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一個以語料庫為本

對現代漢語中反義詞共現現象之研究

A Corpus-based Approach to
Antonym Co-occurrences in Mandarin Chinese

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摘要

本論文採用以語料庫為本的研究方法，探討現代漢語中反義詞共現之現象。本研究一共選擇了二十五組反義詞，從中文詞彙特性素描系統(Chinese Word Sketch Engine)中選取三千六百零五個句子作為檢測語料。本研究的分析採用 Jones (2002)針對反義詞共現之篇章功能所提出的理論架構。

在中文裡，我們發現十三個反義詞共現的篇章功能。其中，對等反義詞(Coordinated Antonymy)與輔助反義詞(Ancillary Antonymy)是最常見的功能。除此之外，本研究發現中文反義詞的篇章功能分佈會受到以下因素的影響：傳統上反義詞分類的類型、詞類、現代化程度、詞素音節結構。本研究更進一步發現，反義詞共現篇章結構之跨語言差異，可歸因於各個語言獨特的語法特徵。

本論文也發現，中文裡每種反義詞共現的篇章功能，皆有其典型的詞彙語法框架。這些不斷出現的構式可能會增強反義詞之間的連結。我們又發現當中文反義詞共現時，會偏向特定的詞序。在中文裡，影響反義詞共現詞序的因素包括正面性與詞頻。當篇章中的觀點轉變時，另一種共現詞序可能會出現。

本論文探討現代漢語中反義詞共現之現象，為 Jones (2002)針對反義詞篇章功能所提出的理論架構提供跨語言的支持，也觸及中文反義詞共現現象所反映出的認知機制。本篇是一針對傳統上屬於語義學的反義詞現象，以語料庫及篇章分析的角度所做的研究，彰顯出反義詞之間的橫列(syntagmatic)關係。我們建議未來關於反義詞的研究可採用跨語料庫、跨語言的研究方法，探討反義詞此一語內現象，與各語言獨特的語法特徵及各項語外因素之互動。

ABSTRACT

The thesis adopts a corpus-based approach to investigating how antonym co-occurrences in Mandarin Chinese function in text. In total, 25 antonymous pairs are selected for analysis, and 3,605 sentences are sampled from the Chinese Word Sketch Engine. The analysis is mainly based on Jones' (2002) functional framework.

In Mandarin Chinese, thirteen textual functions of antonym co-occurrences are identified. Coordinated Antonymy and Ancillary Antonymy are the most dominant functions. In addition, it is found that the functional distribution of antonyms in Mandarin Chinese may be influenced by their traditional category of semantic oppositeness, grammatical category, extent of modernization, and morpho-syllabic structure. Moreover, cross-linguistic discrepancies in how antonyms function in text are attributed to language-specific structural properties.

Furthermore, the thesis identifies the typical lexico-syntactic frames that are associated with the textual functions of antonymy in Mandarin Chinese. The recurrent linguistic formulas may enhance the pairing between antonyms. In addition, antonyms in Mandarin Chinese are also found to prefer a particular sequencing in text. In Mandarin Chinese, factors that affect antonym sequencing include positivity and frequency. However, the reverse sequencing order shows up when perspective shifts take place in text.

The thesis on antonym co-occurrences in Mandarin Chinese lends cross-linguistic support to Jones' (2002) functional framework and touches on the cognitive facet of antonymy in Mandarin Chinese. The thesis illustrates an attempt to treat antonymy, a traditionally semantic issue, from the corpus and discourse analysis perspective, focusing on the syntagmatic aspect of antonymy. It is suggested that further research on antonymy should take a multi-corpus, cross-linguistic approach to

examine how such a language-internal phenomenon interacts with language-specific structural properties and language-external factors.

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Chapter 1

Introduction

1.1 General Background

Antonymy is commonly understood as a concept which refers to a pair of words with opposite meaning. It is also commonly believed that antonyms help people to organize their perception of various phenomena in the world. For example, it is fairly natural and fundamental to divide the human race into men and women (Trudgill 2000:61). This division is taken for granted, encoded in antonym pairs such as *man/woman*, *male/female*, and *masculine/feminine*.

In the field of linguistics, antonymy is an intriguing topic with a host of issues discussed in the literature. For instance, how is semantic oppositeness defined? How are words associated with each other as antonyms? No consensus has been reached so far.

Traditional approaches to the study of antonymy are intuition-based, with a focus on making logical distinctions between members in an antonymous pair. There are several well-established categories of meaning oppositeness, such as complementary antonymy, gradable antonymy, relational antonymy, and directional antonymy (Cruse 1986; Leech 1974; Saeed 1997).

With the rapid development of corpus linguistics, a significant finding of many corpus-based studies on antonymy is that antonyms co-occur far more frequently than expected by chance (e.g., Fellbaum 1995; Jones 2002; Justeson and Katz 1991). Therefore, more and more attention has been directed to the syntagmatic aspect of antonymy, i.e., antonym co-occurrences in language use.

One of the most important studies of antonym co-occurrences is Jones (2002). With the aid of a 280-million-word corpus, Jones (2002) proposes eight textual

functions of antonymy in English. In addition, each of these textual functions of antonymy is associated with some particular lexico-syntactic frames, which are argued to contribute to antonym associations in the mental lexicon. Furthermore, antonyms in English are found to prefer a particular sequence in text. Finally, the same functional framework has also been used to account for antonyms in child-produced speech, child-directed speech (Jones and Murphy 2005), and spoken language (Jones 2006).

To our knowledge, the only study on antonym co-occurrences in Mandarin Chinese is Lien (1989), in which four functions are identified. For example, antonym co-occurrences in Mandarin Chinese might signal “totality” (Lien 1989:283), as exemplified in the following:

(1) 東拉西扯

dong-la-xi-che

east-drag-west-pull

‘talk at random’

(taken from Lien 1989:299)

According to Lien (1989), the antonyms *dong* ‘east’ and *xi* ‘west’ in (1) function as polar affixes (cf. Zhu 1982:36), signaling the infinity of the event *la-che* ‘to drag-pull’. While Lien (1989) has paid attention to the functions of antonym co-occurrences in Mandarin Chinese, he limits the research scope to four-character phrases with antonyms as affixes and does not consider authentic production data.

Presently, there is no study that takes a broader scope nor a corpus-based perspective to explore the textual functions of antonymy in Mandarin Chinese. To fill the gap, this thesis adopts a corpus-based approach to investigating how antonyms in

Mandarin Chinese function in text. Relevant issues such as lexico-syntactic frames associated with antonyms and antonym sequence preferences are also addressed. In the following section, research questions to be investigated in this thesis are summarized.

1.2 Research Questions

This thesis poses the following research question. Jones (2002), having established a list of 56 antonymous pairs, comprehensively investigates how antonyms in English function in text. With a data-based approach, Jones (2002) identifies eight textual functions of antonym co-occurrences, touching on the syntagmatic aspect of antonymy and complementing traditional approaches to antonymy. To our knowledge, Jones' (2002) functional framework has not been applied to languages other than English. From a cross-linguistic perspective, we would like to explore the extent to which Jones' (2002) functional framework of antonymy is able to account for data in Mandarin Chinese. The purposes of this research question are twofold, i.e., to investigate how antonyms in Mandarin Chinese function in text, and to examine the generality of Jones' (2002) functional framework of antonymy. After arriving at a holistic picture of how antonyms in Mandarin Chinese function in text, the present study will zoom in to examine to what extent the functional distribution of antonymy in Mandarin Chinese is affected by various linguistic variables. Some variables, such as an antonymous pair's traditional category of oppositeness, are also Jones' (2002) concerns; others, such as the morpho-syllabic structure of the antonym words, reflect structural properties specific to Mandarin Chinese and are explored further.

From a constructional perspective, what constructions¹ in Mandarin Chinese can serve as lexico-syntactic frames for antonym co-occurrences? In constructional linguistics, recurrent linguistic formulas are multi-word units stored in our memory which fluent speakers rely on in communication (e.g., Biq 2004; Fillmore, Kay and O'Connor 1988; Goldberg 1995, 2006; Sinclair 1996; Stubbs 2001; Tao and McCarthy 2001; Thompson 2002). When antonyms co-occur in recurrent linguistic patterns, antonym associations might be enhanced (Charles and Miller 1989; Fellbaum 1995; Jones 2002; Justeson and Katz 1991). With the above implications, the present study aims to establish a collocational profile for each textual function of antonymy in Mandarin Chinese.

Another research question that seems to have constructional implications is whether antonym pairs in Mandarin Chinese prefer a particular occurrence sequence in text (e.g., *good and bad* versus *bad and good*). If yes, what factors determine the preferred sequence? Is the preference over occurrence sequencing the same across all the antonym pairs? These language-internal phenomena might be conditioned by language-external factors, such as cognitive operations, text types, and cultural features. The present study attempts to address these issues.

All the research questions posed in this thesis have their theoretical and empirical implications. They will be answered in the following chapters. The organization of the thesis is presented in the next section.

1.3 Organization of the Thesis

This thesis is organized as follows. Chapter 2 reviews two main types of approaches to antonymy, i.e., the intuition-based approach and the data-based

¹ In general terms, the term “construction” (Fillmore, Kay and O'Connor 1988; Goldberg 1995, 2006) might be interchangeable with “lexical items” and “extended units of meaning” (Sinclair 1996, 1998).

approach. Chapter 3 introduces the corpus used for this study, the antonymous pairs selected for analysis, and the sampling method adopted to retrieve sentences for analysis. Chapter 4 explores how antonyms in Mandarin Chinese function in written text and the factors that affect the functional distribution of antonymy in Mandarin Chinese. Chapter 5 identifies constructions that are associated with each textual function of antonymy in Mandarin Chinese. Chapter 6 discusses factors that determine antonym occurrence sequences in Mandarin Chinese. Chapter 7 offers the conclusion and some suggestions for further research.

Chapter 2

Literature Review

The present study aims to explore how antonym co-occurrences in Mandarin Chinese function in text. In this chapter, major studies of antonymy are reviewed. Generally speaking, there are two types of approaches to antonymy, i.e., the intuition-based approach and the data-based approach. Section 2.1 reviews the intuition-based approach, which focuses on traditional categories of antonymy. Section 2.2, which consists of two subsections, reviews the data-based approach to antonymy. Section 2.2.1 introduces two competing hypotheses on how two words are associated with each other as antonyms: the Substitutability Hypothesis and the Co-occurrence Hypothesis. The latter reflects how antonymy is considered from a data-based perspective. Section 2.2.2 presents Jones' (2002) functional framework of antonym co-occurrences, which is also the framework the present study adopts. Finally, Section 2.3 is the summary.

2.1 Intuition-based Approaches to Antonymy

Generally speaking, an antonym is defined as “a word which is opposite in meaning to another word” (Richards, Platt and Weber 1985:14). Another definition is that antonymy “refers collectively to all types of semantic oppositeness” (Crystal 1985:18). In the following subsections, four major traditional categories of semantic oppositeness, i.e., complementary antonymy (Section 2.1.1), gradable antonymy (Section 2.1.2), relational antonymy (Section 2.1.3), and directional antonymy (Section 2.1.4) (Cruse 2001; Saeed 1997), are reviewed. This classification is regarded as intuition-based because it depends mainly on linguists' intuitive judgments.

2.1.1 Complementary Antonymy

Of all the types of semantic oppositeness, complementary antonymy might be conceptually the simplest (Cruse 1986:198). This class is also referred to as “binary taxonomy” (Leech 1974:106). By definition, complementary antonyms “divide some conceptual domain into two mutually exclusive compartments, so that what does not fall into one of the compartments must necessarily fall into the other” (Cruse 1986:198).² For example, one cannot be alive and dead at the same time, so *alive* and *dead* form a complementary antonymous pair. Due to the dichotomous nature of complementary antonymy, the following sentences featuring complementary antonyms are semantically anomalous:

- (2) ? John is neither **alive** nor **dead**. (taken from Leech 1974:106)
- (3) ? The statement that John has blue eyes is neither **true** nor **false**. (taken from Cruse 1986:199)

From a componential perspective, complementary antonyms can be represented by semantic features, as the following examples illustrate (Leech 1974:96):

- | | | | |
|----------|-------------|-------------|------------|
| (4) man: | [+ human] | [+ adult] | [+ male] |
| woman: | [+ human] | [+ adult] | [− male] |
| boy: | [+ human] | [− adult] | [+ male] |

² In fact, an absolute boundary between complementary antonyms does not seem to exist, as the following example shows:

- (i) In a technical sense he was **alive**, but for all practical purposes he was **dead** (taken from Leech 1974:106)

Still, complementary antonymy is a verbal strategy that helps human beings organize the world (Leech 1974).

girl: [+human] [−adult] [−male]

Cruse (1986:201-202) proposes a framework of verbal complementary antonymy, as summarized in Table 1. Note that verbal antonymous triplets are formed for each category, with the first verb denoting a given condition and the complementary antonymous pair denoting the consequences.

Table 1. Cruse's (1986) framework of verbal complementary antonymy

Categories	Definitions	Antonymous Triplets
Interactive	The verb expressing the precondition for complementarity denotes an action which has as its goal the elicitation of the response denoted by its interactive opposite, which, in turn, is one of the terms of the complementary pair.	<i>request: grant/refuse</i> <i>learn: remember/forget</i>
Satisfactive	The verb denotes an attempt to do something, and the complementary antonymous pair denotes the performance.	<i>try: succeed/fail</i> <i>compete: win/lose</i>
Counteractive	The verb denotes an aggressive action, and the complementary antonymous pair represents an active response and a passive response to the action.	<i>attack: defend/submit</i> <i>shoot: save/let</i>

Jones (2002) criticizes that Cruse's (1986) categories of verbal complementary antonyms are highly restrictive so that it is difficult to find antonymous pairs that fit the above framework and at the same time are recognized as good opposites by most native speakers.

2.1.2 Gradable Antonymy

According to Cruse (1986), gradable antonyms have the following properties:

- (i) They are fully gradable (most are adjectives; a few are verbs).
- (ii) Members of a pair denote degrees of some variable property such as length, speed, weight, accuracy, etc.
- (iii) When more strongly intensified, the members of a pair move, as it were, in opposite directions along the scale representing degrees of the relevant variable property. Thus, *very heavy* and *very light*, for instance, are more widely separated on the scale of weight than *fairly heavy* and *fairly light*.
- (iv) The terms of a pair do not strictly bisect a domain: there is a range of values of the variable property, lying between those covered by the opposed terms, which cannot be properly referred to by either term. As a result, a statement containing one member of an antonym pair stands in a relation of contrariety with the parallel statement containing the other term. Thus, *It's long* and *It's short* are contrary, not contradictory, statements.

(taken from Cruse 1986:204)

This class is also referred to as “polar opposition” (Leech 1974:108), for a polarity can accommodate a region on a given scale which does not belong to either end of the scale, as the following sentence exemplifies:

- (5) This man is **neither rich nor poor**. (taken from Leech 1974:108)

In (5), there is a middle ground on the scale of wealth that fits the polarity phrase *neither rich nor poor*.

Cruse (1986:206-214) proposes a framework of adjective gradable antonyms, as summarized in Table 2. This framework is based on impartiality and committedness.

For example, for a given entity to be hotter than something else, the entity is supposed to be hot. However, for a given entity to be longer than something else, the entity is not necessarily long. According to Cruse (1986), words such as *hotter* are regarded as committed, while words such as *longer* are regarded as impartial.

Table 2. Cruse’s (1986) classification of adjective gradable antonymy

Categories	Definitions	Examples
Polar Antonyms	Both members of a gradable antonymous pair are impartial in the comparative.	<i>long/short, high/low, wide/narrow, thick/thin</i>
Overlapping Antonyms	One member of a gradable antonymous pair is committed in the comparative, and the other is impartial.	<i>good/bad, kind/cruel, clean/dirty, polite/rude</i>
Equipollent Antonyms	Both members of a gradable antonymous pair are committed in the comparative.	<i>hot/cold, happy/sad, proud of/ashamed of</i>

Now consider the following sentence:

(6) I’m **sad**, but I’m **happier** than yesterday.

Because the sentence in (6) is considered semantically unacceptable (Cruse 1986:207), the pair *happy/sad* is classified as an equipollent antonymous pair. However, Cruse’s (1986) analysis is not compatible with every native speaker’s intuitive judgment. The main problem with Cruse’s (1986) classification of adjective gradable antonyms lies in its “subjective nature of the criteria” (Jones 2002:16).

2.1.3 Relational Antonymy

In general terms, relational antonyms describe the same relationship, with the noun phrase arguments interchanged (Cruse 1986:231),³ as shown in the following pair of sentences:

- (7) a. A is **above** B.
b. B is **below** A.

Here are several typical examples of relational antonyms: *parent/offspring*, *ancestor/descendant*, *in front of/behind*, *buy/sell*, and *husband/wife*. This category is also referred to as “converses” (Leech 1974:111).

According to how many arguments are involved, relational antonyms might denote 2-place, 3-place, or 4-place relationships (Cruse 2001:255). Consider the following examples:

- (8) a. **John gave a book** to **Jenny**.
b. **Jenny received a book** from **John**.
- (9) a. **John bought the book** for **one thousand dollars** from **Jenny**.
b. **Jenny sold the book** to **John** for **one thousand dollars**.

In (8a) and (8b), three arguments are involved, i.e., *John*, *a book*, and *Jenny*, so the pair *give/receive* is regarded as 3-place. In (9a) and (9b), four arguments are involved,

³ To prevent symmetrical synonyms, such as *resemble/be similar to*, from being classified as relational antonyms, Cruse (1986:233, emphasis added) poses additional conditions to the permutation test:

X and Y are converses if any sentence in which X expresses a relation between two noun phrases N¹ and N² is logically equivalent to the sentence which results when (i) N¹ and N² are interchanged and (ii) X is replaced by Y, **but is not equivalent to the sentences which result when operations (i) and (ii) are carried out singly**.

i.e., *John, a book, one thousand dollars, and Jenny*, so the pair *buy/sell* is regarded as 4-place.

Cruse (1986:233-234) further divides relational antonymous pairs into two subcategories. Consider the following sentences:

- (10) a. John **gave** a book to Jenny.
- b. Jenny **received** a book from John.
- (11) a. Monday **precedes** Tuesday.
- b. Tuesday **follows** Monday.

In (10), the interchanged arguments are *John* and *Jenny*. The word *John* serves as the subject in the double object construction, while the word *Jenny* serves as the indirect object in the double object construction, occupying a syntactically more peripheral position than *John*. On the other hand, both *Monday* and *Tuesday* in (11) occupy a syntactically essential position. According to Cruse (1986:233-234), relational antonymous pairs in which the interchanged arguments both occupy essential positions (e.g., *precede/follow*) are considered “direct”, while those in which an essential argument and a peripheral argument are interchanged are considered “indirect”.

2.1.4 Directional Antonymy

There are two main categories of directional antonymy. The first is “static” directional antonyms (Cruse 2001:254), which denote a relationship between two spatial terms on the ends of a given axis. Here are a few typical examples of static directional antonyms: *up/down*, *north/south*, *east/west*, and *forwards/backwards*.

The other type of directional antonymy is “dynamic” directional antonyms

(Cruse 2001:254). This class is also referred to as “reversives” (Cruse 1986:226). There are two subtypes of reversives, i.e., restitutives and independent reversives. In the case of restitutives, one of the members “necessarily denotes the restitution of a former state” (Cruse 1986:228). Take the pair *remove/replace*, for example. One can remove something to a certain place where it has never been to, but one cannot replace something in a place where it has never been to. That is, *remove* is an independent member, while *replace* is logically dependent on a former state. Here are some more examples of restitutives: *stop/resume*, *kill/resurrect*, and *damage/repair*.

As for independent reversives, there is “no necessity for the final state of either verb to be a recurrence of a former state” (Cruse 1986:228). Take the pair *lengthen/shorten*, for example. A line which lengthens does not need to return to a former state of being long, after it is shortened. Here are two more examples of independent reversives: *increase/decrease* and *widen/narrow*.

2.1.5 Interim Summary

In Section 2.1, four traditional categories of antonymy are reviewed. A complementary antonymous pair (e.g., *alive/dead*) is a pair of opposites which are mutually exclusive categories. A gradable antonymous pair (e.g., *easy/difficult*) is a pair of opposites that represent the opposite ends of a semantic scale. A relational antonymous pair (e.g., *teacher/student*) is a pair of opposites that represent a symmetrical relationship. A directional antonymous pair might be either static or dynamic. The former (e.g., *up/down*) represents a symmetrical spatial relationship, while the latter (e.g., *lengthen/shorten*) represents a change of state. The above traditional classification of antonymy is useful in making logical distinctions between antonymous pairs.

However, the intuition-based approach to antonymy has a few limitations. First,

some words are semantically opposite, but they are not regarded as antonyms by most native speakers. For example, although *affluent* and *broke* operate along the same semantic scale, i.e., the scale of wealth, most native speakers of English do not regard them as antonyms (Jones 2002:10). Second, while *big* and *large* are synonymous and *little* and *small* are synonymous, most native speakers of English might intuitively feel that *big/little* and *large/small* achieve greater antonymous status than *big/small* and *large/little* (Charles and Miller 1989:373-374). As the above examples show, the traditional definition of antonymy, i.e., semantic oppositeness, is apparently insufficient.

2.2 Data-based Approaches to Antonymy

As Muehleisen (1997:113) has suggested, typical antonyms “not only occupy opposite ends of a shared semantic dimension, but also describe the same kind of things” (cited in Jones 2002:11). That is, the antonymous status of a pair depends on its members’ individual collocational profiles. If two words (e.g., *affluent* and *broke*) have very different collocational profiles, they might not be considered to be an antonymous pair. This additional criterion, i.e., collocational profiles, complements traditional definitions of antonymy. Since a pair’s antonymous status has a lot to do with its individual members’ collocational patterns, more and more linguistic studies exploring antonymy take a data-based perspective. In the following subsections, major studies adopting data-based approaches to antonymy are reviewed.

2.2.1 Antonymy: Substitutability versus Co-occurrence

One of the central issues in previous studies of antonymy is how two words are associated with each other as antonyms. There are at least two hypotheses concerning this issue, i.e., the Substitutability Hypothesis and the Co-occurrence Hypothesis.

The Substitutability Hypothesis (Deese 1962, 1964, 1965) states that two words are learned and associated with each other as antonyms because they are syntactically and/or semantically interchangeable in most contexts. In other words, paradigmatic substitutability contributes to the antonymic association between a pair of words. To test the hypothesis, Charles and Miller (1989) design three context-sorting tasks. Here are two experimental sentences in Charles and Miller (1989):

(12) Third, there were those notably Patrice Lumumba who favored a Unified Congo with a very _____ central government.

(13) It is no harder to raise big, healthy, blooming plants than _____, sickly, little things; in fact it is easier.

(taken from Charles and Miller 1989:362)

The participants are asked to sort the sentences, according to which antonym, say *strong* or *weak* for the above sentences, can be used to fill in the blanks. Based on the participants' intuition, each sentence in the Charles and Miller's (1989) experiment is biased for a given antonym rather than neutral between both members. That is, antonyms are seldom interchangeable in the context. This finding does not lend support to the Substitutability Hypothesis.

On the other hand, the Co-occurrence Hypothesis suggests that two words are associated with each other as antonyms because they co-occur at a rate higher than expected by chance (Charles and Miller 1989:360). The hypothesis has been empirically supported by many corpus-based studies on antonymy. For example, Justeson and Katz (1991) select the Brown corpus, a database "containing 1,000,000 words of English text balanced across 15 general categories, divided into 500 text extracts of about 2,000 words each" (Justeson and Katz 1991:3), finding that

antonyms co-occur far more frequently than expected by chance. Their findings are further confirmed in the APHB corpus, “a much larger but grammatically untagged corpus of 25,000,000 words, obtained from the American Publishing House for the Blind and archived at IBM’s Watson Research Center” (Justeson and Katz 1991:4). Following Justeson and Katz (1991), Fellbaum (1995) makes the Co-occurrence Hypothesis even more general, suggesting that “regardless of their syntactic category, words expressing semantically opposed concepts tend to be used together in the same sentences” (Fellbaum 1995:289).⁴

In effect, the Substitutability Hypothesis and the Co-occurrence Hypothesis are complementary, as Stubbs (2001:39, italics added) suggests:

Antonymy has traditionally been regarded as a *paradigmatic* opposition permanently available in the lexicon of the language. However, it is better seen in addition as a *syntagmatic* relation, which is realized in co-text.

When it comes to syntagmatic relations, a key concept is collocation, which is defined as “a lexical relation between two or more words which have a tendency to co-occur within a few words of each other in running text” (Stubbs 2001:24). From a collocational perspective, it is of great interest how antonym co-occurrences function in text and interact with their co-text. These issues need to be addressed by analyzing a large amount of production data, and the findings might complement traditional approaches to antonymy.

2.2.2 Textual Functions of Antonym Co-occurrences

As for how antonyms function in text, a preliminary study from a data-based perspective is Fellbaum (1995) (Section 2.2.2.1). By analyzing data from a 280-million-word corpus, Jones (2002) revisits the textual functions of antonym

⁴ The corpus which Fellbaum (1995) uses is the Brown Corpus.

co-occurrences in English and proposes a functional framework of antonymy (Section 2.2.2.2). This framework has also been used to account for different types of English data (Section 2.2.2.3).

2.2.2.1 Fellbaum (1995)

Fellbaum (1995) is a preliminary study on how antonyms function in text. Fellbaum (1995:294-297) suggests some possible reasons for antonym co-occurrences.

First, there are a large number of lexico-syntactic frames with two variables, which might allow antonyms. Typical lexico-syntactic frames available for antonym co-occurrences include *X or Y*, *X and Y alike*, and *between X and Y*:

(14) A matter of **life** or **death**

(15) **Rich** and **poor** alike

(16) I asked about the battle between **life** and **death** in his plays.

(taken from Fellbaum 1995:295)

Second, antonyms are sometimes redundantly used for emphasis, as illustrated by the following sentence:

(17) Just to remind the communists that the bombs dropped on Japan were to **end** a war not **start** one. (taken from Fellbaum 1995:296)

In (17), since *end* and *start* are obviously antonymous, the phrase *end a war* implies the negation of *start one* (= a war). The redundancy is to put emphasis on the real intention of dropping two nuclear bombs on Japan, i.e. *to end a war*.

Third, antonyms are sometimes used for rhetoric reasons, such as humor and irony, as shown in the following:

(18) How easily he could **hate** the **lovable** Irish. (taken from Fellbaum 1995:296)

The sentence in (18) has a tinge of irony due to the incompatibility between the antonymous words *hate* and *loveable*.

Fourth, antonyms sometimes co-occur to refer to a change of state, as the following example illustrates:

(19) After being **closed** for seven months, the Garden of the Gods Club will have its gala summer **opening** Saturday, June 3. (taken from Fellbaum 1995:297)

In the above instance, a transition is involved in that the Garden of the Gods Club was closed and then reopened.

Fellbaum (1995) has touched on the textual functions of antonym co-occurrences in English. However, as Fellbaum (1995:295) acknowledges, the above textual functions of antonymy are merely crude suggestions for further research. In addition, the corpus selected for use in Fellbaum (1995), i.e., the Brown Corpus, is relatively small in size. Comprehensive studies on how antonyms function in text do not appear until Jones (2002).

2.2.2.2 Jones (2002)

Jones (2002) takes a data-based perspective to explore how antonyms function in

text. The corpus selected for use in Jones (2002) consists of 280 million words of newspaper data from *The Independent*, including all the articles printed from October 1, 1988 to December 31, 1996. Jones' (2002) first step towards establishing a fresh list of antonymous pairs is to consider Deese's (1964) list, and the following criteria are taken into consideration (Jones 2002:30). First, more non-gradable antonymous pairs should be added. Second, a representative set of antonymous pairs should not be restricted to adjectives. Third, morphologically related antonyms (e.g., *correct/incorrect*) should be included. Finally, 56 antonymous pairs, which are presented in Table 3 (Jones 2002:33), are selected for analysis.

