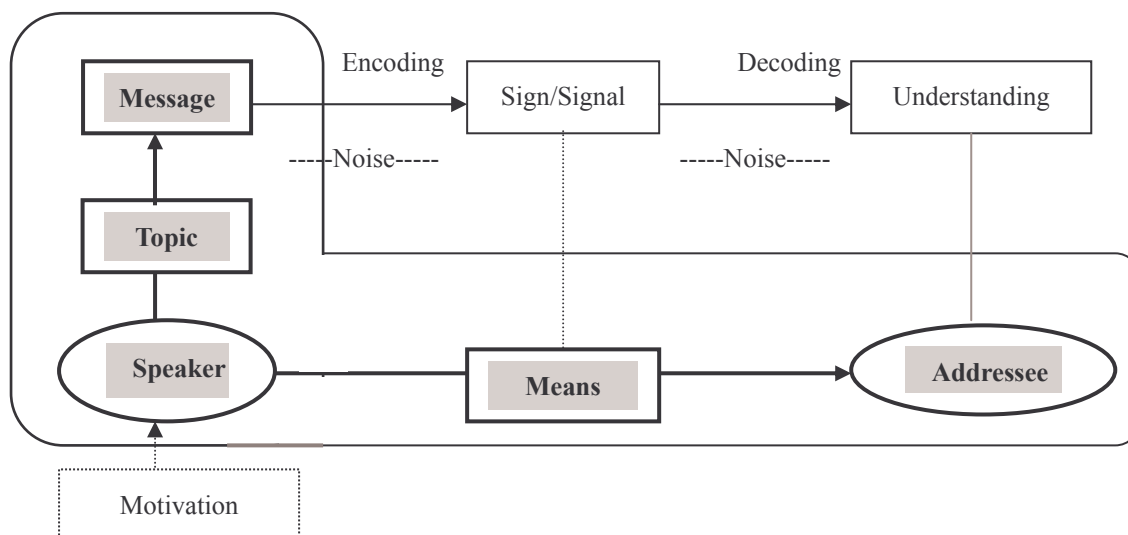**Core Frame Elements**: Speaker, Message, Topic, Addressee, Means
Basic Patterns: a) 周先生[Speaker]說：「我很快樂。」[Message]

b) 周先生 [Speaker]跟／向／對我[Addressee]說：「我很快樂 。」
[Message]

c) 他們的／一個／許多／實際的建議[+nom]

4.2 Cognitive Schema for the Statement Frame

The shared cognitive structure for Mandarin statement verbs is defined as follows: A speaker expresses a Message on a Topic to some Addressees by means of a Medium_Means (language or Means). The communicative event is a unidirectional information-giving process. Since the Statement frame is subsumed to the Communication Domain, it can be represented in the cognitively-based archi-model proposed by Liu and Wu (2003). The cognitive schema for defining the Statement Frame is schematized below with highlighted core frame elements:

(7) Cognitive Schema of the Statement Frame

4.3 Syntactic motivations for distinguishing the subframes

Verbs of statement involve a set of core frame elements: Speaker, Message, Topic, Means, and Addressee. As have been mentioned in the previous section, fifty nine statement verbs were found and can be defined by these core FEs. Then, one would wonder what motivates Chinese to have such a wide range of statement verbs. More specifically, what are each verb's unique lexicalized meanings that distinguish one from another? A satisfactory answer might not be easy to access to. Fortunately, a frame-based approach provides us with some useful insights.

By first investigating the high-frequent verbs in detail, eleven criteria for further dividing the subframes were found. Number two to five are distributions of core frame elements and number six to nine are variarions related to core frame elements.

The last two are collocational patterns of non-core frame elements: 1) Frequency of nominalization 2) Incorporated Message: owing to morphological make-up, verbs such as *jianhua* '講話' or *shuohua* '說話' have theme incorporated, and thus, rarely can be followed by a Message 3) Distributional contrasts of Topic: Topic tends to be absent in the speaking event 4) Distributional contrasts of Addressee: Addressee is highlighted in the Report subframe 5) Overt marking of Medium_Means: the explain event prefers to perform the verbal activity by means of an analogy or comparison Means such as 例子/實例/故事/經驗 6) Variation of Speaker role: speakers of some verbs tend to be professional (學者/專家/教授) or official (官員/議員) figures 7) Variations of Message types: Message is different among the various events; 8) Relation between Speaker and Addressee: some verbs may be more commonly used by a single Speaker to a collective Addressee, for instance, 他向他們. In addition, there exists different status relation between Speaker and Addressee, i.e., superior to inferior or *vice versa*, for example 學生向老師 or 縣太爺向衙役 9) Topic as Human: in the complaining event, human topic can be frequently found (抱怨政府) 10) V+V pattern: some may occur with the proceeding verb, *jinxing* 進行 'proceed', others may be proceeded by *jiayi* 加以 'treat/handle', and still others may co-occur with *xue/lianxi* 學/練習 'learn/practice'; 11) Collocational variations of aspectual modifications. Based on the above eleven criteria, verbs of statement can be further categorized into several subframes.

4.3.1 Frequency of nominalization

In the Statement frame, some groups of verbs—speaking, expressing, explaining, suggesting, complaining, and reporting verbs can be nominalized, whereas, other groups of verbs—saying, revealing, and admitting verbs cannot be nominalized, as illustrated below:

(8) a. 他們努力不懈，直到他人完全接受他們的**建議**[+nom]
 b. 他們努力不懈，直到他人完全接受他們的 *說/*透露/*承認[+nom]

The distributional skewing over grammatical functions is shown in table (9):
(9) Distribution of predicate vs. nominal uses

V / Function	說 200	說話 350	表示 600	說明 400	建議 251	透露 197	抱怨 277	承認 296	報告 239
Predicate	100% (200)	81.2% (284)	86.8% (494)	46.4% (186)	62.2% (156)	100% (197)	67.1% (185)	100% (296)	39.1% (110)
Nominalized	0%	18.8% (66)	13.2% (106)	53.6% (214)	37.8% (95)	0%	32.9% (92)	0%	60.9% (129)

Nominalization in the Statement frame correlates with the collocation with one of the most frequently used light verbs found in the Statement frame—*zuo* 做/作 'to do'. Verbs that can be nominalized were found to collocate with *zuo*, as presented in the following tables:

(10) Collocation with light verbs *zuo* 做/作

[+nom]	說	說話	表示	說明	建議	透露	抱怨	承認	報告
做/作	0%	4% (1/25)	6.7% (7/104)	17.8% (19/107)	1.1% (1/95)	0%	8.9% (7/79)	0%	12.9% (16/124)

(11) a. 離總統大選還有七、八十天，我們相信仍有足夠的時間來做**說明**[+nom]
    b. 美國國防部長錢尼二十二日站在六十輛坦克上對駐防沙國的美軍陸戰隊第一師的官兵作精神**講話**[+nom]。
    c. 我們相信仍有足夠的時間來做/作 *説/*透露/*承認

According to Huang *et al* (1995), *zuo* takes a deverbal noun which refers to the result of the event. This suggests that nominalization in the statement frame provides a means to refer to the result (or the end product) of some stating events.

