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近義詞「買賣」、「交易」、「貿易」的共現與語意韻律研究

Near-Synonyms of Transaction Words in Mandarin Chinese: An Investigation of their Collocation and Semantic Prosody

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BY

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研究所別：語言學研究所

論文名稱：近義詞「買賣」、「交易」、「貿易」的共現與語意韻律研究

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論文提要內容：（共一冊，二萬零二百四十七字，分五章）

本文旨在探討現代漢語近義詞「買賣」、「交易」、「貿易」的異同，透過它們的搭配現象以及語意韻律的表現來進行討論。本文的語料來自「中央研究院漢語平衡語料庫」，根據搭配詞本身與「買賣」、「交易」、「貿易」的句法及語意關係來做為搭配詞的判斷，接著對於前後搭配詞的句法行為、語意功能以及框架要素再去做近一步的探討。

「買賣」、「交易」、「貿易」的前後搭配詞在句法上經常做名詞使用，在語意功能及框架要素方面，「買賣」及「交易」經常呈現交換者(exchanger)以及交換品(theme)兩個要素，而「貿易」主要凸顯的是交換者(exchanger)。在語料裡，大部分的框架要素都呈現在前置搭配詞，主要有交換者(exchanger)、交換品(theme)、處所(location)、時間(time)、方式(manner)、頻率(frequency)；後置搭配詞有交換者(exchanger)、交換品(theme)、處所(location)、時間(time)、方式(manner)、頻率(frequency)、組織(organization)、條例(regulation)。在語意韻律方面，「買賣」及「交易」傾向和負面語意的前置搭配詞出現，而「貿易」則是有較多負面的後置搭配詞。透過共現行為及語意韻律的分析，本文系統性地呈現了「買賣」、「交易」、「貿易」的相似與相異處。

Abstract

This thesis explores three near-synonymous transaction words in Mandarin Chinese, *maimai*, *jiaoyi*, and *maoyi*. These three words are defined in a circular manner in the dictionary, and their meanings are not distinguishable. The present study aims to detect the similarities and differences among them via the examination of their collocational behaviors and semantic prosody. The data are extracted from Sinica Corpus, and the left-sided and right-sided collocates based on their syntactic and semantic relation to the node words are identified. Then, the collocated words are discussed in terms of their syntactic behaviors, semantic functions, and frame elements.

The collocates of *maimai*, *jiaoyi*, and *maoyi* frequently function as nouns on both sides. The semantic functions and frame elements of both *maimai* and *jiaoyi* frequently express exchanger and theme in their instances, while for *maoyi*, exchanger and manner make up the majority of its frame elements. Most frame elements are profiled in the collocates. On the left side, there are exchanger, theme, location, time, manner and frequency. On the right side, there are exchanger, theme, location, time, manner, frequency, organization, and regulation. As for semantic prosody, most collocates are neutral. The left-sided collocates of *maimai* and *jiaoyi* tend to be negative words. Regarding the right-sided collocates, *maoyi* has more negative collocates than *maimai* and *jiaoyi*. With the collocational behaviors and semantic prosody analyzed, the study presents the similarities and differences of the three synonymous words in a systematic way.

CHAPTER I

INTRODUCTION

1.1 Motivation and Purpose

Near-synonymy is a common linguistic phenomenon in our daily life. Lyons says, “[...] near-synonyms: expressions that are more or less similar, but not identical, in meaning” (1981: 50). As a result, for language learners it is always a concerned issue. Partington points out, “ […] there is a good deal of evidence to suggest that vocabulary is often best acquired by analogy, in other words, remembered as being similar in meaning to previously acquired items” (1998: 29). If we look up the dictionary, the meanings of vocabularies are often defined by other similar lexical items. However, these synonymous words are not used in the same way, and this is not accounted for explicitly in dictionaries. In recent years, this phenomenon has received increased attention in fields like linguistics and Teaching Chinese as Second Language (TCSL). Many studies on near-synonymy have been undertaken to investigate the semantic relations in various languages such as English (Chung 2011) or the contrast between English and Portuguese (Sardinha 2000). With no exception, in Mandarin Chinese some sets of near-synonyms have also been reviewed by

researchers based on different approaches (Chief et al. 2000, Hsu and Chung 2012, Liu 2002, Liu et al. 2006, Lin 2010, Tsai et al. 1996, Xiao and McEnery 2006).

The transaction words in Mandarin Chinese, *maimai* (買賣), *jiaoyi* (交易) and *maoyi* (貿易), are commonly used in our daily commercial act. When we describe a transaction event, it is inevitable to mention these three words. If we look up the dictionaries, these three words are interchangeable in the definitions. In the *Revised Mandarin Chinese Dictionary* (重編國語辭典修訂本) by the Ministry of Education in Taiwan, the definitions of *maimai*, *jiaoyi* and *maoyi* are given as follows.

買賣

1. 商場上的**交易**，即做生意。
2. 以非法的途徑奪取財物。

maimai

1. Trading (*jiaoyi*) in the market place, which is business.
2. Using illegal way to obtain property.

交易

1. 本指交換、互換。後泛指**買賣**。
2. 往來、交往。
3. 更換、更替。

jiaoyi

1. Originally it meant exchange or switch; now it means commerce (*maimai*).
2. To be in contact with, or to be in relationship with.

貿易

1. **買賣**。
2. 變易。

maoyi

1. Commerce (*maimai*).
2. To change/alter.

It is readily perceived that their meanings are defined in a circular manner; *maimai* is defined by *jiaoyi*, and both *jiaoyi* and *maoyi* are explained as *maimai*. In addition to the dictionary definition, *maimai*, *jiaoyi* and *maoyi* sometimes are replaceable in sentences. The following examples illustrate.

(1) 但亞洲熊都被列在保育第一類的黑名單上，因此國際上**買賣/交易/貿易**取自養殖場的引流膽，仍被視為非法行為。

'However, Asian black bear is on the first category of species conservation blacklist. Therefore, international trading/commerce/commerce of bear's bile from the farm is illegal.'

(2) 台視總經理鄭優說：「**買賣/*交易/*貿易** 片子主要是基於業務考量，若損傷到台視自身利益，生意當然做不成…

'The TTV manager, Zheng You, says, "The trading/ *commerce/ *commerce of films is based on business consideration. If it hurts TTV's business interests, the trading will definitely fail…'

(3) 在很多農民一心就想賣祖產，趕快離農，則開放農地自由**買賣/交易/*貿易**，只會加速農業的消失而已。

'While many farmers have set their minds on selling patrimony and get away from agriculture, it will only accelerate the disappearing of agriculture to legalize the free trading/ commerce/ *commerce of farmlands.'

In sentence (1), *maimai*, *jiaoyi* and *maoyi* are fully interchangeable. However, in the other two sentences (2) and (3), some words will make the sentences ungrammatical. From the above examples, it appears that *maimai* is more commonly used. As a result, we might anticipate that the word frequency of *maimai* will be higher than the other two words. Therefore, we do a simple search on the corpus and online. The following

table shows the rough result from the Sinica corpus[1] and the Google search[2].

Table 1.1 Word Frequency of *maimai, jiaoyi, maoyi*

Word Frequency	***maimai* (買賣)**	***jiaoyi* (交易)**	***maoyi* (貿易)**
Sinica Corpus 4.0	280	843	928
Google.tw (2015/3/28)	27,100,000	214,000,000	38,900,000

From the above data, *maimai* surprisingly has the lowest word frequency, no matter in the corpus or on the internet. When we describe a commercial event, the prototypical predicates used are *mai* (買) and *mai* (賣). However, when these two words combine to be a compound word *maimai*, the frequency becomes fairly low. The differences of *maimai*, *jiaoyi* and *maoyi* regarding their lexical meanings are quite curious to be explored. Firth says, "you shall judege a word by the company it keeps" (1957). As a result, this study intends to find out the substantial distinction among *maimai, jiaoyi* and *maoyi* based on their collocational behaviors. By examining their collocation, we can continue to discuss the semantic prosodies that arise from the interaction between *maimai, jiaoyi* or *maoyi* and their collocates. Finally, we further investigate the frame elements that appear in the data. Accordingly, the questions to be addressed in this study are as follows.

a. What are the similarities and differences among *maimai, jiaoyi* and *maoyi* in terms of their collocational behaviors?

[1] an online open corpus (http://asbc.iis.sinica.edu.tw/)
[2] www.goole.com.tw

b. What semantic prosodies do *maimai*, *jiaoyi* or *maoyi* bring out?

c. What frame elements are evoked by *maimai*, *jiaoyi* and *maoyi*, respectively?

1.2 Data

The data for the analysis in the study is from the Academia Sinica Balanced Corpus 4.0 (Sinica Corpus) of up to 11 million words (http://asbc.iis.sinica.edu.tw/). It contains both written and spoken contemporary Mandarin with different topics in various areas. There are 280 tokens for *maimai* (買賣), 843 tokens for *jiaoyi* (交易), and 928 tokens for *maoyi* (貿易) in the corpus.

1.3 Organization of the Thesis

After introducing our motivation and purpose for the study, we will review previous researches on near-synonyms based on different approaches in Chapter Two. Chapter Three introduces the theoretical concepts, the data and the methodology for this study. Chapter Four provides data results and discussion on the transaction words. Chapter Five concludes the study and provide suggestions for further research.

CHAPTER II

PREVIOUS STUDIES ON NEAR SYNONYMS

With the technical progress in corpora, researchers have extensively taken a corpus-based approach to the studies of near-synonyms in recent years. With quantitative calculation, the distributional patterns of data can be well recognized as the evidence for linguistic analysis, and the subtle contrasts within a set of synonymous words can be easily captured. Tsai et al. (1996), Liu (2002), Liu et al. (2005), Lin (2010), Chief et al. (2000), and Xiao and McEnery (2006) all positively identify the advantages of applying corpora to their studies on near-synonyms. However, the frameworks they adopt in each research are not entirely the same. Previous studies primarily approach near-synonyms from four different perspectives: feature-based, MARVS-based, frame-based, and collocation and semantic prosody-based. In this chapter, we will review and remark on studies of those different frameworks, and then point out the direction of this study.

2.1 Feature-based Studies

Some studies on near-synonyms have concentrated on the interactive relationship between lexical semantic properties and syntactic behaviors. By observing their

distributional syntactic patterns from the corpus data, researchers can deduce the semantic features to differentiate near-synonyms. In addition, the syntactic behaviors can also be predicted from lexical semantics. For instance, Tsai et al. (1996) discuss a pair of near-synonyms, *gaoxing* (高興) 'happy' and *kuaile* (快樂) 'glad'. Two semantic features are proposed to account for their distinct syntactic behaviors, [±change-of-state] and [±control]. The feature [±change-of-state] explains the different aspectual types between *gaoxing* and *kuaile*. Since *gaoxing* refers to a result state, denoting a change of state, it can take the perfective aspect markers *-le* (了) and the aspectual adverbs *zheng* (正). However, *kuaile* is a homogeneous state and does not refer to any change so it can only take the aspectual adverb which indicates a permanent state *buzai* (不再). The following examples can illustrate the differences (Tsai et al. 1996: 172).

(1) 我們談得正 (高興+*快樂)，突然…
*women tan de zheng (gaoxing+*kuaile), turan…*
we talk CSC[3] ASP happy glad suddenly…
'We are talking happily, but suddenly…'

(2) 從此不再 (快樂+*高興)
*congci buzai kuaile+*gaoxing*
since-then no-again glad happy
'[Somebody] is no longer happy since then.'

The different sentential types contrasted by *gaoxing* and *kuaile* can be explicated by

[3] Complex stative construction is short for CSC here (Li and Thompson 2008).

the other feature [±control]. *Gaoxing* can form an imperative sentence as in (3), and *kuaile* can appear in a wish sentence as in (4). Imperative sentences represent that the hearers have the abilities to perform the action or not so it means the state of *gaoxing* is controllable. As for the use of wish sentences, the control of doing something is not involved.

(3) 高興/*快樂 一點!
*gaoxing/*kuaile yidian*
happy glad
'Be happy!'

(4) 祝你 快樂/*高興
*zhu ni kuaile/*gaoxing*
wish you glad happy
'I wish you be happy.'

The feature of [±control] also allows *gaoxing* to co-occur with volitional verbs *yinggai* (應該) and *yao* (要) as well as evaluative verb *zhide* (值得).

Another study of a near synonym pair *fangbian* (方便) and *bianli* (便利) 'to be convenient' by Chief et al. (2000) also adopts the same approach. Semantic features are extracted from the distributional differences in syntactic patterns, and then tested in new syntactic frames. Some observed major differences are that *bianli* never functions as a verbal modifier which is exclusive to *fangbian*. *Fangbian* appears mostly in intransitive form, and in the transitive usage it takes a sentential or a verbal object. Moreover, *fangbian* can be negated by *bu* (不) while *bianli* cannot. To account

for these distinctions Chief et al. (2000) propose the feature [beneficial role]. With the prominent feature of beneficial role, *bianli* cannot allow the post-verbal proposition to be inverted to the pre-verbal position as the examples of (5a) and (5b) contrast. However, *fangbian* has the trivial status of beneficial role so such inversion is available as (6a) and (6b) illustrate (cited from Chief et al. 2000: 54).

(5a) 修改許多法規便利山民墾殖
xiugai xuduo fagui buanli shan-min kenzhi
modify many rule convenient mountain-people cultivate
'Modifying many rules makes it convenient for the aborigines to cultivate (land)'

(5b) *修改許多法規山民墾殖便利
xiugai xuduo fagui shan-min kenzhi bianli
modify many rule mountain-people cultivate convenient

(6a) 設置辦事處方便民眾出國觀光
shezhi banshichu fangbian minzhong chuguo guanguang
establish office convenient people go-abroad visit
'Establishing an office makes it convenient for people to travel abroad.'

(6b) 設置辦事處民眾出國觀光方便
shezhi banshichu minzhong chuguo guanguang fangbian
establish office people go-abroad visit convenient
'Establishing an office makes it convenient for people to travel abroad.'

Other differences can be further explicated by the notion of lexical conceptual profile. Extended from the feature [beneficial role], Chief et al. (2000) claim that *bianli* profiles the beneficial role but that *fangbian* profiles the whole propositional event. Therefore, the lexical conceptual profile of *fanbian* makes it able to co-occur

with *bu* (不) 'not' because its event can be negated like any proposition. They further point out the positive meaning denoted by the beneficial role of *bianli* also excludes negation (Chief et al. 2000: 55).

2.2 MARVS-based Studies

Module Attribute Representation of Verbal Semantics (MARVS) is a theory of lexical knowledge proposed by Huang et al. (2000). In terms of this model, each sense of a verb has its own event structure, and the structural and content information it conveys can be specified by the composition of modules and attributes. The two types of modules are Event Module and Role Module, and the two attributes linked to them are Event-Internal Attributes and Role-Internal Attributes, respectively. The model can be schematized as the following figure (=Huang et al. 2000: 24, Figure 1).