Table 3. Antonymous pairs selected in Jones (2002)

new/old	254	long/short	36
private/public	134	fact/fiction	36
bad/good	117	strength/weakness	35
hate/love	104	confirm/deny	34
poor/rich	102	gay/straight	33
active/passive	96	hard/soft	32
failure/success	88	high/low	32
female/male	87	illegal/legal	31
directly/indirectly	79	married/unmarried	31
heavy/light	77	dry/wet	31
old/young	69	explicitly/implicitly	30
feminine/masculine	68	attack/defend	30
fail/succeed	63	discourage/encourage	28
false/true	62	fast/slow	28
right/wrong	60	quickly/slowly	28
cold/hot	59	permanent/temporary	28
lose/win	58	difficult/easy	27
alive/dead	54	major/minor	27
badly/well	53	officially/unofficially	25
begin/end	51	rural/urban	24
large/small	50	boom/recession	24
agree/disagree	49	optimism/pessimism	21
optimistic/pessimistic	47	punishment/reward	19
private/public	47	correct/incorrect	18
happy/sad	45	drunk/sober	18
guilt/innocence	44	peace/war	15
rightly/wrongly	44	disprove/prove	14
advantage/disadvantage	36	dishonest/honest	12

The next step is to sample sentences from the corpus. In total, 3,000 sentences are needed for analysis. Jones (2002) suggests that a representative set of sentences for analysis should not be biased towards adjective gradable antonymous pairs, which have drawn a lot of attention in the literature. Therefore, the following guidelines are observed (Jones 2002:32):

- (i) no more than 60 percent of database sentences should feature adjectival antonyms; at least 10 percent should feature antonymous nouns, at least 10 percent should feature antonymous verbs, and at least 10 percent should feature antonymous adverbs;
- (ii) at least 250 database sentences should feature non-gradable antonyms;
- (iii) at least 250 database sentences should feature morphologically related antonyms;
- (iv) where possible, while still meeting the criteria above, sample size should reflect co-occurrence frequency.

With the above guidelines taken into consideration, the numbers of sentences retrieved for each antonymous pair are manually determined. The figures in Table 3 indicate the numbers of sentences randomly sampled for each antonymous pair. In fact, there are only 2,844 sentences recorded in Table 3. The shortfall, i.e., 156 sentences, is left for sentences featuring *un-* antonyms (e.g., *known/unknown*), for the morpheme of opposition *un-* is fairly productive in English. In total, 3,000 sentences, with 156 sentences featuring *un-* antonyms included, are randomly sampled for analysis. Note that when a sentence is somehow not interpretable, or antonyms in a sentence are not in any contextual relationship, another sentence is randomly sampled to replace the sentence in question.

Jones (2002) identifies eight textual functions of antonym co-occurrences in English, as summarized in Table 4. Note that the percentage in parentheses indicates

the proportion a given textual function accounts for in the database. As Table 4 shows, Ancillary Antonymy (38.7%) and Coordinated Antonymy (38.4%) dominate in English, accounting for 77.1% of the database sentences.

Table 4. Functions of antonymy identified in Jones (2002)

<p>Ancillary Antonymy (38.7%)</p> <p>The antonymous pair signals a contrastive interpretation of a non-contrastive pair. (e.g., Stamps are popular, but collecting is unpopular.)</p>
<p>Coordinated Antonymy (38.4%)</p> <p>Antonyms are used in a unified, coordinated way to show inclusiveness or exhaustiveness. (e.g., He had a particular gift for metaphor, mixed and unmixed, which he deployed to greater advantage.)</p> <p>Typical Constructions: <i>both...and..., either...or..., neither...nor..., ...and...alike, ...as well as..., whether...or...</i></p>
<p>Comparative Antonymy (6.8%)</p> <p>Antonyms are used to establish some form of comparison. (e.g., A study of institutionalized mental patients at the turn of the century found that castrated men lived longer than uncastrated ones.)</p> <p>Typical Constructions: <i>more...than..., ... be more [adjective] than..., ...rather than...</i></p>
<p>Distinguished Antonymy (5.4%)</p> <p>Antonyms are used in frames like <i>the gap/difference between X and Y</i>. (e.g., But the gap between rich and poor has widened and there's a dwindling middle class.)</p> <p>Typical Constructions: <i>the difference between...and..., separating...and..., a gap between...and...</i></p>
<p>Transitional Antonymy (3.0%)</p> <p>The context signals a movement or change from one antonymous state to the other. (e.g., The younger generation is leading the way from passive to active forms of entertainment and information-gathering.)</p> <p>Typical Constructions: <i>from...to..., turning...to..., ...give way to...</i></p>

Table 4. Functions of antonymy identified in Jones (2002) (cont.)

Negated Antonymy (2.1%)

An antonym is negated, modifying the other member in the pair.

(e.g., If you look at **employment**, **not unemployment**, that too fell in the first quarter of the year.)

Typical Constructions: *...not..., ...instead of..., ...as opposed to...*

Extreme Antonymy (1.3%)

Extremity-signaling adverbs are used to modify either antonym.

(e.g., The meticulous lawnsman will aerate it every fortnight throughout the year except when the soil is **too wet** or **too dry**.)

Typical Constructions: *the very...and the very..., either too...or too..., deeply...and deeply...*

Idiomatic Antonymy (0.8%)

An antonymous pair is embedded in an idiomatic frame.

(e.g., But **old dog** that he is, Clough has little interest in **new tricks**.)

In addition, it has been found in Jones (2002) that each textual function of antonymy has its typical lexico-syntactic frames. Typical lexico-syntactic frames associated with each textual function of antonymy are recorded in Table 4. According to Jones (2002:154), it is important to identify typical lexico-syntactic frames in which antonyms co-occur, for words which often occupy the same lexico-syntactic frames but have not been regarded as antonyms might evolve into new antonyms. Take *...instead of...*, for example. While this lexico-syntactic frame is typical of Negated Antonymy, it is open to words which are not prototypical antonyms, signaling a contrastive interpretation. By placing a given word in the contrast-signaling construction *...instead of...* and searching for words which co-occur with the target word in the above lexico-syntactic frame, it is possible to establish the antonymous profile of the target word and identify new opposites which arise from constant textual contrasts.

Furthermore, Jones (2002:122-130) has found that antonyms in English tend to favor a particular sequence in text. A root word tends to precede its morphologically related antonym (e.g., *advantage/disadvantage*); a positive word tends to precede its negative antonymous partner (e.g., *good/bad*); a word of greater magnitude tends to precede its antonymous partner (e.g., *large/small*); a word which tends to precede its antonym in the real world tends to precede its antonym in text (e.g., *begin/end*); a phonologically shorter word tends to precede its phonologically longer antonymous partner (e.g., *easy/difficult*). These tendencies might remain dormant when the reverse sequence is contextually more significant, as illustrated by the following two examples:

- (20) In my seventeen years with the group, I served **indirectly** and **directly**, no fewer than twenty chairmen and managing directors. (taken from Jones 2002:134)
- (21) The stricter approach coincides with growing demands for curbs from Congress, where bills have been tabled aimed at reducing both **illegal** and **legal** immigrants. (taken from Jones 2002:134)

The tendency that a root word usually precedes its morphologically related antonym is not observed in the above sentences. In (20), it is likely that the twenty chairmen were mostly served indirectly, so the antonym *indirectly* is more significant and takes precedence in this context. Similarly, *illegal* is more readily accessible than *legal* in (21) because the phrase *illegal immigrants* occurs more frequently than its antonymous counterpart *legal immigrants* in text.

2.2.2.3 Follow-up Studies of Jones' (2002) Functional Framework of Antonymy

Jones' (2002) functional framework of antonymy is derived from the examination of written English. This framework is adopted to examine how antonyms function in other text types such as child-produced speech, child-directed speech (Jones and Murphy 2005), and spoken language (Jones 2006). A comparison of antonym co-occurrences across the above four domains is established (Jones 2007). The corpus used to investigate antonym co-occurrences in child-produced and child-directed speech is the Child Language Data Exchange System (CHILDS),⁵ from which the spoken texts of three children observed longitudinally are collected, with 281,736 words of child-produced speech and 247,076 words of child-directed speech. The corpus selected for examining antonym co-occurrences in spoken language consists of 855 spoken texts from the National British Corpus (BNC),⁶ containing 9,980,799 words in total. Since adults' and children' languages are greatly different, two separate lists of antonymous pairs are established. For the two lists of antonymous pairs, see Table 2 in Jones (2007). The findings in Jones and Murphy (2005) and Jones (2006, 2007) suggest that Jones' (2002) functional framework of antonymy is highly applicable to examining antonym co-occurrences in different domains. In addition, Ancillary Antonymy and Coordinated Antonymy dominate in all of the four domains.

A longitudinal analysis of child-produced speech shows that while the proportional use of Ancillary Antonymy and Coordinated Antonymy remains constant during childhood, changes in the use of Negated Antonymy and Transitional

⁵ The Child Language Data Exchange System (CHILDS) is a database for studying interactions between adults and children. The database is available on-line at <http://chilids.psy.cmu.edu>.

⁶ The British National Corpus (BNC) consists of 89.74 million words of written language and 10.37 million words of spoken language. Not all the spoken texts in the British National Corpus are included in Jones (2006). The excluded spoken texts (55 in total) are "either demographically-governed conversations recorded by respondents under the age of 16 or else data collected in an educational context" (Jones 2006:1106-1107).

Antonymy are apparent (Jones and Murphy 2005). On the one hand, the frequency of Negated Antonymy decreases with age, perhaps because children, as their language competence improves, become more capable of using antonyms in complicated contexts so that they use antonyms less often in such an explicitly contrastive context as Negated Antonymy (Jones and Murphy 2005:411). On the other hand, the frequency of Transitional Antonymy increases with age, perhaps because children are more aware of changes around them and become able to describe them as they grow older (Jones and Murphy 2005:412). Furthermore, it is found that antonym co-occurrences in child-produced speech do not completely reflect those in child-directed speech (Jones and Murphy 2005:413).

In the comparison between antonym co-occurrences in written language and spoken language, the antonyms investigated are found to co-occur 1.36 times more often in written language than in spoken language (Jones 2006:191). The two modes are different in at least two other aspects of antonym use (Jones 2006:198):

- (i) While spoken language favors pairs that are casual and conversational in nature and often concerned with judgments and feelings (e.g., *badly/well*, *hate/love*), written language favors pairs that are more conventional in nature and more likely to be technical (e.g., *directly/indirectly*, *confirm/deny*).
- (ii) When two antonymous pairs operate along the same semantic scale, one tends to occur more commonly in spoken language (e.g., *right/wrong*, *big/little*) and the other more commonly in written language (e.g., *correct/incorrect*, *large/small*).

To summarize, the three follow-up studies on the textual functions of antonym co-occurrences, i.e., Jones and Murphy (2005) and Jones (2006, 2007), all suggest that the functional framework proposed in Jones (2002) has a strong descriptive power in the discussion of antonym co-occurrences across various domains. The

results show that antonym co-occurrences in the four domains (i.e., adult-produced writing, adult-produced speech, child-produced speech, and child-directed speech) are generally similar in how they function in language use, with Ancillary Antonymy and Coordinated Antonymy being the most dominant functions of antonymy in English. Nevertheless, minor differences do exist, and they might be attributed to different communicative needs in different language modes.

2.2.3 Interim Summary

Fellbaum (1995), from a corpus-based perspective, sketches how antonyms function in text. Structurally speaking, there are many lexico-syntactic frames allowing antonym co-occurrences. Fellbaum (1995) suggests that antonyms co-occur for rhetorical reasons, such as emphasis, humor, and irony. Moreover, antonyms sometimes co-occur to signal a change of state.

Jones (2002) is a larger-scale study of antonym co-occurrences in text. Based on a 280-million-word corpus of newspaper data, Jones (2002) proposes eight textual functions of antonym co-occurrences. The most dominant functions are Coordinated Antonymy and Ancillary Antonymy.

Jones' (2002) functional framework of antonymy in English has been used to describe how antonyms function in child-produced speech, child-directed speech (Jones and Murphy 2005), and spoken language (Jones 2006). The framework is found to be useful in accounting for the textual functions of antonym co-occurrences across various domains.

Jones' (2002) functional framework of antonymy should be further tested in other languages, say, Mandarin Chinese. A cross-linguistic comparison is further called for to see whether typological properties in different languages affect how antonyms function in text. It is hoped that multi-corpus and cross-linguistic

approaches to antonymy can enhance our understanding of how antonym co-occurrences function in language use.

2.3 Summary

In Chapter 2, two types of approaches to antonymy are reviewed, i.e., the intuition-based approach (Section 2.1) and the data-based approach (Section 2.2). Generally speaking, the intuition-based approach to antonymy focuses on logical distinctions between members in an antonymous pair, ignoring how antonyms actually function in text. Another problem with the intuition-based approach is that the definition of antonymy, i.e., semantic oppositeness, cannot explain why words that are opposite on a given scale (e.g., *affluent/broke*) do not always form an antonymous pair. Despite the inadequacies of the intuition-based approach to antonymy, the traditional categories of oppositeness identified with such an approach are still deemed valid and useful for the analysis conducted in the present study.

The rapid development of corpus linguistics has made it possible to explore the textual functions of antonymy from a data-based perspective. The findings might complement the intuition-based approach to antonymy. Jones (2002) analyzes a considerable amount of corpus data to investigate how antonyms in English function in text, and proposes eight textual functions of antonym co-occurrences. Jones' (2002) functional framework of antonymy has been successfully applied to various language modes (Jones 2006, 2007; Jones and Murphy 2005), such as child-produced speech, child-directed speech, and spoken language.

So far, Jones' (2002) functional framework of antonymy has not been adopted to investigate antonym co-occurrences in languages other than English. The present study is intended to examine whether corpus data in Mandarin Chinese can lend cross-linguistic support to Jones' (2002) functional framework of antonymy. The

following chapter will introduce the corpus, the antonymous pairs, and the sampling method for this study.

Chapter 3

Methodology

Chapter 2 reviews two types of approaches to antonymy: the intuition-based approach (e.g., Cruse 1986; Leech 1974; Lyons 1977; Saeed 1997) and the data-based approach (e.g., Charles and Miller 1989; Fellbaum 1995; Jones 2002, 2006, 2007; Muehleisen 1997). While the intuition-based approach is useful in making logical distinctions between different types of antonymous pairs, it is inadequate when the question comes to how antonyms function in text, for they seldom consider real production data (Jones 2002:25). To complement previous accounts of antonymy, Jones (2002) resorts to corpus data and proposes eight textual functions of antonymy in English.

The present study adopts the data-based approach to examine to what extent Jones' (2002) functional framework of antonymy is applicable to Mandarin Chinese. This chapter introduces the corpus (Section 3.1), the antonymous pairs (Section 3.2), and the sampling method (Section 3.3) for this study.

3.1 Corpus

A well-known corpus in Mandarin Chinese is the Academia Sinica Balanced Corpus of Modern Chinese, Sinica Corpus hereafter.⁷ In the Sinica Corpus, texts have been collected and classified according to the following five variables: genre, style, mode, topic, and source. The corpus is segmented and tagged. The current version was completed in 1997, containing roughly 5 million words.

For the purpose of studying antonym co-occurrences in Mandarin Chinese, the

⁷ The Academia Sinica Balanced Corpus of Modern Chinese is open to the research community online. It is available at <http://www.sinica.edu.tw/SinicaCorpus/>.

Sinica Corpus is relatively small in size and does not offer adequate data for analysis. For instance, there are only 21 lines featuring the pair *ying/shu* ‘to win/to lose’ in the database. Any patterns and generalizations based on such a small sampling pool can be flawed with biases due to insufficient data.

Another Chinese corpus currently available for research is the Chinese Word Sketch Engine.⁸ This corpus takes as its input the Chinese Gigaword Corpus (the second edition), which is an archive of newswire text data in Mandarin Chinese. The second edition of the Chinese Gigaword Corpus includes three international sources of Chinese newswire: Central News Agency of Taiwan (1991-December 2004), Xinhua News Agency of Beijing (1990-December 2004), and Zaobao Newspaper of Singapore (October 2000-September 2003).

The Chinese Word Sketch Engine is selected for use in this study. The reasons are as follows. First, texts in the Chinese Word Sketch Engine are natural and authentic. Second, the size of the Chinese Word Sketch Engine is large enough for the present study. For example, in the Chinese Word Sketch Engine there are 899 lines featuring the antonymous pair *ying/shu*, roughly 40 times more than in the Sinica Corpus. Third, the present study is intended to examine the applicability of Jones’ (2002) functional framework of antonymy to Mandarin Chinese, and the Chinese Word Sketch Engine makes the present study comparable with Jones (2002), for both studies are based on newswire texts. Last but not least, an essential feature of corpus linguistics is that data for analysis should be publicly accessible (Stubbs 2001:123), and the Chinese Word Sketch Engine is open to the research community.

⁸ The Chinese Word Sketch Engine is officially open to the research community after the analysis of this study is almost done. The current version of the Chinese Word Sketch Engine is available at <http://wordsketch.ling.sinica.edu.tw/>. An earlier version, on which the present study is based, is still accessible at http://corpora.fi.muni.cz/chinese_all/.

3.2 Antonymous Pairs for Analysis

Since there is still no consensus on an adequate definition of antonymy, “any list of antonyms is immediately and inherently flawed” (Jones 2002:29). In other words, different definitions of antonymy may identify different sets of antonymous pairs, so it is difficult to select a representative set of antonymous pairs. The best one could do is to examine a wide range of pairs which most native speakers recognize as good opposites. In this section, how a list of antonymous pairs is established in the present study is explained.

Jones’ (2002) list (see Table 3 in Section 2.2.2.2) includes gradable (e.g., *old/young*) and non-gradable (e.g., *right/wrong*) pairs, lexical (e.g., *right/wrong*) and morphological (e.g., *correct/incorrect*) pairs, and pairs of different grammatical categories (e.g., *good/bad*, adjectival; *well/badly*, adverbial; *confirm/deny*, verbal; *advantage/disadvantage*, nominal). The antonymous pairs in this list are translated into Mandarin Chinese as the first step to establish our Chinese list.

When these antonyms are translated into Mandarin Chinese, several problems emerge. First, it is impossible to find an equivalent in Mandarin Chinese for certain pairs, such as *explicitly* and *implicitly*. Second, even when it is possible to obtain an equivalent in Mandarin Chinese, the Chinese counterparts do not always form good opposites. For example, while *encourage* and *discourage* are good opposites in English, their Chinese equivalents, i.e., *guli* and *quanzu* respectively, are hardly considered antonymous by native speakers. Another example is the pair *fact/fiction*. The Chinese equivalents, i.e., *shishi/xiaoshuo*, are not considered antonymous by most native speakers, either. If *fiction* is translated as *xugou*, the pair *shishi/xugou* might be even lower on the scale of antonymity, for *shishi* is a noun while *xugou* is usually regarded as a verb. Third, there might be no lexical equivalent in Mandarin Chinese for the negative member of a morphological antonymous pair in English. For

example, the word *dishonest* might be naturally translated into *bu-chengshi* ‘not-honest’, which is a phrase rather than a word in Mandarin Chinese. In view of the above problems, some antonymous pairs in Jones’ (2002) list, such as *explicitly/implicitly*, *encourage/discourage*, *fact/fiction*, and *honest/dishonest*, are excluded in the present study.

In selecting a representative set of antonymous pairs, another consideration is co-occurrence frequency. Some antonyms in Jones’ (2002) list can be easily translated, but their equivalents in Mandarin Chinese do not co-occur very often. For example, in the Chinese Word Sketch Engine there are only 11 hits featuring the antonymous pair *gan/shi*, i.e., ‘dry/wet’. In the present study, antonyms that co-occur fewer than 150 times in the Chinese Word Sketch Engine, such as *gan/shi* ‘dry/wet’ and *kuai/beishang* ‘happy/sad’, are not considered.

With the above limitations, only seven antonymous pairs are selected from Jones’ (2002) list, i.e., *ai/hen* ‘to love/to hate’, *lao/nianqing* ‘old/young’, *yi/nan* ‘easy/difficult’, *chengren/fouren* ‘to confirm/to deny’, *dui/cuo* ‘right/wrong’, *nan/nu* ‘male/female’, and *ying/shu* ‘to win/to lose’. The seven antonymous pairs in Mandarin Chinese are semantically close to their English equivalents in Jones’ (2002) list, and they do achieve great antonymous status. In addition, the seven antonymous pairs all pass the co-occurrence frequency threshold, i.e., each pair has at least 150 hits in the Chinese Word Sketch Engine.

Seven pairs are apparently not adequate for a study that aims to test whether Jones’ (2002) framework works for Chinese data. More pairs are selected, therefore, through considering other linguistic variables and structural properties specific to Mandarin Chinese.

First, Jones’ (2002) classification of antonymy is divided into gradable antonymous pairs and non-gradable ones, but the present study adopts a fine-grained

categorization of antonymy, including gradable, complementary, relational, and directional antonyms (Cruse 2001; Saeed 1997). Among the seven pairs selected from Jones' (2002) list, three (i.e., *ai/hen*, *lao/nianqing*, *yi/nan*) are gradable, three (i.e., *chengren/fouren*, *dui/cuo*, *nan/nu*) are complementary, and one (i.e., *ying/shu*) is relational.⁹ To balance the distribution across different categories of oppositeness, four pairs are added in the present list. For the complementary category, the pair *jia/zhen* 'fake/real' is added. For the relational category, *mai/mai* 'to buy/to sell' is added. For the directional category, *jin/tui* 'to move forwards/to move backwards' and *jin/chu* 'to enter/to go out' are selected. In the Chinese Word Sketch Engine, the members of the above four pairs are found to co-occur frequently.

Second, the present study aims to cover different grammatical categories of antonymous pairs, just as Jones (2002) does. So far, there are six verbal pairs and three adjectival pairs. Only *nan/nu* is nominal. To balance the distribution across grammatical categories, the following three pairs are added to the nominal category: *qian/hou* 'front; before/back; after',¹⁰ *fumu/haizi* 'parents/child', and *laoshi/xuesheng* 'teacher/student'. In the Chinese Word Sketch Engine, the members of the above three pairs are found to co-occur frequently. In addition, the three pairs are recognized to be good opposites for most native speakers of Mandarin Chinese.

Third, some antonymous pairs in Mandarin Chinese have a counterpart in Classical Chinese that is still in use. We want to investigate whether an antonymous pair's extent of modernization has an effect on its functional distribution. Therefore,

⁹ In fact, some other antonymous pairs in Jones' (2002) list, such as *punishment/reward*, are highly translatable into Mandarin Chinese, and their Chinese equivalents do achieve great antonymous status and pass the co-occurrence frequency threshold. However, they are not considered in the present study because they cannot fit the present four-category framework of oppositeness well.

¹⁰ In Mandarin Chinese, *qian* 'front; before' and *hou* 'back; after' are locative markers (Chao 1968; Li and Thompson 1981). While locative markers in Mandarin Chinese are not regarded as nouns, they function as nouns in Classical Chinese and still retain a number of nominal properties in Modern Chinese (Huang, Li and Li, to appear). Therefore, the present study includes *qian* and *hou* even though they are not prototypical nouns.

to contrast with the pair *lao/nianqing*, *lao/shao* is selected as its Classical Chinese counterpart. In like fashion, *shi/fei* is chosen as the Classical Chinese counterpart to contrast with *dui/cuo*. Both *lao/shao* and *shi/fei* pass the co-occurrence frequency threshold in the present study. It is noted that *shi* and *fei* are versatile in terms of their grammatical properties. They can function as adjectives, nouns, and even copulas. Despite its multiple grammatical functions, the pair is chosen to contrast with its vernacular counterpart, i.e., *dui/cuo*, to focus on the functional variation arising from the classical/vernacular parallel. Therefore, in the present study, the grammatical functions of *shi* and *fei* are not distinguished.

Fourth, Jones' (2002) list includes a number of morphological antonymous pairs, such as *correct/incorrect* and *honest/dishonest*. The present study also takes an antonymous pair's morphological structure into consideration. As widely documented in the literature, a morpho-lexical fact related to the Classical Chinese issue is the monomorphemic versus double-morphemic, and the resulting monosyllabic versus disyllabic, parallels for some lexical items in Modern Chinese (Chao 1968; Li and Thompson 1981). For example, while the two monomorphemic and monosyllabic words *dui* 'right' and *cuo* 'wrong' form an antonymous pair, the two double-morphemic and disyllabic words *zhengque* 'right' and *cuowu* 'wrong' form another pair with the same semantic oppositeness. The co-existing, synonymous sets (of antonymous pairs) may differ from each other in their distribution and function across text types. To verify whether the single versus double morphemic/syllabic structure has any impact on the textual functions of antonyms, three double-morphemic, disyllabic antonymous pairs are selected to contrast with their monomorphemic, monosyllabic counterparts that are already in the present list, i.e., *rongyi/kunnan* 'easy/difficult' versus *yi/nan*, *qianjin/houtui* 'to move forwards/to move backwards' versus *jin/tui*, and *zhengque/cuowu* 'right/wrong' versus *dui/cuo*.

Fifth, in Mandarin Chinese, there exist some antonyms that share a morpheme with each other. For example, *maifang* ‘buyer’ and *maifang* ‘seller’, a nominal antonymous pair, share the second morpheme *fang*. This pair is selected not only for this purpose but also because its functional distribution can be further compared with that of its verbal counterpart *mai/mai* ‘to buy/to sell’. The other case in point is the pair *fangdong/fangke* ‘landlord/tenant’, which is selected to contrast with the pair *maifang/maifang*, since the members of the former share the first morpheme while the members of the latter share the second morpheme.

Sixth, the antonymous pair *nan/nu* ‘male/female’ is particularly noteworthy, for it has at least four synonymous relatives, including *nanren/nuren*, *nansheng/nusheng*, *nanxing/nuxing*, and *nanzi/nuzi*. To investigate whether synonymous pairs show any variation as they are used in text, the present study includes all of the above five antonymous pairs related to gender distinction.

With the above linguistic variables and Chinese structural features taken into consideration, 18 antonymous pairs are added. Along with the seven pairs from Jones’ (2002) list, 25 antonymous pairs in total are selected for analysis. Table 5 presents all the antonymous pairs selected in the present study.

Table 5. Antonymous pairs selected for analysis*

	Verbs	Adjectives	Nouns
Gradable	<i>ai</i> 'to love'/ <i>hen</i> 'to hate' (247)	<i>lao</i> 'old'/ <i>nianqing</i> 'young' (256) <i>lao</i> 'old'/ <i>shao</i> 'young' (651) <i>yi</i> 'easy'/ <i>nan</i> 'difficult' (458)	<i>rongyi</i> 'easy'/ <i>kunnan</i> 'difficult' (212)
Complementary	<i>chengren</i> 'to confirm'/ <i>fouren</i> 'to deny' (387)	<i>dui</i> 'right'/ <i>cuo</i> 'wrong' (470) <i>shi</i> 'right'/ <i>fei</i> 'wrong' (9406) <i>jia</i> 'fake'/ <i>zhen</i> 'real' (1238)	<i>zhengque</i> 'right'/ <i>cuowu</i> 'wrong' (164) <i>nan</i> 'male'/ <i>nu</i> 'female' (14869) <i>nanren</i> 'male'/ <i>nuren</i> 'female' (872) <i>nansheng/nusheng</i> (1603) <i>nanxing/nuxing</i> (5579) <i>nanzi/nuzi</i> (8273)

* The figure following each antonymous pair indicates the number of lines featuring the pair.

Table 5. Antonymous pairs selected for analysis (continued)

	Verbs	Adjectives	Nouns
Relational	<p><i>ying</i> ‘to win’/ <i>shu</i> ‘to lose’ (899) <i>mai</i> ‘to buy’/ <i>mai</i> ‘to sell’ (1062)</p>		<p><i>fangdong</i> ‘landlord’/ <i>fangke</i> ‘tenant’ (127) <i>maifang</i> ‘seller’/ <i>maifang</i> ‘buyer’ (462) <i>fumu</i> ‘parents’/ <i>haizi</i> ‘child’ (1514) <i>laoshi</i> ‘teacher’/ <i>xuesheng</i> ‘student’ (4027)</p>
Directional	<p><i>jin</i> ‘to move forwards’/ <i>tui</i> ‘to move backwards’ (917) <i>jin</i> ‘to enter’/ <i>chu</i> ‘to go out’ (1273)</p>	<p><i>qianjin</i> ‘to move forwards’/ <i>houtui</i> ‘to move backwards’ (121)</p>	<p><i>qian</i> ‘front; before’/ <i>hou</i> ‘back; after’ (13532)</p>

Regarding the frequency of these 25 pairs, as Table 5 shows, there are two cases not meeting our frequency criterion of having 150 hits or more in the database. There are only 121 lines featuring the pair *qianjin/houtui* and 127 lines featuring the pair *fangdong/fangke*. The former is selected to contrast with its monomorphemic, monosyllabic counterpart *jin/tui*. In the latter pair, the members share the first morpheme, i.e., *fang*. This pair is selected to contrast with *maifang/maifang* ‘seller/buyer’, in which the members share the second morpheme.

