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**The Antonym Construction:  
A Comparison between English and Mandarin**

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Submitted in accordance with the requirements for the degree of  
Doctor of Philosophy

York St John University

School of Education, Language and Psychology

October 2023

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## Abstract

All languages have antonym pairs but may differ in the ways of using them. The use of antonymy in the form of antonym co-occurrence has been examined and compared between English and Mandarin with the conclusion that antonym pairs could co-occur on lexical level in Mandarin but not in English. That might be refuted with the identification of the antonym co-occurrence on lexical level in English like *frenemy* (friend-enemy) and *humblebrag*.

Therefore, this study identified and collected the items of antonym co-occurrence on lexical level from in-use English and Mandarin to examine and compare within the framework of Construction Grammar. The collected items were curated for antonymy consistency and the status of being lexicalized. The final sample included 105 English and 161 Mandarin antonym constructs. The two collections were examined and compared from the perspectives of form-meaning schema, headedness, syntactic categories, and inheritance links.

In addition to the typological differences between English and Mandarin, the observation demonstrates that the antonym constructions in both languages make use of the unity and contrast inherent in antonymy to communicate the meanings more than a binary contrast. Both can be nominalized or adverbialized, have the property of neutralized headedness, and are a complex of multi-inheritance links across lexical and phrasal levels.

Construction Grammar proves effective in facilitating this original joint analysis of the English and the Mandarin antonym constructions. Such effectiveness is credited to observing the antonym constructs as a form-meaning pair in use. Construction is thus proposed as a parameter in future contrastive studies. With the universality of the understanding and use of antonymy on lexical level confirmed between English and Mandarin, further research including more languages will be worthwhile in verifying such cognitive and linguistic universal.

# Contents

<b>List of Tables</b> .....	<b>vii</b>
<b>List of Figures</b> .....	<b>viii</b>
<b>List of Abbreviations and Acronyms</b> .....	<b>ix</b>
<b>Chapter 1 Introduction</b> .....	<b>1</b>
1.1 Research background .....	1
1.2 Thesis aims and scope .....	4
1.3 Data coding and presentation .....	6
1.4 Thesis structure .....	8
<b>Chapter 2 Theoretical Framework</b> .....	<b>10</b>
2.1 Contrastive linguistics and linguistic typology .....	10
2.1.1 Contrastive linguistics and typological parameters .....	10
2.1.2 Typological differences between English and Mandarin .....	12
2.2 Construction Grammar .....	20
2.2.1 Usage-based model of grammar .....	20
2.2.2 Usage-Based Construction Grammar .....	24
2.2.3 Construction Grammar and Morphology .....	28
2.2.4 Construction Grammar and contrastive linguistics .....	32
<b>Chapter 3 Antonymy and Antonym Constructions between English and Mandarin</b> .....	<b>37</b>
3.1 Antonymy .....	38
3.1.1 Definition of antonym .....	39
3.1.2 Classification of antonyms .....	45
3.2 English antonym construction .....	48
3.3 Mandarin antonym construction .....	63
3.4 Comparison of English and Mandarin antonym constructions .....	71
3.5 Conclusion .....	79
<b>Chapter 4 Data Collection and Curation</b> .....	<b>81</b>
4.1 Data source and data collection .....	81
4.2 Antonym criteria and data curation .....	86
4.3 Construct criteria and data curation .....	91

4.4 Summary .....	104
<b>Chapter 5 Analysis and Comparison of English and Mandarin Antonym Constructions.....</b>	<b>105</b>
5.1 Antonym construction in English.....	108
5.1.1 The schema of English antonym construction.....	109
5.1.2 The syntactic categories of English antonym construction .....	114
5.1.3 The headedness of English antonym construction.....	117
5.1.4 The inheritance links of English antonym construction .....	120
5.1.5 Summary .....	124
5.2 Antonym construction in Mandarin.....	127
5.2.1 The schema of Mandarin antonym construction .....	127
5.2.2 The syntactic categories of Mandarin antonym construction .....	132
5.2.3 The headedness of Mandarin antonym construction .....	136
5.2.4 The inheritance links of Mandarin antonym construction.....	138
5.2.5 Summary .....	143
5.3 Comparison of English and Mandarin antonym constructions .....	146
5.3.1 Comparison of the schemas of English and Mandarin antonym constructions.....	146
5.3.2 Comparison of the syntactic categories of English and Mandarin antonym constructions .....	150
5.3.3 Comparison of the headedness of English and Mandarin antonym constructions .....	153
5.3.4 Comparison of the inheritance links of English and Mandarin antonym constructions .....	156
5.4 Summary .....	159
<b>Chapter 6 Discussion and Future Directions .....</b>	<b>162</b>
6.1 Discussion and future directions for research on antonym construction.....	162
6.1.1 Key characteristics of antonym construction.....	163
6.1.2 Future directions for research on antonym construction .....	174
6.2 Discussion and future directions for Construction Grammar.....	178
6.2.1 The effectiveness of Construction Grammar in observation and comparison.....	179
6.2.2 Construction Grammar and other linguistic notions.....	182
6.3 Discussion and future directions for contrastive linguistics and typological parameters.....	185
<b>Chapter 7 Conclusion.....</b>	<b>190</b>
7.1 Findings and implications .....	190
7.2 Limitations and future directions .....	192
<b>Appendices .....</b>	<b>195</b>
Appendix 1: Candidates for English antonym constructs .....	195

Appendix 2: English pairs of antonymy elements retained after antonymy curation.....	201
Appendix 3: Contextual examples for English antonym constructs.....	205
Appendix 4: Semantic patterns of English antonym construction .....	214
Appendix 5: Syntactic categories of English antonym construction .....	222
Appendix 6: Candidates for Mandarin antonym constructs .....	227
Appendix 7: Mandarin pairs of antonymy elements retained after antonymy curation .....	240
Appendix 8: More English interpretations of Mandarin antonym constructs .....	250
Appendix 9: Semantic patterns of Mandarin antonym construction .....	257
Appendix 10: Syntactic categories of Mandarin antonym construction.....	264
<b>References .....</b>	<b>269</b>

## List of Tables

Table 4.1 Excluded Mandarin candidates due to lowest frequency.....	83
Table 4.2 English items excluded after the application of the antonym criteria.....	89
Table 4.3 Mandarin items excluded after the application of the antonym criteria .....	90
Table 4.4 English antonym constructs.....	94
Table 4.5 Mandarin antonym constructs .....	99

## List of Figures

Figure 3.1 Contrary .....	47
Figure 3.2 Complementary .....	47
Figure 3.3 Converse .....	47
Figure 3.4 The active-passive antonym construction (Jones et al., 2012: 117) .....	49
Figure 3.5 The continuum of the antonym constructs with tokens (Yang, 2007a: 35).....	69
Figure 5.1 The syntactic categories of English antonym construction .....	117
Figure 5.2 English antonym construction network.....	122
Figure 5.3 English antonym construction.....	126
Figure 5.4 The syntactic categories of Mandarin antonym construction.....	136
Figure 5.5 Mandarin antonym construction network .....	139
Figure 5.6 Mandarin antonym construction .....	145
Figure 5.7 Comparison of the forms of English and Mandarin antonym constructions.....	147
Figure 5.8 Comparison of the form-meaning schemas of English and Mandarin antonym constructions	149
Figure 5.9 Comparison of the syntactic categories of English and Mandarin antonym constructions....	150
Figure 5.10 Differences and similarities of the syntactic categories of English and Mandarin antonym constructions.....	152
Figure 5.11 Comparison of the headedness of English and Mandarin antonym constructions .....	155
Figure 5.12 Comparison of the inheritance links of English and Mandarin antonym constructions .....	157
Figure 5.13 Differences and similarities of English and Mandarin antonym constructions.....	161

## List of Abbreviations and Acronyms

a.	adjective
ad.	adverb
CCG	Cognitive Construction Grammar
CCL	Center for Chinese Linguistics (Mandarin corpus)
E	English
LADEC	The Large Database of English Compounds
M	Mandarin
n.	noun
NOW	News on the Web (English corpus)
OED	Oxford English Dictionary
prep.	preposition
pron.	pronoun
RCG	Radical Construction Grammar
TG	transformational grammar
UG	Universal Grammar
v.	verb

# Chapter 1 Introduction

This study is a bidirectional comparison of the antonym constructions between English and Mandarin within the theoretical framework of Construction Grammar. The antonym co-occurrence on lexical level has been found in English and Mandarin, like *bittersweet* for English and 动静 (*dòngjìng*, dynamic-static, ‘dynamic’) for Mandarin. The two combinations share in that they both contain a pair of antonyms or opposite elements. Yet a closer observation reveals that in the former both antonym elements are included in the meaning of the combination that something *bittersweet* is both bitter and sweet; whereas only the left element ‘dynamic’ is included in the latter that ‘static’ is not contributing to the meaning. Intrigued by such differences and the possible linguistic factors, I proposed this research. In this chapter, the research background, the thesis aims and scope, the data coding and presentation and the thesis structure of this study will be clarified.

## 1.1 Research background

The binary contrast seems common to human cognition and has been encoded into antonym pairs in all languages. For instance, we all should have the words for the binary contrast *yes/no*, *up/down*, *right/wrong*, *left/right*, *black/white*, etc. in our own language. However, such understanding of antonymy may be universal but not necessarily in the form of a specific antonym pair (Murphy, 2003; Hofmann, 1993; Osgood et al., 1975). For instance, not all English speakers will consider *chalk/cheese* a pair of antonyms. *Chalk/cheese* could be a pair of antonyms due to the semantic relatedness that both are almost white and the semantic oppositeness that one is edible but the other not. ‘If two people are like chalk and cheese, they are completely different from each other. (Hornby, 2019)’. The oppositeness between *chalk* and *cheese* can be drawn from the incompatibility suggested in the second clause ‘completely different’. Even within the context, however, such semantic contrariety may not be so understandable for an English speaker who has little acquaintance of either cheese or chalk. As Murphy (2003) has put it, the pairing of antonyms is influenced by ‘culture-specific’ (213) factors.

Moreover, ‘the role of antonymy in language and culture’ (Murphy, 2003: 213) may differ. Languages have been distinguished between whether they are marked by implicit or explicit awareness of antonymy (Willners, 2001). Willners (2001) has considered English a language with implicit awareness of antonymy while Mandarin one with explicit awareness. Such explicitness in Mandarin has been

demonstrated (Willners, 2001) with the overwhelming compounded antonymous stative predicates and noun-noun antonym compounds (Li and Thompson, 1989: 81). The former indicated the scale that the predicates measure, for instance, 大小 (*dàxiǎo*, big-small, ‘size’), 快慢 (*kuàimàn*, quick-slow, ‘speed’) and 好坏 (*hǎohuài*, good-bad; ‘quality’). The latter were compounds consisting of a pair of nominal antonyms like 水土 (*shuǐtǔ*, water-earth, ‘climate’) and 父母 (*fùmǔ*, father-mother, ‘parents’). In fact, there can be similar combinations in English like *bittersweet*, *hearsay*, and *frenemy* (*friend-enemy*).

Mandarin has been assumed to emphasize the unity composed by the antonym pairs, whereas English the contrast (Murphy, 2003; Chan, 1967). A prevalent Chinese philosophy of seeing the world organized in a binary but unified unit *yin/yang* was considered to lie underneath the use of the binary observation. There were such binary contrasts in English like *female/male*, *earth/heaven*, and *passive/active*. What distinguished the Chinese perspective from English was the cyclic and unifying nature of *yin/yang*. According to Murphy (2003) and Chan (1967), it seemed that English tended to emphasize the contrast in antonym pairs, and that the incompatibility was clear-cut. In contrast, *yin/yang* in Chinese culture was an eternal cycle of reversal in all systems. What was *yin* was expected to become *yang* and *yin* again.

To justify that observation requires a systematic comparison of the use of antonymy in English and Mandarin. The use of antonymy here refers to the antonym co-occurrence in a context. It can be on a lexical (1.1a), phrasal (1.1b), or syntactic level (1.1c).

(1.1) a1. **bittersweet**

a2. 动静 (*dòngjìng*, dynamic-static, ‘dynamic’)

b1. neither **alive** nor **dead** (Bertocchi, 2003)

b2. 半死不活 (*bànsǐ bùhuó*, half-dead not-alive, ‘neither **dead** nor **alive**’)

c1. The **rich** are stupid; the **poor** are ignorant. (Jones et al., 2012: 123-124)

c2. 讨论                      不是                      争论  
*Tǎolùn*                      *búshì*                      *zhēnglùn*,  
 Discuss-discuss      not-is                      contend-argue  
 ‘To discuss is not to argue.’  
 不是争                      谁是                      谁非,                      我赢                      你输 (Lu et al., 2021)  
*Búshìzhēng*                      *shuíshì*                      *shuífēi*,                      *wǒyíng*                      *nǐshū*  
 Not-is-contend      who-right                      who-wrong      I-win                      you-lose  
 ‘It is not to contend who is **right** and who is **wrong**, nor who **wins** and who **loses**.’

The antonym co-occurrence has been compared between English and Mandarin for different

purposes. Wu and Zhang (2022), Lu et al. (2021), Lu (2020), and Chen (2010) aimed at the common or different linguistic properties between English and Mandarin. Zhang (2021), Wang and Sha (2014), and Liao (2006) aimed for more effectiveness in teaching Mandarin antonym compounds to the English speakers whose mother tongue is not Mandarin. Despite the different purposes, the common scale for comparison were all contextual meanings or usages. As a result, the findings were limited to the identification of the semantic equivalents on a general level between the two languages and the differences were no more than the formal inequivalence. It was claimed that the antonym co-occurrence on lexical level was absent in English with the single exception *bittersweet*. That can be overridden by the identification of *humblebrag*, *frenemy*, *hatelike*, etc. Even the phrasal co-occurrence of antonyms in English can be used on lexical level like *(go) hot and cold*, or *(the) ins and outs (of)*.

In English, the antonym co-occurrence has caught academic interest for the frequency higher than accidental and the antonym pairs have been regarded as antonym constructions (Jones et al., 2012; Murphy, 2006). However, that proposal is based on the observation of the antonym co-occurrence on syntactic level.

In Mandarin, the antonym co-occurrence on lexical level has been examined in terms of meaning patterns, headedness, lexicalization and syntactic categories, and the sequence order and motivation. However, the co-existence of headedness and non-headedness, and the co-existence of lexical and phrasal status in the same combination have never been consistently explained within one study.

Therefore, this study will focus in an original way on the English antonym co-occurrence on lexical level, and a consistent explanation of the inconsistencies in Mandarin antonym co-occurrence on lexical level, and a systematic comparison of the two.

For this purpose, it is the approach of Construction Grammar that is taken. Construction Grammar considers a linguistic unit as a form-meaning complex that is paired in use. It is a usage-based model of grammar, which considers the division between language use and knowledge, the division between synchronic and diachronic, and the division between rules and words in ways that are not true of natural languages. To examine language from the perspective of construction is the approach to welding those divisions. Therefore, this study will be a comparison of the antonym constructions between English and Mandarin. The antonym co-occurrence on lexical level in English and Mandarin will be identified, collected, and curated for the antonym constructs, based on which the constructions will be observed, generalized, schematized, and compared.

Construction Grammar is necessary for a consistent analysis of the inconsistencies in the antonym constructions in either English or Mandarin, and necessary for a systematic comparison of the two.

In English, the antonym construction has not been focused on, but the collection of antonym constructs includes lexical and phrasal forms. For instance, *bittersweet* is compounded, but *more or less*, and *(the) ins and outs (of)* take the form of a phrase. Those phrasal forms that can be used on lexical level can be considered phrasal compounds and explained on lexical level (Shao, 2019; Arcodia et al., 2010), which is at the price of the phrasal properties. With the perspective of form-meaning pair in use, the antonym construction in English does not need to prioritize its lexical meanings over the phrasal forms and can be accommodated and explained as what it is.

In Mandarin, the antonym construct takes the form of bi-syllabic coordinate compounding like 大小 (*dàxiǎo*, big-small, ‘size’) or 好坏 (*hǎohuài*, good-bad; ‘quality’). However, such compounding form can be used on phrasal level, which has not been explained in previous studies. Furthermore, the coordinate form can be used in a headed way, which has always led to a combination of different theories in previous studies. To examine the antonym construct in use without prioritizing the form or meaning makes it possible to explain and schematize those inconsistencies consistently.

Following this, the inequivalent forms of the English and the Mandarin antonym constructs will not be a problem on the condition that they are equal on the level of construction and a systematic comparison is possible.

## 1.2 Thesis aims and scope

This is a bidirectional comparison of the English and the Mandarin antonym constructions. Comparisons have been conducted between English and Mandarin antonym co-occurrence in general but not on lexical level. English antonym co-occurrence has been examined and proposed to be antonym construction yet with no observation on lexical level. Mandarin antonym co-occurrence on lexical level has been recognized and examined over a long period yet without accommodating and explaining the inconsistencies between forms and meanings consistently in one study. Therefore, this study attempts to fill those gaps by examining and comparing the antonym co-occurrence on lexical level in English and Mandarin from the perspective of Construction Grammar. Four questions are addressed:

- 1) What are the key characteristics of the lexicalized antonym construction in English and in

Mandarin?

- 2) To what extent do the constructions share properties between English and Mandarin?
- 3) How effective is Construction Grammar in the analysis and comparison of the antonym constructions between English and Mandarin?
- 4) What are the implications of this study for contrastive linguistics and typological parameters?

For this purpose, all the relevant literature, including those in Chinese, were considered, identified, and reviewed.

For this purpose, the antonym co-occurrence on lexical level in English and in Mandarin was identified, collected, and curated. In English, it can be a compound or a coordinate item, as exemplified by *bittersweet*, *ups and downs* or *sooner or later*. In Mandarin, it is a two-character compound as exemplified by 动静 (*dòngjìng*, dynamic-static, ‘dynamic’).

For the acceptance of the antonyms between English and Mandarin, the definition of antonymy RC-LC was followed to curate the collection; the classification of oppositeness into contrary, complementary, and converse was followed to justify the minimal difference in antonym pairs. The lexical status especially in the English collection can be arguable due to the phrasal form. Therefore, the status of being lexicalized was curated in corpora. Because it is a synchronic comparison, the in-use status for each combination was checked in contemporary corpora. Afterwards, 105 items are retained for English (Table 4.4) and 161 for Mandarin (Table 4.5).

With those two collections, the English and Mandarin antonym constructions have been observed and compared from the perspectives of form-meaning patterns, headedness, syntactic categories, and inheritance links. Not all aspects of the English and the Mandarin antonym constructions have been observed and compared. Further examination can be conducted on the sequence order of the antonym elements and the motivation, the register, the extended use like metaphor based on the antonym constructs identified for this study, and the Mandarin coordinate antonyms on syntactic level.

This study contributes to the identification that both English and Mandarin decode and encode the unity and contrast inherent in antonymy to communicate the meanings more than a binary contrast on lexical level. It also confirms the effectiveness of Construction Grammar in rationalizing the comparison despite the formal inequivalence, explaining the inconsistencies in each language consistently, and capturing the overlap in the understanding and use of antonymy between English and Mandarin without

covering the language-specific properties. Such effectiveness is credited to the in-use observation of the antonym constructs as a form-meaning pair. It is thus proposed that construction can be an effective parameter in a bidirectional contrastive study.

This study should be the first to analyze English and Mandarin antonym constructions individually but consistently with the same theoretical framework of Construction Grammar and then compare them systematically. The universality of the understanding and use of antonymy on lexical level has been confirmed between English and Mandarin and further research including more languages will be of value to verify such cognitive and linguistic universal.

### 1.3 Data coding and presentation

This section clarifies the way to code each English and Mandarin antonym construct for the cross-reference across different tables and appendices, the source of the sentential examples, and the way to present the in-text examples.

There are five appendices respectively for the English and the Mandarin antonym collections with different purposes each. The antonym constructs are coded for the cross-reference between different tables. In English, each antonym construct was marked with a number initialed with E, which is short for English (Table 4.4). In Mandarin, each item was marked with a number initialed with M, which is short for Mandarin (Table 4.5). In both collections, the construct composed of the same pair of antonym pairs were counted as one with the same code. With the code E-1 or M-1, the relevant information for the same antonym construct can be found in different tables.

The contextual examples could be a phrase or a sentence, which depended on the need of the analysis and discussion. The source for English exemplification is the NOW corpus (News on the Web, <https://www.english-corpora.org/now>). For the same purpose of better examination and clarification, the contextual examples of Mandarin antonym constructs are retrieved from the corpus CCL (Center for Chinese Linguistics PKU, [http://ccl.pku.edu.cn:8080/ccl\\_corpus](http://ccl.pku.edu.cn:8080/ccl_corpus)).

Mandarin is a branch of the language family of Chinese. Mandarin here can be understood as Modern Chinese. It can be written with the simplified version of Chinese characters and the alphabetic transcription of *Pinyin*, both of which are officially standardized in the mainland of China. However, the use of the antonym constructs is shared throughout the Chinese language family. In addition, the term Mandarin is equivalent to *Putonghua*, Standard Mandarin, Mandarin Chinese, or Modern Chinese, all of

which for most of the time are defined as the contemporary speech with the contemporary written form and grammar by most Chinese people.

Because Chinese characters are included in sample and exemplification, the way to gloss Chinese constructs and the contextual examples is specified. Generally, it is the Leipzig glossing rules (Comrie, et al., 2015) that were followed in including the Mandarin Antonym Constructs and the contextual examples. However, the inequivalence between the source language Mandarin and the target language English might lead to dispute in translation and interpretation. To reduce such dispute, the way to include and present the Mandarin antonym constructs and their exemplifications are clarified and explained here.

Chinese characters are included in Mandarin antonym constructs and their contextual examples (1.2a; 1.2b). Yet both were followed by *Pinyin* transcription in italics to indicate the pronunciation (1.2a; 1.2c). The way to transcribe followed the convention of word-by-word alignment in *Basic rules of the Chinese phonetic alphabet orthography* (Ministry of Education of PRC, 2012). In addition, the punctuation marks in Mandarin sentences (1.2b) followed the convention of Mandarin writing (Ministry of Education of PRC, 2012).

For the antonym constructs, two versions of English translation were included (1.2a). Firstly, morpheme-to-morpheme translation is included with a hyphen in-between to indicate that they are semantically joined. Yet the equivalence is not secured in every aspect of the translation like syntactic category or usage due to the language differences between English and Mandarin. One more translation follows up to explain the contextual meaning of the antonym construct as a unit, which is marked by quotation marks (‘’).

For the contextual examples, there are three versions of English interpretation (1.2d; 1.2e; 1.2f). First is the interpretation of each morpheme (1.2d). According to Leipzig glossing rules (Comrie, et al., 2015), two ways could be applied here. One is the word-by-word alignment, the other is the morpheme-by-morpheme correspondence with syntactic categories. Syntactic categories are irrelevant in the semantic interpretation of the Mandarin sentential examples. Therefore, it is the word-by-word alignment that has been followed. Such interpretation, however, is only an attempt to interpret the meaning of each Mandarin character without considering grammar or use in the source nor the target language. Furthermore, the semantic interpretation is only valid in the context because Mandarin characters can be polysemous and multifunctional, which is context dependent (Arcodia et al., 2018). The next two versions (1.2e; 1.2f) are the meaning interpretation of the example that is acceptable in English. The difference between the two is

that one (1.2e) includes the morpheme-to-morpheme interpretation of the antonym construct in italics and the other (1.2f) with an in-text interpretation. The latter is marked with quotation marks (‘’) signifying it is a complete meaning interpretation. The intention for paralleling those two interpretations is to accentuate the connection and the contrast between the form and the meaning of the Mandarin antonym construct. When the contextual examples are provided for other purposes instead of illustrating the antonym constructs, the interpretation as in (1.2e) will only be included when it is necessary.

(1.2) a. 动静 (*dòngjìng*, dynamic-static, ‘movement’)

b. 屋里                      没有              动静。

c. *Wūlǐ*                      *méiyǒu*              *dòngjìng*.

d. room-inside              not-have              dynamic-static

e. There is no *dynamic-static* in the room.

f. ‘There is no movement in the room.’

## 1.4 Thesis structure

This thesis consists of seven chapters. Following the introduction, Chapter 2 introduces the theoretical framework of this study. Contrastive linguistics and typological parameters are first introduced (Section 2.1.1) as the background of this bidirectional comparison. The relevant typological differences identified between English and Mandarin in previous literature are also introduced and reviewed (Section 2.1.2). Construction Grammar (Section 2.2.2) is adopted as the theoretical framework for this study. It is introduced with its usage-based background and its divergence from the generative paradigm, throughout which the justification for the approach is clarified (Section 2.2.1). The division between morphological and syntactical explorations proves untrue to natural languages as indicated in the co-existence of both in the antonym constructs identified for this study. Therefore, an argument for welding rather than continuing such division within Construction Grammar follows (Section 2.2.3). Following this, the application of Construction Grammar to cross-linguistic comparisons is reviewed for the possible implications for this study (Section 2.2.4).

Chapter 3 reviews the definition of antonymy and the relevant studies on the use of antonyms. The ways to define and categorize antonyms are reviewed and discussed for the antonymy curation of the language data collected for this study (Section 3.1). For the use of antonyms in English, the research on relevant structures and the antonym co-occurrence on syntactic level are reviewed (Section 3.2). For the use of antonyms in Mandarin, the research on the antonym constructions is reviewed (Section 3.3).

Afterwards, the comparison of antonym co-occurrence between English and Mandarin are reviewed (Section 3.4). In the end, gaps in those studies are identified and research questions are raised for this study (Section 3.5).

Chapter 4 documents the collection and curation of the English and the Mandarin antonym constructs identified and collected for this study. The criteria to curate are specified respectively for English and Mandarin when language-specific properties are involved. The lists of excluded or retained items are included.

Chapter 5 schematizes and compares the English and the Mandarin antonym constructions, including the form-meaning patterns, the syntactic categories, the headedness, and the inheritance links.

Chapter 6 interprets and discusses the key findings in Chapter 5, with reference to each of the research questions. Previous relevant research findings are related in the discussion. The implications for the future discussion on antonym constructions (Section 6.1), for the application of Construction Grammar (Section 6.2), and for the typological parameters in contrastive linguistics are included (Section 6.3).

Chapter 7 summarizes the key findings of the study, focuses on the original contributions of the study, and indicates the unresolved issues and the possible directions for future discussion.

## **Chapter 2 Theoretical Framework**

In this chapter, the relevant theoretical background and the relevant application of the theories will be introduced and reviewed. This is a comparison between English and Mandarin, which are two genealogically unrelated languages. Therefore, the contrastive linguistics and the typological parameters will be introduced to serve as the background of this comparison (Section 2.1.1). The typological differences between English and Mandarin that are relevant to this study will be introduced and reviewed (Section 2.1.2). The identified typological parameters are form-first that cannot rationalize this study due to the formal in-equivalence of the antonym constructions between English and Mandarin. Therefore, this study takes the approach of Construction Grammar, which does not prioritize form or meaning. Construction Grammar will be introduced in Section 2.2, with its origin (Section 2.2.1) and methodology (Section 2.2.2). The application of Construction Grammar to morphological analysis has been claimed to be Construction Morphology. That is observed a repetition of the form-first perspective and a violation of the main principles in Construction Grammar. That argument will be included in Section 2.2.3. Construction Grammar has been applied to the comparisons across languages, which will be reviewed in Section 2.2.4 to shed light on this study.

### **2.1 Contrastive linguistics and linguistic typology**

This section presents a brief background for the comparison of the antonym constructions between the two languages English and Mandarin. English and Mandarin are two genealogically and historically unrelated languages that they are diverse in many aspects. To position this study in a broader context, the following sections will firstly present a short introduction of contrastive linguistics and the typological parameters across languages, and then the typological differences between English and Mandarin that are relevant to this study. At the end of this section, the perspective for this comparison to take and the reason for choosing the approach Construction Grammar will be summarized.

#### **2.1.1 Contrastive linguistics and typological parameters**

Contrastive linguistics is also named contrastive analysis or contrastive studies (Ping, 2019). As suggested by the name, contrast or comparison is involved. Linguistic comparison can take four

perspectives (Ping, 2019). They are diachronic intralingual comparison, synchronic intralingual comparison, diachronic interlingual comparison, and synchronic interlingual comparison. The purposes of synchronic interlingual comparison can be specified as three (Ping, 2019). The first is to find out the common properties across languages, which leads to language universals (Ping, 2019); the second targets at the typological differences, which is linguistic typology (Ping, 2019); and one more is originally related to applied linguistics in solving the negative transfer between two languages, which is often named contrastive linguistics (Xiao, 2002; Whaley, 1996). However, typological differences are based on language universals (Comrie, 1989). The general discussion of the typological differences or language universals needs to be grounded in the specific linguistic properties revealed in contrastive linguistics. Therefore, this study will not distinguish contrastive linguistics between micro and macro scopes and the discussion of typological or universal will be involved when necessary. In this section, the principles and the methods for comparison are introduced.

As in any comparison, a common ground is necessary for justifying the differences identified in contrastive linguistics. That common ground is traditionally referred as the *tertium comparationis*, meaning ‘the third element in comparison (Ping, 2019: 32). It plays the role of a constant, based on which the variables or the findings are captured and observed. In theory, common ground can occur on any linguistic level. When the common attributes are shared by most or ideally all human languages, they are generalized as language universals (Velupillai, 2012). The identified parameters in categorizing languages are based on those generalized universals (Comrie, 1989).

Known languages have been categorized based on the typological parameters of morphology, syntax, and phonology. Morphologically, languages can be classified into synthetic or analytic languages based on whether there is one-to-one correspondence between morpheme and word, and whether there are bound morphemes or not (Moravcsik, 2012). Synthetic languages can be further specified into fusional or agglutinating languages based on the clarity between morphemes (Moravcsik, 2012). Syntactically, languages are categorized based on the most regular arrangement of Subject, Verb and Object in a clause (Moravcsik, 2012). Phonologically, what mainly distinguishes languages are tone and rhythm (Handke, 2012). It will be a tone language if it is tone that differs word meanings; if not, the language may rely more on stress or syllable (Moravcsik, 2012). The morphological, syntactic, and phonological parameters all take a single aspect and form-first observation. However, such perspective of form-first might conceal some revealing common ground between languages. For instance, there is no proper form equivalence of

the use of antonymy on lexical level in this study, which has been claimed in the studies of English and Mandarin antonym co-occurrence (Section 3.4). When the scope to examine is extended beyond formal features, however, there could be more depth into the typological exploration of human languages (Ono et al., 2021; Croft, 2012).

Two steps are involved in a contrastive analysis (Ping, 2019). The first is an adequate observation and description of the language data from the languages compared. The next is to compare. However, such observation and comparison do not always treat the languages equally.

Comparison across languages can be unidirectional or bidirectional/multidirectional (Ping, 2019). In a unidirectional observation, it is to identify in language B what has been observed in language A. That can be exemplified by the application of Construction Grammar to cross-linguistic comparison in Section 2.2.4. As noted by Ping (2019), such way tends to observe how a property identified in language A is realized in language B. In a bidirectional observation between two languages or a multidirectional among three or more, it is to examine how a universal is realized in different languages (Ping, 2019). Although to choose the former or the latter depends on the purpose of a comparison, the former could reveal less about language B with language A as a certain standard. In contrast, the latter can reveal more about the languages involved, and thus convey more about linguistic universals and typological differences.

In this section, the main principles and methods in contrastive studies have been introduced. The identified typological parameters to categorize languages mainly rely on the forms of linguistic units. Yet the form-first perspective is not always effective in comparison. It cannot rationalize the correspondence of the antonym constructions between English and Mandarin in this study. Therefore, this study takes the approach of Construction Grammar, which examines a linguistic unit as a form-meaning pair in use. In the comparison of two languages, it can be unidirectional that one language is prioritized, or bidirectional that two languages are equally included to see how a general universal is realized in each language. For more observation of language universal and typological differences, the latter could be more effective. To see more of the use of antonymy on lexical level, it is the bidirectional observation that this study follows. In next section, the typological differences between English and Mandarin will be introduced, especially those related to coordinate compounds.

### **2.1.2 Typological differences between English and Mandarin**

Geographically, English and Mandarin belong to two language families (Moravcsik, 2012). The

former belongs to Indo-European family, and the latter Sino-Tibetan family. Linguistically, English and Mandarin are also associated with different types (Moravcsik, 2012). Both morphological and syntactic properties are involved with the language data for this study. Therefore, an overview of English-Mandarin differences based on the typological parameters of morphology and syntax will be presented in this section. Following this will be a review of the differences between English and Mandarin coordinate compounding, which is the main pattern of the antonym constructs in this study.

### ***Morphological and syntactic differences between English and Mandarin***

Morphologically, Chinese is an analytic language, and English tends to be synthetic in contrast with Chinese. For a synthetic language, grammatical relations are frequently and systematically indicated by inflected forms; differently, an analytic language relies on function words, auxiliary verbs, and different word orders to indicate grammatical relations (Moravcsik, 2012). Take the progressive, past, present perfect and future forms of *write* in English and Mandarin (Chen, 1998: 4) (2.1).

(2.1)

a. I <i>am writing</i> a letter. (Synthetic)	我 <i>Wǒ</i> I	<i>正在</i> <i>zhèngzài</i> in-the-process	<i>写信。</i> <i>xiě xìn</i> write-letter
b. I <i>wrote</i> a letter yesterday. (Synthetic)	我 <i>Wǒ</i> I	<i>昨天</i> <i>zuótiān</i> yesterday	<i>写了 信。</i> <i>xiěle xìn</i> wrote letter
c. I <i>have written</i> a letter. (Synthetic)	我 <i>Wǒ</i> I	<i>已经</i> <i>yǐjīng</i> already	<i>写了 信。</i> <i>xiěle xìn</i> wrote letter
d. I <i>shall write</i> a letter tomorrow. (Analytic)	我 <i>Wǒ</i> I	<i>明天</i> <i>míngtiān</i> tomorrow	<i>写信。</i> <i>xiě xìn</i> write-letter

In (2.1), the first three English examples but the last have conducted grammatical conjugations to indicate the intended tenses and aspects. The tense of future in (2.1d) resorts to the modal verb *shall*, which is the feature of an analytical language. In the Chinese equivalence on the right, there is no inflectional changes to the verb *写* (*xiě*, ‘write’). Instead, the progressive in the first (2.1a) relies on the adverb *正在* (*zhèngzài*, right-doing, ‘in the process’); the past tense in (2.1b) the particle *了* (*le*, ‘used after a verb to show that an action is finished’), and the present perfect in (2.1c) the adverb *已经* (*yǐjīng*, ‘already’) together with the particle *了* (*le*, ‘used after a verb to show that an action is finished’). As for

the future tense in the last example (2.1d), there is no signals of the tense but the noun 明天 (*míngtiān*, ‘tomorrow’). Such synthetic and analytic differences between English and Mandarin can be many more like word classes, number, cases, etc., which will not be specified here. However, English is not the most synthetic or it is a mixture of synthetic and analytic. English can be synthetic as further evidenced by the conflation of third person, singular number, and present tense in the verbal suffix *-s* of *she writes*, but also analytic as in *She will be able to write it*.

Syntactically, the word order in English tends to be more varied than Chinese (Li and Thompson, 1974; Lian, 1993; Dryer, 2007). The main constituents Subject (S), Verb (V), and Object (O) of a clause are shared between English and Chinese, and so are their main order SVO (Lian, 1993). However, inversions are more frequent in English. Fowler (1994) concluded that inversions in English could happen for the purpose or as the result of interrogative, imperative, exclamatory, hypothetical, balance, link, signpost, negative, and metrical inversion. Compare the following negative inversions with its equivalence in Chinese (2.2).

(2.2)

a. I have met him.	我	见过	他。	
	<i>Wǒ</i>	<i>jiànguò</i>	<i>tā</i>	
	I	met	him	
b. I have never met him.	我	没见过	他。	
	<i>Wǒ</i>	<i>méijiànguò</i>	<i>tā</i>	
	I	not-met	him	
c. Never have I met him.	我	真没	见过	他。
	<i>Wǒ</i>	<i>zhēnméi</i>	<i>jiànguò</i>	<i>tā</i>
	I	really-not	met	him

As shown in (2.2), the negative can take two sequence orders in English, but only one in Chinese. In English, one way is to insert *never* between *have* and *met* (2.2b) without changing the word order of the declarative (2.2a); the other way is to add *never* to the beginning with the auxiliary verb *have* moving before the subject to follow the change (2.2c). The second way adds more emphasis on *never*. In the Chinese equivalence, the negative is expressed with the addition of the negative adverb 没 (*méi*, ‘not’) with no changes in word order (2.2b), which is almost the same as the English equivalence (2.2b). For emphasis, however, it is to add functional adverbs like 真 (*zhēn*, ‘very’) (2.2c) with no change in the sequence order.

As it has been observed by Nida (1982), English tends to be characterized by hypotaxis whereas

Mandarin parataxis. World Book Dictionary and the American Heritage Dictionary define hypotaxis and parataxis based on the use of connectives. Hypotaxis is defined as the feature of using connectives between sentences and clauses, whereas parataxis does not rely on connectives to connect sentences and clauses. Yet Lian (1993) and Liu (2006) interpret hypotaxis and parataxis in a broader way. Lian (1993) considers hypotaxis as using more lexical or other specified linguistic forms to indicate grammar and meaning but parataxis using less. Liu (2006) considers hypotaxis as using lexical forms to indicate word or sentence connections but parataxis using few. Despite the different scopes taken, those different interpretations share in that hypotaxis features more use of lexical or specified forms to indicate coherence while parataxis less. That can be supported by the above morphological and syntactic differences between English and Mandarin. Chinese is analytic that relies more on function words, auxiliary verbs, and different word orders to indicate grammatical relations, whereas English tends to be synthetic with more specified linguistic clues like inflections to indicate grammatical relations (Lian, 1993). Because of the more accessible linguistic clues, English exhibits more varied word orders than Chinese (Lian, 1993).

### ***Coordinate compounding***

Coordinate compounds have been identified and compared between English and Mandarin. The definition of a coordinate compound here follows Arcodia et al. (2010) that it is a combination in which ‘two or more units share the same status’ (2) like *bittersweet*. Coordinate compounds overlap with binomials (Arcodia et al., 2010). Binomials (Section 3.2) refers to ‘the sequence of two words pertaining to the same form-class, placed on an identical level of syntactic hierarchy, and ordinarily connected by some kind of lexical link’ (Malkiel, 1959: 113), including *and/or*. Therefore, both coordinate compounding and binomials are reviewed in the relevant literature on English antonym construction (Section 3.2).

Shao (2019) has categorized coordinate compounds into four and examined them between English and Mandarin. They are synonym coordinate (同义并列, *tóngyì bìngliè*, same-meaning coordinate-juxtaposition, ‘synonym coordinate’) like *picture-postcard* and 语言 (yǔyán, speaking-talking, ‘language’), antonym coordinate (反义并列, *fǎnyì bìngliè*, opposite-meaning coordinate-juxtaposition, ‘antonym coordinate’) like *bittersweet* and 甘苦 (*gānkǔ*, sweetness-bitterness, ‘joys and sorrows’), correlation coordinate (相关并列, *xiāngguān bìngliè*, mutual-related coordinate-juxtaposition,

‘correlation coordinate’) like *(fight) tooth and nail* and 笔墨 (*bǐmò*, pen-ink, ‘writing’), where two elements are correlated, and asymmetry coordinate (偏义并列, *piānyì bìngliè*, lean-meaning coordinate-juxtaposition, ‘asymmetry coordinate’) like 忘记 (*wàngjì*, forget-remember, ‘to forget’) and 质量 (*zhìliàng*, quality-quantity, ‘quality’) with the right element semantically neutralized. It seems that the asymmetry coordinate and the antonym coordinate here are overlapped due to that the constituents in both are antonym pairs. The difference is that the latter does not equally include the meaning of the pair of antonyms. In that sense, the coordinate compound consisted of antonyms can have two meaning patterns. One is to include both constituents and the other exclude one of them after being compounded. However, this is not the concern of the studies on the coordinate compound comparison between English and Mandarin. It will be further reviewed in Section 3.3.

The asymmetry coordinate in Mandarin has been considered absent in English (Shao, 2019). That may need further confirmation, but the notion of asymmetry (偏义, *piānyì*, lean-meaning, ‘semantically asymmetry’) in Mandarin seems relevant to the notion of headedness (Section 2.2.3) in English. Asymmetry (偏义, *piānyì*, lean-meaning, ‘semantically asymmetry’) (Wang, 1999; Li, 1924) has taken a visual perspective. It has presupposed that the coordinative juxtaposition of a pair of constituents is symmetry. When one of the constituents is excluded from the meaning of the combination, it is asymmetry (偏义, *piānyì*, lean-meaning, ‘semantically asymmetry’). As the asymmetry happens on the semantic level, it is the semantic parameter of head (Hoeksema, 1992) that is involved (Section 2.2.3). As has been observed by Huang (1998), Mandarin is a headless language based on the frequent inconsistency of the syntactic categories between the constituents and the whole combination (Huang, 1998). Even based on the semantic parameter, however, the role of the non-head constituent here still differs from that in Williams’ Right-Hand Head Rule (Williams, 1981). In the Right-Hand Head Rule, the non-head constituent is semantically included to modify the head. In the asymmetry coordinate here, however, the non-head element is semantically neutralized. For instance, the constituent 记 (*jì*, ‘to remember’) is absent in the meaning of 忘记 (*wàngjì*, forget-remember, ‘to forget’). Whether that is shared by English, and what could lead to this semantic pattern will be analysed and discussed based on the collections of the antonym constructs for this study (Section 5.1.3; Section 5.2.3; Section 5.3.3).

It has also been contended that English coordinate compounds often include a lexical connector but not that in Mandarin. Examples are 是非 (*shìfēi*, yes-no, ‘gossip’)/right and wrong, or 迟早 (*chízǎo*, late-early, ‘sooner or later’)/sooner or later (Shao, 2019). That observation has been shared by Li (2011). Here

Shao (2019) and Li (2011) both have considered the phrasal combinations joined by *and/or* in English as compounds. That follows the way of considering compounding in contextual use by Arcodia et al. (2010). They (Arcodia et al., 2010) have proposed for a typological approach to coordinate compounds, considering the lexical connectors *and/or* a typological property of the coordinate compound in languages like Standard European Languages. It has been argued that combinations in English like *right and wrong* or *sooner or later* are morphologically loose due to the lexical connector yet with ‘internal stability’ (Arcodia et al., 2010: 15). In addition to being a lexical unit in context, the sequence of the two elements *right/wrong* or *sooner/later* tends to be irreversible (Arcodia et al., 2010: 15). Such typological approach has seen the linguistic fact that the phrasal combination in use is semantically combined as a lexical unit. Different from form-first observation (Section 2.1), it seems to have prioritized the lexical property of the meaning over the phrasal property of the form. However, for the observation of natural language in use as claimed by Arcodia et al. (2010), it might be better to equally include form and meaning without prioritizing either of them (Section 2.2.3).

It has been agreed that there is a preference for the sequence order in English and Mandarin binomials (Cheng and Li, 2018; Li, 2018; Liu, 2015; Li, 2011) but disagreed in which language is more irreversible. Liu (2015) took a synchronic perspective, collecting 398 binomials respectively for English and Mandarin and testing the reversibility of each in corpus. It was found that the irreversible in English was 79 while those in Mandarin only 16. In that sense, the binomials in English were more irreversible. In contrast, Li (2018) took a diachronic perspective and had an opposite conclusion. They observed the frequency of 468 English nominal binomials and the reversed correspondence in the Corpus of Contemporary American English and the Corpus of Historical American English; and observed 421 Mandarin nominal binomials in the contemporary corpus and the ancient corpus in CCL. It was found that Mandarin was more irreversible. The opposite conclusions are hard to examine due to the different perspectives taken. Yet both together may verify the hypothesis by Malkiel (1959) that the irreversibility in binomials is related to time.