Furthermore, in the Statement frame, all the deverbal nouns can be modified by determiners such as *yige* '一個', *yipian* '一篇', *yifen* '一份', *yixiang* '一項', or *yizhong* '一種' and quantifiers such as *yixie* '一些', *xuduo* '許多' or *zhuduo* '諸多', as exemplified below:

(12) a. 蕭萬長表示，在五輕動工時就已對石化業未來的發展有了一個**說明**[+nom]，即未來台灣石化業要視中。
    b. 但因無法盡如人意，受到了許多**抱怨**[+nom]

(13) Colloaction with determiners and quantifiers

+nom	說	說話	表示	說明	建議	透露	抱怨	承認	報告
Det. & Quant.	0%	8% (2/25)	6.7% (7/104)	18.7% (20/107)	14.7% (14/95)	0%	19% (15/79)	0%	6.5% (8/124)

Nominalized event nominals can all be modified by prenominal adjectival phrases, indicating that they can be evaluated or commented on, as illustrated in example (17):

(14) a. 例如大和解的理念我們應該對社會大眾做更詳細的**說明**

The above collocational associations suggest that the deverbal nouns in the Statement frame are referable and measurable. That is, through the process of explaining, suggesting, complaining, and reporting, a referable and measurable 'product', the incremental theme, is created.

However, among all the verbs that can be nominalized, only the speaking verbs cannot co-occur with another frequently used light verb, *tichu* 提出 'present/propound', as shown below:

(15) Collocation with light verb 提出

[+nom]	說話	表示	說明	建議	抱怨	報告	
提出	0% (0/25)	7.7% (8/104)	2.8% (3/107)	13.7% (13/95)	3.8% (3/79)	3.4% (3/124)	

(16) a. 在每一方面我會就我所知的舉實例來說明並在能力所及也提出**建議** [+nom]。

  b. 並在能力所及也提出 *說話/*講話[+nom]。

This collocational variation may be attributed to the different semantic subtypes (subframes). As suggested by Huang *et al* (1995), Mandarin light verb, *zuo*, not only retains the "activity skeleton" but also entails the creation of a theme. Events such as expressing, explaining, suggesting, complaining, and reporting verbs which can co-occur with *zuo* and *tichu* encode the process as well as the creation of a 'verbal product'— the Message itself. On the other hand, saying verbs focuses more on the process of the activity, not the product, and thus, cannot co-occur with *tichu*.

4.3.2 Incorporation of Message

Although statement verbs emphasize the addressing of message or information, however, speaking verbs—*shuohua* and *jianhua* rarely take a Message-object. The frequency of overt Message object is presented below:

(17) Frequency of overt Message object

V.	說	說話	表示	說明	建議	透露	抱怨	承認	報告	
Overt Message	87% (174/200)	1.1% (3/284)	98.4% (486/494)	47.2% 133/282	87.2% (136/156)	93.4% (184/197)	48.6% 90/186)	80.1% (236/296)	50.5% (55/110)	

(18)a. 講演的人站在講臺上，開口**講話**，眼睛要看著聽眾。

b. 若要問:「你快樂嗎?」周先生一定毫不遲疑地**說**:「我很快樂。」[Message]

This distributional variation can be attributed to the verb's morphological-makeup. The Verb-Noun sequence indicates that the Message object of the speaking event has been incorporated and lexicalized, and thus, the core frame element—Message is lexically backgrounded. This also suggests that the speaking event focuses more on the process of speaking activity than the process of packaging the message.

4.3.3 Distribution of Topic

Some statement events tend to require a topic to be a core FE. The Topic may directly follow the verb or get moved to the front with an overt topic marker such as *youguan* '有關', *guanyu* '關於', or *zhendui* '針對', as shown below:

(19) a. 將ｃａｌｌ―ｉｎ模式大舉搬上螢光幕之後,每一個人都可以**評論**國是 [Topic]。

b. 關於這一點[Topic],我們可以用一個譬喻來**說明**:譬如我們去訪問一個 朋友,向他借書。我們見到他的時候,決不能突然說:把書借給我。

And their distributional differences are shown below:

(20) Frequency of Topic

V.	說	說話	表示	說明	建議	透露	抱怨	承認	報告
Freq. of Topic	4.5% (9/200)	0%	2.8% (14/494)	28.7% (81/282)	0.6% (1/156)	2.5% (5/197)	11.9% (22/185)	8.8% (26/296)	6.4% (7/110)

The occurrences of Topic and Message are highly correlated with each other. When the Message role is backgrounded, as in *shuohua* 說話, it rarely requires a Topic.

4.3.4 Distribution of Addressee

Another observation related to core frame elements is that some statement events tend to prefer an overt realization of the Addressee. Although all the statement events might involve an Addressee by default, only the reporting verbs have a higher tendency (36% vs. less than 14%) in taking an overtly marked or specified Addresse, as shown below:

(21) Frequency of Addressee

V	說	說話	表示	說明	建議	透露	抱怨	承認	報告
+Addr	2.5%	4.9%	2.6%	13.8%	7.1%	6.1%	8.1%	4.7%	35.5%
	(5/200)	(14/284)	(13/494)	(38/282)	(11/156)	(12/197)	(15/185)	(14/296)	(39/110)

(22) a. 答案出來時，這個學生非常興奮，自己的老師是最有智慧的，立刻爭相走告，並向老師[Addressee]報告：「神說你最有智慧。」

The high frequency of Addressee with *baogao* 報告 suggests that events of reporting require the coding of an Addressee, as it has to satisfy the inferior-to-superior relation between the Spearker and the Addressee, as discussed in Section 4.2.8 below.

4.3.5 Overt marking of Means

According to Liu and Wu (2003), communication events may be performed by means of a certain Medium, be it a language (用中文), a person (透過人), or a Means. The use of Means may include phone, fax, email or face-to-face communication. In the statement frame, a special way of conveying the Message was found. In the event of explaining, rhetoric strategies, i.e., 'analogy or comparison' (*ju lizi* '舉例子', *yong kushi* '用故事', or *yong piyu* '用譬喻') are often used as a Means. This shows that the explaining verbs prefer to make use of an analogy or comparison as a Means to expand on a specific Topic for expressing the Message, as illustrated below:

(23)a. 關於這一點，我們可以用一個譬喻[Means]來說明：譬如我們去訪問一個朋友，向他借書。我們見到他的時候，決不能突然說：把書借給我。

Below is the distributional difference over the use of Analogy as Means:

(24) Frequency of Medium_Means

V	說	說話	表示	說明	建議	透露	抱怨	承認	報告
Analogy as Means	0%	0.4%	0.3%	16%	0%	1%	1.1%	1%	1.8%
	(0/200)	(1/284)	(2/494)	(47/282)	(0/156)	(2/197)	(2/185)	(3/296)	(2/110)

The use of Means may comply with the purpose specific to the explaining event: to explicate or make things easier to understand.