To select a representative set of antonymous pairs for analysis, the present study adopts the English list (Jones 2002) as a point of departure and then considers various linguistic variables and structural features specific to Mandarin Chinese, such as categorization of oppositeness, grammatical category, modern versus classical contrast, morpho-syllabic structure, and synonymous alternates. In total, 25 antonymous pairs in Mandarin Chinese are selected for analysis. The following step is to sample sentences from the database.

3.3 Sampling Method

After the corpus and the set of antonymous pairs for analysis are selected, the next step is to sample sentences from the Chinese Word Sketch Engine. In the present study, a sentence is loosely regarded as a concordance line, for antonyms may co-occur in simple sentences and complex sentences.

As Table 5 shows, the antonymous pairs selected for analysis are greatly different in how frequently their members co-occur. However, for each antonymous pair, an equal number of database sentences, i.e., 150, is randomly sampled with the rationale that this 150 frequency threshold can exclude antonyms which do not

co-occur often and thus cannot be studied from a corpus-based perspective.¹¹ In the process of sampling sentences from the Chinese Word Sketch Engine, we use the set default values for search, such as window size (i.e., 21 words) and search span (i.e., -5~5).

Not all the sentences retrieved from the database meet our needs. Some examples are of accidental antonym co-occurrences.

(22) 考生有老有少，年輕的體能較佔優勢，

Kaosheng you **lao** you shao, **nianqing** de tineng jiao zhan youshi.

examinee have old have young, young NOMINALIZER physical strength
more take advantage

‘There were old and young examinees, and younger ones were at an
advantage in their physical strength.’

(23) 他在比賽中戰術正確，不犯低級錯誤，

Ta zai bisai zhong zhanshu **zhengque**, bu fan diji **cuowu**.

he in game middle strategy right, not commit low-level mistake

‘He adopted right strategies in the game and did not make stupid
mistakes.’

Note that the sentence in (22) is retrieved for the pair *lao/nianqing* ‘old/young’, not for the pair *lao/shao* ‘old/young’. In (22), although *lao* and *nianqing* co-occur in close lexical proximity, they seem to have little to do with each other. In effect, *lao* is coordinated with *shao* in the lexico-syntactic frame *you...you...* ‘have...have...’.

Such sentences as the above are not included for analysis. As for the sentence in (23),

¹¹ The only two exceptions to this 150 threshold are *qianjin/houtui* ‘to move forwards/to move backwards’ (121 lines) and *fangdong/fangke* ‘landlord/tenant’ (127 lines). The reasons for keeping the two pairs in the list are given in Section 3.2.

zhengque ‘right’ serves as an adjectival predicate while *cuowu* is categorized as a noun, serving as the object of the verb *fan* ‘to make (mistakes)’. Following Jones’ (2002) framework, which does not account for cross-grammatical antonym co-occurrences, the present study does not consider antonyms belonging to different grammatical categories.

When a database sentence is discarded, it is replaced by another database sentence randomly sampled from the Chinese Word Sketch Engine. This procedure works for most cases. However, the database sentences for the pair *kunnan/rongyi* ‘difficult/easy’ and the pair *zhengque/cuowu* ‘right/wrong’ feature too many accidental antonym co-occurrences. After all the database sentences featuring the two pairs are examined, there are only 101 valid database sentences featuring *kunnan/rongyi* and 120 valid database sentences featuring *zhengque/cuowu*. As for *fangdong/fangke* and *qianjin/houtui*, there are only 127 and 121 sentences respectively in the database. With accidental antonym co-occurrences discarded, 114 database sentences featuring *fangdong/fangke* and 120 database sentences featuring *qianjin/houtui* are included for analysis. For the above four pairs, i.e., *kunnan/rongyi*, *zhengque/cuowu*, *fangdong/fangke*, and *qianjin/houtui*, 455 sentences in total are retrieved from the database. For each of the other 21 antonymous pairs selected in the present study, 150 database sentences are included for analysis. That is, 3,150 sentences are retrieved for the 21 pairs. In total, there are 3,605 database sentences for analysis.

3.4 Summary

This study aims to explore, with a data-based approach, how antonyms in Mandarin Chinese function in text. This chapter demonstrates how data are collected to answer the above research question. The database chosen for this study is the

Chinese Word Sketch Engine, which is a large archive of newswire texts. In total, 25 antonymous pairs are selected for analysis (see Table 5), and 3,605 sentences containing the co-occurrences of these antonymous pairs are sampled from the database. As Jones (2002) has pointed out, since no consensus has been reached for an adequate definition of antonymy, any list of antonymous pairs may be criticized for not being adequately representative. With Jones' (2002) list serving as a point of departure and various linguistic variables and structural features specific to Mandarin Chinese taken into consideration, the 25 antonymous pairs selected in the present study are the result of our effort in trying to approximate a representative set for the functional study of antonym co-occurrences in text at the preliminary level.

Chapter 4

Functions of Antonymy in Mandarin Chinese

Jones (2002) identifies eight textual functions of antonymy in English. This thesis is intended to evaluate Jones' (2002) functional framework of antonymy by applying it to data in Mandarin Chinese. To achieve this goal, 25 antonymous pairs in Mandarin Chinese are selected for analysis (see Table 5 in Section 3.2), and 3,605 database sentences are sampled from the Chinese Word Sketch Engine.

In this chapter, the results of our analysis are presented. In total, thirteen different textual functions of antonymy have been identified in Mandarin Chinese (Section 4.1). A closer examination shows that the functional distribution of antonym co-occurrences in Mandarin Chinese is affected by various variables (Section 4.2). Finally, a cross-linguistic comparison between English and Mandarin Chinese is established (Section 4.3).

4.1 Functions of Antonymy in Mandarin Chinese: Definitions and Examples

It will be shown in this section that Jones' (2002) functional framework of antonymy is applicable to antonym co-occurrences in Mandarin Chinese. The eight textual functions of antonymy identified in Jones (2002) have also been identified in Mandarin Chinese, i.e., Ancillary Antonymy, Coordinated Antonymy, Comparative Antonymy, Distinguished Antonymy, Transitional Antonymy, Negated Antonymy, Extreme Antonymy, and Idiomatic Antonymy. In addition, four of the residual functions in Jones (2002) have also been identified in Mandarin Chinese, including Specified Antonymy, Associative Antonymy, and Simultaneous/Equivalent

Antonymy.¹² However, our analysis shows that the above categories cannot accommodate all the corpus data we have collected. This study identifies two more textual functions of antonymy in Mandarin Chinese: Transitive Antonymy and Negated Ancillary Antonymy. In total, thirteen different textual functions have been identified for antonym co-occurrences in Mandarin Chinese. In the following, each textual function is defined and exemplified.

4.1.1 Ancillary Antonymy

An antonymous pair is considered ancillary when the antonyms do not function to be the primary contrast in the context, “but are actually responsible for signaling a more important opposition (usually instantial) between another pair of words, phrases or clauses” (Jones 2002:45). Consider the following sentences:

- (24) 有男人狩獵、女人織布的圖騰。

You nanren shoulie, nuren zhibu de tuteng.

have man hunt, woman weave DE totem

‘There are totems showing that men hunt and women weave.’

- (25) 地雷是一種很有效的武器，埋設容易，但清除困難。

Dilei shi yi zhong hen youxiao de wuqi, maishe rongyi, dan qingchu kunnan.

mine be one CLASSIFIER very effective DE weapon, bury easy, but clear difficult

‘Mines are effective weapons; they are easy to bury, but hard to clear.’

¹² In Jones (2002), Equivalent Antonymy and Simultaneous Antonymy are two distinct categories. For why the two functions are merged in this study, see Section 4.1.11.

(26) 在美國大學採申請制也是進去容易出來困難，

Zai Meiguo daxue cai shenqing zhi ye shi **jinqu rongyi chulai kunnan**,

at America university adopt apply system also be enter easy come out
difficult

‘In the U.S., universities accept applications; it is easy to enter a university,
but hard to graduate.’

To begin with the sentence in (24), the recognized antonyms are *nanren* ‘man’ and *nuren* ‘woman’, and this pair serves as a lexical signal of another contrast, namely that between *shoulie* ‘to hunt’ and *zhibu* ‘to weave’. To most native speakers of Mandarin Chinese, *shoulie* and *zhibu* themselves do not form an antonymous pair. However, when this pair is placed in a context about the division of labor between men and women, it receives a contrastive interpretation. Similarly, while the antonymous pair in (25) is *rongyi* ‘easy’ and *kunnan* ‘difficult’, the primary contrast lies between *maishe* ‘to bury’ and *qingchu* ‘to clear’. The writer intends to contrast the easiness of *maishe* and the difficulty of *qingchu* to emphasize the effectiveness of mines as weapons. The sentence in (26) follows the same pattern, with *rongyi* and *kunnan* signaling a nearby contrast between *jinqu* ‘to enter’ and *chulai* ‘to come out’.

According to Jones (2002), the ancillary pair contributes to the effectiveness of the contrast of the second pair no matter whether the contrast of the second pair is or is not apparent already. In some cases, such as (24), antonyms play an active role in creating an opposition for the second pair which would not otherwise be interpreted contrastively. In some other cases, such as (26), on the other hand, the second pair itself already manifests a relatively well-established contrast, so the ancillary pair merely helps to affirm this contrast.

4.1.2 Coordinated Antonymy

An antonymous pair is assigned to the class of Coordinated Antonymy when it is used to signal “inclusiveness or exhaustiveness of scale” (Jones 2002:61). Consider the following sentences:

- (27) 男人與女人的生物時鐘都會在他們邁入三十大關後開始啟動。

Nanren yu nuren de shengwu shizhong dou hui zai tamen mairu sanshi daguan hou kaishi qidong.

man and woman DE biological clock all will at they enter thirty threshold after begin switch on

‘Both men’s and women’s biological clocks will be switched on after they are thirty.’

- (28) 對於此一報導既不承認也不否認。

Duiyu ci yi baodao ji bu chengren ye bu founen.

to this one report already not confirm also not deny

‘This report was neither confirmed nor denied.’

- (29) 網上的生意人有真有假，

Wang shang de shengyiren you zhen you jia,

Internet on DE businessman have real have fake

‘Some businessmen on the Internet are honest, while others are not.’

- (30) 無論是老或少，都會覺得這是很貼近人心的音樂；

Wulun shi lao huo shao, dou hui juede zhe shi hen tiejin ren xin de yinyue.

whether be old or young, all will feel this be very approach person heart DE music

‘Young or all, all people feel the music touching their heart.’

In (27), the antonyms *nanren* ‘man’ and *nuren* ‘woman’ are linked by *yu* ‘and’. The phrase *nanren yu nuren* is regarded as inclusive in the sense that both men and women are included in a certain biological study. In (28), the antonyms *chengren* ‘to confirm’ and *fouren* ‘to deny’ are also considered to be inclusive in that the writer couples the antonyms together to negate the pair (Jones 2002:71). On the other hand, the antonymous pair *zhen/jia* ‘fake/real’ in (29) is regarded as exhaustive in the sense that people are advised to be careful with ALL the businessmen on the Internet because there are some dishonest businessmen. The antonymous pair *lao/shao* ‘old/young’ in (30) is also exhaustive in that it represents ALL the points on the given scale, not just the two specific points mentioned. In this instance, ALL the people would be touched by the guitar player, regardless of their age.

In fact, antonyms are very different and very similar at the same time in the sense that they are opposite on the same scale (Clark 1970; Cruse 1986; Leech 1974). On the one hand, an ancillary antonymous pair functions to trigger the contrastive power of the second pair. On the other hand, when antonyms function in a coordinated fashion, the focus of attention is on their similarity rather than their inherent semantic dissimilarity: “they work in unison, creating no overt element of contrast, and encompass all points on their given scale” (Jones 2002:61). Jones (2002:74) thus suggests that Ancillary Antonymy emphasizes the dissimilarity of an antonymous pair whereas Coordinated Antonymy emphasizes the similarity of an antonymous pair.

4.1.3 Comparative Antonymy

An antonymous pair is assigned to the class of Comparative Antonymy when the antonyms occur within a lexico-syntactic framework that “places those words in a comparative context or measures one antonym against the other” (Jones 2002:76). Here are a few examples:

- (31) 全省初估約有八千到一萬名自閉症兒童，且男生多於女生

Quan sheng chu gu yue you ba qian dao yi wan ming zibizheng ertong, qie
nansheng duo yu nusheng

all province roughly estimate about have eight thousand to one ten
thousand CLASSIFIER autism kid, and boy many than girl

‘It is estimated that there are roughly 8,000 to 10,000 kids with autism,
with boys more than girls.’

- (32) 男生可以做到的，女生一樣可以做的到。

Nansheng keyi zuodao de, **nusheng yiyang** keyi zuo de dao.

man can achieve DE, woman same can do DE arrive

‘Women can also achieve what men can.’

- (33) 急性心肌梗塞病例由每年四十人增為近年來的一百六十人，其中男性
是女性的四倍，

Jixing xinjigengse bingli you mei nian sishi ren zeng wei jin nian lai de yi
bai liushi ren, qizhong **nanxing** shi **nuxing** de **si bei**,

acute myocardial infarction case from every year forty person increase be
recent year come DE one hundred sixty person, among male be female DE
four time

‘For the recent years, the cases of acute myocardial infarction have
increased from forty people each year to one hundred and sixty, among
whom males are four times more than females.’

The sentence in (31) contains a comparison between the antonyms *nansheng* ‘boy’ and *nusheng* ‘girl’ in terms of autism case numbers. This comparison is considered to be indirect because the antonyms are compared against another independent scale (Jones 2002:78). In a direct comparison, antonyms are compared on their given

semantic scale, as the following example shows (taken from Jones 2002:77):

- (34) Although one has to be **more pessimistic than optimistic** in the Third World when it comes to liberation movements and democracy, it is hard not to notice some special characteristics of the Palestinian revolution in general and the PLO in particular.

For some reason, we do not get any sentences like (34) in our database.

Another sub-class of Comparative Antonymy is equal comparison (Jones 2002:79), in which antonyms are compared with each other, but no distinction is made. For example, the sentence in (32) indirectly compares *nansheng* and *nusheng* in terms of their ability in military training, indicating that the latter can do as well what the former can do.

Furthermore, a sentence involving a ratio between antonyms also falls into the class of Comparative Antonymy, as exemplified in (33). In this instance, *nanxing* ‘male’ and *nuxing* ‘female’ are indirectly compared in terms of heart attack case numbers, and the results are presented by a ratio, i.e., *si bei* ‘four times’.

4.1.4 Distinguished Antonymy

Distinguished Antonymy refers to “the co-occurrence of an antonymous pair within a framework that alludes to the inherent semantic dissimilarity of those words” (Jones 2002:81). Presupposing that the reader is familiar with the dissimilarity in an antonymous pair, the writer often employs the distinction between antonyms to make a more general statement. Here are a few examples:

(35) 新補充的年輕隊員技術水平與老隊員有較大差距。

Xin buchong de nianqing duiyuan jishu shuiping yu lao duiyuan you jiao da chaju.

new complement DE young player skill standard and old player have more big difference

‘There are greater differences in skills between new and old players.’

(36) 這種年輕隊員與老隊員之間、甚至年輕球員間的競爭

Zhe zhong nianqing duiyuan yu lao duiyuan zhijian, shenzhi nianqing qiuyuan jian de jingzheng

this CLASSIFIER young player and old player between, even young player between DE competition

‘the competition between young and old players, and even between young players’

(37) 劃清正確與錯誤的界限；

Hua qing zhengque yu cuowu de jiexian;

draw clear right and wrong DE boundary

‘draw a clear boundary between right and wrong’

In discussing the difference in skills between young players and old players, the sentence in (35) uses the noun *chaju* ‘difference’ to highlight the inherent semantic difference between *nianqing* ‘young’ and *lao* ‘old’. In (36), the noun head *jingzheng* ‘competition’ signals rivalry between two different parties, so the reader’s attention might be drawn to the inherent semantic dissimilarity between *nianqing* and *lao*. In fact, the word denoting difference, distinction, and division in Distinguished Antonymy can be replaced by a metaphor (Jones 2002:86), as the sentence in (37) exemplifies. This sentence employs a spatial metaphor (Lakoff and Johnson 1981) to

describe the distinction between *zhengque* ‘right’ and *cuowu* ‘wrong’ as *jiexian* ‘boundary’.

4.1.5 Transitional Antonymy

When an antonymous pair expresses “a movement or change from one location or state to another” (Jones 2002:85), it is assigned to the class of Transitional Antonymy. Consider the following sentences:

- (38) 澳門的科技發展應先從應用科技入手，**由易到難**，

Aumen de keji fazhan ying xian cong yingyong keji rushou, **you yi dao nan**,

Macao DE technology development should first from application technology start, from easy to difficult

‘The technological development in Macao should start with applied technology, from what is easy to what is difficult.’

- (39) 鄭秀文倒是覺得很有挑戰性，不但要從**年輕演到老**，

Zhengxiuwen daoshi juede hen you tiaozan xing, budan yao **cong nianqing yan dao lao**,

Zhengxiuwen yet feel very have challenge quality, not only need from young play to old

‘However, Zhengxiuwen finds it challenging; she not only needs to play a role, in which she is gradually getting old,’

- (40) 現在已經從**賣方**市場走入**買方**市場。

Xianzai yijing **cong maifang** shichang **zou ru maifang** shichang.

now already from seller market walk into buyer market

‘Now (the market) has got from a seller’s market into a buyer’s market.’

In (38), the technological development in Macao is advised to begin with what is easy and move on to what is difficult. In (39), the actress takes a challenging role in a movie; in this movie, she is young at first and then getting older and older gradually. In (40), the role of the market is changing from a seller to a buyer. According to Jones (2002:87), since Transitional Antonymy expresses changes and movements, the metaphor of journey (cf. Lakoff and Johnson 1981) is frequently employed, such as *cong...dao...* ‘from...to...’ in (39) and *cong...zouru...* ‘to walk from...into...’ in (40).

4.1.6 Negated Antonymy

An antonymous pair falls into the class of Negated Antonymy when one of its members is negated “as a device to augment the other” (Jones 2002:88). As a matter of fact, the negated antonym is grammatically droppable, no matter which part of speech it belongs to. However, it does not follow that the negated antonym is semantically redundant. The textual function of Negated Antonymy is twofold (Jones 2002). First, more attention is drawn to the one in the syntactically positive environment. Second, negation makes the reader more aware of the rejected alternative. Consider the following sentences:

(41) 這些建議是依據錯誤且不正確的法律分析。

Zhexie jianyi shi yiju cuowu qie bu zhengque de falu fenxi.

these suggestion be according to wrong and not right DE law analysis

‘These suggestions are based on incorrect, not correct, legal analyses.’

(42) 我不能輸，我應該贏。

Wo bu neng shu, wo yinggai ying.

I not can lose, I should win

‘I cannot lose; I should win.’

In (41), the negated antonym *zhengque* ‘right’ complements *cuowu* ‘wrong’. The negation of *zhengque* not only directs the reader’s attention to the other antonym *cuowu* but also strengthens the association between *zhengque* and *cuowu*. In (42), the negated antonym *shu* ‘to lose’ precedes its counterpart *ying* ‘to win’, but its textual function remains similar. The negation of *shu* places emphasis on the writer’s determination to win the game and not to become a loser.

4.1.7 Extreme Antonymy

An antonymous pair which “unites the outer-most areas of their given semantic scale” (Jones 2002:91) falls into the class of Extreme Antonymy. An extremity-signaling adverb pre-modifies each antonym so that the contrast is stretched further apart on the given semantic scale. It is the two outer-most areas, rather than the semantic domain in between, that become the focus of attention (Jones 2002). Here is an example:

(43) 在佛國傳揚佛法是最困難，也是最容易。

Zai fo guo chuanyang fofa shi **zui kunnan**, ye shi **zui rongyi**.

at Buddhism country promote Buddhism be most difficult, also be most easy

‘It is the most difficult and easiest to promote Buddhism in a Buddhist country.’

In (43), the adverb of extremity *zui* ‘most’ modifies the antonyms *kunnan* ‘difficult’ and *rongyi* ‘easy’. The antonyms modified by *zui* identify the two outer-most areas on

the scale of difficulty without considering any other point in between.

4.1.8 Idiomatic Antonymy

The last major textual function of antonymy identified in Jones (2002) is Idiomatic Antonymy. Here are two examples:

(44) 市場經濟不進則退，

Shichang jingji bu jin ze tui,

market economy not proceed then recede

‘The market economy either makes progress or recedes.’

(45) 長江後浪推前浪，這位老將出人意料地接連輸給薩姆索諾夫三局，

Changjiang hou lang tui qian lang, zhe wei lao jiang churen yiliao de
jielian shu gei Samusuonuo fu san ju,

the Yangtze River back wave push front wave, this CLASSIFIER old general
unexpectedly ADVERB MARKER continuously lose to Samsonov three
CLASSIFIER

‘Each generation outdoes the last. Unexpectedly, the experienced player
was defeated three games in a row by Samsonov.’

The sentence in (44) features *jin* ‘to move forward’ and *tui* ‘to move backward’, with the former negated with *bu* ‘not’. Although this sentence is compatible with examples of Negated Antonymy, the context where the antonyms co-occur is highly clichéd, reminding the reader of Confucius’ words.¹³ The sentence in (45) is compatible with

¹³ The phrase *bu jin ze tui* is from *Lun Yu*, which is a collection of Confucius’ words:

(i) 學如逆水行舟，不進則退。
Xue ru ni shui xing zhou, bu jin ze tui.

examples of Transitive Antonymy, which is not in Jones's (2002) framework and will be discussed in Section 4.1.12. Once again, almost all native speakers can recognize the expression in question as a cliché¹⁴ at first sight. Although all the cases falling into this category can be assigned to another category, such an option is not sensible. Each pair as used in the specific context is embedded in a familiar idiom, proverb, or cliché and consequently processed as a unit rather than interpreted componentially (Jones 2002:94).

4.1.9 Specified Antonymy

In addition to the above eight functions of antonymy, four of the minor categories in Jones (2002) are identified as well in the preset study. Consider the following sentences:

- (46) 住校的學生只有十七人，其中男生十一人，女生六人。

Zhu xiao de xuesheng zhi you shiqi ren, qizhong **nansheng shiyi ren,**
nusheng liu ren.

live school DE student only have seventeen person, among boy eleven
person, girl six person.

'Only seventeen students live on campus; among them, there are eleven
boys and six girls.'

learning like against water row boat, not proceed then recede
'Learning is like rowing upstream, either to keep making progress or to be washed
backwards.'

¹⁴ The phrase *Changjiang hou lang tui qian lang* is from Fu Liu's (劉斧) poem 'Qing Suo Kao Yi' (青瑣高議):

- (i) 長江後浪推前浪，浮事新人換舊人。
Changjiang hou lang tui qian lang, fushi xin ren huan jiu ren.
the Yangtze River back wave push front wave, life new person replace old person
'Each generation outdoes the last.'

- (47) 目前澳洲已有百分之四十九的女性、百分之六十二的男性患有肥胖症，
 Muqian Aozhou yi you **baifenzhi sishi jiu de nuxing, baifenzhi liushi er**
 de **nanxing** huanyou feipangzheng,
 currently Australia already have percentage forty nine DE female,
 percentage sixty two DE male suffer from obesity
 ‘Currently in Australia, forty nine percent of females and sixty two percent
 of males suffer from obesity.’

In each of the above sentences, the antonymous pair is quantified. It is noted that the figures in each sentence do not seem to contrast with each other, so it is not appropriate to assign these sentences to the class of Ancillary Antonymy. For instance, the sentence in (46) specifies the numbers of boys and girls living on campus (*shiyi* ‘eleven’ and *liu* ‘six’ respectively). The figures simply provide additional details, with no contrastive power generated in this context. Similarly, the percentages of overweight males and females in (47) simply provide further information rather than contrast with each other. According to Jones (2002), the antonymous pair in each of the above sentences functions in a taxonomic, rather than ancillary, manner. The suggested name for this category is Specified Antonymy (Jones 2002:98-99).

4.1.10 Associative Antonymy

Now consider the following sentences:

- (48) 強化學生與老師的互動關係，
 Qianghua **xuesheng yu laoshi de hudong guanxi**,
 enhance student and teacher DE interaction relationship
 ‘enhance the interaction relationship between students and teacher’

(49) 在幾經討論之後，決定讓房東房客自己去協調。

Zai jijing taolun zhihou, jue ding rang **fangdong fangke** ziji qu **xietiao**.

at several discuss after, decide let landlord tenant oneself go negotiate

‘After some discussions, it has been decided that landlords and tenants should negotiate by themselves.’

(50) 現代孩子從父母長輩那兒得到太多，

Xiandai **haizi cong fumu** zhangbei naer dedao tai duo,

modern child from parents elder there get too much

‘Nowadays children get too much from their parents.’

In each of the above sentences, the relationship between antonyms might be too close for the pair to be assigned to the class of Distinguished Antonymy and, on the other hand, too distant for the pair to be assigned to the class of Coordinated Antonymy (Jones 2002:98). In (48), although the context where *xuesheng* ‘student’ and *laoshi* ‘teacher’ co-occur follows the lexico-syntactic frame identified in Distinguished Antonymy, i.e., X *yu* Y (*zhijian*) *de* [noun phrase] ‘[noun phrase] between X and Y (where X and Y form an antonymous pair)’, the noun phrase *hudong guanxi* ‘interaction relationship’ does not signal differences or distinctions. Rather, it highlights the connection between the antonyms instead of emphasizing their dissimilarity. On the other hand, although *xuesheng* and *laoshi* in (48) are coordinated by *yu* ‘and’, they do not seem to function in an inclusive manner. As for the sentence in (49), the connection-signaling verb *xietiao* ‘to negotiate’ also reflects the association between *fangdong* ‘landlord’ and *fangke* ‘tenant’. The sentence in (50) is slightly different in that there exists no connection-denoting word or phrase. Still, an association or a connection is reflected between *haizi* ‘child’ and *fumu* ‘parents’ in the context where the former receives something from the latter. Therefore, sentences

with *cong* ‘from’ of this kind are also assigned to this category. The suggested name for this category is Associative Antonymy (Jones 2002:97).

4.1.11 Simultaneous/Equivalent Antonymy

Now consider the following two English sentences:

(51) But that **strength** could also be a **weakness** in that, internationally, he never really accepted that what was good for France was not necessarily equally good for the UK and the US. (taken from Jones 2002:99)

(52) Then there is the possibility that the Hairy Hands story is the **rural** version of the **urban** folk-myth—everyone has heard the one about the deep-fried chicken that was really a battered rat— which plays on people’s fears about their environment. (taken from Jones 2002:101)

The antonyms in (51) are “directly equated with one another to create an unlikely or ironic parallel” (Jones 2002:99). This sentence follows the lexico-syntactic frame *X is Y* (where X and Y are antonyms), which signals simultaneity. In (52), the context where the antonyms co-occur expresses equivalence in that the antonyms follow the lexico-syntactic frame *X [noun] of Y*, where the noun is *equivalent* or a synonym thereof (Jones 2002:101). In Jones (2002), these two sentences are assigned to two distinct categories. Even though the two categories have their own lexico-syntactic frames, they are semantically similar. On the one hand, the lexico-syntactic frame for the class of simultaneity, i.e., *X is Y*, also expresses equivalence. On the other hand, when X is an equivalent of Y, X exhibits the features of Y and itself simultaneously. Therefore, the above two textual functions are merged in the present study, and the suggested name is Simultaneous/Equivalent Antonymy. Here are two examples in

Mandarin Chinese:

(53) 他倆愛就是恨，恨就是愛，

Ta liang **ai jiu shi hen**, hen jiu shi ai,

he two love just be hate, hate just be love

‘Their love is just hate, and their hate is just love.’