The syntactic categories of English and Mandarin coordinate compounds have not been compared but the syntactic categories in general have (Zhao and Zhang, 2017; Sun, 2006; Zhong, 2003; Lou and Mei, 2000; Peng, 1980; Xie, 1998; Zhao, 1998). One difference between English and Mandarin is that the syntactic categories in English can be identified from the formal properties but not that in Mandarin (Lou and Mei, 2000; Xie, 1998). For instance, *in/out* are prepositions but they are nouns in *(the) ins and outs*

(of) as signified by the plural ending to nouns -s. In contrast, there is no connection between the forms of the characters and the syntactic categories in Mandarin. That property has led to the proposition that the syntactic categories in Mandarin should be determined by the context (Li, 1924). If there is no context, it is hard to justify the syntactic category in Mandarin (Li, 1924). In that sense, the syntactic category in Mandarin seems to be more related to the use in context rather than the form of the linguistic units.

Prepositions are another concern in the comparisons of the syntactic categories between English and Mandarin (Zhao and Zhang, 2017; Sun, 2006; Zhong, 2003; Peng, 1980; Zhao, 1998). There are about 285 prepositions in English including the phrasal items, but only around 80 in Mandarin (Peng, 1980). There can be equivalence between English and Mandarin prepositions (Zhao and Zhang, 2017). For instance, *about* and 关于 (*guānyú*, ‘about’) are equivalent in meaning and usage in (2.3a). They both suggest the subject of the book and follow the link verb *is/是* (*shì*, ‘is’). However, the meaning communicated through prepositions in English tends to be expressed with verbs or just omitted in Mandarin. In (2.3b), the verb 反对 (*fǎnduì*, ‘against’) in Mandarin communicate the meaning of the preposition *against*. In (2.3c), the preposition *of* in English is totally omitted to follow the way of wording in Mandarin. In general, English tends to use more prepositions than Mandarin to lexicalize the connection between words and expressions (Zhao and Zhang, 2017; Peng, 1980). That has been considered part of the evidence for English to be hypotaxis whereas Mandarin parataxis (Zhao and Zhang, 2017; Peng, 1980).

(2.3) a1. This is about preschool education. (Zhao and Zhang, 2017)

a2. 这本书 是 关于 幼儿教育 的 (Zhao and Zhang, 2017)  
*Zhèběnshū shì guānyú yòu'érjiàoyù de*  
 This-piece-book is about infant-child-teach-raise of  
 ‘This book is about preschool education.’

b1. No one is against this plan. (Zhao and Zhang, 2017)

b2. 没有人 反对 这个 (Zhao and Zhang, 2017)  
*Méiyǒurén fǎnduì zhège*  
 not-have-people opposite-face this-bit  
 ‘No one is against this.’

c1. This is a picture of mine. (Zhao and Zhang, 2017)

c2. 这是 我的 照片 (Zhao and Zhang, 2017)  
*Zhèshì wǒde zhàopiàn*  
 This-is me-of taken-picture  
 ‘This is a picture of mine.’

This section has presented an overview of the morphological and syntactic differences between English and Mandarin and reviewed the differences in coordinate compounding, the headedness, and the syntactic categories between the two languages. The asymmetry coordinate has been considered absent in English. The headedness in the asymmetry coordinate in Mandarin refers to semantic centre and the non-head element is neutralized in the meaning of the combination. The coordinate compounding in English can be joined by the lexical connectors *and/or* but not that in Mandarin. There is a preference in the sequence of the constituents in both languages. The syntactic category in English can be identified from formal properties but that in Mandarin needs to be justified by contextual use. Moreover, English specifies the connections between linguistic units in lexical forms more than Mandarin, which is evidenced by the more use of prepositions in English. The meaning communicated by prepositions in English are often expressed by verbs or do not need to be expressed due to the wording custom in Mandarin. In general, English tends to exhibit hypotaxis whereas Mandarin parataxis.

Section 2.1 has reviewed the main principles and methods in contrastive studies and the typological properties of English and Mandarin coordinate compounding. For the comparison of two languages, it can be a unidirectional comparison to prioritize one language or a bidirectional comparison equally including both for a better observation of the language universals and typological differences. This study will follow the bidirectional perspective for a better observation of the antonym use between English and Mandarin. The identified form-first parameters cannot rationalize this study due to the formal in-equivalence of the antonym constructions between English and Mandarin (Section 2.1.1; Section 2.1.2; Section 3.4); the meaning-first approach may explain the lexical properties of the coordinate compounding like antonym construction yet overlooking the phrasal properties (Section 2.2.3; Section 3.4). Therefore, this study will take the approach of Construction Grammar (Section 2.2) to examine the item as a form-meaning pair in use without prioritizing either form or meaning. Coordinate compounding has been considered common to English and Mandarin but the asymmetry (headed) coordinate. There is a preferred sequence order in both English and Mandarin coordinate compounding. The syntactic categories in English can be related to the formal properties but they are contextual for Mandarin. In addition, English relies more on prepositions than Mandarin. Those typological differences are going to be examined in the antonym constructions for this study.

## **2.2 Construction Grammar**

Construction Grammar was first developed in the 1980s. One of the original motivations for Construction Grammar is the interest in the unpredictability of a linguistic unit like an idiom. In generative paradigm, languages are analyzed in a binary way of grammatical rules and vocabulary. Those cannot be explained by the regular grammatical rules are collected into dictionaries like vocabulary, which they are not (Hilpert, 2014). The constructionists consider all language facts should have a proper status in explanation. Based on this notion, Construction Grammar starts taking shape. Construction Grammar is a family of approaches that are united for the shared consideration of constructions as the basic units of natural language (Hoffmann, 2022; Goldberg, 2013). The concept of construction has existed in the scope of linguistics for a long time. In Lackoff's 'Linguistic Gestalts' (1977), the concept of form-meaning pair has been indirectly suggested. Yet it is Goldberg (1995) that first refines its definition. The main trend in constructional approaches is usage-based in that forms and meanings are paired and function in the process of use. Because cognition is involved in the process of language use, Construction Grammar is also cognitive. The usage-based background will be introduced in Section 2.2.1 to show the status quo of this branch of linguistics. Based on the notion of construction, a family of different constructional approaches have been developed. Therefore, the assumptions shared by the family and the major differences between the constructional approaches and generative paradigm will follow. Section 2.2.2 will focus on Usage-Based Construction Grammar, the framework for this study. Construction Morphology has been proposed and well developed, but there is no theoretical motivation for that based on the core notions of Construction Grammar, which will be included in Section 2.2.3. Section 2.2.4 will be a review of the application of Construction Grammar to crosslinguistic comparisons to see how Construction Grammar has contributed to the discussion on typology. At the end of this section, the main points in each subsection will be summarized with reflection on the application of Construction Grammar.

### **2.2.1 Usage-based model of grammar**

The term 'usage-based model' was coined by Langacker (1987) in his exploration within the scope of cognitive linguistics. Cognitive linguists consider language knowledge 'derived from linguistic experience' (Diessel, 2019a: 50) and aim to 'develop a framework for the analysis of linguistic structure that is grounded in general cognitive process' (Diessel, 2019a: 50) like categorization, schematization, analogy, etc. For instance, metaphor is considered a mode of thought from the cognitive perspective and

human understanding of time *before/after* is explained as a metaphor based on human visual perception. Such an attempt to explain linguistic phenomenon with concepts has verified the connection between linguistic structure and human cognition, which is connected in the process of language use and development. As proposed, concern should be ‘given to the actual use of the linguistic system and a speaker’s knowledge of this use’ (Langacker, 1987: 494). That underlies the usage-based model of languages, within which grammar is understood as ‘a dynamic system of emergent categories and flexible constraints that are always changing under the influence of domain-general cognitive processes involved in language use’ (Diessel, 2019a: 51).

The usage-based model diverges from the central conception of binary division between language use and knowledge, between diachronic and syntactic exploration, and between rules and words in the main trend of 20<sup>th</sup> century linguistics (Diessel, 2019a: 51). Firstly, it considers language use and language system together, rather than dividing them. For the consideration of language use, data in use like corpus data is preferred; data frequency rather than regularity matters in the entrenchment of a token. Secondly, synchronic analysis is not necessarily separated from diachronic observation. For understanding the synchronic linguistic system, usage-based model explores the change of languages in history or acquisition (Diessel, 2017). Third, it considers grammatical rules lying in words. Syntactic structures are lexically particular (Diessel, 2017). Usage-based model considers language as a bank of units, or constructions chunking together and observes the combinations (Langacker, 2008; Bybee, 2010). It does not presuppose a set of primitive categories like a subject or noun phrases (Jackendoff, 2002). In general, usage-based model is a bottom-up approach to languages. As indicated, the joint of syntactic and diachronic, and the joint of rules and words follows from seeing language in use and development.

Mainly three aspects have been explored within usage-based model. The first is construction, which is the one that has been worked on most. It is shared by all usage-based research that construction is the building block of language. Construction is ‘a complex linguistic sign that combines a particular structural pattern with a particular meaning or function’ (Diessel, 2017). Bybee (1985) and Aronoff (1994) have mainly worked on the morphological level. Goldberg (1995; 2006) and Hilpert (2013) have mainly worked on syntactic level. Another focus is the connection between those constructions, which is less explored. Language is considered as an inventory of constructions organized by inheritance links and taxonomic links, and those constructions can overlap. One more is the domain-general cognitive processes. Cognitive or conceptual notions are essential in language use and development. Those that

have been discussed are joint attention in social cognition, conceptualization of meaning, memory and processing of exemplar-based representations, automatization, analogy, etc. Diessel (2019b) has focused well on the language network and the cognitive processes in language use.

Based on the notion of construction, a theoretical family of usage-based Construction Grammar has been developed. The earliest and most quoted is Cognitive Construction Grammar (CCG) (Lakoff, 1987; Goldberg, 1995; Goldberg, 2006; Boas, 2013). It considers constructions as ‘learned pairings’ (Boas, 2013: 234) of form and meaning and attempts to offer a psychologically realistic explanation of language. Radical Construction Grammar (RCG) (Croft, 2001; 2022) does not have major differences from CCG except its relevance to Typology (Hoffmann, 2022: 267). In typological research, the distributional patterns of a construction can be so diverse or mismatched within a language or across languages. Based on that, the ‘building-block model of syntactic structure’ (Croft, 2013: 231) is rejected. Instead, it is a form-function pair that is identified and explored. RCG considers grammatical categories as language-specific and construction-specific. Concerning universality, only part-whole relation between constructions and the grammatical roles occurring in constructions are concerned. Other main trends of Construction Grammar are Parallel Architecture (Jackendoff, 2013), Fluid Construction Grammar (Steels, 2013) and Embodied Construction Grammar (Bergen and Chang, 2013). Despite the differences across the diverse constructional approaches, there are no ‘inherent and systematic contradictions’ (Boas, 2013: 250) relevant to the principles of organizing language. They differ in what they consider the most important aspect (Boas, 2013; Goldberg, 2013; Hoffman, 2022).

Four assumptions are shared by the family of constructional approaches (Goldberg, 2013; Hoffmann, 2022). Firstly, there is only one surface structure of a language; secondly, a language is a lexicon-syntax continuum; third, a language is a structured inventory, which is a taxonomic network organized by inheritance; fourth, constructions are language-specific due to the arbitrariness of symbol assignment but common on a very general level. Those four assumptions have well declared its divergence from the major notions in the generative paradigm, which will be specified in the following paragraphs.

Constructionists consider there is only one surface structure in a language, rather than seeing languages as different and separate layers as in the generative paradigm. The generative paradigm considers the phonology, syntax, and semantics as three independent layers, which will only be combined in output (Hoffmann, 2022). Besides, transformational grammar (TG) in the generative paradigm distinguishes grammatical rules between deep structure and surface structure. In the constructional

approaches, however, language is one layer, which is a series of form-meaning pairs. Form includes phonology and morphosyntax, and meaning involves semantics and pragmatics. Because of such a holistic view, the constructional approaches are considered as an output-based approach that ‘what you see is what you get’ (Boas, 2013: 240).

Constructionists consider a language as a lexicon-syntax continuum, which is different from the binary division between lexicon and grammar as in the generative paradigm. A language for the constructionists is a bank of constructions. Those constructions are classified as substantive and schematic constructions (Hoffmann, 2022). For words in the generative paradigm, they may roughly correspond to the substantive constructions in the constructional approaches. For the grammatical rules, they may roughly correspond to the schematic constructions that have some slots for certain constructions to fit in. In this way, the in-between structure can be partly substantive and partly schematic like *neither X nor Y* construction. Following this, lexicon and syntax are just two ends of a continuum with the combination that is not completely vocabulary nor grammar in-between.

Without TG, the separation of phonology, syntax, and semantics as in the generative paradigm, the constructional approaches consider the bank of constructions in a language as well grouped and linked by inheritance. Firstly, a language is considered as a taxonomic network organized by inheritance (Croft and Cruse, 2004; Hoffmann, 2022). Just like the classification in taxonomy, closely related items are grouped together ‘under a single umbrella’ (Hoffmann, 2022: 11), where they inherit some properties from one or more umbrellas. An item can belong to more than one group, and it inherits some properties from each. Secondly, when constructions are combined, the properties of some can be chosen over the other in the meaning of the combination. That is explained by the principle of coercion (Hilpert, 2014). Those assumptions are attempts to model the way that a language is likely to be organized in the human mind (Hoffmann, 2022).

Constructionists also consider language universals, which are different from that in the generative paradigm. Constructions are considered as language specific due to the symbolic arbitrariness and what they share lie in very general terms. The generalizations shared across languages mainly lie in two respects. One is the similar functions like communication that human languages serve; the other is the domain-general cognitive processes shared among human beings like categorization, schematization, generalization, etc. (Hoffmann, 2022; Croft, 2001). That is far from the innateness or the structural rules in Universal Grammar (UG). UG in the generative paradigm refers to structural rules, which is a faculty a

natural person should be born with in no regard to the mother tongue. Everyone has it on the condition that they are not deprived of language ability.

This section has introduced the usage-based model of languages and the family of constructional approaches. Usage-based model starts from the concern for language use and development. It considers that the division between language use and knowledge, the division between synchronic and diachronic, and the division between rules and words are not true of natural languages. To weld the division, it sees languages a bank of constructions, which are form-meaning pairs learnt, modified, and reproduced in the daily language use. Sharing the notion of construction, the theoretical family of constructional approaches has been developed. Rather than seeing languages as grammatical rules plus word meanings, the constructional approaches consider languages a continuum of constructions ranging from lexical to syntactic; and an inventory organized as a taxonomic network with inheritance. Language constructions are considered lying in exemplar representations that constructions are language specific. Yet it is believed that there is language universal shared between different languages like linguistic function or cognitive processes, which are not the innate language faculty. Sharing those assumptions, the constructional approaches have been organized and united into Usage-Based Construction Grammar for the first time by Hoffman (2022).

### **2.2.2 Usage-Based Construction Grammar**

The Construction Grammar for this study is limited to Usage-Based Construction Grammar. Hoffmann (2022) has examined and summarized the main approaches in the family of Construction Grammar and organized them as Usage-Based Construction Grammar. It is his usage-based definition of construction that will be introduced below and followed throughout this study. Yet before introducing the definition of a construction, when a pattern can be claimed as a construction will be clarified. Afterwards, the preference of the data in Usage-Based Construction Grammar will also be specified.

When can a linguistic pattern be identified as a construction? In general, a linguistic pattern that is an arbitrary pair of form and meaning can be claimed as a construction (Hoffmann, 2022: 43). In specific, if a linguistic unit is unpredictable in either form or function based on its components or ways of combination, then it can be claimed as a construction; or even if it is predictable in all aspects, but it is frequent enough to be entrenched in the mind of speakers, then it is a construction (Goldberg: 2006: 5). In that sense, a linguistic complex being meaningful can be a construction.

Based on such notion of form-meaning complex, Hoffmann (2022: 43) has proposed the following usage-based definition of construction:

1. a construction is an arbitrary pairing of FORM and MEANING:  
FORM  $\Leftrightarrow$  MEANING
  - FORM includes phonetic/phonological, morphological and syntactic information
  - MEANING includes semantic and pragmatic (including social meaning) information
2. a construction is acquired through language use and is stored in a speaker's mental construction
  - either if some aspect of its FORM or MEANING is unpredictable from its components or other constructions
  - or if the construction is frequent enough in language use to become entrenched.

Following this definition, Hoffman (2022: 42) has adopted the notation as in (2.4) to represent a construction. Take the construction *Un-ADJ* of the constructs like *untrue*, *unable* or *unhappy* (42).

(2.4) *Un-ADJ* construction

FORM:	PHONOLOGY:	$/\Delta n_1-X_2/3$
	MORPHOSYNTAX:	$[UN_{-1}ADJ_2]_{ADJ_3}$
$\Leftrightarrow$		
MEANING:	SEMANTICS:	'NOT <sub>1</sub> A <sub>2</sub> ' <sub>3</sub>
	PRAGMATICS:	

What is the difference between construction and construct? As has been clarified by Hoffmann (2022), construction is FORM-MEANING 'that are stored in the long-term memory of speakers' (4) and construct the 'output of our mind' (4). Construct refers to the language performance data that has been written or spoken. They can be recorded and analyzed. In a word, construct is the authentic token and instance, and construction is mental. Our mental constructions combine and produce simple or complicated constructs. The inheritance links between constructs and constructions are essentially vertical (Hoffmann, 2022). For instance, *untrue*, *unable*, and *unhappy* are the constructs on the output level that all vertically inherit from the same generalized schema *un-ADJ* construction (2.4).

As shown in (2.4), form and meaning poles are indicated by capitalized FORM and MEANING. So are the sub-levels PHONOLOGY, MORPHOSYNTAX, SEMANTICS and PRAGMATICS. A double arrow ' $\Leftrightarrow$ ' is used to indicate the symbolic correlation between the FORM pole and the MEANING pole. The relation is arbitrary and also conventional (Hoffman, 2022: 3). Being arbitrary as in the relation between the signifier and the signified by Saussure (2011); being conventional as the connection has been agreed upon and established in a speech community and a speaker needs to learn to be communicated

(Hoffman, 2022: 2).

The FORM pole can include two levels, which are PHONOLOGY and MORPHOSYNTAX. At the PHONOLOGY level, it is the phonetic details that are included in terms of the pronunciation, or the phonological details as to the intonation contour. For pronunciation, the alphabets of International Phonetics Association are used and put in slashes ‘//’. In (2.4), what is relevant is the speech sound of the bound morpheme *un-*, which is represented as /ʌn-/. When it is the written constructions that are to be discussed, PHONOLOGY will be replaced by ORTHOGRAPHY with angled brackets and italic orthographic representations. For example, <*dog*>. The order at this level will follow the linear order of the spoken or written tokens.

At the level of MORPHOSYNTAX, it is morphological and syntactic information that is included. As clarified in Section 2.2.1, the binary division between morphology and syntax does not hold in constructional approaches. Language for constructionists is a continuum from lexicon to syntax. Such notion is indicated by combining morphology and syntax into a single level (Jackendoff and Audring, 2016; Hoffmann, 2022). The information included on this level is mainly grammatical. It can be part of speech for a word, phrasal status for a phrase or function for syntactic elements. In (2.4), it is the word class required from the morphemes that is marked, which needs to be an adjective as shown in capitalized ADJ.

The formal elements of a construction can be substantive or schematic (Croft and Cruse, 2004; Hoffman, 2022). In (2.4), the *Un-*construction consists of two elements. One is [UN-], which is a fixed phonological element. Such a recurring and unchanged element is substantive element. Following the substantive element [UN-] is a single slot that needs to be filled and can be changed among adjectives like *true*, *able*, or *happy*. Element like such slot is schematic element. So *Un-*construction is a complex of substantive and schematic elements. It is represented as [UN-ADJ] with syntactic function specified in capitals and a hyphen ‘-’ used to join the substantive *un-* and its schematic slot.

The MEANING pole can also involve two levels of information, SEMANTICS and PRAGMATICS. The meaning here involves two perspectives due to the cognitive concern in constructional approaches. First, it is a description of the constructional combination in natural language; secondly, it attempts to capture how the construction is understood by a speaker (Hoffmann, 2022: 40). For the representation of such, the general meaning will be marked by a single quotation (‘’), and the idiosyncratic meaning will be paraphrased in an informal way. PRAGMATICS is relevant when the meaning is highly dependent on the

specific contextual context of the construction, which can be social, textual, or discourse-functional meaning (Hoffmann, 2022: 42). It is not involved in the exemplification in (2.4) and less relevant in this study. For more details about the notation, please see Hoffmann (2022: 39-42).

Furthermore, the co-index numbers are adopted in subscripts to show the connections in at least two dimensions and make the form-meaning pair a whole as in (2.4). Three indices are adopted in (2.4). With the co-occurrence of 1, 2 and 3 on all three levels, the correlations across PHONOLOGY, MORPHOLOGY and SEMANTICS are indicated. In this way, different levels are combined and unified with the connection in a certain vertical dimension. Furthermore, the repetition of ADJ on the level MORPHOSYNTAX and the change of the subscript from 2 to 3 as shown in [UN-<sub>1</sub>ADJ<sub>2</sub>]ADJ<sub>3</sub> indicate that the syntactic category of the unit is the same as that slot. In this way, the correlation at the MORPHOSYNTAX level is clarified in a linear or horizontal dimension.

The notation above is not intended to be exhaustive in capturing the linguistic features of the construction (Hoffmann, 2022: 39). Instead, it is meant to be flexible in a realistic practice to include more linguistic features or to remove some marks when necessary. It can also be easily put in a horizontal way in a running text (Hoffmann, 2022: 3). Different notation systems have been adopted to represent the internal structures of constructions, but that is not related to linguistic differences (Goldberg, 2013; Hoffmann, 2022). Rather those notations can be transferred from one to another (Goldberg, 2013; Hoffmann, 2022).

Data in Usage-Based Construction Grammar is mainly corpus-based (Gries, 2013; Hoffmann, 2022). The data for usage-based research needs to be ‘authentic, natural, observational’ (Hoffmann, 2022: 44) for assessing the quality and quantity of linguistic combinations. McEnery (2019) defines corpus as a machine-readable ‘body of text’ (29) that is finite-sized and sampled for maximal representativeness of the language in discussion. In this way, corpora are just the linguistic samples required in a usage-based examination. Corpus data can be problematic. The existence of a linguistic unit in a corpus does not suggest its being grammatical, and the absence of one does not mean ungrammatical (Hoffmann, 2022). Yet that problem can be solved based on the specific case.

Another claim for corpus data is the text frequency. The text frequency exemplifies the entrenchment of a linguistic unit in the system of cognition (Schmid, 2010). Frequency is essential for understanding and explaining the entrenchment of constructions (Hoffmann, 2022: 29) and the change of languages (Diessel et al., 2019). Frequency regarding constructional approaches can be classified as two (Hoffmann,

2022: 28). One is token frequency, and the other is type frequency. The former is the frequency of a construct, and the latter is that of a construction, which is with certain abstraction and generalization. Only no specific measurement of frequency has been found in the family of constructional approaches.

This section has introduced the definition of construction, the relevance between construction and construct, the notation to represent a construction, and the data preference in Usage-Based Construction Grammar. The definition this study follows is the usage-based one organized and proposed by Hoffmann (2022). According to him, any arbitrary form-meaning complex can be a construction. The token of a construction is a construct. For the notation of a construction, both FORM and MEANING poles are included with a double arrow ‘ $\Leftrightarrow$ ’ to show their correlation. The subscripts are adopted to connect different levels of interpretation, both horizontally and vertically. Furthermore, corpus-based data is preferred for the study within Construction Grammar considering its being closer to natural language and able to justify constructional frequency. Next section will be an argument for bridging rather than dividing the morphological and the syntactic explorations within the domain of Construction Grammar.

### **2.2.3 Construction Grammar and Morphology**

The term Construction Morphology was firstly proposed in Booij’s publication in 2005 and this model has been developed as early as his ‘Constructional idioms, morphology and the Dutch lexicon’ in 2002 (Masini and Audring, 2019). The claim underneath Construction Morphology is that ‘lexicon is to be interpreted as a structured and hierarchically organized array of constructions and constructs’ (Booij, 2013: 273). It intends to cover words, phrases, and multiword expressions (Masini and Audring, 2019). However, whether morphological studies in the framework of Construction Grammar should be claimed as Construction Morphology may need a second thought. The argument for this will be included in this section.

As it has been acknowledged, however, the achievement on morphological level within the framework of Construction Grammar is a contribute to constructional exploration like the interpretation of headedness. The interpretation of headedness within Construction Grammar will also be reviewed in this section.

#### ***Why not Construction Morphology***

The application of constructional approaches to morphological level is certainly diverse from that on syntactic and phrasal levels considering the peculiarities of the linguistic combinations on morphological

level. Yet Construction Morphology seems to suggest a division in addition to the difference from syntactic explorations and that there should be Construction Syntax. It is proposed here that the constructional exploration on morphological level is the application of Construction Grammar to the lexical end of the lexicon-syntax continuum of natural languages, rather than a separate branch. The proposal of Construction Morphology is argued against from four aspects.

Firstly, the proposition of Construction Morphology violates the consideration of form-meaning unit as the basic building blocks of language. The basis in separating morphological studies from the rest is form-first. However, as shared by all constructional approaches the basic unit in considering natural languages is form-meaning pair. That suggests that form and meaning weigh the same in constructional examinations. To judge and classify language data firstly based on forms seems to disturb the equal status of form and meaning. It is just the privilege of form in linguistic examination that leads to the peripheral and less concerned status of idioms in the generative paradigm.

Phrases and multi-word expressions with non-compositional meanings have been included in the language data targeted by Construction Morphology, which disturbs the consistency of the data judgement. The proposition for phrases and multi-word expressions to be included as the data of Construction Morphology is that they semantically function as a word. As a result, judging by form in morphology is switched to judging by meaning. It has been claimed that phrases and multiword expressions can be well explained within the domain of Construction Morphology (Audring et al., 2013). However, it is hardly convincing to attribute such explanatory adequacy only to Construction Morphology but not Construction Grammar. Instead, the inconsistency of data measurement switching between form and meaning may reduce the claim for Construction Morphology.

Furthermore, to separate the examinations on morphological constructions from the rest violates the consideration of languages as a lexicon-syntax continuum. The major starting point for Construction Grammar is the phrases and multiword expressions, which are treated as irregular and classified into dictionaries of vocabulary in the generative paradigm. The way of including them into Construction Morphology seems a repetition of that. To give the language data at the lexical end of the continuum a proper status is agreeable, but the morphological end might not be the proper status for the middle phrasal and multi-word linguistic units. They can be included into the morphological end due to their morphological properties. However, that cannot cover the fact that they have syntactic features. Such mixture of morphological and syntactic in the same combination may suggest more than either

morphological or syntactic examination. For linguistic facts to tell, it is necessary to give a proper status for the ‘irregular patterns’ as the middle area on the lexicon-syntax continuum.

In general, the morphological and syntactic separation is a typical top-down observation of languages, which is a main property of the generative paradigm. However, Construction Grammar is a bottom-up approach (Hoffmann, 2022). A major motivation for proposing Construction Morphology is the descriptive and explanatory adequacy for the paradigmatic relation of substitution of morphemes like *socialism/socialist* or words like *good/bad* and the holistic properties of constructions like non-compositionality (Booij, 2013). However, there is no evidence that those have been covered or overlooked in the more general domain of Construction Grammar. It is thus concluded that the constructional examination on the lexical end of the lexicon-syntax continuum is the application of Construction Grammar to morphological level, rather than a separate Construction Morphology.

### ***Headedness in Construction Grammar***

Headedness has been considered essential in describing or explaining a morphological complex that has been discussed from a syntactic perspective (e.g. Williams, 1981; Selkirk, 1982), semantic perspective (e.g. Hall, 1992) or both (e.g. Jespersen, 1924). It seems that the syntactic perspective takes the main trend. However, Booij (2009) has proposed in his constructional exploration on morphological level that the interpretation of head needs to be semantic for headedness to be a universal parameter across languages.

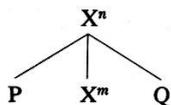
The main trend in the interpretation of head is syntactic, which yet does not apply universally even within one language. The syntactic head as the main trend can be evidenced by Righthand Head Rule (RHR) (Williams, 1981: 248). It is a generalization of the regular position of the syntactic head, which is considered ‘the only generalization contributed by the rule of compounding’ (ten Hacken, 2017). Such position generalization has been refuted and modified because the syntactic head is not always on the right hand based on English and other languages. Take English. *Secretary general* is a noun but *general* is an adjective (2.5).

(2.5) [secretary<sub>N</sub>] + [general<sub>A</sub>] → [secretary general<sub>N</sub>] (Hall, 1992: 62)

For the syntactic head to be universal, Selkirk (1982) has modified RHR to include both left and right headedness as in (2.6).

(2.6) *Right-hand Rule (Revised)*

In a word-internal configuration,



where X stands for a syntactic feature complex and where Q contains no category with the feature complex X,  $X^m$  is the head of  $X^n$ . (Selkirk, 1982: 20)

This revised RHR will be able to describe or explain the languages that are right-headed like German, English and Dutch (Scalise, 1984; 1992), and that are left-headed like Italian (Scalise, 1984; 1992) and Maori (Bauer, 1993). It can also describe or explain the languages containing both left-headed and right-headed compounds like Romance languages, Chinese, and Japanese (Booij, 2009).

However, the modified model of syntactic head is not yet universal in the application across languages (Booij, 2009: 9). Take two examples in Mandarin (2.7) (Ceccagno and Basciano, 2007: 211). *毒贩* (*dúfàn*, drug-criminal, ‘drug criminal’) (2.7a) is considered as right headed in the sense of syntactic category; yet it is still right headed in the sense of meaning. *禁毒* (*jìndú*, prohibit-poison, ‘ban the sale and abuse of drugs’) (2.7b) is left headed considering both syntactic category and meanings. However, the syntactic category of the compounds in Mandarin can change and vary in actual use. *禁毒* (*jìndú*, prohibit-poison, ‘ban the sale and abuse of drugs’) in *禁毒宣传* (*jìndú xuānchuán*, prohibit-poison promote-spread, ‘ban-drug propaganda’) is used as an adjective to modify the noun *宣传* (*xuānchuán*, promote-spread, ‘propaganda’). In cases like that, it is the semantic but not the syntactic category that holds in head identification. It also entails that the identification of the head cannot rely on both semantic and syntactic category at the same time. As Booij (2009) has proposed, the ‘generalizations about the position of the head must be made in terms of the corresponding semantic structure’ (9).

(2.5) a. Right-headed (Ceccagno and Basciano, 2007: 211):

*毒贩* (*dúfàn*, drug-criminal, ‘drug criminal’): [<sub>N</sub>毒] + [<sub>N</sub>贩] → [<sub>N</sub>毒贩]

b. Left-headed (Ceccagno and Basciano, 2007: 211):

*禁毒* (*jìndú*, prohibit-poison, ‘ban the sale and abuse of drugs’): [<sub>V</sub>禁] + [<sub>N</sub>毒] → [<sub>V</sub>禁毒]

For the notion of headedness to be universal, it is the semantic perspective that is required in cross-linguistic observation and interpretation within Construction Grammar. In this study, it is the semantic head proposed by Booij (2009) that is followed in the observation of English and Mandarin antonym constructs.

This section has claimed that constructional studies on morphological level should be the application of Construction Grammar. In this way, the phrases, and multiword expressions in the middle area of the lexicon-syntax continuum can be given a proper status to be the constructions they are, instead of being squeezed into morphological or syntactic. Such status may allow the linguistic facts to tell more and may weld the division between morphology and syntax. Yet the achievement at the lexical end of the lexicon-syntax continuum like considering headedness a semantic parameter is a contribution to Construction Grammar. The interpretation of the head in the antonym construction in this study will follow Booij's proposal to take the semantic perspective.

#### **2.2.4 Construction Grammar and contrastive linguistics**

Constructions have been considered language specific, especially in the formal representations of grammatical structures (Croft, 2001: 3-4). This seems to suggest a low possibility to compare languages, especially those less morphologically related (Boas, 2010). However, Construction Grammar has been applied to the comparisons across languages and proves effective. As it has been clarified in Section 2.1.1, comparisons between two languages can be unidirectional or bidirectional. The former is to identify in the other language the linguistic element identified in one language. The latter is to examine the linguistic universal that can be shared across languages. Due to the primary focus on English, the constructional comparisons between languages are mainly unidirectional, identifying in other languages the constructions having been described and analyzed in English (Boas, 2010). Yet a review of those studies will surely shed light on the comparison within the framework of Construction Grammar, especially on the exploration of the linguistic equivalence. Those studies can be generally grouped into three. One group is within the Indo-European language family, one between English and a non-European language, and one more across four languages. The relevant findings and claims of each group are to be reviewed in this section.

Within the Indo-European language family, Hilpert (2010) compared English and Swedish comparative constructions, González-García (2010) English and Spanish Accusative cum Infinitive constructions, and Gurevich (2010) English and Russian conditional constructions. Mainly three claims are relevant here. First is that Construction Grammar allows all-level exploration and generalization, which is impossible in a reductive approach (Hilpert, 2010). Take one example from each study. A final /l/

biases speakers towards the periphrastic comparative in English but not in Swedish (Hilpert, 2010). In English and Spanish, the two patterns *He found that chair to be uncomfortable/He found that chair uncomfortable* seem synonymous but not in pragmatics (González-García, 2010). English and Russian both use the morphological features of verbs to express distinctions, but English mainly uses verb tense and Russian verb mood like imperative, conditional, or declarative (Gurevich, 2010). As claimed, the perspective of form-meaning pair allows the linguistic elements to be observed and compared in a multi-level and case-specific way.

The rest two claims are more relevant to the advantage of comparative examinations. Firstly, comparing constructions can uncover the parameters that is unnoticed in the analysis limited to one language (Hilpert, 2010). For instance, *vad* ('what') is frequently used in the Swedish pattern *He's taller than what I am*, but not in English (Hilpert, 2010). Moreover, comparisons can test the assumption of functional motivation based on one language (Hilpert, 2010). Take the assumption by Mondorf (2003). It was proposed that morphological comparative (*-er*) is preferred over periphrastic (*more*) in English for easier processing (Mondorf, 2003). That has been verified by the language data from Swedish (Hilpert, 2010).

Outside the Indo-European language family, English constructions were compared with their counterparts in Finnish (Leino, 2010), Thai (Timyam and Bergen, 2010), and Japanese (Hasegawa et al., 2010). The first two studies compared the Argument Structure Constructions. Leino (2010) examined ditransitive, caused-motion and resultative constructions, and Timyam and Bergen (2010) caused-motion and ditransitive constructions. Their findings have verified that constructions are language specific. For instance, the same features in Finnish are expressed by a versatile case inflection system, but by prepositions and word order in English (Leino, 2010). Different from the two studies, Hasegawa et al. (2010) compared Measurement and Comparison Constructions between English and Japanese. It was concluded that 'even in a limited semantic domain with relatively straightforward equivalences across languages there are many significant lexical and constructional differences' (Hasegawa et al., 2010). Similarities have been found in those three examinations but in general terms. For instance, which argument structure to be used is related to the pragmatics in either English or Thai (Timyam and Bergen, 2010). In a way, the three comparisons have verified the assumption that constructions are language specific with universals only in general terms. However, they have also confirmed the effectiveness of Construction Grammar to describe and explain (Hasegawa et al., 2010) as shown by the studies within

Indo-European language family.

Additionally, the notion of construction correspondence has been proposed and discussed (Leino, 2010). A clarification of construction correspondence is essential. On the one hand, a common ground plays the role of a constant for the languages in comparison, based on which the variables in each language are observed and compared (Section 2.1.1); on the other, common ground can occur on any linguistic level (Section 2.1.1), but what are the levels that should be involved in a constructional comparison has not been defined within the framework of Construction Grammar.

The construction correspondence, according to Leino (2010), should refer to the rough equivalence between a pair of constructions from two languages that enables a comparison. Three aspects (Leino, 2010) were clarified. Firstly, the correspondence would include both form and meaning similarities. For meaning, it could be semantic or communicative; for form, it could be formal, structural, or morpho-syntactic. Yet the similarity would not be ‘in any single respect alone’ (132). Secondly, the correspondence of the construction would be based on a shared scene or situation (Leino, 2010). That was set in Isomorphic Mapping Hypothesis that similar situation tends to be coded in similar morphosyntactic means in argument structure. Thirdly, the correspondence would be a gradient. The relevant similarities between the two constructions may be more in some and less in other aspects. Those three proposals are increasingly generalized from the first to the last, and the last two need to be based on the first. The confirmation or even modification of the three assumptions requires further application of Construction Grammar to cross-linguistic comparisons, but Isomorphic Mapping Hypothesis has been concerned and discussed (Goldberg, 2006: 187; Lidz et al., 2003: 154).

Isomorphic Mapping Hypothesis is proposed by the constructionists like Lidz et al. (2003: 154) but it is not new. It is proposed as a more transparent way to refer to the theta-criterion, which yet has been argued against due to the generative basis (Goldberg, 2006: 187). Alternatively, Goldberg (1995: 39) has proposed Scene Encoding Hypothesis from the perspective of construction.

Scene Encoding Hypothesis: Constructions which correspond to basic sentence types encode as their central senses event types that are basic to human experience. (Goldberg, 1995: 39)

Scene Encoding Hypothesis observes that similar happenings tend to be communicated with similar syntactic structures in different languages, which is the same as Isomorphic Mapping Hypothesis. What

differs Scene Encoding Hypothesis from Isomorphic Mapping Hypothesis is that the former considers the encoding a cognitive complex in language use, which is part of human cognition. After all, constructional approaches are cognitive and usage-based (Section 2.2.1).

Different from the above examinations limited to two languages, the one by Croft et al. (2010) examined across English, Icelandic, Bulgarian and Japanese to discuss and revise Talmy's typological classification of complex event constructions. Complex event constructions are related to predicate, which is less relevant here. For more details, please see Croft et al. (2010). Yet two claims are relevant. Firstly, all the four languages have used more than one type identified by Talmy. It has thus been proposed that comparison is not about a whole language, but about a construction encoding an equivalent situation (Croft et al., 2010). It seems to suggest that construction could be a typological parameter. Secondly, the comparison across the four morphologically diverse languages of the same construction has suggested that 'crosslinguistic variation is constrained' (Croft et al., 2010: 202).

In sum, Construction Grammar can be applied to crosslinguistic comparisons although they are mainly limited to unidirectional observation. Construction Grammar allows an all-level examination across languages that are even morphologically unrelated. For the identification of the construction equivalence in crosslinguistic comparison, Leino (2010) has proposed construction correspondence, considering both form and meaning and coding an equivalent situation. Following this assumption, construction seems to play the role of a parameter in the comparisons across languages. However, this is an assumption based on another assumption that is to be confirmed.

Section 2.2 has introduced the Usage-Based Construction Grammar, argued for the bridging of morphological and syntactical observations within Construction Grammar and reviewed the application of Construction Grammar to cross-linguistic comparisons. This study takes the approach of Construction Grammar because it examines form and meaning in use without prioritizing either. Construction Grammar considers form-meaning pair the building-block of languages and language a lexicon-syntax continuum that all linguistic facts should have a proper place on it. Following this, the examination at the morphological level is not the separate Construction Morphology, rather the application of Construction Grammar on lexical level. Constructions have been considered language-specific, and the similarities lie in the communicative purpose of language use and the cognition involved in the process. However, Construction Grammar has been applied to the unidirectional comparisons across languages to identify

the constructions that have been identified and concerned in English. It proves effective and has led to the discussion of linguistic correspondence across languages in comparison. I assume that comparing languages within Construction Grammar may lead to the redefinition of typological parameters due to its perspective of form-meaning pair. Yet that needs to be told by the linguistic facts (Section 6.2; Section 6.3).

## CONCLUSION

Chapter 2 has introduced the theoretical background of this study and reviewed the relevant theoretical applications. Section 2.1 provided an overview of the main principles in contrastive studies and the morphological differences between English and Mandarin. This study will follow the bidirectional perspective in the comparison to equally include English and Mandarin. Section 2.2 focused on Construction Grammar and reviewed the application of Construction Grammar to cross-linguistic comparisons. Form-first perspective cannot rationalize this study due to the formal in-equivalence of the antonym constructions between English and Mandarin; meaning-first perspective is limited to the identification of meaning equivalence between English and Mandarin (Section 2.2.3; Section 3.4). Therefore, this study will take the approach of Construction Grammar to examine the antonym co-occurrence as a form-meaning pair in use without prioritizing either form or meaning.

## Chapter 3 Antonymy and Antonym Constructions between English and Mandarin

Possible differences between English and Mandarin in the use of antonymy have been noticed. English has been considered a language with implicit awareness of antonymy while Mandarin explicit (Willners, 2001). Such explicitness in Mandarin has been exemplified by the overwhelming compounded antonymous stative predicates and noun-noun antonym compounds (Li and Thompson, 1989: 81). The former indicated the scale that the predicates measure, for instance, 大小 (*dàxiǎo*, big-small, 'size'), 快慢 (*kuàimàn*, quick-slow, 'speed') and 好坏 (*hǎohuài*, good-bad; 'quality'). The latter were compounds consisting of a pair of nominal antonyms like 水土 (*shuǐtǔ*, water- earth; 'climate') and 父母 (*fùmǔ*, father-mother, 'parents'). In fact, there can be similar combinations in English like *bittersweet*, *hearsay* and *humblebrag*.

Mandarin has been considered to emphasizing the unity composed by the antonym pairs, whereas English the contrast (Murphy, 2003; Chan, 1967). Underneath the use of the binary observation was considered a prevalent Chinese philosophy of seeing the world organized in a binary but unified unit *yin/yang*. There were such binary contrasts in English like *female/male*, *earth/heaven*, and *passive/active*. What distinguished the Chinese perspective from English was the cyclic and unifying nature of *yin/yang*. According to Murphy (2003) and Chan (1967), it seemed that English tended to emphasize the contrast in antonym pairs, and that the incompatibility was clear-cut. In contrast, *yin/yang* in Chinese culture was an eternal cycle of reversal in all systems. What was *yin* was expected to become *yang* and *yin* again.

Consistent examinations of the antonym constructions in English and Mandarin and a systematic comparison of them are necessary to justify that assumption and to clarify whether such cultural differences have been encoded in the use of antonymy.

In this chapter, the literature relevant to antonymy and the antonym constructions in English and Mandarin will be reviewed. The understanding of antonymy may be shared across languages and cultures but not particular antonym pairs (Murphy, 2003; Osgood et al., 1975). It has been noticed (Hofmann, 1993) that the antonymy of *mountain* in the United States tends to be *valley*, but it tends to be *ocean* in Japan. As Murphy (2003) has put it, particular pairings are influenced by 'culture-specific' (213) factors and 'the role of antonymy in language and culture' (213) may differ. For the consistency of the antonymy in the language data for this study, the definition and classification of antonyms are reviewed in Section

3.1. In English, the antonym co-occurrence on syntactic level has been examined but not that on lexical level. Therefore, Section 3.2 will firstly review the literature of the English lexical or phrasal structures relevant to the antonym constructions in this study and then the English antonym co-occurrence on syntactic level. The antonym co-occurrence on lexical level has always been an academic topic in Chinese linguistics, which will be reviewed in Section 3.3. Section 3.4 will review the studies that have compared English and Mandarin antonym co-occurrence. Following the review, Section 3.5 will summarize the identified gaps and clarify the design for this study.

### 3.1 Antonymy

The term ‘antonymy’ was coined in 1867 by C. J. Smith in his *Synonyms and Antonyms* ‘as an opposite of’ and ‘by analogy with’ (Jones, 2002: 9) synonymy. It was intended to be ‘the standard technical term for oppositeness of meaning’ (Lyons, 1977: 270-271) between a pair of lexical units. Yet what is antonymy and what can be antonyms are not so easy to identify in practice. For instance, not all English speakers will consider *chalk/cheese* a pair of antonyms (Section 1.1). Having observed such dispute, antonymy has been defined and redefined.