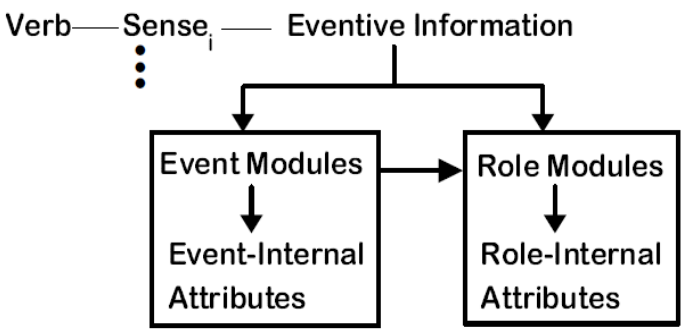

Figure 2.1 Module-Attribute Representation (=Huang et al. 2000: 24, Figure 1)

The Event Module represents the overall shape of the event structure and it is

composed of five atomic event structures: Boundary, Process, Stage, State and Punctuality. The followings are their associated symbols and statements (Huang et al. 2000: 26).

(7) • (Boundary)

Boundary refers to a temporal point of an event.

(8) / (Punctuality)

Punctuality represents a single occurrence of an activity that cannot be measured based on duration.

(9) ///// (Process)

Process represents an event that can keep going and has a time course.

(10) ____ (State)

State refers to a homogenous event that is neither punctual nor does it have a time course.

(11) ^^^^^ (Stage)

Stage consists of interactive sub-events.

The Event-internal Attributes linked to the module are the inherent features of the event itself, such as [control], [effect], [disposal], etc.

The other module, Role Module, represents the participant roles. It contains all required arguments and optional arguments or adjuncts. The roles include Agent, Cause, Causer, Comparison, Experiencer, Goal, Instrument, Incremental theme, Location, Locus, Manner, Ranger, Recipient, Source, Target, Theme, and so on

(Huang et al. 2000: 31). The associated Role-Internal Attributes further specify the inherent semantic behaviors of the focused role. Some examples are [sentience], [volition], [design], etc.

Liu (2002) adopts the MARVS model to investigate Mandarin verbs of doubt, *huaiyi* (懷疑) and *cai* (猜). *Huiyi* can be preceded by the inception verb *kaishi* (開始), marking an inchoative state in the Event Module. While *cai* can be followed by an endpoint marker *wan* (完), representing a bounded process in the Event Module. The following examples illustrate the point (Liu 2002: 6-7).

(12) 她開始懷疑/*猜果汁到底是不是純的
*ta kaishi huaiyi/*cai guozhi daodi shibushi chun de*
she start huaiyi/*cai juice to bottom be not be pure DE
'She started wondering if the juice was pure.'

(13) 你到底猜/*懷疑完了沒?
*ni daodi cai/*huaiyi wan le mei*
you to bottom cai/*huaiyi finish LE no
'Have you on earth finished guessing?'

Their distinction in the event module also implies their different participant roles. *Huaiyi* takes an experiencer to be the subject, and *cai* takes a volitional agent in the Role Module. Below is the schematic representation of *huaiyi* and *cai* based on MARVS model (=Liu 2002: 10, (14)).

Table 2.1 MARVS for *huiyi* and *cai* (=Liu 2002: 10, (14))

Verb	Event Module Event-Internal Attributes	Role Module Role-Internal Attributes
huiyi	inchoative state • _____ | [irrealis assertion] ◄- - - - - - - - ► [challengeable] [denial] ◄- - - - - - - - ► [presuppositional]	<Experiencer, Theme> | [challengeable]
cai	bounded process • ////// • | [low epistemic strength]	<Agent, Theme> | [challengeable]

Another study by Hsu and Chung (2012) also adopt the same approach to examine another set of near-synonyms, *pao* (泡) and *jin* (浸), verbs of soaking. With the same Role Module, their differences are identified by the Event Module in MARVS. *Pao* is a composite event for its inclusion of boundary, process and state. Therefore, *pao* represents a dual process-state. However, *jin* cannot co-occur with the durative marker *zai* (在), and it represents an inchoative stage in the Event Module. The following schema illustrates the differences between *pao* and *jin* based on MARVS model (=Hsu and Chung 2012: 306, (7)).

Table 2.2 MARVS for *pao* and *jin* (=Hsu and Chung 2012: 306, (7))

Verb	Event Module	Role Module Role-Internal Attributes
pao	dual process-state • ///// • ____	<Theme, Goal> | [+hot spring]
jin	inchoative state • ____	<Theme, Goal>

2.3 Frame-based Studies

Frame Semantics, introduced by Fillmore (1977, 1982, 1992), approaches lexical meaning by centering the relations between language and human experience. The meanings of the lexicon would be retrieved only when the background information is involved and the frames are constituted by the interrelated concepts that the words encode (Fillmore 1992). Each frame contains different frame elements that constitute the conceptual frame. A classic example, the Commercial Frame Event, is made by Fillmore (1977). The Commercial Frame denotes a transaction act and the frame elements (in terms of situational roles) include the buyer, the seller, the money and the goods. The Commercial Frame is schematized as follows (=Fillmore 1977: 104, Figure 1).

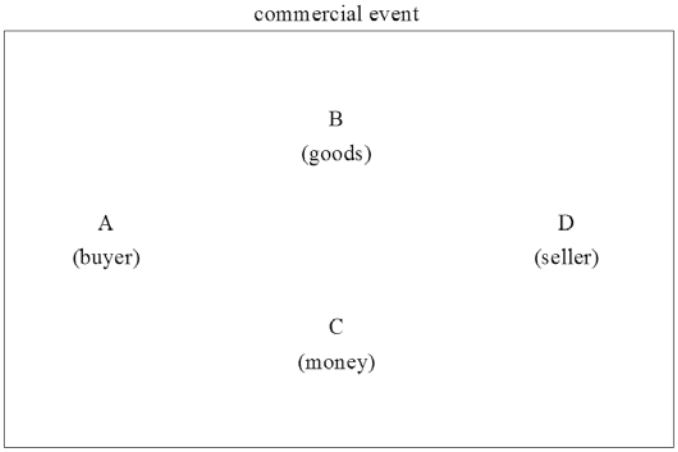

Figure 2.2 The Commercial Event Frame (=Fillmore 1977: 104, Figure 1)

Some related verbs linked to this frame are *buy*, *sell*, *pay*, *send*, *cost* and *charge*. However, each verb evokes different perspectives of the frame. For example, the verb of *buy* puts the buyer and goods into perspective but the verb of *sell* perspectivizes the seller and goods (Fillmore 1977). More details will be further discussed in Chapter 3.

Liu et al. (2006) take a frame-based approach to discuss polysemous near-synonyms, Mandarin verbs of expression, *biaoshi* (表示), *biaoda* (表達), and *biaolu* (表露). *Biaoshi* is a polysemous verb with three different senses, and each sense belongs to different frames: the Statement frame, the Encoding frame, and the Evidence frame. With highlighting different participant roles (indicated by gray shading), the defining schemas and core frame elements are represented as follows (Liu et al. 2006: 140-141).

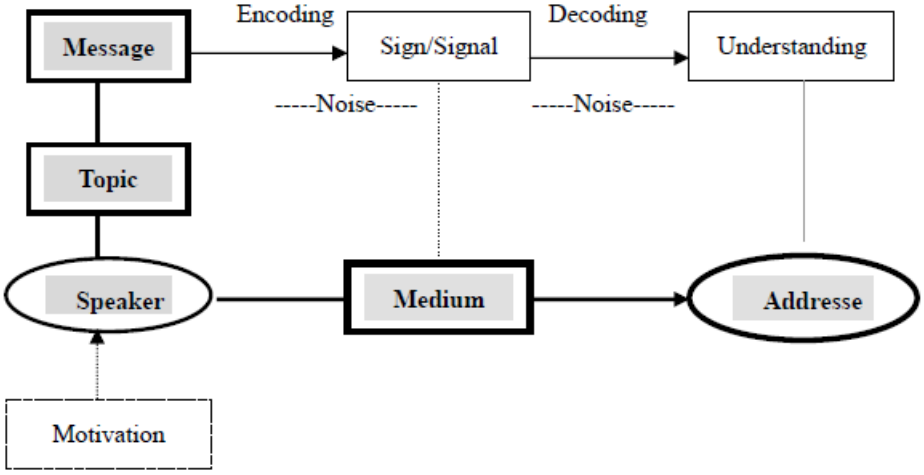

Figure 2.3 Defining schema of the Statement frame (=Liu et al. 2006: 140, (4))

The core frame elements: Speaker, Message (VP or S)

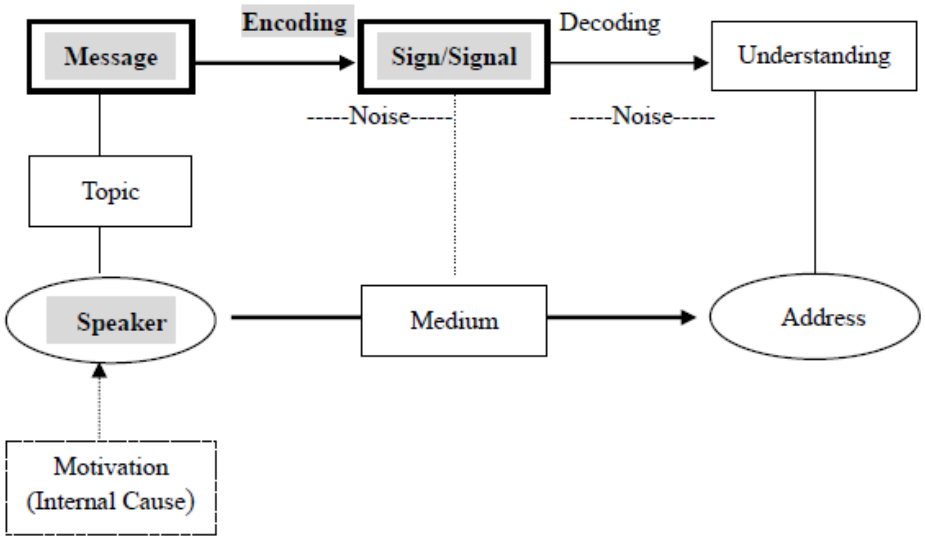

Figure 2.4 Defining schema of the Encoding frame (=Liu et al. 2006: 141, (5))

The core frame elements: Speaker, Message (NP)

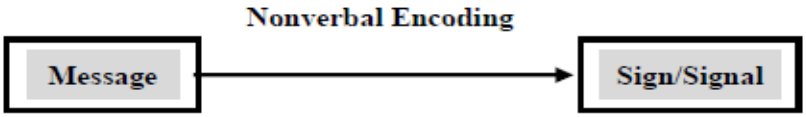

Figure 2.5 Defining schema of the Evidence Frame (=Liu et al. 2006: 141, (6))

The core frame elements: Sign, Message (S or NP)

In terms of the frame membership and their syntactic behaviors from corpus data, Liu et al. (2006) further distinguish *bioashi, biaoda* and *biaolu*. The data shows that although *biaoshi* belongs to three frames, it is a prototypical verb of Statement (with 72.2% frequency). Similarly, *biaoda* is also a cross-frame verb but it is predominately used as a verb of Encoding. As for *biaolu*, it only functions as a verb of Encoding with no token of other frames. The following examples illustrate the points (Liu et al. 2006: 143).

(14) 不擅談論自己的何先生[Speaker]，靦腆的**表示**:
bu shan tanlun ziji de he xiansheng, miantian-de biaoshi:
NEG good at talk oneself NOM Her Mr. shy say

這不過是盡心盡力做好份內工作[Message]
zhe buguoshi jinxinjinli zuohao fennei gongzuo
this nothing-but dedicated do-well one's job

'Mr. Her who is not good at talking about himself bashfully says that he does nothing but dedicated to do his own job well.

(15) 我[Speaker]今天寫這一封信[Sign]就是要**表達**
wo jintian xie zhe yi feng xin ju shi yao biaoda
I today write this one CL letter emphatic be want to express

我衷心的感謝[Message]
wo zhongxin-de ganxie

I sincere-GEN gratitude

'Today I write this letter for the purpose of expressing my sincere gratitude.'

(16) 費茲瓦特並說，海珊[Speaker]迄未**表露**

feiziwate *bing* *shuo, haishan* *qi* *wei* *biaolu*
Fitzwater also says, Hussein until-now not express

願與布希特使會談的意願[Message]

yuan *yu* *buxi* *teshi* *huitan* *de* *yiyuan*
willing to with Bush emissary parley GEN wish

'Fitzwater also says that until now Hussein has not yet expressed his wish to parley with Bush's emissary.'

In the study, Liu et al. (2006) also discuss the relationship across three frames. The Encoding frame is derived metonymically from the Statement frame, and the Evidence frame is metaphorically induced from the Encoding frame.

Lin (2009) studies a pair of near-synonym of *fangbian* (方便) and *bianli* (便利) 'to be convenient' by taking the same frame-based approach. The study is to re-examine the previous research by Chief et al. (2000) based on a different analysis. *Fangbian* and *bianli* evoke two frames: the Convenience frame with the frame elements of Agents, Means, Reason, Beneficiary, and Purpose, and the Inconvenience frame with the frame elements of Reason, Agent, Action, Maleficiary and Purpose. Although these two frames seem to be parallel, the evaluation of intentionality makes the difference. Within the Convenience frame, *fangbian* and *bianli* take two different perspectives. *Fangbian* focuses on the result-subevent, and perceives the event from

the perspective of the Beneficiary benefiting from the Purpose. As shown in (17), the result-subevent is more concerned because the Beneficiary Soochow University achieves the Purpose of participation in the game more easily, and it is regardless of the intention of the collegiate athletic association's holding the game (Lin 2009: 24). However, *bianli* focuses on the cause-subevent, and perceives the event from the perspective of the Agent's employing the Means. Therefore, in (18) the adverb *gaohao* (剛好), which implies the resultant convenience is accidental, is not allowed by *bianli*. On the contrary, the example of (19) is available because the Means is exercised out of the goodwill of the Agent (Lin 2009: 27).

(17) 大專 體總(Agent) 辦 七人制球賽(Means)
dazhuan ti-zong *ban qi-ren-zhi qiu-sai*
college athletic-association hold seven-man-rule ball-game

剛好 **方便** 東吳(Beneficiary)
ganghao *fangbian* *dongwu*
accidentally FANGBIAN Soochow

組隊 參加(Purpose)
zu-dui *canjia*
recruit-team participate

'The collegiate athletic association is holding the seven-player rugby game, which happens to facilitate the team recruitment and participant in the game for Soochow University.'

(18) ?大專 體總(Agent) 辦 七人制球賽(Means)
dazhuan ti-zong *ban qi-ren-zhi qiu-sai*
college athletic-association hold seven-man-rule ball-game

剛好 **便利** 東吳(Beneficiary)
ganghao *bianli* *dongwu*
accidentally BIANLI Soochow

組隊 參加(Purpose) [constructed example]
zu-dui *canjia*
recruit-team participate

(19) 大專 體總(Agent) 辦 七人制球賽(Means)
dazhuan ti-zong *ban qi-ren-zhi qiu-sai*
college athletic-association hold seven-man-rule ball-game

以 **便利** 東吳(Beneficiary)
yi fangbian dongwu
to BIANLI Soochow

組隊 參加(Purpose) [constructed example]
zu-dui *canjia*
recruit-team participate

2.4 Collocation and Semantic Prosody-based Studies

The final approach that adopts collocation and semantic prosody is best benefited by corpora work. With such large quantities of concordance data, the collocation behaviors and semantic prosody can be observed by a statistical method. Firth (1957) first uses collocation as a technical term and applies the test of 'collocability' in his article *Modes of Meaning*. Other researchers also follow Firth's step making similar views on collocation including Sinclair (1991), Leech (1974), and Hoey (1991) (cf. Partington 1998). While we look at these collocational patterns,

some favorable or unfavorable connotations will arise with their habitual collocates. This phenomenon is referred to as “semantic prosody”. Sinclair (1991) investigates examples of *set in* and *happen* to manifest semantic prosody. He points out that *set in* habitually co-occurs with subjects associated with unpleasant states of affairs and *happen* tends to occur with unpleasant things such as accident. Stubbs (1995) also gives several corroborating examples from the LOB corpus (Stubbs 1995: 2-3).