(54) 但年輕的老菸槍面臨的風險最大。

Dan **nianqing** de **lao** yanqiang mianlin de fongxian zui da.

but young DE old heavy smoker face DE danger most big

‘But the risk that young heavy smokers face is the greatest.’

In (53), *ai* ‘to love’ is equated with *hen* ‘to hate’ in the lexico-syntactic frame *X jiushi Y* ‘X is just Y’. Jones (2002:99) suggests that such an apparent semantic conflict is licensed by different perspectives. In (54), the noun phrase *yanqiang* ‘heavy smoker’ is modified by *nianqing* ‘young’ and *lao* ‘old’ simultaneously. In effect, *nianqing* and *lao* here do not function along the same semantic scale. While *nianqing* modifies *yanqiang* in terms of the smoker’s physical age, *lao* modifies *yanqiang* in terms of how long the smoking habit has persisted. As such, the antonymous pair *nianqing* and *lao* operates on two levels: on the surface, the antonyms simultaneously modify the noun phrase *yanqiang*; underneath, the antonyms do not contradict with each other.

4.1.12 Transitive Antonymy

The above functions identified in Jones (2002) cannot accommodate all the corpus data we have collected in Mandarin Chinese. The residual sentences fall into two categories. First, an antonym might occur in the subject position of a clause and function in an agent-like manner, with its counterpart filling in the object position and

functioning in a patient-like manner (cf. Dowty 1990). Consider the following sentences:

- (55) 老師體罰學生常常發生，

Laoshi tifa xuesheng changchang fasheng,

teacher physical punishment student often happen

‘Teachers often physically punish students.’

- (56) 臺灣的父母喜歡把孩子送到南非

Taiwan de **fumu** xihuan ba **haizi** song dao Nanfei

Taiwan DE parents like BA child send to South Africa

‘Parents in Taiwan like to send their children to South Africa.’

- (57) 我是幼兒園老師，天天看到孩子被父母接走的幸福情景，

Wo shi youeryuan laoshi, tiantian kandao **haizi bei fumu jie zou** de xingfu qingjing,

I be kindergarten teacher, everyday see child BEI parents pick up away DE pleasant scene

‘I am a kindergarten teacher; every day I see the pleasant scene that children are picked up by their parents.’

- (58) 老師對女學生性騷擾，

Laoshi dui nu xuesheng xing saorao,

teacher to female student sexual harassment

‘Teachers impose sexual harassment on female students.’

- (59) 為了照顧孩子，做父母的幾乎不再有機會從事簡單的休閒活動，

Weile **zhaogu haizi**, zuo **fumu** de jihu bu zai you jihui congshi jiandan de xiuxian huodong,

in order to take care of child, do parents DE almost not again have

opportunity do simple DE leisure activity

‘In order to take care of children, parents almost do not have any opportunities to do simple leisure activities.’

(60) 在老師的認真教導學生下，

Zai laoshi de renzhen jiaodao xuesheng xia,

at teacher DE earnestly teach student under

‘under teachers’ teaching students in earnest’

In (55), *laoshi* ‘teacher’ occurs in the subject position, and *xuesheng* ‘student’ fills in the object position. This antonymous pair fits in an agent-patient schema since *laoshi* is the doer of physical punishment while *xuesheng* is the done-to one. As a matter of fact, Mandarin Chinese does not stick to the subject-verb-object (SVO) schema all the time. There exist a few prepositions to introduce the object to a position higher than the verb, yielding the subject-object-verb (SOV) sequence. For example, the preposition *ba* in (56) brings the antonyms *fumu* ‘parents’ and *haizi* ‘child’ closer, leaving the verb *song* ‘to send’ behind. The passive marker *bei* ‘by’ in (57) and the preposition *dui* ‘to’ in (58) function in a similar way. Even though the objects in these sentences (56)-(58) are all moved forwards, the antonyms still stand in an agent-patient schema. As for the sentence in (59), the object *haizi* even precedes the subject *fumu*, but this pair also functions in an agent-patient schema. Still, as shown in (60), the agent-patient relationship holds between the antonyms when the verb-object (VO) construction is nominalized by *de*. The suggested name for this new category is Transitive Antonymy.

4.1.13 Negated Ancillary Antonymy

The other residual sentences are the hybrid of Ancillary Antonymy and Negated

Antonymy. On the one hand, the antonymous pair is used as a lexical signal of another contrast. On the other hand, one of the members in the antonymous pair is negated. Here is an example:

(61) 千萬不要怕文法錯誤或發音不正確，

Qianwan bu yao pa wenfa cuowu huo fayin bu zhengque,

must not want afraid grammar wrong or pronunciation not right

‘Never be afraid that your grammar is incorrect or your pronunciation is not correct.’

In (61), *wenfa* ‘grammar’ and *fayin* ‘pronunciation’ are two distinct aspects of language learning, and the two aspects might be interpreted contrastively in the contrastive context featuring the antonymous pair *cuowu/zhengque* ‘wrong/right’. Meanwhile, with one of the antonyms *zhengque* modified by *bu* ‘not’, more attention is drawn to its counterpart *cuowu*. This sentence is not assigned to Ancillary Antonymy nor to Negated Antonymy because it manifests both textual functions and it is not easy to tell which function is more dominant in this sentence. A new class of antonymy is required, and the suggested name for this category is Negated Ancillary Antonymy.

4.1.14 Interim Summary

Section 4.1 is intended to show how antonym co-occurrences in Mandarin Chinese function in text. In total, thirteen different textual functions of antonymy have been identified, with their definitions and examples given above. The next question is: how do all the database sentences distribute among these classes?

4.2 Database Distribution

In this section, the sentence distribution in the functional framework of antonym co-occurrences in Mandarin Chinese is reported (Section 4.2.1). In addition, several factors are found to have an effect on the distribution (Section 4.2.2), including an antonymous pair's traditional category of oppositeness, grammatical category, extent of modernization, and morpho-syllabic structure.

4.2.1 Overall Distribution

Table 6 provides the distribution of all the pairs across the thirteen textual functions identified in Section 4.1.

Table 6. Distribution of pairs across textual functions

	<i>yi</i> 'easy'/ <i>nan</i> 'difficult'		<i>kunnan</i> 'difficult'/ <i>rongyi</i> 'easy'		<i>lao</i> 'old'/ <i>shao</i> 'young'		<i>lao</i> 'old'/ <i>nianqing</i> 'young'		<i>ai</i> 'to love'/ <i>hen</i> 'to hate'	
Coordinated	10	6.7%	4	4.0%	147	98.0%	30	20.0%	122	81.3%
Ancillary	59	39.3%	77	76.2%	1	0.7%	30	20.0%	8	5.3%
Transitive	0	0.0%	0	0.0%	1	0.7%	33	22.0%	4	2.7%
Transitional	80	53.3%	1	1.0%	0	0.0%	19	12.7%	3	2.0%
Specified	0	0.0%	0	0.0%	1	0.7%	0	0.0%	0	0.0%
Negated	0	0.0%	5	5.0%	0	0.0%	8	5.3%	7	4.7%
Comparative	0	0.0%	1	1.0%	0	0.0%	4	2.7%	0	0.0%
Associative	0	0.0%	0	0.0%	0	0.0%	7	4.7%	0	0.0%
Idiomatic	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Distinguished	0	0.0%	0	0.0%	0	0.0%	7	4.7%	0	0.0%
Negated Ancillary	0	0.0%	10	9.9%	0	0.0%	4	2.7%	1	0.7%
Simultaneous/Equivalent	0	0.0%	0	0.0%	0	0.0%	7	4.7%	5	3.3%
Extreme	1	0.7%	3	3.0%	0	0.0%	1	0.7%	0	0.0%
TOTAL	150	100.0%	101	100.0%	150	100.0%	150	100.0%	150	100.0%

Table 6. Distribution of pairs across textual functions (continued)

	<i>dui</i> ‘right’/ <i>cuo</i> ‘wrong’		<i>shi</i> ‘right’/ <i>fei</i> ‘wrong’		<i>jia</i> ‘fake’/ <i>zhen</i> ‘real’		<i>zhengque</i> ‘right’/ <i>cuowu</i> ‘wrong’		<i>chengren</i> ‘to confirm’/ <i>foren</i> ‘to deny’	
Coordinated	141	94.0%	6	4.0%	28	18.7%	18	15.0%	104	69.3%
Ancillary	7	4.7%	136	90.7%	110	73.3%	58	48.3%	29	19.3%
Transitive	0	0.0%	0	0.0%	5	3.3%	0	0.0%	0	0.0%
Transitional	1	0.7%	0	0.0%	1	0.7%	4	3.3%	10	6.7%
Specified	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Negated	0	0.0%	0	0.0%	1	0.7%	21	17.5%	3	2.0%
Comparative	0	0.0%	0	0.0%	2	1.3%	2	1.7%	0	0.0%
Associative	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Idiomatic	0	0.0%	0	0.0%	1	0.7%	0	0.0%	0	0.0%
Distinguished	0	0.0%	3	2.0%	1	0.7%	3	2.5%	0	0.0%
Negated Ancillary	1	0.7%	5	3.3%	1	0.7%	13	10.8%	4	2.7%
Simultaneous/Equivalent	0	0.0%	0	0.0%	0	0.0%	1	0.8%	0	0.0%
Extreme	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
TOTAL	150	100.0%	150	100.0%	150	100.0%	120	100.0%	150	100.0%

Table 6. Distribution of pairs across textual functions (continued)

	<i>nan</i> 'male'/ <i>nu</i> 'female'		<i>nanren</i> 'male'/ <i>nuren</i> 'female'		<i>nansheng</i> 'male'/ <i>nusheng</i> 'female'		<i>nanxing</i> 'male'/ <i>nuxing</i> 'female'		<i>nanzi</i> 'male'/ <i>nuzi</i> 'female'	
Coordinated	109	72.7%	47	31.3%	25	16.7%	26	17.3%	108	72.0%
Ancillary	4	2.7%	26	17.3%	10	6.7%	12	8.0%	11	7.3%
Transitive	1	0.7%	34	22.7%	10	6.7%	2	1.3%	1	0.7%
Transitional	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Specified	32	21.3%	4	2.7%	77	51.3%	50	33.3%	25	16.7%
Negated	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Comparative	3	2.0%	27	18.0%	25	16.7%	59	39.3%	4	2.7%
Associative	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Idiomatic	1	0.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Distinguished	0	0.0%	7	4.7%	3	2.0%	1	0.7%	1	0.7%
Negated Ancillary	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Simultaneous/Equivalent	0	0.0%	5	3.3%	0	0.0%	0	0.0%	0	0.0%
Extreme	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
TOTAL	150	100.0%	150	100.0%	150	100.0%	150	100.0%	150	100.0%

Table 6. Distribution of pairs across textual functions (continued)

	<i>mai</i> 'to buy'/ <i>mai</i> 'to sell'		<i>ying</i> 'to win'/ <i>shu</i> 'to lose'		<i>maifang</i> 'seller'/ <i>maifang</i> 'buyer'		<i>fangdong</i> 'landlord'/ <i>fangke</i> 'tenant'		<i>laoshi</i> 'teacher'/ <i>xuesheng</i> 'student'	
Coordinated	96	64.0%	64	42.7%	34	22.7%	28	24.6%	50	33.3%
Ancillary	31	20.7%	43	28.7%	15	10.0%	16	14.0%	11	7.3%
Transitive	0	0.0%	0	0.0%	4	2.7%	43	37.7%	72	48.0%
Transitional	6	4.0%	17	11.3%	86	57.3%	0	0.0%	0	0.0%
Specified	6	4.0%	2	1.3%	0	0.0%	4	3.5%	6	4.0%
Negated	4	2.7%	19	12.7%	1	0.7%	2	1.8%	0	0.0%
Comparative	3	2.0%	0	0.0%	5	3.3%	0	0.0%	0	0.0%
Associative	0	0.0%	0	0.0%	2	1.3%	10	8.8%	9	6.0%
Idiomatic	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Distinguished	2	1.3%	1	0.7%	1	0.7%	11	9.6%	0	0.0%
Negated Ancillary	0	0.0%	3	2.0%	0	0.0%	0	0.0%	0	0.0%
Simultaneous/Equivalent	2	1.3%	1	0.7%	2	1.3%	0	0.0%	2	1.3%
Extreme	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
TOTAL	150	100.0%	150	100.0%	150	100.0%	114	100.0%	150	100.0%

Table 6. Distribution of pairs across textual functions (continued)

	<i>fumu</i> ‘parents’/ <i>haizi</i> ‘child’		<i>jin</i> ‘to move forwards’/ <i>tui</i> ‘to move backwards’		<i>jin</i> ‘to enter’/ <i>chu</i> ‘to go out’		<i>qian</i> ‘front; before’/ <i>hou</i> ‘back; after’		<i>qianjing</i> ‘to move forwards’/ <i>houtui</i> ‘to move backwards’	
Coordinated	11	7.3%	59	39.3%	88	58.7%	75	50.0%	67	55.8%
Ancillary	6	4.0%	4	2.7%	14	9.3%	60	40.0%	5	4.2%
Transitive	84	56.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Transitional	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%
Specified	0	0.0%	6	4.0%	2	1.3%	0	0.0%	1	0.8%
Negated	0	0.0%	26	17.3%	35	23.3%	0	0.0%	47	39.2%
Comparative	0	0.0%	0	0.0%	10	6.7%	4	2.7%	0	0.0%
Associative	42	28.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Idiomatic	0	0.0%	52	34.7%	0	0.0%	8	5.3%	0	0.0%
Distinguished	1	0.7%	0	0.0%	0	0.0%	2	1.3%	0	0.0%
Negated Ancillary	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Simultaneous/Equivalent	6	4.0%	3	2.0%	1	0.7%	0	0.0%	0	0.0%
Extreme	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
TOTAL	150	100.0%	150	100.0%	150	100.0%	150	100.0%	120	100.0%

A general pattern of antonym co-occurrences in Mandarin Chinese emerges. The overall distribution of the thirteen textual functions is recorded in Table 7.

Table 7. Functional distribution of antonymy in Mandarin Chinese

	Tokens	%
Coordinated	1497	41.5%
Ancillary	783	21.7%
Transitive	294	8.2%
Transitional	229	6.4%
Specified	216	6.0%
Negated	179	5.0%
Comparative	149	4.1%
Associative	70	1.9%
Idiomatic	62	1.7%
Distinguished	44	1.2%
Negated Ancillary	42	1.2%
Simultaneous/Equivalent	35	1.0%
Extreme	5	0.1%
TOTAL	3605	100.0%

As shown in Table 7, the most dominant textual function is Coordinated Antonymy, to which 41.5% of the database sentences have been attributed. Ancillary Antonymy is the second-largest category, accounting for 21.7% of the database sentences. The popularity of Coordinated Antonymy and Ancillary Antonymy might arise from the fact that the two functions are compatible with various traditional categories of oppositeness and different grammatical categories. However, it is noted that Ancillary Antonymy is much less dominant than Coordinated Antonymy. In fact, Ancillary Antonymy is conceptually and structurally complex in that two pairs of oppositeness are involved and few lexico-syntactic frames are associated with it (Jones 2006:205). Transitive Antonymy, Transitional Antonymy, Specified Antonymy,

and Negated Antonymy follow, accounting for 8.2%, 6.4%, 6.0%, and 5.0% of the database sentences respectively. The frequency of the other textual functions tails off very rapidly; none of them account for more than 5% of the database sentences.

Although the overall distribution shows that Coordinated Antonymy and Ancillary Antonymy dominate in Mandarin Chinese, many antonymous pairs examined in the present study exhibit idiosyncratic preferences for some textual functions over others. As a matter of fact, Coordinated Antonymy is not the most dominant function in the following twelve pairs: *kunnan/rongyi*, *shi/fei*, *jia/zhen*, and *zhengque/cuowu*, which favor Ancillary Antonymy; *lao/nianqing*, *maifang/maifang*, *fangdong/fangke*, *laoshi/xuesheng*, and *fumu/haizi*, which favor Transitive Antonymy; *yi/nan*, which favors Transitional Antonymy; *nansheng/nusheng*, which favors Specified Antonymy; *nanxing/nuxing*, which favors Comparative Antonymy.

The above idiosyncratic preferences might stem from an antonymous pair's intrinsic lexical properties, including its traditional category of oppositeness, grammatical category, extent of modernization, and morpho-syllabic structure. The following section will discuss factors that affect the overall database distribution.

4.2.2 Factors that Affects the Database Distribution

This section examines the factors that affect the functional distribution of antonym co-occurrences in Mandarin Chinese. In the following subsections, these factors will be discussed one by one, including an antonymous pair's traditional category of oppositeness (Section 4.2.2.1), grammatical category (Section 4.2.2.2), extent of modernization (Section 4.2.2.3), morpho-syllabic structure (Section 4.2.2.4), and morphological structure (Section 4.2.2.5). In addition, to examine whether synonymous pairs show any variation in how they function in text, the set of near synonyms, i.e., *nan/nu*, *nanren/nuren*, *nansheng/nusheng*, *nanxing/nuxing*, and

nanzi/nuzi, is examined in Section 4.2.2.6.

4.2.2.1 Traditional Category of Oppositeness

As noted in Section 3.2, the antonymous pairs in this study are divided into four categories of oppositeness, i.e., gradable, complementary, relational, and directional. The functional distribution of antonymy in terms of these four categories is reported in Table 8. Some patterns do emerge in Table 8, which indicates that the database distribution is affected by a pair's traditional category of oppositeness.

Table 8. Distribution of antonymy in Mandarin Chinese by traditional category of oppositeness

	Gradable		Complementary		Relational		Directional	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
Coordinated	313	44.7%	612	41.6%	283	32.8%	289	50.7%
Ancillary	175	25.0%	403	27.4%	122	14.1%	83	14.6%
Transitive	38	5.4%	53	3.6%	203	23.5%	0	0.0%
Transitional	103	14.7%	16	1.1%	109	12.6%	1	0.2%
Specified	1	0.1%	188	12.8%	18	2.1%	9	1.6%
Negated	20	2.9%	25	1.7%	26	3.0%	108	18.9%
Comparative	5	0.7%	122	8.3%	8	0.9%	14	2.5%
Associative	7	1.0%	0	0.0%	63	7.3%	0	0.0%
Idiomatic	0	0.0%	2	0.1%	0	0.0%	60	10.5%
Distinguished	7	1.0%	19	1.3%	16	1.9%	2	0.4%
Negated Ancillary	15	2.1%	24	1.6%	3	0.3%	0	0.0%
Simultaneous/Equivalent	12	1.7%	6	0.4%	13	1.5%	4	0.7%
Extreme	5	0.7%	0	0.0%	0	0.0%	0	0.0%
TOTAL	701	100.0%	1470	100.0%	864	100.0%	570	100.0%

For the five gradable antonymous pairs examined in the present study, the most dominant textual function is Coordinated Antonymy (44.7%), followed by Ancillary Antonymy (25.0%) and Transitional Antonymy (14.7%). It is noted that Transitional Antonymy is relatively more frequent in the gradable antonymous pairs than in the other pairs examined in this study. According to Cruse (1986:204), the semantic scale of a gradable antonymous pair forms a continuum, and the members of the pair seem to move along the given semantic scale when they are modified by intensifiers such as *very* and *fairly*. The dynamic nature of gradable antonymous pairs may contribute to the preference for Transitional Antonymy. In addition, it is noted that not all gradable antonymous pairs are dominated by Coordinated Antonymy. A closer examination shows that *yi/nan* favors Transitional Antonymy over Coordinated Antonymy, and that *kunnan/rongyi* favors Ancillary Antonymy.

For the ten complementary antonymous pairs examined in this study, Coordinated Antonymy (41.6%) still dominates, followed by Ancillary Antonymy (27.4%), Specified Antonymy (12.8%), and Comparative Antonymy (8.3%). Still, as Table 6 shows, Coordinated Antonymy does not dominate in all complementary pairs. For instance, more co-occurrences featuring *shi/fei*, *jia/zhen*, and *zhengque/cuowu* are assigned to Ancillary Antonymy than to Coordinated Antonymy. It is noted that almost all the tokens in Specified Antonymy and Comparative Antonymy come from *nan/nu*, *nanren/nuren*, *nansheng/nusheng*, *nanxing/nuxing*, and *nanzi/nuzi*. The distribution of the above five pairs will be further discussed in Section 4.2.2.6.

For the six relational antonymous pairs examined in this study, Coordinated Antonymy (32.8%) is still the most dominant function, followed by Transitive Antonymy (23.5%), Ancillary Antonymy (14.1%), and Transitional Antonymy (12.6%). However, Coordinated Antonymy is not always the most dominant category in all relational pairs. For example, Transitional Antonymy is markedly favored by

maifang/maifang. This pair belongs to the domain of business and transaction, and an ownership transition is often involved in business. Transitive Antonymy is favored by *fangdong/fangke*, *laoshi/xuesheng*, and *fumu/haizi*. There exists a power relationship between landlords and tenants, between teachers and students, and between parents and children, so these pairs are very likely to occur in an agent-patient schema, as exemplified in the following examples:

(62) 房東必須嚴格管理房客使用電話，

Fangdong bixu yange **guanli fangke** shiyong dianhua,

landlord must strictly control tenant use telephone

‘Landlords must strictly control tenants’ use of the telephone.’

(63) 老師還須輔導學生依身高選擇合適課桌椅，

Laoshi hai xu fudao **xuesheng** yi shengao xuanze heshi kezhuo yi,

teacher also need help student according to height choose suitable desk chair

‘Teachers also need to help students choose, according to their height, suitable desks and chairs.’

(64) 暑假期間許多父母帶孩子出國旅遊，

Shujia qijian xuduo **fumu dai haizi** chuguo luyou,

summer vacation period many parents bring child go abroad travel

‘During the summer vacation, many parents take their children to go abroad for a trip.’

As for the four directional antonymous pairs examined in the present study, the most dominant textual function is Coordinated Antonymy (50.7%), followed by Negated Antonymy (18.9%), Ancillary Antonymy (14.6%), and Idiomatic Antonymy

(10.5%). Coordinated Antonymy is favored by all directional pairs. In addition, it is found that Negated Antonymy is much more dominant in the directional pairs than in the other categories of oppositeness. In the political domain, directional verbal antonymous pairs often occur in a negated context to show a political party's determination in a political campaign. Here is an example:

(65) 經濟發展只能前進，不能後退，

Jingji fazhan **zhi neng qianji, bu neng houtui**,

economic development only can proceed, not can recede

'The economic development can only proceed and cannot recede.'

In this instance, the determination to improve a country's economy is doubly demonstrated by Negated Antonymy. Idiomatic Antonymy is also relatively more frequent in the directional pairs. In this study, there are 62 database sentences assigned to Idiomatic Antonymy, 40 (64.5%) of which feature Confucius' words *bu jin ze tui* 'either to make progress or recede'.

To summarize, in addition to Coordinated Antonymy and Ancillary Antonymy, which dominate across the four traditional categories of oppositeness, each traditional category still has its idiosyncratically favored textual functions. As Table 8 shows, the gradable pairs favor Transitional Antonymy, the complementary pairs favor Specified Antonymy and Comparative Antonymy, the relational pairs favor Transitional Antonymy and Transitive Antonymy, and the directional pairs favor Negated Antonymy and Idiomatic Antonymy. It is concluded that the database distribution is, to a large extent, affected by an antonymous pair's lexical properties associated with its traditional category of oppositeness.

4.2.2.2 Grammatical Category

In addition to an antonymous pair's traditional category of oppositeness, its grammatical function is found to affect the functional distribution of antonymy to some extent. Table 9 provides the distribution of the antonyms by word class.

Table 9. Distribution of antonymy in Mandarin Chinese by grammatical category

	Adjective		Verbal		Nominal	
	Tokens	%	Tokens	%	Tokens	%
Coordinated	384	34.3%	600	58.8%	513	35.0%
Ancillary	478	42.6%	134	13.1%	171	11.7%
Transitive	39	3.5%	4	0.4%	251	17.1%
Transitional	106	9.5%	36	3.5%	87	5.9%
Specified	1	0.1%	17	1.7%	198	13.5%
Negated	35	3.1%	141	13.8%	3	0.2%
Comparative	9	0.8%	13	1.3%	127	8.7%
Associative	7	0.6%	0	0.0%	63	4.3%
Idiomatic	1	0.1%	52	5.1%	9	0.6%
Distinguished	14	1.2%	3	0.3%	27	1.8%
Negated Ancillary	34	3.0%	8	0.8%	0	0.0%
Simultaneous/Equivalent	8	0.7%	12	1.2%	15	1.0%
Extreme	5	0.4%	0	0.0%	0	0.0%
TOTAL	1121	100.0%	1020	100.0%	1464	100.0%

For the eight adjective antonymous pairs examined in this study, Ancillary Antonymy (42.6%) and Coordinated Antonymy (34.3%) are dominant, collectively accounting for 76.9% of the database sentences. However, the two dominant functions do not equally dominate in each adjective pair. Coordinated Antonymy is favored by *lao/shao* and *dui/cuo*; Ancillary Antonymy is favored by *yi/nan*, *kunnan/rongyi*, *shi/fei*, *jia/zhen*, and *zhengque/cuowu*.

For the seven verbal antonymous pairs examined in this study, Coordinated

Antonymy (58.8%) is much more dominant than the other textual functions. This tendency is observed in all verbal antonymous pairs without exception.

For the ten nominal antonymous pairs examined in this study, Coordinated Antonymy (35.0%) is also favored. However, this tendency is not as strong as in the verbal antonymous pairs (58.8%) because nominal properties are compatible with many other textual functions. First, nouns can fill in the agent-patient schema, so Transitive Antonymy (17.1%) is favored, especially by relational antonymous pairs such as *fangdong/fangke*, *laoshi/xuesheng*, and *fumu/haizi*. Second, nouns can be quantified, so nominal pairs – *nan/nu*, *nansheng/nusheng*, *nanxing/nuxing*, and *nanzi/nuzi* in particular – favor Specified Antonymy (13.5%). Third, nouns are compatible with comparative constructions, so Comparative Antonymy (8.7%) is preferred by the nominal pairs examined in the present study, especially by *nanren/nuren* and *nanxing/nuxing*. Finally, Distinguished Antonymy is found to be slightly preferred by nouns (1.8%) because “one can distinguish between ‘things’ more easily than one can distinguish between ‘actions’” (Jones 2002:145) and lexico-syntactic frames typical of Distinguished Antonymy such as *...yu...zhijian* ‘between...and...’ are highly compatible with nouns.

To further explore whether the functional distribution of an antonymous pair is affected by its grammatical category, two case studies are included in the thesis: *mai/mai* and *maifang/maifang*, and *qianjin/houtui* and *qian/hou*. In the first case, the verbal antonymous pair *mai/mai* strongly favors Coordinated Antonymy (64.0%), which is also favored by the other verbal antonymous pairs in this study. On the other hand, the nominal antonymous pair *maifang/maifang* favors Transitional Antonymy (57.3%), whose typical lexico-syntactic frame *cong...dao...* ‘from...to...’ is compatible with nouns. In the first case study, the functional distribution of antonymy indicates that an antonymous pair’s grammatical category plays a role in how it

functions in text.

However, an antonymous pair's grammatical category is not as influential in the second case study. The verbal antonymous pair *qianjin/houtui* favors Coordinated Antonymy (55.8%) and Negated Antonymy (39.2%). While the former is favored by all verbal antonymous pairs examined in this study, the latter is not a typical favorite for other verbal antonymous pairs. The nominal antonymous pair *qian/hou* favors Coordinated Antonymy and Ancillary Antonymy, both of which are found to be dominant in most antonymous pairs (Section 4.2.1), not particular to nominal antonymous pairs.

To sum up, an antonymous pair's grammatical category affects its functional distribution in text. As shown in Table 9, adjective antonymous pairs in Mandarin Chinese favor Ancillary Antonymy and Coordinated Antonymy, verbal antonymous pairs favor Coordinated Antonymy, and nominal antonymous pairs favor Coordinated Antonymy, Transitive Antonymy, Specified Antonymy, Comparative Antonymy, and Distinguished Antonymy. However, the extent to which an antonymous pair's grammatical category affects its functional distribution varies from pair to pair.