4.3.6 Variation as to the Speaker role

Among all the core frame elements, Speaker is the most fundamental one in that all the statement verbs must take a Speaker-subject (almost 100% of all the occurrences). However, after a careful investigation of the corpus data, the role of the Speaker among the statement verbs was found to differ. Firstly, in contrast to human participants, some verbs tend to take inanimate subjects (place or institute names) as Speakers, as exemplified below:

(25) a. 周先生/他/杜象/爸媽/另一位/評審**說**…
　　b. 經建會/公司/善後小組/天文台[Inanimate Subject]**表示**，由於全球石油需求成長，已經呈現遲滯現象

In addition to inanimate subjects, some verbs were found to have a higher tendency in taking an official and professional speaker e.g., 官員 and 專家. The examples are shown as follows with the contrast between ordinary, i.e., unmarked participants and officials/professionals, i.e., marked participants:

(26) a. 我/他/評審/有人/雷履泰/吳先生**說**…
　　b. 教育部長/議員/學者/法律專家**表示**[Official/Professional Speaker]教官室三至四年後完成階段任務將會退出校園

Variations as to the Speaker role in the statement frame are summarized in the table below:

(27) Variation of Speaker role

V	說 199	說話 284	表示 494	說明 284	建議 158	透露 196	抱怨 186	承認 296	報告 129
Inanimate subj	1.5% (3)	1.1% (3)	11.1% (55)	8.8% (25)	8.9% (14)	11.7% (23)	2.7% (5)	9.8% (29)	4.7% (6)
official Speaker	1.5% (3)	1.1% (3)	47.6% (235)	11.3% (32)	20.9% (33)	23% (45)	7% (13)	12.2% (36)	10.1% (13)

The application of inanimate subjects has been discussed by Liu and Chang (In press). They asserted that this usage tends to be associated with verbs which entail a formal register requiring a formal and non-personal topic as well. Similarly, the application of official and professional speaker role may be correlated with verbs that comply with the non-personal issue, namely, public topic. Besides, it might indicate that the Speaker may have a certain degree of authority over the Message.

In contrast to identifying the Speaker, some verbs are prone to conceal the identity of the Speaker by means of the source marker, *ju* 據 'according to'. The Speaker may be either an unspecified entity (某某人士/人員) or completely absent. (據透露/表示). Example (28a) illustrates an individualized Speaker, (28b) an unspecified Speaker, and (28c) exemplified a covert null identity:

(28) a. 簡春安[Speaker]就大聲的說：「那個男生現在心跳加快，血液加速循環，他現在就像狼一樣」

b. 據廣州一位金融界權威人士[unspecified identity]透露：今年底深圳市發行上市股票的公司將會增加十家

c. 據[covert null identity]透露，劉邦友一行也將與台塑董事長王永慶會面，直接溝通有關事宜

Nevertheless, verbs such as saying, speaking, suggesting, complaining, admitting, and reporting are rarely used with the source marker:

(29)   d. 據 *說話/*建議/*抱怨/*承認/*抱怨…

The corpus data show that only the revealing events have a preference for unspecified Speakers, as presented in the following table:

(30) Frequency of unspecified Speaker

V	說	說話	表示	說明	建議	透露	抱怨	承認	報告
據 + unspec. Speaker	0% (0/199)	0% (0/284)	1.6% (8/494)	0.4% (1/284)	0% (0/158)	15.8% (31/196)	0% (0/186)	0% (0/296)	0% (0/129)

The phrase '*ju* + unspecified Speaker' marks the way or the means of obtaining the message. By concealing the identity of the Speaker, the responsibility of delivering a Message is also cancelled. Besides, the occurrence of an unknown speaker may be highly associated with the marked content of the Message unique to the revealing event, which will be discussed in the next section.

4.3.7 Variation of Message type

With respect to the role-internal features of Message, some verbs tend to encode Messages with a special content. The Message in the statement frame may be realized as nominal phrases (NP) or clauses (CL). Verbs of revealing are found to prefer an NP

Message, i.e., Message_description (Baker, Fillmore and Cronin 2003) (23% vs. 0%). And the NP message pertains to secretive matters, such as *mimi* '秘密', *zhenxiang* '真相', *neimu* '內幕'. The distributional variation and examples are shown below:

(31) Frequency of presumably unknown NP Message

V NP Message	說	說話	表示	說明	建議	透露	抱怨	承認	報告
Presumably unknown Message (秘密/真相/內幕)	0%	0%	0%	0%	0%	22.7% (10/44)	0%	0%	0%

(32) a. 她向我**透露**了她的心頭秘密[presumably unknown Message]：她做夢都想當一名解放軍戰士。為什麼呢？
　　b. 青山決定將此體驗寫成《亞加斯提亞之葉》一書，向世人**揭露**真相[presumably unknown Message]。

　　This collocational pattern might be associated with the communicative purpose unique to the revealing event. The revealing events presumably go with the intension to disclose unknown secret. Since the Message is highly marked, the identity of the Speaker tends to be concealed or protected.

　　When the Message is coded as a clause, i.e., Message_content (Baker, Fillmore and Cronin 2003), some event specific variations were found as well. Firstly, for the complaining event, the expressed Message tends to be a negative evaluation or judgment containing negative adjectival or verbal phrases e.g., *buzu* '不足', *chou* '醜', or *shaoyijian* '少一件', as illustrated in example (33a) and (33b), respectively:

(33) a. 他的字就跟人一種豪氣遄飛，有的人**評論**他的字說英勁有餘，渾厚不足[negative evaluation]
　　b. 其中本國女性所面臨的時代衝擊，尤較男性為大，她們[Speaker]**抱怨**衣服永遠少一件[negative evaluation]

　　This usage accounts for 51% of all the occurrences in the complaining event, while less than 2% in other events. This pattern may suggest that when complaining verbs are used, some personal judgment or evaluations are involved. It seems to indicate that verbs which involve positive evaluation such as *chengzan* 稱讚 'compliment' or *zanmei* 讚美 'praise' should also be considered in the Statement frame. A larger class of 'judging verbs' including complaining and praising verbs

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should be viewed as cross-frame verbs that involve both 'statement' and 'judgement'.

Secondly, about 40% of all the Messages with suggesting verbs are irrealis, i.e., coded with irrealis modals such as *yao* 要, *yingai* '應該', or *bixu* '必須'. The Message itself conveys a future projecting proposition. This is illustrated as follows:

(34)a. 楊寬弘最後**建議**，身為輔導青少年工作者，**必須**確切了解孩子們的次級文化

   b. 胡教授說：「休息，吃點乾糧。」早晨，營地的一個同志**提醒要**帶乾糧

This pattern may be correlated with the communicative purpose unique to the suggesting event: to provide a solution or plans for future action.

Thirdly, contrary to irrealis Messages, the Message of the admitting verbs tends to be realis. The high percentage of the use of confirmation markers such as *queshi* '確實' or *dique* '的確' (6.6% vs. 0.7%) in the Message of admitting events may suggest that before making a statement, a presupposition has been established. The use of confirmation markers is exemplified as follows:

(35) 我們也**承認**在推動大和解的過程及方式上的確有許多地方值得我們來檢討
   [Presumably known Message]

The occurrence of realis Message with confirmation markers seems to implicate that the admitting event is used to encode a presumably known Message to further verify a presupposition.