Despite the intention of coining *antonym* as the opposite to *synonym* to indicate oppositeness, however, not all scholars have adopted the term that way. Lyons (1977) chose the terms *opposition* and *contrast* rather than *antonymy* in the discussion of the opposite sense relation between lexemes. He (Lyons, 1977) explained that the term *antonymy* proved no more precise than *oppositeness*. Others took *antonym* a subgroup of lexical opposites. Lexical opposites refer to those without morphological indications of the relation like *agree/disagree*. In Palmer’s discussion (1981), *antonym* was exemplified by *wide/narrow*, *old/young*, and *big/small*, which was parallel with relational opposites like *buy/sell* and *husband/wife*. Löbner (2002) categorized opposites into five types with *antonym* as a subgroup. More recent discussions have used *antonyms* as an equal replacement of opposites like Saeed (2001), Cao (2001), Jones (2002), Murphy (2003), Shu and Tian (2019), etc. This study will follow the trend to use *antonym/antonymy* as the technical terms to refer to the opposite/oppositeness in discussion.

The following two subsections will introduce the main definitions of antonymy and the major ways to categorize antonyms. In the end, the definition of antonymy and the categorization of antonyms for this study to follow will be summarized to close this section.

### 3.1.1 Definition of antonym

*Antonym/antonymy* has been defined in more than one way. It is the perspective of semantics that has been taken in the original attempts (Lyons, 1977; Palmer, 1981; Crystal, 1985; Cruse, 1986; Muehleisen, 1997; Kreidler, 1998; Richards and Schmidt, 2011). Afterwards, more and more lexical and textual features of the antonym pairs have been taken into consideration (Justeson and Katz, 1992; Jones, 2002; Murphy, 2003). Four definitions will be clarified and compared here to show different reflection on antonymy. In the end, the definition for this study to follow will be identified and rationalized.

From the perspective of semantics (Lyons, 1977; Palmer, 1981; Crystal, 1985; Cruse, 1986; Muehleisen, 1997; Kreidler, 1998; Richards and Schmidt, 2011), *antonymy* includes two elements. Firstly, it is a binary relation between a couple of items; secondly, it refers to the oppositeness in meaning. Such binary contrast has been concluded in the following definition:

Antonym is ‘a word which is opposite in meaning to another word (Richards and Schmidt, 2011: 27).’

Following the semantic understanding of antonymy, mainly two approaches have been taken to justify the sense relation of antonymy. One of them is truth conditional semantics (Kreidler, 1998). To explain the sense relations between different expressions, truth-conditional semantics compares the possible predications about the same expression (Kreidler, 1998). Entailment, paraphrase, and contradiction are three such relations (Kreidler, 1998). What is relevant here is contradiction. In the sense relation of contradiction between two propositions A and B, if A is true, B is necessarily false; or if B is true, A is necessarily false (Löbner, 2002: 69). Kreidler (1998) exemplified it with the cost of a necktie. If it is true that the necktie is cheap, then it is false that the necktie is expensive; vice versa (Kreidler, 1998).

Such truth-conditional approach to meaning can show logical properties and relations but ‘do not directly concern meaning’ (Löbner, 2002: 81). It hardly shows proper insight in social, expressive, or non-contingent meanings (82). Besides, there can be a middle ground between antonyms (Griffiths, 2006: 30). Continue with the necktie example (Kreidler, 1998: 86). For the cost of the necktie, there can be a middle ground that is neither cheap nor expensive. In that case, the logic of contradiction does not hold.

The other semantic approach to justify the sense of antonymy is the semantic field theory. According

to the semantic field theory, a lexeme can be defined by the set it belongs to and how different it is from the rest member lexemes within the set (Kreidler, 1998). Take the set *man/woman/boy/girl* (Leech, 1981; Kreidler, 1998). They share one semantic feature of being human but differ in the semantic features of age or gender.

The identification of such semantic features is componential analysis. In componential analysis, the presence or absence of certain semantic components are marked on the left with ‘+/-’, semantic components are capitalized to distinguish from lexemes, and square brackets are placed to start and end the semantic feature notation (Leech, 1981). *Man/woman/boy/girl* can be described as in the following notations of semantic features (3.1) (90):

- (3.1) man [+HUMAN, +MALE, +ADULT]  
 woman [+HUMAN, -MALE, +ADULT]  
 boy [+HUMAN, +MALE, -ADULT]  
 girl [+HUMAN, -MALE, -ADULT]

Componential analysis has been considered effective in representing the binary contrast properties of anonym sets (Lyons, 1977), but it has been criticized (e.g. Lyons, 1977; Leech, 1981; Cao, 2001; Shu and Tian, 2019). Only those disputes are relevant in defining a lexeme, but not in revealing the sense relation. One dispute is about the psychological reality and universality of the semantic components. It is always the unmarked semantic component rather than the marked one that is chosen in defining lexemes. For instance, it is MALE instead of FEMALE that is used in defining *man/woman/boy/girl*. Furthermore, the definition of lexemes can be an endless circle because the semantic components are originally words and require being defined.

In general, the semantic definition of antonymy has observed the binary contrast in the relation between a pair of antonyms. Yet neither the truth condition of contradiction nor the componential analysis approach can be effective enough in justifying the antonymy between a pair of antonyms. In comparison with the truth condition of contradiction, componential analysis seems more effective in showing the binary features of antonym pairs. However, to be a pair of antonyms involves more than a binary contrast in meaning as claimed by Justeson and Katz (1992).

A semantic opposition along a single dimension is the traditional criterion for antonymy, often with additional semantic constraints. However, antonymy is not only a semantic but also a lexical relation, specific to words rather than concepts. (Justeson and Katz, 1992: 176)

Justeson and Katz (1992: 176) have proposed that antonymy should be lexical-specific and evidenced the inadequacy of semantic definition with three linguistic facts of antonym pairs. The first are morphological antonyms where the pair shared the same root. Take *agree/disagree* or *proper/improper*. The antonym counterparts here are a result of adding to the original root the negation suffix *dis-* or *im-*, which is lexical specific. The second are lexical antonyms that are readily paired. For instance, *large* is opposed to *small* while *big* to *little*. With a swap between them, *big/small* is well accepted but not *large/little*. Such ‘lexical specificity’ (176) and ‘asymmetry in antonymy judgements’ (176) cannot be explained by the semantic definition. The third is ‘the absence of antonyms’ (176) for certain concepts when their synonyms have opposites. The antonym of *soggy* is not readily available but *wet* is readily paired with *dry*.

After their corpus-based exploration of adjective antonyms, Justeson and Katz (1992: 182) defined antonymy that:

... antonyms are those semantically opposed words that are conjoined and often opposed to one another at relatively high rates in sentences by substitution for one another in otherwise essentially identical (or parallel) phrases. (Justeson and Katz, 1992: 182)

In this definition, the co-occurrence frequency suggested by ‘often opposed to one another at relatively high rates’ (Justeson and Katz, 1992: 182) has partly explained the lexical-specific association between antonyms. Moreover, ‘otherwise essentially identical (or parallel) phrases’ (182) has also suggested the in-text pattern for the antonyms to co-occur. It would be either identical or parallel. In this regard, the definition has proved more informative than the former one limited to semantics. Moreover, it has suggested that ‘the behavior of words in actual language’ (181) is crucial to define antonyms.

Jones (2002) has further specified the contextual co-occurrence of antonyms. He first selected 56 pairs of opposites. That list is a modification of Deese’s list of adjective antonyms. To be more representative, Jones retained core pairs like *poor/rich*, *right/wrong* and *hard/soft*, included more non-gradable pairs without different levels in-between like *female/male* (Section 3.1.2), and added verb pairs like *lose/win* and morphological ones like *advantage/disadvantage*. With this modified collection, he did

a co-occurrence exploration in a 280-million-word newspaper corpora (consisted of all the stories printed in the newspaper *The Independent* between 1<sup>st</sup> Oct. 1988 and 31<sup>st</sup> Dec. 1996) and came up with his own definition of antonym.

Antonyms are pairs of words which contrast along a given semantic scale and frequently function in a coordinated and ancillary fashion such that they become lexically enshrined as ‘opposites.’ (Jones, 2002: 179)

This definition has first specified the semantic requirements for a pair of items to be antonyms. Binariness is indicated in ‘pair’ that the relation is limited to two items; and a common semantic domain needs to be shared like a scale by the pair of items. Furthermore, the identical or parallel co-occurrence pattern noticed by Justeson and Katz (1992) has been further specified as ‘coordinated and ancillary’ (Jones, 2002: 179).

Coordinated pattern is usually a pair of antonyms conjoined by *and/or* to imply inclusiveness or exhaustiveness. According to Jones (2002), coordinated antonymy ‘does not focus on the distinction between antonyms’ (103). Instead, it relies on the common scale shared by the pair of antonyms to ‘encompass all points on their given scale’ (61). When the pair of antonyms are linked by *and*, it is the sense of inclusiveness that is expressed; when the pair are linked by *or*, it is the sense of exhaustiveness that is expressed (63). In (3.2a), *success/failure* are joined by *and*; it is ‘all the happenings’ on the scale ‘from success to failure’ that were taken. In (3.2b), *win/lose* are joined by *or*; it is ‘any result’ on the scale ‘from win to lose’ that are considered. Following this, it can be concluded that both inclusiveness and exhaustiveness are about the whole coverage of the common scale defined by the pair of antonyms in discussion. Slightly differently, inclusiveness emphasizes that it is all the points on the common scale of the antonym pair that are included, when the lexical link is *and*; whereas exhaustiveness emphasizes that it is any points on the scale shared by the antonym pair that are included, when the lexical link is *or*.

(3.2) a. He took success and failure in his stride. (Jones, 2002: 64)

b. Yet, win or lose, he could fade faster than Donny Osmond if the money goes to his head.  
(Jones, 2002: 66)

Ancillary antonymy is a sentential pattern where a pair of antonyms act as a signal of a nearby secondary pair of contrast sets. The secondary pair of contrast sets is often contextual and has less

antonymy. In the following first example (3.3a), *faith/doubts* are not readily a pair of antonyms, but it appears opposite in the context due to the oppositeness between *young* and *old* plus the contrast strengthened by the parallel structure. So are *six months ago/today* in the second example (3.3b). The oppositeness between *immoral and unnecessary* and *moral and necessary* makes the intention to contrast *six months ago/today* more clearly. Outside the context, however, *six months ago/today* will not be so different as a set of opposites. Antonym pairs like *old/young* (3.3a), *immoral/moral* (3.3b) and *necessary/unnecessary* (3.3b) are considered canonical or conventionalized antonyms that do not require a context to be considered antonym pairs. Yet *faith/doubts* (3.3a) and *six months ago/today* (3.3b) are contextual antonyms with less antonymy because they will hardly be considered opposite out of the special context (3.3a; 3.3b). To sum up, coordinated and ancillary patterns have specified ‘what antonymy does’ (Jones, 2002: 24) in discourse.

(3.3) a. You are as young as your faith, as old as your doubts. (Jones, 2002: 56)

b. What was immortal and unnecessary *six months ago* cannot be moral and necessary *today*.  
(Jones, 2002: 50)

Jones’ definition proves more informative than that by Justeson and Katz (1992), but it is a definition limited to ‘good opposites’ (Jones, 2002: 11) or ‘enshrined’ (Jones, 2002: 179) canonical antonyms. His definition has captured the semantic and the co-occurrence measurements of antonymy. Nonetheless, not all pairs of opposites could meanwhile meet both standards (Jones, 2002). Those meet both became canonical antonyms, which are paired and preferred over other possible opposite sets (Jones, 2002). Take the above examples. It is the contrast in the parallel context that makes *faith/doubts* or *six months ago/today* opposites. Their oppositeness is contextual and temporal. In contrast, *old/young*, *mortal/immortal* and *necessary/unnecessary* will be accepted as antonyms even without the context. Therefore, it has been proposed that the antonymy of antonym pairs could be a continuum, with one end ‘prototypical or canonical’ (Jones, 2002: 11) antonyms and the other end ‘peripheral’ (Cruse, 1986: 198) or ‘non-canonical’ (Murphy, 1995: 4) opposites.

Different from Jones (2002), and Justeson and Katz (1992), Murphy has proposed a more inclusive but also effective way to define antonyms in her discussion on semantic relations.

#### Relation by Contrast-Lexical Contrast (RC-LC)

A lexical contrast set includes only word-concepts that have all the same contextually

relevant properties but one. (Murphy, 2003: 170)

Underneath this definition of antonymy (RC-LC) is the principle of minimal difference (Murphy, 2003). Minimal difference entails two requirements of semantic relatedness. One is similarity and the other difference. Firstly, similarity is basic to any semantic relatedness; secondly, the related items are different in one relevant aspect (Murphy, 2003). Take the antonym pair *up/down*. They both refer to vertical directions, and based on that they are incompatible and opposite to each other. Minimal difference is the contrast based on the commonality between lexical items. Murphy (2003) concludes it as the Relation by Contrast to include all the lexical relations. Which lexical relation depends on which aspects to share and which aspects to differ (Murphy, 2003). Synonyms differ in form; hyponyms differ in categorization level. Regarding antonymy, antonym pairs suggest things that are incompatible but otherwise the same (Murphy, 2003).

RC-LC is a sub-branch of Relation by Contrast (RC) and intends to explain the semantic relation of antonymy. RC-LC is effective and inclusive in explaining antonymy. Firstly, it allows for the semantic explanation of the common scale and the binary oppositeness as has been noticed by the semantic definition. The common semantic scale is included in ‘all the same contextually relevant properties’ (Murphy, 2003: 170) and the oppositeness is the ‘one’ (Murphy, 2003: 170) minimal difference.

Secondly, it leaves to the context to define the twoness or the binary contrast, which is the premise of shaping a pair of antonyms. It is shared across Jones (2002), and Justeson and Katz (1992) that the twoness or the binary contrast in the context can lead to antonyms. Yet such contextuality is not included in their definitions. RC-LC leaves it to the context to define which aspects of the set to share and to differ. That allows the contextual co-occurrence indicated in the definitions by Jones (2002), and Justeson and Katz (1992) to be explained. In this way, the temporary and secondary opposite pairs noticed by Jones (2002) can be explained. Take the above *faith/doubts* (3.2a). *Faith* means ‘trust’ or ‘belief’, and *doubts* ‘uncertainty’ or ‘disbelief’. *Faith* and *doubts* are not readily accepted as an antonym couple despite the potential oppositeness between the synonym of each *belief/disbelief*. Yet the parallel pattern *as... as your faith, as... as your doubts* puts *faith* and *doubts* in a structure of being binary contrasted. The oppositeness between *old* and *young* only adds to the binary oppositeness. Contextually, *faith* and *doubts* are generated as antonyms based on their potential contrast related by *belief/disbelief* and the binary context they are in.

Thirdly, RC-LC can also explain why the same word can have different antonyms. Take *man*. It can be opposite to *beast* in regard that both are creatures with the first human and the other non-human. It can

be opposite to *woman* regarding the traditional notions of biological gender. It can be opposite to *wife* regarding the binary partnership in a traditional marriage. Furthermore, it can be opposite to *boy* regarding the physical or mental maturity of a male. While being opposite to different antonymous counterparts, different aspects of ‘man’ is intrigued by the counterpart to shape their common semantic scale, following which the contrast between the pair is also adjusted.

RC-LC is pragmatic as indicated in its effectiveness and inclusiveness in identifying the semantic relation of antonymy. That is because the examination of the semantic relation in RC-LC is based on the word-concepts of the lexical items (Murphy, 2003: 58). According to Murphy (2003: 24), the mental representations of words that have been observed include two types. One is the linguistic lexical items and the other the metalinguistic conceptual representations of lexical concept. The latter is the word-concept meant by Murphy (2003). Word-concept is obtained in language use, which can be diverse from person to person. For instance, when *dog* is mentioned, the concept intrigued in the mind of each person could be different. It can be a guide dog, a pet dog, a biting dog, etc., which depends on the personal experience in obtaining the word in daily life. Semantic relations are consisted of conceptual knowledge about words (Murphy, 2003), and ‘both semantic and form-related criteria’ (58) that can be relevant in identifying semantic relations.

In sum, the four definitions are continuous attempts to describe and explain *antonym/antonymy*. The semantic definition has captured the semantic essentials for being a pair of antonyms. They need to be a binary contrast on their common semantic scale. Justeson and Katz’s definition (1992) has moved beyond the semantic perspective and noticed the lexical-specific co-occurrence of antonym pairs. Jones’ definition (2002) has further specified the most frequent context for the co-occurrence of antonym pairs, but the definition is exclusive to contextual or peripheral opposites. Murphy (2003) has moved further than Justeson and Katz (1992) and Jones (2002). Murphy’s RC-LC (2003) includes form in addition to meaning in explaining antonymy and leaves it to the relevant properties in context to justify antonymy. That makes it possible to include and explain both canonical and non-canonical antonyms. This study will follow Murphy’s definition due to its being inclusive, effective, and pragmatic, making it possible to explain the diverse antonym pairs across languages like English and Mandarin (Section 3.4).

### **3.1.2 Classification of antonyms**

Just like in defining antonymy, the previous attempts to categorize antonyms also took a semantic

perspective (Sapir, 1944; Cruse, 1986; Kreidler, 1998). Afterwards, other linguistic features start playing a role in the categorization, including forms (Murphy, 2003) and contextual dependence (Jones, 2002; Cao, 2001). In addition to meaning, form and contextual dependence, however, there could be one more perspective to categorize the sense of antonymy. It is the logical relation in oppositeness (Löbner, 2002; Jiang, 2005). This section will review the different ways of classification and conclude with the classification followed by this study.

The traditional categorization of antonyms mainly relies on semantic properties and the most quoted is gradable and non-gradable (Sapir, 1944). The former can be exemplified by *hot/cold* that the two antonyms are the two ends of the continuous spectrum of temperature, leaving different degrees in-between. The non-gradable antonym can be further specified as converse or relational like *uncle/aunt* and complimentary like *dead/alive*, both of which are the two clear-cut halves or ends of a whole unit. Kreidler (1998) classified antonyms into binary and non-binary. They are equal to the above mentioned complementary like *dead/alive* and contrary like *old/young*. Cruse (1986) categorized antonyms into pseudo-comparatives and true comparatives with further sub-classes to describe the semantic relations of each pair of antonyms. This is not an exhaustive list of diverse ways of semantic classification of antonyms.

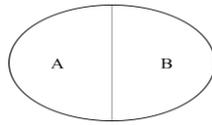
Yet Jones (2002) has claimed that the more semantic types or sub-types are added, the further they could be from the generally accepted antonyms. It has been proposed (Jones, 2002) that antonym classification should be based on their contextual function. For this purpose, Jones (2002) examined 3,000 authentic sentential contexts of fifty-six good opposites and categorized them into ancillary, coordinated and the rest minor groups. Similarly, Murphy has commented that ‘a complete logical taxonomy of opposite relations does not exist’ (2003: 201) and that antonym subtypes are of little relevance to their actual usage (Murphy, 2003). Based on the morphological relatedness, Murphy (2003) proposed morphological related and unrelated antonyms, which could be exemplified by *like/dislike* or *do/undo*. That has given the morphological antonyms a status in the group of antonyms and expanded the focus on lexical antonyms. On top of all that, it has also been proposed that antonymy can be distinguished between context dependent and context independent (Cao, 2001). That will find support at least in Jones (2002) and Murphy (2003) (Section 3.1.1).

In the above categorizations, it is the perspectives of meaning, form or usage that has been taken. Differently, Löbner (2013) has noticed the logic relation underneath oppositeness. In the classification of

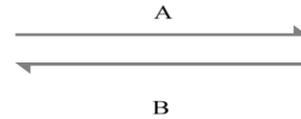
opposites, Löbner (2013) observed that the logic relation underneath oppositeness could be three: contrary, complementary, and converse. Contrary refers to the ‘opposite extremes on a scale’ (Löbner, 2013: 214) like *big/small*, *war/peace*, and *love/hate*; or the ‘opposite directions on an axis’ (Löbner, 2013: 214) like *above/below*, *before/after*, and *lock/unlock*, which are also considered directional opposites. Complementary refers to ‘either-or alternatives within a given domain’ (Löbner, 2013: 214) like *even/odd* or *girl/boy*. Converse refers to ‘reversed roles (relations only)’ (Löbner, 2013: 214) like *buy/sell*, *wife/husband*, and *employee/employer*. Such observation of the logical relations between antonyms can be indicated as in the following figures (Jiang, 2005: 129). As the specification of the oppositeness, this categorization can be a way to examine the incompatibility between a possible set of binary contrasts to see whether they are contrary, complementary, or converse.



**Figure 3.1 Contrary**



**Figure 3.2 Complementary**



**Figure 3.3 Converse**

In sum, antonyms can be categorized based on the semantic properties, antonym forms, antonymy contextual dependence or the logic specification of oppositeness. What makes the last different from the former classifications is that it is an observation of the oppositeness logic. Being contrary, complementary, or converse can be a way to identify the oppositeness between a pair of antonyms and to specify the minimal contrast. Therefore, the examination of the antonymy in the antonym constructs identified and collected for this study will be put to this test.

To conclude Section 3.1, the examination of antonymy has been expanded from semantic focus to usage based, during which antonym has been defined and redefined, and the categorization extended and modified. Antonymy, ‘in its most general sense... refers collectively to all types of semantic opposites (antonyms), with various subdivisions then being made (Crystal, 1985: 28).’ Antonymy is a continuum. At one end are good, prototypical, or canonical antonyms, while at the other are contextual or temporary pairs. The good end tends to be a group of antonyms that are likely to be universally identified without a context like *up/down*, *left/right*, or *black/white*. A practical way to identify antonymy is to rely on the

most context-relevant similarities and one crucial related contrast as suggested by RC-LC. For the minimal difference between a pair of antonyms, it can be specified as contrary, complementary, or converse. In curating the antonyms constituting the antonym constructs identified for this study, it is the definition of RC-LC that will be followed and the minimal difference between the antonyms will be examined whether it is contrary, complementary, or converse.

### 3.2 English antonym construction

This section will review the literature related to the antonym construction in English. The antonym construction in English for this study is limited to the antonymy use or antonym co-occurrence on lexical level. It can take the forms of coordinate compounds like *bittersweet* or coordinate phrases like *sooner or later* or *ups and downs*. Antonym co-occurrence can happen on lexical level or syntactic level. The latter in English has been concerned but not the former. Given both are an examination of antonymy use the literature on syntactic level will be reviewed to inform the properties of antonymy in use. For the relatedness in forms, the literature on the coordinate constructions will also be reviewed. Throughout the review the literatures will be compared to show the necessity for a study focusing on lexical level of antonym cooccurrence. At the end of this section, the research gaps and the properties that could be inherited by the antonym constructions of this study will be summarized.

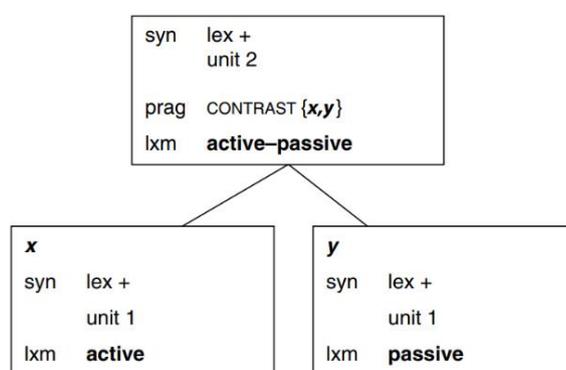
#### *English antonym co-occurrence on syntactic level*

In English, antonym pairs have been contended as constructions, capturing their paradigmatic and meanwhile syntagmatic properties (Murphy, 2006; Jones et al., 2012). Paradigmatic and syntagmatic are a pair of dichotomy notions in the description of semantic relations from the perspective of structuralists. Antonym pairs are paradigmatic in that they can replace each other structurally. For instance, *hot* in *It is hot*. can be grammatically replaced by *cold* with no changes to the structure. Syntagmatic refers to the co-occurrence of a pair of antonyms in the same text that they function together to communicate meanings. For instance, *go hot and cold*. *Hot* and *cold* here are joined as a unit to express a sudden fear or anxiety. If the lexical relation is an axis, then the paradigmatic is the vertical and the syntagmatic horizontal.

Antonym relation is considered syntagmatic as well as paradigmatic for several reasons. As Murphy (2006) has observed, antonym pairs are lexically linked in human mind and accessible without recourse to

semantic processing; their regular textual co-occurrence is higher than expectation; the conventionalized pairs can trigger secondary antonymous pairs; the preference of lexical opposites over morphologically derived antonyms are not context-dependent; new opposite pairs can arise due to their highly co-occurrence in contrastive constructions; polysemous words have different opposites with different senses, and when one of the pair is extended in a metaphorical way, the other can follow in parallel.

Following those observations Antonym Construction was proposed with six properties (Murphy, 2006), which has been modified into four (Jones et al., 2012). The Antonym Construction is formulated by two ‘lexical items that can be interpreted as contrasting, but which are not in any phrasal relation to each other’ (Jones et al., 2012: 116). Take *active/passive* (Figure 3.4).



**Figure 3.4 The *active-passive* antonym construction (Jones et al., 2012: 117)**

Firstly, the Antonym Construction *active-passive* is a lexical construction [+ LEX] (Figure 3.4). It is a construction of a pair of discontinuous lexis yet without any slots. Secondly, the lexical construction has two daughters *active* and *passive* that are not in ‘linear or hierarchical relation’ (Jones et al., 2012: 117) to each other (Figure 3.4). Thirdly, the UNIT of the Antonym Construction is specified as 2 to indicate the pair-wise property of *active-passive* on the syntagmatic level, and meanwhile the daughter unit is specified as 1 to indicate the status of *active* or *passive* on the paradigmatic level (Figure 3.4). Furthermore, the pragmatic relation of being a contrast {x,y} (Figure 3.4) is fixed on the pair level to indicate that it is a top-down approach that contextual antonyms are allowed. Those have been summarized as four properties (Jones et al., 2012: 116) that an Antonym Construction must have.

- 1) The entire construction is specified as lexical [+ LEX ].
- 2) The construction consists of two (usually lexical) daughters.

- 3) A feature UNIT is specified as 2.
- 4) Pragmatically, the two daughters are considered to be minimally different for the purposes at hand.

The Antonym Construction proposed by Murphy (2006) and Jones et al. (2012) is the result of observing antonym co-occurrence on syntactic level. On syntactic level (Section 3.4), the antonym pairs indicate the pairwise and contrast sensitiveness, including the regular textual co-occurrence higher than expected; the potential to trigger secondary antonymous pairs in a parallel construction; and new opposites paired due to highly co-occurrence in contrastive constructions. The pairwise and contrast sensitiveness can be roughly illustrated by the examples (3.4) from Jones et al. (2012). The co-occurrence of *rich/poor* (3.4a) or *down/up* (3.4b) as antonym pairs proves no doubt and *stupid/ignorant* (3.4a) and *mansion/manger* (3.4b) appear antonymous due to the opposite contrast in *rich/poor* (3.4a) or *down/up* (3.4b). Moreover, the opposite contrast is enhanced by the parallel in repeating the same syntactic structure (3.4). All this is an observation of the antonym co-occurrence on syntactic level.

- (3.4) a. The rich are stupid; the poor are ignorant. (Jones et al., 2012: 123-124)  
 b. We must not measure greatness from the mansion down, but from the manger up. (Jones et al., 2012: 123-124)

The pairwise and contrast sensitiveness of antonym pairs can also be used on discourse level for rhetoric purposes, which have been concerned. Jeffries (2010) has examined discourse opposition by close reading poetry, the reporting of the general election in the last few days before the Labour won power in 1997, and the openings of one hundred novels. For a pair of conventional opposites, it has been found that when one is present and the other is absent, the image of the absent can be triggered (Jeffries, 2010: 53). In the sentential context in (3.5), the image of white is triggered due to the conventional oppositeness between black and white. Gjergo and Delija (2014) stated that antonyms can constitute antithesis in literature or figurative speech. Davies (2008) went beyond the adoption of antonyms and examined the oppositeness between ‘us’ and ‘them’ in three article news from the perspective of Critical Discourse Analysis. Bertocchi (2003) worked on the pattern like *neither alive nor dead*, the paradoxical quality of which expresses a sense of humor with literally suggesting the intermediate point on the scale between life and death. According to Bertocchi (2003), this use is like the corresponding figurative use of the comparative construction ‘more dead than alive’ (117).

(3.5) It is called the suburbs now, but when black people lived there it was called the Bottom.  
(Jeffries, 2010: 53)

The common scale shared by antonym pairs has also been observed in use apart from the pairwise and contrast sensitivity in the above observation. A sense of exhaustiveness has been noticed (Jones et al., 2012; Murphy, 2006; Jones, 2002) in antonym co-occurrence, which is considered based on the common scale shared by the antonym pairs (Section 3.1.1). In the contrastive frames ‘X and Y, both X and Y, X and Y alike, X or Y, either X or Y, how X or Y, whether X or Y, neither X nor Y, and X as well as Y’ (Jones et al., 2012: 106), all the points on the semantic scale shared by antonym pairs X/Y are included that a sense of exhaustiveness is communicated. Take ‘... *how good or bad your defense lawyer is*’ (Jones et al., 2012: 106) and ‘*in neither public nor private cases*’ (Jones et al., 2012: 106). In both cases, the antonym pairs *good/bad* and *public/private* define and specify their respective semantic scale and all those covered by the common scale are included. As a result, the first can be understood as ‘any defenses, no matter good or bad’, and the second ‘any cases including public and private’. Those frames can be summarized into two. One is coordinative *and*; the other is alternative *or*, which can be extended or varied as *both... and..., either... or..., ... as well as..., etc.* However, whether this is a property limited to the antonym co-occurrence in those contrastive frames or it can occur to other antonym co-occurrence needs further exploration.

The use of antonymy has been explored from syntactic to discourse level but not on lexical level. It is unlikely to anticipate that the pairwise, the contrast sensitivity or the sense of exhaustiveness would play a major role or not in the antonym co-occurrence on lexical level without a close observation. One thing for sure is that it will inherit certain properties specific to antonym pairs, but it could also have properties that are different from the use on syntactic or discourse level. The relevant literature on the coordination structures, which are the structures of the antonym co-occurrence on lexical level, will be reviewed below to anticipate the properties of the antonym construction for this study.

### ***English coordinate constructions***

For the use of antonymy in English, no research has directly focused on lexical level. A previous observation of antonym co-occurrence on lexical level reveals that they can take three forms. It can be a compound like *bittersweet*, or a coordinating item joined by *and/or* like (go) *hot and cold* and *more or*

*less*, which are related to the patterns of binomials, freezes, and coordinates. The term binomial seems to have been coined by Malkiel (Kopaczyk and Sauer, 2017; Sauer and Schwan, 2017a; Sauer and Schwan, 2017b) to refer to ‘the sequence of two words pertaining to the same form-class, placed on an identical level of syntactic hierarchy, and ordinarily connected by some kind of lexical link.’ (Malkiel, 1959: 113) Irreversible binomials are called freezes (e.g. Cooper and Ross, 1975). The notion of coordinates is generally equal to that of binomials except that the lexical connectors are limited to *and/or* when there is one (e.g. Abraham, 1950; Renner, 2014). Therefore, the literature on those coordinating items is reviewed to see what may be inherited by the antonym co-occurrence on lexical level, including lexical connectors and coherence, meaning patterns and figurative use, lexicalization and syntactic categories, the sequence order and the motivation, the register for the construction, and the universal to dichotomize. For more relevance throughout the review, the examples containing antonyms are quoted when they were included by the reviewed studies.

#### ***a. lexical connectors and coherence***

The coherence in the coordinating items has been observed from the perspectives of lexical links and the properties of the substantive elements. The links joining the two elements can be lexical and the most frequent are *and/or* (e.g. Masini, 2006; Mollin, 2014; Lohmann, 2014), for instance, *up and down* and *right or wrong*. However, there can be zero link or non-lexical link (Malkiel, 1959: 132), for instance, *East-West* territory, *hit-run* (car), or *lend-lease* (bill) (Malkiel, 1959: 132). Such zero or non-lexical link could be favored by ‘derivational and syntactic conditions’ (Malkiel, 1959: 132) compressing the combinations to the barest minimum. Despite the description of the diverse forms from lexical to non-lexical, it has not been clarified whether the different links indicate the same or different coherence. Grammatically, *East-West* should be tighter than *up and down* or *right or wrong* because the former is a compound whereas the latter are phrases allowing for modification in-between.

Coherence has also been explained with the properties of the substantive elements. Klegr and Čermák (2008) noticed that the semantic or the formal repetition between the two elements A and B can contribute to the semantic coherence. Firstly, the alliteration in (*ideas on*) *this and that*, and the rhyme in *obverse or reverse* are phonological repetition and contribute to the coherence of the combination. Secondly, the opposition in *live or die* was considered a repetition of meaning adding to the coherence. However, in what semantic aspects the opposition can be a repetition has not been clarified. In the

observation of coordinating items, Wälchli (2005: 5-6) took the stance of natural coordination, considering the juxtaposed elements are inherent coordination and on the same taxonomic level. Similarly, Haspelmath (2004) related the coherence between the elements to their connections in daily life. According to him, tight coordinates were composed of those closely related and accepted couples or pairs in the real world, whereas those less daily related were loose coordinates. Take the context of washing. *Hands and face* might form a tighter unit than *hands and feet* because the former is a tighter conceptual unit than the latter in this occasion (Wälchli, 2005: 8). It was added that ‘tight and loose coordination do not simply form two clear-cut classes that are opposed to each other’ (87). That observation may lead to the assumption that tightness or coherence in coordination construction is a continuum. Yet the focus here is the semantic coherence of the substantive elements. How much the lexical connectors have contributed to the continuum of tightness has not been discussed.

Additionally, we can ask what the relations between the elements are. For those with lexical links, whether the relations between the substantive elements are the same as indicated by the lexical links; for those with non-lexical links, what the relations could be. Take *great and small* (3.6). *Great and small* (3.6) here has further specified *all creatures*. To some extent, *all creatures great and small* is synonymous to *all creatures*. The further specification seems an attempt to weigh and value each individual and especially those ‘small’ in the business service. In that sense, the semantic relation between *great* and *small* seems to have diverted from the coordinative connector *and*. Following this, the semantic relation between the antonym elements in this study may need a closer examination.

(3.6) 9honey pets (a business brand) will celebrate all creatures great and small with information, advice, tips and the latest news on our beloved furry.

### ***b. meaning patterns and figurative use***

The meaning of the whole combination has been examined. Those observations can be generally categorized into two types. One is the original meaning and the other a meaning slightly extended from the original. Malkiel (1959: 138-139) observed that the meanings of the whole could be equal to the ‘exact sum’ (Malkiel, 1959: 138) of the components. Instances are *brother and sister*, *husband and wife*, or *knife and fork*. That is the same as the observation by Arcodia et al. (2010). In justifying his hypothesis about the distribution of coordinating nominal compounds between European and non-European languages, Arcodia et al. (2010) contended that coordinating compounds should be semantically classified

into Hyponym (Hypo) and Hyperonym (Hyper) (Arcodia et al., 2010). The former refers to those kept to the original constituent meaning, which is the same as meant by Malkiel (1959).

More academic concern has been given to the extended meaning of the combination. The other meaning pattern observed by Malkiel (1959: 138-139) was an ‘unnamed multi-faceted’ (138) whole evoked by the two substantial elements. Instances are *blood and thunder*, *flesh and blood*, or *tooth and nail*. Those suggested an image with the items as a few strokes. That was a figurative use that the elements become less transparent in the final meaning of the binomial. In the discussion of natural coordination, Wälchli (2005: 5-6) considered the meaning of the whole a superordinate of the elements with certain generalization. In the classification of coordinating nominal compounds by Arcodia et al. (2010), Hyperonym (Hyper) referred to a hypernym of the juxtaposed constituents. Sauer and Schwan (2017b: 189-190) discussed the meaning and use of the binomials based on the semantic relation between the elements and a separate section has been given to the binomials consisting of antonyms. The antonym group, according to Sauer and Schwan (2017b: 189-190), expressed ‘a higher unity’ (Sauer and Schwan, 2017b: 189-190) that is often abstract. In contrast, the components are more concrete. That was exemplified (Sauer and Schwan, 2017b: 189-190) by *births and deaths* (‘the circle of life’), *father and mother* (‘parents’), *men and women* (‘people, mankind’), *sons and daughters* (‘children’), etc. It can be concluded here that the extended use of the coordination items is inherited by the antonym combinations.

Different from them, Norrick (1988) only focused on the figurative use via Frame Semantics and two types of figurative use have been observed. They are object-attribute metaphor and species-genus synecdoche. An example of the object-attribute metaphor is *fight like cats and dogs*. Being joined by *and*, the attribute related to the co-occurrence of *cats/dogs* is activated, which is a vicious fight between a cat and a dog. Which attribute of the element is activated depends on the partner (Norrick, 1988). The attribute of ‘sinister playfulness’ (Norrick, 1988: 83) was activated in *to play cat and mouse with an old enemy*, which is quite different from that of *cats and dogs*. Such figurative interpretation of the binomials was highly related to the paired members. Therefore, they were named object-attribute metaphor.

For species-genus synecdoche, it was a genus or species that was activated in the paired subtype members. For instance, *bread/butter* are two prototypes of daily basic food in the European way of eating. When they are joined by *and*, *bread/butter* is first generalized to represent the daily basic food and then further abstracted to refer to a whole concept of daily basic needs for living in general. Aside from the combination of two prototypical or prominent members, such synecdoche can happen with the joint of

two endpoints on their shared scale. Cradle is traditionally considered as the starting point of a human life and grave the end, and *from cradle to grave* refers to the entire span of a human life. The interpretation here resembles the sense of exhaustiveness captured by Murphy (2006) and Jones et al. (2012) in their observation of the antonym co-occurrence on syntactic level (Section 3.1.1).

In sum, the meaning of the combination can be a sum of the two elements or can be extended to express something higher like a hypernym, a superordinate, or a generalized concept or even can be used in a figurative way. However, the connection between the meaning patterns and the semantic relation joining the elements has never been asked. For instance, a sense of exhaustiveness has been captured by Norrick (1988) in the patterns *from... to... with the potential opposite pairs cradle/grave*, and by Murphy (2006) and Jones et al. (2012) in the antonym co-occurrence in coordinative and alternative patterns. This leads to the question whether the sense of exhaustiveness is shared by those patterns, or it is a property related to antonym co-occurrence. This question cannot be answered before a close examination of the semantic relation between the antonym elements.

### ***c. lexicalization and syntactic categories***

It has been noticed that there is a tendency to be lexicalized in the pattern of the coordinating items. Lexicalization has been understood diversely (Lehmann, 2002; Brinton and Traugott, 2005; Hilpert, 2019). Here it refers to the process of ‘the addition of new open-class elements to a repository of holistically processed linguistic units’ (Hilpert, 2019), which is usually considered diachronic. With the antonym construct for this study, it is considered lexicalized when it becomes less compositional in meaning and even has a part of speech that is diverse from its individual elements. Malkiel (1959: 136-137) took the perspective of contextual dependence in mapping out the meanings of the combination, which were classified into three. The first were semantically self-contained and the least context dependent. They were represented by binomials composed of adverbs or verbs like *first and foremost*, *now and then*, *still and all*, *to win or lose*, *to hire and fire*, and *to hem and haw*. Binomials in this group had certain syntactic autonomy in that they did not rely on a particular collocation to indicate their meaning. For the second, such semantic or syntactic independence was reduced. Take (*cays, jobs, salaries*) *bigger and better*, (*books, friends, ideas*) *old and new*, (*to be able, know, learn to*) *read and/or write*, *give or take* (*a dollar, a mile, a year*) *in either direction*. Instantiations in this group had to be ‘attached to other words to round out their meaning’ (1959: 136). The third group could be the most context dependent

because they were lexicalized and often limited to certain collocations, for instance, (*for*) *better or worse*, (*with*) *might and main*, (*through*) *thick and thin*, (*to blow*) *hot and cold*, (*to know*) *the ins and outs*, (*to live as*) *man and wife*, and (*to mind one's*) *p's and q's*.

Norrick (1988) noticed the inconsistency of the syntactic categories between the elements and the combinations, which was named incongruity. In the binomials like *ins and outs/ups and downs/ifs and buts/whys* and *wherefores/dos and don'ts/pros and cons*, either of the components in each binomial was originally a noun, but both functioned as a noun after being combined. So were those elements in binomials like *the long and the short (of a thing)*, *the straight and narrow*, *the high and the mighty*, *in the (sweet) by and by* and *on the up and up*. All the substantive components here were an adjective or a preposition, but they must be interpreted as nouns since all followed *the*. Here the incongruity between the elements and the combinations were considered a result from the modification of the inflectional *-s* or the definite article *the*.

In fact, such incongruity could also happen without lexical or inflectional signals (Norrick, 1988). Take *hammer and tongs*, *give and take* and *so and so* (3.7). Here the first noun combination *hammer and tongs* (3.7a) is adverbialized, the following verb combination *give and take* (3.7b) and adverb combination *so and so* (3.7c) were nominalized. Such incongruity, however, could not be achieved outside the pattern or the context (Norrick, 1988: 76). Norrick (1988: 76) concluded that the grammatical transformation could be activated by fixed elements like *-s/the* or the context. Following this, the syntactic category of the coordinating items seems to be contextual and functional like those in Mandarin (Section 2.1.2).

- (3.7) a. ... grandma's a very determined woman anyway. So those two must have been at it hammer and tongs. (Norrick, 1988: 76)  
 b. Judy longs for more real give and take. (Norrick, 1988: 76)  
 c. ... on the other hand you can never tell with Edgar Sparrow. He's a canny old so and so. (Norrick, 1988: 76)

Further exploration is required for the motivation of the lexicalization in the coordinating items, but based on present observation, they can be a noun or an adverb. Whether the antonym construction for this study will be used in this way or expand the list of syntactic categories cannot be answered before the exploration, but it seems that the syntactic category in English coordinating items here can be as contextual and functional as those in Mandarin (Section 3.3).

#### ***d. sequence order and the motivation***

The sequence order of the substantial elements in the coordinating items has been examined. For the same expressiveness, the two elements have a certain sequence order and cannot be reversed. It is believed that there is a logic underneath the sequence order and the factors can be semantic (e.g. Malkiel, 1959; Cooper and Ross, 1975; Landsberg, 1995; Hegarty et al., 2011), phonological (e.g. Malkiel, 1959; Pinker and Birdsong, 1979; Cooper and Ross, 1975; Mollin, 2014; Oden and Lopes, 1981), cognitive (e.g. Landsberg, 1995; Cooper and Ross, 1975; Fenk-Oczlon, 1989; Hegarty et al., 2011), or a blend of all.

Semantic factors in ruling the element sequence are many but all share the principle of ‘Me First’ (Cooper and Ross, 1975). According to Cooper and Ross (1975), the first element in the sequence indicated the properties describing ‘the prototypical speaker’ (67) of ‘Me’ (67). Those properties could be here (e.g. *here and there/this and that*), now (e.g. *now and then/sooner or later*), present generation (e.g. *father and grandfather/son and grandson*), adult (e.g. *man and boy/father and son*), male (e.g. *husband and wife/king and queen*), positive (e.g. *positive or negative/plus or minus*), singular (e.g. *singular and plural/monolingual and bilingual*), patriotic (e.g. *United States and Canada*), animate (e.g. *people and things/men and machines*), friendly (e.g. *friend or foe/support or oppose*), solid (e.g. *land and sea/Army and Navy*), front (*front and back/fore and aft*), agentive (*agent and patient/speaker or hearer*), power source (e.g. *bow and arrow/horse and carriage*), living (e.g. *living or dead/life and death*), at home (e.g. *home and away/at home and abroad*), general (e.g. *general and particular/word and deed*), nominal (e.g. *nouns and verbs*), and count (e.g. *count and mass nouns*) (Cooper and Ross, 1975: 65-66). Generally, the first elements were linguistically unmarked and ‘easier to understand’ (66). The Me First principle was related to psychological evidence (Cooper and Ross, 1975: 92). It was proposed that fixed order like up-down or vertical-horizontal should be based on the ‘ease of perceptual processing’ (92) of Me in either input or output. Cooper and Ross (1975: 92) stated that up or vertical was more easily processed in up-down or vertical-horizontal relations.