4.2.2.3 Extent of Modernization

The functional distribution of an antonymous pair might be influenced by its extent of modernization. To illustrate this point, *lao/shao* and *lao/nianqing* are compared, with the assumption that *lao/shao* is used more often in *wenyan*-like written Chinese (a style of modern written Chinese with a flavor of Classical Chinese) while *lao/nianqing* is used more often in vernacular Mandarin. As Table 6 shows, almost all the co-occurrences (98.0%) featuring *lao/shao* function in a coordinated manner, with only three exceptions. On the other hand, *lao/nianqing* manifests more textual functions, such as Transitive Antonymy (22.0%), Coordinated Antonymy

(20.0%), Ancillary Antonymy (20.0%), and Transitional Antonymy (12.7%).

A generalization may obtain that an antonymous pair used more often in the vernacular style than in the archaic style is more flexible in its textual function than its *wenyan* Classical counterpart. However, the modern pair *dui/cuo* and its *wenyan* counterpart *shi/fei* seem to form counterexamples to the above generalization. As shown in Table 6, 94.0% of the sentences featuring *dui/cuo* are assigned to Coordinated Antonymy, and 93.1% of the sentences featuring *shi/fei* fall into Ancillary Antonymy. However, a closer examination indicates that the pair *shi/fei* is much less flexible in the environment where it occurs. A typical frame for *shi/fei* is *shi...(er) fei...* ‘be...(but) not...’. Here is an example:

(66) 兩岸關係發展是動態非靜態的

Liang an guanxi fazhan **shi dongtai fei jingtai** de

two bank relationship development be dynamic not static DE

‘The development of the cross-strait relationship is dynamic, not static.’

On the other hand, even though *dui/cuo* usually functions in a coordinated manner, this pair fits with a variety of lexico-syntactic frames, as the following examples show:

(67) 人類生活中並沒有所謂絕對的對與錯，

Renlei shenghuo zhong bing maiyou suowei juegui de **dui yu cuo**,

human life amid really without so-called absolute DE right and wrong

‘In human life, there do not exist absolute right and wrong.’

(68) 現在已不是爭論誰對誰錯的時候，

Xianzai yi bu shi zhenglun **shei dui shei cuo** de shihou,

now already not be argue who right who wrong DE time

‘Now it is already not a time to argue who is right and who is wrong.’

(69) 不論我做的對或錯都有人批評，

Bulun wo zuo de dui huo cuo dou you ren piping,

whether I do DE right or wrong all have person criticize

‘Whether it is right or wrong, what I do is always criticized.’

The lexico-syntactic frames in the above three examples are different: in (67), *dui* and *cuo* are coordinated simply by a conjunction *yu* ‘and’; in (68), *dui* and *cuo* occur in a four-character construction, with the question word *shei* ‘who’ reduplicated; in (69), *dui* and *cuo* are embedded in *bulu...huo...* ‘whether...or...’ to signal exhaustiveness. In other words, compared with *wenyan* antonymous pairs such as *shi/fei* and *lao/shao*, vernacular antonymous pairs such as *dui/cuo* and *lao/nianqing* do exhibit more flexibility in working with a variety of lexico-syntactic frames, or even demonstrate wider functional distribution.

4.2.2.4 Morpho-syllabic Structure

To investigate whether an antonymous pair’s morpho-syllabic structure has an effect on its functional distribution, eight pairs are examined, including *yi/nan* (monosyllabic) and *kunnan/rongyi* (disyllabic), *dui/cuo* and *zhengque/cuowu*, *mai/mai* and *maifang/maifang*, and *jin/tui* and *qianjin/houtui*.

The monomorphemic/monosyllabic pair *yi/nan* (53.3%) favors Transitional Antonymy much more than its double-morphemic/disyllabic counterpart *kunnan/rongyi* (1.0%) does. One of the typical lexico-syntactic frames in Transitional Antonymy is *xian...hou...* ‘first...then...’. When the monosyllabic antonymous pair *yi/nan* fills in this frame, a four-character expression is yielded. As noted,

four-character phrases abound in Mandarin Chinese, so the phrases *xian yi hou nan* and *xian nan hou yi* gain popularity. Here is an example:

(70) 改革分階段進行，先易後難，

Gaige fen jieduan jinxing, **xian yi hou nan**,

reformation divide phase carry out, first easy then difficult

‘The reformation is carried out phase by phase, starting with what is easy and moving on to what is difficult.’

As for *dui/cuo* and *zhengque/cuowu*, the former favors Coordinated Antonymy much more than the latter does (94.0% and 15.0% respectively). Coordinated Antonymy features many four-character lexico-syntactic frames, and the monomorphemic/monosyllabic pair *dui/cuo* fits well. Here are two examples, with *shi...shi...* ‘be...be...’ and *shei...shei...* ‘who...who...’ as the lexico-syntactic frame respectively:

(71) 許多青少年都不知道自己所作所為是對是錯。

Xuduo qingshaonian dou bu zhidao ziji suo zuo suo wei **shi dui shi cuo**.

many teenager all not know oneself SUO do SUO do be right shi wrong

‘Many teenagers do not know whether what they do is right or wrong.’

(72) 誰對誰錯一時之間難以釐清，

Shei dui shei cuo yishi zhijian nan yi liqing,

who right who wrong now amid difficult YI clarify

‘For the time being, it is hard to clarify who is right and who is wrong.’

It might be concluded that monomorphemic/monosyllabic antonymous pairs such as

yi/nan and *dui/cuo* might favor textual functions associated with four-character lexico-syntactic frames.

It has been argued that Mandarin Chinese is evolving towards a state where almost all content words contain at least two syllables to maintain a disyllabic rhythmic pattern (Chao 1968; Li and Thompson 1981). Based on this observation, monomorphemic/monosyllabic words can be argued to exhibit an air of archaism. In addition, most fixed four-character phrases in Mandarin Chinese have an origin in archaic language, so four-character expressions may render an air of archaism in modern Mandarin. Therefore, when a monosyllabic antonymous pair fills in a four-character construction, an air of archaism may arise.

However, not all the differences between a monomorphemic/monosyllabic antonymous pair and its double-morphemic/disyllabic counterpart have to do with their morpho-syllabic structures. In fact, the disyllabic pair *maifang/maifang* (57.3%) favors Transitional Antonymy, a function that is associated with four-character lexico-syntactic frames, more than the monosyllabic pair *mai/mai* (4.0%) does. In this instance, the compatibility between the nominal status of *maifang/maifang* and the lexico-syntactic frame of Transitional Antonymy is more relevant. Also, an antonymous pair's morpho-syllabic structure does not appear to play a role in how *jin/tui* and *qianjin/houtui* function in text, since the functional distribution of *jin/tui* and that of *qianjin/houtui* are similar.

4.2.2.5 Morphological Structure

In this study, the four nominal relational antonymous pairs are further divided into two groups: *maifang/maifang* and *fangdong/fangke*, and *laoshi/xuesheng* and *fumu/haizi*. In the former group, the two members share one morpheme. In the latter group, the two members are independent of each other in terms of their morphological

structures. Table 10 presents the functional distribution of the above four antonymous pairs.

Table 10. Functional distribution of *maifang/maifang*, *fangdong/fangke*, *laoshi/xuesheng*, and *fumu/haizi*

	<i>maifang</i> 'seller'/ <i>maifang</i> 'buyer'		<i>fangdong</i> 'landlord'/ <i>fangke</i> 'tenant'		<i>laoshi</i> 'teacher'/ <i>xuesheng</i> 'student'		<i>fumu</i> 'parents'/ <i>haizi</i> 'child'	
Coordinated	34	22.7%	28	24.6%	50	33.3%	11	7.3%
Ancillary	15	10.0%	16	14.0%	11	7.3%	6	4.0%
Transitive	4	2.7%	43	37.7%	72	48.0%	84	56.0%
Transitional	86	57.3%	0	0.0%	0	0.0%	0	0.0%
Specified	0	0.0%	4	3.5%	6	4.0%	0	0.0%
Negated	1	0.7%	2	1.8%	0	0.0%	0	0.0%
Comparative	5	3.3%	0	0.0%	0	0.0%	0	0.0%
Associative	2	1.3%	10	8.8%	9	6.0%	42	28.0%
Idiomatic	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Distinguished	1	0.7%	11	9.6%	0	0.0%	1	0.7%
Negated Ancillary	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Simultaneous/Equivalent	2	1.3%	0	0.0%	2	1.3%	6	4.0%
Extreme	0	0.0%	0	0.0%	0	0.0%	0	0.0%
TOTAL	150	100.0%	114	100.0%	150	100.0%	150	100.0%

As Table 10 shows, each pair has its own functional profile, which seems to have little to do with morphological structure. It is therefore concluded that the morphology of an antonymous pair does not influence how the pair functions in text.

4.2.2.6 Near Synonyms

In the present study, a set of near synonyms, i.e., *nan/nu*, *nanren/nuren*, *nansheng/nusheng*, *nanxing/nuxing*, and *nanzi/nuzi*, are examined. Although these

pairs are near synonyms, they are very different in how they function in text.

For the above five antonymous pairs, the most dominant textual function is Coordinated Antonymy (42.0%), followed by Specified Antonymy (25.1%) and Comparative Antonymy (15.7%). These three textual functions of antonymy account for 82.8% of the database sentences featuring *nan/nu*, *nanren/nuren*, *nansheng/nusheng*, *nanxing/nuxing*, and *nanzi/nuzi*. A closer examination shows, however, that the above three functions of antonymy are preferred by different pairs.

Coordinated Antonymy is strongly preferred by *nan/nu* and *nanzi/nuzi*. As shown in Table 6, 72.7% of the sentences featuring *nan/nu* and 72.0% of the sentences featuring *nanzi/nuzi* fall into the class of Coordinated Antonymy. Here are two examples:

(73) 死傷者中男、女皆有。

Sishangzhe zhong nan, nu jie you.

casualty amid male, female all have

‘The casualties include males and females.’

(74) 在7日進行的男子和女子2000米接力決賽中，

Zai qi ri jinxing de nanzi han nuzi liang qian mi jieli juesai zhong,

at seven date hold DE male and female two thousand meter relay final in

‘In the male and female 2,000-meter relay final races held on the seventh,’

In (73), *nan* and *nu* are juxtaposed, with *jie* ‘all’ signaling inclusiveness. In (74), *nanzi* and *nuzi* are coordinated by the conjunction *han* ‘and’, which also signals inclusiveness.

Specified Antonymy is favored by *nansheng/nusheng* and *nanxing/nuxing*. As shown in Table 6, 51.3% of the sentences featuring *nansheng/nusheng* and 33.3% of

the sentences featuring *nanxing/nuxing* are assigned to the class of Specified Antonymy. Here are two examples:

(75) 全部考生中，男生三萬三千零八十四人，女生三萬零九百二十七人。

Quanbu kaosheng zhong, **nansheng** san wan san qian ling bashi si ren, **nusheng** san wan ling jiu bai ershi qi ren.

all examinee amid, boy three one thousand three thousand zero eighty four person, girl three one thousand zero nine hundred twenty seven person

‘Among all the examinees, there are 33,084 boys and 30,927 girls.’

(76) 這艘大陸漁船上共有二十三名男性、兩名女性，

Zhe sao Dalu yu chuan shang gong you **ershi san ming nanxing**, **liang ming nuxing**,

this CLASSIFIER China fishing boat on totally have twenty three CLASSIFIER man two CLASSIFIER woman

‘There are 23 men and 2 women on this fishing boat belonging to Mainland China.’

In (75), *nansheng* and *nusheng* are quantified. The figures do not generate any contrastive interpretation, but simply provide additional details. Similarly, the figures in (76) provide further information rather than contrast with each other.

Comparative Antonymy is preferred by *nanxing/nuxing*. For the five near synonymous pairs, there are 118 sentences in total assigned to Comparative Antonymy, and half of these sentences feature *nanxing/nuxing*. Here is an example:

(77) 高血壓、超重、高膽固醇的疾病，其中男性比女性更為嚴重，

Gao xieya, chaozhong, gao danguchun de jibing, qizhong **nanxing** bi

nuxing geng wei yanzhong,

high blood pressure, obesity, high cholesterol DE disease, among male than female more be serious

‘Diseases such as high blood pressure, obesity, and high cholesterol are much more serious in males than in females.’

In this instance, *nanxing* and *nuxing* are compared in terms of their health. The two biologically complementary categories, i.e., male and female, are often brought into a comparison in text.

While *nan/nu*, *nansheng/nusheng*, *nanxing/nuxing* and *nanzi/nuzi* all show a skewed preference for one or two textual functions of antonymy, *nanren/nuren* does not show such a strong tendency. For *nanren/nuren*, the most dominant function is Coordinated Antonymy (31.3%), followed by Transitive Antonymy (22.7%), Comparative Antonymy (18.0%), and Ancillary Antonymy (17.3%). The less skewed functional distribution of *nanren/nuren* suggests that *nanren/nuren* is more flexible than the other four pairs in how they function in text.

As shown in Table 6, *nan/nu*, *nanren/nuren*, *nansheng/nusheng*, *nanxing/nuxing*, and *nanzi/nuzi* have distinct functional distributions. The differences in their functional distributions arise from their subtle semantic differences. This suggests that the context where near synonyms are used reveals how they differ from each other in meaning (Cruse 1986). In other words, “words shall be known by the company they keep” (Mackin 1978:149).

4.2.3 Interim Summary

In Mandarin Chinese, Coordinated Antonymy and Ancillary Antonymy dominate, collectively accounting for 63.2% of the database sentences. In addition, it has been

identified that the functional distribution of antonymy in Mandarin Chinese is affected by an antonymous pair's (1) traditional category of oppositeness, (2) grammatical category, (3) extent of modernization, and (4) morpho-syllabic structure. Whether a pair shares the first morpheme or the second morpheme remains dormant, not playing a role in the functional distribution of antonym co-occurrences in Mandarin Chinese. Finally, a case study of five synonymous pairs related to gender distinction (i.e., *nan/nu*, *nanren/nuren*, *nansheng/nusheng*, *nanxing/nuxing*, and *nanzi/nuzi*) indicates that near synonyms show variations in their textual functions as they are used in text.

While an antonymous pair's inherent lexical properties might affect how it functions in text, it should be noted that any of the above factors does not preclude any antonymous pair from any textual function by definition (Jones 2002:152). For instance, although lexico-syntactic frames associated with Comparative Antonymy are highly compatible with nouns, adjective and verbal antonymous pairs can function in a comparative manner as well:

(78) 錯誤的獨家報導，永遠不如多家正確報導；

cuowu de dujia baodao, yongyuan bu ru duo jia zhengque baodao;

wrong DE exclusive report, forever not like many CLASSIFIER right report

'An incorrect exclusive report is always worse than many correct reports.'

(79) 出大於進24 億美元。

Chu da yu jin ershi si yi mei yuan.

export big than import twenty four hundred million American dollar

'Export is more than import by twenty four hundred million American dollars.'

Therefore, it can be safely concluded that even though the functional distribution of

an antonymous pair might be *affected* by its lexical and structural properties, how it functions in text is not *restricted* by these properties (Jones 2002:144).

4.3 A Cross-linguistic Comparison: Antonym Co-occurrences in Mandarin Chinese and English

In this section, the functional distributions of antonymy in Mandarin Chinese and English are compared. First, the overall distributions in Mandarin Chinese and English will be presented (Section 4.3.1). Second, a more detailed comparison will be carried out in a pair-by-pair manner (Section 4.3.2).

4.3.1 Overall Distributions of Antonymy in Mandarin Chinese and English

The functional distribution of antonymy in Mandarin Chinese and that in English (Jones 2002) are presented in Table 11.

Table 11. Functional distributions of antonymy in Mandarin Chinese and English

	Mandarin Chinese		English (Jones 2002)	
	Tokens	%	Tokens	%
Coordinated	1497	41.5%	1151	38.4%
Ancillary	783	21.7%	1162	38.7%
Transitive	294	8.2%		
Transitional	229	6.4%	90	3.0%
Specified	216	6.0%		
Negated	179	5.0%	62	2.1%
Comparative	149	4.1%	205	6.8%
Associative	70	1.9%		
Idiomatic	62	1.7%	23	0.8%
Distinguished	44	1.2%	161	5.4%
Negated Ancillary	42	1.2%		
Simultaneous/Equivalent	35	1.0%		
Extreme	5	0.1%	40	1.3%
Residual			106	3.5%
TOTAL	3605	100.0%	3000	100%

As Table 11 shows, Coordinated Antonymy and Ancillary Antonymy dominate not only in English but also in Mandarin Chinese. However, a few differences arise in how antonym co-occurrences function in Mandarin Chinese and English. First, though Coordinated Antonymy and Ancillary Antonymy are the most dominant functions in Mandarin Chinese, the two textual functions are not equally dominant, as they are in English. In Mandarin Chinese, Coordinated Antonymy (41.5%) is much more dominant than Ancillary Antonymy (21.7%). Second, some textual functions of antonymy are relatively more dormant in English than in Mandarin Chinese, and vice versa. For example, while Specified Antonymy falls into the residual category in Jones (2002), it accounts for 6.0% of the database sentences in this study. On the other hand, while Distinguished Antonymy accounts for 5.4% of the database sentences in

Jones (2002), only 1.2% of the database sentences in this study are assigned to it.

While Jones (2002) chooses 56 antonymous pairs in English, the present study only chooses 25 antonymous pairs in Mandarin Chinese. The two studies are significantly different in how many antonymous pairs are chosen. Even so, the results of the two studies could have been compared in a sub-categorical fashion. For instance, how do antonymous pairs of the same category of oppositeness (e.g., gradable pairs) function in Mandarin Chinese and in English? However, it seems that such a comparison would not be cross-linguistically significant, given the difference in the size and scope of the two studies. Take gradable pairs, for example. While there are 25 gradable pairs chosen in Jones (2002), there are only 5 gradable pairs chosen in the present study. Due to the skewed quantitative difference, it is decided that we do not carry out cross-linguistic sub-categorical comparisons here. In the following, the focus of comparison is on pairs that are both examined in the present study and in Jones (2002).

4.3.2 Pair-by-pair Comparison

In this section, a pair-by-pair comparison is established. The results are demonstrated in Table 12.¹⁵

¹⁵ Note that the order of the functions in Table 12 is different from that in the previous tables. In Table 12, the textual functions are arranged according to the order in Jones (2002), not their frequencies. The purpose is to explicitly separate the eight functions identified in Jones (2002), the residual functions identified in Jones (2002) and in the present study, and the new functions identified in the present study.

Table 12. Comparison of the results in the present study and Jones (2002)

	<i>yi</i> 'easy'/ <i>nan</i> 'difficult'	<i>kunnan</i> 'difficult'/ <i>rongyi</i> 'easy'	<i>difficult/</i> <i>easy</i>	<i>lao</i> 'old'/ <i>shao</i> 'young'	<i>lao</i> 'old'/ <i>nianqing</i> 'young'	<i>old/</i> <i>young</i>	<i>ai</i> 'to love'/ <i>hen</i> 'to hate'	<i>love/</i> <i>hate</i>
Ancillary	59 39.3%	77 76.2%	19 70.4%	1 0.7%	30 20.0%	20 29.0%	8 5.3%	40 38.5%
Coordinated	10 6.7%	4 4.0%	5 18.5%	147 98.0%	30 20.0%	34 49.3%	122 81.3%	44 42.3%
Comparative	0 0.0%	1 1.0%	0 0.0%	0 0.0%	4 2.7%	6 8.7%	0 0.0%	7 6.7%
Distinguished	0 0.0%	0 0.0%	0 0.0%	0 0.0%	7 4.7%	5 7.2%	0 0.0%	2 1.9%
Transitional	80 53.3%	1 1.0%	0 0.0%	0 0.0%	19 12.7%	0 0.0%	3 2.0%	1 1.0%
Negated	0 0.0%	5 5.0%	0 0.0%	0 0.0%	8 5.3%	1 1.4%	7 4.7%	2 1.9%
Extreme	1 0.7%	3 3.0%	1 3.7%	0 0.0%	1 0.7%	3 4.3%	0 0.0%	2 1.9%
Idiomatic	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
Specified	0 0.0%	0 0.0%		1 0.7%	0 0.0%		0 0.0%	
Associative	0 0.0%	0 0.0%		0 0.0%	7 4.7%		0 0.0%	
Simultaneous/Equivalent	0 0.0%	0 0.0%		0 0.0%	7 4.7%		5 3.3%	
Transitive	0 0.0%	0 0.0%		1 0.7%	33 22.0%		4 2.7%	
Negated Ancillary	0 0.0%	10 9.9%		0 0.0%	4 2.7%		1 0.7%	
Residual			2 7.4%			0 0.0%		6 5.8%
TOTAL	150 100%	101 100%	27 100%	150 100%	150 100%	69 100%	150 100%	104 100%

Table 12. Comparison of the results in the present study and Jones (2002) (continued)

	<i>dui</i> 'right'/ <i>cuo</i> 'wrong'		<i>shi</i> 'right'/ <i>fei</i> 'wrong'		<i>zhengque</i> 'right'/ <i>cuowu</i> 'wrong'		right/ wrong		correct/ incorrect		<i>chengren</i> 'to confirm'/ <i>fouren</i> 'to deny'		confirm/ deny	
Ancillary	7	4.7%	136	90.7%	58	48.3%	36	60.0%	6	33.3%	29	19.3%	0	0.0%
Coordinated	141	94.0%	6	4.0%	18	15.0%	13	21.7%	11	61.1%	104	69.3%	34	100.0%
Comparative	0	0.0%	0	0.0%	2	1.7%	1	1.7%	0	0.0%	0	0.0%	0	0.0%
Distinguished	0	0.0%	3	2.0%	3	2.5%	5	8.3%	1	5.6%	0	0.0%	0	0.0%
Transitional	1	0.7%	0	0.0%	4	3.3%	1	1.7%	0	0.0%	10	6.7%	0	0.0%
Negated	0	0.0%	0	0.0%	21	17.5%	0	0.0%	0	0.0%	3	2.0%	0	0.0%
Extreme	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Idiomatic	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Specified	0	0.0%	0	0.0%	0	0.0%					0	0.0%		
Associative	0	0.0%	0	0.0%	0	0.0%					0	0.0%		
Simultaneous/Equivalent	0	0.0%	0	0.0%	1	0.8%					0	0.0%		
Transitive	0	0.0%	0	0.0%	0	0.0%					0	0.0%		
Negated Ancillary	1	0.7%	5	3.3%	13	10.8%					4	2.7%		
Residual							4	6.7%	0	0.0%			0	0.0%
TOTAL	150	100%	150	100%	120	100%	60	100%	18	100%	150	100%	34	100%

Table 12. Comparison of the results in the present study and Jones (2002) (continued)

	<i>nan</i> 'male'/ <i>nu</i> 'female'		<i>nanren</i> 'male'/ <i>nuren</i> 'female'		<i>nansheng</i> 'male'/ <i>nusheng</i> 'female'		<i>nanxing</i> 'male'/ <i>nuxing</i> 'female'		<i>nanzi</i> 'male'/ <i>nuzi</i> 'female'		female/ male		feminine/ masculine	
Ancillary	4	2.7%	26	17.3%	10	6.7%	12	8.0%	11	7.3%	23	26.4%	37	54.4%
Coordinated	109	72.7%	47	31.3%	25	16.7%	26	17.3%	108	72.0%	43	49.4%	18	26.5%
Comparative	3	2.0%	27	18.0%	25	16.7%	59	39.3%	4	2.7%	1	1.1%	2	2.9%
Distinguished	0	0.0%	7	4.7%	3	2.0%	1	0.7%	1	0.7%	4	4.6%	3	4.4%
Transitional	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.1%	0	0.0%
Negated	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Extreme	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.5%
Idiomatic	1	0.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2.3%	0	0.0%
Specified	32	21.3%	4	2.7%	77	51.3%	50	33.3%	25	16.7%				
Associative	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%				
Simultaneous/Equivalent	0	0.0%	5	3.3%	0	0.0%	0	0.0%	0	0.0%				
Transitive	1	0.7%	34	22.7%	10	6.7%	2	1.3%	1	0.7%				
Negated Ancillary	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%				
Residual											13	14.9%	7	10.3%
TOTAL	150	100%	150	100%	150	100%	150	100%	150	100%	87	100%	68	100%

Table 12. Comparison of the results in the present study and Jones (2002) (continued)

	<i>ying</i> 'to win'/ <i>shu</i> 'to lose'	<i>win/</i> <i>lose</i>
Ancillary	43 28.7%	27 46.6%
Coordinated	64 42.7%	25 43.1%
Comparative	0 0.0%	5 8.6%
Distinguished	1 0.7%	0 0.0%
Transitional	17 11.3%	0 0.0%
Negated	19 12.7%	1 1.7%
Extreme	0 0.0%	0 0.0%
Idiomatic	0 0.0%	0 0.0%
Specified	2 1.3%	
Associative	0 0.0%	
Simultaneous/Equivalent	1 0.7%	
Transitive	0 0.0%	
Negated Ancillary	3 2.0%	
Residual		0 0.0%
TOTAL	150 100%	58 100%

For the English pair *difficult/easy*, two counterparts in Mandarin Chinese are included, i.e., *nan/yi* and *kunnan/rongyi*. Generally speaking, Ancillary Antonymy is dominant in the three pairs, as Table 12 shows. However, the preference of *nan/yi* for Transitional Antonymy is obvious. As discussed in Section 4.2.2.4, one of the typical lexico-syntactic frames in Transitional Antonymy is *xian...hou...* ‘first...then...’, and the monosyllabic antonymous pair *nan/yi* fits well with the frame, which accounts for the preference.

For the English pair *old/young*, there are at least two counterparts in Mandarin Chinese, and *lao/shao* and *lao/nianqing* are chosen for this study. As shown in Table 12, the functional distribution of *lao/nianqing* is more like that of *old/young*. The two pairs favor Coordinated Antonymy, but they also exhibit other textual functions. On the other hand, almost all the sentences featuring *lao/shao* are assigned to Coordinated Antonymy. As discussed in Section 4.2.2.3, an antonymous pair with an air of archaism is usually relatively fixed in its textual function.

For the English pair *love/hate*, *ai/hen* is chosen as its counterpart in this study. As Table 12 demonstrates, while *love/hate* favors not only Coordinated Antonymy but also Ancillary Antonymy, *ai/hen* strongly favors Coordinated Antonymy only. In Mandarin Chinese, Coordinated Antonymy is preferred by verbal antonymous pairs (Section 4.2.2.2) and monosyllabic antonymous pairs (Section 4.2.2.4). Coordinated Antonymy is favored by *ai/hen* since the pair is a verbal and monosyllabic antonymous pair.

For the English pairs *right/wrong* and *correct/incorrect*, there are three counterparts in Mandarin Chinese, i.e., *dui/cuo*, *shi/fei*, and *zhengque/cuowu*. The functional distributions of the five pairs are different from each other, as demonstrated in Table 12. Like *ai/hen*, *dui/cuo* is monosyllabic, so it fits well in the four-character lexico-syntactic frames associated with Coordinated Antonymy. As for *shi/fei*, which

exhibits an air of archaism as the pair *lao/shao* does, its textual function is relatively more fixed than its English counterparts. In fact, the functional distribution of *zhengque/cuowu* is similar to that of *right/wrong*, but *zhengque/cuowu* is used in a negated context far more frequently (Negated Antonymy: 17.5%; Negated Ancillary Antonymy: 10.8%) than *right/wrong* (Negated Antonymy: 0%).

For the English pair *confirm/deny*, *chengren/fouren* is its counterpart in Mandarin Chinese. As Table 12 shows, both pairs favor Coordinated Antonymy in text. Jones (2002:71) observes that politicians and celebrities often use *confirm/deny* in the lexico-syntactic frame *neither...nor...* to avoid questions and express neutrality. The pair *chengren/fouren* is often used in a similar way.