Lastly, the Message of some statement events may be interrogative, introduced by WH words such as *shemo* '什麼', *weishemo* '為什麼', or *ruhe* '如何'. Explaining verbs outrank other verbs in taking an interrogative Message, as shown below:

(36) 依序所談主題為使用的需求、公用ＡＳＰＡＣＫ中的軟體、那些軟體可滿足使用者、並舉例**說明**在院區要**如何**運用以及使用ＡＳＰＡＣＫ
   [Interrogative Message]。

Despite of the low frequency (10%), it is still significant for other verbs seldom used so (less than 3%). This finding, again, might be associated with the purpose of the explaining event. The WH words may reveal that the information is insufficient or unclear, and thus, motivates the Speaker to further expand on the topic or state out more messages.

To briefly sum up, variations in Message types may be highly correlated with the purpose of the event. The varied types of clausal messages and their distributional skewing are summarized in the following table:

(37) Distributional variations of clausal Message

V〔CL Message	說 161	說話 3	表示 290	說明 112	建議 138	透露 134	抱怨 88	承認 229	報告 33	
Negative Message (不足/缺/少一件)	0%	0%	1.4% (4)	1.8% (2)	0%	0%	**51.1%** (45)	2.2% (5)	0%	
Irrealis Message (irrealis modals: 要/應該/必須)	0%	0%	5.9% (17)	0%	**40.0%** (55)	0%	0%	0.4% (1)	18.2% (6)	
Message encoding Realis events	5.6% (9)	0%	12.1% (35)	11.6% (13)	0%	5.2% (7)	4.5% (4)	**69.9%** (160)	6.1% (2)	
Interrogative Message (什麼/為什麼/如何)	1.9% (3)	0%	0%	**10.7%** (12)	0.7% (1)	0.7% (1)	0%	0%	3% (1)	

4.3.8 Relation between Speaker and Addressee

As noted above, among the statement verbs, the event of reporting is prone to highlight the frame element—Addressee. What are the motivations? After carefully examining the examples with overt coding of Addressee, some interesting patterns were found. Firstly, for the reporting verbs, the verbal activity is often performed by a single Speaker to a collective Addressee (50% vs. less than 30%):

(38) 而且在下級幹部[Single Speaker]向他們[Collective Addressee]報告了產量和 災情之後，許多人還不相信

Instead of coding interpersonal communication, the reporting event is inclined to code public communicative events. Further, the overtly coded Addressee normally has some kind of a status relation over the Speaker, being inferior to or superior:

(39)a. 學生[Inferior Speaker]並向老師[Superior Addressee]報告：「神說你最有智

慧。」

b. <u>縣太爺</u>[Superior Speaker]沉思了一會兒，低聲向<u>身旁的衙役</u>[Inferior Addressee]**交代**一番

Examples above demonstrate that the reporting verbs tend to profile formal and public events rather than interpersonal communicative events. The distributional tendency found in Sinica Corpus is presented as follows:

(40) Distributional variations of the relation between Speaker and Addressee

V CL Message	說 5	說話 14	表示 13	說明 38	建議 11	透露 12	抱怨 15	承認 14	報告 39
Single to Collective	0%	28.6% (4)	30.8% (4)	13.2% (5)	9.1% (1)	16.7% (2)	6.7% (1)	0% (0)	**48.7%** (19)
Status relation between Speaker and Addressee	0%	7.1% (1)	23.1% (3)	0%	18.2% (2)	8.3% (1)	13.3% (2)	0%	**51.3%** (20)

4.3.9 Variation of Topic type

As noted in Section 4.2.3, Topic can be found in all the statement verbs except verbs of speaking. However, different from Topics referring to events or affairs, some Topics are human, as provided in (46a) and (46b):

(41)a. 在臺灣念書的孩子很少人會感激政府，大多數都**抱怨**<u>政府</u>[Human Topic]。

b. 西元２２０年，曹操亡。年六十七。陳壽**評論**<u>曹操</u>[Human Topic]：運籌思算，廣用謀略，鞭策四宇之內

The event of complaining is unique in this usage and accounts for 52% of all the Topic occurrences. The distributions of human Topic among verbs of statement are listed below:

(42) Frequency of human Topic

	說	說話	表示	說明	建議	透露	抱怨	承認	報告
Topic as human	0%	0%	0%	0%	0%	0%	**50%** (11/22)	0%	0%

This observation may suggest that the target of complaining events may be human. The event of complaining may be used to state messages about events or human beings, whereas all the other events tend to address messages about events.

4.3.10 V+V pattern: with the preceding verbs *jinxing* 進行, *jiayi* 加以, and *xue/lianxi* 學/練習

Another pattern that sets the verbs apart is the collocation with preceding verbs. After looking into the verbs in detail, three kinds of preceding verbs were found to collocate with one specific group of statement verbs. Some verbs may co-occur with the preceding verb, *jinxing* 進行 'proceed', others occur with *jiayi* 加以 'treat/handle', and still others with *xue/lianxi* 學/練習. According to Huang *et al* (1995) and Liu and Chang (In press), the use of the light verb, *jinxing* 進行, entails a formal register and also profiles a procedural process or atelic event. Among statement verbs, only the explaining and reporting verbs can collocate with *jinxing*. Example (48a) and (48b) are presented to illustrate such a contrast:

(43)a. 最後由該店一位王姓經理接待在場外<u>進行</u>**說明/報告**。
    b. <u>進行</u> *說/*說話/*表示/*建議/*透露/*抱怨/*承認

This collocation suggests that the event type of the explaining and reporting verbs is 'procedural process' and tends to require a formal register.

Another preceding verb which co-occurs with the statement verbs is *jiayi*. Significantly, only the explaining verbs can occur with *jiayi*, while others cannot, as illustrated in (49a) and (49b), respectively:

(44)a. 但我認為，如果不<u>對現代人的塵勞根源</u>[Topic]<u>加以</u>**說明**，確實很難有效掌握。
    b. <u>加以</u> *說/*說話/*表示/*建議/*透露/*抱怨/*承認/*報告

This pattern is highly associated with the overt marking of Topic, Means, and Addressee. 75% of the occurrences of *jiayi* was found to collocate with a Topic, Means, Addressee, suggesting that the explaining event may entail a specific target including person and event. Lastly, the ordinary but significant preceding verbs—*xue*, *xuexi*, and *lianxi* were found to be used with the statement verbs. What they encode seems to differ from the former two. In the statement frame, only the speaking event was found to be preceded by preceding verbs like *xue*, *xuexi*, and *lianxi*, as exemplified below:

(45)a. 但我還是會找適當的時機，讓小朋友們上台練習說話。

    b. 讓小朋友們上台練習 *說/*表示/*說明/*建議/*透露/*抱怨/*承認。

As have been mentioned in section 4.2.1 to 4.2.3, the speaking verbs largely profile the speaking activity. Here, this usage may indicate that the speaking verbs encode the most basic verbal activity of human beings (Brown 1958) with little restriction on the speaking activity's register, topic, and manner.