(20) before bad weather *sets in*; the fact that misery can set in; desperation can set in; stagnation seemed to have set in; before rigor mortis sets in.

(21) the fantastically dry and sunny spell that *set in*.

(22) the problem of what will *happen*; this sort of accident can still *happen*; need the quarrel with Cuba ever have *happened*; something very untoward has *happened*; calm down and tell me exactly what *happened*.

From a cross-linguistic perspective, Xiao and McEnery (2006) explore three cases of near-synonyms: the *consequence* group, the *cause* group and the *price/cost* group, drawing upon data from English and their translation equivalents in Mandarin Chinese. Based on their collocational behavior and semantic prosody, the semantic relations of near-synonyms in terms of their collocational behavior and semantic prosody are investigated. Comparing two different languages, the specific characteristic of language also becomes an affective factor. For example, the morphological variations in English would affect its semantic prosody as in the patterns of *consequence* (consequence, consequences and consequently), as illustrated

by the following table.

Table 2.3 Distribution of consequence across meaning categories in FLOB/Frown (= Xiao and McEnery 2006: 109, Table 2)

Pattern	Negative	Neutral	Positive
as a consequence	6	7	4
in consequence (of)	8	3	1
consequence	27	7	6
consequences	85	20	1
consequent(ly)	15	73	5

However, Mandarin Chinese lacks such morphological variations. Besides, although English and Mandarin Chinese are two unrelated languages, they both show a similar collocational behavior and semantic prosodies of near-synonyms. For example, in the *cause* group the English near-synonyms are *cause*, *arouse*, *lead to*, *result in/from*, *give rise to*, and *bring about*. Most of the verbs show negative semantic prosodies but *give rise to* shows high frequency of positive prosody. Moreover, both *give rise to* and *cause* are significant collocates of *change(s)* but the collocations show different evaluations. *Change(s)* collocating with *bring about* typically shows a favourable evaluation while the collocating with *cause* shows an unfavourable evaluation (Xiao and McEnery 2006: 115). The following table demonstrates the frequency of semantic prosody across the English near-synonyms of *cause*:

Table 2.4 Distribution of *cause*-words across meaning categories in English (=Xiao and McEnery 2006: 117, Table 3)

Synonyms	Negative	Positive	Neutral
CAUSE	223 (78%)	8 (3%)	56 (19%)
AROUSE	45 (65%)	10 (15%)	14 (20%)
LEAD to	141 (49%)	65 (22%)	85 (29%)
RESULT in/from	84 (47%)	49 (27%)	47 (26%)
GIVE rise to	27 (46%)	8 (13%)	24 (41%)
BRING about	14 (38%)	17 (46%)	6 (16%)

The corresponding translations of *cause* in Mandarin Chinese include *changsheng* (產生), *xingcheng* (形成), *zaocheng* (造成), *yinqi* (引起), *dailai* (帶來), *daozhi* (導致), *cushi* (促使), *zhishi* (致使), *yinfa* (引發), *cucheng* (促成), and *niangcheng* (釀成). From the corpus data, *zhishi*, *niangcheng*, *zaocheng*, *yinqi*, and *daozhi* are overwhelmingly negative and their collocates also conform with the negative prosody such as *shigu* (事故), *weiji* (危機), *chongtu* (衝突) etc. Due to the strongly negative prosody of *zaocheng*, even an apparently neutral result may turn to negative, as the following example can inllustrate (Xiao and McEnery 2006: 119).

(23) 臥室的窗戶沒有關，薄薄的窗簾在夜風裡
woshi de chuanghu meiyou guan, bobo de chuanglian zai yefeng li
bedroom GEN window not close, thin GEN curtain in night-wind in

漂漂浮浮，造成一種極具浪漫情調的，飛動的
piaopiaofufu, zaocheng yizhong ji ju langman qingdiao de, feidong de
flutter-flutter, cause one-CL very have romantic appeal GEN flying GEN

印象，正像女主人喜怒無常，躁動不寧的
yinxiang, zheng xiang nuzhuren xinuwuchang, zaodong bu ning de
impression, just like hostess changing-moods, restless not calm GEN

性格。
xingge
disposition

'The window of the bedroom was open. The thin curtain was fluttering gently in the night wind, giving an impression of romantic appeal and flying, just like the restlessly changing moods of its hostess.'

As for *cucheng* and *cushi* with high frequency of positive semantic prosodies, their collocates also show the corresponding evaluation. For example, the collocates of *cucheng* and *cushi* are either positive or neutral such as *fazhang* (發展), *zhuanhua* (轉化), *kaifa* (開發), *heping* (和平) etc. The following table shows the distributional pattern.

Table 2.5 Distribution of *cause*-words across meaning categories in Chinese (=Xiao and McEnery 2006: 117, Table 4)

Synonyms	Negative	Positive	Neutral
zhi4shi3 (致使)	569 (99%)	0	3 (1%)
niang4cheng2 (酿成)	92 (98%)	2 (2%)	0
zao4cheng2 (造成)	190 (91%)	3 (2%)	15 (7%)
yin3fa1 (引发)	523 (77%)	31 (5%)	123 (18%)
dao3zhi4 (导致)	60 (76%)	2 (3%)	17 (21%)
dai4lai2 (带来)	64 (49%)	36 (27%)	31 (24%)
yin3qi3 (引起)	83 (43%)	28 (15%)	81 (42%)
chan3sheng1 (产生)	111 (31%)	88 (24%)	162 (45%)
xing2cheng2 (形成)	34 (10%)	85 (26%)	215 (64%)
cu4shi3 (促使)	2 (5%)	26 (59%)	16 (36%)
cu4cheng2 (促成)	2 (1%)	171 (98%)	2 (1%)

With the thorough examination of the collocational behavior and semantic prosody of near-synonyms, Xiao and McEnery (2006) also provide valuable suggestions for language pedagogy.

2.5 Remarks

Researchers analyze near-synonyms by adopting different frameworks and perspectives. Early works put more emphasis on the interaction between lexical semantic properties and syntactic behaviors so as to propose semantic features. After Huang et al. (2000) propose the MARVS theory, researchers take the model to discuss the event structure of verbal near-synonyms. Liu et al. (2006) examine synonymous words with the theory of Frame Semantics. Researchers propose different types of frames to investigate the lexical meanings of near-synonyms. Also some researchers (Xiao and McEnery 2006) take a more statistical way to study near-synonyms. By examining their collocation behavior percentage in the corpus, they can further point out the semantic prosodies brought out by these collocates. These previous studies take descriptive or quantitative approach on differentiating near-synonyms. However, using the dichotomous semantic feature such as [±change of state] or [±control] is sometimes arbitrary. The MARVS theory does not take the context into consideration. Therefore, in this study we will first adopt the corpus-based approach to classify the transaction words based on the commercial event frame. In the following, we will also examine the concordance data to extract their collocation and semantic prosody, and to see if there is any corresponding observation between the results carried out by different approaches. In this way, we can give the transaction words a more thorough

analysis and observe their different behaviors from different perspectives.

CHAPTER III

DATA AND METHODOLOGY

3.1 Theoretical Concepts

3.1.1 Frame Semantics

Fillmore (1977, 1982, 1992) advances Frame Semantics to approach lexical meanings by centering the relations between language and human experience. In the early papers, *frame* was regarded as any system of linguistic choices, and it was differentiated from *scene* which was cognitive and experiential entity. However, in recent works *frame* has shifted toward a cognitive interpretation and *scene* had no longer used (Petruck 1996). Frame is a notion to represent conceptual structures and to schematize human experiences. As Fillmore and Atkins point out, "[…] a word's meaning can be understood only with reference to a structured background of experience, beliefs, or practices, constituting a kind of conceptual prerequisite for understanding the meaning" (1992:76). In other words, the meanings of words are not merely the interactions between lexical items; instead they are schematized by human experiences and shared knowledge. As a result, the meaning of the lexicon will be retrieved only when information is involved and frames are constituted by the

interrelated concepts that the words encode. Each frame contains different frame elements that constitute the conceptual frame. A classic example, the Commercial Frame Event, is made by Fillmore (1977). The Commercial Frame denotes a transaction act and the elements (in terms of situational roles) involved are the buyer, the seller, the money and the goods. The frame is schematized as follows (=Fillmore 1977: 104, Figure 1).

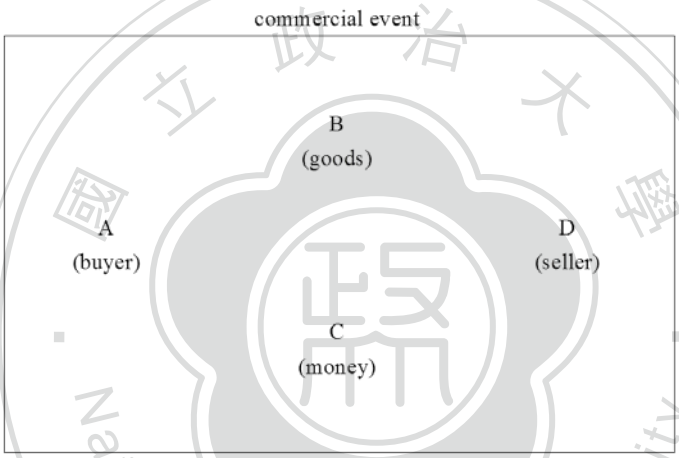

Figure 3.1 The commercial event frame (=Fillmore 1977: 104, Figure 1)

A typical scenario of completing a commercial event is when a seller sells what he owns (the goods), and a buyer buys the goods by rendering money. Some related verbs linked to this frame are *buy, sell, pay, send, cost* and *charge*. However, each verb evokes different perspectives of the frame. The verb *buy* directs one's attention to the Buyer and the Goods, and background the Seller and the Money. *Pay* focuses on the Buyer, the Money, and the Seller, and backgrounds the Goods. Based on the same frame, these related verbs are simply a change of perspective. As a result, to

understand the meaning of these frame related verbs, one will need to know the process of commercial transaction which requires our daily experience and knowledge (Petruck 1996). Frame semantics is also useful to describe lexical meanings, including the words that share the same reference. For example, the words *land* and *ground* both denote the dry surface of the earth. However, *land* takes the perspective from the sea, and *ground* is from the perspective of the air above it. When we hear the sentence "a bird spends its life on the land", we will know the bird does not spend time in "water". Similarly, if a bird spends its life on the ground, we know that the bird does not fly (Fillmore 1982).

It will be incomplete to talk about frame related verbs without including their valence description which specifies in both semantic and syntactic terms (Fillmore and Atkins 1992). Let us go back to the Commercial Frame and those related verbs, *buy, sell, pay, send, cost* and *charge.* In the sentence "Tommy bought the cat from Dolly for $300", the buyer is the subject (Tommy), and the goods is the direct object (the cat); both of them are obligatory. As for the backgrounded elements, they are optional and thus surface as oblique objects, from Dolly (the seller), and for $300 (the money) (Petruck 1996). The following table illustrates the valence description of all the verbs from the Commercial Frame.

Table 3.1The Semantic and Syntactic Valence (Active Voice) of the Verbs from the Commercial Transaction Frame[4]

(=Fillmore and Atkins 1992: 79,Table 2.1)

	Buyer	*Seller*	*Goods*	*Money*
BUY	Subj	(from)	D-Obj	(for)
SELL	(to)	Subj	D-Obj	(for)
CHARGE	(I-Obj)	Subj	(for)	D-Obj
SPEND	Subj	NULL	for/on	D-Obj
PAY	Subj	[I-Obj]	[for]	D-Obj
PAY	Subj	(to)	for	D-Obj
COST	(I-Obj)	NULL	Subj	D-Obj

Although the information is not specified in the frame itself, however, with the rich descriptions of the frame elements, the information is deducible.

FrameNet (https://framenet.icsi.berkeley.edu/fndrupal/) is an online English lexical database based on the theory of Frame Semantics and supported by corpus evidence. This project has operated by the International Computer Science Institute in Berkeley since 1997. It provides the detailed information for the properties of conceptual structures and frame-related lexical items. Every frame involves various participants and other conceptual roles which are frame elements (FEs). Those essential frame elements to the frame are called core, and those less essential ones are non-core. Some words evoke the frame such as *buy* and *sell* in the commercial event

[4] "Subj"= subject, "D-Obj"= direct object, "I-Obj"= indirect object. Parentheses represent optionality, and square brackets represent omissibility under conditions of definite anaphora (Fillmore and Atkins 1992).

frame referred to as lexical units (LUs) in this project. In the following analysis, this study will use these terms when it refers to those notions.

3.1.2 Collocation

Firth (1957) first uses *collocation* as a technical term along with his well-known saying, “you shall judge a word by the company it keeps”. The meaning by collocation is to investigate a given word by the company it keeps; therefore it is contrary to the conceptual approach to word-meaning (Firth 1957). Other researchers also follow Firth’s step making their views on collocation including Sinclair, Leech, and Hoey. Based on the definitions given by them, Partington (1998) classifies these definitions into three aspects: textual, psychological (or associative), and statistical definitions. In terms of textual definition, the collocation is realized as a notion of linearity of language by defining it as “the occurrence of two or more words within a short space of each other in a text” (Sinclair 1991: 170). As for psychological definition, it relies on a native speaker’s communicative competence. The definition comes from Leech, he says “collocative meaning consists of the associations a word acquires on account of the meanings of words which tend to occur in its environment” (1974: 20). Native speakers’ intuitions can tell if the co-occurrences of words are appropriate or not within given circumstances. Finally, the statistical definition draws much attention from corpus linguists. Hoey indicates that “collocation has long been

the name given to the relationship a lexical item has with items that appear with greater than random probability in its (textual) context" (1991: 6-7). Therefore, the patterns of collocation can be investigated thoroughly with large quantities of data. In recent work, Hoey (2005) puts forward a psychological theory of priming to explain collocation. In psycholinguistics, semantic priming is used to describe that a 'priming' word may evoke a 'target' word, and the priming and target words are from the same semantic category. For example, the word *body* primes the listener for *heart* instead of *trick* which does not have an obvious association with *body* (Hoey 2005). Therefore, Hoey employs the theory of priming with a powerful statement, " […] every word is mentally **primed** for collocational use. As a word is acquired through encounters with it in speech and writing, it becomes cumulatively loaded with the contexts and co-contexts with certain other words in certain kinds of context" (2005: 8). As a result, every word is primed to occur with other specific words which are its collocates.

Sinclair (1991) notices that when two words co-occur significantly, the collocation has a different value in the description of each of the two words. Therefore, he proposes two types of collocation, upward collocation and downward collocation. Let us assume there are two words, *a* and *b*, and *a* occurs twice frequent

than *b* in the corpora. If *b* is the node[5] word and *a* is the collocate, then this is upward collocation. In downward collocation, *a* is the node word and *b* is the collocate. For example, the word *back* upward collocates with *at, from, now, her, them* which appear more frequent than *back*. Inversely, *back* downward collocates with *arrive, climb, drew, looked, rush, stared, again, normal* which are more frequent words than *back* (Sinclair 1991).