For the English pairs *female/male* and *feminine/masculine*, five pairs are selected as their counterparts in Mandarin Chinese, i.e., *nan/nu*, *nanren/nuren*, *nansheng/nusheng*, *nanxing/nuxing*, and *nanzi/nuzi*. As shown in Table 12, the distributions of the seven pairs are diverse. When the five Chinese pairs as a set are compared with *female/male* and *feminine/masculine*, it is found that the five Chinese pairs related to gender distinction favor Comparative Antonymy and Specified Antonymy. This difference may be attributed to the fact that *female/male* and *feminine/masculine* are more adjectival while their counterparts in Mandarin Chinese are more nominal. Therefore, the five Chinese pairs related to gender distinction prefer textual functions associated with noun-biased lexico-syntactic frames, such as Comparative Antonymy and Specified Antonymy.

For the English pair *win/lose*, *ying/shu* is examined as its counterpart in Mandarin Chinese. As Table 12 shows, both pairs prefer Coordinated Antonymy and Ancillary Antonymy, but *ying/shu* is used in transitional and negated contexts far more frequently than *win/lose*. The pair *ying/shu* sometimes occurs in a transitional context where an athlete's performance is reported, as the sentence in (80)

exemplifies:

(80) 葡萄牙隊先輸後贏，

Putaoya dui **xian shu hou ying**,

Portugal team first lose then win

‘The Portugal team fell behind at the beginning of the game, but finally won.’

Also, the pair *shu/ying* sometimes occurs in a negated context where a political party manifests its determination in a political campaign, as exemplified in (81):

(81) 執政黨這次三合一選舉只能贏不能輸，

Zhizheng dang zhe ci san he yi xuanju **zhi neng ying bu neng shu**,

rule party this CLASSIFIER three combine yi election only can win not can lose

‘In this three-in-one election, the ruling party can only win and cannot lose.’

4.3.3 Interim Summary

To summarize, it might not be methodologically justified to compare the sub-categorical distributions of antonym co-occurrences in English and in Mandarin Chinese, since Jones (2002) and the present study are significantly different in how many pairs are chosen for each subcategory. However, because some equivalent pairs are examined in both studies, a pair-by-pair comparison is highly desirable. Some antonymous pairs in Mandarin Chinese and their counterparts in English are found to show similar functional preference in text. On the other hand, some antonymous pairs

in Mandarin Chinese and their English counterparts are found to be substantially different in how they function in text. For synonymous pairs across languages (e.g., *chengren/fouren* in Mandarin Chinese and *confirm/deny* in English), their functional distributions are supposed to be similar. Differences, if any, that arise might be attributed to discrepancies in language-specific structural properties.

4.4 Summary

In total, thirteen textual functions of antonym co-occurrences in Mandarin Chinese have been identified. Only two functions, i.e., Transitive Antonymy and Negated Ancillary Antonymy, are not identified in Jones (2002). This indicates that Jones' (2002) functional framework of antonymy is cross-linguistically useful in describing how antonym co-occurrences function in text.

Of the thirteen textual functions of antonymy, Coordinated Antonymy (41.5%) and Ancillary Antonymy (21.7%) dominate in Mandarin Chinese, as they do in English. Several factors are identified to affect the functional distribution of antonymy in Mandarin Chinese, including an antonymous pair's (1) traditional category of oppositeness, (2) grammatical category, (3) extent of modernization, and (4) morpho-syllabic structure. In other words, an antonymous pair's functional distribution may be affected by its lexical and structural properties.

Finally, the textual functions of antonym co-occurrences in English and Mandarin Chinese are compared, with the special focus on antonymous pairs that are examined in both Jones (2002) and the present study. Due to structural properties specific to Mandarin Chinese, antonymous pairs in Mandarin Chinese may show functional differences from their equivalents in English.

Chapter 5

Constructions of Antonym Co-occurrences in Mandarin Chinese

In Chapter 4, thirteen textual functions of antonym co-occurrences are identified in Mandarin Chinese. Furthermore, it is shown that the distribution of these functions is affected by various factors. In this chapter, constructions typical of each textual function of antonymy will be identified and discussed.

Traditionally, constructions are regarded as recurrent lexico-syntactic frames (e.g., Biq 2004; Quirk, Greenbaum, Leech and Svartvik 1985; Tao and McCarthy 2001; Thompson 2002). It has been found in Jones (2002) that each textual function of antonymy has its typical lexico-syntactic frames. It is further suggested that these recurrent lexico-syntactic frames might contribute to the association between antonyms. In light of Jones' (2002) findings, this chapter is intended to identify constructions typical of each textual function of antonym co-occurrences in Mandarin Chinese. Note that Negated Ancillary Antonymy and Simultaneous/Equivalent Antonymy are not included in the following discussion because few lexico-syntactic frames are associated with them. Extreme Antonymy is also excluded in the following discussion, as its frequency is too low in Mandarin Chinese.

5.1 Constructions of Coordinated Antonymy

When antonyms co-occur to signal inclusiveness or exhaustiveness of a semantic scale, the most common pattern in Mandarin Chinese is simply to juxtapose antonyms (516 out of 1497, 34.5%), as shown in the following:

(82) 這個語音資料庫將男、女、老、少各種人的聲音錄下來，

Zhe ge yuyin ziliaoku jiang nan, nu, lao, shao ge zhong ren de shengyin lu

xialai,

this CLASSIFIER voice database JIANG male, female, old, young various kind voice record down

‘This voice database records voices from different kinds of people, including males, females, the elderly, and the young.’

In (82), *lao* ‘old’ and *shao* ‘young’ are juxtaposed to represent the entire range, indicating that the database includes a variety of subjects.

In addition, antonyms might be coordinated by various conjunctions in Mandarin Chinese (349 out of 1497, 23.3%), such as *yu* ‘and’, *han* ‘and’, *(yi)ji* ‘and’, and *huo* ‘or’. Here are a few examples:

- (83) 男人與女人的生物時鐘都會在他們邁入三十天關後開始啟動。

Nanren yu nuren de shengwu shizhong dou hui zai tamen mairu sanshi daguan hou kaishi qidong.

man and woman DE biological clock all will at they enter thirty threshold after begin switch on

‘Both men’s and women’s biological clocks will be switched on after they are thirty.’

- (84) 較難及較易的考題將各只佔六分之一，

Jiao nan ji jiao yi de kaoti jiang ge zhi zhan liu-fenzhi-yi,

more difficult and more easy DE questions will respectively only account for one-sixth

‘Questions which are more difficult and easier will account for one-sixth respectively.’

- (85) 在災前或災後舉行的組成的「防災會報」

Zai zai **qian** **huo** zai **hou** juxing de zucheng de “fang zai huibao”
 at disaster before or disaster after hold DE establish DE “prevent disaster
 meeting”
 ‘a “disaster-preventing meeting” that is established and held before or after
 a disaster’

Moreover, Coordinated Antonymy in Mandarin Chinese favors four-character lexico-syntactic frames (340 out of 1497, 22.7%). Consider the following examples:

(86) 網上的生意人有真有假，

Wang shang de shengyiren you **zhen** you **jia**,

Internet on DE businessman have real have fake

‘Some businessmen on the Internet are honest, while others are not.’

(87) 她並不確知這樣的決定是對是錯，

Ta bing bu que zhi zheyang de jueding **shi dui** **shi cuo**,

she really not exactly know this DE decision be right be wrong

‘She does not know exactly whether this decision is right or wrong.’

In (86), the monosyllabic antonymous pair *zhen/jia* ‘real/fake’ fits in the exhaustiveness-signaling lexico-syntactic frame *you...you...* ‘have...have...’, and a four-character phrase is yielded. Similarly, another four-character phrase is yielded in (87) when the monosyllabic antonymous pair *dui/cuo* ‘right/wrong’ fits in the lexico-syntactic frame *shi...shi...* ‘be...be...’, which exhaustively lists all the alternatives. As mentioned in Chapter 4, since Coordinated Antonymy favors four-character lexico-syntactic frames, it is more compatible with monosyllabic antonymous pairs such as *yi/nan* ‘easy/difficult’ and *dui/cuo* ‘right/wrong’ than with

disyllabic antonymous pairs such as *kunnan/rongyi* ‘difficult/easy’ and *zhengque/cuowu* ‘right/wrong’.

Furthermore, coordinated antonyms in Mandarin Chinese might be embedded in the construction ‘interrogative + antonym X + interrogative + antonym Y’, as shown in the following sentence:

(88) 歷史是會證明誰對誰錯。

Lishi shi hui zhengming shei dui shei cuo.

history be will prove who right who wrong

‘History will prove who is right and who is wrong.’

In addition to the monosyllabic interrogative *shei* ‘who’, disyllabic interrogatives such as *heshi* ‘when’ are also found to co-occur with antonyms to signal inclusiveness and exhaustiveness. Here is an example:

(89) 不知何時進、何時退。

Bu zhi heshi jin, heshi tui.

not know when proceed, when recede

‘not knowing when to proceed and when to recede’

Another lexico-syntactic frame in Mandarin Chinese associated with Coordinated Antonymy is *(buguan/bulun/wulun)(shi)...haishi/huoshi...* ‘whether...or...’, as the following sentence exemplifies:

(90) 無論是老或少，都會覺得這是很貼近人心的音樂；

Wulun shi lao huo shao, dou hui jue de zhe shi hen tiejin ren xin de

yinyue.

whether be old or young, all will feel this be very approach person heart

DE music

‘Young or all, all people feel the music touching their heart.’

The antonymous pair *lao/shao* ‘old/young’ in (90) is exhaustive in that it represents all the points on the given scale, not just the two specific points mentioned. In this instance, all the people would be touched by the music, regardless of their age.

Other minor constructions associated with Coordinated Antonymy include *bu...(ye) bu...* ‘not... (also) not...’ and *meiyou...ye meiyou...* ‘without...also without...’, as exemplified in the following sentences:

(91) 對於此一報導既不承認也不否認。

Duiyu ci yi baodao **ji bu chengren ye bu fouren**.

to this one report already not confirm also not deny

‘This report was neither confirmed nor denied.’

(92) 對這個說法沒有承認、也沒有否認，

Dui zhe ge shuofa meiyou chengren, ye meiyou fouren,

to this CLASSIFIER statement without confirm also without deny

‘This statement was neither confirmed nor denied.’

In the above two examples, the antonyms *chengren* ‘to confirm’ and *fouren* ‘to deny’ are considered to be inclusive in that the writer couples the antonyms together to negate the pair (Jones 2002:71). Almost all the sentences involving double negation feature *chengren* ‘to confirm’ and *fouren* ‘to deny’. This pair is doubly negated very often in media discourse to express neutrality.

5.2 Constructions of Ancillary Antonymy

Ancillary Antonymy refers to an antonymous pair serving as a lexical signal of a nearby contrast. In Mandarin Chinese, Ancillary Antonymy (21.7%) is not as dominant as Coordinated Antonymy (41.5%). One of the possible explanations is that few lexico-syntactic frames are associated with Ancillary Antonymy (Jones 2006:205).

In this section, the members of a well-established antonymous pair are labeled X and Y, and the members of its nearby contrast is labeled A and B, with the former mapped to X and the latter to Y. Consider the following example:

(93) 有 男人 狩獵、女人 織布的圖騰。

You nanren shoulie, nuren zhibu de tuteng.

have man hunt, woman weave DE totem

‘There are totems showing that men hunt and women weave.’

In this instance, the combination pattern is XAYB: X is *nanren* ‘man’, Y is *nuren* ‘woman’, A is *shoulie* ‘to hunt’, and B is *zhibu* ‘to weave’. While few lexico-syntactic frames are associated with Ancillary Antonymy, how the four elements are ordered is likely to be cognitively driven.

Mathematically speaking, there should be 24 different combination patterns, i.e., XYAB, XYBA, YXAB, YXBA, and so forth. However, only five of them are attested in the data, i.e., XAYB, AXBY, AXYB, ABXY, and XYAB, as shown in the following. In addition, the five combination patterns are not evenly distributed: XAYB (503 out of 783, 64.2%) is the most dominant, followed by AXBY (201 out of 783, 25.7%), AXYB (69 out of 783, 8.8%), ABXY (6 out of 783, 0.8%), and XYAB (4 out of 783, 0.5%).

(94) 有男人(X)狩獵(A)、女人(Y)織布(B)的圖騰。

You nanren(X) shoulie(A), nuren(Y) zhibu(B) de tuteng.

have man hunt, woman weave DE totem

‘There are totems showing that men hunt and women weave.’

(95) 地雷是一種很有效的武器，埋設(A)容易(X)，但清除(B)困難(Y)。

Dilei shi yi zhong hen youxiao de wuqi, maishe(A) rongyi(X), dan qingchu(B) kunnan(Y).

mine be one CLASSIFIER very effective DE weapon, bury easy, but clear difficult

‘Mines are effective weapons; they are easy to bury, but hard to clear.’

(96) 火災地點存有若干爆炸物(A)，但機場人員稍後予以否認(X)，不過，他們承認(Y)該處貯存燃料(B)。

Huozai didian cun you ruogan baozhawu(A), dan jichang ren yuan shao hou yuyi fouren(X), buguo, tamen chengren(Y) gai chu chucun ranliao(B).

fire location exist have several explosive, but airport staff little later YUYI deny, however, they admit that location store fuel

‘At the location of the fire accident were some explosives, but this was later denied by the airport staff. However, they admitted that that location stored fuel.’

(97) 死者(A)與兇嫌(B)為房東(X)、房客(Y)關係，

Sizhe(A) yu xiong xian(B) wei fangdong(X), fangke(Y) guanxi,

the killed and murderer be landlord, tenant relationship

‘The killed and the murderer are landlord and tenant.’

(98) 男生(X)、女生(Y)試務分別由高雄市立左營(A)、高雄(B)中學負責。

Nansheng(X), nusheng(Y) shi wu fenbie you Gaoxiong Shili Zuoying(A),

Gaoxiong(B) Zhongxue fuze.

boy, girl test affair respectively by Kaohsiung Municipal Zuoying,
Gaoxiong Senior High School responsible

‘Test affairs for boys and girls are respectively taken care of by Kaohsiung
Municipal Zuoying, Gaoxiong Senior High School.’

In each sentence, two mappings are involved: the element A is mapped to the antonym X, and the element B is mapped to the antonym Y. For example, *shoulie* and *zhibu* in (94) are mapped to *nanren* and *nuren* respectively. In (94), the two elements to be mapped together, i.e., *nanren/shoulie* and *nuren/zhibu*, are syntagmatically next to each other. However, mappings sometimes interfere with each other. Consider the sentence in (97). The mapping between *sizhe* and *fangdong* is interfered by *xiongxian*, and the mapping between *xiongxian* and *fangke* is interfered with *fangdong*. When the two elements to be mapped together are syntagmatically next to each other (e.g., *nanren* and *shoulie* in (94)), the cognitive load may be lighter than when the mapping is interfered (e.g., *sizhe* and *fangdong* in (97)). This cognitive motivation might explain why the patterns XAYB and AXBY are highly preferred while the patterns ABXY and XYAB are dispreferred.

In the pattern AXYB, the two mappings (i.e., the mapping between A and X, and the mapping between Y and B) do not interfere with each other, as in the patterns XAYB and AXBY. However, the pattern AXYB is dispreferred. In the pattern XAYB, the mapping scheme is ‘antonym/its nearby contrastive member’, i.e., X-A and Y-B. In the pattern AXBY, the mapping scheme is reverse, i.e., A-X and B-Y. In the above two patterns, the first mapping and the second mapping are symmetric in terms of whether the antonym or its nearby contrastive member occurs first. In the pattern AXYB, however, the antonym follows its nearby contrastive member in the first

mapping while the other antonym precedes the other contrastive member in the second mapping. This asymmetry might make the combination pattern AXYB cognitively dispreferred.

5.3 Constructions of Transitive Antonymy

Identified in Mandarin Chinese but not in English (Jones 2002), Transitive Antonymy refers to contexts in which an antonymous pair fits in an agent-patient schema. In Mandarin Chinese, an agent-patient schema tends to be syntactically realized as a subject-verb-object (SVO) construction, as shown in the following:

(99) 老師(S)體罰(V)學生(O)常常發生，

Laoshi tifa xuesheng changchang fasheng,

teacher physical punishment student often happen

‘Teachers often physically punish students.’

In (99), *laoshi* ‘teacher’ and *xuesheng* ‘student’ fit in an agent-patient schema, the former being the doer of physical punishment while the latter being the done-to one. In Mandarin Chinese, the lexico-syntactic frame ‘subject + verb + object’ is strongly favored by an agent-patient schema.

The lexico-syntactic frame ‘subject + verb + object’ has its passive alternative, with the patient moved to the front and the agent introduced by a passive marker, such as *bei* ‘by’, *zao* ‘by’, and *shou* ‘by’. Here are a few examples:

(100) 我是幼兒園老師，天天看到孩子(O)被父母(S)接走(V)的幸福情景，

Wo shi youeryuan laoshi, tiantian kandao haizi bei fumu jie zou de xingfu qingjing,

I be kindergarten teacher, everyday see child BEI parents pick up away DE
pleasant scene

‘I am a kindergarten teacher; every day I see the pleasant scene that
children are picked up by their parents.’

(101) 抗議的房客(O)往往就遭到房東(S)驅逐(V)

kangyi de fangke(O) wangwang jiu zaodao fangdong(S) quzhu(V)

protest DE tenant tend to just by landlord expel

‘Tenants who protest tend to be expelled by landlords.’

(102) 一名學生(O)疑似受老師(S)體罰(V)

Yi ming xuesheng(O) yisi shou laoshi(S) tifa(V)

one CLASSIFIER student seem by teacher physical punishment

‘A student seems to be physically punished by the teacher.’

In (100), the agent-patient schema is realized by the Chinese passive construction ‘patient + *bei* ‘by’ + agent + verb’. Similarly, the agent in (101) is introduced by *zaodao* ‘by’, and the agent in (102) is introduced by *shou* ‘by’.

In addition, the object in Mandarin Chinese might be moved, by a co-verb such as *ba* and *dui*, to a pre-verbal position. Here are two examples:

(103) 台灣的父母(S)喜歡把孩子(O)送(V)到南非

Taiwan de fumu xihuan ba haizi song dao Nanfei

Taiwan DE parents like BA child send to South Africa

‘Parents in Taiwan like to send their children to South Africa.’

(104) 老師(S)對女學生(O)性騷擾(V) ,

Laoshi dui nu xuesheng xing saorao,

teacher to female student sexual harassment.

‘Teachers impose sexual harassment on female students.’

In each of the above two examples, the object is marked by a co-verb (e.g., *ba* in (103) and *dui* in (104)) before the verb is introduced. Therefore, a subject-object-verb (SOV) construction is yielded. Even though the sentences in (103) and (104) do not conform to the canonical word order SVO in Mandarin Chinese, they are still semantically compatible with the agent-patient schema.

5.4 Constructions of Transitional Antonymy

Transitional Antonymy involves a transition from one antonymous concept to another. A skewed distributional pattern emerges: 34.9% of the database sentences falling into this category feature *yi/nan* ‘easy/difficult’, and 37.6% of them feature *maifang/maifang* ‘seller/buyer’. The above two pairs have their typical lexico-syntactic frames when they function in a transitional manner.

When the pair *yi/nan* is used to signal a transition, the most common lexico-syntactic frame is *xian...hou...* ‘first...then...’ (62 out of 80, 77.5%). The following is an example:

(105) 改革分階段進行，先易後難，

Gaige fen jieduan jinxing, **xian yi hou nan**,

reformation divide phase carry out, first easy then difficult

‘The reformation is carried out phase by phase, starting with what is easy and moving on to what is difficult.’

When the monosyllabic antonymous pair *yi/nan* fills in the frame *xian...hou...*, a four-character expression is yielded. As mentioned in Chapter 4, four-character

phrases abound in Mandarin Chinese, so the phrases *xian yi hou nan* and *xian nan hou yi* gain popularity.

In addition, the lexico-syntactic frame *cong/you...dao...* ‘from...to...’ (15 out of 80, 18.8%) is sometimes used when the pair *yi/nan* occurs in a transitional context:

(106) 命題內容從難到易，

Mingti neirong **cong nan dao yi**,

make test content from difficult to easy

‘The contents of the test are difficult at the beginning and then getting easier,’

(107) 談判的進行，則應該由易到難，

Tanpan de jinxing, ze yinggai **you yi dao nan**,

negotiation DE proceed, then should from easy to difficult

‘The negotiation should move from what is easy on to what is difficult.’

In the above two sentences, the metaphor of journey *cong/you...dao...* is employed to describe transitions (Jones 2002:87).

As for the pair *maifang/maifang*, the most frequent lexico-syntactic frame is *(cong/you)...zhuang(bian) wei/zhuang hui/zhuang xiang...* ‘(from)...turn into...’ (41 out of 86, 47.7%):

(108) 絕大多數工業產品由賣方市場轉變為買方市場，

Jue daduoshu gongye chanpin **you maifang** shichang **zhuangbian wei maifang** shichang,

extremely most industry product from seller market change be buyer market

‘For most industrial products, the seller’s market has turned into the buyer’s market.’

(109) 實際上是將鋼鐵市場從買方市場轉向賣方市場，

Shijishang shi jiang gangtie shichang **cong maifang** shichang **zhuanxiang maifang** shichang,

actually be JIANG steel iron market from buyer market change to seller market

‘In fact, the iron and steel industry is changed from a buyer’s market to a seller’s market.’

In the above two examples, the verb *zhuan* ‘to turn’ is used to express a transition. In (108), *zhuan* combines with *bian* ‘change’ to form a compound verb *zhuanbian* ‘to turn into’. In (109), the preposition *xiang* ‘to’ is attached to *zhuan* to introduce the direction of the transition.

In addition, the pair *maifang/maifang* is sometimes embedded in the lexico-syntactic frame *(cong/you)...xiang/dao...(de) zhuanbian/bianhua* ‘(from)...to...(DE) change’ (22 out of 86, 25.6%) to express transitions, as exemplified in the following:

(110) 實現了煤炭由賣方市場向買方市場的轉變，

Shixian le meitan **you maifang** shichang **xiang maifang** shichang de zhuanbian,

realize ASPECT coal from seller market to buyer market DE change

‘For coal, the change from a seller’s market to a buyer’s market has been realized.’

(111) 隨著鐵路由賣方市場向買方市場的變化，

Suizhe tielu you maifang shichang xiang maifang shichang de bianhua,

as railway from seller market to buyer market DE change

‘For the railway, with the change from a seller’s market to a buyer’s market.’

In these two examples, *zhuambian* ‘change’ and *bianhua* ‘change’ are used as nouns, denoting transitions in the business domain.

The above lexico-syntactic frames also occur with other pairs when used to denote Transitional Antonymy, as the following examples show:

(112) 鄭秀文倒是覺得很有挑戰性，不但要從年輕演到老，

Zhengxiuwen daoshi juede hen you tiaozhan xing, budan yao **cong**
nianqing yan **dao lao**,

Zhengxiuwen yet feel very have challenge quality, not only need from
young play to old

‘However, Zhengxiuwen finds it challenging; she not only needs to play a
role, in which she is gradually getting old,’

(113) 他們面對死刑態度由恨轉為愛，

Tamen miandui sixing taidu you hen zhuan wei ai,

they face death penalty attitude from hate to love

‘Their attitude towards the death penalty changes from hate to love.’

In (112), the construction *cong...dao...*, which is typical of the pair *yi/nan*, is also compatible with the pair *lao/nianqing* ‘old/young’. In (113), the construction *you...zhuan wei...*, which is characteristic of the pair *maifang/maifang*, is also

available to the pair *ai/hen* ‘to love/to hate’.

In fact, almost all the other transition-signaling lexico-syntactic frames identified in this study might be regarded as the variants of the lexico-syntactic frames introduced above:

(114) 先在回教法庭否認而後又承認以致被定罪。

Xian zai Huijiao fating **fouren** er hou you **chengren** yizhi bei dingzui.

first at Islam court deny but then again admit so by declare guilty

‘(Someone) denied at the Islam court but later admitted so that (he) was declared guilty.’

(115) 他只是把錯誤的生日改回正確的而已。

Ta zhishi ba cuowu de shengri gai hui zhengque de eryi.

he only ba wrong DE birthday change back right DE nothing more

‘He simply changed the incorrect birthday to the correct one, and that’s all.’

In (114), the lexico-syntactic frame *xian...er hou you...* ‘first...and then...’ is considered a variant of *xian...hou...*, which is preferred by the pair *yi/nan*. In (115), *gai* ‘to change’ in the lexico-syntactic frame *ba...gai hui...* ‘CO-VERB...change back...’ is synonymous with *zhuan* ‘to turn’ and *bian* ‘to change’, which are highly favored by the pair *maifang/maifang*.

5.5 Constructions of Specified Antonymy

Specified Antonymy refers to contexts in which antonyms are quantified. As in Ancillary Antonymy, few lexico-syntactic frames are associated with Specified Antonymy. Nevertheless, how antonyms and figures are ordered is also of interest.

In this section, the members of a well-established antonymous pair are labeled X and Y, and the figures quantifying the antonymous pair are labeled A and B, with the former mapped to X and the latter to Y. Consider the following example:

(116) 住校的學生只有十七人，其中男生十一人，女生六人。

Zhu xiao de xuesheng zhi you shiqi ren, qizhong **nansheng shiyi ren,**
nusheng liu ren.

live school DE student only have seventeen person, among boy eleven person, girl six person.

‘Only seventeen students live on campus; among them, there are eleven boys and six girls.’

In this instance, the combination pattern is XAYB: X is *nansheng* ‘boy’, Y is *nusheng* ‘girl’, A is *shiyi ren* ‘eleven people’, and B is *liu ren* ‘six people’. As discussed in Section 5.2, how the four elements are ordered might be cognitively driven.

Mathematically speaking, there should be 24 different combination patterns, i.e., XYAB, XYBA, YXAB, YXBA, and so forth. However, only three of them are attested in the data, i.e., XAYB, AXBY, and XYAB, as shown in the following. In addition, the distribution of the three combination patterns is not even: XAYB (131 out of 216, 60.6%) is the most dominant, followed by AXBY (82 out of 216, 38.0%), and XYAB (3 out of 216, 1.4 %).

(117) 住校的學生只有十七人，其中男生(X)十一人(A)，女生(Y)六人(B)。

Zhu xiao de xuesheng zhi you shiqi ren, qizhong **nansheng shiyi ren,**
nusheng liu ren.

live school DE student only have seventeen person, among boy eleven

person, girl six person.

‘Only seventeen students live on campus; among them, there are eleven boys and six girls.’

(118) 他們一行包括十七名(A)女選手(X)、十四名(B)男選手(Y) ,

Tamen yi xing baokuo **shiqi ming(A) nu(X)** xuanshou, **shisi ming(B) nan** xuanshou(Y),

they one group include seventeen CLASSIFIER female player, fourteen CLASSIFIER male player

‘The whole group includes seventeen female players and fourteen male players.’

(119) 北歐吸煙的人更少一些，在男人(X)和女人(Y)中各佔百分之二十八(A)和二十九(B) ,

Beiou xiyan de ren geng shao yixie, zai **nanren(X)** han **nuren(Y)** zhong ge zhan **baifenzhi ershi ba(A)** han **ershi jiu(B)**,

North Europe smoke DE person more few some, at man and woman among respectively account for percent twenty eight and twenty night

‘Smokers in Northern Europe are much fewer, accounting for 28% of men and 29% of women there.’

In each sentence, two mappings are involved: the figure A is mapped to the antonym X, and the figure B is mapped to the antonym Y. When the two elements to be mapped together are syntagmatically next to each other, the cognitive load might be lighter than when the mapping is interfered. As in Ancillary Antonymy, the same cognitive motivation might explain why the patterns XAYB and AXBY are highly preferred over the pattern XYAB.

5.6 Constructions of Negated Antonymy

When an antonym is negated, the most common negative marker in Mandarin Chinese is *bu* ‘not’. A typical lexico-syntactic frame featuring *bu* is ‘(modal +) antonym + *bu* (+ modal) + antonym’, in which the modal might be *shi* ‘be’, *hui* ‘will/can’, *yao* ‘want to’, *ying* ‘should’, *neng* ‘can’, *keyi* ‘can’, and so on. In this lexico-syntactic frame, the first modal is sometimes modified by *zhi* ‘only’ to emphasize the antonym in the positive environment. Here are a few examples:

(120) 這些建議是依據錯誤且不正確的法律分析。

Zhexie jianyi shi yiju cuowu qie bu zhengque de falu fenxi.

these suggestion be according to wrong and not right DE law analysis

‘These suggestions are based on incorrect, not correct, legal analyses.’