    The collocational associations with preceding verbs are summarized in the following table:

(46) Collocational associations with preceding verbs

V	說	說話	表示	說明	建議	透露	抱怨	承認	報告
jinxing 進行	No	No	No	**Yes**	No	No	No	No	**Yes**
jiayi 加以	No	No	No	**Yes**	No	No	No²	No	No
xue/lianxi 學/練習	No	**Yes**	No	No	No	No	No	No	No

4.3.11 Collocational Associations with Aspectual Markers

    Last but not the least important, statement verbs differ with respect to the collocation with aspectual modifications. The collocational asymmetries over aspectual modifications are provided in the table below:

(47) Collocational Asymmetry of Aspectual Modifications

V	Aspectual markers		Durational Phrase of time	Endpoint marker
	[正/正在/著]	[了]	了 + duration[NP/AdvP]	Adverbial [完]
說話/表示/說明/建議/透露/抱怨/報告	Yes	Yes	No	Yes
說	Yes	Yes	**Yes**	Yes
承認	**No**	Yes	No	Yes

    The majority of verbs (speaking, expressing, explaining, suggesting, revealing, complaining, and reporting verbs) differ from the saying and admitting verbs in aspectual modifications. The former can take progressive markers, i.e., *zheng* 正, *zhengzai* 正在, and *zhe* 著 and markers denoting possible event boundary such as *le* 了 and *wan* 完. Also, they cannot take duration phrases (*le* + time duration).

The acceptability with progressive markers may be attributed to the event type: a process, instead of a state. As for the acceptability with endpoint markers and unacceptability with duration phrases might suggest that the event is bounded. These collocations might suggest that those verbs' event type is 'process with endpoint'. However, the saying and revealing verbs were found to be different from all the above-mentioned verbs. The saying verbs can take duration phrases, while some other statement verbs cannot, as shown below:

(47) a. [2]飄雲<u>說</u>了許久，中間有些話我聽得不真切。

    b. 他*<u>講話</u>/*<u>表示</u>/*<u>建議</u>/*<u>透露</u>/* /*<u>承認</u>/* 了許久

Since the saying verbs can be modified by progressive markers and duration phrases, it may indicate that their event type is 'simple process.' As for the revealing verbs, they are unique in that they cannot take progressive aspectual markers, i.e., *zheng*, *zhengzai*, and *zhe*, while all the other verbs can, as exemplified in (55a) and (55b), respectively:

(48) a. 他 *<u>正</u>/*<u>正在</u><u>承認</u>：『還是愛的。』

    b. 他<u>正</u>/<u>正在</u> <u>說</u>/<u>表示</u>/<u>說明</u>/<u>建議</u>/<u>透露</u>/<u>抱怨</u>/<u>報告</u>…

This means that the event type of revealing verbs may be 'punctual'. The collocational associations with aspectual modifications provide another syntactically-motivated evidence for categorizing verbs in the Statement frame.

5. The Nine Subframes
5.1 Basic Patterns associated with the Subframes
a) Subframe 1- Say 說

Say subframe has four Basic Patterns associated with core FEs:

Basic Patterns (BP)	
[+Message]	Speaker [NP] < ＊ < Message[CL/NP]
	<u>周先生</u>一定毫不遲疑地<u>說</u>：「<u>我很快樂。</u>」
[-Message]	Speaker [NP] < ＊
	去，去，去去去，<u>媽媽（或爸爸）</u>忙，別煩我，等會再<u>說</u>。
[+Addressee]	Speaker[NP]< 對 +Addressee[NP] < ＊ < Message[CL]
	<u>我</u>對<u>它</u><u>說</u>。<u>好像自己作出的作品超越了自己</u>
[+Topic]	Speaker[NP]< ＊ < / (的) +Topic [NP]

	以上講的還只是<u>我們所**說**的國學</u>
[Preposed Topic]	(關於) + Topic [NP] < Speaker[NP] < ＊
	<u>關於棋賽</u>，<u>他</u>對ＴｒｕｍａｎＣａｐｏｔｅ**說**：「祺賽有很高的可塑性。

b) **Subframe 2- Speak 說話**

Speak subframe has five Basic Patterns associated with core FEs:

Basic Patterns (BP)	
[+Message]	Speaker[NP] < ＊ <：+ Message[CL]
	<u>孔融</u>已經先**說話**了：<u>我們家和李先生是世交，麻煩您通報一下</u>
[-Message]	Speaker [NP] < ＊
	<u>毛</u>**說話**時，他的愛將、中共安徽省委第一書記曾希聖也湊熱插了一句
[+Addressee]	Speaker[NP] < 對 + Addressee[NP] < ＊
	前一陣子，<u>我</u>在慈濟紀念堂對<u>大家</u>**講話**
As a head noun	Modification Phrase: (作/做 +) (modifier (+ 的)) < ＊ [+nom]
	<u>作精神</u>**講話**[+nom]
As a modifier	Nominal Modifier：＊ [+nom] (的) < NP
	說話[+nom]<u>的技巧</u>。

c) **Subframe 3- Express 表示**

Express subframe has three Basic Patterns associated with core FEs:

Basic Patterns (BP)	
[+Message]	Speaker[NP] < ＊ < (：+) Message[VP/CL/NP]
	<u>蘇聯</u>曾數度公開**表示**<u>不可能與台灣發展官方關係</u>
[+Topic]	有關/對/關於 + Topic[CL] < Speaker[NP] < ＊ < Message[CL]
	<u>對於孩子的教養</u>，<u>周先生</u>**主張**<u>讓孩子思想多方面發展</u>
As a head noun	Modification Phrase: (提出/作/做+) (modifier(+的)) < ＊[+nom]
	但許文志並沒有<u>對此事</u>**作**進一步的**表示**

d) **Subframe 4- Explain 說明**

Explain subframe has seven Basic Patterns associated with core FEs:

Basic Patterns (BP)	
[+Message]	Speaker[NP] < 進行 + ＊ < Message[CL/NP]
	<u>系統小組會議</u>則進行「ＩＮＮＯＰＡＣ升級８．１版，**說明**<u>事項</u>」
[-Message]	Speaker[NP] < (加以) + ＊

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	人不斷構築海市蜃樓的烏托邦，又不斷<u>加以</u>**解釋**，人生也許就是如此輪迴的。
[+Means]	Speaker[NP]＜ 以/舉 ＋Means[NP]＜ ＊ ＜(Message[CL])
	<u>筆者舉出上述實例，目的乃為</u>**說明**<u>我國企業對於未來經理人的培養缺乏這種制度設計</u>
	Speaker[NP]＜ 以/舉/用 ＋Means[NP]＜ ＊ ＜Topic[NP]
	<u>舉一個「塞翁失馬」的故事來</u>**說明**<u>這種境界</u>。
[+Topic]	Speaker[NP]＜ ＊ ＜(對＋) Topic[NP,CL]
	第三個層面是「朝聞道，夕死可矣。」亦即可以**解釋**<u>生、死問題的「道」</u>
[+Addressee]	Speaker[NP]＜ 向/跟 ＜Addressee[NP]＜ ＊ ＜(Message[CL/NP])
	<u>莊子這才主動向他</u>**解釋**說：<u>「你的問題太籠統了！</u>
	Speaker[NP]＜ 向 ＜Addressee[NP]＜ ＊ ＜Topic[NP]
	<u>廚師向惠王</u>**說明**<u>了自己掌握宰牛的經過</u>
As a head noun	Modification Phrase: (提出/作/做+)(modifier (+的))＜ ＊[+nom]
	<u>似乎沒有一個單位，可以對如何處理這一棘手事件，提出</u>具體**解釋**[+nom]
As a modifier	Nominal Modifier: ＊[+nom] (的)＜ NP
	<u>想不出有更好的</u>**說明**[+nom]方式。

e) **Subframe 5- Suggest 建議**

　　Express subframe has four Basic Patterns associated with core FEs:

Basic Patterns (BP)	
[+Message]	Speaker[NP]＜ ＊ ＜(：+) Message[CL]
	<u>楊寬弘最後</u>**建議**，<u>身為輔導青少年工作者，必須確切了解孩子們的次級文化</u>
[+Topic]	Speaker[NP]＜ ＊
	每次都是<u>媽媽</u>**提醒**，他才「哦！對對對…」
[+Addressee]	Speaker[NP]＜ 對/給 ＋Addressee[NP]＜ ＊ ＜Message[CL]
	<u>我就會給他</u>**提醒**說，<u>你什麼領口、袖口，那裡比較髒，你就多刷幾下</u>
As a head noun	Modification Phrase: (提出/作/做+) (modifier (+ 的))＜[+nom]
	<u>個人因此想藉此提出</u>鄭重的**建議**[+nom]

f) **Subframe 6- Reveal 透露**

　　Express subframe has three Basic Patterns associated with core FEs:

Basic Patterns (BP)	
[+Message]	Speaker[NP]＜＊＜(：+) Message[CL/NP]
	據廣州一位金融界權威人士<u>透露</u>：今年底深圳市發行上市股票的公司將會增加十家
[+Topic]	Speaker[NP]＜＊
	糾結著學生與老師、老師與老師間藉媒體放話，相互指控、**揭露**、恐嚇的複雜情節。
[+Addressee]	Speaker[NP]＜ 向/跟/對+ Addressee[NP]＜＊＜Message[NP/CL]
	從小母親告誡<u>他們</u>不能向<u>人透露</u>]這密祕

g) Subframe 7- Complain 抱怨

Express subframe has six Basic Patterns associated with core FEs:

Basic Patterns (BP)	
[+Message]	Speaker[NP]＜＊＜Message[CL]
	她逢人就**抱怨**<u>一點效果也沒有</u>
[-Message]	Speaker[NP]＜＊
	<u>他</u>由於未接獲完整訊息，暫不予**評論**。
[+Topic]	Speaker[NP]＜＊＜ 就/挑+Topic＜(Message[CL])
	同年８月的《中國建設者》雜誌就此事故**評論**說：「<u>現在是工部局在租界裡對建築師開業加強管理的時候了</u>
[Preposed Topic]	對於/有關 + Topic＜Speaker[NP]＜＊＜Message[CL/NP]
	而<u>有關支管方面</u>，由於<u>台北瓦斯公司</u>一再**抱怨**<u>太多的共同管道</u>
[+Human Topic]	Speaker[NP]＜＊＜Human_Topic[NP]
	在臺灣念書的孩子很少人會感激政府，大多數都抱怨政府
As a head noun	Modification Phrase: (提出/作/做+) (modifier(+的))＜＊ [+nom]
	以及感謝每個子題的三位先生、女士為我們**做評論**[+nom]
As a modifier	Nominal Modifier: ＊ [+nom] (的)＜NP
	他也因此接到了腸管處的**抱怨**[+nom]電話。

h) Subframe 8- Admit 承認

Express subframe has two Basic Patterns associated with core FEs:

Basic Patterns (BP)	
[+Message]	Speaker[NP]＜＊ ＜(：+) Message[VP/CL]
	追問下<u>黃某</u>**坦承**<u>吸食安非他命</u>
[Preposed Message]	Message[VP/CL]＜Speaker[NP]＜＊
	<u>很多人喜歡你，你很有人緣</u>，<u>我</u>**承認**

[-Message]	Speaker[NP] < ∗
	勞委會官員不願正面承認

5.2 Semantic Attributes Associated with the Subframes

As has been demonstrated in the previous section, the asymmetrical distributions with respect to the manifestations of core frame elements and non-core frame elements may serve as the anchor for the categorization of verbs. The collocational criteria regarding core FEs are summarized below:

(50) Distribution of grammatical functions and core frame elements:

	Nominalization	Speaker	Message	Addressee	Topic	Analogy Means
1. Say 說	0%	99.5%	87%	2.5%	**4.5%**	0%
2. Speak 說話/講話	18.9%	100%	**1.1%**	4.9%	0%	0.4%
3. Express 表示/發表	13.2%	99.9%	98.4%	2.6%	**2.8%**	0.3%
4. Explain 說明/解釋	**53.6%**	100%	47.2%	13.8%	**28.7%**	**16%**
5. Suggest 建議/提醒	**37.8%**	100%	87.2%	7.1%	**0.6%**	0%
6. Reveal 透露/揭露	0%	100%	93.4%	6.1%	**2.5%**	1.0%
7. Complain 抱怨/評論	**32.9%**	100%	48.6%	8.1%	**11.9%**	1.1%
8. Admit 承認/坦承	0%	100%	80.1%	4.7%	**8.8%**	1.8%
9. Report 報告/交代	**60.9%**	100%	50.5%	**35.8%**	4.6%	Low

(51) Distributional asymmetries associated with core frame elements

a. Speaker and Addressee

FEs	Speaker			Addressee	
	Inanimate subject	Official/ Profession	據 + unspecified Speaker	Single to Collective	Status relation between Speaker
1. Say 說	Low	Low	Low	Low	Low
2. Speak 說話/講話	Low	Low	Low	Mid	Mid
3. Express 表示/發表	**High**	**High**	Mid	Mid	Mid
4. Explain 說明/解釋	**High**	Low	Low	Mid	Low
5. Suggest 建議/提醒	**High**	**High**	Low	Mid	Mid
6. Reveal 透露/揭露	High	**High**	**High**	Mid	Mid
7.Complain 抱怨/評論	Low	Low	Low	Mid	Mid
8. Admit 承認/坦承	**High**	Low	Low	Low	Low
9. Report 報告/交代	Mid	Low	Low	**High**	**High**

(51) Distributional asymmetries associated with core frame elements

    b. Message and Topic

FEs	Message					Topic
	Presumably unknown	Negative Evalution	Irrealis	Realis	Interrogative	Human Topic
1. Say 說	Low	Low	Low	Mid	Mid	Low
2. Speak 說話/講話	Low	Low	Low	Low	Low	Low
3. Express 表示/發表	Low	Mid	Mid	Mid	Low	Low
4. Explain 說明/解釋	Low	Mid	Low	Mid	**High**	Low
5. Suggest 建議/提醒	Low	Low	**High**	Low	Mid	Low
6. Reveal 透露/揭露	**High**	Low	Low	Mid	Mid	Low
7.Complain 抱怨/評論	Low	**High**	Low	Mid	Low	**High**
8. Admit 承認/坦承	Low	Mid	Low	**High**	Low	Low
9. Report 報告/交代	Low	Low	Mid	Mid	Mid	Low