The principle of Me First has been related to the canonical ‘egocentric’ (Landsberg, 1995: 65) perception of human themselves by Landsberg (1995). He (Landsberg, 1995) examined the main semantic criteria with phonologically independent freezes, excluding the combinations with vowel alternations like *pitter-patter* or *razzle-dazzle*. In the end it was concluded that the semantic rules governing the sequential choice was egocentricity – human’s gestalt and canonical image of themselves in the universe (66). ‘Egocentricity’ (Landsberg, 1995: 68) was both temporal and spatial. According to

Lyons (1979: 638), the utterance of the speaker was egocentric in that the speaker would relate everything to his or her point of view as an expression of the ego. The speaker was the here and now in the context of the conversation. The speakers took their turns to play their role of the zero-point in the temporal and spatial coordinates of the utterance.

Phonological factors have been discussed (e.g. Malkiel, 1959; Cooper and Ross, 1975; Oden and Lopes, 1981; Renner, 2014) despite their secondary role. Cooper and Ross (1975: 71) classified their phonological observation of binomials into seven based on the properties of the second element. In comparison with the first element, the second was considered having more syllables, longer vowels, more initial consonants, more obstruent initial consonants, less closed or less front vowels, less final consonants, and less obstruent final consonants. Those factors were reexamined (e.g. Pinker and Birdsong, 1979; Oden and Lopes, 1981). Pinker and Birdsong (1979) examined the rules individually and amended the rule of less final consonants to be more final consonants. Oden and Lopes (1981) examined the factors in a combined way and in the end combined the seven factors into three – the element in the first slot tended to have a shorter vowel, fewer initial consonants, and a higher vowel, which were first tested individually and then in a combination. Renner (2014) extended the phonological observation of binomials to other lexical coordinate items, including compounds and blends. It was found that the wider and the more varied the data became, the less the ordering rules were applicable. Yet the rule of syllable numbers would stand. The number of syllables in the second element were found more than that in the first one in general.

The cognitive perspective of frequency has been examined. Fenk-Oczlon (1989) proposed the rule ‘high frequency before low frequency’ (519). The rule was based on the cognitive economy principles that old information came before new. In cognition, old information was less demanding as a result that it must have been come across more than once. Linguistically, old information must have been acquired and ready in the mind of the speaker. In comparison, new information was more demanding in the cognitive process due to less familiarity. Either cognitively or linguistically, the old information was a result of frequency that is more than one. The rule of higher frequency first was tested through 400 freezes. It was found that it overrode both semantic and phonological factors with 84% correct predictions (531). It was observed that frequency order could reverse the semantic rule as in male before female (e.g. *goose and gander/duck and drake sequence/bride and groom*) or human before nonhuman (e.g. *horse and rider*) (535-536). The frequency rule could also explain situational sequence order. In a context, the element in

the first slot of a coordinate item tended to be the one frequently mentioned in the foregoing discourse (536-537).

Semantic, phonological and frequency factors have been discussed in a combined way. Sauer and Schwan (2017b) examined phonological, semantic, and translational factors for the sequence order in binomials and concluded that those factors could overlap and reinforce or otherwise contradict each other. The translation factor was involved when a binomial was borrowed via translation from other languages, in which case the order always followed that of the source language. Mollin (2014) examined 18 ordering constraints on 544 high-frequency binomials extracted from the BNC and proposed a hierarchy of constraints from the most to the least: iconicity, perceptual markedness, formal markedness > power > number of syllables, avoidance of lapse, avoidance of ultimate stress, word frequency > syllable weight, vowel length, syllable openness, vowel backness. Those constraints were considered as a measure of well-formedness (218), a basis for frozenness or irreversibility. In the binomials where the constraints were more likely to occur, they were more well-formed and more likely to be frozen. Benor and Levy (2006) examined the semantic, programmatic, metrical/non-metrical phonological and frequency factors in 692 binomial tokens of the pattern A *and* B with three frameworks: the traditional Optimality Theory, stochastic Optimality Theory, and logistic regression. It was concluded that the model of logistic regression was the best in predicting the sequence order in binomials with 79.2% hits in their collection, and that semantic factors ranked over metrical constraints, and metrical over frequency constraints.

Given the semantic, phonological and frequency factors have been and can only be tested upon a certain language data, it is hard to justify which is more efficient in predicting the sequence order. However, the phonological and the cognitive factors seem to share that the less demanding comes first. That seems related to the egocentric perception of the speaker Me. After all the easiness of Me matters in making his or her decision about which element comes first in actual use.

The central role of the Egocentricity of Me can even explain the item with reversed order. *Boy(s) and girl(s)* can be reversed as *girl(s) and boy(s)*. In the language data of Gustafsson (1976), the frequency of *boy(s) and girl(s)* was five times of that of *girl(s) and boy(s)*. The former seemed to be the more regular and frequent sequence in use. Yet the reversion could avoid current social prejudices or to show preference or favor (Gustafsson, 1976). Therefore, *girl(s) and boy(s)* was possibly used to show there was no gender preference of male over female or even further that ‘girls’ could be valued more than ‘boys’ for the speaker. Either of the intention in reversing the order, however, seems to be the decision of the

speaker Me.

Jones et al. (2012) and Murphy (2006) have discussed the word sequence in antonym co-occurrence. In the view of Murphy (2006), the less marked term tended to go first though markedness can be contextually dependent; the derived term always followed as the second like ‘disagree’ would come after ‘agree’ in *agree or disagree*; and the items in the pair could be ordered chronologically or phonologically. However, not all antonym pairs had an inherent order; and the order varied in strength or stability. The factors for the order preference in antonym co-occurrence were summarized into three: 1) semantic, morphological, phonological, and prosodic properties; 2) learnt orders; 3) discourse considerations. However, all factors had exceptions, and a preferred order could be overridden by the semantic or information-structure required in context (Jones et al., 2012).

Although the motivation for the sequence order in coordinating items or antonym co-occurrence has not been resolved, one presupposition is shared. The slots have been given different emphasis although they are coordinating. Such asymmetry has been examined (e.g. Edmondson, 1985; Battistella, 1990; Haspelmath, 2004; Benor and Levy, 2006; Mollin, 2014). When a regular frozen order AB is reversed to BA, it is the element placed first that is emphasized with a loss of the idiomaticity or institutionality in the more regular order AB (Abraham, 1950). Institutionality refers to the sequence order becoming institutionalized in a particular society (Gustafsson, 1976). In that sense, slot A has more emphasis than slot B. That can be exemplified by *girl(s) and boy(s)*, the reversed version of *boy(s) and girl(s)*. Either for valuing ‘girls’ more than ‘boys’, or only for breaking the institutionality of ‘boys’ being weighed more than ‘girls’, the reverse works on the condition that slot A is weighed more than slot B. That seems to be related to the notion of the egocentric Me.

The motivations for the element order can be phonological, morphological, semantic, or cognitive, and all explanations can have an exception or can be reversed in a specific context. Yet one presupposition is shared through the explorations on the ordering motivations. The first slot seems to be weighed more than the second slot. If so, the principle of the egocentric Me may explain all the fixed or temporary sequence order. The egocentric Me weighs the first slot more than the second and will put in the first slot the element weighed more by the context of here and now. That can explain the exceptions, the in-context reversions in addition to those fixed sequence order. However, that needs further examination.

### ***e. the register***

The register for the coordinating items has been examined. It has been noticed (Malkiel, 1959) that the daily use of the coordinating items like binomials is mainly limited to non-academic areas, both oral and written. According to Malkiel (1959: 155-157), they could be found in proverbs, riddles, songs; tags, titles, names; book titles (e.g. *Sense and Sensibility*), motion pictures, film series, popular magazines, musicals, non-professional societies, firms, and advertisers (Malkiel, 1959). Norrick (1988) thought binomials was more in oral English than in written. No further evidence is available for this hypothesis, but being non-academic could be a result of the ornamental property. Klegr and Čermák (2008) contended that coordinating items were originally poetic. The formal resemblance could be certain parallelism with aesthetic effect and added to the cohesion between the elements and helped memory (Malkiel, 1959: 157-158; Klegr and Čermák, 2008; Sauer and Schwan, 2017a; Zabolotna, 2017). It could take the form of rhyme, including alliteration as in *Pride and Prejudice/Of Mice and Men*, assonance as in *hit or miss/rise and shine/heads or tails*, and the repetition of a morpheme as in *obverse and reverse sides/sooner or later/upwards and downwards*. Aside from strengthening the cohesion, such formal parallel can add aesthetic effect (Klegr and Čermák, 2008; Sauer and Schwan, 2017a; Zabolotna, 2017).

### ***f. universal to dichotomize***

The observations on coordinating items or antonyms have both led to the same proposal that humans tend to dichotomize. Sauer and Schwan (2017b: 192) has noticed that binomials were characterized by two types regarding what was communicated. They were factual and stylistic. Factual binomials were considered as a mirror of reality. They were mainly composed of antonyms like *births and deaths* or *seeing and hearing*. On the contrary, the stylistic binomials were mainly composed of synonyms like *fine robes and superior garments* or *clean and spotless*. It was noted that thinking in pairs could be a common human trait.

Jones (2007: 1118) has observed that antonym output in childhood was not input-driven and that pointed strongly to the innate urge to dichotomize as proposed by Lyons. Jones (2006) compared the co-occurrence frequency and textual function frequency of 56 pairs of conventional antonyms between written and spoken English in BNC. It was found that different pairs were preferred between written and spoken discourse. *Private/public* were preferred in written discourse while *hate/love* in spoken. For the same semantic scale different pairs were favored. For instance, *right/wrong* was preferred in spoken

discourse while *correct/incorrect* in written. In the end, antonym co-occurrence was 1.36 times more common in written language than spoken, but the discourse functions of antonymy and the functional frequency were relatively similar. Besides, the discourse functions of the nine classes of antonymy were examined (Jones, 2007) in four domains. They were Adult-Produced Writing, Adult-Produced Speech, Child-Produced Speech, and Child-Directed Speech. Jones (2007: 1118) observed that antonym output in childhood was not input-driven and that it pointed strongly to the innate urge to dichotomize.

However, the assumptions by Sauer and Schwan (2017b: 192) and Jones (2007: 1118) are based on English language data. The universal to dichotomize may need the linguistic evidence from other languages to be language universal and human universal. Moreover, an examination on the use of antonymy on lexical level may reveal more than dichotomy.

Section 3.2 has reviewed the literature related to the English antonym constructions for this study, including the studies of the antonym co-occurrence on syntactic level and the studies of coordinating patterns. The antonym co-occurrence has caught so much academic concern that it has been proposed to be a construction yet mainly based on the observation on syntactic level. The properties of the antonym co-occurrence on syntactic level are mainly related to its pairwise, and contrast sensitiveness. It is likely for the antonym co-occurrence on lexical level to inherit those properties or to have its own lexical properties.

Three aspects are common to coordinate items and syntactic antonym co-occurrence. Firstly, a sense of exhaustiveness has been noticed in the observation of both antonym co-occurrence and the coordinate items. Secondly, there is always an order preference in the coordinate items and the antonym co-occurrence. The motivations can be phonological, morphological, semantic, or cognitive, the following or overriding of which could be the egocentric principle of the potential speaker Me. Thirdly, the studies on coordinating items and antonym co-occurrence all point to the hypothesis that humans tend to dichotomize. Those three aspects are likely to be inherited by the antonym co-occurrence on lexical level given they are shared by the observations of coordinate items and syntactic antonym co-occurrence.

However, the form-meaning patterns, the syntactic categories and the register for use could distinguish the antonym co-occurrence on lexical level from that on syntactic level. The meaning of the combination can be a sum, a superordinate, an abstracted notion of the constituents or even a figurative use. The lexicalized coordinate items can be a noun, or an adverb in context. The register for coordinating

items in English tends to be non-academic. Those properties seem absent in the antonym co-occurrence on syntactic level and add to the necessity to explore the antonym co-occurrence on lexical level.

### 3.3 Mandarin antonym construction

This section reviews the literature related to the antonym construction in Mandarin. In Mandarin, the antonym co-occurrence on lexical level is formulated by a disyllabic combination of a pair of antonym characters like 动静 (*dòngjìng*, dynamic-static; ‘movement’). Disyllabic compounding or the juxtaposition of two characters is one of the most regular ways to formulate and communicate meanings in Mandarin (Ceccagno, 2016). Yet the antonym constructs have caught the academic attention due to the sharp contrast between the coordinating form and the not always coordinating meaning. The literature reviewed here includes the frameworks that have been adopted, the language data collection and curation that has been done, the semantic structure, the headedness, the syntactic category and the lexicalization, and the sequence order and the motivation. At the end of this section, what has been done and what needs further examination will be summarized.

The approaches to the antonym constructs in Mandarin have mainly taken two trends. One is theoretical framework free (e.g. Yang, 2007a; Lang, 2008); the other takes Construction Grammar or other cognitive approaches. Based on the findings, those without a framework seem more inspiring like Yang (2007a) and Lang (2008) as to be reviewed and discussed below. Construction Grammar was adopted by Bi (2007), Zhang (2015), and Ma (2018). Bi (2007) illustrated the co-occurrence of antonyms from lexical to sentential level and claimed that the co-occurrence of antonyms in Mandarin should be constructions. Zhang (2015) focused on the antonym compounds and considered the antonym construction a continuum of different tightness (Figure 3.4) as proposed by Yang (2007a). Despite seeing the co-existence of phrases and lexicalized items in Mandarin antonym constructs, however, Zhang (2015) failed to see the lexical use of the antonym constructs in English like (*go*) *hot and cold* and claimed antonym compounds were absent in English. Ma (2018) explained the headed use of the antonym constructs in Mandarin with construction coercion. It was exemplified with 人物 (*rénwù*, person-material, ‘a person, an important person’) (3.8). Here (3.8) it was explained that the subject was human and the element 人 (*rén*, ‘person’) was chosen. That was a result of construction coercion. Based on the analysis, the coercion seems to come from the subject of the context. In that sense, the left headed here is

contextual. However, it has not explained what facilitates such contextual choice with the element in the right slot completely neutralized.

- (3.8) 他 是个 [...] 人物 (Ma, 2018: 88)  
*Tā shìgè [...] rénwù*  
 He is-a [...] person-material  
 He is a [...] *person-material*  
 ‘He is an [...] important person.’

For the cognitive perspectives, they share in the attempt to explain the semantic patterns of the antonym constructs. A challenge in explaining the semantic patterns in the antonym constructs in Mandarin is to find a way to be able to explain both the headed and the non-headed use. That explains why most studies have taken multiple approaches. Jin (2007) took cognitive Metaphor and Metonymy as most other studies (e.g. Zeng, 2007; Qian, 2013; Chen, 2016) to explain the coordinative and extended meaning patterns but Figure/ground Theory to explain the headed meaning. Shu and Huang (2008) took Conceptual Blending in general but resorted to the Gresham Law in Economics that bad money drives out good in explaining the headed pattern. Tang (2010) combined Conceptual Blending Theory with Figure/ground Theory, Metaphor and Metonymy to create an analysis model CBT<sup>+</sup>. Wang (2014) merged Metonymy and Prominence Principle as MP Model. Different from those merging or taking multiple theoretical frameworks, Huang (2017) and Liu (2020) adopted Event-domain Cognitive Model to explain different semantic patterns. Event-domain Cognitive Model is proposed by Wang (2007). It includes three interfaces Event, Action, and Being with Event the top interface and the other two under in a hierarchical way. Yet Event-domain Cognitive Model did not explain why headedness and non-headedness can co-exist in the same pattern.

Data collection and data source are available along with the studies (e.g. Tan, 1989; Zeng, 2007; Zhang, 2015), but data source is limited to dictionaries without in-use check. The approachable data curation has been found in the study by Yang (2007a). For the check of the antonymy, different semantic notations were formulated for complementary, converse, and contrary antonym pairs A/B (44-48). Here are the interpretations. For complementary, if A then not B; if B then not A; if not A then B; if not B then A. For converse and contrary, if A then not B; if B then not A; if not A not necessarily B; if not B not necessarily A. Afterwards, the status of being lexicalized were checked through in-text meaning to see whether there was a meaning different from the sum of the antonym elements, including one-head,

generalization, abstraction, metaphor, and other extended use. However, which definition of antonymy to follow is not clarified.

The semantic structure of the antonym constructs has been examined since it caught the academic attention (e.g. Tan, 1989; Yang, 2007a; Zhang, 2018) and Yang (2007a) has categorized it in a way followed by later studies without essential changes. According to Yang (2007a), the coordinating juxtaposition of two antonyms is only the exterior structure and the interior structure is the semantic structure. The antonym pairs were represented as A/B and the semantic patterns were categorized into six. The first is ‘AB = A+B’ when the meaning of the combination is a sum of the two elements like 夫妻 (*fūqī*, husband-wife, ‘husband and wife’). The second is ‘AB > A+B’ when the meaning of the combination is a generalization like 大小 (*dàxiǎo*, big-small, size). The third is ‘AB = C’ when the meaning is a transferred like 上下 (*shàngxià*, upward-downward, ‘from the past to the present’). The fourth is represented the same as the third ‘AB = C’ but refers to those with a metaphor of the original meaning like 浮沉 (*fúchén*, rise-fall, ‘ups and downs’). The fifth is ‘AB = A(B)’ when only one element is indicated in the meaning like 动静 (*dòngjìng*, dynamic-static; ‘movement’). The last one is ‘AB = either A or B’ when the semantic relation is alternative like 早晚 (*zǎowǎn*, early-late, ‘either early or late’). A construct could have more than one semantic pattern like 左右 (*zuǒyòu*, left-right, please see Appendix 8 for all the meanings) that can be used in all the ways. After the clarification of the meaning structure, Yang (2007a) mentioned that the contextual meaning of the construct could be grasped with the possible meaning patterns plus the exterior form in the context. That overlaps with the consideration by Booij (2013) that the relation between the elements in a lexical construct would adjust to a specific case or a general description. It seems more possible for a speaker to store the possible meaning patterns rather than the contextual meanings for each construct or even construction. That may also explain the flexibility of a speaker in switching between phrasal and lexical levels despite using the same combination. However, the third and the fourth semantic patterns that are all ‘AB = C’ might not be stored too differently for a language user.

Zhang (2018) also observed the semantic structure of the antonym constructs but limited it to those with coordinating meanings. It was proposed that ‘1 + 1’ means more than 2. For instance, 大小 (*dàxiǎo*, big-small, ‘size’) is not the big one plus the small one. Instead, it refers to all or any along the continuum modified by big at one end and small the other. That was pervasiveness (周遍性, *zhōubiàn xìng*). Pervasiveness (周遍性, *zhōubiàn xìng*) was defined as no exception within a domain (Zhu, 1982) that

each (Shi, 2001) and any (Lu, 1986) member within the domain should be included. That seems to overlap with the exhaustiveness noticed by Murphy (2006) and Jones et al. (2012) in the observation of antonym co-occurrence on syntactic level (Section 3.1; Section 3.2). Zhang (2018) specified the pervasiveness of the antonym constructs into three, which are ALL (全称, *quánchēng*), ANY (任指, *rènzhǐ*) and HYPERNYM (统指, *tǒngzhǐ*). Take 大小 (*dàxiǎo*, big-small, ‘big and/or small’) (3.9). In (3.9a), it refers to all the islands, in (3.9b) it intends to include each member, and in (3.9c) it is the hypernym of ‘big’ and ‘small’. Moreover, she claimed that such semantic property is related to the oppositeness of the antonym elements.

(3.9) a. 大小岛屿

*dàxiǎo dǎoyǔ*

big-small island-island

*big-small* islands

‘all islands’

b. 无论大小

*wúlùn dàxiǎo*

no-discuss big-small

no matter *big-small*

‘no matter how big or small (each is ...)’

c. 你的大小

*nǐde dàxiǎo*

you-of big-small

your *big-small*

‘your size’

The factors in the formation of the neutralized headedness in antonym compounds were explored. There are mainly two trends. One was disyllabic antithesis (Ren, 2009; Li, 2005; Liang, 1988) and the other euphemism (Liu, 2010; Li, 2005; Liu, 2005). Yet Chen (1989) agreed with neither of them. Over the primary period, he (Chen, 1989) claimed, the main context for antonym compounds was prose, a free and loose documentary requiring no rhetoric like antithesis and no clear evidence showed them as rhetoric before 771 BC. The euphemists (Liu, 2010; Li, 2005; Liu, 2005) listed 利害 (*lìhài*, good-bad, ‘bad’), 得失 (*déshī*, profit-loss, ‘loss’), 缓急 (*huǎnjí*, un-hurried-hurried, ‘hurry’), 成败 (*chéngbài*, success-failure, ‘failure’), 爱憎 (*àizēng*, love-hate, ‘hate’) and 祸福 (*huòfú*, bad luck-good luck, ‘bad luck’), claiming all of them referred to the negative half of the pair. The attachment of the positive part, according to them,

was to reduce the unhappiness or offence caused by the bad. Chen (1989) argued that a different context could change their meaning to the opposite, and that the headed antonym compounds did not play the rhetorical role of disyllabic antithesis or euphemism before the Han Dynasty (202-220 BC). The examples of the euphemists were from *Records of the Historian* (90 BC), *Book of Later Han* (432-455 AD), *Records of the Three Kingdoms* (280-290 AD), and *Comprehensive Mirror for Aid in Government* (960-1127 AD). All of them tended to be close to or after the Han Dynasty (202-220 BC).

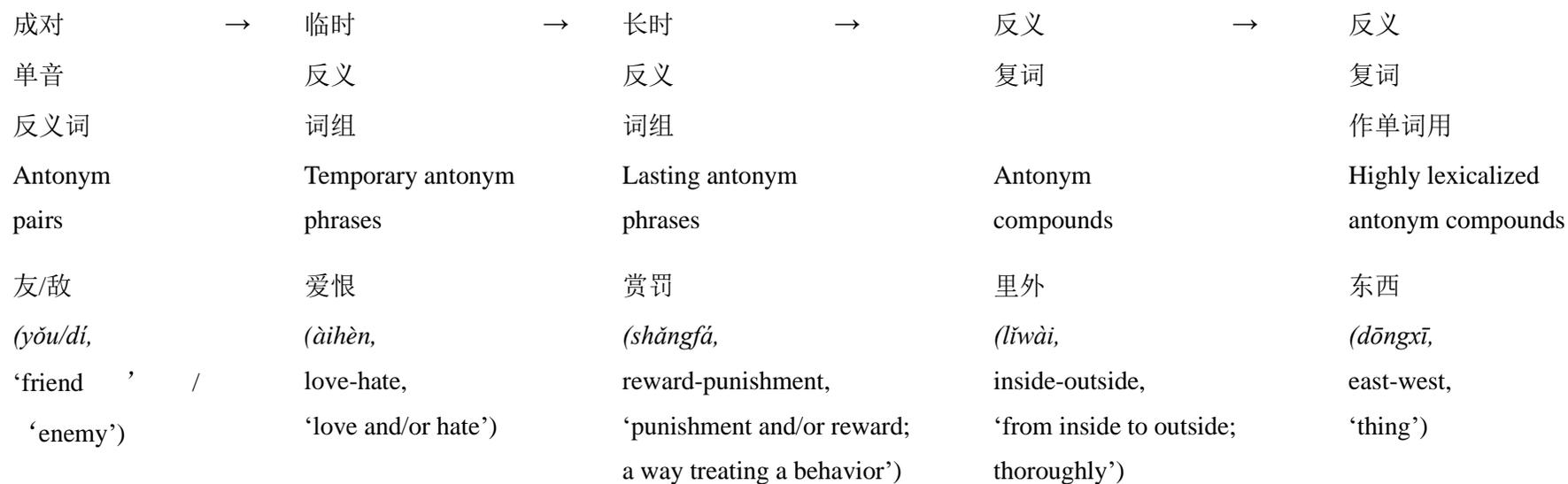
According to Chen (1989), the factors in the formation of the headed antonym compounds were mainly linguistic. He claimed that the earliest headed antonym compounds could at least be traced to the Zhou Dynasty (1046-771 BC). Yet such tendency had been indicated even earlier into the late Shang Dynasty (1600-1046 BC) as in 文武 (*wénwǔ*, civil scholar-military officer, ‘civil scholar’), which was an example from that time. He explained, as the antonym compounds became well-established and reappeared frequently, the compound meaning started to take one of the constituents, but which of the pair was dependent on the specific context. After a wobbling process, the most frequent were chosen and inherited over the less frequent. Two aspects can be concluded from that claim. First the headed antonym compounds came into being on the basis of non-headed (or bi-headed) antonym compounds. Secondly, when the pair were well established, there was a tendency to use the antonym compound to indicate only half of the meaning, which is not fixed. That observation overlaps with the proposal of construction coercion by Ma (2018). However, what facilitates the acceptance of the mismatch between the coordinating form and the headed meaning has not been discussed.

The antonym constructs can be a noun, a verb, an adjective, or an adverb (e.g. Wei, 2017; Feng, 2016). Different from those, Zhang (2018) included one more syntactic category, which is a pronoun. Two constructs could be pronouns in her collection of 232 constructs. They are 多少 (*duōshǎo*, more-less, ‘how much’) and 彼此 (*bǐcǐ*, that-this, ‘both/each’). The former can be used as an interrogative pronoun, and the latter personal pronouns. Take 多少钱 (*duōshǎoqián*, more-less-money, ‘how much is it’), and 彼此帮助 (*bǐcǐ bāngzhù*, that-this help-aid, ‘help each other’). That could be an informative addition with the properties of 多少 (*duōshǎo*, more-less, ‘how much’) and 彼此 (*bǐcǐ*, that-this, ‘both/each’) further specified. Yet it might be included in the process of nominalization considering the similarity shared between nouns and pronouns.

Grammaticalization, lexicalization, and subjectivation have been discussed in the observation of the antonym constructs in Mandarin. Grammaticalization (Wei, 2017; Zhang, 2014; Chen, 2014; Sun, 2012; Liu, 2011; Fang and Zeng, 2007) was related due to the adverbialization of the antonym constructs like 早晚 (*zǎowǎn*, early-late, ‘anyway’) in 你早晚得去 (*nǐ zǎowǎn déqù*, you early-late must-go, ‘you have to go anyway’). Grammaticalization refers to the process that content words become a functional word or morpheme. In Chinese Linguistics, adverbs are considered function words (Kam-Siu, 2016: 539). Based on that, the adverbialization of the antonym constructs could be grammaticalization. However, 早晚 (*zǎowǎn*, early-late, ‘morning and evening’) can still be a noun. It is inaccurate to count it as a grammatical marker. In that sense, the perspective of grammaticalization needs more consideration. Furthermore, the classification of adverbs as functional may need re-consideration.

The lexicalization of the antonym constructs has been discussed (e.g. Jing, 2018; Wang, 2016; Zhou, 2016) and one major concern is the adverbialization (Wei, 2017; Feng, 2016; Li, 2015; Xiao, 2012; Liu and Li, 2010). It was the diachronic perspective that was taken, for instance, 反正 (*fǎnzhèng*, negative-positive, ‘anyway’). Its occurrence was traced back to the book *Songs of Chu* in the Warring States (475-221 BC) (Liu and Li, 2010). According to Yang (2007a), the antonym juxtaposition first emerged in large numbers in Qin Dynasty (221-207 BC).

Yang (2007a) has also taken a synchronic perspective and claimed that the family of the antonym constructs should be an open and alive continuum from phrasal to lexical. She presented a synchronic continuum of the antonym constructs (Figure 3.5). As indicated in the examples (Figure 3.5) for each stage of the continuum, the meanings are more and more abstracted away from the meaning of the antonym elements. With the last example, the element meanings are totally lost. She considered that as the subjectivation of meaning. According to Yang (2007a), the process of the lexicalization of the antonym constructs was combined with the meaning abstraction and subjectivation. The continuum of the antonym construction is alive in different tokens with different levels of lexicalization and is open to new combinations. This proposal seems convincing with the presented Mandarin tokens. An examination with English antonym constructs can verify or invalidate it. If the proposal proves valid with both English and Mandarin antonyms constructs in the end, it may expand the dimension of the diachronic understanding of lexicalization (Section 3.2).



**Figure 3.5 The continuum of the antonym constructs with tokens (Yang, 2007a: 35)**

The ordering of the antonym constructs in Mandarin was considered fixed (Tan, 1989) and the motivation for the ordering has been explored (Yang, 2007a; Lang, 2008; Shu and Huang, 2008; Tang, 2010; Zhang, 2014; Wang, 2016). Yang (2007a) observed the ordering of the antonym constructs in Mandarin and claimed that the order was irrelevant to syntax and there were two motifs in the ordering. The first and foremost was meaning. When there was an exception, it was often the tone. However, the meaning motifs are not specified. The tone ordering is the same as the order of the standardized tones in Mandarin. They are sequenced as *Yinping* (ˊ), *Yangping* (ˋ), *Shangsheng* (ˊ), *Qusheng* (ˋ). Jing (2018), Shu and Huang (2008) considered that the semantic order followed the Pollyanna Principle (Matlin and Stang, 1978), which was positive first. Wang (2016) considered the phonological order following the rule of less phonologically demanding first. Positive first and less phonologically demanding first seem to follow the egocentric principle of the speaker Me (Section 3.2).

Different from them, Lang (2008) examined the motifs in the sequence order from phonological, morphosyntactic and semantic perspectives. The top two motifs were logically motivated and culturally motivated. The logical motivation included early before late, near before distant, more before less (unmarked before marked), up before down, big before small, left before right, active before inactive, and horizontal before vertical. Cultural motivation included male-before-female, superior-before-inferior, group-before-individual, and positive-before-negative. Tone was considered the motif after the logical and cultural one. The rest were syllable openness; vowel length; alphabetic order. With all those motifs the collection of the antonym constructs by Lang (2008) were all explained.

Section 3.3 has reviewed the literature on the antonym co-occurrence on lexical level in Mandarin. Different approaches have been taken to observe the antonym constructs, including close observation, Construction Grammar, and other cognitive perspectives. The close observation of the antonym constructs without a theoretical framework seems promising; the understanding of Construction Grammar needs more consideration in what formulates a lexical construction, and the motivation for construction coercion in headed antonym construction. For the cognitive perspective, Event-domain Cognitive Model seems to be able to explain the headed and non-headed patterns in Mandarin antonym constructs consistently but has ignored the co-existence of lexical and phrasal

meaning patterns, and also failed to explain why headedness and non-headedness can co-exist in the same pattern.

The antonym constructs have been identified and collected, and a reproducible way to curate the data proves adding to the strength of the argument. Yet a definition for the antonymy may make it more convincing.

The semantic properties of headed and non-headed have been captured and described, but the role of the antonym and the role of the coordinating pattern have not been clarified.

The proposal of the antonym construction as an open and alive continuum has accommodated the co-existence of phrasal and lexical in the antonym construction, but such co-existence can occur to the combination of the same antonym pairs, which has been ignored.

The sequence order of the antonyms in the construction was considered fixed and the motivation for the ordering has been examined semantically, phonologically, and culturally. Different rules with different perspectives have been proposed with different priorities. However, no one rule can explain all the orders consistently.

### **3.4 Comparison of English and Mandarin antonym constructions**

English and Mandarin antonym constructions have been compared. The motivations for the comparison are different. Zhang (2021), Wang and Sha (2014), and Liao (2006) aimed for more effectiveness in teaching Mandarin antonym construction to the English speakers whose mother tongue is not Mandarin. Wu and Zhang (2022), Lu et al. (2021), Lu (2020), and Chen (2010) simply aimed at the linguistic properties sharing or differing between English and Mandarin. In this section, those studies will be examined, including the approaches taken in comparing English and Mandarin antonym constructions, the antonym constructions that have been compared, and the differences and similarities that have been identified in the comparison. At the end of this section, the gaps and the necessity for this study will be summarized.

Two approaches have been adopted in the comparison of the antonym constructions between English and Mandarin. Zhang (2021), Wang and Sha (2014), Chen (2010) and Liao (2006) all took a framework-free approach. What they did was a close observation of the data based on the semantic equivalence of the antonym elements or that of the unit. Lu et al. (2021) and Lu (2020) took the perspective of Cognitive Linguistics and claimed antonym co-occurrence as constructs.

Based on the constructs from lexical to sentential level, the antonym construction was generalized as ‘(...) X (...) Y (...)’ with X/Y representing the pair of antonyms and ellipsis in the parentheses indicating there could be other elements (Lu, 2020). With the notion of construction, one aspect that has distinguished Lu et al. (2021) and Lu (2020)’s examinations from the previous is the inclusiveness. First is the inclusion of the data, covering the whole continuum from lexical to syntactic; secondly is the exploration, covering form, meaning, use and cognition. In that sense, the cognitive approach of construction seems effective.

However, a closer observation conveys that the data correspondence is problematic. Take *ladies and gentlemen* and 你信不信 (*nǐ xìn bù xìn*, you believe-not-believe, ‘you believe or not’). According to Lu et al. (2021), *ladies and gentlemen* and 你信不信 (*nǐ xìn bù xìn*, you believe-not-believe, ‘you believe or not’) were compared because both are discourse pragmatic markers containing antonym pairs. But the two tokens are formulated so differently that the English token is a coordinate phrase, whereas the Mandarin is a sentence; and *ladies/gentlemen* is a pair of lexical antonyms, whereas 信/不信 (*xìn/bù xìn*, ‘believe/disbelieve’) is a pair of morphological antonyms. In fact, 彼此 (*bǐcǐ*, that-this, ‘both/likewise’) can be a pragmatic marker, which could be a proper correspondence for the comparison. Yet it may have been covered by the wide range of language data from lexical to sentential. In the observation of the cognitive motivation for using antonymy, Lu (2020) compared tokens like 东西南北 (*dōngxī nánběi*, east-west south-north, ‘everywhere’) and *left and right* (3.10). It was concluded that the cognitive motivation was shared between English and Mandarin. However, the basis for the comparison is semantic equivalence, which could be the main reason for the conclusion. Instead, the structural difference between the juxtaposition of one antonym pair in English and the juxtaposition of two pairs in Mandarin were ignored.

- (3.10) a. 他 东西南北 乱跑 [...] (Lu, 2020: 22)  
*Tā dōngxī nánběi luànpǎo [...]*  
 He east-west north-south randomly-run [...]  
 He walked around *east-west north-south* [...]  
 ‘He walked around (everywhere) [...]

- b. You look at some countries like Mexico where they are killing reporters left and right.  
 (Lu, 2020: 22)

Those two comparisons have raised the question of what the proper correspondence should be

in comparing constructions. Lu et al. (2021) only focused on the in-text function, ignoring the inequivalence in structures and the antonym elements. Lu (2020) only focused on the meaning equivalence, ignoring the completely different structures. Construction being a form-meaning pair may need to consider both form and meaning in defining the correspondence of a linguistic unit in comparison.

The antonym constructs that have been noticed and compared between English and Mandarin seem to have covered the continuum from lexical to phrasal and sentential. Zhang (2021), Chen (2010) and Liao (2006) compared the two-character pattern in Mandarin with the pattern joined by *and/or* in English. Take 输赢 (*shūyíng*, lose-win, ‘win and/or lose’) and *win or/and lose*. Wang and Sha (2014) compared the two-character pattern and the four-character pattern in Mandarin with its semantic equivalence in English. It was claimed that the semantic equivalence for the Mandarin two-character pattern in English could be a pair of antonyms joined by *and/or* or an English word with no hint of antonym co-occurrence. For instance, 生死 (*shēngsǐ*, alive-dead, ‘life and death’) is equivalent to *life and death*, 是否 (*shìfǒu*, yes-no, ‘yes or no’) to *yes or no*, and 东西 (*dōngxī*, east-west, ‘thing, something’) to *thing*. Different from them, Lu et al. (2021) and Lu (2020) conducted an overall comparison, including the antonym co-occurrence from lexical to sentential levels. Take 国家 (*guójiā*, nation-family, ‘nation’), 自始至终 (*zìshǐ zhìzhōng*, from-beginning to-end, ‘from the beginning to the end’), 你信不信 (*nǐ xìn bù xìn*, you believe-not-believe, ‘you believe or not’), and 周瑜打黄盖 (*Zhōuyú dǎ Huánggài*, Zhou-Yu beat Huang-Gai, ‘the man named Yu Zhou beat the man named Gai Huang’) from Mandarin, and *bittersweet*, *nine to five*, *from beginning to end*, *separate the sheep from the goat* from English. As indicated by the examples, the notion of antonymy in the language data by Lu et al. (2021) and Lu (2020) differ from that in other studies. Lu et al. (2021) and Lu (2020) has extended the notion of antonymy to cover the morphological antonyms like 信 (*xìn*, ‘believe’)/不信 (*bùxìn*, not-believe, ‘disbelieve’) and the contextual antonyms like 国 (*guó*, ‘nation’)/家 (*jiā*, ‘family’), 周瑜 (*Zhōuyú*, ‘the man named Yu Zhou’)/黄盖 (*Huánggài*, ‘the man named Gai Huang’), *nine/five*, and *sheep/goat*.

The inclusion of the language data here has mixed two perspectives of antonym constructs. One perspective was to put the emphasis on the constructs consisting of a ready pair of antonyms like *bittersweet*, *life and death*, *from beginning to end*, 生死 (*shēngsǐ*, alive-dead, ‘life and death’), and 自始至终 (*zìshǐ zhìzhōng*, from-beginning to-end, ‘from the beginning to the end’). The

examination of those tends to be an observation of the use of the antonymy or oppositeness to communicate meanings. The other was the coordinate or contrastive template with the inherent parallel that can give rise to a contrast set like *nine to five, separate the sheep from the goat*, 国家 (*guójiā*, nation-family, ‘nation’), and 周瑜打黄盖 (*Zhōuyú dǎ Huánggài*, Zhou-Yu beat Huang-Gai, ‘the man named Yu Zhou beat the man named Gai Huang’). Nine/five, sheep/goat, 国 (*guó*, ‘nation’)/家 (*jiā*, ‘family’), and 周瑜 (*Zhōuyú*, ‘the man named Yu Zhou’) /黄盖 (*Huánggài*, ‘the man named Gai Huang’) are unlikely to be accepted as antonyms outside of the pattern. The observation of those constructs would be mainly about how those parallel patterns make contrast and produce antonyms. Both perspectives are related to antonymy. Yet the former is the use of ready antonym pairs and the latter the pattern producing contrast sets. How to define the antonym construct in discussion is personal, but a line needs to be drawn in-between for a clear and consistent observation. This study focuses on the use of antonymy. For this purpose, the contextual contrast set should be out of consideration.

Differences and similarities have been found in the forms, meanings, and uses of the antonym constructions between English and Mandarin. Take the form first. It was concluded that there was no formal correspondence in English for the Mandarin antonym constructs like 生死 (*shēngsǐ*, alive-dead, ‘life and death’). Zhang (2021), Wang and Sha (2014), Chen (2010) and Liao (2006) acknowledged that the correspondent form in English were those coordinating patterns joined by *and/or*. Lu (2020) claimed that the correspondent pattern in English would always be a phrase but *bittersweet* *al.l* of them had presupposed that the Mandarin pattern like 生死 (*shēngsǐ*, alive-dead, ‘life and death’) was a compound and acknowledged that English coordinating patterns can be used on lexical level like *ups and downs*. However, English antonym constructs without lexical connectors may be not overwhelming but could be more like *hearsay, humblebrag*, etc. Besides, 生死 (*shēngsǐ*, alive-dead, ‘life and death’) can be lexical and phrasal with no formal change in actual use. For instance, it is lexical in (3.11a) but phrasal in (3.11b). Those observation leads to the question of what the formal equivalence in the comparison of English and Mandarin antonym constructions should be.

(3.11) a. 生死兄弟

*shēngsǐ xiōngdì*

alive-dead elder-brother-younger-brother

*alive-dead* friends

‘very good friends’

b. 生死问题

*shēngsǐ wèntí*

alive-dead question-topic

*alive-dead* topic

‘the topic of life and (the topic of) death’

Zhang (2021), Wang and Sha (2014) and Liao (2006) has noticed the differences in the order of the two antonym elements in the comparison of semantic equivalence. Firstly, it was found that the sequence order in Mandarin was stricter than English (Zhang, 2021; Wang and Sha, 2014; Liao, 2006). For instance, it could be *old and young* or *young and old* in English but only 老少 (*lǎoshào*, old-young, ‘old and young’) in Mandarin. This stability in Mandarin was considered the outcome of the moral tradition that the elder come first in Chinese culture to show higher status and more respect (Wang and Sha, 2014; Liao, 2006). That seems to suggest that the left slot in Mandarin could mean something better and more than the right slot. Yet the reason for the flexibility in English are not discussed.

Secondly, opposite orders of the same antonym elements were found and explained (Zhang, 2021; Wang and Sha, 2014; Liao, 2006). It was 南北 (*nánběi*, south-north, ‘from north to south’) in Mandarin but *north and south* in English, and 输赢 (*shūyíng*, lose-win, ‘win or/and lose’) in Mandarin but *win or lose* in English. For the former, it was explained that the location of south was considered better and higher than the north in Chinese traditional culture (Wang and Sha, 2014). For the latter, there were synonymous Mandarin constructs 胜负 (*shèngfù*, win-lose, ‘win or/and lose’) and 胜败 (*shèngbài*, win-lose, ‘win or/and lose’) in Mandarin that had the same ordering as *win or lose*. In that sense, it should be the same in English and Mandarin that ‘to win’ was favored over ‘to lose’ (Liao, 2006). As for 输赢 (*shūyíng*, lose-win, ‘win or/and lose’), it was less demanding in oral producing with the first tone before the second tone. It was the phonological easiness that played the first role in this case (Liao, 2006). Again, the left slot here seems to be identified with something more and better in Mandarin. Even in the case of 输赢 (*shūyíng*, lose-win, ‘win or/and lose’), the left slot was the one with more phonological easiness. However, such identification with the left slot tends to be Mandarin-centered in the discussion without a clear and convincing consideration for English. Besides, those explanations are limited to those individual examples.

Differently, Wu and Zhang (2022) took a cognitive perspective in comparing the antonym ordering in English and Mandarin coordinates. After corpus search and multifactorial examination, it was concluded that the motivation of the antonym ordering in coordinates was shared between English and Mandarin. It was found that chronology and positivity were the first semantic motivation. However, age, gender, and hierarchical superiority affected Mandarin antonym ordering but played a marginal role in English ordering. Based on the motivation shared between English and Mandarin, it was explained that they have similar iconicity of closeness, temporal sequence, and cognitive accessibility. What led to the differences was the different iconicity of cultural values and norms. It was proposed that the antonym ordering was driven by general cognitive principles. That could be related to the egocentric principle of the potential speaker Me (Section 3.2) proposed in observing English coordinate items.

One more finding related to the form of the antonym constructs in the comparison is the syntactic category. Zhang (2021) claimed that the syntactic categories of the constructs in Mandarin could be different from those of the antonym elements, but that did not happen in English constructs. That is not convincing. First, the syntactic category of the antonym element in Mandarin could be disputed in whether contextual or not (Cheung, 2016). Zhang (2021) did not clarify how the syntactic categories of the antonym elements were identified. Besides, the antonym elements in English could have more than one syntactic category. It is not clarified here which syntactic category is chosen and why. Furthermore, the syntactic category of the construct can be diverse from those of its antonym elements in English. For instance, *root and branch* can be used as an adverb as in *destroy the organization root and branch* ('thoroughly and completely'). Yet *root/branch* are nouns or verbs. Chen (2010) compared the nominal antonym constructs in English and Mandarin and proposed that the lexicalization of English antonym constructs was less obvious. For instance, *old and young* was semantically lexicalized and referred to 'all people' in *Old and young rush to the ground*. Yet such use as a lexicalized unit was not followed in the form. Such conclusion entails that if there is no lexical connector between the two antonym elements, the combination would be a lexicalized unit. That may not be the case as indicated by the lexical and phrasal uses of 生死 (*shēngsǐ*, alive-dead, 'life and death') (3.12). Besides, it was claimed that the antonyms constituting the Mandarin constructs were adjectives without any identification or justification like Zhang (2021).