(121) 只能贏不能輸，否則將與得牌無緣。

Zhi neng ying bu neng shu, fouze jiang yu de pai wu yuan.

only can win not can lose, or will and get medal without hope

‘We can only win and cannot lose, or we will not be able to get a medal.’

(122) 兩岸間的交流與合作只應前進，不應後退。

Liang an jian de jiaoliu yu hezuo zhi ying qianjin, bu ying houtui.

two bank between DE communication and cooperation only should proceed,

not should recede

‘The cross-strait communication and cooperation should only proceed and should not recede.’

In (120), the negated antonym *zhengque* ‘right’ complements *cuowu* ‘wrong’, and the negation of *zhengque* focuses the reader’s attention on the other antonym *cuowu*. In (121), the negation of *shu* ‘to lose’ lays emphasis on its counterpart *ying* ‘to win’, and

the modal *neng* ‘can’ is modified by *zhi* ‘only’ to show an athlete’s determination. As for the sentence in (122), the negation of *houtui* ‘to move backwards’, along with the adverb *zhi*, highlights the antonym *qianjin* ‘to move forwards’.

In addition to *bu*, other negative markers in Mandarin Chinese, such as *wu* ‘without’, *fei* ‘not’, and *meiyou* ‘without’, might be used to negate antonyms. Here are a few examples:

(123) 我們的目標應當是有進無退，

Women de mubiao yingdang shi **you jin wu tui**,

our DE goal should be have proceed without recede

‘Our goal should be to proceed and never recede.’

(124) 補助對象是實際設籍居住的房客，而非房東。

Buzhu duixiang shi shiji sheji juzhu de **fangke**, er fei **fangdong**.

subsidize target be actual have identify inhabit DE tenant, but not landlord

‘The target to be subsidized is tenants who indeed inhabit here and have a local identity, rather than landlords.’

(125) 只有贏沒有輸的選舉，則是騙人。

Zhiyou **ying meiyou shu** de xuanju, ze shi pianren.

only have win without lose DE election, then be deceiving

‘Elections in which (a certain party) always wins and never loses are deceiving.’

In each of the above six sentences, the negated antonym is preceded by its positive counterpart. In fact, the negative antonym can precede its positive counterpart, as the following sentence exemplifies:

(126) 我不能輸，我應該贏。

Wo bu neng shu, wo yinggai ying.

I not can lose, I should win

‘I cannot lose; I should win.’

Intriguingly, a negative antonym is much more likely to be preceded by its positive counterpart (125 out of 179, 69.8%) than to precede its positive counterpart (54 out of 179, 30.2%). This finding has its cognitive basis. In a negative context, an antonym is negated to augment its counterpart. For the negated antonym to effectively achieve its textual function, it is likely to occur at a salient position in discourse. According to Chafe (1994), such a position is usually at the end of an utterance, where the listener or the reader is cognitively prepared for new ideas. This might explain why a negated antonym is usually preceded by, rather than precedes, its positive counterpart.

5.7 Constructions of Comparative Antonymy

In the data, there are three subcategories of Comparative Antonymy, and each subcategory has its typical lexico-syntactic frames. Of the three subcategories, the most dominant is indirect comparison (112 out of 149, 75.2%), in which antonyms are compared against another independent scale. A typical lexico-syntactic frame of indirect comparison is ‘antonym X + *bi/jiao* ‘than’ + antonym Y + stative verb’ (55 out of 112, 49.1%), as shown in the following:

(127) 義大利女人比男人長壽。

Yidali nuren bi nanren changshou.

Italy woman than man long-lived

‘In Italy, women live longer than men.’

Another lexico-syntactic frame associated with indirect comparison is ‘antonym X + stative verb + *yu* ‘than’ + antonym Y’ (40 out of 112, 35.7%), as shown in the following:

(128) 全省初估約有八千到一萬名自閉症兒童，且男生多於女生。

Quan sheng chu gu yue you ba qian dao yi wan ming zibizheng ertong, qie

nansheng duo yu nusheng

all province roughly estimate about have eight thousand to one ten thousand CLASSIFIER autism kid, and boy many than girl

‘It is estimated that there are roughly 8,000 to 10,000 kids with autism, with boys more than girls.’

In this instance, a comparison is made between the antonyms *nansheng* ‘boy’ and *nusheng* ‘girl’ in terms of autism case numbers. Unlike the sentence in (127), the stative verb *duo* ‘many’ in (128) precedes one of the antonyms (i.e., *nusheng*) instead of being preceded by the antonymous pair. As shown in the following, the construction ‘...stative verb + *yu* ‘than’...’ is inherited from Classical Chinese (Liu 2007; Xiong 2007), and stative verbs in Classical Chinese are usually monosyllabic (Chao 1968; Li and Thompson 1981):

(129) 季氏富於周公。(《論語》：先進)

Jishi fu-yu Zhougong. (*Lun Yu*: Xian Jin)

Jishi rich-than Duke Zhou

‘Jishi is richer than Duke Zhou.’

(130) 苛政猛於虎。(《禮記》：檀弓)

Ke zheng meng-yu hu. (*Li Ji*: Tan Gong)

rigid government fierce-than tiger

‘An oppressive government is fiercer than a tiger.’

(taken from Liu 2007:84-85)

It is observed in the data that the stative verbs in the lexico-syntactic frame ‘antonym + stative verb + *yu* ‘than’ + antonym’, such as *you* ‘great’, *gao* ‘tall’, and *chang* ‘long’, are monosyllabic.

The second subcategory of Comparative Antonymy is equal comparison (18 out of 149, 12.1%). In fact, equal comparison might be regarded as a subtype of indirect comparison: antonyms are compared against another independent scale, but no distinction is made. A common lexico-syntactic frame associated with equal comparison is ‘antonym X + *han/tong/gen* ‘and’ + antonym Y + *yiyang/tongyang* ‘the same’’, as shown in the following:

(131) 男人和女人一樣都有更年期的問題。

Nanren han nuren yiyang dou you gengnianqi de wenti.

man and woman same all have climacteric DE problem

‘Both men and women suffer from climacteric problems.’

The third subcategory of Comparative Antonymy features a ratio between antonyms (19 out of 149, 12.8%). One of its typical lexico-syntactic frames is ‘antonym X + *yu/han* ‘and’ + antonym Y + (*de*) + *bili/bilu* ‘ratio’’, as shown in the following:

(132) 去年台灣男性與女性比例為百分之一百零六點四，

Qu nian Taiwan nanxing yu nuxing bili wei baifenzhi yi bai ling liu dian

si,

last year Taiwan male and female proportion be percent one hundred zero six point four

‘Last year, the proportion of males to females in Taiwan was 106.4%.’

Another lexico-syntactic frame associated with this subcategory is ‘antonym X + *shi/wei* ‘be’ + antonym Y + *de* + number + *bei* ‘time’’, as shown in the following:

(133) 急性心肌梗塞病例由每年四十人增為近年來的一百六十人，其中男性是女性的四倍，

Jixing xinjigengse bingli you mei nian sishi ren zeng wei jin nian lai de yi bai liushi ren, qizhong nanxing shi nuxing de si bei,

acute myocardial infarction case from every year forty person increase be recent year come DE one hundred sixty person, among male be female DE four time

‘For the recent years, the cases of acute myocardial infarction have increased from forty people each year to one hundred and sixty, among whom males are four times more than females.’

5.8 Constructions of Associative Antonymy

Associative Antonymy highlights the connection between antonyms. When the connection between antonyms is highlighted, the context might feature connection-denoting words such as *guanxi* ‘relationship’, *hudong* ‘interaction’, *hezuo* ‘cooperation’, *peihe* ‘cooperation’, *peidui* ‘match’, *jiaoyi* ‘transaction’, *jiaoliu* ‘communication’, *jiehun* ‘to get married’, *xietiao* ‘to negotiate’, and *xiangchu* ‘to get along with’. Here are two examples:

(134) 強化學生與老師的互動關係，

Qianghua xuesheng yu laoshi de hudong guanxi,

enhance student and teacher DE interaction relationship

‘enhance the interaction relationship between students and teacher’

(135) 在幾經討論之後，決定讓房東房客自己去協調。

Zai jijing taolun zhihou, jue ding rang fangdong fangke ziji qu xietiao.

at several discuss after, decide let landlord tenant oneself go negotiate

‘After some discussions, it has been decided that landlords and tenants should negotiate by themselves.’

In (134), although *xuesheng* ‘student’ and *laoshi* ‘teacher’ are coordinated by *yu* ‘and’, they do not function in an inclusive manner. Rather, the noun phrase *hudong guanxi* ‘interaction relationship’ reflects the connection between the antonyms. In (135), the connection-signaling verb *xietiao* ‘to negotiate’ also reflects the association between *fangdong* ‘landlord’ and *fangke* ‘tenant’.

5.9 Constructions of Idiomatic Antonymy

Sometimes antonyms are embedded in idioms, proverbs, and clichés. All the idiomatic contexts identified in this study, along with their examples and token numbers, are listed in the following:

(136) *bu jin ze tui* (40)

所謂不進則退，必須自我要求，

Suowei bu jin ze tui, bixu ziwo yaoqiu,

so-called not proceed then recede, must myself discipline

‘It is said that (learning) is either to keep making progress or recede, so we

should discipline ourselves.’

(137) **jin** ke gong, **tui** ke shou (12)

採取「**進**可攻，**退**可守」的靈活立場，

Caiqu ‘**jin** ke gong, **tui** ke shou’ de linghuo lichang,

adopt ‘proceed can attack, recede can defend’ DE flexible standpoint

‘Adopt a flexible standpoint so that we can be either aggressive or defensive.’

(138) Changjiang **hou** lang tui **qian** lang (6)

長江**後**浪推**前**浪，這位老將出人意料地接連輸給薩姆索諾夫三局，

Changjiang **hou** lang tui **qian** lang, zhe wei lao jiang churen yiliao de
jielian shu gei Samusuonuofu san ju,

the Yangtze River back wave push front wave, this CLASSIFIER old general
unexpectedly ADVERB MARKER continuously lose to Samsonov three
CLASSIFIER

‘Each generation outdoes the last. Unexpectedly, the experienced player
was defeated three games in a row by Samsonov.’

(139) **qian** wu gu ren, **hou** wu lai zhe (2)

冰川風化的亂石擋住了去路，看到「**前**無古人，**後**無來者」，

Bingchuan fonghua de luan shi dangzhu le qulu, kandao ‘**qian** wu gu ren,
hou we lai zhe’,

glacier weathering DE messy stone block ASPECT road, see ‘front without
ancient person, back without come person’

‘Weathered stones from the glacier scattered, blocking the road ahead (of
me); (I) see no predecessor and no follower.’

(140) **nan** you fen, **nu** you gui (1)

要本著「**男**有分、**女**有歸」的群體關懷，

Yao ben zhe ‘**nan you fen, nu you gui**’ de qunti guanhuai,
should base ASPECT ‘man have job, woman have home’ DE group concern
‘The government should take care of the society and make sure that
everyone has a job and a home.’

(141) **jia xi zhen zuo** (1)

李勝峰害怕新黨候選人**假戲真作**，

Lishengfong haipa Xin Dang houxuanren **jia xi zhen zuo**,

Lishengfong afraid New Party candidate fake play real do

‘Lishengfong is afraid that the candidate from New Party will take
advantage of the cheat.’

5.10 Constructions of Distinguished Antonymy

Distinguished Antonymy alludes to the inherent semantic dissimilarity of an antonymous pair by collocating antonyms with words signaling differences or distinctions, i.e., “d-words” (Jones 2002:84). In Mandarin Chinese, words signaling differences or distinctions include *chabie* ‘difference’, *chayi* ‘difference’, *butong* ‘difference’, *fenqing* ‘to distinguish’, *fenbian* ‘to distinguish’, *fenpei* ‘to distribute’, and so on. Here are two examples:

(142) 不論民主與獨裁、**男人與女人**等差別，

Bulun minzhu yu ducai, nanren yu nuren deng chabie,

regardless democracy and dictatorship, man and woman etc. distinction

‘Regardless of the distinction between democracy and dictatorship, man
and woman, and so on,’

(143) 幫助幹部戰士分清**是與非**、

Bangzhu ganbu zhanshi **fenqing shi** yu **fei**,

help leader warrior distinguish right and wrong

‘help leading warriors to distinguish between right and wrong,’

In (142), the noun *chabie* ‘difference’ signals the inherent semantic dissimilarity between *nanren* ‘man’ and *nuren* ‘woman’. In (143), the distinction between *shi* ‘right’ and *fei* ‘wrong’ is highlighted by the distinction-signaling verb *fenqing* ‘to distinguish’.

Moreover, spatial metaphors such as *chaju* ‘difference in distance’ and *jiexian* ‘boundary’ are sometimes used to highlight the inherent semantic dissimilarity of an antonymous pair, as exemplified in the following:

(144) 劃清正確與錯誤的界限；

Hua qing **zhengque** yu **cuowu** de **jiexian**;

draw clear right and wrong DE boundary

‘draw a clear boundary between right and wrong’

In this sentence, the distinction between *zhengque* ‘right’ and *cuowu* ‘wrong’ is described as *jiexian* ‘boundary’.

In addition to spatial metaphors, metaphors of war such as *zhanzheng* ‘war’, *jingzheng* ‘competition’, *duikang* ‘fight’, and *dou* ‘to fight; to compete’ are also employed to signal inherent distinctions (Chiang and Duann 2007), as the following example shows:

(145) 在答詢之間有如男人與女人的戰爭，

Zai daxun zhijian youru **nanren** yu **nuren** de **zhanzheng**,

at Q&A between like man and woman DE war

‘The Q&A is like a war between men and women.’

In (145), the noun *zhanzheng* ‘war’ signals rivalry between different parties, so the reader’s attention might be drawn to the inherent semantic dissimilarity between *nanren* ‘man’ and *nuren* ‘woman’.

5.11 Summary

In Chapter 5, lexico-syntactic frames typical of each textual function of antonym co-occurrences in Mandarin Chinese have been identified. Table 13 summarizes the findings. The findings have several theoretical and empirical implications.

Table 13. Constructions typical of each textual function of antonym co-occurrences in Mandarin Chinese

Functions	Typical Constructions
Coordinated Antonymy	<ul style="list-style-type: none"> • juxtaposition: XY • antonym X + conjunction (e.g., <i>yu</i> ‘and’) + antonym Y • four-character phrases (e.g., <i>shi dui shi cuo</i> ‘be right be wrong’) • interrogative + antonym X + interrogative + antonym Y • (<i>buguan/bulun/wulun</i>)(<i>shi</i>)...<i>haishi/huoshi</i>... ‘whether...or...’ • double negation (e.g., <i>bu... (ye) bu...</i> ‘not... (also) not...’)
Ancillary Antonymy	<ul style="list-style-type: none"> • XAYB (X and Y form an antonymous pair; A and B form a nearby contrast.) • AXBY (ditto)
Transitive Antonymy	<ul style="list-style-type: none"> • subject + verb + object • patient + passive marker (e.g., <i>bei</i> ‘by’) + agent + verb • subject + co-verb (e.g., <i>dui</i> ‘to’) + object + verb
Transitional Antonymy	<ul style="list-style-type: none"> • <i>xian...hou...</i> ‘first...then...’ • <i>cong/you...dao...</i> ‘from...to...’ • (<i>cong/you</i>)...<i>zhuan(bian) wei/zhuan hui/zhuan xiang</i>... ‘(from)...turn into...’ • (<i>cong/you</i>)...<i>xiang/dao...(de) zhuanbian/bianhua</i> ‘(from)...to...(DE) change’
Specified Antonymy	<ul style="list-style-type: none"> • antonym X + number + antonym Y + number • number + antonym X + number + antonym Y
Negated Antonymy	<ul style="list-style-type: none"> • (<i>zhi</i> ‘only’ +)(modal +) antonym X + <i>bu</i> ‘not’ (+ modal) + antonym Y

Functions (cont.)	Typical Constructions (cont.)
Comparative Antonymy	<ul style="list-style-type: none"> • antonym X + <i>bi/jiao</i> ‘than’ + antonym Y + stative verb • antonym X + monosyllabic stative verb + <i>yu</i> ‘than’ + antonym Y • antonym X + <i>han/tong/gen</i> ‘and’ + antonym Y + <i>yiyang/tongyang</i> ‘the same’ • antonym X + <i>yu/han</i> ‘and’ + antonym Y + (<i>de</i>) + <i>bili/bilu</i> ‘ratio’ • antonym + <i>shi/wei</i> ‘be’ + antonym + <i>de</i> + number + <i>bei</i> ‘time’
Associative Antonymy	<ul style="list-style-type: none"> • connection-denoting words: <i>guanxi</i> ‘relationship’, <i>hudong</i> ‘interaction’, <i>hezuo</i> ‘cooperation’, <i>peihe</i> ‘cooperation’, <i>peidui</i> ‘match’, <i>jiaoyi</i> ‘transaction’, <i>jiaoliu</i> ‘communication’, <i>jiehun</i> ‘to get married’, <i>xietiao</i> ‘to negotiate’, <i>xiangchu</i> ‘to get along with’, etc.
Idiomatic Antonymy	<ul style="list-style-type: none"> • <i>bu <u>jin</u> ze <u>tui</u></i> • <i><u>jin</u> ke gong, <u>tui</u> ke shou</i> • <i>Changjiang <u>hou</u> lang tui <u>qian</u> lang</i> • <i><u>qian</u> wu gu ren, <u>hou</u> wu lai zhe</i> • <i><u>nan</u> you fen, <u>nu</u> you gui</i> • <i><u>jia</u> xi <u>zhen</u> zuo</i>
Distinguished Antonymy	<ul style="list-style-type: none"> • d-words: <i>chabie</i> ‘difference’, <i>chayi</i> ‘difference’, <i>butong</i> ‘difference’, <i>fenqing</i> ‘to distinguish’, <i>fenbian</i> ‘to distinguish’, <i>fenpei</i> ‘to distribute’, etc. • spatial metaphors: <i>chaju</i> ‘difference in distance’ and <i>jiexian</i> ‘boundary’, etc. • metaphors of war: <i>zhanzheng</i> ‘war’, <i>jingzheng</i> ‘competition’, <i>duikang</i> ‘fight’, and <i>dou</i> ‘to fight; to compete’, etc.

First, this study complements Lien (1989), which focuses on four-character phrases with antonyms serving as affixes, such as *dong-ben-xi-pao* ‘east-run-west-run; to run about’, *qian-si-hou-xiang* ‘front-think-back-think; to think over and over again’, and *fei-lai-fei-qu* ‘fly-come-fly-go; to fly back and forth’. The present study, on the other hand, examines four-character phrases in which antonyms are semantically fundamental, such as *shi dui shi cuo* ‘be right be wrong’ and *cong nan dao yi* ‘from what is difficult to what is easy’. The four-character phrases examined in this study exhibit various textual functions, such as signaling inclusiveness or exhaustiveness (e.g., *shi dui shi cuo* ‘be right be wrong’), describing a transition (e.g., *cong nan dao yi* ‘from what is difficult to what is easy’), and laying emphasis (e.g., *zhi jin bu chu* ‘only get in not get out’).

Second, by identifying lexico-syntactic frames associated with each textual function of antonymy in Mandarin Chinese, this study shows that textual functions can be understood in terms of collocational associations (Stubbs 2001). It is impossible to directly observe how antonyms function in text, for textual functions are an invisible mental phenomenon. Nevertheless, the textual function of an antonymous pair can be reliably inferred through words occurring around the pair, i.e., the lexico-syntactic frame in which the pair is embedded. For example, when antonyms co-occur in the lexico-syntactic frame *(buguan/bulun/wulun)(shi)...haishi/huoshi...* ‘whether...or...’, their inclusiveness is signaled. On the other hand, when antonyms co-occur in a context featuring a d-word (e.g., *chabie* ‘difference’), it is their distinction that is enhanced. These examples suggest that the textual function of an antonymous pair is not independent of the environment.

Third, the observation that there exist associations between lexico-syntactic frames and textual functions of antonymy in Mandarin Chinese confirms the findings in recent studies on antonymy. Traditionally, antonymy has been regarded as a

paradigmatic opposition stored in the lexicon (e.g., Deese 1962, 1964). That is, words are associated with each other as antonyms because they are interchangeable in most contexts. However, recent studies (e.g., Charles and Miller 1989; Fellbaum 1995; Jones 2002, 2006; Justeson and Katz 1991; Stubbs 2001) have observed that how antonyms function in text is inferable from the co-text, i.e., the lexico-syntactic frame in which the antonymous pair is embedded. It is thus suggested that antonymy might be considered to be a syntagmatic relation in addition to a paradigmatic opposition. The alternative view to antonymy has had significant implications for how antonyms are acquired. According to the Co-occurrence Hypothesis (Charles and Miller 1989:360), the association between antonyms might arise from the fact that they co-occur far more frequently than by chance. Furthermore, the association between antonyms might be enhanced by recurrent lexico-syntactic frames in which antonyms are embedded (Justeson and Katz 1991).

Chapter 6

Antonym Sequences in Mandarin Chinese

In Chapter 5, constructions typical of each textual function of antonym co-occurrences in Mandarin Chinese are identified. Another intriguing issue that seems to have constructional implications is whether antonyms prefer a particular sequence in text. As in English (Jones 2002), it has been found in Mandarin Chinese that antonyms prefer a particular sequence in text (Section 6.1). There are two more research questions in this chapter. First, for a certain antonymous pair in Mandarin Chinese, why is a given sequence preferred over the reverse of the preferred sequence (Section 6.2)? Second, since the canonical sequence is not preferred at all times, what are the factors that determine the use of a canonical antonym sequence (Section 6.3)? In this chapter, it will be demonstrated that the most dominant factor affecting antonym sequences in Mandarin Chinese is the notion of positivity. In addition, the notion of positivity plays an essential part in how stabilized a given canonical antonym sequence is.

6.1 Sequence Statistics

This section presents the sequence statistics, identifying which sequence is preferred by a given antonymous pair in Mandarin Chinese and how stabilized the preferred sequence is. Table 14 lists all the antonymous pairs examined in the present study, in order of the extent to which they adhere to their canonical sequence in text. In Table 14, the canonical antonym sequences in Mandarin Chinese are recorded in Column 1, the number of the database sentences that follow the canonical sequence of a given antonymous pair is recorded in Column 2, the percentage of the database sentences that follow the canonical sequence of a given antonymous pair is recorded

in Column 3, the number of the database sentences that do not follow the canonical sequence of a given antonymous pair is recorded in Column 4, the percentage of the database sentences that do not follow the canonical sequence of a given antonymous pair is recorded in Column 5, and the total of the database sentences for each antonymous pair is recorded in Column 6.

Table 14. Antonym sequences in Mandarin Chinese

Canonical Sequences	Tokens of Canonical Sequences		Tokens of Non-canonical Sequences		TOTAL
		%		%	
<i>lao</i> ‘old’/ <i>shao</i> ‘young’	148	98.7%	2	1.3%	150
<i>dui</i> ‘right’/ <i>cuo</i> ‘wrong’	145	96.7%	5	3.3%	150
<i>shi</i> ‘right’/ <i>fei</i> ‘wrong’	143	95.3%	7	4.7%	150
<i>qianjing</i> ‘to move forwards’/ <i>houtui</i> ‘to move backwards’	111	92.5%	9	7.5%	120
<i>nan</i> ‘male’/ <i>nu</i> ‘female’	138	92.0%	12	8.0%	150
<i>jin</i> ‘to move forwards’/ <i>tui</i> ‘to move backwards’	137	91.3%	13	8.7%	150
<i>ai</i> ‘to love’/ <i>hen</i> ‘to hate’	130	86.7%	20	13.3%	150
<i>yi</i> ‘easy’/ <i>nan</i> ‘difficult’	130	86.7%	20	13.3%	150
<i>jin</i> ‘to enter’/ <i>chu</i> ‘to go out’	129	86.0%	21	14.0%	150
<i>nansheng</i> ‘male’/ <i>nusheng</i> ‘female’	123	82.0%	27	18.0%	150
<i>fangdong</i> ‘landlord’/ <i>fangke</i> ‘tenant’	85	74.6%	29	25.4%	114
<i>jia</i> ‘fake’/ <i>zhen</i> ‘real’	111	74.0%	39	26.0%	150
<i>nanren</i> ‘male’/ <i>nuren</i> ‘female’	109	72.7%	41	27.3%	150
<i>nanzi</i> ‘male’/ <i>nuzi</i> ‘female’	106	70.7%	44	29.3%	150
<i>qian</i> ‘front; before’/ <i>hou</i> ‘back; after’	105	70.0%	45	30.0%	150
<i>chengren</i> ‘to confirm’/ <i>fouren</i> ‘to deny’	103	68.7%	47	31.3%	150
<i>nanxing</i> ‘male’/ <i>nuxing</i> ‘female’	102	68.0%	48	32.0%	150
<i>mai</i> ‘to buy’/ <i>mai</i> ‘to sell’	101	67.3%	49	32.7%	150
<i>fumu</i> ‘parents’/ <i>haizi</i> ‘child’	98	65.3%	52	34.7%	150
<i>laoshi</i> ‘teacher’/ <i>xuesheng</i> ‘student’	97	64.7%	53	35.3%	150
<i>maifang</i> ‘seller’/ <i>maifang</i> ‘buyer’	92	61.3%	58	38.7%	150
<i>zhengque</i> ‘right’/ <i>cuowu</i> ‘wrong’	72	60.0%	48	40.0%	120
<i>kunnan</i> ‘difficult’/ <i>rongyi</i> ‘easy’	59	58.4%	42	41.6%	101
<i>lao</i> ‘old’/ <i>nianqing</i> ‘young’	83	55.3%	67	44.7%	150
<i>ying</i> ‘to win’/ <i>shu</i> ‘to lose’	82	54.7%	68	45.3%	150

It is shown in Table 14 that antonyms in Mandarin Chinese prefer a particular sequence in text. For example, *lao* precedes *shao* in 98.7% of the database sentences featuring this pair, and *dui* precedes *cuo* in 96.7% of the database sentences featuring this pair. Meanwhile, it is also shown in Table 14 that the order of the two antonyms is more stabilized in some cases than in others. For instance, while *lao* precedes *shao* in as high as 98.7% of the database sentences featuring this pair, *ying* precedes *shu* in only 54.7% of the database sentences featuring this pair. The first question to be addressed is what factors affect the sequence in which antonyms co-occur.

6.2 Sequence Principles

In Section 6.1, it has been found that antonyms in Mandarin Chinese prefer a particular sequence over the reverse of the preferred sequence. This section is intended to find out what factors determine which sequence is preferred by a given antonymous pair in Mandarin Chinese.

6.2.1 Positivity

In English, antonyms bearing positive associations are given priority over those bearing negative associations (Jones 2002:124). In Mandarin Chinese, the notion of positivity is also influential in antonym sequences. For example, the word *dui*, which is more positive than its antonymous partner *cuo*, is found to precede *cuo* in 96.7% of the database sentences featuring this pair. The word *shi*, like its modern counterpart *dui*, is also found to precede the negative member *fei* in 95.3% of the database sentences featuring this pair. Similarly, the word *ai* is considered more positive than *hen*, and *ai* is found to precede *hen* in 86.7% of the database sentences featuring this pair.

The pair *yi/nan* is also influenced by positivity. The word *nan* bears negative

associations in that what is difficult is usually considered time-consuming and obstructive. It is shown in Table 14 that *yi* precedes *nan* in 86.7% of the database sentences featuring this pair. However, the same tendency is not observed in the disyllabic counterpart *kunnan/rongyi*. As shown in Table 14, *kunnan* precedes *rongyi* in 58.4% of the database sentences featuring this pair. A possible explanation for this pattern is that modern disyllabic antonyms may be more flexible with respect to occurrence sequencing.¹⁶

Another pair influenced by positivity is *chengren/fouren* (Jones 2002:125). The word *chengren* precedes its negative partner *fouren* in 68.7% of the database sentences featuring this pair.

The pair *zhengque/cuowu* patterns with its monosyllabic counterpart *dui/cuo*, with the positive antonym *zhengque* preceding the negative antonym *cuowu* in 60.0% of the database sentences featuring this pair. However, this tendency is not as strong as in the pair *dui/cuo*. Like the modern disyllabic antonymous pair *kunnan/rongyi*, the antonyms *zhengque* and *cuowu* also show more flexibility in their sequence.