3.1.3 Semantic Prosody

While we look at these collocational patterns, some favorable or unfavorable connotations would arise from the interaction between the node word and its collocate. This phenomenon is referred to as Semantic Prosody. Partington says, "*[s]emantic* prosody refers to the spreading of connotational colouring beyond single word boundaries" (1998: 68), through the neighborhood of nodes and collocates the evaluative meaning is able to be conveyed. The phenomenon of semantic prosody is first noticed by Sinclair (1987) while he investigates the collocational behavior of phrasel verb *set in*. He points out, "[t]he most striking feature of this phrasel verb is the nature of the subjects. In general they refer to unpleasant states of affairs." (Sinclair 1987: 155). Among the collocate words of *set in*, only a few words are neutral and most are unfavorable items, such as *rot, decay, impoverishment, prejudice,*

[5] The term *node* is used for the word that is being studied, and *collocate* for any word that occurs in the specified environment of the node (Sinclair 1991: 115).

rigor mortis, bitterness, anarchy, disillusion and so on. After the long company of these unpleasant subject words, the phrasel verb *set in* is thus imbued by its collocates and describes as unfavorable prosody. In other words, *set in* itself is no longer neutral; it carries an implied and affective meaning which is unfavorable. Xiao and McEnery also use a Chinese proverb to depict semantic prosody properly, "he who stays near vermilion gets stained red, and he who stays near ink gets stained black"[6] (2006: 107). An item does not carry an affective meaning before it co-occurs with its typical collocates in the context. Therefore, with the long-term interplay between the item and its typical collocates, the item alone will be imbued and colored and then takes on the affective meaning. Words such as *rightly*, *timely*, *flabby* are also considered to be "in-built favourable or unfavourable" which are obvious to speakers. However, semantic prosody portrays the same kind of evaluative meaning which is less evident to the naked eye (Partington 2004).The evaluative meaning can be conveyed through the neighborhood of nodes and collocates. Semantic prosody's primary function, therefore, is to express the speaker/writer's attitude or viewpoints about the propositions they are conveying to the audience/reader, and it indicates that something is positive or negative (Partington 2004; Xiao and McEnery 2006). Partington further points out, "In fact this is what semantic prosody *for*; it reveals […] how a part of

[6] According to the English translation, this Chinese saying is "*jin zhu zhe ci, jin mo zhe hei*" (近朱者赤，近墨者黑).

utterance ‘is to be interpreted functionally. Without it the string of words just ‘means’ – it is not put to use in a viable communication” (2004: 150). As a result, when people violate the expected semantic prosodies, they tend to achieve some kind of goal, for example irony (Louw 1993). Louw also argues that some writers might accidentally make the divergence, so the readers will be able to detect what the writers really believe. The clashes between semantic prosodies would be a good strategy for writers or advertisers to secretly leak out their real thoughts, and what they want the readers to believe.

There is another similar yet distinct concept called semantic preference. These two terms can be confusing because sometimes they are applied to the same phenomenon, but some other times to different phenomenon. Stubbs (2001) defines semantic preference as “the relation, not between individual words, but between a lemma or word-form and a set of semantically related words” (cf. Partington 2004: 145). An item shows semantic preference when the habitual collocation of lexical items with a class of words which share some semantic feature. Bednarek (2008) gives some examples from Stubbs (2001) and Partington (2004).

Table 3.2 Examples for Semantic Preference (= Bednarek 2008: 120)

Lexical items investigated	Preference for
large	Quantities and sizes
sheer	Magnitude, weight, volume
	Force, strength, energy
	Persistence
	Strong emotion
entirely	Absence
	Change of state
	(In)dependency

It is observable that the lexical item, such as *sheer*, typically collocates with other words that share some semantic features, such as "magnitude, weight, volume" or "force, strength, energy". The following examples can further demonstrate this phenomenon (Bednarek 2008: 134).

(1) The raider, who masked his face with a tartan scarf, forced Mr. Bridgeman to open his safe and escaped with a **large** amount of money. [quantity]

(2) The includers are not always merely disinterested advocates of a philosophy, but people who have become so through experience, through the **sheer** amount of time they spend with members of the excluded social group. [magnitude, weight, volume]

(3) Then he leaned towards her and took both her hands in his and begn to study them as if they were **entirely** new creations, the like of which he had never seen before. [change of state]

These lexical items (*large*, *sheer, entirely)* do not randomly collocate with another item; instead, they "prefer" the company of words that belong to a particular semantic set, such as "quantity", "magnitude, weight, volume", and "change of state". If we

compare these semantic sets with the collocation group of semantic prosody, semantic prosody collocation represents a more general semantic group. Stubbs (2001) pinpoints that “It is a question of how open-ended the list of collocates is: it might be possible to list all words in English for quantities and sizes, but not for ‘unpleasant things’” (cf. Bednarek 2008). Besides to that, sematic prosody is a further level of abstraction than semantic preference is. Stubbs (2001) lists four kinds of relation between lexical units with an ascending order of abstraction: collocation (the relationship between lexical item and other lexical items), colligation (the relationship between lexical item and a grammatical category), semantic preferences, and semantic prosody (cf. Partington 2004: 145). Semantic prosody is built up by the semantic preferences. It can be further illustrated by the example of *undergo* discussed by Stubbs (2001). The collocation of *undergo* expresses the semantic preferences for medicine, tests, change and involuntariness. However, if we go back to investigate the semantic set of “tests” and “change”, we will discover that these words carry unfavorable prosody, for example *rigorous test* and *dramatic changes* (Partington 2004: 150). It shows that with the “narrower” characteristic of semantic preference, semantic prosody is able to control the general environment and its effect extends widely over the stretch of context.

3.2 Data Materials

The great progress on computational and software techniques has given researchers a lot of advantages to investigate a large number of data with less effort. Corpora provide natural and valuable data resources, and enable researchers to observe the linguistic patterns easily, especially for near-synonyms. To find out minimal contrasts requires a quantitative analysis. The similarities and differences of near-synonyms can be captured from their distributional tendencies shown in the corpora. Stubbs gives a reason to utilize corpora on the ground of the unreliable intuitions of native speakers, "[b]ut they certainly cannot document collocations with any thoroughness, and they cannot give accurate estimates of the frequency and distribution of different collocations" (1995: 2). As a result, this study adopts a corpus-based approach.

The corpus used in this study is the Academia Sinica Balanced Corpus 4.0 (Sinica Corpus). It contains up to 11 million words of written and spoken contemporary Mandarin from different topics in various areas. It is developed by the CKIP (Chinese Knowledge and Information Processing) group at Academia Sinica, Taiwan, and it is an open resource through the internet: http://asbc.iis.sinica.edu.tw/. The corpus contains the complete word segmentation and syntactic tagging; therefore, it is a representational corpus in the research fields such as linguistics and TCSL. In

terms of data's quantity and quality, the Sinica Corpus is a great choice for this study.

3.3 Data Coding

In Mandarin Chinese, *maimai*, *jiaoyi* and *maoyi* are compound words which consist of two coordinate verbs, and their word structures can be summarized as [V_1 V_2] compounds. The word structures of *maimai*, *jiaoyi* and *maoyi* can be illustrated as follows.

(2)

maimai	買賣	buy-sell	'commerce'
jiaoyi	交易	come and go-exchange	'deal'
maoyi	貿易	trade-exchange	'trade'

As we can see in (2), the semantic relation between *jiao* (交) 'come and go' and *yi* (易) 'exchange' and the meanings of *mao* (貿) 'trade' and *yi* (易) 'exchange' are virtually synonymous. Both V_1 and V_2 of *jiaoyi* and *maoyi* have closely related meanings, and the [V_1 V_2] compounds represent the synonymous meanings 'deal' and 'trade'. However, the case in *maimai* is different; the components V_1 and V_2 possess disparate meanings. The semantic relation between *mai* (買) 'buy' and *mai* (賣) 'sell' is actually antonymous. The meaning expressed by *maimai* includes both the meanings of *mai* (買) 'buy' and *mai* (賣) 'sell', and thus represents the overall transaction meaning 'commerce'. As Packard states, "[...] when V_1 and V_2 are

semantically disparate, the relationship is more likely to be a kind of semantic coordination, with the meaning of the gestalt verb generally containing both of the meanings of each of the component verbs" (2000: 93).

The Sinica Corpus has in-built statistical test, MI value, to measure the collocational strength. However, some drawbacks are noticed. First, the grammatical relations between the collocates and the node word are unidentified. According to the MI value provided by the Sinica Corpus, *zaisha* 'slaughter' (宰殺) is listed as one of the collocates of *maimai*. However, in the following sentence these two words are both listed items after the nominalizer *zhi* (之), and hence they are syntactically and semantically unrelated.

(3) 保育類野生動物之獵補、**宰殺**、進出口、
baoyulei yesheng dongwu zhi liebu zaisha jinchukou
protected species wild animals NOM hunting slaughter import and export

買賣、交換、虐待、干擾及飼養
maimai jiaohuan nuedai ganrao ji siyang
trade exchange cruelty disturbance and breeding

野生動物保育法中都有嚴格之限制。
yesheng dongwu baoyufa zhong dou you yange zhi xianzhi
wild animals in-conservation-act all have strict NOM restriction

'The hunting, slaughter, import and export, trade, exchange, cruelty, disturbance and breeding of wildlife are strictly restricted by wildlife conversation act.'

Second, the position of the collocates comparing to the node word is not classified. In

other words, we do not know if the collocates are on the left side or right side of the node word. As a result, we do not adopt the in-built MI value for this study. We review the data to find out the collocated words on the left side and right side of *maimai*, *jiaoyi* and *maoyi*. The identification of collocates is based on their syntactic and semantic relation to the node word. In other words, the words that can constitute an independent lexical unit with the node word are qualified as collocates. Next, we can continue to discuss the semantic prosodies that arise from the interaction between the node word and the collocates. In this way, the syntactic interactions and semantic attributions of *maimai*, *jiaoyi*, *maoyi* and their collocates can be examined more carefully.

In this study, the syntactic categories and syntactic constructions are identified on the basis of Liu et al. (2001), and the detailed descriptions of noun, verb, adjective, and preposition are given as follows.

A noun functions as the name of human or specific things. Syntactic features of Mandarin nouns can be described as follows. First, they can be accompanied by a classifier which must occur with a numeral. Second, nouns can be modified by pronouns, adjectives, verbs, or other nouns. Third, generally nouns cannot be modified by adverbs and this is a prominent feature that differentiates nouns from other syntactic categories. For example, it is ungrammatical to say, "*hen zhuozi* (很桌

子)". The most common syntactic functions of nouns are subject, object, and attributive.

A verb conveys an action or behavior. Due to the lack of inflection in Mandarin, the identification of verbs is complicated. Generally, the syntactic features of verbs can be described as follows. First, verbs mainly function as predicates in the sentence, but sometimes verbs can also be subjects, objects, attributives, and complements. Second, verbs usually can be negated by *bu* (不), and many verbs can also be negated by *mei* (沒). Third, most verbs can be followed by auxiliary verbs *le* (了), *zhe* (著), and *guo* (過).

In Mandarin, the behavior of adjectives is very similar to verbs; therefore, some researchers consider adjectives to be a type of verbs. However, there are some syntactic features that can differentiate them. First, most adjectives can be modified by degree adverbs, such as *hen-hong* 'very red' (很紅) or *shifen-zhunagguan* 'extremely spectacular' (十分壯觀). Second, adjectives cannot take objects. If some adjectives have objects, they are regarded as verbs which convey causative meaning in this case. Third, some adjectives can be reduplicated. The main syntactic functions of adjectives are attributive, predicate, modifier, and complement.

A preposition comes before nouns, pronouns or some other phrases to form a preposition phrase that modifies verbs or adjectives. Its syntactic features are as

follows. First, preposition is a function word, therefore it cannot be an answer to a question, and cannot function as a predicate. Second, prepositions cannot be reduplicated, and cannot take auxiliary verbs such as *le* (了), *zhe* (著), *guo* (過). Third, proposition must combine with nouns, verbs, adjectives or other phrases to form a preposition phrase in order to function syntactically in a sentence.

The frame elements in this study are identified according to the Exchange Frame[7] from the FrameNet. The core elements include Exchangers and Themes, and the non-core elements include Purpose, Location, Time, Manner, Means and Frequency. The frame elements are illustrated by the following table.

Table 3.3 Frame Elements of Exchange Frame

Frame element	Description
Exchangers	The participants who give or receive from the other themes.
Themes	The items which change possession between the exchangers.
Purpose	The purpose for which the exchangers make the trade.
Location	The place where the trade occurs.
Time	The time when the trade takes place.
Manner	Any description of the trade, including secondary effects (quietly, loudly), and general descriptions comparing events (the same way). Or the salient characteristics of exchangers that affect the trade (eagerly, carefully).
Means	The means by which the trade occurs.
Frequency	The frequency which the exchangers trade themes.

[7] The Exchange frame is similar to the commercial event frame mentioned in Section 3.1.

CHAPTER IV

RESULTS AND DISCUSSION

4.1 Data Distribution

In the Sinica Corpus, 280 tokens of *maimai* (買賣), 843 tokens of *jiaoyi* (交易), and 928 tokens of *maoyi* (貿易) are found. Their syntactic behavior in corpus data shows that *maimai, jiaoyi* and *maoyi* mainly function as nouns. The following table shows the percentages of their syntactic categories, and the token numbers are given in the brackets.

Table 4.1 Distribution of Syntactic Categories

Percentage / Categories	***maimai* (買賣)**	***jiaoyi* (交易)**	***maoyi* (貿易)**
Noun	66% (186)	92% (774)	99% (923)
Verb	34% (94)	8% (69)	1% (5)
total	100% (280)	100% (843)	100% (928)

From the distributional patterns, *maimai*, *jiaoyi*, and *maoyi* predominantly serve as nouns with 66%, 92%, and 99% of the instances, respectively. Both *jiaoyi* and *maoyi* have a very low frequency for verbs, especially *maoyi* which is basically used for nouns only; however, *maimai* has higher frequency for verbs with 34% of the cases. With respect to the distribution of the syntactic categories, the difference

among *maimai*, *jiaoyi*, and *maoyi* is statistically significant[8]. In the case of *maimai*, the collocate is more likely to function as a verb than the other two words. As for *maoyi*, it tends to function as a noun.

When *maimai*, *jiaoyi*, and *maoyi* are used as nouns in the corpus data, they syntactically function as subjects, objects and attributives. The following table provides their distributional proportion in terms of syntactic functions, and the token numbers are presented in the brackets.

Table 4.2 Syntactic Functions of Nominal Usage

Percentage / Functions	***maimai* (買賣)**	***jiaoyi* (交易)**	***maoyi* (貿易)**
Subject	8% (15)	2% (14)	2% (19)
Object	63% (118)	75% (577)	54% (495)
Attributive	29% (53)	24% (184)	44% (409)
total	100% (186)	100% (774)	100% (923)

All of the three words are consistent in functioning as objects, with quite similar distributional patterns. Among the three words, *maimai* has the highest frequency of serving as subject with 8% of instances as in the example ***maimai*** *shi yizhong qihuozhi* 'Trading is a kind of futures system.' (**買賣**是一種期貨制). In terms of the syntactic function of object, *jiaoyi* appears to have higher frequency than the other two words with 75% of instances as in the example *zhengquan* ***jiaoyi***

[8] The Chi-square test for the distribution of the syntactic categories in *maimai*, *jiaoyi* and *maoyi* yields $\chi^2_{.95(2)} = 312.103$ (p-value = 0.000). The standardized residuals for noun are -16.7 in *maimai*, 0.0 in *jiaoyi* and 11.5 in *maoyi*. The standardized residuals for verb are 16.7 in *maimai*, 0.0 in *jiaoyi* and -11.5 in *maoyi*.