(52) Distributional asymmetries associated with non-core frame elements

a. Preceding verbs

FEs	Preceding verbs + V[+nom]		V+V Pattern		
	做/作	提出	進行	加以	學習/練習
1. Say 說	No	No	No	No	No
2. Speak 說話/講話	**Yes**	No	No	No	**Yes**
3. Express 表示/發表	**Yes**	**Yes**	No	No	No
4. Explain 說明/解釋	**Yes**	**Yes**	**Yes**	**Yes**	No
5. Suggest 建議/提醒	**Yes**	**Yes**	No	No	No
6. Reveal 透露/揭露	No	No	No	No	No
7. Complain 抱怨/評論	**Yes**	**Yes**	No	No	No
8. Admit 承認/坦承	No	No	No	No	No
9. Report 報告/交代	**Yes**	**Yes**	**Yes**	No	No

(52) Distributional asymmetries associated with non-core frame elements

b. Aspectual modifications

FEs	Aspectual markers		Durational Phrase of time	Endpoint marker
	[正/正在/著]	[了]	了＋duration	Adverbial [完]
1. Say 說	Yes	Yes	**Yes**	Yes
2. Speak 說話/講話	Yes	Yes	No	Yes
3. Express 表示/發表	Yes	Yes	No	Yes
4. Explain 說明/解釋	Yes	Yes	No	Yes
5. Suggest 建議/提醒	Yes	Yes	No	Yes
6. Reveal 透露/揭露	Yes	Yes	No	Yes
7. Complain 抱怨/評論	Yes	Yes	No	Yes
8. Admit 承認/坦承	**No**	Yes	No	Yes
9. Report 報告/交代	Yes	Yes	No	Yes

These asymmetrical patterns of the statement verbs clearly suggest that verbs can be further divided into subtypes. Although sharing the same cognitive frame, subgroups of verbs exhibit distinct variations of syntactic patterns, indicating that they may have different lexicalized semantic properties (syntax-to-semantic correspondences). The preliminary distinction of nine subframes of the statement frame is provided below, each with a definition, its core FEs, semantic attributes, and lemmas, as shown below:

(53) Statement Subframes:

a) **Subframe 1- Say 說**

Def.: A speaker conveys a Message, sometimes on a Topic.

FEs: Speaker, Message, Topic

Semantic Attributes: [Event type: simple process]
                     [Register: unspecified]
                     [Speaker: unspecified]
                     [Topic: unspecified]
                     [Purpose: unspecified]
Lemmas: 說, 講, 道, 言

b) **Subframe 2- Speak 說話**

Def.: A speaker speaks. Message is incorporated. Topic tends to be absent in the speaking events. The speaking activity is emphasized over the packaging of Message.

Backgrounded FE: Message

Semantic Attributes: [Event type: process with endpoint]
                     [Register: unspecified]
                     [Speaker: unspecified]
                     [Purpose: unspecified]
Lemmas: 說話, 講話, 傳道, 講道, 訓話, 致詞

c) **Subframe 3- Express 表示**

Def.: A speaker—usually a person with authority/information—expresses a Message on a Topic.

FEs: Speaker, Message, Topic

Semantic Attributes: [Event type: process with endpoint]
                     [Register: formal]
                     [Speaker: authority]
                     [Topic: formal]
                     [Purpose: unspecified]
Lemma: 提及,發表,宣佈,主張,聲明,陳述,宣稱,堅稱,宣告,聲稱,表示,表達,表達,表露,傳達

d) **Subframe 4- Explain 說明**

Def.: A speaker provides more message/information on a Topic to make the information more understandable and clear by means of using an analogy Means.

Foregrounded FE: Means

Semantic Attributes: [Event type: procedural process with endpoint]
                     [Register: formal]
                     [Speaker: unspecified]

[Topic: formal]

[Purpose: to make the Message more precise and

understandable]

[Medium: Analogy Means]

Lemma: 說明, 解釋, 辯解, 敘述, 重申, 複述

e) Subframe 5- Suggest 建議

Def.: A speaker offers a Message & Advice as a solution to a problem to an
Addressee.

FEs: Speaker, Message, Topic

Semantic Attribute: [Event type: process with endpoint]

[Register: formal]

[Speaker: authority]

[Topic: formal]

[Purpose: to provide a solution or a suggested future act]

Lemma: 建議, 提議, 勸, 警告, 提醒

f) Subframe 6- Reveal 透露

Def.: A speaker conveys a presumably unknown Message to an Addressee on a
Topic. The identity of the Speaker tends to be unspecified to eliminate the
responsibility of disclosing unknown Message.

FEs: Speaker, Message, Topic

Semantic Attribute: [Event type: process with endpoint]

[Register: unspecified]

[Speaker: authority]

[Topic: formal]

[Purpose: to disclose presumably unknown message]

Lemma: 透露, 揭露, 吐露

g) Subframe 7 - Complain 抱怨

Def.: A Speaker utters a Message out of discontent to judge on a Topic or
human Topic.

Foregrounded FE: Human Topic

Semantic Attribute: [Event type: process with endpoint]

[Register: unspecified]

[Speaker: unspecified]

[Topic: event or human Topic]

[Purpose: to judge on events or human]

Lemma: 埋怨, 抱怨, 評論

h) **Subframe 8 - Admit 承認**

Def.: A Speaker utters a Message about a Topic in order to verify presumably
known information.

FEs: Speaker, Message, Topic

Semantic Attribute: [Event type: punctual]

[Register: formal]

[Speaker: unspecified]

[Topic: formal]

[Purpose: to verify the presumably known message]

Lemma: 坦承, 承認, 否認, 保證, 承諾, 證實, 證明

i) **Subframe 9- Report 報告**

Def.: A Speaker gives an account Message on a Topic to an Addressee. The
Speaker tends to have status relation with the Addressee.

Foregrounded FE: Addressee

Semantic Attributes: [Event type: procedural process with endpoint]

[Register: unspecified]

[Speaker: marked]

[Addressee: marked]

[Purpose: unspecified]

Lemma: 報告, 報導, 簡報, 交代, 吩咐

References

Berlin, Brent and Kay Paul. 1969. Basic color terms: Their universality and evolution. Berkeley: University of California Press.

Brown, Roger. 1958. How shall a thing be called ? Psychological Review 65. 14-21.

Chang, Lili, Keh-Jiann Chen, and Chu-Ren Huang. 2000. Alternation across semantic fields: A study of mandarin verbs of emotion. Computational Linguistics & Chinese Language Processing 5. 61-80.

Chang, Li-li, Chu-Ren Huang, and Keh-Jiann Chen. 2000. A lexical-semantic analysis of mandarin Chinese verbs: Representation and methodology. Computational Linguistics and Chinese Language Processing 5. 1-18.

Chang, Lili, Keh-Jiann Chen, and Chu-Ren Huang. 2000. Alternation across semantic fields: A study of mandarin verbs of emotion. Computational Linguistics & Chinese Language Processing 5. 61-80.

Chang, Miao-Hsia. 1998. The discourse functions of Taiwanese *kong* in relation to its grammaticalization. Selected Ppaers from the Second International Symposium on Languages in Taiwan.