The use of the antonym constructs has been compared between English and Mandarin. The register for the antonym construct (Chen, 2010) and its use as a pragmatic marker (Lu et al., 2021) have been examined. Chen (2010) noted that antonym constructs were preferred in an informal or literary register for offering more details. According to Chen (2010), (3.12a2) and (3.12b2) tended to be more abstract, general, and formal, whereas (3.12a1) and (3.12b1) informal yet with more details. That overlaps with the observation of the coordinating items in English (Section 3.2).

(3.12) a1. 灯的 [...] 明暗是不一样的。(Chen, 2010: 147)

Dēngde [...] míng'àn shì buyíàngde.

Lamp-of [...] light-dark be not-the-same

The *light-dark* [...] of lamps is different.

'The brightness [...] of lamps is different.'

a2. 灯的 [...] 亮度是不一样的。(Chen, 2010: 147)

Dēngde [...] liàngdù shì buyíàngde.

Lamp-of [...] bright-degree be not-the-same

The *bright-degree* [...] of lamps is different.

'The brightness [...] of lamps is different.'

b1. Old and young rush to the ground. (Chen, 2010: 147)

b2. All the people rush to the ground. (Chen, 2010: 147)

Different from such synchronic examination, Lu et al. (2021) took a diachronic perspective and compared *ladies and gentlemen* and 你信不信 (*nǐ xìn bù xìn*, you believe-not-believe, 'you believe or not') in their being used as pragmatic markers. It was concluded that the two constructs differed in that 你信不信 (*nǐ xìn bù xìn*, you believe-not-believe, 'you believe or not') had more variations. A close observation will reveal that 信 (*xìn*, 'believe')/不信 (*bù xìn*, not-believe, 'disbelieve') is a pair of morphological opposites but *ladies/gentlemen* not; and that 你信不信 (*nǐ xìn bù xìn*, you believe-not-believe, 'you believe or not') is a sentence with a subject and a predicate but *ladies and gentlemen* a coordinate phrase. Such inequivalence in the two constructs might have added to the variables in the comparison and left the conclusion in doubt. Moreover, the more variations of 你信不信 (*nǐ xìn bù xìn*, you believe-not-believe, 'you believe or not') could be related to its syntactic structure.

For the meanings of the antonym constructs, what has been identified are mainly the similarities between English and Mandarin. Chen (2010) observed that the meanings of the nominal antonym constructs in both languages were a summation of the antonym elements. That cannot

stand considering 动静 (*dòngjìng*, dynamic-static, ‘dynamic/movement’) is left headed when it is a nominal antonym construct. Lu (2020) proposed that the sum of both antonym elements was one main semantic structure shared between English and Mandarin antonym constructs, like *bittersweet* and 老少 (*lǎoshào*, old-young, ‘old and young’). However, no statistical evidence is available for this assumption. With the identification of the semantic equivalence on the continuum from lexical to sentential between the two languages, Lu et al. (2021) and Lu (2020) concluded that similar perception and interpretation of the world was shared between English and Mandarin. That conclusion is unlikely convincing without considering the semantical inequivalence between the two languages.

Differences have been identified by Zhang (2021), Wang and Sha (2014), and Liao (2006). Zhang (2021) and Liao (2006) mainly compared those composed of the same antonym pairs in English and Mandarin. It was concluded that most of those constructs had similar meanings with one English construct correspondent to multiple Mandarin counterparts. For instance, *win or lose* is equal to 输赢 (*shūyíng*, lose-win, ‘win or/and lose’), 胜负 (*shèngfù*, win-lose, ‘win or/and lose’) and 胜败 (*shèngbài*, win-lose, ‘win or/and lose’). The exceptions were *this and that/彼此* (*bǐcǐ*, that-this, ‘both/likewise’) and *root and branch/本末* (*běnmò*, branch-root, ‘all/primary and secondary’). Aiming for the semantic equivalence between English and Mandarin, Wang and Sha (2014) added that Mandarin antonym construct could be equivalent to one single word instead of antonym co-occurrence in English. For instance, 东西 (*dōngxī*, east-west, ‘thing, something’) is equivalent to *thing*. Although the differences identified by the three studies are different, they share in the attempt to find the equivalent antonym constructs between English and Mandarin. A comparison of the antonym construction should be able to reveal more than the equivalence in the meanings.

Section 3.4 has reviewed the comparisons of the antonym constructions between English and Mandarin. The forms, meanings and uses have been compared but not consistently nor systematically. Firstly, the correspondence of the antonym constructions between English and Mandarin seems problematic. The correspondence could be form, meaning or use and the perspectives taken here are meaning or use. As a result, the findings tend to be the common ground between the two languages on a very general level and the differences only lies in the forms that

English has lexical connectors but not that in Mandarin.

Secondly, both synchronic and diachronic perspectives have been tried in comparative studies. The effectiveness in the diachronic perspective is hard to justify because the data correspondence is only in use as a pragmatic marker without considering the equivalence in form or meaning. For the synchronic perspective, it is shared among the studies that the English antonym constructions on lexical level is absent.

Thirdly, the inconsistency of the syntactic categories between the antonym elements and the constructs have been found, but how to decide on the syntactic categories of the antonym elements were not clarified.

However, the findings in the sequence order and the register overlap with the findings in English coordinate items. The motivations identified in comparing the sequence order of antonym elements in the two languages has been assumed cognitive, which seems similar to the egocentric principle of the potential speaker Me proposed in the examination of the English coordinate items. The register for the antonym construction in both languages has been assumed informal and literary. That overlaps with the proposal of the non-academic registers for English coordinating items.

### 3.5 Conclusion

Chapter 3 has reviewed the literature related to the examination and comparison of antonym constructions in English and Mandarin. The antonym construction here is delimited to the antonym co-occurrences as they are deployed on lexical level. They contain two elements with opposite senses, joined by no more than one lexical connector; and the lexical connector does not add any meanings other than indicating the joint relation between the two antonym elements. In English, it can be a compound or a coordinate item, as exemplified by *bittersweet*, *ups and downs* or *sooner or later*. In Mandarin, it is a two-character compound as exemplified by 东西 (*dōngxī*, east-west, ‘something’). Comparisons have been conducted between English and Mandarin antonym co-occurrence but not on lexical level. English antonym co-occurrence has been a focus of interest for a long period but not on lexical level. Mandarin antonym co-occurrence on lexical level has been the focus of concern but not consistently or systematically. Therefore, this study attempts to fill this gap by examining and comparing the antonym constructions in English and Mandarin.

For this purpose, antonym co-occurrences on lexical level in English and Mandarin have been

identified, collected, and curated. For the acceptance of the antonyms between English and Mandarin, the definition of antonymy RC-LC will be followed to curate the collected data; the classification of oppositeness into contrary, complementary, and converse will be followed to justify the minimal difference in antonym pairs. The lexical status especially in the English collection is likely controversial due to the phrasal form. Therefore, the status of being lexicalized will also be curated in corpora. Because it is a synchronic comparison, the in-use status for each combination will be checked in corpora.

The approach of Construction Grammar will be taken to examine and compare the antonym constructions in English and Mandarin. A form-first or meaning-first approach would not suit this study. Firstly, English and Mandarin antonym co-occurrence on lexical level has not been compared due to the formal inequivalence. Secondly, the comparisons based on meaning equivalence have failed to reveal more than the formal inequivalence. Therefore, it is the Construction Grammar considering a linguistic unit as a form-meaning complex in use that is taken in this study.

To sum up, this is a synchronic and bidirectional study, examining and comparing the antonym co-occurrence on lexical level in English and Mandarin from the perspective of Construction Grammar. Four questions are considered:

- 1) What are the key characteristics of the lexicalized antonym construction in English and in Mandarin?
- 2) To what extent do the constructions share properties between English and Mandarin?
- 3) How effective is Construction Grammar in the analysis and comparison of the antonym constructions between English and Mandarin?
- 4) What are the implications of this study for contrastive linguistics and typological parameters?

## Chapter 4 Data Collection and Curation

This study is a cross-linguistic examination of the antonym constructs in English and Mandarin from the perspective of Construction Grammar. For this purpose, the antonym constructs in English and Mandarin were identified and collected. As clarified in the conclusion of Chapter 3, the antonym constructs for this study are those containing a pair of antonyms. For the English data, the antonym constructs are composed of an antonym pair with the lexical connector *and/or* or without any lexical connectors; for the Mandarin data, they are formulated by the juxtaposition of an antonym pair. This chapter is a clarification and documentation of the collection process. Section 4.1 is an overall clarification of the process, including the data source and the steps for the data curation. To ensure the in-use status of the antonym constructs, each item was first checked for the presence in contemporary corpora before accepting as a data candidate. For a valid and reliable sample, the candidates were put to test first with antonym criteria and then construct criteria. Section 4.2 specifies the antonymy criteria and documents the items that were excluded. Section 4.3 clarifies the criteria for being the constructs for this study and presents the items excluded. Following this clarification, the final sample of English antonym constructs is listed in Table 4.4 and Mandarin antonym constructs in Table 4.5.

### 4.1 Data source and data collection

The sources for the English and the Mandarin collections of the antonym constructs differ due to the different availability of the relevant studies. The main source of the Mandarin collection is the previous studies on Mandarin antonym constructs, while that for the English collection is diverse and various.

The collection of the antonym constructs in Mandarin was a result of combining the collections by former scholars (Zhang, 2015; Jin, 2007; Yang, 2007a; Zeng, 2007; Zhang, 2006). Zhang (2015) collected 232 items, Jin (2007) 208 items, Yang (2007a) 254 items, Zeng (2007) 245 items and Zhang (2006) 298 items. There was overlap across those collections and all of them added the Mandarin antonym constructs up to 307 items (Appendix 6).

For the collection in English, mainly four sources were involved. One source for the English collection was based on casual observation. The effort did not add up to many items, but some very

interesting tokens were collected in this way, like *frenemy*, *hate-like*, *humblebrag*, *tragicomedy*, *(blow) hot and cold*, and *in-out (referendum)*. Another source of the collection was a search of OED Online based on the 56 canonical antonym pairs collected by Jones (2002). Not all the 56 pairs led to an antonym construct, but others were prompted and found during the process of retrieval. For instance, the pair *boom/recession* does not formulate an antonym construct, but the retrieval of *boom* led to the items *boombust*, *boom or bust* and *boom and bust*. The third source for the English collection was The Large Database of English Compounds (LADEC) (Gagné et al., 2019). A line-to-line close reading of it allowed for more antonym compounds like *hearsay*, *nitwit*, and *dimwit*. One more source was the spreadsheets of the lexical entries of Oxford dictionary and Oxford antonyms set up and shared online by lexicography enthusiasts (<https://github.com/dwyl/english-words>). A python expression was written up by Wenrui Liu (Shanghai Jiao Tong University, China) based on the two spreadsheets to screen the antonym constructs. Those various sources yielded 150 items for the English antonym collection (Appendix 1).

Both collections were checked for the in-use status in relevant corpora to exclude those with zero or low hits. As it has been indicated in Section 2.2.2, the language data within the framework of Construction Grammar is preferred to be corpus data and the text frequency is considered indicative of token currency. Therefore, the text frequency of each construct in this study was calculated in corpus.

For English, it was the online NOW corpus (News on the Web, <https://www.english-corpora.org/now>) that was used. The corpus was chosen due to the updated time and the representativeness in present daily use. The data in this corpus starts from 2020 and is daily updated from web-based newspapers and magazines. The first time for retrieval was 11<sup>th</sup> – 13<sup>th</sup> April 2022 and the time for the final check was 18<sup>th</sup> – 22<sup>nd</sup> May 2023. A new retrieval could lead to different results. For Mandarin, it was the Mandarin corpus CCL (Center for Chinese Linguistics PKU, [http://ccl.pku.edu.cn:8080/ccl\\_corpus](http://ccl.pku.edu.cn:8080/ccl_corpus)) that was used. CCL is developed by the Center for Chinese Linguistics of Peking University from China. It includes the raw material of Chinese that is well divided into ancient and contemporary Chinese sub-corpora. To retrieve and check the Mandarin antonym constructs in the contemporary one can ensure the synchronic consistence of the data. Furthermore, newspapers account for the main source of the corpus, which can be a good match with the NOW corpus in English. The time for the retrieval was 29<sup>th</sup> – 31<sup>st</sup> August 2022.

However, the contemporary corpus in CCL includes the language data ever since 1949 (Zhan et al., 2019). That is too early in comparison with the starting line of 2020 of NOW corpus. To balance such disparity in the starting time of the language data, the frequency of the candidates retrieved from each corpus will be considered in different ways.

The way to count the items and frequency in English is slightly more complicated than that in Mandarin. In English, there can be more than one form for the combination of the same pair of antonyms, like *in-out/in and out/ins and outs/in-and-outer*. Such variation in form for the same pair of antonyms does not happen in Mandarin data. Therefore, the diverse forms of the same pair of antonyms in English were counted as one. The frequency of the English antonym constructs with the same antonym pair was also added up. The frequency of the antonym constructs here was not an accurate reflection of natural language, but corpus-based frequency could be more objective for the purpose of confirming the in-use status than individual intuition.

The English items excluded due to zero frequency in the corpus of NOW are: *activo-passive, all and some, end or mend, hide-and-coop, hitty-missy, open-and-shet, top and butt, tops and drops, tops and lops, whole or none, and yea and nay/yea-nay*.

There is no standard of text frequency that has ever been found (Section 2.2.2). Those items with low frequency (Table 4.4) may do not ring a bell for a native speaker but a context will make the token understood. That means the entrenchment is there that the token with frequency higher than zero should be collected.

The Mandarin items excluded due to the lowest frequency in the corpus of CCL are listed in Table 4.1 with the frequency from the lowest to the highest. As indicated above, the starting time for the inclusion of the language data in CCL is as early as 1949 (Zhan et al., 2019), which is not up-dated enough in comparison with the starting line of 2020 in NOW. Therefore, it is the lowest rather than the zero frequency that was considered to exclude for Mandarin candidates. Yet none of them represents a pattern that is not included in the final sample.

**Table 4.1 Excluded Mandarin candidates due to lowest frequency**

NO.	Excluded candidates	In-use frequency
1	颠末 ( <i>diānmò</i> , top-bottom, ‘from the start to the end’)	7
2	挹注 ( <i>yìzhù</i> , (of liquid) take out-pour in, ‘take out and pour in’)	9

3	弛张 ( <i>chízhāng</i> , relaxation-tension, ‘relaxation and tension’)	12
4	翕张 ( <i>xīzhāng</i> , pull back-stretch out, ‘pull back and stretch out’)	12
5	枘凿 ( <i>ruìáo</i> , mortise-tenon, ‘mortise and tenon’)	13
6	晦明 ( <i>huìmíng</i> , light-darkness, ‘light and darkness’)	13
7	奸宄 ( <i>jiānguǐ</i> , evil inside-evil outside, ‘evil’)	13
8	妍媸 ( <i>yánchī</i> , beautiful-ugly, ‘beautiful or ugly’)	14
9	瞻顾 ( <i>zhāngù</i> , look forward-look back, ‘ponder’)	17
10	赔赚 ( <i>péizhuàn</i> , losses-gains, ‘losses and gains’)	17
11	参商 ( <i>shēnshāng</i> , Orion-Antares, ‘distant relationship’)	19
12	翁姑 ( <i>wēnggū</i> , husband’s father-husband’s mother, husband’s parents)	20
13	修短 ( <i>xiūduǎn</i> , long-short, ‘length’)	21
14	牝牡 ( <i>pìnǚ</i> , male-female, ‘male and female’)	24
15	弃取 ( <i>qìqǔ</i> , abandon-adopt, ‘abandon or adopt’)	24
16	绝续 ( <i>juéxù</i> , break off-continue, ‘break off and continue’)	30
17	利钝 ( <i>lìdùn</i> , sharp-blunt, ‘sharp or blunt’)	32
18	赠答 ( <i>zèngdá</i> , give-repay, ‘to give and receive presents’)	33
19	依违 ( <i>yīwéi</i> , compliance-violation, ‘indecisive’)	36
20	考妣 ( <i>kǎobǐ</i> , deceased father-deceased mother, ‘deceased parents’)	39
21	霄壤 ( <i>xiāorǎng</i> , sky-earth, ‘disparate’)	40
22	敌友 ( <i>díyǒu</i> , enemy-friend, ‘enemy or friend’)	41
23	夙夜 ( <i>sù yè</i> , morning-evening, ‘from morning to evening’)	42
24	昆仲 ( <i>kūnzhòng</i> , elder brother-younger brother, ‘brothers’)	47
25	玄黄 ( <i>xuánhuáng</i> , sky color-earth color, ‘sky and earth’)	47
26	榘卯 ( <i>sǔnmǎo</i> , tenon-mortise, ‘tenon and mortise’)	49
27	轩轻 ( <i>xuānzhì</i> , high-low, ‘high or low’)	49
28	冰炭 ( <i>bīngtàn</i> , ice-fire, ‘conflict’)	53
29	拆建 ( <i>chāijiàn</i> , deconstruct-construct, ‘tear down and build’)	64
30	起讫 ( <i>qǐqì</i> , beginning-end, ‘the beginning and the end’)	64
31	朔望 ( <i>shuòwàng</i> , (per month in lunar calendar) the first day-the middle day, ‘the first and the middle days per lunar month’)	64
32	咸淡 ( <i>xiándàn</i> , salty-light, ‘salty or light’)	64
33	幽明 ( <i>yōumíng</i> , darkness-light, ‘darkness and light’)	65
34	详略 ( <i>xiánɡlüè</i> , detailed-generalized, ‘detailed and generalized’)	68
35	稼穡 ( <i>jiàsè</i> , sowing-reaping, ‘farming’)	70
36	舒卷 ( <i>shūjuǎn</i> , unwind-wind, ‘unwind and wind’)	74
37	丰歉 ( <i>fēngqiàn</i> , good harvest-bad harvest, ‘good or bad harvest’)	84
38	乘除 ( <i>chéngchú</i> , multiplication-division, ‘calculation’)	90
39	天渊 ( <i>tiānyuān</i> , heaven-hell, ‘heaven and hell’)	93
40	宽窄 ( <i>kuānzhǎi</i> , broad-narrow, ‘width’)	95
41	臧否 ( <i>zāngpǐ</i> , compliment-criticize, ‘evaluate’)	96

42	行藏 ( <i>xíngcáng</i> , do's-don'ts, 'do's and don'ts')	98
43	拆装 ( <i>chāizhuāng</i> , disassemble-install, 'disassemble and install')	103
44	明灭 ( <i>míngmiè</i> , flash on-flash off, 'flicker')	107
45	正误 ( <i>zhèngwù</i> , right-wrong, 'right or wrong')	111
46	清浊 ( <i>qīngzhuó</i> , clear-muddy, 'clear or muddy')	117
47	枯荣 ( <i>kūróng</i> , wither-blossom, 'ups and downs')	121
48	晨昏 ( <i>chénhūn</i> , dawn-dusk, 'dawn and dusk')	127
49	腹背 ( <i>fùbèi</i> , back-belly, 'front and back')	130
50	珠玑 ( <i>zhūjī</i> , spherical bead-not spherical bead, 'spherical and non-spherical beads')	145
51	录放 ( <i>lùfàng</i> , record-show, 'to record and to play')	152
52	隐现 ( <i>yǐnxiàn</i> , cover-uncover, 'cover or uncover')	154
53	起止 ( <i>qǐzhǐ</i> , start-stop, 'start and stop')	161
54	剪接 ( <i>jiǎnjiē</i> , cut-join, 'cut and join')	164
55	进退 ( <i>bǎihé</i> , advance-retreat, 'trick')	170
56	行止 ( <i>xíngzhǐ</i> , go-stop, 'behavior')	170
57	平仄 ( <i>píngzè</i> , level tones-oblique tones, 'tones')	173
58	劳逸 ( <i>láoyì</i> , work-play, 'to work or take a break')	174
59	疏密 ( <i>shūmì</i> , distant-close, 'density')	175

However, it must be noticed that the final in-use frequency is not an accurate calculation of the token in discussion in the corpus. One major reason is that the token collected could be mixed with other combinations. Take *before after* (4.1). (4.1a) exemplifies the compounding use of the direct juxtaposition of the pair of antonyms *before/after*, which is what this study aims for. However, (4.1b) is nothing of that, though *before* and *after* happen to be juxtaposed together. In (4.1b), *before* modifies *the year* and *after* forms a prepositional phrase with *a drop in orders* that *before* and *after* are used separately and not semantically compounded. In such cases, the context will be read through closely to make sure examples like (4.1b) are not included.

(4.1)

- a. She posted a before-after of her hair and needless to say, there's a tremendous difference...
- b. 4.2m loss the year before after a drop in orders.

The same can also occur in Mandarin where simple juxtaposition is the only form of the antonym construct. Take 左右 (*zuǒyòu*, left-right, 'or so') (Picture 4.1). It was found including the

four-morpheme pattern 左左右右 (*zuǒzuǒyòuyòu*, ‘left-left-right-right’) (Picture 4.2) due to the formal overlap of 左右 (*zuǒyòu*, ‘left-right’) in the middle and the three-morpheme pattern 左右左 (*zuǒyòuzuǒ*, ‘left-right-left’) (Picture 4.3) due to the formal overlap at the beginning. Close reading was conducted to spot on such cases like 左左右右 (*zuǒzuǒyòuyòu*, ‘left-left-right-right’) and 左右左 (*zuǒyòuzuǒ*, ‘left-right-left’) and then they were retrieved and deducted from the first retrieval.

Picture 4.1 Frequency retrieval of 左右 (*zuǒyòu*, ‘left-right’)

Picture 4.2 Frequency retrieval of 左左右右 (*zuǒzuǒyòuyòu*, ‘left-left-right-right’)

Picture 4.3 Frequency retrieval of 左右左 (*zuǒyòuzuǒ*, ‘left-right-left’)

However, the recorded in-use frequency would not be claimed as accurate despite the effort in deducting the misleading entries. In the end, the in-use frequency only serves as indicative of the currency of the collected constructs but does not play any central role in the process of analysis.

After the check of frequency, the English collection was reduced to 140 and the Mandarin 248. Those two collections, however, were only candidates for the antonym constructs of my study. For the consistency of the antonymy between the two substantive elements of the antonym constructs, antonym criteria were formulated and applied to each item in the collection. After the identification of the antonymy, the verified items were put to test with the construct criteria before being included in the sample for this study.

## 4.2 Antonym criteria and data curation

Antonym pairs can be lexical-specific and context-specific (Osgood et al., 1975; Justeson and

Katz, 1992; Hofmann, 1993; Jones, 2002; Murphy, 2003). As a result, the acquaintance and identification of a pair of antonyms may differ from one individual to the other. To reduce such disputes in the antonym constructs collected for this study, the criteria to identify the antonymy were clarified. The criteria followed Murphy's definition (Murphy, 2003: 170) due to its being inclusive and pragmatic. Murphy's definition considers antonymy as a semantic relation between word concepts in actual use. It leaves to the context to decide the common scope, the twoness, and the oppositeness for an antonym pair. That makes it possible to specify rules that are consistent between English and Mandarin yet including language-specific properties.

#### Relation by Contrast-Lexical Contrast (RC-LC)

A lexical contrast set includes only word-concepts that have all the same contextually relevant properties but one. (Murphy, 2003: 170)

Following RC-LC, what needs to be specified are where and how to check the word concept; what is the context for the pair of antonym elements; what are the relevant properties based on the context, and how to test those properties. To make the criteria accessible, those considerations are specified in the following three paragraphs.

For the word concept, I adopted the main meaning of each antonym element in English (OED Online) or Mandarin (Contemporary Chinese Dictionary, 7<sup>th</sup> edition) dictionaries. The personal concept of words can vary due to their different experiences in actual use of language (Murphy, 2003: 21-60), but the denotations are shared. Take *dog*. Despite different experiences with dogs in life, it would be agreed that it is normally a 'carnivorous animal' with four legs, a tail and an acute sense of smell as indicated in the entry of denotation (OED Online).

The context for the pair of antonym elements did not go beyond the construct they formulate. The language data were collected for the examination of the antonym constructs in use, or the use of antonymy. Before constituting the construct, the elements need to have been antonyms. Therefore, the context was within the construct between the pair of antonyms.

The relevant properties were therefore between the pair and mainly related to the meanings. To examine the oppositeness between the pair of elements within the construct, their forms could be related to the word concepts. Form could be phonological, orthographic or morphosyntactic, the similarity of which would add to instead of leading to the contrast between the pair of antonyms

(Murphy: 2003: 34-35). Therefore, the form of the antonym element was out of consideration. As a result, the focus of the antonym criteria was the semantic properties relevant to the word concepts of the antonym elements.

Following the clarification, the criteria for the antonym are specified from two perspectives. One is what they share and the other is in what they differ.

Semantically, a pair of antonyms formulate a twoness within a common scope. The common scope can be a scale, an axis, or a domain (e.g. Lyons, 1977; Cao, 2001; Jones, 2002; Murphy, 2003; Richards and Schmidt, 2011; Shu and Tian, 2019) that can be identified with a hypernym or a generalized concept. For instance, 开 (*kāi*, ‘open’) and 关 (*guān*, ‘close’) share the notion of movement; *hot* and *cold* both are about temperature. The twoness is that the pair are two prototypes with equal semantic status and that they together can define their common scope. 开 (*kāi*, ‘open’) and 关 (*guān*, ‘close’) together can define the movement of an on-off switch; *hot* and *cold* together can define the two ends of temperature despite there is middle area in-between.

Based on the common scale, axis or domain, the binary set of elements needs to be incompatible in one aspect. Such semantic incompatibility has been specified as contrary, complementary, or converse (Löbner, 2013; Jiang, 2005). Contrary refers to the ‘opposite extremes on a scale’ (Löbner, 2013: 214) like *good/bad* or 好 (*hǎo*, ‘good’)/坏 (*huài*, ‘bad’), or the ‘opposite directions on an axis’ (Löbner, 2013: 214) like *left/right* or 左 (*zuǒ*, ‘left’)/右 (*yòu*, ‘right’). Complementary refers to ‘either-or alternatives within a given domain’ (Löbner, 2013: 214) like *male/female* or 男 (*nán*, ‘male’)/女 (*nǚ*, ‘female’). Converse refers to ‘reversed roles (relations only)’ (Löbner, 2013: 214) like *buy/sell* or 买 (*mǎi*, ‘buy’)/卖 (*mài*, ‘sell’).

To sum up, the criteria to identify the antonymy in my collection are two:

- 1) Twoness: they are a binary set semantically defining a common scale/axis/domain.
- 2) Oppositeness: the set has one incompatibility relevant to their common semantic scale/axis/domain, which can be contrary, complementary, or converse.

Following the criteria, the antonym elements in my collection were examined firstly for their twoness and then the oppositeness.

For the English collection, the previous sets of potential antonyms were 141, and 29 of them were excluded after this curation (Table 4.2). The items from 1 to 19 (Table 4.2) were excluded due to the unclear twoness; the items from 20 to 29 were excluded because the contrast between them is

not the oppositeness as defined by converse, contrary or complementary. All of them are likely to be a pair of antonyms if they were put in a context defining or specifying their twoness or oppositeness. 113 were retained (Appendix 2) after the examination following the above criteria with their common scope and oppositeness being clarified.

**Table 4.2 English items excluded after the application of the antonym criteria**

No.	Excluded pairs	Reasons to exclude	
1	now/then	They need a context to make them into a unit of two.	
2	pen/ink		
3	needle/thread		
4	length/breadth		
5	one/two		
6	one/another		
7	hen/chickens		
8	chicken/egg		
9	hen/egg		
10	cut/cover	A context is needed to relate the two.	
11	double/nothing		
12	double/quits		
13	do/die		
14	kill/cure		
15	mend/end		
16	hands/knees		
17	trick/treat		
18	top/tail		
19	noughts/crosses	They both together can refer to all; the relation in-between is whole-part/whole-part.	
20	facts/figures		
21	rank/file		
22	life/work		
23	whole/some		
24	one/all		
25	one/many		
26	each/all		They both together can refer to everyone/everything; the relation in-between is individual-whole/ whole-individual.
27	all/singular		
28	cat/dog	They are two (usual running pets for potential 'English Natives'); they naturally fight, but not converse/contrary/complementary.	
29	apples/oranges	They two usual round handy fruits for potential 'English Natives'; the tastes naturally incompatible, but not converse/contrary/complementary.	

For the Mandarin collection, the previous sets of potential antonyms were 248. 210 were

retained after the examination following the above criteria and they are listed in Appendix 7 with their common scope and oppositeness clarified. Those excluded are listed in Table 4.3. All of them are likely to be a pair of antonyms if they were put in a context defining their twoness. The items from 1 to 7 (Table 4.3) were excluded due to the part-whole or whole-part relationship with one likely included in the other; the items from 8 to 38 were excluded because the two together without a context do not entail a unit of two.

**Table 4.3 Mandarin items excluded after the application of the antonym criteria**

No.	Excluded pairs	Reasons to exclude
1	国/家 ( <i>guó/jiā</i> , 'nation/family')	Overlap: whole-part
2	面/目 ( <i>miàn/mù</i> , 'face/eyes')	Overlap: whole-part
3	借/贷 ( <i>jiè/dài</i> , 'borrow/loan')	Overlap: part-whole
4	劳/资 ( <i>láo/zī</i> , 'workers/people owning the capital')	Overlap: part-whole (The former can be included in the latter.)
5	起/居 ( <i>qǐ/jū</i> , 'get up/live')	Overlap: part-whole
6	往/复 ( <i>wǎng/fù</i> , 'go/return')	Overlap: part-whole (The latter is double way that could include the former.)
7	仰/卧 ( <i>yǎng/wò</i> , 'look up/lie down')	Overlap: part-whole (The former can be included in the latter.)
8	官/兵 ( <i>guān/bīng</i> , 'officials/soldiers')	They need a context to make them into a unit of two.
9	跋/涉 ( <i>bá/shè</i> , 'scale-mountains/ford-rivers')	
10	沧/桑 ( <i>cāng/sāng</i> , 'the colour of water/the trees in fields')	
11	唱/和 ( <i>chàng/hè</i> , 'sing/follow or respond')	
12	朝/野 ( <i>cháo/yě</i> , 'court or government/folk')	
13	窗/户 ( <i>chuāng/hu</i> , 'window/door')	
14	丹/青 ( <i>dān/qīng</i> , 'red/green')	
15	敌/我 ( <i>dí/wǒ</i> , 'enemies/us')	
16	方/圆 ( <i>fāng/yuán</i> , 'square/circle')	
17	父/子 ( <i>fù/zǐ</i> , 'father/son')	
18	干/群	

	( <i>gàn/qún</i> , ‘cadres/the masses’)	
19	古/今 ( <i>gǔ/jīn</i> , ‘ancient/contemporary’)	
20	广/袤 ( <i>guǎng/mào</i> , ‘width/length’)	
21	规/矩 ( <i>guī/jǔ</i> , ‘instrument for drawing circles/squares’)	
22	狐/狸 ( <i>hú/li</i> , ‘fox/raccoon dog’)	
23	今/昔 ( <i>jīn/xī</i> , ‘the present/the past’)	
24	军/民 ( <i>jūn/mín</i> , ‘soldiers/civilian’)	
25	举/止 ( <i>jǔ/zhǐ</i> , ‘lift/stop’)	
26	名/实 ( <i>míng/shí</i> , ‘reputation/reality’)	
27	母/女 ( <i>mǔ/nǚ</i> , ‘mother/daughter’)	
28	铺/盖 ( <i>pū/gài</i> , ‘spread/cover’)	
29	日/月 ( <i>rì/yuè</i> , ‘sun/moon’)	
30	山/水 ( <i>shān/shuǐ</i> , ‘mountain/river’)	
31	诗/歌 ( <i>shī/gē</i> , ‘poetry/songs’)	
32	水/火 ( <i>shuǐ/huǒ</i> , ‘fire/water’)	
33	图/书 ( <i>tú/shū</i> , ‘pictures/books’)	
34	消/息 ( <i>xiāo/xī</i> , ‘disperse/stop’)	
35	源/流 ( <i>yuán/liú</i> , ‘river source/river flow’)	
36	治/乱 ( <i>zhì/luàn</i> , ‘governance/disorder’)	
37	中/外 ( <i>zhōng/wài</i> , ‘China/foreign’)	
38	中/西 ( <i>zhōng/xī</i> , ‘China/western’)	

### 4.3 Construct criteria and data curation

When the antonymy between the antonym elements had been justified, the construct criteria were also in need of clarification especially for the data consistency between English and Mandarin. The focus of this study is the use of antonymy on lexical level between English and Mandarin. However, such use can take the form of a phrase as indicated in the English data with lexical

connectors. Take (*go*) *hot and cold*. Here *hot and cold* is used semantically as a lexical unit to express fear or anxiety, which is in the form of a phrase. The phrasal form can leave the language data for this study in dispute. To resolve this, the construct criteria for the collection to follow are clarified.

Three aspects of the constructs were required and examined before being included into the final sample:

- 1) The construct is a juxtaposition of a pair of antonym elements.
- 2) The construct has been used as a unit on lexical level.

Following the criteria, the details regarding English or Mandarin properties are respectively explained.

For the form of the construction in English, there are generally three. The first is a direct juxtaposition of a pair of antonym elements, for instance, *bittersweet* and *humblebrag*. For this type, there are constructs when the first element is clipped as in *frenemy* (friend-enemy). The other two forms are joined by the lexical connectors *and/or*, for instance, *black and white* and *give or take*.

The lexical connectors *and/or* are included in English antonym constructs in the sense that they lexicalize the logic relation between the two antonym elements. They do not modify, reduce, or add to the meaning of either of the elements. English antonym elements can be joined by prepositions *to*, *in*, *for*, *with*, *over* and *after* as in *top to bottom*, *something for nothing*, or *life after death*. These combinations, however, are excluded. Those prepositions have modified the meanings of the combinations. That is different from conjunctions *and/or*. Prepositions grammatically share with conjunctions in that both can join nouns and pronouns, but prepositions semantically add more to the modified than conjunctions. They can express time, place, position, or method (Thomson and Martinet, 2015). Such semantic addition from prepositions has extended beyond lexicalizing the logic relations between antonym morphemes. To be correspondent to the juxtaposition of two characters without lexical connectors in Mandarin, the antonym pairs joined by prepositions in English are excluded.

In addition, the antonym constructs in English can be spaced, non-spaced or hyphenated in writing like *bitter sweet/bitter-sweet/bittersweet*, which are treated as different written representations of the same combination.

In general, the antonym construct having been used on lexical level in English involves the

constructs with the connectors *and/or*, and those with a compounding form. For the latter, examples are *bittersweet* and *humblebrag*. They were included for being a compound. For the former joined by *and/or*, they were collected on the condition that they have been used on lexical level. If the construct has been used with a syntactic category different from that of its substantive elements, it was included (4.2a); or if it has been used with a meaning more than the sum of the element meanings, it was included (4.2b). In (4.2a), *Man and boy* is used as an adverb to modify the whole sentence, but neither man nor boy will be considered as an adverb individually. A meaning more the sum of the element meanings refers to a hypernym, a generalization, an abstraction, a metaphor, or other extended meanings. Take *black and white* (4.2b).

(4.2) a. On a personal level, this writer has known frustration man and boy.

b1. black and white colours

b2. It's a complex issue, but he only sees it in black and white.

Here the meaning of *black and white* in (4.2a) is a simple sum of black and white and the whole phrase can be paraphrased as 'black colours and white colours.' The former can be considered as short for the latter. In (4.2b2), *black and white* refers to binary way to look at things in an extremely binary way that is either bad or good, or either right or wrong. *Black and white* here (4.2b2) is used as a lexical unit that cannot be split and the meaning has been abstracted and extended beyond the colours white and black. *Black and white* would be collected for the meaning in (4.2b2) but not (4.2b1). Constructs like *man and boy* (4.2a) and *black and white* (4.2b2) are collected despite the lexical connectors because they function as a lexical unit in the context.

Following the criteria of form and meaning, the 113 English items with checked antonymy were curated and 105 were retained. The items excluded due to not being used on lexical level were four. They were *back front*, *upwards and downwards*, *take or leave*, and *whole or none*. Furthermore, the items limited to a specific domain like a proper noun were also excluded. There were three, including *front-rear/rear front*, and *over or under/over and under/over under*. The construction they represent could be covered by the data in the final sample. The final sample was listed in Table 4.4. The antonym construct composed of the same pair of antonyms were counted as one and marked with a number. E is short for English. The in-use frequency in NOW corpus was

updated from 18<sup>th</sup> to 22<sup>nd</sup> in May 2023. A contextual example for each antonym construct from NOW corpus was attached in Appendix 3 to indicate the lexical status. The contextual syntactic categories for each construct are included in Appendix 5.

**Table 4.4 English antonym constructs**

<b>Codes</b>	<b>Antonym Constructs</b>	<b>In-use frequency</b>
E-1	Adam and Eve	5199
E-2	all or none	518
E-3	all or nothing	11723
E-4	back and forth	146202
E-5	back and fore	51
E-6	back and forward	1225
E-7	before and after	71190
	before after	1358
E-8	bittersweet	42422
E-9	black and white	132736
	black-white	1554
E-10	boom and bust	6013
	boom-or-bust	2225
	boom-bust	1746
E-11	buy and sell	22569
	buy-sell	941
	bought and sold	16169
E-12	cat and mouse	11100
E-13	cause and effect	10296
E-14	chalk and cheese	2089
E-15	come and go	28832
	coming or going	876
E-16	cost-benefit	133448
E-17	day and night	50639
	day or night	8214
E-18	dead and alive	580
	dead alive	226
E-19	dimwit	769
	dim-witted	2679
	dim-wittedness	63
E-20	dos and don'ts	167
E-21	fast and loose	4301
E-22	feast or famine	1032
	feast and famine	273
E-23	fingers and toes	2738
E-24	flora and fauna	17585

E-25	fore and aft	923
E-26	frenemy	2309
E-27	give and take	10582
	give or take	7012
E-28	good bad	875
E-29	great and small	2883
E-30	grey-white	207
E-31	happy sad	812
E-32	hand and foot	1774
	hands and feet	10751
E-33	hate-like	227
E-34	head or tail	544
	heads or tails	992
E-35	hear tell	91
E-36	hearsay	14377
E-37	heaven and earth	2849
E-38	here and there	58527
E-39	here and now	17924
	here-and-nowness	
E-40	hide and seek	8221
E-41	high and low	16095
	highs and lows	25177
	in high and low	
	high-low	2890
E-42	hit or miss	5544
	hit and miss	7330
E-43	hither and thither	528
E-44	hot and cold	14163
	hot-cold	151
E-45	humblebrag	553
E-46	icy-hot	177
E-47	in and out	156717
	ins and outs	15383
	the ins and outs (of sth)	
	in-out	987
E-48	inside-outside	794
E-49	left and right	32028
	left-right	3777
E-50	life or death	12688
	life and death	37565
E-51	ladies and gentlemen	18351
E-52	lords and ladies	821
E-53	lost and found	3696
E-54	love-hate	6180
	love hating	44

E-55	love-hatred	5
E-56	make or break	27412
E-57	make or mar	1439
E-58	male-female	2572
E-59	man and boy	434
E-60	man and wife	1605
E-61	man and woman	20734
	man-woman	526
E-62	man or beast	159
	man-beast	121
E-63	masculine-feminine	77
E-64	more and less	624
	more or less	107838
E-65	new-old	1602
E-66	nitwit	522
E-67	nothing and nobody	331
E-68	north and south	52188
	north-south	23394
E-69	on and off	119885
	on or off	16050
	on-off	5955
E-70	one and other	628
	one or other	2472
E-71	open and shut	3030
E-72	pass-fail	422
E-73	plants and animals	11353
E-74	plus-minus	4297
E-75	profit and loss	6342
	profit or loss	3628
E-76	public-private	43586
E-77	push and pull	5767
	push-pull	1767
E-78	rain or shine	18577
E-79	rich and poor	15498
E-80	right or wrong	19086
	rightly or wrongly	5952
	right-wrong	29
E-81	rise and fall	23856
	rise-fall	17
	rising-falling	8
E-82	root and branch	3197
E-83	rural-urban	4129
E-84	sale or return	85
E-85	short and long	8728
	short-long	6941

E-86	something or nothing	110
	something and nothing	128
E-87	song and dance	12273
E-88	sooner or later	29266
E-89	stop-start	7739
	stop-and-start	611
	stops and starts	1479
E-90	stop-go	974
	stop-and-go	2284
E-91	strengths and weaknesses	22729
E-92	sweet and sour	4750
	sweet-sour	489
E-93	there and then	12166
	there then	4154
E-94	thick and thin	8404
E-95	this and that	14523
	this or that	12499
E-96	to and fro	9071
	toing and froing	590
E-97	top and bottom	14757
	tops and bottoms	1008
E-98	tragicomedy	1516
	tragicomic	1688
E-99	true-false	72
E-100	up and down	162146
	ups and downs	66918
	upward and downward	495
E-101	wet and dry	3710
E-102	wife and mother	8652
	wife-mother	12
E-103	win or lose	13918
	win-lose (situation)	584
E-104	yes-no	381
	yes and no	7520
	yes or no	11465
E-105	young-old	87
	young and old	27231

For the construct form in Mandarin, there is only one. It is the juxtaposition of two antonym characters. Take 动静 (*dòngjìng*, dynamic-static, ‘movement’).

For the construct meaning in Mandarin, it needs to be able to function as a lexical unit. The way to justify is to see whether it can be reversed or separated for the same meaning. If yes, then it

is excluded. Take 动静 (*dòngjìng*, dynamic-static, ‘movement’) (4.3).

- (4.3) a. 动静自如 (*dòngjìng zìrú*, dynamic-static self-willing, ‘start or stop freely’)  
 b. 屋里没有动静 (*wūlǐ méiyǒu dòngjìng*, room-inside not-have dynamic-static, ‘no movement in the room’)

Here 动静 (*dòngjìng*, dynamic-static, ‘movement’) in both examples take the same form, but the first can be separated. In (4.3a), 动静 (*dòngjìng*, dynamic-static, ‘start and stop’) is semantically equal to the sum ‘动 (*dòng*, ‘dynamic’) plus ‘静 (*jìng*, ‘static’)’, which is a phrase. The example (4.3a) can be extended as ‘start freely and stop freely.’ In (4.3b), 动静 (*dòngjìng*, dynamic-static, ‘movement’) refers to ‘movement.’ It will not make the same sense if 动 (*dòng*, ‘dynamic’) and 静 (*jìng*, ‘static’) are separated or reversed. Constructs like 动静 (*dòngjìng*, dynamic-static, ‘start and stop’) in (4.3a) were excluded.

Following the criteria of form and meaning, 210 Mandarin items with checked antonymy were curated and 161 were retained. 15 items were excluded because the same meaning can be expressed with a reversed order. They are 爱憎 (*àizēng*, love-hate, ‘love and hate’), 宾主 (*bīnzhǔ*, guest-host, ‘guests and hosts’), 攻守 (*gōngshǒu*, offend-defend, ‘offend and defend’), 加减 (*jiājiǎn*, addition-subtraction, ‘addition and subtraction’), 奖惩 (*jiǎngchéng*, reward-punishment, ‘reward and punishment’), 接送 (*jiē sòng*, pick up-see off, ‘pick up and see off’), 集散 (*jísàn*, gather-distribute, ‘gather and distribute’), 聚散 (*jùsàn*, gather-spread, ‘coming together and separating’), 利弊 (*lìbì*, wanted-unwanted, ‘gains and losses’), 善恶 (*shàn’è*, good-evil, ‘good and evil’), 升降 (*shēngjiàng*, rising-falling, ‘rising and falling’), 问答 (*wèndá*, question-answer, ‘to question and to answer’), 抑扬 (*yìyáng*, fall tone-rise tone, ‘rising and falling tones’), 增减 (*zēngjiǎn*, increase-decrease, ‘to increase or to decrease’), and 涨跌 (*zhǎngdiē*, rise-fall, ‘to rise and to fall’).