'securities transaction' (證券**交易**). As for the attributive function, *maoyi* has 44% of instances, which is the most of all. The example, ***maoyi*** *gongsi* 'trading company' (**貿易**公司) can illustrate.

With regard to their verbal usage, the result is given in the following table. The numbers in the brackets are the tokens in the corpus.

Table 4.3 Distribution of Verbal Usage

Percentage / Verb types	***maimai* (買賣)**	***jiaoyi* (交易)**	***maoyi* (貿易)**
Transitive	47% (44)	9% (7)	0
Intransitive	53% (50)	91% (62)	100% (5)
total	100% (94)	100% (81)	100% (5)

Both *maimai* and *jiaoyi* have transitive and intransitive usages but *jiaoyi* is predominantly used as intransitive verbs. As for *maoyi*, it only has an intransitive usage.

It is obvious that *maimai*, *jiaoyi* and *maoyi* have a common similarity in syntactic functions, and their collocates also show a similar pattern. The syntactic categories of their collocates are classified in Table 4.4 below.

Table 4.4 Distribution of Syntactic Categories of Collocates

Syntactic Categories		***maimai* (買賣)**	***jiaoyi* (交易)**	***maoyi* (貿易)**
Left side	**Noun**	77%	74%	68%
	Verb	15%	11%	10%
	Adjective	8%	15%	14%
	Prepositional Phrase	0	0	8%
	total	100%	100%	100%

Right side	**Noun**	83%	82%	90%
	Verb	17%	14%	9%
	Adjective	0	5%	1%
	total	100%	100%	100%

The corpus data shows that on the left side of *maimai, jiaoyi* and *maoyi*, the collocates are nouns, verbs, adjectives, or prepositional phrases. The collocates on the right side has similar categories including nouns, verbs, or adjectives. On the left side, the collocates appear to be nouns mainly with the highest frequency. Examples include *tudi maimai* 'land transaction' (土地買賣), *gupiao jiaoyi* 'share transaction' (股票交易), and *shijie maoyi* 'world trade' (世界貿易). Concerning the distribution of the syntactic categories on the left side, the difference among *maimai*, *jiaoyi*, and *maoyi* is statistically siginificant, mostly derived from prepositional phrases[9]. Comparing with *maimai* and *jiaoyi*, the left-sdied collocates of *maoyi* are more likely to function as prepositional phrases. As for the right-sided collocates, the distributional pattern is similar to the pattern of left-sided collocates. Most of the collocated words are nouns, while verbs and adjectives have a pretty low frequency. Regarding the syntactic categories of the right-sided collocates, the difference among *maimai*, *jiaoyi*, and *maoyi* is statistically siginificant; nouns and adjectives cause the differences[10]. The right-sided collocates of *jiaoyi* tend to

[9] The Chi-square test for the distribution of the syntactic categories on the left side in *maimai*, *jiaoyi* and *maoyi* yields $\chi^2_{.95(6)} = 78.241$ (p-value = 0.000). The standardized residuals for prepositional phrase are -2.5 in *maimai*, -7.2 in *jiaoyi* and 8.5 in *maoyi*.

[10] The Chi-square test for the distribution of the syntactic categories on the right side in *maimai, jiaoyi*

function as adjectives, and those of *maoyi* are more likely to function as nouns than the other two words.

4.2 Collocation of *maimai, jiaoyi, maoyi*

This section discusses the collocational behavior of *maimai*, *jiaoyi* and *maoyi* to further examine their differences. The collocated words presented and described here are syntactically and semantically related to the node word, *maimai, jiaoyi* or *maoyi* (see Appendices for the detailed list of collocation). First, we generalize and describe the syntactic behaviors of collocates. Second, we further explore their semantic functions and compare them with frame elements.

4.2.1 Syntactic Behaviors of Collocates

From Sinica Corpus, *maimai* has 280 tokens, and 186 tokens of them are used as nouns. The collocates of *maimai* functioning as a noun are first discussed. Referring to Appendix 1, the collocated words on the left side have 137 instances, in which there are 64 instances (46.72%) with frequency above 2. The top two collocates are *tudi* 'land' (土地) and *budongchan* 'realty' (不動產) which have 12 and 5 instances, respectively. There are seven collocates with 2 frequencies, including *zhong*

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and *maoyi* yields $\chi^2_{.95(4)} = 37.715$ (p-value = 0.000). The standardized residuals for noun are -1.0 in *maimai*, -4.1 in *jiaoyi* and 4.5 in *maoyi*. The standardized residuals for adjective are -1.4 in *maimai*, 5.2 in *jiaoyi* and -4.4 in *maoyi*.

'Classifier' (種), *renshen* 'human' (人身) and *dupin* 'drugs' (毒品). For the collocated words on the right side, there are 88 instances in total, and 43 instances (48.86%) have the frequency above 2. The top five collocates are *shuangfang* 'the two parties' (雙方)**,** *qiyue* 'contract' (契約), *gongzuorenyuan* 'staff' (工作人員), *zhongxin* 'center' (中心) and *shichang* 'market' (市場).

Although the listed words appear to be nouns mostly, other syntactic categories of *maimai*'s collocates are also found. The following table generalizes the syntactic categories of collocates on the left and the right side of *maimai* as a noun.

Table 4.5 Syntactic Categories of Collocates of *maimai* as a Noun

***maimai* (買賣)**				
Syntactic Categories		Examples	Freq.	%
Left side	**Noun**	*tudi* 'land' (土地)、 *budongchan* 'realty' (不動產)	106	77.37
	Verb	*zuo* 'do' (作)、 *dongjie* 'freeze' (凍結)	20	14.60
	Adjective	*da* 'big' (大)、 *yiban* 'common' (一般)	11	8.03
	total		137	100
Right side	**Noun**	*shuangfang* 'the two parties' (雙方)、 *qiyue* 'contract' (契約)	73	82.95
	Verb	*qude* 'obtain' (取得)、 *yinqi* 'cause' (引起)	15	17.05
	total		88	100

On the left side of *maimai*, there are categories of nouns, verbs, and adjectives. As for the right side, there are only nouns and verbs. In a descending order, the left-sided collocates function as nouns, verbs, and adjectives. The most frequent nouns are used as attributives to modify the next noun, *maimai*, as in *tudi maimai* 'land transaction' (土地買賣) and *budongchan maimai* 'realty transaciton' (不動產買賣). On the right side, the most frequent categories are nouns, and second are verbs. The right-sided nouns function as objects to be modified by *maimai* as in the examples of *maimai shuangfang* 'two parties of the transaction' (買賣雙方) and *maimai qiyue* 'transaction contract' (買賣契約).

In addition to the nominal usage of *maimai*, there are 94 tokens used as verbs. Referring to Appendix 2, a total of 63 collocates are found on the left side, and the top three words are *ziyou* 'freely' (自由), *touziren* 'investor' (投資人), and *(bu) ke* '(not) able to' ((不)可). The right-sided collocates have 44 instances, and the top three words are *fangwu* 'house' (房屋), *gupiao* 'stock' (股票), and *tudi* (土地).

Based on their syntactic categories, the collocation of *maimai* as a verb can be generalized in the following table.

Table 4.6 Syntactic Categories of Collocates of *maimai* as a Verb

***maimai* (買賣)**				
Syntactic Categories		Example	Freq.	%
Left side	**Noun**	*minzhong* 'population' (民眾)、 *guojishang* 'internationally' (國際上)	10	15.87
	Verb Phrase	*liyong zhongjie* 'to use agency' (利用仲介)、 *yong jinqian* 'to use money' (用金錢)	12	19.05
	Auxiliary Verb	*yingai* 'should' (應該)、 *buzhun* 'not allowed' (不准)	9	14.29
	Adverb	*ziyou* 'freely' (自由)、*jia* 'fasely' (假)	25	39.68
	Prepositional Phrase	*zai zhengquan yingyechuosuo* 'at over-the-counter market'(在證券營業處所)、 *zai nogli qieyu* 'during ghost month' (在農曆七月)	7	11.11
	total		63	100.00
Right side	**Noun**	*fangwu* 'house' (房屋)、 *gupiao* 'stock' (股票)、*tudi* 'land' (土地)	44	100.00
	total		44	100.00

The result shows that the categories on the left-sided collocation have more variations. In a descending order, there are adverbs, verb phrases, nouns, auxiliary verbs and prepositional phrases. The most frequent adverbs function as modifiers to modify the verbal *maimai* as in the example, *nongdi bixu ziyou maimai* 'the land must trade freely' (農地必須自由買賣). On the right side, there are nouns only, and they function as the objects of verbal *maimai* as in the example, *maimai fangwu* 'to trade the house' (買賣房屋).

In the case of *jiaoyi*, there are 774 occurrences functioning as nouns out of 843 occurrences. Referring to Appendix 3 a total of 682 occurrences on the left side of *jiaoyi* are found, and 94 instances have frequency above 5. The top five collocated words are *gongping* 'fair' (公平), *xing* 'sex' (性), *zhengquan* 'sercurities' (證券), *shichang* 'market' (市場) and *dianzi* 'electronic' (電子). As for the right-sided collocation, there are 494 instances in total, and the words with frequency above 5 have 247 instances. The top five collocated words are *weiyuanhui* 'committee' (委員會), *shichan*g 'market' (市場), *fa* 'law' (法), *zhongxin* 'center' (中心) and *anquan* 'security' (安全).

The syntactic categories of *jiaoyi*'s collocates can be generalized in the following table.

Table 4.7 Syntactic Functions of the Collocates of *jiaoyi* as a Noun

***jiaoyi* (交易)**				
Syntactic Categories		Examples	Freq.	%
Left side	**Noun**	*xing* 'sex' (性)、 *zhengquan* 'sercurities' (證券)	504	73.90
	Verb	*wancheng* 'finish' (完成)、 *jinxing* 'proceed' (進行)	76	11.14
	Adjective	*gongping* 'fair' (公平)、 *feifa* 'illegal' (非法)	102	14.96
	total		682	100
Right side	**Noun**	*weiyuanhui* 'committee' (委員會)、 *shichan*g 'market' (市場)	403	81.58

	Verb	*huoluo* ‘activate’ (活絡)、 *jinxing* ‘proceed’ (進行)	67	13.56
	Adjective	*reluo* ‘active’ (熱絡)、 *qingdan* ‘light’ (清淡)	24	4.86
	total		494	100

From Table 4.7, both sides of collocates show an identical distributional pattern of the categories and proportion. There are categories of nouns, verbs, and adjectives. The most frequent category is noun, the second is verb, and adjective has the lowest frequency. On the left side, the most frequent nouns function as attributives to modify the next noun, as in *xing jiaoyi* ‘sex transaction’ (性交易) and *zhengquan jiaoyi* ‘securities transaction’ (證券交易). On the right side, the most frequent nouns are used as an object to be modified by *jiaoyi*, as in *jiaoyi weiyuanhui* ‘transaction commission’ (交易委員會) and *jiaoyi shichang* ‘transaction market’ (交易市場).

As for the verbal *jiaoyi*, a total of 65 occurrences on the left side, and 17 occurrences on the right side are found. The top three left-sided collocates are *zhubi* ‘transaction by transaction’ (逐筆), *zhijie* ‘directly’ (直接), *bei* ‘passive’(被). On the right side, the only word that has 2 occurrences is *guolai* ‘come’ (過來). See the details in Appendix 4.

Based on their syntactic categories, the collocation of *jiaoyi* as a verb can be generalized in the following table.

Table 4.8 Syntactic Categories of Collocates of *jiaoyi* as a Verb

***jiaoyi* (交易)**				
Syntactic Categories		Example	Freq.	%
Left side	**Verb Phrase**	*jinchang* 'go into' (進場)、 *shang shichang* 'go to market' (上市場)	21	32.31
	Auxiliary Verb	*neng* 'be able to' (能)、 *keyi* 'has permission to' (可以)	2	3.08
	Adverb	*zhubi* 'transaction by transaction' (逐筆)、 *zhijie* 'directly' (直接)	20	30.77
	Prepositional Phrase	*hen nage ren* 'with that person' (和那個人)、 *zai wangshang* 'on the internet' (在網上)	22	33.85
	total		65	100.00
Right side	**Noun**	*sihuo* 'contraband' (私貨)、 *diannao* 'computer' (電腦)	8	47.06
	Verb	*guolai* 'come' (過來)、 *chuqu* 'go out' (出去)	7	41.18
	Adverb	*pinfan* 'frequently' (頻繁)、 *qingdan* 'lightly' (清淡)	2	11.76
	total		17	100.00

In a descending order, there are prepositional phrases, verb phrases, adverbs, and auxiliary verbs on the left side. The most frequent prepositional phrases function as modifers to modify the verbal *jiaoyi* as in the example, *he nage ren jiaoyi* 'to trade with that person' (和那個人交易). On the right side, there are nouns, verbs and adverbs. The most frequent nouns function as the objects of verbal *jiaoyi* as in the example, *jiaoyi sihuo* 'to trade the smuggled goods' (交易私貨).

From the corpus data, the total tokens of *maoyi* are 928 and there are 923 instances that are syntactically used as nouns. Referring to Appendix 5, the total frequency of left-sided collocates is 778, in which 475 occurrences have frequency above 5. The top five collocated words are *shijie* 'world' (世界), *guoji* 'international' (國際), *ziyou* 'free' (自由), *duiwai* 'with foreign country' (對外) and *liangan* 'cross-strait' (兩岸). On the right side of *maoyi*, there are 769 occurrences in total, and those words with frequency above 5 have 422 occurrences. The top five collocated words are *zuzhi* 'organization' (組織), *gongsi* 'company' (公司), *shuncha* 'surplus' (順差), *nicha* 'deficit' (逆差) and *zhicai* 'sanction' (制裁).

The syntactic functions of *maoyi*'s collocates can be shown in the following table.

Table 4.9 Syntactic Functions of the Collocates of *maoyi* as a Noun

***maoyi* (貿易)**				
Syntactic Categories		Examples	Freq.	%
Left side	**Noun**	*shijie* 'world' (世界)、 *guoji* 'international' (國際)	527	67.74
	Verb	*jiejue* 'solve' (解決)、 *zuo* 'do' (做)	80	10.28
	Adjective	*ziyou* 'free' (自由)、 *shuangbian* 'bilateral' (雙邊)	105	13.50
	Prepositional Phrase	*duiwai* 'with foreign country' (對外)、 *duiri* 'with Japan' (對日)	66	8.48
	total		778	100

Right side	**Noun**	*zuzhi* ‘organization’ (組織)、*gongsi* ‘company’ (公司)	694	90.25
	Verb	*ziyouhua* ‘to free’ (自由化)、*chuchao* ‘to export excessively’ (出超)	69	8.97
	Adjective	*pinfan* ‘frequent’ (頻繁)、*reluo* ‘active’ (熱絡)	6	0.78
	total		769	100

On the left side, there are nouns, adjectives, verbs and prepositional phrases in a descending order. On the right side, there are nouns, verbs, and adjectives. Preposition is a function word that has a little lexical meaning and cannot function as a grammatical component within a sentence by itself. Therefore, it must combine with other syntactic categories such as nouns or verbs to form a prepositional phrase for expressing its lexical meaning (Liu et al. 2001). It is particular that *maoyi* has prepositional phrases that syntactically function as attributives, as in the examples, *duiwai maoyi* ‘trade with foreign country’ (對外貿易), *duiri maoyi* ‘trade with Japan’ (對日貿易). On the right side, there are nouns, verbs, and adjectives. The most frequent nouns function as objects to be modified by *maoyi*.