Cheng, Robert. 1989. Ba Guoyu Changyong Xuci Ji Qi Taiyu Duiyingci Shili (Commonly Used Mandarin Function Words and Their Taiwanese Equivalents). : Crane Publishing Co.

Chief, Lian-Chen, Chu-Ren Huang, Keh-Jiann Chen, Mei-Chih Tsai, and Lili Chang. 2000. What can near synonyms tell us? Computational Linguistics & Chinese Language Processing 5. 47-60.

Fillmore, Charles J., and Beryl T. Atkins. 1992. Toward a Frame-Based Lexicon: The Semantics of RISK and its Neighbors. Frames, Fields and Contrasts, ed. by Adrienne Lehrer and Eva Feder Kittay, 75-102. Hillsdale. New Jersey: Lawrence.

Givón, Talmy. 1993. English grammar: a function-based introduction. Amsterdam: J. Benjamin.

Givon, Talmy. 1984. Syntax: A functional-typological introduction. Amsterdam/Philadelphia: John Benjamins.

Huang, Chu-Ren, Kathleen Ahrens, Li Li Chang, Keh-Jiann Chen, Mei-Chun Liu, and

Mei-Chi Tsai. 2000. The module-attribute representation of verbal semantics: From semantics to argument structure. Computational Linguistics and Chinese Language Processing 5. 19-46.

Huang, Chu-Ren, Meili Yeh, and Li-ping Chang. 1995. A Corpus-based Study of Nominalization and Verbal Semantics: Two Light Verbs in Mandarin Chinese. The Sixth North American Conference on Chinese Linguistics.

Jackendoff, Ray. 1983. Semantics and Cognition. Cambridge: MIT Press.

Levin, Beth. 1993. English Verb Classes and Alternations: A Preliminary Investigation. Chicago & London: University of Chicago Press. Chicago: University of Chicago Press.

Levin, Beth and Malka Rappaport Hovav. 1996. Lexical semantics and syntactic structure. The Handbook of Contemporary Semantic Theory, ed. by Shalom Lappin, 487-507. Mass., USA: Cambridge.

Liu, Mei-Chun. 1994. Discourse explanations for the choice of *jiu* and *cai* in mandarin conversation. Journal of Chinese Linguistics 2. 671-709.

Liu, Mei-Chun. 1999. Lexical meaning and discourse patterning: the three cases of Mandarin BUILD. Cognition and Fuction in Language, ed. by Barbara Fox, Dan Jurafsky and Laura A. Michaelis, 181-199. Stanford: Center for the Study of Language and Information . (CSLI Publications).

Liu, Mei-chun et al. 2000. When endpoint meets endpoint: a corpus-based lexical semantic study of Mandarin verbs of throwing. Computational Linguistics and Chinese Language Processing 5 (1) : 81-96. (Co-authored with Chu-ren Huang, Charles Lee, and Ching-yi Lee). NSC 89-2411-H-009-016-MC.

Liu, Mei-chun. 2002a. Corpus-based lexical semantic study of verbs of doubt: *HUAIYI* and *CAI* in Mandarin. Concentrics. NSC 90-2411-H-009-018-MC.

Liu, Mei-chun. 2002b. Mandarin Verbal Semantics: a Corpus-based Approach, 2nd Edition. Taipei: Crane Publishing Co. NSC 90-2411-H-009-018-MC.

Liu, Mei-chun. 2002c. Verbal semantics and the profiling of CAUSE: a study of emotional activity verbs in Mandarin. The 1st Symposium on Cognitive Linguistics (第一屆認知語言學學術研討會). National Cheng-Chi University, Taipei. NSC

91-2411-H-009-012-ME

Liu, Mei-chun. 2003a. From collocation to event information: the case of Mandarin verbs of discussion. Language and Linguistics 4(3): 563-586 (TSSCI Journal). NSC 91-2411-H-009-012-ME.

Liu, Mei-chun. 2003c. Verbs of surface contact in Mandarin: a lexical semantic study. In Form and Function: Linguistic Studies in Honor or Shuanfan Huang, eds. by Lily I-wen Su, Lien Chinfa and Kawai Chui, 275-304. Taipei: Crane Publishing Co. NSC 91-2411-H-009-012-ME.

Liu, Mei-Chun, and Chun Edison Chang. In press. From frame to subframe: Collocational asymmetry in mandarin verbs of conversation. Computational Linguistics and Chinese Language Processing 10.

Liu, Mei-Chun, Ting-Yi Chiang, and Edison Chun Chang. 2004. The Construction of Mandarin VerbNet: A Frame-based Corpus Approach. 漢語詞彙語義研究的現狀與趨勢國際學術研討會, Beijing, China.

Liu, Mei-Chun, and Yi-ching Wu. 2003. Beyond frame semantics: insight from Mandarin verbs of Communication. , City University of Hong Kong, Hong Kong.

Pustejovsky, James. 1991. The syntax of event structure. Lexical and Conceptual Semantics.

Pustejovsky, James. 1995. The nature of lexical knowledge . The Generative Lexicon, 5-26. London: MIT Press.

Rosch, Eleanor. 1973. Natural categories. Cognitive Psychology 4. 328-50.

Rosch, Eleanor. 1975a. Cognitive reference points. Cognitive Psychology 7. 532-47.

Rosch, Eleanor. 1975b. Cognitive representation of semantic categories. Journal of Experimental Psychology: General 104. 192-333.

Smith, Carlota S. 1991. The parameter of aspect. Dordrecht: Kluwer Academic.

Su, Lily I-wen. 2002. I say what I mean: between speech and thought. 第三屆中文詞彙語意學研討會論文集, 台北.

Traugott, Elizabeth Closs. 1989. On the rise of epistemic meanings in english: An example of subjectification in semantic change. Language 65. 31-55.

Tsai, Mei-Chih, Chu-Ren Huang, and Keh-Jiann Chen. 1996. From near-synonyms to the interaction between syntax and semantics (由近義詞辨義標準看語意、句法之互動). Proceedings of the Fifth International Symposium Near-synonyms to on Chinese Languages and Linguistics. 167-180.

Tsai, Mei-Chih, Chu-Ren Huang, Ken-Jiann Chen, and Kathleen Ahrens. 1998. Towards a representation of verbal semantics-- an approach based on near-synonyms. Computational Linguistics and Chinese Language Processing 3. 61-47.

Vendler, Zeno. 1967. Linguistics in Philosophy. Ithaca: Cornell University Press.

洪嘉翡 and 黃居仁. 2004. 「聲」與「音」的近義辨析：詞義與概念的關係. 漢語詞彙與義研究的現狀與趨勢國際學術研討會, Beijing, China.

Website Resources

Sinica Corpus (中研院平衡語料庫) http://www.sinica.edu.tw/SinicaCorpus/
Sinica Bow (中研院中英雙語知識本體詞網) http://bow.sinica.edu.tw/
FrameNet http://framenet.icsi.berkeley.edu/
Google (online archive) http://www.google.com.tw/
Yahoo (online archive http://tw.yahoo.com/
教育部重編國語辭典修訂版 http://140.111.1.22/mandr/clc/dict/dict/?open