25 items were excluded because the two antonym elements can express the same meaning with being separated and expanded into a phrase. They are: 哀乐 (*āilè*, joys-sorrows, ‘joys and sorrows’), 表里 (*biǎolǐ*, inside-outside, ‘inside and outside’), 成败 (*chéngbài*, success-failure, ‘success or failure’), 传习 (*chuánxí*, teach-learn, ‘to teach and to learn’), 断续 (*duàn xù*, breaking-continuing, ‘intermittent’), 恩仇 (*ēnchóu*, mercy-revenge, ‘mercy and revenge’), 功过 (*gōngguò*, merit-fault, ‘merits or faults’), 供求 (*gōngqiú*, supply-demand, ‘supply and demand’), 公私 (*gōngsī*, public-private, ‘public and private’), 奖罚 (*jiǎng fá*, reward-punishment, ‘reward and punishment’),

将士 (*jiàngshì*, officer-soldier, ‘officers and soldiers’), 起降 (*qǐjiàng*, take off-land, ‘(of an airplane) to take off and land’), 去就 (*qùjiù*, leave-take, ‘leave or take (an position)’), 去留 (*qùliú*, leave-stay, ‘leave or stay’), 任免 (*rènmǐǎn*, appoint-remove, ‘to hire or dismiss’), 赏罚 (*shǎngfá*, reward-punishment, ‘to reward and to punish’), 盛衰 (*shèngshuāi*, flourish-decline, ‘ups and downs’), 师生 (*shīshēng*, teachers-students, ‘teachers and students’), 收支 (*shōuzhī*, income-expenditure, ‘income and expenditure’), 水旱 (*shuǐhàn*, flood-drought, ‘flood and drought’), 序跋 (*xùbá*, preface-postscript, ‘preface and postscript’), 正负 (*zhèngfù*, positive-negative, ‘positive and negative’), 真假 (*zhēnjiǎ*, true-false, ‘true or false’), 装卸 (*zhuāngxiè*, load-unload, ‘to load and unload’), and 祖孙 (*zǔsūn*, grandparent-grandchild, ‘grandparents and grandchildren’).

Besides, 9 candidates were excluded because they were semantically limited to a specific domain. They are: 干支 (*gānzhī*, main stems-subordinate stems, ‘Chinese dating system Ganzhi’), 纲目 (*gāngmù*, outline or generalization-details or specification, ‘classification and introduction of plants and animals’), 购销 (*gòuxiāo*, purchase-sale, ‘purchase and sale in economics/commerce’), 寒热 (*hánrè*, cold-hot, ‘malaria’), 经络 (*jīngluò*, main channel-sub channel, ‘physical channels for energy in traditional Chinese medicine’), 离合 (*lǐhé*, separation-reunion, ‘clutch’), 批零 (*pīlíng*, wholesale-retail, ‘selling in economics/commerce’), 僧尼 (*sēngní*, Buddhist monks-Buddhist nuns, ‘Buddhism members’) and 僧俗 (*sēngsú*, monkish people-not monkish people, ‘people inside and outside Buddhism’). The patterns they represent can be included in the discussion of the retained items.

The final sample was listed in Table 4.5 with one English interpretation indicating the lexical status. More English interpretations are included in Appendix 8. Each item was coded with a number and M is short for Mandarin. As in English, the construct composed of the same pair of antonym pairs were counted as one. Subscripts 1 and 2 were used to differentiate the constructs with two sequence orders. The contextual syntactic categories for each construct are also included (Appendix 10).

**Table 4.5 Mandarin antonym constructs**

Codes	Antonym constructs	In-use Frequency
M-1	安危 ( <i>ānwēi</i> , safe-dangerous, ‘risk’)	1363
M-2	凹凸 ( <i>āotū</i> , concave-convex, ‘bump’)	801

M-3	褒贬 ( <i>bāobiǎn/bian</i> , praise-criticize, ‘criticize’)	584
M-4	本末 ( <i>běnmò</i> , tree roots-tree tops, ‘a whole story’)	368
M-5	标本 ( <i>biāoběn</i> , branches-roots, ‘sample’)	3362
M-6	彼此 ( <i>bǐcǐ</i> , this-that, ‘likewise’)	12447
M-7	裁缝 ( <i>cáiféng/feng</i> , cut off-sew up, ‘a tailor’)	803
M-8	操纵 ( <i>cāozòng</i> , impose control-lift control, ‘to manipulate’)	3723
M-9	长短 ( <i>chángduǎn</i> , long-short, ‘gossip’)	2190
M-10	沉浮 ( <i>chénfú</i> , sink-float, ‘ups and downs’)	739
M-11	迟早 ( <i>chízǎo</i> , late-early, ‘sooner or later’)	1757
M-12	出没 ( <i>chūmò</i> , appear-disappear, ‘haunt’)	1362
M-13	出纳 ( <i>chūnà</i> , cash out-cash in, ‘cashier’)	741
M-14	春秋 ( <i>chūnqiū</i> , spring-autumn, ‘age’)	5599
M-15	出入 ( <i>chūrù</i> , out-in, ‘differences’)	7206
M-16	雌雄 ( <i>cíxióng</i> , female-male, ‘winner or loser’)	669
M-17	存亡 ( <i>cúnwáng</i> , live-die, ‘existent or extinct’)	1557
M-18	粗细 ( <i>cūxì</i> , thick-thin, ‘width’)	526
M-19	旦夕 ( <i>dànxi</i> , morning-evening, ‘in a short while’)	537
M-20	大小 ( <i>dàxiǎo</i> , big-small, ‘at least’)	17975
M-21	得失 ( <i>déshī</i> , gain-lose, ‘good and bad’)	2691
M-22	动静 ( <i>dòngjìng/jìng</i> , dynamic-static, ‘dynamic’)	2561
M-23	东西 ( <i>dōngxī</i> , east-west, ‘something’)	78203
M-24	多寡 ( <i>duōguǎ</i> , many-few, ‘quantity’)	382
M-25	多少 ( <i>duōshǎo/shao</i> , many-few, ‘how much’)	43183
M-26	恩怨 ( <i>ēnyuàn</i> , grateful-resentful, ‘hatred’)	811
M-27	反正 ( <i>fǎnzhèng</i> , negative-positive, ‘anyway’)	8385
M-28	肥瘦 ( <i>féishòu</i> , fat-slim, ‘size of clothes’)	195
M-29	凤凰 ( <i>fēnghuáng</i> , male phoenix-female phoenix, ‘bird of good luck’)	3686
M-30	夫妇 ( <i>fūfù</i> , husband-wife, ‘married couples’)	11027
M-31	父母 ( <i>fùmǔ</i> , father-mother, ‘parents’)	22046
M-32	俯仰 ( <i>fǔyǎng</i> , head down-head up, ‘a short while’)	199
M-33	甘苦 ( <i>gānkǔ</i> , sweetness-bitterness, ‘experiences, especially sufferings’)	743
M-34	高矮 ( <i>gāoǎi</i> , tall-short, ‘height’)	237
M-35	高低 ( <i>gāodī</i> , high-low, ‘after all’)	5511
M-36	公婆 ( <i>gōngpó</i> , husband’s father-husband’s mother, ‘husband’s parents’)	392
M-37	贵贱 ( <i>guìjiàn</i> , expensive-cheap, ‘social status’)	432
M-38	寒暑 ( <i>hánshǔ</i> , winter-summer, ‘winter and summer’)	753
M-39	行列 ( <i>hángliè</i> , row-column, ‘procession’)	7543

M-40	寒暄 ( <i>hánxuān</i> , cold-warm, ‘greetings’)	746
M-41	好歹 ( <i>hǎodǎi</i> , good-bad, ‘at least’)	1136
M-42	好坏 ( <i>hǎohuài</i> , good-bad, ‘at least’)	2419
M-43	好恶 ( <i>hàowù</i> , like-dislike, ‘interest’)	457
M-44	黑白 ( <i>hēibái</i> , black-white, ‘good and bad’)	2668
M-45	横竖 ( <i>héngshù</i> , horizontal-vertical, ‘anyway’)	319
M-46	厚薄 ( <i>hòubó</i> , thick-thin, ‘closeness’)	208
M-47	缓急 ( <i>huǎnjí</i> , no rush-urgent, ‘urgency’)	505
M-48	毁誉 ( <i>huǐyù</i> , slander-good name, ‘reputation’)	224
M-49	祸福 ( <i>huòfú</i> , disaster-luck, ‘disaster’)	458
M-50	呼吸 ( <i>hūxī</i> , exhale-inhale, ‘breathe’)	10372
M-51	呼应 ( <i>hūyìng</i> , call-response, ‘coherent’)	1676
M-52	教学 ( <i>jiào/jiāoxué</i> , teach-learn, ‘teaching’)	20027
M-53	交接 ( <i>jiāojiē</i> , give-take, ‘befriend’)	3166
M-54	嫁娶 ( <i>jiàqǔ</i> , marry a man-marry a woman, ‘marriage’)	363
M-55	姐妹 ( <i>jiěmèi</i> , elder sister-younger sister, ‘female fellows’)	5615
M-56	进出 ( <i>jìnchū</i> , in-out, ‘income and expenditure’)	19590
M-57	经纬 ( <i>jīngwěi</i> , longitude-latitude, ‘main points’)	2649
M-58	进退 ( <i>jìntuì</i> , advance-retreat, ‘social behaviours’)	1370
M-59	紧张 ( <i>jǐnzhāng</i> , tension-relaxation, ‘in short supply’)	32032
M-60	吉凶 ( <i>jíxiōng</i> , good luck-bad luck, ‘fortune’)	354
M-61	巨细 ( <i>jùxì</i> , big-small, ‘all’)	338
M-62	开关 ( <i>kāiguān</i> , turn on-turn off, ‘a switch’)	1908
M-63	可否 ( <i>kěfǒu</i> , yes-no, ‘can you...’)	2309
M-64	快慢 ( <i>kuàimàn</i> , quick-slow, ‘anyway’)	426
M-65	来回 ( <i>láihuí</i> , to-fro, ‘repeatedly’)	5339
M-66	老少 ( <i>lǎoshào</i> , old-young, ‘all people’)	2393
M-67	冷暖 ( <i>lěngnuǎn</i> , cold-warm, ‘sufferings’)	1032
M-68	利害 ( <i>lìhài/hai</i> , profit-loss, ‘excellent’)	2653
M-69	里外 ( <i>lǐwài</i> , inside-outside, ‘or so’)	3004
M-70	买卖 ( <i>mǎimài</i> , buy-sell, ‘a deal’)	9374
M-71	矛盾 ( <i>máodùn</i> , spear-shield, ‘struggling’)	30200
M-72	没有 ( <i>méiyǒu</i> , nothing-something, ‘nothing’)	421666
M-73	南北 ( <i>nánběi</i> , south-north, ‘against south and toward north’)	11682
M-74	男女 ( <i>nánnǚ</i> , male-female, ‘grown-up’)	14929
M-75	内外 ( <i>nèiwài</i> , inside-outside, ‘or so’)	39828
M-76	能否 ( <i>néngfǒu</i> , can-cannot, ‘can you...’)	14425
M-77	浓淡 ( <i>nóngdàn</i> , heavy-light, ‘the strength of color, flavour, etc.’)	223
M-78 <sub>1</sub>	女儿 ( <i>nǚér</i> , daughter-son, ‘daughter’)	27226
M-78 <sub>2</sub>	儿女 ( <i>érnǚ</i> , son-daughter, ‘children’)	7422

M-79	女士 ( <i>nǚshì</i> , lady-gentleman, ‘lady’)	12159
M-80 <sub>1</sub>	女子 ( <i>nǚzǐ</i> , female-male, ‘lady’)	36246
M-80 <sub>2</sub>	子女 ( <i>zǐnǚ</i> , male-female, ‘children’)	11676
M-81	强弱 ( <i>qiángruò</i> , strong-weak, ‘intensity’)	1206
M-82	前后 ( <i>qiánhòu</i> , front-back, ‘or so’)	11847
M-83	乾坤 ( <i>qiánkūn</i> , sky-earth, ‘a situation’)	881
M-84	阡陌 ( <i>qiānmò</i> , (of path) southnorth-westeast, ‘road’)	197
M-85	起伏 ( <i>qǐfú</i> , rise-fall, ‘changes’)	3904
M-86	起落 ( <i>qǐluò</i> , take off-fall off, ‘success or failure’)	834
M-87	情理 ( <i>qínglǐ</i> , sensibilities-senses, ‘common sense’)	1902
M-88	轻重 ( <i>qīngzhòng</i> , light-heavy, ‘importance’)	4871
M-89	亲疏 ( <i>qīnshū</i> , close-distant, ‘closeness’)	270
M-90	取舍 ( <i>qǔshě</i> , accept-reject, ‘choose’)	877
M-91	曲直 ( <i>qūzhí</i> , curvy-straight, ‘reasonable and unreasonable’)	314
M-92	人物 ( <i>rénwù</i> , somebody-something, ‘somebody’)	38137
M-93	日夜 ( <i>rìyè</i> , day-night, ‘around the clock’)	6276
M-94	荣辱 ( <i>róngrǔ</i> , honour-disgrace, ‘reputation’)	1037
M-95	上下 ( <i>shàngxià</i> , upward-downward, ‘or so’)	21061
M-96	舍得 ( <i>shěde</i> , willingness to lose-possibility to gain, ‘(be) willing to (give, lose, etc.)’)	1713
M-97	胜负 ( <i>shèngfù</i> , victory-defeat, ‘result’)	2871
M-98	生死 ( <i>shēngsǐ</i> , life-death, ‘life’)	6533
M-99	深浅 ( <i>shēnqiǎn</i> , deep-shallow, ‘a situation’)	665
M-100	伸缩 ( <i>shēnsuō</i> , stretch out-draw back, ‘flexibility’)	446
M-101	是非 ( <i>shìfēi</i> , yes-no, ‘gossip’)	20028
M-102	是否 ( <i>shìfǒu</i> , yes-no, ‘likely’)	48103
M-103	时空 ( <i>shíkōng</i> , time-space, ‘spacetime’)	3411
M-104	始末 ( <i>shǐmò</i> , beginning-end, ‘the whole story’)	601
M-105	始终 ( <i>shǐzhōng</i> , beginning-end, ‘throughout’)	31700
M-106	收发 ( <i>shōufā</i> , receive-deliver, ‘a worker receiving and delivering things’)	839
M-107	手脚 ( <i>shǒujiǎo</i> , hands-feet, ‘conspiracy’)	3221
M-108	授受 ( <i>shòushòu</i> , give-take, ‘contact’)	212
M-109	首尾 ( <i>shǒuwěi</i> , head-tail, ‘the whole story’)	532
M-110	手足 ( <i>shǒuzú</i> , hands-feet, ‘brothers’)	1836
M-111	睡觉 ( <i>shuìjiào</i> , sleep-awake, ‘sleep’)	7560
M-112	水土 ( <i>shuǐtǔ</i> , water-earth, ‘environment’)	5514
M-113	输赢 ( <i>shūyíng</i> , lose-win, ‘loss’)	545
M-114	死活 ( <i>sǐhuó</i> , dead-alive, ‘anyway’)	942
M-115	松紧 ( <i>sōngjǐn</i> , loose-tight, ‘size’)	216

M-116	损益 ( <i>sǔnyì</i> , decrease-increase, ‘loss and profit’)	542
M-117	天地 ( <i>tiāndì</i> , sky-earth, ‘space’)	11033
M-118	题跋 ( <i>tí bā</i> , preface-postscript, ‘comment’)	262
M-119	听讲 ( <i>tīngjiǎng</i> , hear-tell, ‘listen to’)	626
M-120	听说 ( <i>tīngshuō</i> , hear-say, ‘hear’)	18000
M-121	头尾 ( <i>tóuwěi</i> , head-tail, ‘trace’)	236
M-122	吞吐 ( <i>tūntǔ</i> , swallow-spit, ‘talking’)	3027
M-123	往返 ( <i>wǎngfǎn</i> , to-fro, ‘repeatedly’)	3003
M-124	往还 ( <i>wǎnghuán</i> , forth-back, ‘to contact’)	178
M-125	忘记 ( <i>wàngjì</i> , forget-remember, ‘to forget’)	13555
M-126	往来 ( <i>wǎnglái</i> , go-come, ‘to have contact with’)	11560
M-127	文武 ( <i>wénwǔ</i> , literary-military, ‘various skills’)	1476
M-128	遐迩 ( <i>xiá’ěr</i> , far-near, ‘all around’)	1069
M-129	向背 ( <i>xiàngbèi</i> , support-oppose, ‘loyalty’)	228
M-130	先后 ( <i>xiānhòu</i> , former-latter, ‘in order’)	47391
M-131	消长 ( <i>xiāozhǎng</i> , decrease-increase, ‘disparity’)	353
M-132	兴衰 ( <i>xīngshuāi</i> , thriving-declining, ‘boom and bust’)	1740
M-133	兴亡 ( <i>xīngwáng</i> , prosperous-dead, ‘the rise and fall (of a nation or a country)’)	568
M-134 <sub>1</sub>	兄弟 ( <i>xiōngdì/di</i> , elder brother-younger brother, ‘(a friendly way to name) a younger man’)	18673
M-134 <sub>2</sub>	弟兄 ( <i>dìxiōng</i> , younger brother-elder brother, ‘male followers or friends’)	3387
M-135	休戚 ( <i>xiūqī</i> , joys-sorrows, ‘all happenings’)	399
M-136	虚实 ( <i>xūshí</i> , false-true, ‘the reality’)	627
M-137	扬弃 ( <i>yángqì</i> , carry forward (the good)-abandon (the bad), ‘abandon’)	686
M-138	炎凉 ( <i>yánliáng</i> , hot-cool, ‘unfair treatment to people depending on their popularity’)	231
M-139	言行 ( <i>yánxíng</i> , (human behavior) with talking-without talking, ‘behavior’)	2798
M-140	盈亏 ( <i>yíngkuī</i> , wax-wane, ‘profit and loss’)	2507
M-141	迎送 ( <i>yíngsòng</i> , welcome farewell, ‘welcome and farewell’)	349
M-142	因果 ( <i>yīnguǒ</i> , cause-effect, ‘the relation of cause and effect’)	1923
M-143	阴阳 ( <i>yīnyáng</i> , feminine-masculine, ‘the knowledge of the transfer between opposites’)	2182
M-144	衣裳 ( <i>yīshang</i> , upper clothes-lower clothes, ‘clothes’)	2921
M-145	异同 ( <i>yìtóng</i> , different-same, ‘disagreement’)	542
M-146	优劣 ( <i>yōuliè</i> , advantages-disadvantages, ‘quality’)	1343
M-147	远近 ( <i>yuǎnjìn</i> , far-near, ‘distance’)	2107
M-148	原委 ( <i>yuánwěi</i> , start-end, ‘the whole story’)	643

M-149	鸳鸯 ( <i>yuānyāng</i> , (Mandarin duck) male-female, ‘lovers’)	928
M-150	宇宙 ( <i>yǔzhòu</i> , space-time, ‘universe’)	10056
M-151	皂白 ( <i>zàobái</i> , black-white, ‘right and wrong’)	368
M-152	早晚 ( <i>zǎowǎn</i> , morning-evening, ‘sooner or later’)	1933
M-153	朝夕 ( <i>zhāoxī</i> , morning-evening, ‘a short while’)	1228
M-154	质量 ( <i>zhìliàng</i> , quality-quantity, ‘quality’)	76862
M-155	昼夜 ( <i>zhòuyè</i> , day-night, ‘round the clock’)	3761
M-156	主次 ( <i>zhǔcì</i> , main-minor, ‘importance’)	332
M-157	姊妹 ( <i>zǐmèi</i> , elder sister-younger sister, ‘siblings’)	1795
M-158	纵横 ( <i>zònghéng</i> , vertical-horizontal, ‘move about freely’)	11771
M-159	尊卑 ( <i>zūnbēi</i> , upper class-lower class, ‘social status’)	248
M-160	作息 ( <i>zuòxī</i> , work-rest, ‘schedule’)	460
M-161	左右 ( <i>zuǒyòu</i> , left-right, ‘to influence’)	50360

After the previous collection, antonymy curation and construct curation, 105 English antonym constructs and 161 Mandarin antonym constructs were included in the sample to be observed and compared.

#### 4.4 Summary

This chapter has documented the data collection and curation in English and Mandarin. The focus of this study is antonym constructs consisting of a pair of antonyms that can be joined by lexical connectors *and/or*. However, antonymy can be context dependent such that the identification of antonym pairs can be diverse due to personal experiences and cultural diversities. Aiming to reduce such disputes in the language data for this study, antonym criteria were specified following Murphy’s definition RC-LC and were applied to each item in the first collection. The focus of this study is the use of antonym constructs on lexical level. For this purpose, construct criteria were specified to apply to the items with identified antonymy. The form was examined for the data consistency between English and Mandarin. The meaning was examined for the use on lexical level, and the frequency was checked for the in-use status of the construct. After the antonymy and construct curation, 105 English and 161 Mandarin constructs were included in the sample. With the identified two collections, the antonym constructs were examined and compared between English and Mandarin.

# Chapter 5 Analysis and Comparison of English and Mandarin

## Antonym Constructions

After the data curation, the antonym constructs in English were 105 items and those in Mandarin were 161. With those two collections, the properties of the antonym constructs in each language were observed and generalized from the perspective of Construction Grammar and then compared. Those properties include the meaning patterns, the syntactic categories, the headedness when there is a head in the construct, and the inheritance links between different forms and meaning patterns.

First and foremost, the construction shared by English and Mandarin antonym constructs were generalized and expressed as in (5.1) following the analytical framework of Construction Grammar by Hoffmann (2022: 89). The phonology and pragmatics levels will be included when they are relevant to the discussion. The following will explain the construction from the perspectives of form and meaning.

(5.1) FORM: MORPHOSYNTAX:  $[ant_1Xant_2]_{y_i}$   
 $\Leftrightarrow$   
MEANING: SEMANTICS: 'ANT<sub>1</sub> WITH RELATION R TO ANT<sub>2</sub>'<sub>i</sub>

Based on the form properties of the antonym constructs in English and Mandarin, the morphosyntactic structure of the antonym constructions in English and Mandarin is generalized and expressed as  $[ant_1Xant_2]_{y_i}$  (5.1).

*ant* is short for 'antonym' to represent the antonym elements in the construction.

The subscripts <sub>1</sub> and <sub>2</sub> respectively label the left and the right slots for the antonym elements in the template of the antonym construction. The subscripts first indicate that the substantive elements are a unit of two. Moreover, there is a preferred order from *ant*<sub>1</sub> to *ant*<sub>2</sub>. The third is related to headedness. The head here refers to the semantic center. The antonym construction can be left or right headed, which is construct specific or even context dependent. Such headedness variation is unlikely to be labelled as left or right all throughout in the generalized schema. Yet with the subscripts <sub>1/2</sub>, the head placement can be figured out by seeing which one is being modified in the semantic relation between the two antonym elements. If it is *ant*<sub>1</sub> that is modified, then the construct is left-headed; if it is *ant*<sub>2</sub> that is modified, then the construct is right-headed. That will be

further clarified in the following two sections with the exemplification from both English and Mandarin.

The upper-case  $X$  is a variable and represents lexical connectors. For Mandarin,  $X = 0$  because there are no lexical connectors in the antonym construction. For English,  $X = 0$  when there are no lexical connectors; and  $X = \textit{and/or}$  when the two antonym elements are joined by *and/or*. Being dashed, spaced or non-spaced in English antonym constructs are written conventions and irrelevant here. The grammatical inflection, or the blending of the two antonym elements in English is not specified in the antonym construction. For the blending by shortening the first antonym element as in *frenemy* (friend-enemy) or *tragicomedy* (tragedy-comedy), the shortened represents the original element in meaning. For grammatical inflection, it can be exemplified by *up and down/ups and downs*, and *tragicomedy/tragicomic*. Both are normal productive inflection or derivation leading to the morphological variants of the generalized construction. Such properties will only be included when it is relevant to the discussion.

The subscript lower-case  $y$  represents the syntactic category of the construction. The syntactic category of the antonym construction is observed based on the role of the construction in context. It can be inconsistent with and not so relevant to the syntactic categories of the antonym elements. Therefore, the syntactic categories of the antonym elements are not represented in the generalized schema.

The meaning patterns of the antonym constructions in English and Mandarin are represented by the semantic relation  $R$  between the two substantive elements as indicated by ‘ANT<sub>1</sub> WITH RELATION  $R$  TO ANT<sub>2</sub>’ <sub>$i$</sub>  (5.1). According to Booij (2013), conceptual, encyclopedic, and conventionalized knowledge are required in understanding an item like a compound, and the variable  $RELATION R$  can adjust to a specific case or a general description. Similarly, Yang (2007a) had a similar proposal in her observation of Mandarin antonym constructs. When the semantic relation between the antonym elements was understood, the meaning of the antonym constructs could be grasped when they were put in a context (Yang, 2007a). Therefore, it is the semantic relation between the antonym elements that are generalized and represented in the construction.

The subscript of the lower case  $i$  represents the correspondence between the form and its meaning. One form of the antonym construction can have more than one meaning pattern, when the subscript will build up to *ii, iii, iv, v, vi* as in the following semantic patterns (5.2).

The semantic relation between the two antonym elements ‘ANT<sub>1</sub> WITH RELATION R TO ANT<sub>2</sub>’ in English and Mandarin antonym constructions are summarized as six (5.2).

- (5.2) a. ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’<sub>i</sub>  
 b. ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’<sub>ii</sub>  
 c. ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION/ALL/ANY)’<sub>iii</sub>  
 d. ‘ANT<sub>2</sub> (THAT IS ANT<sub>1</sub>)’<sub>iv</sub>  
 e. ‘ANT<sub>1</sub> (THAT IS ANT<sub>2</sub>)’<sub>v</sub>  
 f. ‘EXTENDED USE OF ‘ANT<sub>1</sub> WITH RELATION R TO ANT<sub>2</sub>’’<sub>vi-i/vi-ii/vi-iii/vi-iv/vi-v</sub>

This analysis of the semantic patterns of the antonym constructions are a combination of my close observation with the previous examination on Mandarin antonym construction or English antonym co-occurrence. According to Yang (2007a), the first semantic pattern is the summation of the two antonym elements, the second is selection, and the third is one-headed when the head can be left or right. The first can follow with the semantic relation of coordinative ‘AND’ in (5.2a). The second can be expressed by alternative ‘OR’ in (5.2b). The meaning pattern of being headed is expressed as ‘... THAT IS...’ with the former slot for the head. So (5.2d) is for those right headed and (5.2e) for those left headed. Because not all antonym constructs include the non-head element in the meaning, parentheses are used to include such cases. Each of those semantic patterns will be specified and exemplified in the following two sections.

One more meaning pattern ‘FROM... TO...’ (5.2c) is added to this list. It has been observed (Zhang, 2018) that the meaning of the antonym constructs can indicate inclusiveness, or pervasiveness. Similarly, Murphy (2006) and Jones et al. (2012) have observed that antonym co-occurrence can intrigue a sense of exhaustiveness. A closer observation reveals that there is a property of direction in the antonym pairs when they carry the sense of pervasiveness or exhaustiveness, for instance, 东西 (*dōngxī*, east-west, ‘from east to west’) in (5.19c). Following this, the property of direction is specified as ‘FROM... TO...’. Such sense of direction can suggest inclusiveness ALL, which is firstly observed in the English form [ant<sub>1</sub> AND ant<sub>2</sub>], and exhaustiveness ANY, which is firstly observed in the English form [ant<sub>1</sub> OR ant<sub>2</sub>]. An example for the former is *root and branch (reform)* (5.16c) (Section 5.1.1; Section 5.1.4) and for the latter (*by day or night*) (5.16b) (Section 5.1.1; Section 5.1.4). Therefore, the semantic pattern ‘FROM... TO...’ (5.2c) are further specified as three sub-types, which are DIRECTION, ALL, and ANY (5.2c). This semantic pattern will be further clarified with English and Mandarin exemplification in the

following two sections.

All the above meaning patterns can occur in an extended way as represented by ‘EXTENDED USE OF ‘ANT<sub>1</sub> WITH RELATION R TO ANT<sub>2</sub>’ (5.2f). The subscript for this meaning pattern  $v_i$  is further specified as  $v_i$ -i/ $v_i$ -ii/ $v_i$ -iii/ $v_i$ -iv/ $v_i$ -v based on which of the first five semantic patterns is extended. The meanings of the Mandarin antonym constructs can be figurative, including metaphor and metonymy (Yang, 2007). In such case, the element meaning becomes less obvious in the meaning of the construct like 东西 (*dōngxī*, east-west, ‘something’). A close observation reveals that this meaning is an abstraction or extension of the semantic pattern ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’. 东 (*dōng*, ‘east’) and 西 (*xī*, ‘west’) in ancient China were places of the markets for people to buy things (Yang, 2007a). They together share the relatedness to ‘goods’ or ‘things.’ With the coordinative juxtaposition ‘EAST<sub>1</sub> AND WEST<sub>2</sub>’, both 东 (*dōng*, ‘east (market to buy things)’) and 西 (*xī*, ‘west (market to buy things)’) are equally included to refer to their common property ‘place for buying things’ and are extended to refer to ‘something’ in a way of metonymy. Yet the extended use here is expanded to include any use that is an abstraction or extension of the first five meaning patterns.

The seven semantic patterns were first prompted by the observation of Mandarin antonym constructs and then modified in the in-text observation of English and Mandarin antonym constructs. They will be respectively illustrated and specified with the form patterns in Section 5.1 for English and Section 5.2 for Mandarin. Following the first clarification of the antonym construction, the properties will be further specified from the perspectives of syntactic category, the headedness, and the inheritance links. In Section 5.3, those properties will be compared between English and Mandarin and the similarities and differences are explained.

## 5.1 Antonym construction in English

This section will focus on the antonym construction in English. There are generally three morphosyntactic forms of the antonym construction in English. One is without lexical connectors like *bittersweet*, *humblebrag*, and *hearsay*. The other two are joined by lexical connectors *and/or*, for instance, *short and long*, *ups and downs*, *coming or going*, and *sooner or later*. The three forms are respectively formulated as below (5.3).

(5.3) a. [ant<sub>1</sub>ant<sub>2</sub>]

- b. [ant<sub>1</sub> OR ant<sub>2</sub>]
- c. [ant<sub>1</sub> AND ant<sub>2</sub>]

The semantic patterns for the antonym construction in English are nine in general due to the variable semantic interactions between the two antonym elements. Yet the possibilities for each form are different, which will be specified one after another in Section 5.1.1. After this, the syntactic category (Section 5.1.2), the headedness when there is a head in the construction (Section 5.1.3), and the inheritance links of different forms (Section 5.1.4) are clarified.

### 5.1.1 The schema of English antonym construction

With the three morphosyntactic forms of the antonym construction in English, the semantic patterns are nine in general due to the variable semantic interactions between the two antonym elements in context. However, the possibilities for each form are different. Generally, [ant<sub>1</sub>ant<sub>2</sub>] has the most meaning patterns, which are eight; [ant<sub>1</sub> OR ant<sub>2</sub>] has the least as coerced by the lexical connector *or*, which are five; and [ant<sub>1</sub> AND ant<sub>2</sub>] is the second most frequent and has seven meaning patterns despite the lexical connector *and*. Each of them is illustrated and specified below.

First is the form [ant<sub>1</sub>ant<sub>2</sub>]. The two antonym elements in this form have been found with nine patterns of semantic relation in context. Each is exemplified. The semantic relation between the two antonym elements in the construction [ant<sub>1</sub>ant<sub>2</sub>] can be coordinative AND. For instance, *It (smartphone) was the world's first foldable smartphone with a left-right foldable design*. Here *left-right* can be semantically interpreted as 'left and right' or 'right and left' with the meaning of both elements equally included. The semantic relation between the two antonym elements in the construction [ant<sub>1</sub>ant<sub>2</sub>] can be selective OR, for instance, *an in-out EU referendum*. Here *in-out* needs to be semantically interpreted as 'in or out (EU)'. The semantic relation between the two antonym elements in the construction [ant<sub>1</sub>ant<sub>2</sub>] can be directional FROM... TO... For instance, *Continuous rural-urban migration will increase the demand for housing in urban centers*. As indicated in the ending part of the sentence, people are heading to the urban areas so that the housing demand there is climbing. In that sense, a direction is intended in *rural-urban* that it needs to be semantically interpreted as 'from rural to urban'.

Furthermore, the English form [ant<sub>1</sub>ant<sub>2</sub>] can be headed, either left or right. Take *humblebrag* for right headed. ... *other commenters were envious, with one remarking that the video could be a*

*humblebrag* to ‘tell me you rich without telling me you rich’. According to the in-text interpretation *tell me you rich without telling me you rich*, the intention is to show off. Then *brag* is the semantic head, which is covered with the appearance *humble*. In that sense, *humblebrag* can be roughly interpreted as ‘brag that is (appears) humble’. Take *nitwit* for left headed. ... *he is forever being typecast as a nitwit. (From his role as the idiot Peter, in The Great, to the pathetic foodie, Tyler, in The Menu.)* Based on the context, it is *nit* that plays the main role in the meaning of *nitwit*. Then *nitwit* here can be interpreted as left headed ‘nit (that is wit).’ Yet *nitwit* here can be replaced by *nit* for the same literal meaning. *Wit* seems to be semantically neutralized. Therefore, the semantic pattern for the left headedness of *nitwit* is modified as ‘nit’, which is represented as ‘ANT<sub>1</sub>’. It can be argued that *nitwit* is right headed with *nit* being the modifier and delimiting *wit* to be idiot. Yet that cannot hold in the case of *hearsay*. For instance, ... *other MPs referred to these allegations as ‘rumours’ and ‘hearsay’.* Here the semantic head of *hearsay* is *hear* with *say* semantically suppressed. Therefore, the meaning pattern for the left headedness of the English form [ant<sub>1</sub>ant<sub>2</sub>] are modified as ‘ANT<sub>1</sub>’.

Three of the five meaning patterns described above are found with an extended use. they are ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’, ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’, and ‘ANT<sub>1</sub>’. With the semantic relation AND, *push-pull* is used in an extended way in *It’s the kind of mental push-pull that makes strategy games so much fun.* There is no real ‘push and pull’ that can be conducted in the head. It is the feeling of struggle or fighting that happens in the brain. *Black-white* is also used in an extended way but with the semantic relation OR. For instance, *The black-white mentality is pervasive from the president of the country to the GSN.* Here the mentality is not really in the colour of black or white. Instead, it refers to the binary way to judge right or wrong without any intermediate. Next is the left headed *hearsay*. It has been extended and specified as rumors as in the above exemplification, which is just one type of something heard.

To sum up, the form [ant<sub>1</sub>ant<sub>2</sub>] in English has been found with eight meaning patterns in context (5.4). Yet not all the meaning patterns of the generalized antonym construction (5.2) are strictly inherited by this form. For the meaning pattern ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION)’, it is the sense of direction that is expressed; for the left headed pattern, it is further specified as ‘ANT<sub>1</sub>’

based on the actual use in context.

(5.4)	[ant <sub>1</sub> ant <sub>2</sub> ] <sub>i/ii/iii/iv/v/vi-i/vi-ii/vi-v</sub>	
	⇔	
	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’ <sub>i</sub>	e.g. left-right
	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’ <sub>ii</sub>	e.g. in-out EU
	‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION)’ <sub>iii</sub>	e.g. rural-urban
	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’ <sub>iv</sub>	e.g. humblebrag
	‘ANT <sub>1</sub> ’ <sub>v</sub>	e.g. nitwit, hearsay
	‘EXTENDED USE OF ‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’ <sub>vi-i</sub>	e.g. push-pull
	‘EXTENDED USE OF ‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’ <sub>vi-ii</sub>	e.g. black-white
	‘EXTENDED USE OF ‘ANT <sub>1</sub> ’ <sub>vi-v</sub>	e.g. hearsay

The next is the form [ant<sub>1</sub> OR ant<sub>2</sub>]. The two antonym elements in this form have been found with five types of semantic relation in context. The first is selective OR as indicated by the lexical connector *or*. For instance, *I only view things on a win or lose basis, which is very shallow!* It is obvious that *win or lose* here offers a binary choice that either the former or the latter. Yet the semantic pattern in this form [ant<sub>1</sub> OR ant<sub>2</sub>] can be more than selective OR. A sense of exhaustiveness can be indicated by the combination. For instance, *The distinctive effect is visible by day or night, whether the vehicle is moving or stationary.* Here *day or night* is meant to include any time around the clock, including the time between day and night. Thus, the meaning pattern is more of ‘FROM DAY TO NIGHT (ANY)’. This pattern has been used in an extended way. Take *heads and tails. ... you’d have a terrible time trying to make heads or tails of what the motivations for the many races in Azeroth are.* Firstly, *to make heads or tails of* here is not just the two ends either the heads or the tails. Instead, it is anything ‘from heads to tails’ that is to be figured out. Besides, ‘from heads to tails’ has been abstracted to refer to any details from the beginning to the end. In that sense ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (ANY)’ has been used in an extended way.

This form [ant<sub>1</sub> OR ant<sub>2</sub>] has been found with a headed way. Take *something or nothing* (5.5). In (5.5a), the meaning emphasis is laid upon *nothing*. Some speech came out from her mouth when she was talking, but it was really nothing and nonsense. The emphasis on *nothing* is clearer in (5.5b). Here ‘I’ admitted that it was nothing that was pondered on. Based on that, it may be concluded that *something or nothing* is right headed with the semantic pattern ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’. Yet there could be two issues here. Firstly, the head can switch. In (5.5c), the semantic emphasis is laid upon *something* on the condition that it is meant to be an encouragement for taking the chance. In that sense, it is left headed in (5.5c). It is thus summarized that the right or left head placement

for this form is contextual. Secondly, the modification from the non-head element is not so clear here. For (5.5a) and (5.5b), the meaning does not change too much with *something or nothing* replaced by *nothing*; for (5.5c), it will lead to similar meaning with *something or nothing* replaced by *something*. In that sense, the headed semantic pattern for the form [ant<sub>1</sub> OR ant<sub>2</sub>] need be specified as ‘ANT<sub>2</sub>’ for right headed and ‘ANT<sub>1</sub>’ for left headed.

- (5.5) a. ... she could talk about something or nothing for an infinite amount of time.  
 b. I keep track of all that movement while pondering on something or nothing. Usually nothing, in fairness.  
 c. Why don't you take a chance? You could wind up with something or nothing.

To sum up, the form [ant<sub>1</sub> OR ant<sub>2</sub>] in English has been found with five meaning patterns in context (5.6). In addition to selective OR as indicated in the lexical connector *or*, this form has been used with the semantic pattern FROM... TO... to indicate a sense of exhaustiveness ANY, which can be used in an extended way. It has also been used in the left or right headed way with little modification from the non-head element, and whether the right or the left element to be the head depends on the context.

- (5.6) [ant<sub>1</sub> OR ant<sub>2</sub>]<sub>ii/iii/iv/v/ vi-iii</sub>  
 ⇔  
 ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’<sub>ii</sub> e.g. win or lose  
 ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (ANY)’<sub>iii</sub> e.g. day or night  
 ‘ANT<sub>2</sub>’<sub>iv</sub> e.g. something or nothing  
 ‘ANT<sub>1</sub>’<sub>v</sub> e.g. something or nothing  
 ‘EXTENDED USE OF ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (ALL)’<sub>vi-iii</sub> e.g. heads or tails

The third is the form [ant<sub>1</sub> AND ant<sub>2</sub>]. The two antonym elements in this form have been found with seven patterns of semantic relation in context. First is the coordinative relation AND, which just follows the lexical coordinator *and* in the form. Take *buy and sell* in the sentence ... *the portfolio manager is the one making the final buy and sell decisions...* Here *buy* and *sell* are equally included and does not mean more than the sum of buy and sell. This semantic pattern with this form can be used in an extended way. For instance, ... *share her wedding day picture with Ahad to declare that they are finally man and wife*. Here *man* and *wife* are equally included, and they together can formulate the image ‘a married couple’, which can be considered their hypernym. In *cat and mouse*, this meaning pattern can be extended further. For instance, ... *a cat and mouse*

*start signalled the gravity of the contest...* Here, *cat* and *mouse* are equally included but the combination is summarized and abstracted as the fighting scene between a mouse and a cat in daily life to show how serious the start of the contest is. From *buy and sell* to *cat and mouse*, the coordinative relation AND is increasingly extended and abstracted.

The two antonym elements in the form [ant<sub>1</sub> AND ant<sub>2</sub>] can be used with the semantic pattern selective OR, or inclusive FROM... TO... Take *life and death* for the former. *The musician has been on the verge of life and death several times, that is why he got the nickname 'bulletproof.'* Here the semantic relation between *life* and *death* is selective that the construct refers to either live or die. Furthermore, it has been used in an extended way that the image of danger is abstracted from the sharp contrast between the two extreme alternatives to live or to die. The inclusive FROM... TO... can be exemplified by *root and branch*. *Only with root and branch reform will public faith in the Met be restored.* Firstly, *root and branch reform* can be paraphrased as 'a reform from root to branch' that intends to cover all. In addition, it has been used in an extended way. *Root and branch* here does not refer to the roots and branches of the *reform*, which is not a tree. Instead, it has been abstracted to refer to the *reform* 'from bottom to top,' which means thoroughly.

Right headedness has been found in the form [ant<sub>1</sub> AND ant<sub>2</sub>]. Take *something and nothing*. ... *have known Ian a long time. It is something and nothing, people try and make something of it.* Here 'people try to make it something' has made it clearer that the semantic emphasis is laid upon *nothing*. Such right headedness becomes clearer with *something* and *nothing* swapped in the following context (5.7). For *nothing and something* in (5.7), the semantic emphasis is laid upon *something*. The topic of the paragraph (5.7) is to convince the listener to make something out of the floating words in the art wall work *Tomorrow Still Comes/ He Rā Anō Ki Tua*. Such intention to make something becomes clearer in the further specification of how to make something in the previous three sentences. In that sense, the semantic head of *nothing and something* in (5.7) is *something* in the right slot. Moreover, the head here is also modified very little by the non-head element. *Something and nothing* in the former example can be replaced by *nothing*; *nothing and something* in the latter can be replaced by *something*. Both replacements do not lead to crucial meaning change.

(5.7) 'I once had this retail job for Noel Leeming and the wages were based on how well you could sell items. The manager tried to motivate us with, 'imagine that this is your shop'.

As an artist that is what you are always doing as well. *Tomorrow Still Comes/ He Rā Anō Ki Tua* (an art wall work) isn't my art work. These words are all floating together and they all mean nothing and something. The size of the text and the spacing between the texts make the space into a word document. Your body is a cursor that walks through that text. It is your story for you to make your own connections.' (Christchurch Art Gallery has a new public artwork and location for Outer Spaces)

To sum up, the form [ant<sub>1</sub> AND ant<sub>2</sub>] has been used with seven semantic patterns (5.8). In addition to coordinative AND as indicated in the lexical connector *and*, this form has been used with the selective pattern OR to indicate a sense of extreme. It has been used with the semantic pattern FROM... TO... to indicate a sense of inclusiveness ALL. It has also been in a right headed way with little modification from the non-headed element. All the semantic patterns but the right headed have been used in an extended way.