In the verbal usage of *maoyi*, there are only 5 occurrences which only have left-sided collocates. All the collocates are prepositional phrases and they syntactically function as modifiers to modify the verbal *maoyi* as in the example, *he rifang maoyi* ‘to trade with Japan’ (和日方貿易) .

4.2.2 Semantic Functions and Frame Elements of Collocates

To further understand what semantic functions these collocates serve and how the frame elements are realized in the collocation, we describe and generalize their frame elements and compare them with semantic functions. The distribution of frame elements is given in the following table.

Table 4.10 Distribution of Frame Elements

Percentage / Frame Element	***maimai* (買賣)**	***jiaoyi* (交易)**	***maoyi* (貿易)**
Exchangers	24% (100)	23% (266)	40% (382)
Themes	47% (195)	33% (379)	10% (94)
Purpose	2% (10)	1% (13)	1% (9)
Location	4% (17)	7% (84)	5% (46)
Time	3% (13)	6% (67)	9% (86)
Manner	16% (66)	24% (276)	33% (322)
Means	1% (6)	5% (56)	2% (18)
Frequency	2% (7)	1% (7)	1% (7)
total	414	1148	963

From Table 4.10, *maimai* mainly presents the elements of exchangers and themes in the instances. As for *jiaoyi*, it displays a similar behavior in that exchangers and themes are frequently expressed in the sentences. In addition, the element of manner which has 24% of the instances is significant to *jiaoyi* as well. In the cases of *maoyi*, exchangers and manner constitute the majority of its frame elements. Unlike those in *maimai* and *jiaoyi*, themes do not have substantial occurences in *maoyi*'s instances.

Concerning the distribution of the frame elements, the difference among *maimai*, *jiaoyi* and *maoyi* is statistically significant[11]. The difference among them is derived from exchangers, themes, manner and means. Exchangers and manner are more likely to be presented in the instances of *maoyi*. Themes are inclined to appear in the instances of *maimai* and *jiaoyi*. The word of *jiaoyi* tends to profile means more than the other two words.

Most of the frame elements can be realized in the left-sided collocation. The left-sided nouns mostly serve semantic functions as exchanger, theme, location, time, manner, and frequency. Exchanger denotes the people, who are involved in the transaction event. Theme is the object that is traded or exchanged during the transaction, and both animate and inanimate themes are found from the collocation data. Theme also describes the particular kind of transaction, or the way of performing this transaction act. Location identifies the place or space where the transaction occurs, and time identifies when the transaction takes place. Manner characterizes the way or the overall condition of the transaction. Frequency describes the size, amount or quantity of the transaction. The following examples can illustrate. The collocated words are underlined and the semantic functions are identified in the

[11] The Chi-square test for the distribution of the frame elements in *maimai*, *jiaoyi* and *maoyi* yields $\chi^2_{.95(14)} = 332.466$ (p-value = 0.000). The standardized residuals for exchangers are -2.7 in *maimai*, -6.5 in *jiaoyi* and 8.7 in *maoyi*. The standardized residuals for themes are 10.4 in *maimai*, 6.8 in *jiaoyi* and -14.9 in *maoyi*. The standardized residuals for manner are -5.2 in *maimai*, -2.4 in *jiaoyi* and 6.4 in *maoyi*. The standardized residuals for means are -2.2 in *maimai*, 4.5 in *jiaoyi* and -2.9 in *maoyi*.

brackets.

(1) 雙方買賣 (exchanger)
shuangfang *maimai*
the two parties trade
'trade between the two parties'

(2) a. 人口買賣 (animate theme)
renkou *maimai*
human transaction
'trade of human'

b. 土地買賣 (inanimate theme)
tudi *maimai*
land trade
'land transaction'

c. 商業買賣 (theme)
shangye *maimai*
business transaction
'business transaction'

d. 走私販毒的買賣 (theme)
zousi *fandu* de *maimai*
drug trafficking DE transaction
'transaction of drug trafficking'

(3) 黑市買賣 (location)
heishi *maimai*
black market trade
'trade on the black market'

(4) 一年間的買賣次數 (time)
yinianjian *de* *maimai* *cishu*
during a year DE trade frequency
'frequency of transaction during a year'

(5) 賺錢的買賣 (manner)
zhuanqian *de* *maimai*
profit-making DE transaction

‘transaction that makes profit’

(6) 多次買賣 (frequency)
duoci *maimai*
many times transaction
‘frequent transaction’

Adjectives on the left side of *maimai* mainly serve semantic functions as manner. It describes the value, general condition, scale or amount of the transaction. The examples are given below.

(7) 吃虧的買賣 (manner)
chikui *de* *maimai*
suffer losses DE transaction
‘transaction that suffers losses’

(8) 一般買賣 (manner)
yiban *maimai*
common transaction
‘common transaction’

(9) 很大的買賣 (manner)
henda *de* *maimai*
very big DE transaction
‘great transaction’

In addition to the left-sided collocation, the frame elements are profiled differently in the sentences. Example (10) profiles the exchangers, location and themes. Example (11) profiles the exchangers, manner and themes.

(10) 央行利用在公開市場**買賣**合格票據的方式來調控資金供給
[Exchangers] [Location] [Themes]
yanghang liyong zai gongkai shichang maimai hege piaoju de fangshi lai
central bank use at public market trade legal bill DE way to
tiaokong zijin gongji

control money supply
'Central Bank controls the money supply through trading legal bill in public markets.'

(11) 高低稅率分別代表對主要由有錢階級藉頻繁**買賣**股票的短線操作牟利的…
[Exchangers] [Manner] [Themes]
gaodi shuilv fenbie daibiao dui zhuyao you youqian jieji jie
high-low tax separately represent to main from the rich class through
pinfen maimai gupiao de duanxian caozuo mouli de
frequently trade stock DE short-swing speculate seek profit DE
'The high-low tax separately represents the profit made by short-swing trading

The semantic functions the right-sided collocates serve are similar to that of the left-sided collocates. They are exchanger, theme, location, manner, and frequency. However, two semantic functions, organization and regulation, which do not exist in the frame elements are also found. Organization represents a company, or a club that is formed for the purpose of transaction. Regulation describes the contract or arrangement agreed between the two parties of the transaction. The following examples can illustrate.

(12) 買賣雙方 (exchanger)
maimai shuangfang
transaction the two parties
'two parties of the transaction'

(13) 買賣款項 (theme)
maimai kuanxiang
transaction funds
'funds of transaction'

(14) 買賣市場 (location)
maimai shichang
transaction market

‘transaction market’

(15) 買賣糾紛 (manner)
maimai *jiufen*
transaction dispute
‘transaction dispute’

(16) 買賣次數 (frequency)
maimai *cishu*
transaction frequency
‘frequency of transaction’

(17) 買賣中心 (organization)
maimai *zhongxin*
transaction center
‘transaction center’

(18) 買賣契約 (regulation)
maimai *qiyue*
transaction contract
‘transaction contract’

In the verbal usage of *maimai*, the categories on the left side have their semantic functions and it can be described as follows. The category of adverb semantically depicts the overall situation or condition of the transaction act. Verbs are used to bring out the means of engaging in the transaction. The category of noun semantically points out the exchanger of the event or identifies the location where the transaction takes place. Prepositional phrases are used to identify the location or time that the transaction occurs. The following examples can illustrate, and the collocated categories are underlined.

(19) 部分農地必須自由**買賣** (situation)

bufen nongdi bixu ziyou maimai
part land must free trade
'Parts of the land must trade freely.'

(20) 利用仲介**買賣**明顯違法 (means)
liyong zhongjie maimai mingxian weifa
use agent trade apparently illegal
'It is apparently illegal to trade though the agent.'

(21) a. 一般民眾**買賣**土地、房屋 (exchanger)
yiban minzhong maimai tudi fangwu
ordinary people trade land house
'Ordinary people trade the land and house.'

b. 國際上**買賣**取自養殖場的引流膽 (location)
guojishang maimai quzi yangzhichange de yinliudan
internationally trade from farm DE bile
'The bile is traded internationally.'

(22) a. 其股票得在證券商營業處所**買賣** (location)
qi gupiao de zai zhengquan yingye chusuo maimai
that stock able at securities business location trade
'The stock is able to trade at over-the-counter market'

b. 一般人皆避諱在農曆七月**買賣**房屋 (time)
yiban ren jie bihui zai nongli qiyue maimai fangwu
ordinary people all avoid at lunar seventh month trade house
'Ordinary people avoid trading house in Ghost month'

In the case of right-sided collocation, there are only nouns, and they all represent the themes which change possession during the transaction.

(23) 日本國民**買賣**玳瑁與海龜，違反培利條款 (theme)
riben guomin maimai daimao yu haigui weifan peili tiaokuan
Japan citizen trade tortoiseshell and sea turtle violate Pelly agreement
'Japanese citizens' trading tortoiseshell and sea turtle violates the Pelly agreement.'

(24) 上市真麻煩，**買賣**一筆土地都要公告 (theme)

shangshi zhen mafan maimai yi bi tudi dou yao gonggao
go public really troublesome trade one CL land all want announce
'It is very troublesome to go public. Even trading a land has to make an announcement.'

In the instances of *jiaoyi*, its collocation has similar functions as those of *maimai*'s. The left-sided nouns can be semantically divided into exchanger, theme, location, time and manner. However, there are two differences. First, the semantic function of frequency is not found in the left-sided collocates of *jiaoyi*. Second, the theme that co-occurs with *jiaoyi* has a variety of words related to financial products and sex, such as *zhengquan* 'sercurities' (證券), *xingyong* 'securities' (信用), and *xing* 'sex' (性), *seqing* 'sex' (色情). The examples of *jiaoyi*'s left-sided nouns are given below.

(25) 廠商的交易條件 (exchanger)
changshang de jiaoyi tiaojian
supplier DE transaction conditions
'transaction conditions of suppliers'

(26) a. 證券交易 (theme)
zhengquan jiaoyi
securities transaction
'securities transaction'

b. 信用交易 (theme)
xinyong jiaoyi
margin transaction
'margin transaction'

c. 性交易 (theme)
xing jiaoyi
sex transaction

‘prostitution’

d. 色情交易 (theme)
seqing *jiaoyi*
sex transaction
‘prostitution’

(27) 場外交易 (location)
changwai *jiaoyi*
outside market transaction
‘off-market transaction’

(28) 盤後交易 (time)
panhou *jiaoyi*
after-hours transaction
‘after-hours trading’

(29) 內線交易 (manner)
neixian *jiaoyi*
insider transaciton
‘insider transaction’

Adjectives on the left side of *jiaoyi* serve as manner in the frame elements. The following examples can illustrate.

(30) 重要交易 (manner)
zhongyao *jiaoyi*
important transaction
‘important transaction’

(31) 公平交易 (manner)
gongping *jiaoyi*
fair transaction
‘fair transaction’

The frame elements of *jiaoyi* can also be profiled in different positions of the sentences. Example (32) profiles the exchangers, manner and themes. Example (33)

profiles the exchangers and location.

(32) 他們談一筆秘密**交易**，土匪們需要治傷藥品，碘酒…
[Exchangers] [Manner] [Exchangers] [Themes]
tamen tan yi bi mimi jiaoy tufeimen xuyao zhishang yaopin dianjiu
they talk one CL secret trade bandits need wound-healing medicine iodine
'They talk about a secret trading. The bandits need wound-healing medicine and iodine.'

(33) 林姓女子常在台北市信義路一帶出沒與洗錢下游**交易**
[Exchangers] [Location] [Exchanger]
lin xing nvzi chang zai taibeishi xinyi lu yidai chumo u
Lin first name woman often at Taipei City Xinyi road area appear with
xiqian xiayou jiaoyi
money-laundering downstream trade
'Miss Lin often appeared at the area of Taipei Xinyi road to trade with people who do money-laundering.'

The right-sided collocates display similar patterns as those of *maimai*'s. The only difference is that *jiaoyi* has the semantic function of time which is not found in the instances of *maimai*. The right-sided nouns of *jiaoyi* serve semantic functions as exchanger, theme, location, time, manner, frequency, organization, and regulation. The following examples can illustrate.

(34) 交易者 (exchanger)
jiaoyi zhe
transaction people
'trader'

(35) 交易商品 (theme)
jiaoyi shangpin
transaction goods
'goods of transcation'

(36) 交易市場 (location)
jiaoyi *shichang*
transaction market
'market of transaction'

(37) 交易日 (time)
jiaoyi *ri*
transaction day
'trading day'

(38) 交易糾紛 (manner)
jiaoyi *jiufen*
transaction dispute
'trading dispute'

(39) 交易筆數 (frequency)
jiaoyi *bishu*
transaction count
'count of transaction'

(40) 交易委員會 (organization)
jiaoyi *weiyuanhui*
transaction commission
'trade commission'

(41) 交易法 (regulation)
jiaoyi *fa*
transaction law
'trading law'

Categories of adjective on the right-sided collocation are identical to the left-sided adjectives in that they serve semantic functions as manner as shown by the following examples.

(42) 交易公平 (manner)
jiaoyi *gongping*
transaction fair
'transaction is fair'

(43) 交易熱絡 (manner)
jiaoyi *reluo*
transaction active
'transaction is active'

In the verbal usage of *jiaoyi*, the syntactic categories on the left side have different semantic functions. Prepositional phrases identify the location where the transaction occurs, or points out the exchanger who engages in the event. Verb phrases carry out the means to perform the transaction, or bring out two consecutive events whereby one event occurs after the other. Adverbs depict the manner of doing the transaction. The following examples can illustrate.

(44) a. 丁伯群昨日在南京西路站交易時，遭警逮獲 (location)
dingboqun zuori zai naningxilu zhan jiaoyi shi zaojing daihuo
Dingboqun yesterday at Nanjingxi Road station trade during meet caught
'Dingboqun was caught during his transaction at Najingxi Road station yesterday.'

b. 在臺灣西南沿海與土著交易 (exchanger)
zai taiwan xinan yanhai yu tuzhu jiaoyi
at Taiwan southwest coastal with aborigines trade
'Trade with aborigines along south-west coast of Taiwan.'

(45) a. 香港多數商號使用港幣交易 (means)
xianggang duoshu shanghao shiyong gangbi jiaoyi
Hong Kong most enterprises use Hong Kong dollar trade
'Most of Hong Kong enterprises trade by Hong Kong dollar.'

b. 讓所有法人能夠早日進場交易 (two consecutive events)
rang suoyou faren nenggou zaori jinchang jiaoyi
let all juristic person able early go to market trade
'Let all juristic persons go trade in the market earlier.'

(46) 陳女可能與安非他命製造工廠直接交易 (manner)

chen nv keneng yu anfeitaming gongchang zhijie jiaoyi
Chen girl maybe with amphetamine supplier directly trade
'Miss Chen probably directly trade with the supplier of amphetamine.'

On the right-sided collocation, the noun represents the themes which change possession during the transaction. The category of verbs mainly functions as complements in the sentence, and does not carry significant meaning. The following examples illustrate.