The word *ying* precedes its antonymous partner *shu* more often (54.7%) than the reverse (45.3%). However, the close figures can hardly confirm a preference either way.

The notion of positivity may be perceived in metaphorical terms. For instance, spatial terms such as *qianjin*, *jin*, and *qian* may be regarded as metaphorically positive, for *jin* and *qian* are associated with success and progress. The corpus data confirm this speculation. It is shown in Table 14 that *qianjin* precedes *houtui*, *jin* precedes *tui*, *jin* precedes *chu*, and *qian* precedes *hou* in 92.5%, 91.3%, 86.0%, and 70.0% of the database sentences respectively.

¹⁶ For why modern disyllabic antonyms may be more flexible with respect to occurrence sequencing, see Section 6.3.

The notion of positivity may be perceived in terms of socio-cultural backgrounds. There exists a striking preference in English that *male* precedes *female* in 82.8% of the database sentences featuring this pair (Jones 2002:127). In Mandarin Chinese, the same tendency is also observed. As shown in Table 14, *nan* precedes *nu*, *nansheng* precedes *nusheng*, *nanren* precedes *nuren*, *nanzi* precedes *nuzi*, and *nanxing* precedes *nuxing* in 92.0%, 82.0%, 72.7%, 70.7%, and 68.0% of the database sentences respectively. Jones (2002:127) recognizes gender as one of the independent factors that affect antonym sequences. In fact, the gender effect in antonym sequencing may be regarded as reflecting social prejudices against women. Traditionally speaking, men are associated with positive characteristics, such as ability and independence, while women are associated with negative characteristics, such as inability and dependence (Litoselliti 2006). Therefore, the notion of positivity—in socio-cultural terms—can explain the sequencing pattern in antonyms of gender distinction.

As shown in Table 14, *fangdong* precedes *fangke*, *fumu* precedes *haizi*, and *laoshi* precedes *xuesheng* in 74.6%, 65.3%, and 64.7% of the database sentences featuring these pairs. In terms of socio-cultural backgrounds, the above patterns can also be accounted for by the notion of positivity. There exists a power relationship between landlords and tenants, between parents and children, and between teachers and students, for landlords rent out houses to tenants, parents raise children, and teachers educate students. The words *fangdong*, *fumu*, and *laoshi*, which are associated with social power, are considered more positive than their antonymous counterparts and thus given priority.

A relevant question arises immediately. That is, why are antonyms with positive associations given priority over those with negative associations? A possible explanation is that concepts bearing positive associations are usually psychologically preferred, so these concepts may be more readily accessible to speakers or writers

than those bearing negative associations. In other words, antonyms given priority are cognitively favored. Since some concepts are universally positive and preferred, the pairs *shi/fei*, *dui/cuo*, *zhengque/cuowu*, *ai/hen*, *yi/nan*, *chengren/fouren*, and *ying/shu* are comparable with their English equivalents *right/wrong*, *love/hate*, *easy/difficult*, *confirm/deny*, and *win/lose* in terms of their canonical sequences (Jones 2002).

The only discrepancy between Mandarin Chinese and English observed in this study is that while *lao* precedes *shao* in 98.7% of the Chinese database sentences featuring this pair, *young* precedes *old* in 71.0% of the English database sentences featuring this pair (Jones 2002:122). The concept of youth is considered positive in the Western culture because it is associated with energy, strength and vitality, so it is natural that *young* precedes *old* far more frequently in English than the reverse. On the other hand, the concept of oldness is considered positive in the Chinese culture because it is associated with maturity, caution and responsibility, so it is not surprising that *lao* precedes *shao* far more frequently in Mandarin Chinese than the reverse. In this instance, the notion of positivity is still relevant, but it is defined in cultural terms.

Finally, there seems to exist a counterexample, i.e., *jia/zhen*. The word *zhen* is more positive than its antonymous partner *jia*, but it is preceded by *jia* in 74.0% of the database sentences featuring this pair. In fact, almost all the sentences with *jia* preceding *zhen* are assigned to Ancillary Antonymy, featuring the lexico-syntactic frame *jia...zhen...* ‘fake...real...’. Here is an example:

(146) 企圖製造「假車禍、真搶劫」案件

Qitu zhizao 'jia chehuo, zhen qiangjie' anjian

attempt produce 'fake accident, real robbery' case

'attempt to produce "fake accident, real robbery" cases'

The lexico-syntactic frame *jia...zhen...* is frequently used in journalism to uncover crimes and conspiracies, surprising the reader or the audience. This lexico-syntactic frame might be considered specific to journalistic texts. For the pair *jia/zhen*, the notion of positivity is overridden by genre-specific concerns. With the sentences featuring the lexico-syntactic frame *jia...zhen...* left aside, almost all the other sentences featuring the pair *zhen/jia* have the negative word *jia* following its positive counterpart *zhen*, as shown in the following sentence:

(147) 網上的生意人有真有假，

Wang shang de shengyiren you zhen you jia,

Internet on DE businessman have real have fake

‘Some businessmen on the Internet are honest, while others are not.’

In (147), *zhen* and *jia* are coordinated in a four-character lexico-syntactic frame, with the positive antonym preceding the negative one. The notion of positivity still works in (147).

6.2.2 Frequency

The notion of positivity cannot account for the sequence pattern observed in the pair *mai/mai* ‘to buy/to sell’. Table 14 shows that *mai* ‘to buy’ precedes *mai* ‘to sell’ in 67.3% of the database sentences featuring this pair. Another factor that may account for this case is frequency. In the Chinese Word Sketch Engine, there are 38,236 hits featuring *mai* ‘to buy’ and 25,951 hits featuring *mai* ‘to sell’. A word with a higher frequency may be more readily accessible to the speaker or the writer than a word with a lower frequency, and this may explain why *mai* ‘to buy’ is given priority over *mai* ‘to sell’.

Intriguingly, while *mai* ‘to buy’ usually precedes *mai* ‘to sell’ in text, *maifang* ‘buyer’ is more frequently preceded by *maifang* ‘seller’ in text (61.3%). This pattern cannot be accounted for by frequency, for *maifang* ‘buyer’ (2,749 hits) is more frequent than *maifang* ‘seller’ (1,731 hits) in the Chinese Word Sketch Engine. In addition, it is hard to tell which antonym is more positive or is associated with power in the business domain. The reason why *maifang* ‘seller’ precedes *maifang* ‘buyer’ more often is not clear yet.

6.2.3 Why do antonyms sometimes co-occur in an uncanonical sequence?

In Mandarin Chinese, the notion of positivity has been identified to be the most dominant factor in antonym sequencing. However, as shown in Table 14, no matter how stabilized a particular sequence is, there always exist cases in which antonyms co-occur in the reverse order. Consider the following sentences:

(148) 奇蹟是怎樣出現的，正是應了「至難出於至易」這句古語。

Qiji shi zenyang chuxian de, zhengshi ying le ‘zhi **nan** chu yu zhi **yi**’ zhe ju gu yu.

miracle BE how appear DE, exactly reflect ASPECT ‘extreme difficult come out from extreme easy’ this CLASSIFIER old saying

‘How miracles take place exactly reflect the old saying ‘what is extremely difficult arises from what is extremely easy.’

(149) 買票有難也有易。

Mai piao you **nan** ye you **yi**.

buy ticket have difficult also have easy

‘Buying (train) tickets is sometimes difficult and sometimes easy.’

Table 14 shows that *yi* precedes *nan* in 86.7% of the database sentences featuring this pair, but this tendency is not observed in the above two sentences. That is, the notion of positivity is ignored in the above two sentences.

For sentences adhering to sequencing principles, the perspective taken is the default one, thus yielding the default, canonical sequence. However, as the above two examples show, perspective shifts might take place from time to time, yielding the other sequencing order. In (148), *qiji* ‘miracle’, which apparently departs from the laws of nature and thus seldom occurs, allows the speaker or the writer to take a perspective from which *nan* is more readily accessible, so the unusual sequence *nan/yi* is yielded. Similarly, *mai piao* ‘to buy tickets’ in (149), which refers to buying train tickets for the Chinese New Year holiday, is also assumed to be difficult. Given this background, the writer perceives *nan* as having more priority than *yi*. As the two examples show, while the perspective taken is usually constrained by sequencing principles, the context may motivate a perspective shift (Verhagen 2007). Therefore, reverse antonym sequences sometimes take place.

6.2.4 Interim Summary

In Mandarin Chinese, antonym sequences are mostly determined by positivity and frequency. As in English, the notion of positivity is the most influential factor in Mandarin Chinese. That is, antonyms bearing positive associations are given priority over those bearing negative associations. However, when the context triggers perspective shifts, the above principles may be ignored, giving rise to reverse antonym sequences.

6.3 Sequencing Preferences

It has been found in Section 6.1 that antonyms in Mandarin Chinese prefer a

particular sequence in text. In addition, as shown in Table 14, some antonym pairs show more stability in the preferred sequencing than others. For example, *lao* precedes its antonymous partner *shao* in as high as 98.7% of the database sentences featuring this pair, while *ying* precedes its antonymous counterpart *shu* in only 54.7% of the database sentences featuring this pair. This section is intended to identify factors that contribute to the stabilization of antonym sequencing.

Note that the antonymous pairs in Table 14 are listed in order of the extent to which they adhere to their respective preferred sequence in text. At the top of Table 14 is the pair *lao/shao*, with *lao* preceding *shao* in almost every database sentence (98.7%). In addition to the pair *lao/shao*, another five antonymous pairs (i.e., *dui/cuo*, *shi/fei*, *qianjin/houtui*, *nan/nu*, and *jin/tui*) appear in their preferred sequence in more than 90% of the database sentences featuring these pairs. Moreover, another four antonymous pairs (i.e., *ai/hen*, *yi/nan*, *jin/chu*, and *nansheng/nusheng*) appear in the preferred sequence in more than 80% of the database sentences featuring these pairs. Further down Table 14, five antonymous pairs show a bias between 70% and 80%, and seven antonymous pairs between 60% and 70%. Only three antonymous pairs score below 60%.

A tendency identified in English is that “the more positive the associations, the more marked the pattern tends to be” (Jones 2002:124). For instance, *true*, *rich*, and *win*, which carry positive connotations, are given priority over their antonymous partner (i.e., *false*, *poor*, and *lose*) in as high as 88.7%, 86.3%, and 84.5% of the database sentences respectively. On the other hand, the word *innocence*, which is negatively associated with naivety but remains more positive than its antonymous counterpart *guilt*, precedes *guilt* in a majority of sentences featuring this pair, but the preferred sequence is relatively less marked (65.9%).

The same tendency is observed in Mandarin Chinese. Those at the top of Table

14, such as *dui* (96.7%), *shi* (95.3%), *qianjin* (92.5%), and *ai* (86.7%), do bear strongly positive associations. On the other hand, some antonyms are positive, but their positive association is less strong than the above examples. Their sequence patterns are found to be less stabilized. For example, the word *chengren* ‘to confirm; to admit’, which means strengthening a claim by conceding it as true, is semantically more positive than its antonymous counterpart *fouren* ‘to deny’, but its positive association is less strong than that of *dui*, *shi*, *qianjin*, and *ai*. As shown in Table 14, *chengren* precedes *fouren* in 68.7% of the database sentences featuring this pair, which is relatively low.

Intriguingly, most antonymous pairs in Mandarin Chinese do not pattern with their relatives in terms of how stabilized their preferred sequencing is. It is found that monosyllabic antonymous pairs adhere to the preferred sequencing more often than their disyllabic counterparts. As shown in Table 14, *lao* precedes *shao* in 98.7% of the database sentences featuring *lao/shao* while *lao* precedes *nianqing* in only 55.3% of the database sentences featuring *lao/nianqing*; *dui* precedes *cuo* and *shi* precedes *fei* in 96.7% and 95.3%, respectively, of the database sentences featuring the two pairs while *zhengque* precedes *cuowu* in only 60.0% of the database sentences featuring *zhengque/cuowu*. Since most monosyllabic words in Mandarin Chinese are inherited from Classical Chinese (Chao 1968; Li and Thompson 1981), most monosyllabic antonymous pairs in Mandarin Chinese are more stabilized than their disyllabic counterparts not only in terms of functions they exhibit and constructions in which they are embedded, but also in terms of the sequence in which their members co-occur.

As shown in Table 14, the monosyllabic antonymous pair *nan/nu* adheres to its preferred sequence in as high as 92.1% of the database sentences featuring this pair, and its disyllabic counterparts, i.e., *nansheng/nusheng* (82.0%), *nanren/nuren* (72.7%),

nanzi/nuzi (70.7%), and *nanxing/nuxing* (68.0%), show different degrees of stabilization in terms of antonym sequences.

In terms of antonym sequences, the monosyllabic antonymous pair *yi/nan* also shows a high degree of stabilization. As shown in Table 14, 86.7% of the database sentences featuring *yi/nan* adhere to the preferred sequence. On the other hand, the modern disyllabic counterpart, *kunnan/rongyi*, has not been conventionalized into the frame ‘positive antonyms preceding negative antonyms’ in Mandarin Chinese. That is, *kunnan* precedes *rongyi* (58.4%) more often than *rongyi* precedes *kunnan* (41.6%). The small difference between the two figures can hardly confirm the sequencing preference either way.

A seemingly unusual antonymous pair is *qianjin/houtui*, which is disyllabic but adheres to its preferred sequencing more often (92.5%) than its monosyllabic counterparts *jin/tui* (91.3%) and *qian/hou* (70.0%) do. It is likely that the disyllabic pair *qianjin/houtui* is conventionalized into the frame ‘positive antonyms preceding negative antonyms’ in Mandarin Chinese, as its monosyllabic counterpart *jin/tui* is. As for the pair *qian/hou*, its ranking is relatively low in Table 14 although *qian*, like *jin* and *qianjin*, bears positive associations. The antonyms *qian* and *hou* often co-occur to define a period of time, with the latter preceding the former. Here is an example:

(150) 行政院及各部會首長，應於立法委員改選後、就任前，即行總辭，

Xingzheng yuan ji ge bu hui shouzhang, ying yu lifaweyuan **gaixuan hou**,
jiuren qian, ji xing zong ci,

administration institute and each organization director, should at legislator
reelect after, inaugurate before, right do totally resign

‘All the officers at the Administration Yuan and related organizations
should resign after legislators are reelected and before they are

inaugurated.’

In (150), *gaixuan* ‘to reelect’ and *jiuren* ‘to inaugurate’ co-occur in the lexico-syntactic frame ...*hou*...*qian* ‘after...before...’ to delimit a period of time. It is suggested that frames of this kind have made the sequence *qian/hou* less stabilized than the sequences *qianjin/houtui* and *jin/tui*.

At the bottom of Table 14 is the pair *ying/shu*. While *ying* is highly positive, the sequence *ying/shu* accounts for only 54.7% of the database sentences featuring this pair. This pattern is incompatible with the finding in Jones (2002). In English, 84.5% of the database sentences featuring the pair *win/lose* conform to the canonical sequence *win/lose*. In Mandarin Chinese, *sheng* is synonymous with *ying* and *bai* is synonymous with *shu*. Interestingly, *jia dui da sheng yi dui* ‘Team A won the game against Team B’ is synonymous with *jia dui da bai yi dui* ‘Team A defeated Team B’. This suggests that the antonyms *sheng* and *bai* can be interpreted from different perspectives, with the same meaning yielded. It is likely that *ying* and *shu* is also more open to either perspective, so there is no apparent preferred sequencing. Another reason is that the pair *ying/shu* may have not been conventionalized into the frame ‘positive antonyms preceding negative antonyms’.

6.4 Summary

This chapter is intended to answer the following three questions. First, do antonym pairs in Mandarin Chinese manifest preferred sequencing in text? Second, what makes a given sequence preferred over the reverse order? Third, what contributes to the stabilization of a preferred sequencing?

The findings of this study support those in Jones (2002), the focus of which is on antonyms in English. First, most antonym pairs in Mandarin Chinese show a preferred

sequencing in text. Second, in terms of antonym sequences, almost all the antonymous pairs investigated in this study are compatible with their equivalents in English. The only difference is that *lao* precedes *shao* and *nianqing* more often while *young* precedes *old* more often. This discrepancy is speculated to have arisen from how youth and oldness are differently perceived in the two cultures.

In Section 6.2, it is found that the most important factor affecting antonym sequencing in Mandarin Chinese is the notion of positivity (Section 6.2.1). A positive word is usually given priority over its negative antonymous partner because the former is cognitively preferred. However, the context sometimes licenses perspective shifts so that the reverse antonym sequencing may show up.

As shown in Table 14, antonym sequencing preference varies from case to case. Just as in English (Jones 2002:124), the more positive the first member of an antonymous pair is, the more preferred the canonical sequence tends to be (Section 6.3). However, other lexical properties, such as whether a given antonymous pair is a remnant from Classical Chinese, might override the notion of positivity, giving rise to the sequencing discrepancy observed between synonymous pairs such as *lao/shao* and *lao/nianqing*.

Chapter 7

Concluding Remarks

This study investigates how antonyms in Mandarin Chinese function in text by applying Jones' (2002) functional framework of antonymy to data in Mandarin Chinese. In Chapter 1, three research questions are posed. First, to what extent is Jones' (2002) functional framework of antonymy able to account for data in Mandarin Chinese? Second, what constructions can serve as lexico-syntactic frames for antonyms in Mandarin Chinese? Third, do antonyms favor a particular sequence in text? If so, then why? In Chapters 4, 5, and 6, the results of our analysis are presented and discussed. This chapter will summarize the findings (Section 7.1), pinpoint the implications of our findings (Section 7.2), and offer some suggestions for further research on antonymy in Mandarin Chinese (Section 7.3).

7.1 Findings of the Thesis

The present study takes a data-based perspective to investigate how antonyms in Mandarin Chinese function in text. The analysis of the study is based mainly on Jones' (2002) functional framework of antonymy. Our Chinese data are found to manifest the eight textual functions of antonymy identified in Jones (2002), i.e., Ancillary Antonymy, Coordinated Antonymy, Comparative Antonymy, Distinguished Antonymy, Transitional Antonymy, Negated Antonymy, Extreme Antonymy, and Idiomatic Antonymy. In addition, three residual textual functions of antonymy identified by Jones (2002) also show up in our Chinese data, i.e., Specified Antonymy, Associative Antonymy, and Simultaneous/Equivalent Antonymy. Still, all the above textual functions cannot account for all the Chinese data. Two new textual functions of antonym co-occurrences are identified. The first one is Transitive Antonymy, i.e.,

antonyms co-occur in an agent-patient schema. The other is Negated Ancillary Antonymy, i.e., antonyms co-occur to signal a nearby contrast, and one of the members is negated. In total, thirteen different textual functions of antonymy have been identified in Mandarin Chinese. Among the thirteen textual functions, Coordinated Antonymy and Ancillary Antonymy are the most dominant, collectively accounting for 63.2% of the database sentences.

To establish a representative set of antonymous pairs in Mandarin Chinese, the present study includes antonymous pairs in different traditional categories of oppositeness. It is found that an antonymous pair's traditional category of oppositeness affects its functional distribution. Typically, gradable pairs favor Transitional Antonymy, complementary pairs favor Specified Antonymy and Comparative Antonymy, relational pairs favor Transitional Antonymy and Transitive Antonymy, and directional pairs favor Negated Antonymy and Idiomatic Antonymy.

It is also found in the present study that an antonymous pair's grammatical category affects how it functions in text. Typically, adjective pairs favor Ancillary Antonymy or Coordinated Antonymy, verbal pairs favor Coordinated Antonymy, and nominal pairs favor Coordinated Antonymy, Transitive Antonymy, Specified Antonymy, Comparative Antonymy, and Distinguished Antonymy.

Some antonymous pairs in Mandarin Chinese have a counterpart in Classical Chinese that is still used in Modern Mandarin. In the present study, an antonymous pair's extent of modernization is taken into consideration. It is found that vernacular pairs (e.g., *dui/cuo* and *lao/nianqing*), in contrast with their counterparts in Classical Chinese (e.g., *shi/fei* and *lao/shao*), exhibit wider functional distribution or more flexibility in working with a variety of lexico-syntactic frames.

Due to the fact that Modern Chinese is evolving towards a situation where almost all content words contain at least two syllables to maintain a disyllabic

rhythmic pattern (Chao 1968; Li and Thompson 1981), an antonymous pair's morpho-syllabic structure is also taken into consideration in the present study. In general, monosyllabic antonymous pairs prefer textual functions associated with four-character lexico-syntactic frames, such as Coordinated Antonymy and Transitional Antonymy.

In short, how antonyms in Mandarin Chinese function in text is influenced, to a certain extent, by their traditional category of oppositeness, grammatical category, extent of modernization, and morpho-syllabic structure. However, even though an antonymous pair's functional distribution may be *affected* by various linguistic factors, it does not follow that how an antonymous pair functions in text is *restricted* by its these factors (Jones 2002:144).

A set of synonymous pairs, i.e., *nan/nu*, *nanren/nuren*, *nansheng/nusheng*, *nanxing/nuxing*, and *nanzi/nuzi* 'man/woman', show variations as they are used in text. Coordinated Antonymy is strongly preferred by *nan/nu* and *nanzi/nuzi*, Specified Antonymy is favored by *nansheng/nusheng* and *nanxing/nuxing*, and Comparative Antonymy is preferred by *nanxing/nuxing*. The pair *nanren/nuren*, unlike its synonymous partners, illustrates the least skewed functional distribution. The findings suggest that distributional differences may reflect how near synonyms differ from each other in meaning.

The textual functions of antonymy in English and Mandarin Chinese are compared, with the focus on antonymous pairs selected both in Jones (2002) and in the present study. It is assumed that synonymous pairs in different languages (e.g., *confirm/deny* in English and *chengren/fouren* in Mandarin Chinese) perform similar textual functions. However, cross-linguistic discrepancies in how synonymous pairs function in text may arise from language-specific structural characteristics.

From a constructional perspective, each textual function of antonymy in

Mandarin Chinese has its typical lexico-syntactic frames. In other words, it is found that how antonyms function in text depends largely on the collocational environment.

In Mandarin Chinese, there are many four-character lexico-syntactic frames that allow antonym co-occurrences, as identified in the following:

(151) Coordinated Antonymy

- ...antonym X...antonym Y (e.g., *shi* **dui** *shi* **cuo** ‘be right be wrong’)
- monosyllabic interrogative + antonym X + monosyllabic interrogative + antonym Y (e.g., *shei* **dui** *shei* **cuo** ‘who right who wrong’)

(152) Transitional Antonymy

- *xian* + antonym X + *hou* + antonym Y ‘first...then...’
- *cong/you* + antonym X + *dao* + antonym Y ‘from...to...’

(153) Negated Antonymy

- (*zhi* ‘only’) + antonym X + *bu* ‘not’ + antonym Y ‘only...not...’

(154) Comparative Antonymy

- antonym X + monosyllabic stative verb + *yu* ‘than’ + antonym Y

(155) Idiomatic Antonymy

- *bu* **jin** *ze* **tui** ‘either to make progress or recede’

The above lexico-syntactic frames fit especially well with monosyllabic antonymous pairs, yielding a large number of four-character phrases.

Finally, it is found that antonym co-occurrences in Mandarin Chinese prefer a particular sequencing in text. In Mandarin Chinese, a positive word tends to precede its negative antonymous partner (e.g., *dui/cuo* ‘right/wrong’), and a word with a higher frequency tends to precede its antonymous partner (e.g., *mai/mai* ‘to buy/to sell’). The notion of positivity, which can be interpreted in psychological,

metaphorical, and socio-cultural terms, is the most dominant factor affecting antonym sequencing in Mandarin Chinese. In addition, the more positive the first member of an antonymous pair is, the more preferred the canonical sequence tends to be. However, when perspective shifts take place in text, the other sequencing order may show up.

7.2 Implications of the Thesis

Jones' (2002) functional framework of antonymy is sufficient to describe how antonyms in English function in different modes of communication (Jones 2006, 2007; Jones and Murphy 2005). The present study shows that Jones' (2002) functional framework of antonymy is also useful in describing the textual functions of antonym co-occurrences in Mandarin Chinese, thus lending cross-linguistic support to this framework.

The present study pursues a corpus-based approach to exploring the textual functions of antonym co-occurrences in Mandarin Chinese by analyzing authentic data in a quantitative manner. The present study suggests that a collaboration between discourse analysis and corpus linguistics can complement traditional intuition-based approaches to language by probing into the actual use of language (Biber, Conrad and Reppen 1998; Halliday 1991, 1992; Stubbs 2001).

Following Jones (2002), this study takes a constructional perspective to establish a collocational profile for each textual function of antonymy in Mandarin Chinese. It is found that each textual function of antonymy has its own lexico-syntactic frames. The syntagmatic aspect of antonymy, i.e., recurrent linguistic formulas for antonym co-occurrences, is revealed in co-text. This view complements the traditional approach, which emphasizes the paradigmatic aspect of antonymy (Stubbs 2001:39).

This study also touches on the cognitive facet of antonymy in Mandarin Chinese. For example, the proximity effect explains mapping preferences in Ancillary

Antonymy (Section 5.2) and Specified Antonymy (Section 5.5). In addition, sequencing preferences in Mandarin Chinese reflect the notion of positivity in the mind.

To summarize, the present study of antonym co-occurrences in Mandarin Chinese has a number of methodological and theoretical implications. This study attempts a collaboration between discourse analysis and corpus linguistics, and lends cross-linguistic support to Jones' (2002) functional framework of antonymy. Moreover, this study takes a constructional perspective to explore the syntagmatic dimension of antonymy, identifying typical lexico-syntactic frames for antonym co-occurrences in Mandarin Chinese. Furthermore, this study offers a cognitive account on mapping preferences in Ancillary Antonymy and Specified Antonymy and antonym sequencing in Mandarin Chinese.

7.3 Suggestions for Further Research

The present study adopts Jones' (2002) functional framework of antonymy to investigate antonym co-occurrences in Mandarin Chinese. In the following, several directions for further research on antonymy in Mandarin Chinese are briefly discussed.

First, the findings of the present study may need to be further verified with large-scale corpora of written language, for the corpus used in the present study, i.e., the Chinese Word Sketch Engine, only contains newspaper texts. As suggested in Kilgarriff (1997) and Stubbs (2001), different corpora have different sources and purposes, so a given research question may obtain different results from different corpora. While the Chinese Word Sketch Engine makes the present study comparable with Jones (2002) in terms of data sources (Section 3.1), it is fair and reasonable to ask whether antonym co-occurrences in Mandarin Chinese function similarly in

newspaper texts and, say, literary works.

Second, the present study focuses on the textual functions of antonym co-occurrences in written language. Further research may be conducted on how antonyms in Mandarin Chinese function in other modes of communication, such as spoken language. As proposed in Jones (2006, 2007), antonyms in English have different functional distributions in different modes of communication (Section 2.2.2.3). In Mandarin Chinese, how antonyms function might be affected by modes of communication as well. In functional linguistics, it is of interest and significance to the functional approach as to how a given language-internal phenomenon, such as antonymy, is affected by language-external factors, such as modes of communication (Biq 2000:378).

Third, the model adopted by the present study, i.e., Jones' (2002) functional framework of antonymy, may have acquisitional applications. For example, one of the issues worthy of our further pursuit is how antonyms function in child-produced and child-directed speech. This issue has been addressed in English (Jones and Murphy 2005) (Section 2.2.2.3), and it should be addressed in Mandarin Chinese as well.

In fact, all of the three directions for further research on antonymy in Mandarin Chinese direct our attention to a multi-corpus, cross-linguistic approach to antonym co-occurrences. While the rapid development of corpus linguistics has made it possible to examine antonym co-occurrences from a usage-based perspective, no corpus is fairly representative of all the genres, styles, modes, topics, and sources (Kilgarriff 1997; Stubbs 2001). Meanwhile, for Jones' (2002) functional framework of antonymy to gain more descriptive power, it needs to be examined in as many languages as possible, with language-specific structural features taken into account. These challenges encourage further research on antonym co-occurrences to take on a multi-corpus, cross-linguistic approach so that we can gain a deeper understanding of

how such a language-internal phenomenon interacts with language-specific properties and language-external factors.

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