(5.8)	[ant <sub>1</sub> AND ant <sub>2</sub> ] <sub>i/ii/iii/iv/vi-i/vi-ii/vi-iii</sub>	
	↔	
	'ANT <sub>1</sub> AND ANT <sub>2</sub> ' <sub>i</sub>	e.g. buy and sell
	'ANT <sub>1</sub> OR ANT <sub>2</sub> ' <sub>ii</sub>	e.g. life and death
	'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)' <sub>iii</sub>	e.g. root and branch
	'ANT <sub>2</sub> ' <sub>iv</sub>	e.g. something and nothing
	'EXTENDED USE OF 'ANT <sub>1</sub> AND ANT <sub>2</sub> '' <sub>vi-i</sub>	e.g. man and wife; cat and mouse
	'EXTENDED USE OF 'ANT <sub>1</sub> OR ANT <sub>2</sub> '' <sub>vi-ii</sub>	e.g. life and death
	'EXTENDED USE OF 'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)'' <sub>vi-iii</sub>	e.g. root and branch

This section has described and clarified the different meaning patterns for the three forms of the antonym construction in English. For the form [ant<sub>1</sub>ant<sub>2</sub>], the semantic relation between the two antonym elements in actual context can be eight; for the form [ant<sub>1</sub> OR ant<sub>2</sub>], it can be five; for the form [ant<sub>1</sub> AND ant<sub>2</sub>], it can be seven. However, it does not mean that an antonym construct of one of the three forms can be used in all the correspondent semantic patterns. This schema is meant to be a generalization capturing the possible semantic relations between the two antonym elements in actual use.

### 5.1.2 The syntactic categories of English antonym construction

This section is about the syntactic category of the antonymy construction in English. The antonym constructs in English have certain syntactic categories. They can be a noun, an adverb, an adjective, a verb, a pronoun, or a preposition. Yet the five syntactic categories do not equally occur in all the three forms [ant<sub>1</sub>ant<sub>2</sub>], [ant<sub>1</sub> OR ant<sub>2</sub>], [ant<sub>1</sub> AND ant<sub>2</sub>] as summarized in (5.9). Therefore,

it will be specified individually for each form in this section.

- (5.9) [ANT<sub>1</sub>ANT<sub>2</sub>]<sub>n/v/adv/adj</sub>  
 [ANT<sub>1</sub> or ANT<sub>2</sub>]<sub>n/v/adv/adj/pron/prep</sub>  
 [ANT<sub>1</sub> and ANT<sub>2</sub>]<sub>n/v/adv/adj/pron/prep</sub>

The form [ant<sub>1</sub>ant<sub>2</sub>] can be a noun, an adjective, an adverb, or a verb. *Frenemy* is a noun as justified by the apposition with other two nouns *friend* and *inspiration* in the instance that ... *the endless list of celebrities, fellow designers and influencers... called him a friend, frenemy or inspiration. Push-pull in the push-pull between reliable small refinements and incomplete major additions* is a noun as signaled by the placement between the article *the* and the preposition *between*. *On-off* is an adjective in *They later got back together again and had an on-off relationship from 2013 to 2017*. It is used to modify the noun *relationship*. *Pass-fail* is also an adjective in *These exercises are pass-fail to ensure the facility team can respond to an event promptly*. It follows the link verb *be* without any grammatical changes. *Plus-minus* is an example of adverb as modifying the number changes in *The sample-wide margin of error is plus-minus three percent*. *Hear tell* is an example of verb. This is justified by its placement between the subject and the object clause in the instance that ... *I hear tell that there are even some amongst us who don't know the difference between a median and a mean*. Yet no preposition in this form has been found.

The form [ant<sub>1</sub> OR ant<sub>2</sub>] can be a pronoun or a preposition in addition to the above four syntactic categories. *Make or break* is used as a noun in *Why 'strategic business building' is a make-or-break for Indonesian startups*. It is placed between the article *a* and the preposition *for*. *All or nothing* is an adjective when it is used to modify a noun. For instance, *The all or nothing approach to setting resolutions is the main reason for quitting*. An example of an adverb would be *sooner or later*. For instance, *Please, do not cut corners because sooner or later it will show and the results will be negative*. Here *sooner or later* modifies the whole clause *it will show* that the construct functions as an adverb. A verb can be exemplified by *make or mar*, for instance, ... *choices that could make or mar their lives*. *This or that* is a pronoun that can be replaced by *anything* in the sentential example *We must stop pretending that we don't know this-or-that about animal sentience*. *On-or-off* is an example of preposition when it is followed by a noun phrase in *He's comfortable on-or-off the ball, and helps the offense flow*.

The form [ant<sub>1</sub> AND ant<sub>2</sub>] can also occur in all the six syntactic categories. *Thick and thin* is

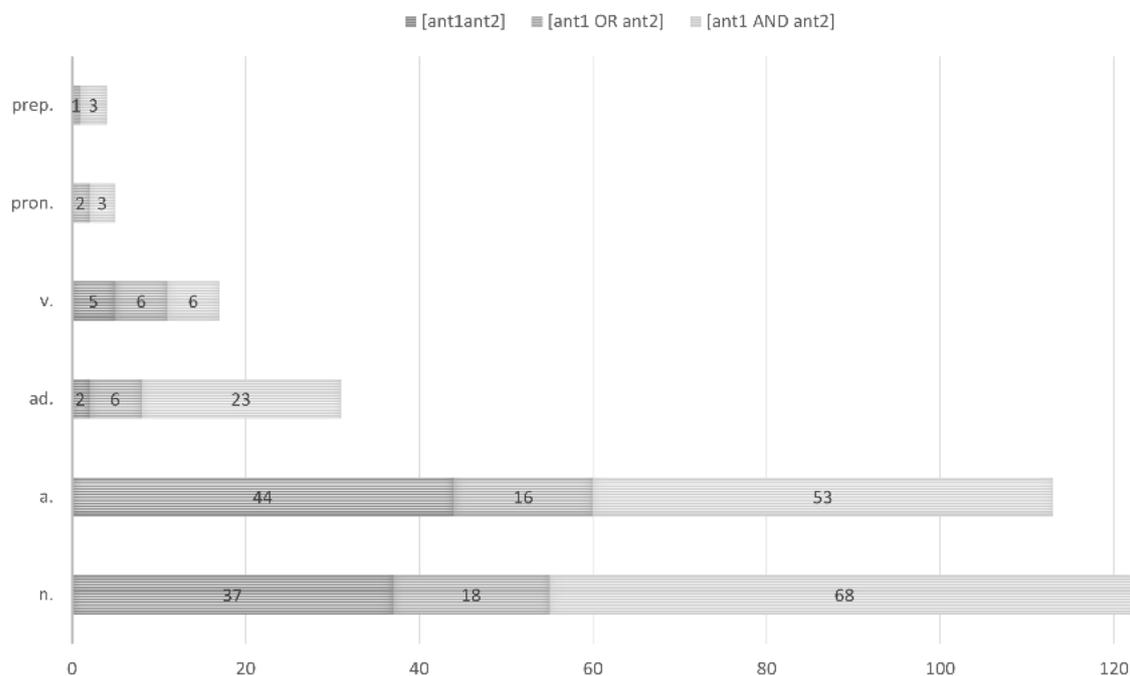
used as a noun in *But I never forget that she has stuck to me through thick and thin, in sickness and in health*. So is *before-and-after* in *When I saw a particularly impressive before-and-after I couldn't stop looking at the photo*. For adjectives, take *boom and bust* and *feast and famine*. *I call it the feast and famine effect, where you either have too much coming in or not enough*. Here *feast and famine* is used as an adjective to modify the noun *effect*. *Boom and bust* is also used as an adjective to modify *managers* in *Boom and bust managers, like Potter, will be gone almost as quickly as they arrive*. *Man and boy* is used as an adverb to modify the whole sentence in *On a personal level, this writer has known frustration man and boy*. For being a verb, it can be exemplified by *stop and start* in ... *your documents don't need to stop and start like a normal inkjet*. *On-and-off* is an example of preposition when it is followed by a noun in *Messi has earned \$1.15 billion during his career on-and-off the field*. Being a pronoun can be exemplified by *one and other*. For instance, *While some horns are positioned to allow users to speak to one-and-other, others face upwards to catch the general sounds of the city*. Here *one-and-other* can be replaced by the pronoun *each other*.

Furthermore, the same construct can have more than one syntactic category. Take an example of the form [ant<sub>1</sub> AND ant<sub>2</sub>]. In (5.10), *to-and-fro* are respectively used with the syntactic category of preposition, noun, adjective and adverb. In (5.10a), *to-and-fro* is followed by the nominal phrase *the Embassy* to formulate a prepositional phrase to modify the verb *scuttle*. In (5.10b), the signifier *this* and the slot for the subject of the clause have evidenced that *to-and-fro* in here is used as a noun. In (5.10c), *to-and-fro* modifies the noun *services* as an adjective. In (5.10d), *to-and-fro* follows and modifies the verb *flew* as an adverb.

- (5.10) a. ... he was fed up with scuttling to-and-fro the Embassy...  
 b. ... this to-and-fro can go on for years...  
 c. ... many transport providers are now offering daily to-and-fro services.  
 d. ... pickleballs flew to-and-fro throughout the three day Pickleball Federation...

This section has summarized the syntactic categories of the antonym construction observed in the English collection. They can be a noun, an adjective, an adverb, a verb, a pronoun, or a preposition, which does not happen to each form equally. As indicated in Figure 5.1 on the following page, being a noun is the most frequent syntactic category for all the three forms, and the rest from highest to lowest are adjective, adverb, verb, pronoun, and preposition. The form [ant<sub>1</sub>ant<sub>2</sub>] has not been found as a pronoun or a preposition in the collection. Some antonym constructs can

have more than one syntactic category.



**Figure 5.1 The syntactic categories of English antonym construction**

Notes:

1. The variants of each construct can have a different syntactic category. Therefore, the total items here are 161 with the variants counted.
2. The abbreviations for the syntactic categories: n. – noun; a. – adjective; ad. – adverb; v. – verb; pron. – pronoun; prep. – preposition.

### 5.1.3 The headedness of English antonym construction

This section focuses on the headedness of the antonym construction in English. The head here only refers to the semantic head. It can be the same as the syntactic head of the antonym construction. For instance, *Netizens ask US expat in SG who appears to humblebrag his \$5K/month expenses. Brag* here is both the semantic and the syntactic head of *humblebrag* as being used as a verb meaning ‘to boast.’ However, *brag* is only the semantic head when *humblebrag* is used as a noun in ... *the video could be a humblebrag to ‘tell me you rich without telling me you rich’*. The concern in this study is the semantic head (Booij, 2009) and being headed here is delimited to when there is one head in the antonym constructs. Headedness has been found in all the three forms [ant<sub>1</sub>ant<sub>2</sub>], [ant<sub>1</sub> OR ant<sub>2</sub>], and [ant<sub>1</sub> AND ant<sub>2</sub>] in English yet with different properties. Left headedness does not occur to all the three forms. The head placement can be contextual. The non-

head element can be neutralized. All this will be specified in the following for each form.

For the form [ant<sub>1</sub>ant<sub>2</sub>], both left and right headed have been found (5.4) (Section 5.1.1). Examples for the former are *hearsay* or *nitwit*; examples for the latter are *humblebrag* or *dead alive*. Yet the difference here between the two types of headedness is not just the right or left head placement. For the left headedness, the non-head element tends to be neutralized as a result that the whole construct could be semantically replaced by the left element. Take the right headedness first. *Humblebrag* (5.11a) means to brag with the pretense of being humble. Here (5.11a) it is synonymous with *boastfulness* in the preceding sentence. *Dead alive* (5.11b) is alive yet without vitality as modified by *dead*. Here (5.11b) what Baba Sofowote knows is that people are easily getting less active as they retire.

(5.11)

- a. I devour these little insights into people's lack of inner voice; the banal detail, the boastfulness, the seemingly never-ending supply of new grandchildren and career success. A particular highlight is the humblebrag holiday – e.g. “for our fourth ‘abroad’ trip this year, we enjoyed a weekend break in Samarkand”.
- b. Baba Sofowote knows that the man who retires quickly becomes dead alive!

The form [ant<sub>1</sub>ant<sub>2</sub>] can be left headed. Take *hearsay* (5.12) first. In (5.12a), *telling hearsay tales* can be paraphrased as ‘telling heard tales.’ The meaning of *hearsay* here can be schematized as ‘HEAR<sub>1</sub>’, and it is a passive participle required by the contextual meaning. In (5.12b) and (5.12c), *hearsay* can be paraphrased as ‘(what is) heard.’ In all the three examples, it is mainly *hear* that plays the role of the semantic head. However, the head placement is switched to the right in (5.12d). Here (5.12d), *hearsay* is an intransitive meaning ‘to tell what one has heard; to repeat rumours’ (OED). Following the OED definition, the semantic head should be placed on *say*. However, the role of *hear* is not so obviously absent that it delimited what is said to be what is heard. That adds to the tendency of right headedness with a non-head element in English.

(5.12)

- a. She blamed herself for telling hearsay tales. (OED)
- c. I gave him stronger proof than mere hearsay. (OED)
- b. Sometimes a rumour, a hearsay... came. (OED)
- d. Men riding and sunning, reporting and hearsaying. (OED)

*Nitwit* is another example of the left headedness with a neutralized non-head. In (5.13a), *nitwit* refers to ‘a stupid, silly, or foolish person’ (OED); in (5.13b), it is an adjective, meaning ‘stupid, foolish, idiotic’ (OED). Semantically, *nitwit* in both examples can be replaced by *nit* with the meaning of *wit* being neutralized. It could be argued that *nit* should modify *wit* in the sense that *nit* is a type of *wit*. This argument somehow shows the tendency of right-headedness in English. To support this argument, *wit* needs to be the superordinate of *nit*. However, this study is an exploration of antonym constructs, in which *nit* and *wit* are equally opposite. Moreover, the analysis here is not a final declaration but an alternative that may expose more about antonym combinations.

(5.13)

- a. Pee Wee Reese was one of the guys willing to take a stand against the behavior of narrow-minded nitwits and racial degenerates, both on and off the field.
- b. The two houses, of course, were the... feuding families of Romeo and Juliet, whose nitwit hatred would indirectly cause Mercurio's departure for Paradise.

For the form [ant<sub>1</sub> OR ant<sub>2</sub>], both left headed and right headed are found, which are contextual (5.6) (Section 5.1.1). Take the examples of *something or nothing* (5.14). Based on the context, the semantic emphasis in (5.14a1) is on the right element *nothing* as clarified in the second clause; the semantic emphasis in (5.14b1) is on the left considering the intention to encourage an action in the first clause. In that sense, the head placement in this form is contextual. Moreover, the non-head element in this form tends to be neutralized. In both examples (5.14a1; 5.14b1), the lexical meaning does not change too much with the construct replaced by the head (5.14a2; 5.14b2). The differences between the original (5.14a1; 5.14b1) and the replaced one (5.14a2; 5.14b2) is that the tone becomes stronger and more certain with the removal of the non-head element. In that sense, the neutralized head seems to play the role of euphemism.

(5.14)

- a1. I keep track of all that movement while pondering on something or nothing. Usually nothing, in fairness.
- a2. I keep track of all that movement while pondering on nothing.
- b1. Why don't you take a chance? You could wind up with something or nothing.
- b2. Why don't you take a chance? You could wind up with something.

The form [ant<sub>1</sub> AND ant<sub>2</sub>] seems to be always right headed when there is a head (5.8) (Section 5.1.1). Compare the two examples (5.15a1; 5.15b1). The semantic head in (5.15a1) is on *nothing* that the speaker considers ‘knowing Ian a long time’ to be nothing. This becomes clearer when the second clause conveys the untold disagreement of the speaker with people’s attempt to make a thing of it. In (5.15b1), *nothing* and *something* is swapped, but the semantic emphasis is still on the right slot. The intention in the context (5.15b) is to make something out of the meaningless floating words. Furthermore, the non-head elements in both cases are neutralized. The replaced counterparts (5.15a2; 5.15b2) get more strength in the statement. In that sense, the neutralized non-head element seems to play the role of euphemism.

- (5.15) a1. ... have known Ian a long time. It is something and nothing, people try and make something of it.  
 a2. ... have known Ian a long time. It is nothing, people try and make something of it.  
 b1. These words are all floating together and they all mean nothing and something.  
 b2. These words are all floating together and they all mean something.

This section has examined the one-headedness of the antonym construction in English. The form [ant<sub>1</sub>ant<sub>2</sub>] can be left headed or right headed. When it is left headed, the non-head element seems to be semantically neutralized. When it is right headed, the non-head element is semantically included as a modifier to the head. The form [ant<sub>1</sub> OR ant<sub>2</sub>] can be left headed or right headed, which is context dependent. In both cases, the non-head element seems to be neutralized. The form [ant<sub>1</sub> AND ant<sub>2</sub>] can only be right headed. The non-head element seems to be neutralized. In all cases, the neutralized element seems to play the role of euphemism. It must be noticed that all the three forms can also be bi-headed with both antonym elements semantically included and indicated, which has been presented in Section 5.1.1. Furthermore, there can be connections between headedness and other meaning patterns, which are organized as inheritance links and presented in Section 5.1.4.

#### **5.1.4 The inheritance links of English antonym construction**

This section focuses on the inheritance links of the antonym construction in English (Figure 5.2). Inheritance links capture the relation between a more abstract level and a more specific level of constructions, which is a continuum rather than a binary division (Hilpert, 2013: 57). Inheritance

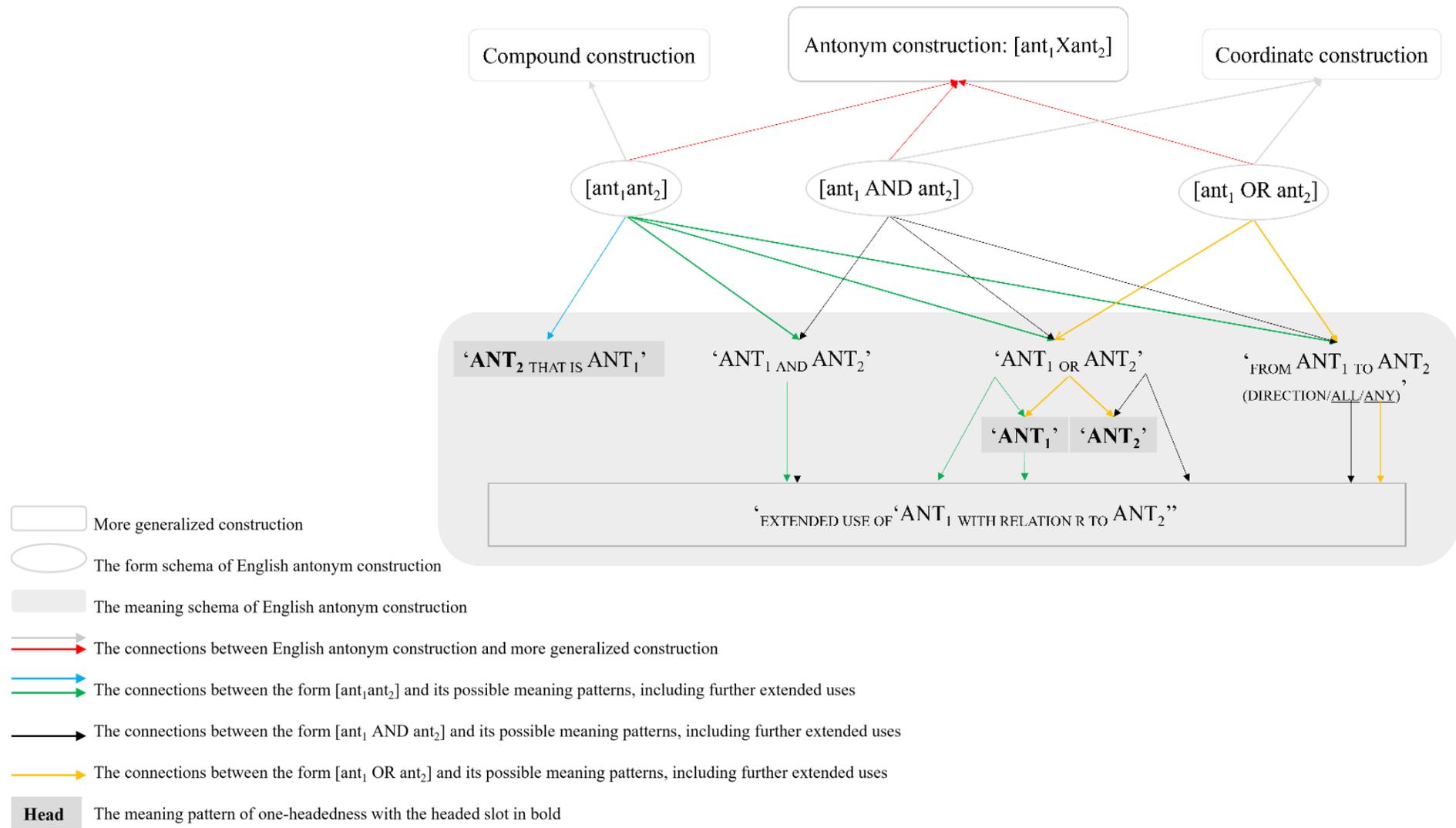
includes form, meaning and function (Hilpert, 2013: 57-60). For the English antonym construction in this study, the inheritance links are mainly explored in form connections and meaning connections. Three levels of abstraction are included in Figure 5.2. The middle layer is the schema of the three forms of English antonym construction; the top layer is the more generalized constructions, from which the three forms of English antonym construction may inherit; the bottom layer in shade is the possible semantic patterns for English antonym construction. The inheritance links that have been observed in English antonym construction will be specified in the following with form connections first and meaning connections next.

From the perspective of form, the three forms of English antonym construction inherit from different constructions despite that they all belong to the antonym construction [ant<sub>1</sub>Xant<sub>2</sub>]. As indicated in Figure 5.2, the two forms [ant<sub>1</sub> AND ant<sub>2</sub>] and [ant<sub>1</sub> OR ant<sub>2</sub>] belong to the coordinate construction in English. That can be evidenced by their lexical connectors *and/or*, which are among the lexical signals of coordinate patterns. Examples are *stops and starts*, *short and long*, *this or that*, *give or take*, etc. Yet the form [ant<sub>1</sub>ant<sub>2</sub>] inherits from the compound construction in English with or without the clipping of the first element. Take *frenemy* (friend-enemy) or *humblebrag*. In that sense, the antonym construction in English overlaps with the coordinate construction and the compound construction.

From the perspective of meaning, the antonym constructions have properties more than compound or coordinate constructions. They could be headed, non-headed, or have the semantic properties related to the antonym elements. All the three aspects are specified in the following of this section.

For the non-headed patterns of English antonym construction, there are three, including ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’, ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ and ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>’. The semantic pattern ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ is a property shared by the English forms [ant<sub>1</sub>ant<sub>2</sub>] and [ant<sub>1</sub> AND ant<sub>2</sub>]. As indicated in Figure 5.1, the two forms have the property to indicate coordinative relation but not the form [ant<sub>1</sub> OR ant<sub>2</sub>]. As the two antonym elements in that form are joined by the lexical connector *or*, it is assumed that the semantic pattern ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ is disabled by the lexical connector *or*.

The semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ is not an exclusive feature of the form [ant<sub>1</sub> OR ant<sub>2</sub>] with the lexical connector *or*. The semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ has been found in all the three forms (Figure 5.2). Therefore, all the three English forms have the property to indicate the semantic



**Figure 5.2 English antonym construction network**

relation alternative OR.

The semantic patterns ‘<sub>FROM</sub> ANT<sub>1</sub> TO ANT<sub>2</sub>’ (Figure 5.2) is considered a property from the pairs of antonym elements. Firstly, a sense of range has been observed in English antonym co-occurrence (Murphy, 2006; Jones et al., 2012). That is expressed as ‘<sub>FROM</sub> ANT<sub>1</sub> TO ANT<sub>2</sub>’. Secondly, the three English forms can be used with such sense yet with different properties. For the form [ant<sub>1</sub>ant<sub>2</sub>] (Figure 5.2), the construct with this meaning pattern is used to express directions like *rural-urban* (5.16a). For the form [ant<sub>1</sub> OR ant<sub>2</sub>] (Figure 5.2), the construct with this meaning pattern is used to express exhaustiveness ANY like *day or night* (5.16b). The sense of exhaustiveness here is considered a result of combining the sense of direction from the antonym pair *day/night* with the original semantic relation selective OR suggested in the lexical connector *or*. For the form [ant<sub>1</sub> AND ant<sub>2</sub>] (Figure 5.2), it is inclusiveness ALL that is expressed like *root and branch* (5.16c). The sense of inclusiveness here is considered a result of combining the sense of direction from the antonym pair *root/branch* with the original semantic relation coordinative AND suggested in the lexical connector *and*.

(5.16)

- a. Continuous rural-urban migration will increase the demand for housing in urban centers.
- b. The distinctive effect is visible by day or night, whether the vehicle is moving or stationary.
- c. Only with root and branch reform will public faith in the Met be restored.

For the headedness of English antonym constructions, there can be two types. One is with the non-head element semantically included. It only occurs in the English form [ant<sub>1</sub>ant<sub>2</sub>] (Figure 5.2). This type can only be right headed. It is considered a property inherited from the right headedness of English compound construction (Williams, 1981). Instances are *humblebrag* or *frenemy*.

The other is with the non-head element neutralized. It is considered a property inherited from the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ (Figure 5.2). Two semantic patterns are shared by all the three English forms. One is ‘<sub>FROM</sub> ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION/ANY/ALL)’, which is the least likely to be related to headedness with both antonym elements necessarily included. The other is ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’, which is likely to be headed on the condition that either of the two antonym elements will function in the contextual meaning. Furthermore, the form [ant<sub>1</sub> OR ant<sub>2</sub>] is the only one among the

three English forms that can be left or right headed with this type of headedness. For the form [ant<sub>1</sub>ant<sub>2</sub>], only left headed has been found; for the form [ant<sub>1</sub> AND ant<sub>2</sub>], only right headed has been found. That adds to the assumption of the inheritance link between the neutralized headedness and the semantic pattern OR. It is hard to claim the reason for the non-head to be neutralized, but the neutralized element seems to play the role of euphemism in the two forms [ant<sub>1</sub> OR ant<sub>2</sub>] and [ant<sub>1</sub> AND ant<sub>2</sub>] (5.14; 5.15). Following this way, *nitwit* and *dimwit* can also be explained. Both constructs are left headed and express stupidity as in *nit* or *dim*, but that can be rude and hurt the listener. With *nitwit* or *dimwit*, the frankness seems to be reduced with the non-head element *wit* as a cushion.

This section has observed the inheritance links of the three forms of the antonym construction in English (Figure 5.2). The coordinative semantic pattern ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ is a property shared by the two forms [ant<sub>1</sub>ant<sub>2</sub>] and [ant<sub>1</sub> AND ant<sub>2</sub>]. The alternative semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ is a property shared by all the three English forms. The right headedness with the non-head element semantically included is a property of the right headedness of English compound construction. The left or right headedness with a neutralized non-head is considered a property inherited from the alternative semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’. The semantic pattern ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION)’ is considered inherent with the pair of antonym elements. When it is combined with the coordinative form [ant<sub>1</sub> AND ant<sub>2</sub>], a sense of inclusiveness ALL is communicated; when it is the alternative pattern [ant<sub>1</sub> OR ant<sub>2</sub>] that is combined with, a sense of exhaustiveness ANY is communicated. Generally, English antonym construction overlaps with compound construction with the form [ant<sub>1</sub>ant<sub>2</sub>] and overlaps with coordinate construction with [ant<sub>1</sub> AND ant<sub>2</sub>] and [ant<sub>1</sub> OR ant<sub>2</sub>]. The semantic patterns of the extended use are not explored. As indicated in Figure 5.2, there are five types of basic meaning patterns that are used in an extended way. When the basic semantic patterns are captured, the extended uses will follow. Moreover, an observation of the extended use would be more about the metonymic, metaphoric, etc. abstraction of the basic semantic patterns. The focus would be more on human cognition.

### 5.1.5 Summary

This section has observed and described the English antonym construction from the

perspectives of form-meaning schema, headedness, syntactic categories, and inheritance links. All those properties are summarized in Figure 5.3 on the following second page.

There are three forms of antonym construction in English and the possible meaning patterns for each form are different. For the form [ant<sub>1</sub>ant<sub>2</sub>], there can be eight semantic patterns. They are ‘ANT<sub>1 AND ANT<sub>2</sub></sub>’, ‘ANT<sub>1 OR ANT<sub>2</sub></sub>’, ‘ANT<sub>1</sub>’, ‘ANT<sub>2 THAT IS ANT<sub>1</sub></sub>’, and ‘FROM ANT<sub>1 TO ANT<sub>2 (DIRECTION)</sub></sub>’ with the first three used in an extended way. For the form [ant<sub>1 AND ant<sub>2</sub></sub>], there can be seven semantic patterns. They are ‘ANT<sub>1 AND ANT<sub>2</sub></sub>’, ‘ANT<sub>1 OR ANT<sub>2</sub></sub>’, ‘FROM ANT<sub>1 TO ANT<sub>2 (ALL)</sub></sub>’, and ‘ANT<sub>2</sub>’, with the first three used in an extended way. For the form [ant<sub>1 OR ant<sub>2</sub></sub>], it can be five. They are ‘ANT<sub>1 OR ANT<sub>2</sub></sub>’, ‘ANT<sub>1</sub>’, ‘ANT<sub>2</sub>’, and ‘FROM ANT<sub>1 TO ANT<sub>2 (ANY)</sub></sub>’, with the last one used in an extended way.

All the three forms can be a noun, an adjective, an adverb, or a verb, but [ant<sub>1 AND ant<sub>2</sub></sub>] and [ant<sub>1 OR ant<sub>2</sub></sub>] can also be a pronoun or a preposition.

Two types of one-headedness have been observed in English antonym construction. One is the right headedness with the non-head element semantically included. That is found in the form [ant<sub>1</sub>ant<sub>2</sub>]. The other headedness neutralizes the non-head element. It can be left or right headed. For the form [ant<sub>1</sub>ant<sub>2</sub>], it is left headed; for the form [ant<sub>1 AND ant<sub>2</sub></sub>], it is right headed, and for the form [ant<sub>1 OR ant<sub>2</sub></sub>], it can be left headed or right headed, which is context dependent. In all cases, the neutralized element seems to play the role of euphemism.

For the inheritance links, English antonym construction overlaps with compound construction with the form [ant<sub>1</sub>ant<sub>2</sub>] and overlaps with coordinate construction with [ant<sub>1 AND ant<sub>2</sub></sub>] and [ant<sub>1 OR ant<sub>2</sub></sub>]. Yet all forms have properties more than that of compound or coordinate construction. The coordinative semantic pattern ‘ANT<sub>1 AND ANT<sub>2</sub></sub>’ is a property shared by the two forms [ant<sub>1</sub>ant<sub>2</sub>] and [ant<sub>1 AND ant<sub>2</sub></sub>]. The alternative semantic pattern ‘ANT<sub>1 OR ANT<sub>2</sub></sub>’ is a property shared by all the three English forms. The right headedness with the non-head element semantically included is a property of the right headedness of English compound construction. The left or right headedness with a neutralized non-head is considered a property inherited from the alternative semantic pattern ‘ANT<sub>1 OR ANT<sub>2</sub></sub>’. The semantic pattern ‘FROM ANT<sub>1 TO ANT<sub>2 (DIRECTION)</sub></sub>’ is considered inherent with the pair of antonym elements. When it is combined with the coordinative form [ant<sub>1 AND ant<sub>2</sub></sub>], a sense of inclusiveness ALL is communicated; when it is the alternative pattern [ant<sub>1 OR ant<sub>2</sub></sub>] that is combined with, a sense of exhaustiveness ANY is communicated.

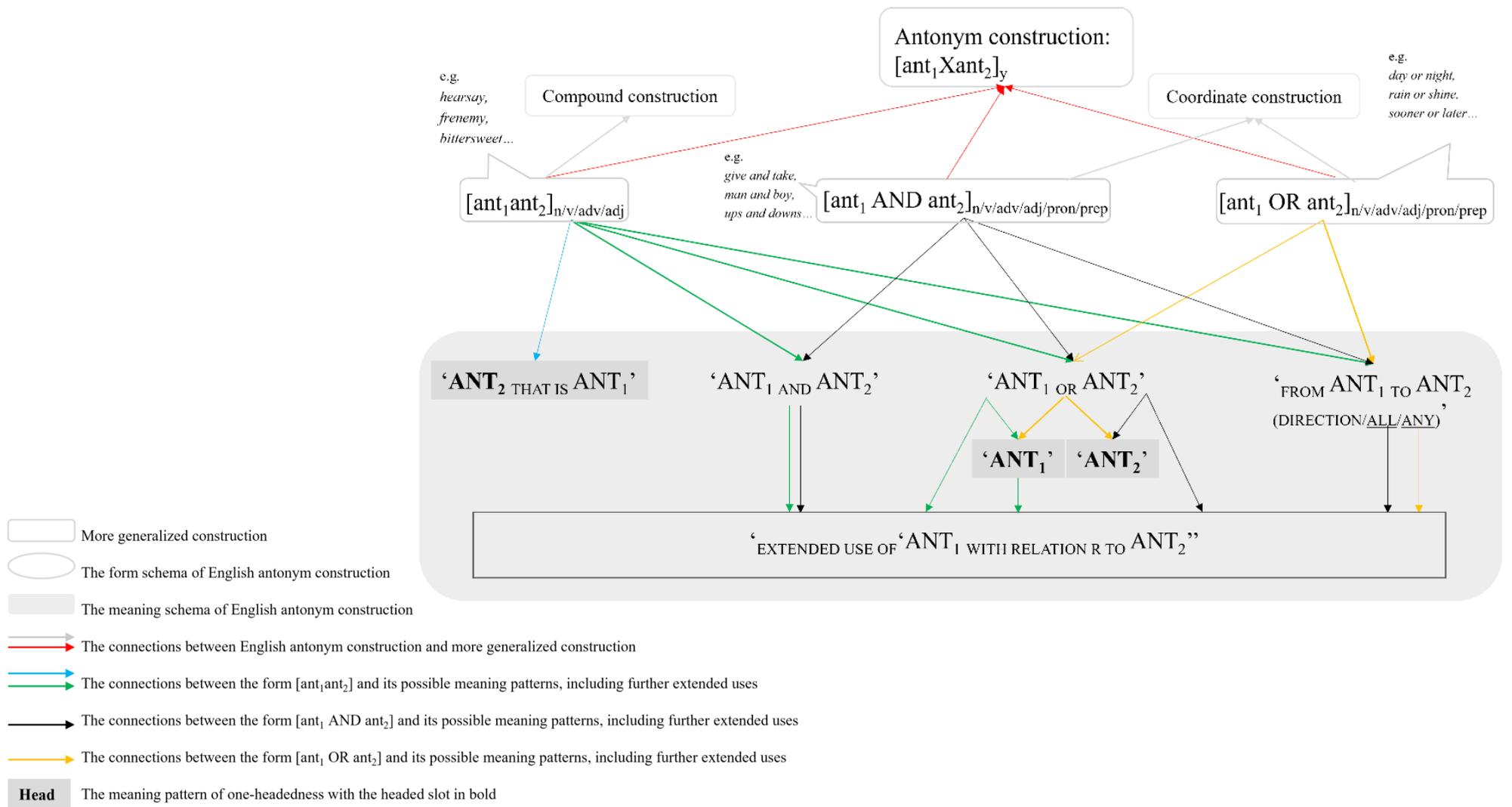


Figure 5.3 English antonym construction

## 5.2 Antonym construction in Mandarin

This section will focus on the antonym construction in Mandarin. The morphosyntactic form of the antonym construction in Mandarin is a simple juxtaposition of a pair of antonyms without any other explicit marker of their combination. For example, 夫妇 (*fūfū*, husband-wife, ‘husband and wife’), 大小 (*dàxiǎo*, big-small, ‘size’), 动静 (*dòngjìng*, dynamic-static, ‘movement’), and 东西 (*dōngxi*, east-west, ‘something’). Such simple juxtaposition of two antonym morphemes can be represented as below (5.17).

(5.17) [ant<sub>1</sub>ant<sub>2</sub>]

Five categories of semantic relation hold between the two antonym elements of the construct and all of them also occur in an extended way, which will be specified in Section 5.2.1. After this, the syntactic category (Section 5.2.2), the headedness when there is a head in the construct (Section 5.2.3), and the possible inheritance links (Section 5.2.4) are clarified.

### 5.2.1 The schema of Mandarin antonym construction

With the singular form [ant<sub>1</sub>ant<sub>2</sub>] of the antonym construction in Mandarin, the semantic patterns are five due to the variable semantic interactions between the two antonym elements in context. All of them can occur in an extended way. Each will be illustrated and specified below.

Firstly, the semantic relation between the two antonym elements in Mandarin can be coordinative AND, or selective OR. Take 儿女 (*érnǚ*, son-daughter, ‘son and daughter’) and 是非 (*shìfēi*, right-wrong, ‘right or wrong’) (5.18). As indicated in the context (5.18a), both 儿 (*ér*, ‘son’) and 女 (*nǚ*, ‘daughter’) are equally included in the meaning of the construct and they are summarized as the hypernym ‘offspring’. In that sense, the semantic relation between 儿 (*ér*, ‘son’) and 女 (*nǚ*, ‘daughter’) is coordinative AND. In (5.18b), 是 (*shì*, ‘right’)/非 (*fēi*, ‘wrong’) is a unit of two choices. What should be thought about and distinguished is ‘whether right or wrong’. Therefore, the semantic relation between 是 (*shì*, ‘right’) and 非 (*fēi*, ‘wrong’) is selective OR.

(5.18) a. 儿女 (*ěrnǚ*, son-daughter, ‘son and daughter’)[儿<sub>1</sub>女<sub>2</sub>] ⇔ ‘SON<sub>1</sub> AND DAUGHTER<sub>2</sub>’

母亲 带着 八个 儿女 饱受 生活的 煎熬。  
*Mǔqīn dàizhe bāgè ǎrnǚ bǎoshòu shēnghuóde jiān'áo.*  
 mother carry eight son-daughter suffer life's torment  
 The mother took care of the eight *son-daughter* and suffered a lot.  
 ‘The mother took care of her eight children and suffered a lot.’

b. 是非 (*shìfēi*, right-wrong, ‘right or wrong’)[是<sub>1</sub>非<sub>2</sub>] ⇔ ‘RIGHT<sub>1</sub> OR WRONG<sub>2</sub>’

是非 不分  
*shìfēi bùfēn*  
 right-wrong not-distinguish  
 Pay no attention to *right-wrong*.  
 ‘Pay no attention to right or wrong.’

The antonym construction in Mandarin can be used with the meaning pattern FROM... TO..., indicating inclusiveness, exhaustiveness, or direction. Take 大小 (*dàxiǎo*, big-small, ‘all (from big to small)’), 高矮 (*gāo'ǎi*, tall-short, ‘any (from tall to short)’), and 东西 (*dōngxī*, east-west, ‘from east to west’). In (5.19a), it is all the officers from high to low status that are meant to include. There is a sense of inclusiveness with no exception. In (5.19b), it is each person within the scope that are intended to include. There is a sense of exhaustiveness in here yet with the modification of a negative 无论 (*wúlùn*, no-discuss, ‘no matter’). In (5.19c), it is the alignment of the mountain that is described, which is from east to west. Yet there is a compound 走向 (*zǒuxiàng*, go-direction, ‘orientation’) suggesting that it is about direction.

(5.19) a. 大小 (*dàxiǎo*, big-small, ‘all’)[大<sub>1</sub>小<sub>2</sub>] ⇔ ‘FROM BIG<sub>1</sub> TO SMALL<sub>2</sub>(ALL)’

当权的 大小 官吏  
*dāngquándē dàxiǎo guānli*  
 in-power-of big-small official-officer  
 the *big-small* officers in power  
 ‘all the officers (from big to small) in power’

b. 高矮 (*gāo'ǎi*, tall-short, ‘any’)[高<sub>1</sub>矮<sub>2</sub>] ⇔ ‘FROM TALL<sub>1</sub> TO SHORT<sub>2</sub>(ANY)’

无论 高矮  
*wúlùn gāo'ǎi*  
 No-discuss tall-short  
 Anyone *big-small*  
 ‘Anyone (from big to small)’

c. 东西 (*dōngxī*, east-west, ‘from east to west’)

[东<sub>1</sub>西<sub>2</sub>] ⇔ ‘FROM EAST<sub>1</sub> TO WEST<sub>2</sub> (DIRECTION)’

这山	东西	走向
<i>Zhèshān</i>	<i>dōngxī</i>	<i>zǒuxiàng</i>
the-mountain	east-west	go-direction

The mountain spreads *east-west*

‘The mountain spreads from east to west.’

The antonym construction in Mandarin can be used with one-headedness, including left and right. Take 动静 (*dòngjìng*, dynamic-static, ‘movement’) and 好歹 (*hǎodǎi*, good-bad, ‘bad’) (5.20). As indicated in the sentential context (5.20), only one of the two antonym elements are indicated in the meaning of the two constructs (5.20). For the first, it is suggested (5.20a) that there is no signal of motion in the room. In that sense, it is the status of being dynamic in 动静 (*dòngjìng*, dynamic-static, ‘movement’) that is required by the context. 动静 (*dòngjìng*, dynamic-static, ‘movement’) here is left headed. For the second (5.20b), the condition the mother cannot accept is that the child could be frozen to death. That is a potential bad happening and corresponds to the bad half of 好歹 (*hǎodǎi*, good-bad). In that sense, it is 歹 (*dǎi*, ‘bad’) that is semantically required by the context. 好歹 (*hǎodǎi*, good-bad, ‘bad’) here is right headed.

(5.20) a. 动静 (*dòngjìng*, dynamic-static, ‘movement’)

[动<sub>1</sub>静<sub>2</sub>] ⇔ ‘DYNAMIC<sub>1</sub>’

屋里没有动静。

*Wūlǐ méiyǒu dòngjìng。*

There is no *dynamic-static* in the room.

‘There is no movement in the room.’

b. 好歹 (*hǎodǎi*, good-bad, ‘bad’)

[好<sub>1</sub>歹<sub>2</sub>] ⇔ ‘BAD<sub>2</sub>’

你要是冻个好歹，妈可怎么活呀？

*Nǐ yàoshì dònggè hǎodǎi, mā kě zěnmehuó ya?*

If you were frozen to *good-bad*, what would your mother live for?

‘If you were frozen to death, what should your mother do?’

All the five semantic relations between the two antonym elements in Mandarin can occur in an extended way. Take the examples for the non-headed use first (5.21). In (5.21a), both 黑 (*hēi*, ‘black’) and 白 (*bái*, ‘white’) are equally included that their semantic relation is coordinative AND. Yet humanity is not something that can be really seen with colors. Therefore, 黑白 (*hēibái*, black-white, ‘good and bad’) here is used in a figurative way to refer to the good and bad of humanity. In

(5.21b), the moment is so crucial as to end with either life or death. The semantic relation between *life* and *death* here is selective OR. Furthermore, *life/death* here has been abstracted to refer to the importance of the moment.

(5.21) a. 黑白 (*hēibái*, black-white, ‘good and bad’)

[黑<sub>1</sub>白<sub>2</sub>] ⇔ ‘EXTENDED USE OF ‘BLACK<sub>1</sub> AND WHITE<sub>2</sub>’

人性	之	黑白	是	说不清	道不明	的
<i>Rénxìng</i>	<i>zhī</i>	<i>hēibái</i>	<i>shì</i>	<i>shuōbùqīng</i>	<i>dào bùmíng</i>	<i>de</i>
Human-property	of	black-white	is	speak-not-clear	tell-not-obvious	of

The *black-white* in humanity is hard to tell.