(47) 有一私梟準備利用凌晨時段**交易**私貨 (theme)
you yi sixiao zhunbei liyong lingchen shiduan jiaoyi sihuo
exist one smuggler prepare use daybreak period trade contraband
'There is a smuggler ready to trade contraband at daybreak.'

(48) 還將「草原雄鷹」巴特爾從活塞隊**交易**過來 (complement)
hai jiang caoyuanxiongying bateer cong huosai dui jiaoyi guolai
also get grassland eagle Bateer from Pistons club trade come
'(They) also trade Bateer from Pistons club.'

In the case of *maoyi*, the semantic functions of its collocates are consistent with *jiaoyi*. The left-sided nouns can be semantically divided into exchanger, theme, location, time, and manner. However, in the cases of *maoyi*, the collocates of exchanger are mostly countries, and some words even specify both of the two parties as in (49c). The examples of collocated nouns are given below.

(49) a. 兩岸貿易 (exchanger)
liangan maoyi
cross-strait trade
'cross-strait trade'

b. 對外貿易 (exchanger)

duiwai *maoyi*
with foreign countries trade
'trade with foreign countries'

c. 中美貿易
zhongmei *maoyi* (exchanger)
China and America trade
'trade between China and America'

(50) 瓷器貿易 (theme)
ciqi *maoyi*
porcelain trade
'trade of porcelain'

(51) 邊境貿易 (location)
bianjing maoyi
border trade
'cross-border trade'

(52) 每年的貿易金額 (time)
meinian *de* *maoyi* *jine*
every year DE trade amount of money
'amount of money of trade

(53) 小額貿易 (manner)
xiaoe *maoyi*
small-amount trade
'small-volume trade'

In terms of the left-sided adjectives, they semantically serve as manner. The following examples can illustrate.

(54) 公平貿易 (manner)
gongping *maoyi*
fair trade
'fair trade'

(55) 自由貿易 (manner)
ziyou *maoyi*

free trade
'free trade'

(56) 龐大的貿易赤字 (manner)
pangda de maoyi chizi
enormous DE trade deficit
'enormous trade deficit'

In addition to left-sided collocation, the frame elements of *maoyi* have different profiling while presented in the sentences. Example (57) profiles the exchangers and manner. Example (58) profiles the exchangers, time and manner. Example (59) profiles manner and themes.

(57) 當時台灣所面臨的問題是**貿易**順差猛增，大量熱錢流入
[Exchangers] [Manner]
dangshi taiwan mianlin de wenti shi maoyi shuncha meng zeng
at that time Taiwan face DE problem is trade surplus abruptly increase
daliang reqian liuru
a great amount hot money inflow
'At that time, Taiwan faced the problem that the trade surplus abruptly increased and lots of hot money flowed in.'

(58) 台灣是大陸今年以來進口成長最快的**貿易**夥伴
[Exchangers] [Time] [Manner]
taiwan shi dalu jinnian yila jinkou chengzhang zuikuai de aoyi huoban
Taiwan is China this year since import growth the fastest DE trade partner
'Taiwan is the trade partner that has the fastest import growth with China.'

(59) **貿易**量大增對船隻與速度的需求也相對增加
[Manner] [Themes]
maoyi liang da zeng dui chuanzhi yu sudu de xuqiu ye
trade volume big increase to ship and speed DE need too
xiangdui zengjia
comparatively increase
'The great increase on trade volume also increases the demand for ship and speed.'

The semantic functions of the right-sided collocation of *maoyi* are quite similar to those of *maimai* and *jiaoyi*. The nouns serve semantic functions as exchanger, theme, location, time, manner, frequency, organization, and regulation. However, some differences from *maimai* and *jiaoyi* are noticed. There are words of manner that carry the meaning of bringing themes from a "foreign or external source" as in (64b). The following examples illustrate the collocates' semantic functions.

(60) 貿易夥伴 (exchanger)
maoyi huoban
trade partner
'trading partner'

(61) 貿易產品 (theme)
maoyi chanpin
trade products
'traded product'

(62) 自由貿易區 (location)
ziyou maoyi qu
free trade zone
'free trade zone'

(63) 貿易時代 (time)
maoyi shidai
trade period
'trading period'

(64) a. 貿易制裁 (manner)
maoyi zhicai
trade sanction
'trade sanctions'

b. 貿易出口 (manner)
maoyi chukou

trade export
'export'

(65) 貿易量 (frequency)
maoyi liang
trade volume
'trading volume'

(66) 世界貿易組織 (organization)
shijie maoyi zuzhi
world trade organization
'world trade organization'

(67) 貿易總協定 (regulation)
maoyi zongxieding
trade agreement
'agreement on trade'

For the right-sided adjectives, they serve as manner, as in the following example.

(68) 貿易頻繁 (manner)
maoyi pinfan
trade frequent
'trade is frequent'

In the verbal usage of *maoyi*, there are only 5 occurrences , and they all function as prepositional phrases to identify the exchanger of the transaction, as indicated by the examples *he rifang maoyi* ' to trade with Japan' (和日方貿易) and *yu sulian maoyi* 'to trade with the Soviet Union (與蘇聯貿易).

4.3 Semantic Prosody of *maimai, jiaoyi, maoyi*

After the discussion of collocation's syntactic and semantic behaviors, we further explore the semantic prosody of collocates to examine the differences between *maimai, jiaoyi* and *maoyi*. We first discuss the prosody of left-sided collocation. The following table shows the proportion and the token numbers are given in the brackets.

Table 4.11 Semantic Prosody of Left-sided Collocation

Prosody / Frequency	Positive	Neural	Negative
***maimai* (買賣)**	2% (3)	74% (101)	24% (33)
***jiaoyi* (交易)**	10% (66)	75% (512)	15% (104)
***maoyi* (貿易)**	10% (74)	88% (685)	2% (19)

From the table, it is observable that all the collocated words of *maimai, jiaoyi* and *maoyi* are mainly neutral. Both of *maimai* and *jiaoyi* tend to carry more negative prosody than positive prosody. In the case of *maoyi*, it suggests that the positive prosody has higher proportion than the negative prosody. In the neutral usage, the collocates with *maimai, jiaoyi* or *maoyi* do not express an affective meaning. The following examples illustrate the neutral usage.

(69) a. 土地買賣
tudi *maimai*
land trade
'land transaction'

b. 一般買賣
yiban *maimai*

common transaction
'common transaction'

c. 從事買賣
congshi *maimai*
engage transaction
'to engage in transaction'

(70) a. 電子交易
dianzi *jiaoyi*
electronic transaction
'electronic transaction'

b. 虛擬的交易
xuni *de* *jiaoyi*
virtual DE transaction
'virtual transaction'

c. 完成交易
wancheng *jiaoyi*
finish transaction
'to finish the transaction'

(71) a. 國際貿易
goji *maoyi*
international trade
'international trade'

b. 間接貿易
jianjie *maoyi*
indirect trade
'indirect trade'

c. 進行貿易
jinxing *maoyi*
proceed trade
'to engage in trade'

With respect to positive prosody, *maimai* shows a lower proportion (2%) among

the three words. Both *jiaoyi* and *maoyi* have 10% of the instances. Some significant collocates for *jiaoyi* are listed below.

(72) **Adjective**: *lirunfenghou* ‘making-profit’ (利潤豐厚)、*zhongyao* ‘important’ (重要)、*guizhong* ‘valuable’ (貴重)、*hefa* ‘legal’ (合法)

(73) **Verb**: *cucheng* ‘to promote’ (促成)、*ciji* ‘to stimulate’ (刺激)、*quebao* ‘to ensure’ (確保)、*weihu* ‘to maintain’ (維護)

The adjectives co-occurring with *jiaoyi* tend to indicate that the transaction event is affirmative or valuable such as *lirun fenghou de jiaoyi xieyi* ‘a trade agreement that makes great profits’ (利潤豐厚的交易協議) and *hefa jiaoyi de guandao* ‘the approach of legal transaction’ (合法交易的管道). When the verbs collocate with *jiaoyi*, they carry the meanings of improvement or protection from danger and harm, as in the example of *ciji jiaoyi* ‘to stimulate the transaction’ (刺激交易), *quebao jiaoyi anquan* ‘to ensure transaction safety’ (確保交易安全) and *weihu jiaoyi zhixu* ‘to maintain the order of transaction’ (維護交易秩序).

In the instances of *maoyi*, some observed positive collocates are listed in the examples of (74) and (75).

(74) **Adjective**: *ziyou* ‘free’ (自由)、*hefa* ‘legal’ (合法)、*youshili* ‘effective’ (有實力)、*lianghao* ‘good’ (良好)

(75) **Verb**: *jiejue* ‘to solve’ (解決)、*cujin* ‘to promote’ (促進)、*daidong* ‘to push forward’ (帶動)、*chechu* ‘to remove’ (撤除)

These adjective words co-occuring with *maoyi* imply that the transaction has a free,

fair or good status such as *ziyou maoyi* ‘the free trade’ (自由貿易) and *lianghao de maoyi guanxi* ‘a good trading relation’ (良好的貿易關係). The collocated verbs carry the meanings of correcting and restoring the existing bad situation as in *jiejue maoyi fenzheng* ‘to solve the trading dispute’ (解決貿易紛爭) and *chechu maoyi xianzhi* ‘to remove the ban on trading’ (撤除貿易限制).

In terms of negative prosody, *maimai* and *jiaoyi* have 24% and 15% of the instances. Some significant collocates for *maimai* are listed below.

(76) **Noun**: *xiniujiao* ‘rhinoceros horn’ (犀牛角)、*renkou* ‘human’ (人口)、*qiguanyizhi* ‘organ transplantation’ (器官移植)、*yeshengdongwu* ‘wild animal’ (野生動物)

(77) **Adjective**: *touji* ‘speculating’ (投機)、*chikui* ‘losses-suffering’ (吃虧)

(78) **Verb**: *dongjie* ‘to freeze’ (凍結)、*chaozuo* ‘to speculate’ (炒作)、*yanjin* ‘to strictly prohibit’ (嚴禁)、*xianzhi* ‘to prohibit’ (限制)

Some of the nouns typically do not express a negative affective meaning; however, the negative meanings are brought out when they co-occur with *maimai*. For example, *renkou maimai* ‘human trafficking’ (人口買賣), *xiniujiao maimai* ‘rhinoceros horn trade’ (犀牛角買賣) and *yeshengdongwu maimai* ‘wild animal trade’ (野生動物買賣) indicate that the transaction behavior is illegal or inhuman because the goods are prohibited to trade. The verbs tend to depict the transaction act is restricted or prevented, such as *dongjie maimai* ‘to free the transaction’ (凍結買賣) and *yanjin maimai* ‘to strictly prohibit the transaction’ (嚴禁買賣).

The word of *jiaoyi* also tends to keep bad company to indicate a negative prosody, as in the following examples.

(79) **Noun**: *xing* ‘sex’ (性)、*neixian* ‘insider’ (內線)、*seqing* ‘sex’ (色情)、*heishi* ‘black market’ (黑市)、*zhengshang* ‘politician and businessman’ (政商)

(80) **Adjective**: *feifa* ‘illegal’ (非法)、*bugongping* ‘unfair’ (不公平)、*toujixing* ‘speculating’ (投機性)、*weifa* ‘illegal’ (違法)

(81) **Verb**: *xianzhi* ‘to restrict’ (限制)、*tiaojiang* ‘to lower’ (調降)、*chaozuo* ‘to speculate’ (炒作)、*pohuai* ‘to destroy’ (破壞)

It is similar to *maimai* in that when the nouns collocate with *jiaoyi*, the event tend to be illegal or under-the-table, for example *heishi jiaoyi* ‘transaction on the black market’ (黑市交易) and *zhengshang jiaoyi* ‘the trade between politician and businessman’ (政商交易). It is also found that there are different words referring to prostitution[12], such as *xing jiaoyi* ‘prostitution’ (性交易), *seqing jiaoyi* ‘prostitution’ (色情交易), *pirou jiaoyi* ‘prostitution’ (皮肉交易) and *taose jiaoyi* ‘prostitution’ (桃色交易).

Next, the proportion and numbers of semantic prosody of right-sided collocation is presented in the following table.

Table 4.12 Semantic Prosody of Right-sided Collocation

Prosody / Frequency	Positive	Neural	Negative
***maimai* (買賣)**	1% (1)	94% (83)	5% (4)

[12] Due to the limited amount of our data, there is only *jiaoyi* found to be co-occurring with sex related words. However, in Sketch Engine *maimai* collocating with sex related words is also found (*xing maimai* ‘sex transaction’ (性買賣)) although the frequency is much lower than that of *jiaoyi*.

***jiaoyi* (交易)**	7% (34)	86% (420)	7% (36)
***maoyi* (貿易)**	4% (30)	83% (633)	13% (103)

On the right side, the majority of collocates are also used neutrally with 94%, 86% and 83% of the occurrences, respectively. In the case of *maimai*, the result suggests that its negative prosody has more frequencies than that of positive ones. As for *jiaoyi*, the positive prosody and negative prosody show an identical proportion. The significant result is that *maoyi* tend to co-occur with negative right-sided collocates, occupying 13% of the instances. Some examples are illustrated as follows.

(82) **Noun**: *dazhan* 'war' (大戰)、*zhichai* 'sanction' (制裁)、z*hengduan* 'dispute' (爭端)、*shiya* 'pressure' (施壓)、*chongtu* 'conflict' (衝突)

(83) **Verb**: *shuaitui* 'to decline' (衰退)、*shiheng* 'to lose balance' (失衡)、*jianshao* 'to reduce' (減少)、*weisuo* 'to wither' (萎縮)

The collocated nouns represent an unfavourable situation, problems or limitations of a transaction event as in the examples, *maoyi dazhan* 'trade war' (貿易大戰), *maoyi zhengduan* 'trade dispute' (貿易爭端), *maoyi jinling* 'ban on trade' (貿易禁令). Besides, verbs on the right side of *maoyi* carries the meaning that the state of transaction event is descending or turning to a negative condition, as in *maoyi shiheng de xianxian* 'the phenomenon of losing balance on trade' (貿易失衡的現象), *jinchukou maoyi shuaitui* 'the import and export declines' (進出口貿易衰退).

4.4 Remarks

The collocation of *maimai*, *jiaoyi* and *maoyi* shows a similar pattern in their syntactic behaviors and semantic functions. With respect to their syntactic behaviors, both sides of collocates mainly are nouns. On the left side, the collocated nouns function as attibutives to modify the next noun, *maimai*, *jiaoyi* or *maoyi*. On the right side, the collocated nouns function as objects to be modified by *maimai*, *jiaoyi* or *maoyi*.

The comparison of these three words' collocational semantic functions is generalized in the following table. The table provides their distributional proportion, and the number zero means the word has no such instances.

Table 4.13 Comparison of the Collocation

Side	Syntactic Categories	Semantic Functions	***maimai*** **(買賣)**	***jiaoyi*** **(交易)**	***maoyi*** **(貿易)**
Left	Noun	**Exchanger**	1.0%	7.3%	59.0%
		Theme	75.0%	50.7%	10.3%
		Location	4.2%	12.0%	8.5%
		Time	5.2%	4.9%	2.3%
		Manner	10.4%	25.1%	19.8%
		Frequency	4.2%	0	0
Right	Noun	**Exchanger**	31.5%	10.7%	5.0%
		Theme	9.6%	13.2%	7.9%
		Location	4.1%	8.4%	5.5%
		Time	0	2.7%	0.3%
		Manner	30.1%	30.5%	41.1%
		Frequency	4.1%	1.7%	1.0%
		Organization	5.5%	13.9%	29.1%
		Regulation	15.1%	18.9%	10.1%

From Table 4.13, the left-sided nouns of *maimai* predominantly serve as theme with 75.0% of the instances, and only *maimai* has the function of frequency. For *jiaoyi*, the most frequent function of the left-sided collocates is also theme (50.7%), and the second frequent function is manner which has 25.1% of the instances. In the cases of *maoyi*, the most frequent function is exchanger (59.0%), and the second is manner with 19.8% of the instances. With regard to the distribution of the left-sided semantic functions, the difference among *maimai*, *jiaoyi*, and *maoyi* is statistically significant; exchanger and theme cause the differences[13]. The left-sided collocates of both *maimai* and *jiaoyi* tend to serve as theme. On the other hand, the left-sided collocates of *maoyi* are more likely to serve as exchanger.

On the right side, the most frequent functions of *maimai* are exchanger and manner with 31.5% and 30.1% of the instances, respectively. The collocates of *jiaoyi* mainly serve as manner (30.5%), and the second frequent function is regulation (18.9%). As for *maoyi*, the collocates predominantly serve as manner with 41.1% of the instances, and the function of organization has 29.1% of the instances. The difference among *maimai*, *jiaoyi*, and *maoyi* is statistically significant with regard to organization[14]. The left-sided collocates of *maoyi* are more likely to serve as

[13] The Chi-square test for the distribution of the semantic functions on the left side in *maimai*, *jiaoyi*, and *maoyi* yields $\chi^2_{.95(10)} = 466.226$ (p-value = 0.000). The standardized residuals for exchanger are -6.8 in *maimai*, -14.7 in *jiaoyi*, and 18.4 in *maoyi*. The standardized residuals for theme are 9.1 in *maimai*, 10.3 in *jiaoyi*, and -15.4 in *maoyi*.

[14] The Chi-square test for the distribution of the semantic functions on the right side in *maimai*, *jiaoyi*,

organization than the other two words.

As for the semantic prosody, most of *maimai*, *jiaoyi* and *maoyi*'s collocates are neutral. The left-sided collocates of *maimai* and *jiaoyi* have more negative words than *maoyi*. As for the right-sided collocates, *maoyi* has more negative collocates than *maimai* and *jiaoyi*.

and *maoyi* yields $\chi^2_{.95(14)} = 146.723$ (p-value = 0.000). The standardized residuals for organization are -3.6 in *maimai*, -5.1 in *jiaoyi*, and 6.7 in *maoyi*.

CHAPTER V

CONCLUSION

5.1 Summary

This thesis explores the near-synonyms of transaction words, *maimai* (買賣), *jiaoyi* (交易) and *maoyi* (貿易). To compare the similarities and differences among the three words, their collocational behaviors and semantic prosody are examined and discussed. First, the collocation is discussed in terms of their syntactic behaviors and semantic functions. Regarding the syntactic behaviors, when *maimai, jiaoyi* and *maoyi* are used as nouns, their collocates show a similar behavior of frequently functioning as nouns on both sides. The left-sided nouns function as attributives to modify *maimai, jiaoyi* or *maoyi*. On the right side, the collocated nouns function as objects to be modified by *maimai, jiaoyi* or *maoyi*. There is one noticed difference that *maoyi* has prepositional phrases as collocates on its left side to point out the exchanger. When *maimai, jiaoyi* and *maoyi* function as verbs, the syntactic categories of their collocation behave differently. In the case of verbal *maimai*, there are nouns, verbal phrases, auxiliary verbs, prepositional phrases on the left side, and nouns on the right side. In the case of *jiaoyi*, there are verbal phrases, auxiliary verbs, adverbials, and prepositional phrases on the left side. On the right side, there are

nouns, verbs and adverbials. In the case of *maoyi*, there are only prepositional phrases.

With respect to their semantic functions and frame elements, *maimai* and *jiaoyi* show a similar pattern in that exchangers and themes are frequently expressed in their instances. In the case of *maoyi*, exchangers and manner make up the majority of its frame elements. Most of their frame elements are realized in their left-sided collocation, and there are exchanger, theme, location, time, manner and frequency. All the left-sided collocates behave similarly; however, *maimai* is the only one that presents frequency in its collocated nouns. Most of *jiaoyi*'s themes are related to financial products or sex, which is not found in other two words (*maimai* or *maoyi*). The exchangers that co-occur with *maoyi* are countries in most cases. On the right side, the collocates show more semantic functions than that of the left side. There are exchanger, theme, location, time, manner, frequency, organization, and regulation. There is only one significant difference that *maoyi*'s words of manner carry the meaning of "a foreign source". From the findings, it appears that *maimai* and *jiaoyi* have more similarities regarding their semantic functions. However, *maoyi* shows a tendency that the transaction act is more exclusive between the countries.

In terms of the semantic prosody, mainly their collocates are used neutrally. However, in the case of *maimai* and *jiaoyi*, they tend to co-occur with the illegal

themes to bring out the negative prosody. The themes they collocate with are inhumane or illegal to trade for. It suggests that when people refer to an illegal transaction, they tend to choose the words, *maimai* or *jiaoyi*. In the right-sided collocation, *maoyi* has the tendency to collocate with negative nouns or verbs. They indicate that the situation or problem of the transaction is in an unfavorable condition.

5.2 Limitations and Future Study

Some limitations and issues in the study still have the room for improvement or for future study. First of all, the judgement of semantic prosodies tends to be too subjective. Since the semantic prosodies refer to the connotation brought out between the words, they tend to rely more on personal feelings or opinions. In the present study, we merely focus on the semantic prosodies of the collocates and their combinations with *maimai, jiaoyi* or *maoyi*. However, their usages within a context can influence their semantic prosodies. Therefore, to examine the semantic prosodies from a wider stretch of context should be taken into account for further study. Second, the collocational behaviors lack strong statistical evidence and support. In the present study we only count the frequencies to be the standard of collocation; however, it is possible that the collocates simply have more frequencies in the corpus. As a result,

the chance of co-occurring with *maimai*, *jiaoyi* or *maoyi* is higher than other words. Therefore, it will be statistically persuasive if the study provides one of the statistical tests to measure the collocational strength. Third, from the data we have found that there are some words showing high tendency to co-occur with certain words such as *xing jiaoyi* 'sex transaction' (性交易), or *seqing jiaoyi* 'sex transaction' (色情交易). In addition to the phenomenon of collocation, one possible explanation is that these terms are going through the process of lexicalization. Such an issue is interesting to be further explored and investigated in future research.

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APPENDICES

Appendix 1 Collocation of *maimai* as a Noun

Collocates of *maimai* (買賣)		Frequency	Percentage
Left side	*tudi* 土地	12	8.76%
	budongchan 不動產	5	3.65%
	zhong 種	3	2.19%
	renshen 人身	3	2.19%
	dupin 毒品	3	2.19%
	zhuang 樁	3	2.19%
	da 大	3	2.19%
	yiban 一般	3	2.19%
	touji 投機	3	2.19%
	shengkou 牲口	2	1.46%
	heishi 黑市	2	1.46%
	nongdi 農地	2	1.46%
	xiniujiao 犀牛角	2	1.46%
	mafei 嗎啡	2	1.46%
	richang 日常	2	1.46%
	zhishi 知識	2	1.46%
	guitai 櫃檯	2	1.46%
	bangongdalou 辦公大樓	2	1.46%
	qiguanyizhi 器官移植	2	1.46%
	shatou 殺頭	2	1.46%
	renkou 人口	2	1.46%
	baoyufa 保育法	2	1.46%
	others	73	53.28%
	Total	137	100.00%
Right side	*shuangfang* 雙方	14	15.91%
	qiyue 契約	8	9.09%
	gongzuorenyuan 工作人員	5	5.68%
	zhongxin 中心	3	3.41%
	shichang 市場	3	3.41%
	jiaoyi 交易	2	2.27%
	zhongjie 仲介	2	2.27%
	cishu 次數	2	2.27%

	jiufen 糾紛	2	2.27%
	guanxi 關係	2	2.27%
	others	45	51.14%
	Total	88	100.00%

Appendix 2 Collocation of *maimai* as a Verb

Collocates of ***maimai* (買賣)**		Frequency	Percentage
Left side	*ziyou* 自由	16	25.40%
	touziren 投資人	3	4.76%
	(bu)ke (不)可	3	4.76%
	(bu)neng (不)能	2	3.17%
	others	39	61.90%
	Total	63	100.00%
Right side	*fangwu* 房屋	7	15.91%
	gupiao 股票	6	13.64%
	tudi 土地	5	11.36%
	yeshengdongwu 野生動物	3	6.82%
	yinger 嬰兒	2	4.55%
	others	21	47.73%
	Total	44	100.00%

Appendix 3 Collocation of *jiaoyi* as a Noun

Collocates of ***jiaoyi* (交易)**		Frequency	Percentage
Left side	*gongping* 公平	54	7.92%
	xing 性	33	4.84%
	zhengquan 證券	20	2.93%
	shichang 市場	17	2.49%
	dianzi 電子	14	2.05%
	shangye 商業	13	1.91%
	gupiao 股票	12	1.76%
	xinyong 信用	12	1.76%
	neixian 內線	10	1.47%
	ge 個	10	1.47%

	bi 筆	10	1.47%
	wanglu 網路	10	1.47%
	tudi 土地	9	1.32%
	seqing 色情	9	1.32%
	fangdichan 房地產	9	1.32%
	jinxing 進行	9	1.32%
	jinrong 金融	8	1.17%
	jinqian 金錢	7	1.03%
	kucanggu 庫藏股	7	1.03%
	shangpin 商品	7	1.03%
	qihuo 期貨	7	1.03%
	xiang 項	7	1.03%
	feifa 非法	7	1.03%
	wancheng 完成	7	1.03%
	waihui 外匯	6	0.88%
	qi 其	6	0.88%
	baozhengjin 保證金	6	0.88%
	xianjin 現金	6	0.88%
	qiuyuan 球員	6	0.88%
	changwai 場外	6	0.88%
	heishi 黑市	6	0.88%
	panhou 盤後	6	0.88%
	zuanshi 鑽石	6	0.88%
	liquan 立券	6	0.88%
	dacheng 達成	6	0.88%
	xianshang 線上	5	0.73%
	xianzhi 限制	5	0.73%
	tingzhi 停止	5	0.73%
	kuaguo 跨國	5	0.73%
	others	288	42.23%
	Total	682	100.00%
Right side	*weiyuanhui* 委員會	33	6.68%
	shichang 市場	17	3.44%
	fa 法	17	3.44%
	zhongxin 中心	13	2.63%
	anquan 安全	11	2.23%
	zhe 者	10	2.02%
	zhong 中	9	1.82%
	fangshi 方式	9	1.82%
	xingwei 行為	9	1.82%

	jine 金額	9	1.82%
	zhixu 秩序	9	1.82%
	suode 所得	8	1.62%
	reluo 熱絡	8	1.62%
	chengben 成本	7	1.42%
	duixiang 對象	7	1.42%
	guocheng 過程	7	1.42%
	fangzhitiaoli 防制條例	6	1.21%
	qingxing 情形	6	1.21%
	qingdan 清淡	6	1.21%
	huoluo 活絡	6	1.21%
	pingtai 平台	5	1.01%
	xitong 系統	5	1.01%
	xiangduiren 相對人	5	1.01%
	changsuo 場所	5	1.01%
	chuanyan 傳言	5	1.01%
	sunshi 損失	5	1.01%
	jiage 價格	5	1.01%
	shuangfang 雙方	5	1.01%
	others	247	50.00%
	Total	494	100.00%

Appendix 4 Collocation of *jiaoyi* as a Verb

Collocates of ***jiaoyyi* (交易)**		Frequency	Percentage
Left side	*zhubi* 逐筆	5	7.69%
	zhijie 直接	3	4.62%
	bei 被	3	4.62%
	jinchang 進場	3	4.62%
	hannageren 和那個人	2	3.08%
	shangshichang 上市場	2	3.08%
	others	47	72.31%
	Total	65	100.00%
Right side	*guolai* 過來	2	11.76%
	others	15	88.24%
	Total	17	100%

Appendix 5 Collocation of *maoyi* as a Noun

Collocates of *maoyi* (貿易)		Frequency	Percentage
Left side	*shijie* 世界	76	9.77%
	guoji 國際	50	6.43%
	ziyou 自由	45	5.78%
	duiwai 對外	32	4.11%
	liangan 兩岸	22	2.83%
	meiguo 美國	18	2.31%
	jinchukou 進出口	18	2.31%
	Proper Nouns 專有名詞(川鶴...)	14	1.80%
	guanshui 關稅	13	1.67%
	duiri 對日	11	1.41%
	bianjing 邊境	11	1.41%
	ciqi 瓷器	10	1.29%
	haishang 海上	9	1.16%
	zhongmei 中美	8	1.03%
	chukou 出口	8	1.03%
	quanqiu 全球	8	1.03%
	jinrong 金融	8	1.03%
	xiangdui 相對	8	1.03%
	shunagbian 雙邊	8	1.03%
	zhongri 中日	7	0.90%
	zhijian 之間	7	0.90%
	jiejue 解決	7	0.90%
	dalu 大陸	6	0.77%
	zhongguo 中國	6	0.77%
	taiwan 台灣	6	0.77%
	dongfang 東方	6	0.77%
	chaye 茶葉	6	0.77%
	jingji 經濟	6	0.77%
	zhuankou 轉口	6	0.77%
	riben 日本	5	0.64%
	jia 家	5	0.64%
	quyu 區域	5	0.64%
	shangye 商業	5	0.64%
	helan 荷蘭	5	0.64%
	jianjie 間接	5	0.64%

	duimeigui 對美國	5	0.64%
	others	303	38.95%
	Total	778	100.00%
Right side	*zuzhi* 組織	67	8.71%
	gongsi 公司	41	5.33%
	shuncha 順差	29	3.77%
	nicha 逆差	25	3.25%
	zhicai 制裁	17	2.21%
	chuchao 出超	13	1.69%
	zhongxin 中心	12	1.56%
	daibiaoshu 代表署	12	1.56%
	chizi 赤字	12	1.56%
	zongxieding 總協定	12	1.56%
	qu 區	11	1.43%
	moca 摩擦	11	1.43%
	huoban 夥伴	10	1.30%
	tanpan 談判	10	1.30%
	zonge 總額	10	1.30%
	wanglai 往來	9	1.17%
	wenti 問題	9	1.17%
	guanxi 關係	9	1.17%
	ziyouhua 自由化	8	1.04%
	yingyu 盈餘	8	1.04%
	zhangai 障礙	8	1.04%
	chengzhang 成長	7	0.91%
	weiyuanhui 委員會	7	0.91%
	bilei 壁壘	7	0.91%
	tixi 體系	7	0.91%
	shang 上	6	0.78%
	fangmian 方面	6	0.78%
	touzi 投資	6	0.78%
	xieding 協定	6	0.78%
	jiufen 糾紛	6	0.78%
	zhengce 政策	6	0.78%
	dalou 大樓	5	0.65%
	xingwei 行為	5	0.65%
	moshi 模式	5	0.65%
	others	347	45.12%
	Total	769	100.00%