‘The good and bad in humanity is hard to tell.’

b. 生死 (*shēngsǐ*, life-death, ‘live or die’)

[生<sub>1</sub>死<sub>2</sub>] ⇔ ‘EXTENDED USE OF ‘LIVE<sub>1</sub> OR DIE<sub>2</sub>’

生死	已到	最后	关头
<i>shēngsǐ</i>	<i>yǐdào</i>	<i>zuìhòu</i>	<i>guāntóu</i>
life-death	has-been	most-final	key-moment

This is the *life-death* moment.

‘This is the crucial moment.’

The sense of direction in ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION)’ has not been found used in an extended way, but the sense of exhaustiveness and inclusiveness ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (ALL/ANY)’ has. Example in (5.22a) illustrates the extended use of ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (ANY)’. The sentential example in (5.22a) can be paraphrased as ‘any (days) from good (好, *hǎo*) to bad (歹, *dǎi*)’ of last year has been past. A sense of exhaustiveness has been suggested that 好歹 (*hǎodǎi*, good-bad, ‘any (from good to bad)’) can be summarized as ‘no matter how; anyway; whatever.’ (5.22b) is an example of the extended use of ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (ALL)’. In the sentential example (5.22b), it is ‘all (the sides) from left (左, *zuǒ*) to right (右, *yòu*)’ of the master that is attended to. A sense of inclusiveness has been suggested here by 左右 (*zuǒyòu*, left-right, ‘all around; nearby’), which can be abstracted as ‘all sides (from left to right)’.

(5.22) a. 好歹 (*hǎodǎi*, good-bad, ‘(any) from good to bad’)

[好<sub>1</sub>歹<sub>2</sub>] ⇔ ‘EXTENDED USE OF ‘FROM GOOD<sub>1</sub> TO BAD<sub>2</sub> (ANY)’

去年	的	日子	好歹	过去了
<i>Qùnián</i>	<i>de</i>	<i>rìzi</i>	<i>hǎodǎi</i>	<i>guòqùle</i>
last-year	of	days	good-bad	past-gone-done

Last year has been past *good-bad*.

‘Last year has been past anyway.’

b. 左右 (*zuǒyòu*, left-right, ‘all around; nearby’)[左<sub>1</sub> and 右<sub>2</sub>] ⇔ ‘EXTENDED USE OF ‘FROM LEFT<sub>1</sub> TO RIGHT<sub>2</sub> (ALL)’

每日[...] 亲侍 左右。  
*Měirì qīnshì zuǒyòu.*  
 Every-day personally-attend left-right  
 Everyday (he) attended (the master) *left-right*.  
 ‘Everyday (he) attended (the master) nearby.’

The headed patterns of Mandarin antonym construction can also occur in an extended way. In (5.23a), if there is something that can be felt, there must be certain change or movement. Therefore, 动静 (*dòngjìng*, dynamic-static, ‘happenings’) is left headed with the meaning of the right element neutralized. Besides, 动 (*dòng*, dynamic, ‘happenings’) is meant to refer to the likely bad happenings in her body. In that sense, left headed 动静 (*dòngjìng*, dynamic-static, ‘happenings’) is used in an extended way. In (5.23b), the speaker is meant to be humble in front of the audience. Being younger or lower is one way to show humbleness and politeness in Chinese culture. In that sense, it should be the right element 弟 (*dì*, ‘younger-brother’) that is required in the construct. Yet the speaker is not really the younger brother of the audience. Therefore, it is the humbleness that is abstracted for a male to name himself in talking to people.

(5.23) a. 动静 (*dòngjìng*, dynamic-static, ‘happenings’)[动<sub>1</sub> 静<sub>2</sub>] ⇔ ‘EXTENDED USE OF ‘DYNAMIC<sub>1</sub>’

她 又感到 体内 有点 什么 动静  
*tā yòugǎndào tǐnèi yǒudiǎn shénme dòngjìng*  
 She again-feel-done body-inside have-some what dynamic-static  
 She felt *dynamic-static* in her body again.  
 ‘She felt something (wrong) in her body again.’

b. 兄弟 (*xiōngdi*, elder-brother-younger-brother, ‘I (a humble claim of himself)’)[兄<sub>1</sub> 弟<sub>2</sub>] ⇔ ‘EXTENDED USE OF ‘YOUNGER-BROTHER<sub>2</sub>’

请 大家 [...] 坐下, 兄弟我 有 几句 话  
*Qǐng dàjiā zuòxià, xiōngdi wǒ yǒu jǐjù huà*  
 Please all-you sit-down elder brother-younger brother-me have some-line word  
 Please sit down! I, *younger-brother*, have a few words.  
 ‘Please sit down! (May) I (humbly) have a few words.’

This section has described and clarified the different meaning patterns for the singular form [ant<sub>1</sub>ant<sub>2</sub>] of the antonym construction in Mandarin (5.24). There are ten semantic patterns in all for the form and five of them are an extended use of the first five semantic patterns. The first five meaning patterns are coordinative AND, selective OR, FROM... TO... with a sense of direction,

exhaustiveness, or inclusiveness, and right or left headed with a neutralized non-head. All of them can occur in an extended way but the directional FROM... TO...

- (5.24) [ant<sub>1</sub>ant<sub>2</sub>]<sub>i/ii/iii/iv/v/vi-i/vi-ii/vi-iii/vi-iv/vi-v</sub>  
 ⇔
- |  |  |
|--|--|
| ‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’ <sub>i</sub>                                    | e.g. 儿女 ( <i>érnǚ</i> , son-daughter, ‘son and daughter’)  |
| ‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’ <sub>ii</sub>                                    | e.g. 是非 ( <i>shìfēi</i> , right-wrong, ‘right or wrong’)   |
| ‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL/ANY/DIRECTION)’ <sub>iii</sub>           | e.g. 大小 ( <i>dàxiǎo</i> , big-small, ‘all’);<br>高矮 ( <i>gāo’ǎi</i> , tall-short, ‘any’);<br>东西 ( <i>dōngxī</i> , east-west, ‘from east to west’) |
| ‘ANT <sub>2</sub> ’ <sub>iv</sub>  | e.g. 好歹 ( <i>hǎodǎi</i> , good-bad, ‘bad’)   |
| ‘ANT <sub>1</sub> ’ <sub>v</sub>   | e.g. 动静 ( <i>dòngjìng</i> , dynamic-static, ‘movement’)  |
| ‘EXTENDED USE OF ‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’’ <sub>vi-i</sub>               | e.g. 黑白 ( <i>hēibái</i> , black-white, ‘good and bad’)   |
| ‘EXTENDED USE OF ‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’’ <sub>vi-ii</sub>               | e.g. 生死 ( <i>shēngsǐ</i> , life-death, ‘live or die’)  |
| ‘EXTENDED USE OF ‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL/ANY)’ <sub>vi-iii</sub> | e.g. 左右 ( <i>zuǒyòu</i> , left-right, ‘all around; nearby’);<br>好歹 ( <i>hǎodǎi</i> , good-bad, ‘(any) from good to bad’)                         |
| ‘EXTENDED USE OF ‘ANT <sub>2</sub> ’’ <sub>vi-iv</sub>                                   | e.g. 兄弟 ( <i>xiōngdì</i> , elder brother-younger brother, ‘I (a humble claim of himself)’)   |
| ‘EXTENDED USE OF ‘ANT <sub>1</sub> ’’ <sub>vi-v</sub>                                    | e.g. 动静 ( <i>dòngjìng</i> , dynamic-static, ‘happenings’)  |

## 5.2.2 The syntactic categories of Mandarin antonym construction

This section is about the syntactic category of the antonymy construction in Mandarin. The antonym construction in Mandarin has certain syntactic categories, which have been thoroughly examined (Wei, 2017; Feng, 2016; Zhang, 2018). The description here is mainly a summarization of previous studies (Wei, 2017; Feng, 2016; Zhang, 2018). Moreover, the syntactic category of Mandarin is context dependent (Li, 1924). Therefore, the way to clarify the syntactic category of the antonym constructs in Mandarin is mainly based on the observation of the role of the antonym construct in context. With the form [ant<sub>1</sub>ant<sub>2</sub>], the syntactic categories can be a noun, an adverb, an adjective, a verb, or a pronoun (5.25). Each will be exemplified in this section.

- (5.25) [ANT<sub>1</sub>ANT<sub>2</sub>]<sub>n/v/adv/adj/pron</sub>

Considering first the nominal antonym constructs in Mandarin, the two antonym constructs

are nouns in the given context (5.26). 深浅 (*shēnqiǎn*, deep-shallow, ‘depth’) (5.26a) is generalized to refer to their hypernym ‘depth’; and 甘苦 (*gānkǔ*, sweet-bitter, ‘good time and bad time’) (5.26b) is used in a figurative way to refer to the ‘happy and unhappy moments’ in life.

(5.26) a. 深浅 (*shēnqiǎn*, deep-shallow, ‘depth’): [深<sub>1</sub> 浅<sub>2</sub>]<sub>n</sub>  
 不 知道 水的 深浅  
*Bù zhīdào shuǐde shēnqiǎn*  
 not know-knowledge water-of deep-shallow  
 The *deep-shallow* of the water is unknown.  
 ‘The depth of the water is unknown.’

b. 甘苦 (*gānkǔ*, sweet-bitter, ‘good time and bad time’): [甘<sub>1</sub> 苦<sub>2</sub>]<sub>n</sub>  
 二人 同 甘苦  
*Èrrén tóng gānkǔ*  
 Two-person together sweetness-bitterness  
 The two will face *sweetness-bitterness* together.  
 ‘The two will face good and bad time together.’

Next are the adverbial and the adjectival antonym constructs in Mandarin (5.27). 上下 (*shàngxià*, upward-downward, ‘about, or so’) (5.27a) and 迟早 (*chízǎo*, late-early, ‘sooner or later’) (5.27b) are adverbs in the given context. 上下 (*shàngxià*, upward-downward, ‘about, or so’) (5.27a) is extended to express ‘approximate’, which is based on the meaning of ‘either upward or downward (a bit)’; 迟早 (*chízǎo*, late-early, ‘sooner or later’) (5.27b) is abstracted from the meaning ‘either late or early’ and used similar to ‘sooner or later’. 买卖 (*mǎimài*, buy-sell, ‘business’) (5.27c) and 宇宙 (*yǔzhòu*, space-time, ‘world’) (5.27d) are adjectives in the given context. 买卖 (*mǎimài*, buy-sell, ‘business’) (5.27c) is summarized as the hypernym ‘business’ based on the semantic pattern ‘buy<sub>1</sub> AND sell<sub>2</sub>’ and used to modify the noun *contract*. 宇宙 (*yǔzhòu*, space-time, ‘world’) (5.27d) is abstracted to the hypernym ‘universe’ or ‘world’ based on the semantic pattern ‘space<sub>1</sub> AND time<sub>2</sub>’ and used to modify the noun *view*.

(5.27) a. 上下 (*shàngxià*, upward-downward, ‘about, or so’): [上<sub>1</sub> 下<sub>2</sub>]<sub>adv</sub>  
 收入 [...] 在 2600 亿 美元 上下  
*shōurù zài liǎngqiānlǐùbǎiyì měiyuán shàngxià*  
 Income be 260 billion dollars upward-downward  
 The income was 260 billion dollars *upward-downward*.  
 ‘The income was 260 billion dollars or so.’

b. 迟早 (*chízǎo*, late-early, ‘sooner or later’): [迟<sub>1</sub> 早<sub>2</sub>]<sub>adv</sub>  
 迟早 需要 改变  
*Chízǎo xūyào gǎibiàn*  
 late-early need-want change-change

It will change *late-early*.  
‘It will change sooner or later.’

c. 买卖 (*mǎimài*, buy-sell, ‘business’) [买<sub>1</sub> 卖<sub>2</sub>]<sub>adj</sub>

买卖	合同
<i>mǎimài</i>	<i>hétong</i>
buy-sell	cooperate-agreement
<i>buy-sell</i>	contract
‘business	contract’

d. 宇宙 (*yǔzhòu*, space-time, ‘world’) [字<sub>1</sub> 宙<sub>2</sub>]<sub>adj</sub>

宇宙	观
<i>yǔzhòu</i>	<i>guān</i>
space-time	vision
<i>space-time</i>	view
‘world	view’

Two more syntactic categories of the antonym constructs in Mandarin are verb and pronoun. 左右 (*zuǒyòu*, left-right, ‘dominate, influence’) (5.28a) and 褒贬 (*bāobian*, praise-criticize, ‘comment on, criticize’) (5.28b) in the given context are verbs. 左右 (*zuǒyòu*, left-right, ‘dominate, influence’) (5.28c) is extended to express ‘to control’ with abstracting ‘(the switch between) right and left’; 褒贬 (*bāobian*, praise-criticize, ‘comment on, criticize’) (5.28d) is summarized as the hypernym ‘to comment’ based on the semantic pattern ‘PRAISE<sub>1</sub> AND CRITICIZE<sub>2</sub>.’ 多少 (*duōshǎo*, much-little, ‘how much’) (5.28c) and 彼此 (*bǐcǐ*, that-this, ‘each other’) (5.28d) are used as pronouns (Zhang, 2018) in the given context. 多少 (*duōshǎo*, much-little, ‘how much’) (5.28c) is firstly summarized as the hypernym of *amount* based on the semantic pattern ‘MUCH<sub>1</sub> AND LITTLE<sub>2</sub>’, and then extended to be a question pronoun *how much* to ask for the quantity of something. 彼此 (*bǐcǐ*, that-this, ‘each other’) (5.28d) is semantically summarized as ‘double sides’ based on the semantic pattern ‘THIS<sub>1</sub> AND THAT<sub>2</sub>’, and then further abstracted as the pronoun *each other*.

(5.28) a. 左右 (*zuǒyòu*, left-right, ‘dominate, influence’): [左<sub>1</sub> 右<sub>2</sub>]<sub>v</sub>

科技 [...]	左右着	人类的	命运
<i>Kējì</i>	<i>zuǒyòuzhe</i>	<i>rénlèide</i>	<i>mìngyùn</i>
science-technology	left-right-doing	Human-type-of	fate-fortune

Technology is *left-right-ing* human destiny.  
‘Modern technology is influencing human destiny.’

b. 褒贬 (*bāobian*, praise-criticize, ‘comment on; criticise’): [褒<sub>1</sub> 贬<sub>2</sub>]<sub>v</sub>

诗人	便	开始	褒贬	征服者
<i>Shīrén</i>	<i>biàn</i>	<i>kāishǐ</i>	<i>bāobiǎn</i>	<i>zhēngfúzhě</i>
poetry-person	thus	start	praise-criticize	Force-control-person

The poets thus started *praise-criticizing* the conquerors.  
 ‘The poets thus started commenting on the conquerors.’

c. 多少 (*duōshǎo*, much-little, ‘how much/how many’): [多<sub>1</sub> 少<sub>2</sub>]<sub>pron</sub>

多少            钱  
*duōshǎo      qián*  
 Much-little    money  
*Much-little* money  
 ‘How much money’

d. 彼此 (*bǐcǐ*, that-this, ‘each other’): [彼<sub>1</sub> 此<sub>2</sub>]<sub>pron</sub>

彼此            知心  
*bǐcǐ            zhīxīn*  
 this-that        know-heart  
 understand *this-that*  
 ‘understand each other’

Furthermore, the same construct can have more than one syntactic category. Take 左右 (*zuǒyòu*, left-right). In addition to being a verb (5.28a) or an adverb (5.22b), 左右 (*zuǒyòu*, left-right) can be a noun or an adjective (5.29). In (5.29a), 左右 (*zuǒyòu*, left-right, ‘attendants’) refers to the waiters, waitresses or the like attending to the service or orders of the speaker; in (5.29b), 左右 (*zuǒyòu*, left-right, ‘left and right, double’) refers to the two sides of the theatre hall from the perspective of the observer, with one side on the left and the other right.

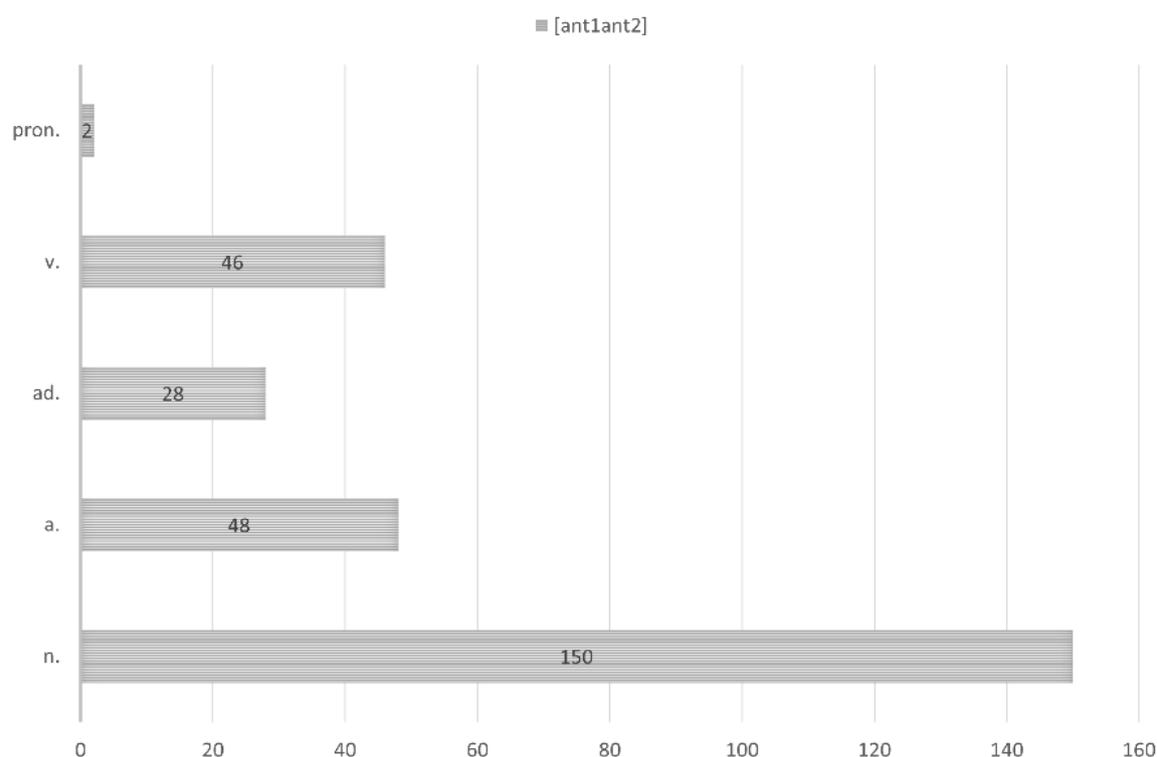
(5.29) 左右 (*zuǒyòu*, left-right, ‘attendants; dominate; all around; left and right’)

[ANT<sub>1</sub> and ANT<sub>2</sub>]<sub>n/v/adv/adj</sub>

a. 吩咐                      左右                      摆上                      酒菜  
*Fēnfù                      zuǒyòu                      bǎishàng                      jiǔcài*  
 order-command            left-right                  put-upward                drink-food  
 ask the *left-right* to serve food and drink  
 ‘ask the attendants to serve food and drink’

b. 剧院                      大厅的                      左右                      两边  
*Jùyuàn                      dàtīngde                      zuǒyòu                      liǎngbiān*  
 opera-theatre              big-hall-of                left-right                  two-side  
 the *left-right* sides of the theatre hall  
 ‘the right and left sides of the theatre hall’

This section has summarized and exemplified the syntactic categories of the antonym construction that has been observed in Mandarin. The singular form [ant<sub>1</sub>ant<sub>2</sub>] can occur in five syntactic categories. They can be a noun, an adverb, a verb, an adjective, or a pronoun with the frequency of occurrence from the highest to the lowest (Figure 5.4). One antonym construct can have more than one syntactic category.



**Figure 5.4 The syntactic categories of Mandarin antonym construction**

Notes:

1. The variants of each construct can have a different syntactic category. Therefore, the total items here are 164 with the variants counted.
2. The abbreviations for the syntactic categories: n. – noun; a. – adjective; ad. – adverb; v. – verb; pron. – pronoun.

### 5.2.3 The headedness of Mandarin antonym construction

This section focuses on the headedness of the antonym construction in Mandarin. Being headed here is delimited to when there is one head in the antonym constructs. Headedness has been found in the singular form [ant<sub>1</sub>ant<sub>2</sub>] in Mandarin but varies from construct to construct regarding the fixedness of the head. This will be specified and exemplified in the following.

When there is a fixed head in an antonym construct in Mandarin, it must be left headed. Examples are 动静 (*dòngjìng*, dynamic-static, ‘movement’), 教学 (*jiàoxue*, teach-learn, ‘teaching’), 质量 (*zhìliang*, quality-quantity, ‘quality’), 忘记 (*wàngjì*, forget-remember, ‘forget’), and 听说 (*tīngshuō*, hear-say, ‘hear’). Furthermore, the non-head elements are all neutralized in all those cases. Take 动静 (*dòngjìng*, dynamic-static, ‘movement’) (5.30). In (5.30), 动静 (*dòngjìng*,

dynamic-static, ‘movement’) is left headed. What is absent in the room should be some motion.

The non-head element 静 (*jìng*, ‘static’) is neutralized in the meaning of the construct.

(5.30) 动静 (*dòngjìng*, dynamic-static, ‘movement’)

[动<sub>1</sub> AND 静<sub>2</sub>] ⇔ ‘DYNAMIC<sub>1</sub>’

屋里	没有	动静。
<i>Wūlǐ</i>	<i>méiyǒu</i>	<i>dòngjìng</i>
room-inside	not-have	dynamic-static

There is no *dynamic-static* in the room.  
‘There is no movement in the room.’

When there is no fixed head in an antonym construct in Mandarin, the head can be right or left, which depends on the context. Compare 好歹 (*hǎodai*, good-bad) in the two following examples (5.31). In (5.31a), the high payment appears to be a welcoming behavior and what the speaker needs to know is such good treatment. For that purpose, it is the meaning of the left element of 好歹 (*hǎodai*, good-bad, ‘good’) that is required in the context. Then it is left headed. In (5.31b), the result that the mother cannot accept is that the child could be frozen to death. That is a potential bad happening and corresponds to the right element of 好歹 (*hǎodai*, good-bad, ‘bad’). In that sense, it is right headed. Furthermore, the non-head element is neutralized in either case.

(5.31) a. 好歹 (*hǎodai*, good-bad, ‘good’)

[好<sub>1</sub> 歹<sub>2</sub>] ⇔ ‘GOOD<sub>1</sub>’

老板,	您	给我的	薪水[...]	够高了 [...]	
<i>Lǎobǎn,</i>	<i>nín</i>	<i>gěiwǒde</i>	<i>xīnshuǐ</i>	<i>gòugāole</i>	
old-boss	you	give-me-of	pay-pay	enough-high-	
				already	
我	还不	满足 [...]	就是	不知	好歹了。
<i>wǒ</i>	<i>háibù</i>	<i>mǎnzú</i>	<i>jiùshì</i>	<i>bùzhī</i>	<i>hǎodǎile.</i>
I	still-not	satisfactory	then-be	not-know	good-bad-still

Dear boss, you’ve paid more than I expected.  
If I wasn’t satisfied, it would be me that have failed to see the *good-bad*.  
‘Dear boss, you’ve paid more than I expected.  
If I wasn’t satisfied, it would be me that have failed to see your goodness.’

b. 好歹 (*hǎodai*, good-bad, ‘bad’)

[好<sub>1</sub> 歹<sub>2</sub>] ⇔ ‘BAD<sub>2</sub>’

你	要 [...]	冻个	好歹,	妈	可	怎么活 [...]
<i>Nǐ</i>	<i>yào</i>	<i>dònggè</i>	<i>hǎodǎi,</i>	<i>mā</i>	<i>kě</i>	<i>zěnmehuó</i>
You	if	frozen-to	good-bad	mom	though	how-to-live

If you were frozen to *good-bad*, what should your mother do?

‘If you were frozen to death, what should your mother do?’

This section has examined the headedness of the antonym construction in Mandarin. When there is a head in an antonym construct in Mandarin, the non-head element is always neutralized. When there is a fixed head, it must be left headed; otherwise, being left or right headed depends on the context of the antonym construct. It needs to be noticed that for the same headed form, it can be bi-headed as schematized in Section 5.2.1. Moreover, there are connections between headed and non-headed meaning patterns, which will be specified in the following section 5.2.4.

### 5.2.4 The inheritance links of Mandarin antonym construction

This section focuses on the inheritance links of the antonym construction in Mandarin (Figure 5.5). Inheritance links are meant to capture the relatedness of constructions between the more abstract and the more specific levels in forms, meanings, or functions (Hilpert, 2013: 57). Inheritance could be form, meaning and function (Hilpert, 2013: 57-60). For the Mandarin antonym construction in this study, the inheritance links are mainly explored in form connections and meaning connections. Three levels of abstraction are included in Figure 5.5. The middle layer is the schema of the form of Mandarin antonym construction; the top layer is the more generalized construction, from which the singular form of Mandarin antonym construction may inherit; the bottom layer in shade is the possible semantic patterns for Mandarin antonym construction. The inheritance links that have been observed in Mandarin antonym construction will be specified in the following with form connections first and meaning connections next.

For the singular form of Mandarin antonym construction [ant<sub>1</sub>ant<sub>2</sub>], it overlaps with the compound construction in addition to belonging to antonym construction [ant<sub>1</sub>Xant<sub>2</sub>] (Figure 5.5). The Mandarin antonym construction for this study has been examined and explored for long as coordinate compound, asymmetry (headed) compound or antonym compound (Zhang, 2015: 15-16). The perspective of coordinate compound (e.g. Zhang, 2018) mainly concerns the property of antonym constructs when both antonym elements are semantically included in the construction like 姐妹 (*jiěmèi*, elder sister-younger sister, ‘female fellows’); the perspective of asymmetry (headed) compound (e.g. Ma, 2018) mainly focuses on the headedness of antonym construction as in 动静

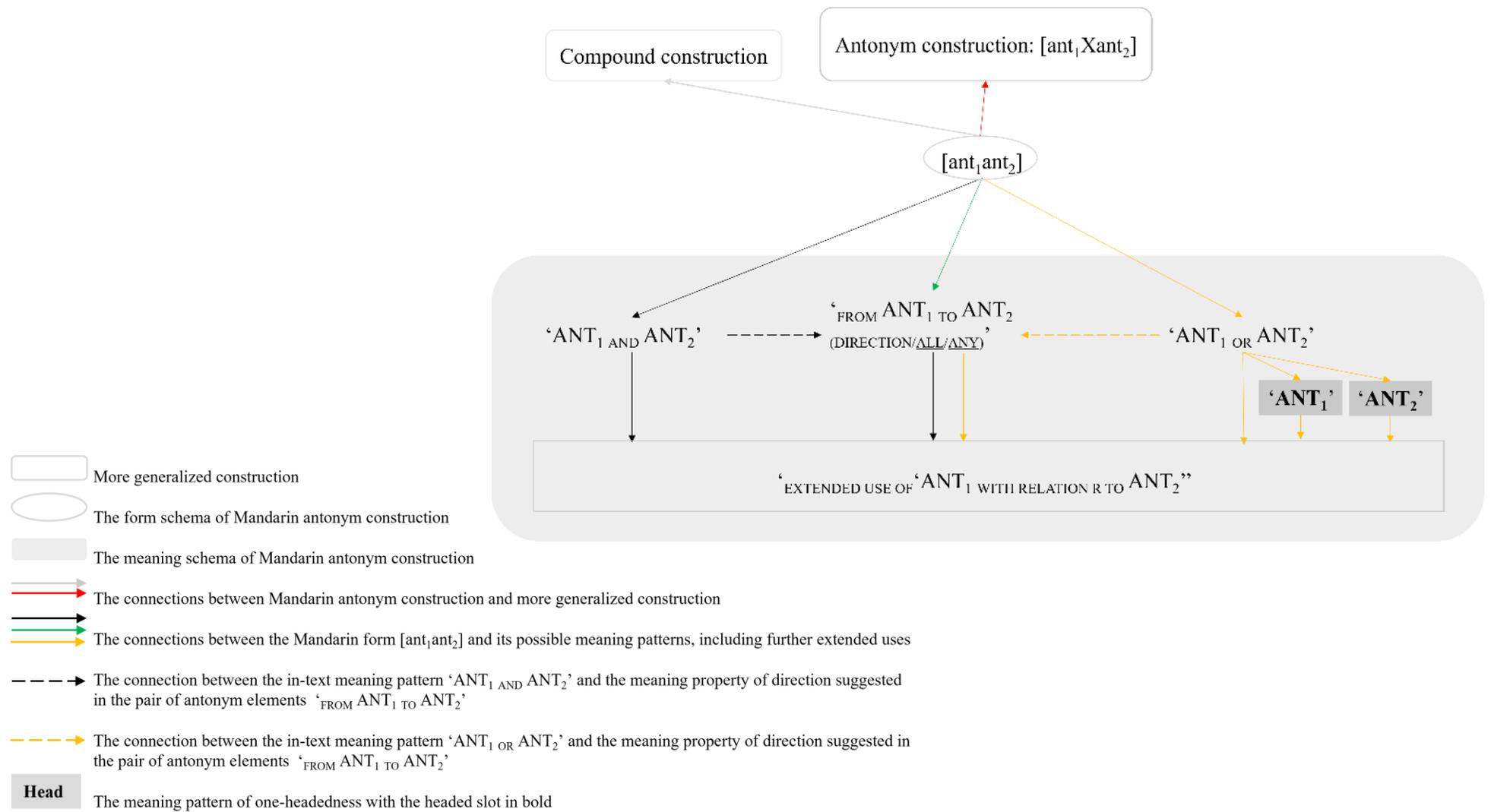


Figure 5.5 Mandarin antonym construction network

(*dòngjǐng*, dynamic-static, ‘movement’); antonym compound (e.g. Shao, 2019) is the most inclusive and considers the items formulated by antonym pairs. Despite the different perspectives taken to observe the antonym construction, all of them consider the antonym constructs for this study as compounds. In that sense, Mandarin antonym construction overlaps with compound construction.

From the perspective of meaning, however, the antonym construction in Mandarin has properties related to compounding and properties related to antonym elements. All are specified in the following part of this section.

Firstly, the two semantic patterns ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ and ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ (Figure 5.5) are considered as the properties inheriting from the coordinate compound construction in Mandarin. Coordinative AND and alternative OR are both coordinate connections. That explains why the antonym construction in Mandarin has been categorized as coordinate compound (e.g. Zhang, 2018). Yet which of the two semantic patterns facilitating a construct seems to depend on the context. Take 老少 (*lǎoshào*, old-young, ‘old and/or young’) (5.32). In (5.32a), to learn is something that will not designate people by age, no matter how old or how young. In that sense, the semantic relation between 老 (*lǎo*, ‘old’) and 少 (*shào*, ‘young’) is the selective OR. In (5.32b), it is all the hosts that lead the way, including the old and the young. In that sense, the semantic relation between 老 (*lǎo*, ‘old’) and 少 (*shào*, ‘young’) is the coordinative AND.

(5.32) a. [老<sub>1</sub>少<sub>2</sub>] ⇔ ‘OLD<sub>1</sub> OR YOUNG<sub>2</sub>’

学	知识	可	不分	老少
<i>Xué</i>	<i>zhīshi</i>	<i>kě</i>	<i>bùfēn</i>	<i>lǎoshào</i>
learn	knowledge	yet	not-distinguish	old-young

Study does not judge *old-young*.

‘Study does not judge old or young (any).’

b. [老<sub>1</sub>少<sub>2</sub>] ⇔ ‘OLD<sub>1</sub> AND YOUNG<sub>2</sub>’

老少 [...]	在前	引路
<i>Lǎoshào</i>	<i>zàiqián</i>	<i>yǐnlù</i>
old-young	in-front	lead-way

*Old-young* led the way in the front.

‘Old and young (all) lead the way in the front.’

Secondly, the headedness with a neutralized non-head is considered as the properties inherited from the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ (Figure 5.5). Evidence can be found in the antonym constructs with contextual headedness like 好歹 (*hǎodai*, good-bad, ‘good; bad’) (5.31). As

indicated in the exemplification (5.31), the two antonym elements of 好歹 (*hǎodai*, good-bad, ‘good; bad’) are like an alternative for each other with the semantic relation OR. A construct like this can be left or right headed and it is the intention in the context to decide which of the two antonym elements is semantically included and indicated. Following this, the antonym construct with a fixed left head can also be explained. Take 忘记 (*wàngjì*, forget-remember, ‘forget’) (5.33). An experience can be remembered or forgotten, and the unhappy happenings here (5.33) is intended to be forgotten. In that sense, it is 忘 (*wàng*, ‘forget’) in the left slot that is required by the context. The difference between 忘记 (*wàngjì*, forget-remember, ‘forget’) and 好歹 (*hǎodai*, good-bad, ‘good; bad’) is that the former cannot be used with right headed in contemporary Chinese.

- (5.33) 过很久            才能            忘记            不愉快的            事  
*guòhěnjiǔ      cáinéng      wàngjì      bù yú kuài de      shì*  
 after-very-long    just-able    forget-remember    not-happy-joy-of    thing  
 It will take a while before *forget-remember* the unhappiness.  
 ‘It will take a while before forgetting the unhappiness.’

Thirdly, the semantic pattern ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>’ is considered a property inherited from the pair of antonym elements. That can be evidenced by the antonym constructs when they express directions as in 南北向 (*nánběixiàng*, south-north-direction, ‘the direction from north to south’), or 左右排列 (*zuǒyòupáiliè*, left-right-row-column, ‘arrangement from left to right’). Both 南北 (*nánběi*, south-north, ‘from north to south’) and 左右 (*zuǒyòu*, left-right, ‘from left to right’) here suggests a sense of direction. Such a sense of direction cannot be explained by the semantic pattern of coordinative ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ or selective ‘ANT<sub>1</sub> OR ANT<sub>2</sub>.’

It is observed that the sense of direction can be found in the antonym elements that the pair together can define a scale of different levels of the property they share. Take 日夜 (*rìyè*, day-night) and 上下 (*shàngxià*, upward-downward). The two antonym elements in the former can define a scale of the time of a day; those in the latter can define a scale of height. Both antonym pairs can indicate the sense of direction or order in time or place.

When those antonym pairs suggesting a sense of direction are put in the in-text semantic pattern of coordination AND, a sense of inclusiveness ALL are communicated (Figure 5.5). Take 日夜 (*rìyè*, day-night, ‘all the time (from day to night)’) and 上下 (*shàngxià*, upward-downward, ‘all (from the senior to the junior)’) (5.34). In (5.34a), both ‘day’ and ‘night’ are equally included, which follows the semantic pattern coordinative AND. The whole context can be paraphrased as

that the work does not stop ‘all the time (from day to night).’ In (5.34b), both ‘upward’ and ‘downward’ are equally included in the semantic pattern of coordinative. The family is intended to include ‘all’ the family members ‘from the senior to the junior.’

(5.34) a. 日夜 (*rìyè*, day-night, ‘all the time (from day to night)’)

[日<sub>1</sub>夜<sub>2</sub>] ⇔ ‘DAY<sub>1</sub> AND NIGHT<sub>2</sub>’  
 日夜                      赶工  
*rìyè*                      *gǎngōng*  
 day-night                rush-work  
 Hurry up with work *day-night*  
 ‘Hurry up with work around the clock’

b. 上下 (*shàngxià*, upward-downward, ‘all (from the senior to the junior)’)

[上<sub>1</sub>下<sub>2</sub>] ⇔ ‘UPWARD<sub>1</sub> AND DOWNWARD<sub>2</sub>’  
 一家              上下                      其乐              融融  
*yìjiā*              *shàngxià*                      *qílè*              *róngróng*  
 one-family      upward-downward      the-joy              harmony-harmony  
 The *upward-downward* family lives in joyful harmony.  
 ‘The whole family (all from the senior to the junior) lives in joyful harmony.’

When those antonym pairs with a sense of direction are combined with the in-text semantic pattern of alternative, a sense of exhaustiveness ANY are communicated (Figure 5.5). Take 迟早 (*chízǎo*, late-early, ‘on any condition (from early to late)’)

and 高低 (*gāodī*, high-low, ‘on any condition (from high to low)’)

(5.35). The antonym elements in both cases have a sense of direction with the former related to time and the latter related to height. In the following context (5.35), both indicate the sense of exhaustiveness. In (5.35a), the semantic pattern should be alternative OR in that the change will happen at some point either ‘late’ or ‘early’. The whole context can be paraphrased that the change will come ‘on any condition from early to late’. In (5.35b), the semantic pattern should be alternative OR in that she made her decision either ‘high’ or ‘low’. The context can be paraphrased that she was unwilling ‘on any condition from high to low’.

(5.35) a. 迟早 (*chízǎo*, late-early, ‘on any condition (from early to late)’)

[迟<sub>1</sub>早<sub>2</sub>] ⇔ ‘LATE<sub>1</sub> OR EARLY<sub>2</sub>’  
 迟早              需要                      改变  
*chízǎo*              *xūyào*                      *gǎibiàn*  
 Late-early      need-want              reform-change  
 Change is unavoidable *late-early*.  
 ‘Change is unavoidable on any condition (from early to late).’

b. 高低 (*gāodī*, high-low, ‘on any condition (from high to low)’)

[高<sub>1</sub>低<sub>2</sub>] ⇔ ‘HIGH<sub>1</sub> OR LOW<sub>2</sub>’

她	高低	就是	不肯
<i>tā</i>	<i>gāodī</i>	<i>jiùshì</i>	<i>bùkěn</i>
she	high-low	just-is	not-willing

She would not *high-low*.

‘She would not on any condition (from high to low).’

This section has observed the inheritance links of the antonym construction in Mandarin. First, Mandarin antonym construction overlaps with compound construction. The coordinative pattern ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ and alternative pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ are considered the properties inherited from the coordinate compound construction in Mandarin. The left or right headed with the non-head neutralized ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’ are considered a property inherited from the alternative semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’. The sense of direction as suggested in ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION)’ is considered inherent with the antonym elements. When it is combined with the coordinative pattern suggested in context, a sense of inclusiveness is communicated as represented by ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (ALL)’; when it is the alternative pattern that is suggested in context, a sense of exhaustiveness is communicated as represented by ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (ANY)’. As indicated in Figure 5.5, the specified meaning patterns can be used in an extended way, which are not explored. An observation of the extended use would be more about the metonymic, metaphoric, etc. abstraction of the basic semantic patterns, which is more related to cognition and beyond the concern of this exploration of linguistic facts.

### 5.2.5 Summary

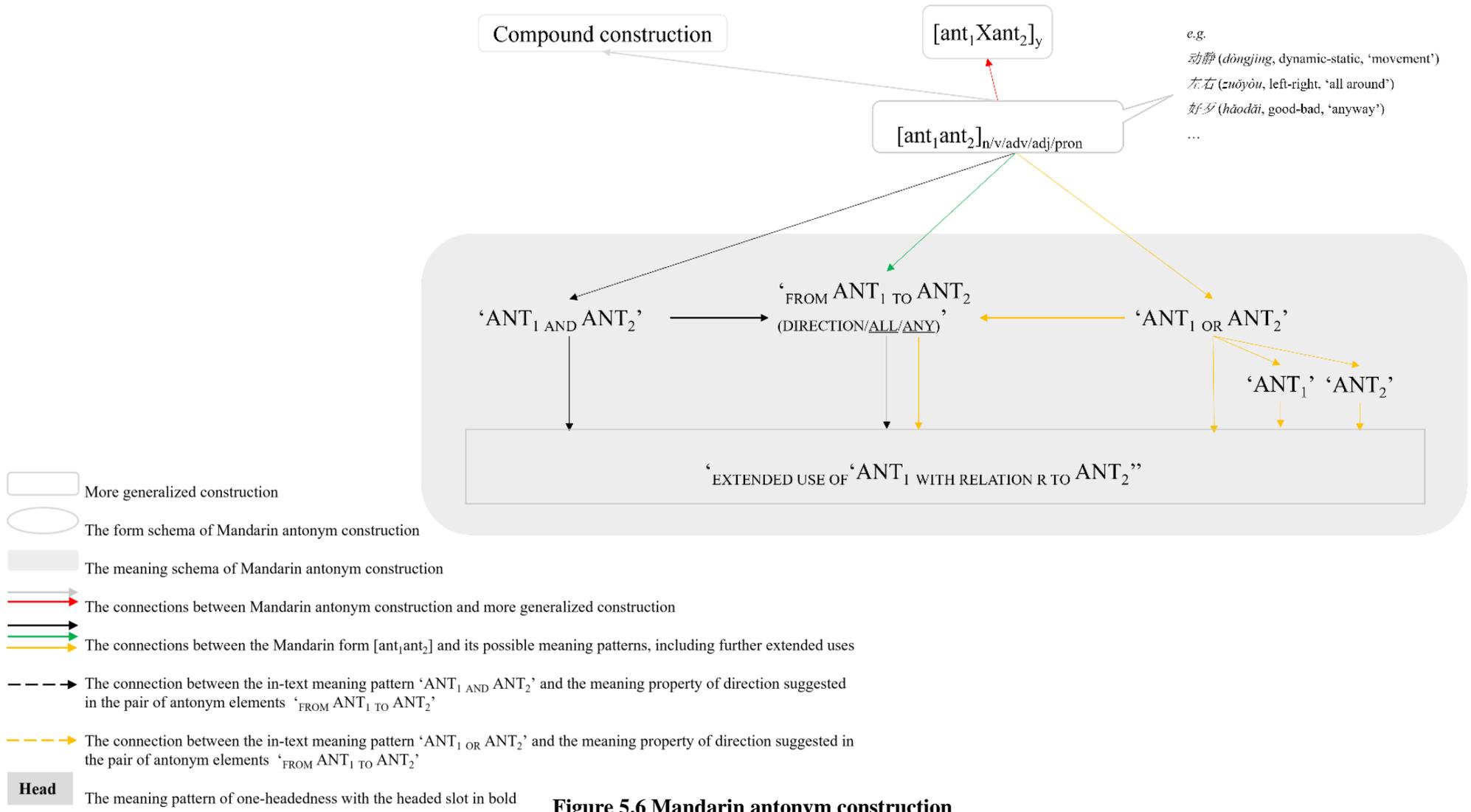
This section has observed and described Mandarin antonym construction from the perspectives of form-meaning schema, headedness, syntactic categories, and inheritance links. All those properties are summarized in Figure 5.6 on the following second page.

For the singular form [ant<sub>1</sub>ant<sub>2</sub>] of the antonym construction in Mandarin, there are ten meaning patterns and five of them are extended uses of the specified meaning patterns. In general, the antonym construction in Mandarin can be headed with the non-head element neutralized. The head can be left or right, which is context dependent. Yet when there is a fixed head, it must be left. The antonym construction in Mandarin can also be used in a non-headed way, including the coordinative ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’, alternative ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ or to express a sense of direction ‘FROM

ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION)’. Also, ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>’ can communicate a sense of inclusiveness ALL when the in-text semantic pattern of the construct is coordinative AND, and a sense of exhaustiveness ANY when the in-text semantic pattern is selective OR.

The antonym construction [ant<sub>1</sub>ant<sub>2</sub>] in Mandarin can be a noun, an adjective, an adverb, a verb, or a pronoun in context. Moreover, one antonym construct can have more than one syntactic category.

For the inheritance links, the antonym construction in Mandarin overlaps with compound construction. The coordinative pattern ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ and alternative pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ are considered the properties inherited from the coordinate compound construction in Mandarin. The left or right headedness with the non-head neutralized ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’ are considered a property inherited from the alternative semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’. The sense of direction as suggested in ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION)’ is considered inherent with the antonym elements. When such a sense of direction occurs in the context suggesting the semantic pattern of coordinative, it is inclusive ALL that is communicated by the antonym construct; when it occurs in the context suggesting selective, it is exhaustive ANY that is communicated.



**Figure 5.6 Mandarin antonym construction**

### 5.3 Comparison of English and Mandarin antonym constructions

The antonym constructions in English and Mandarin have been respectively observed and described from the perspectives of form-meaning schema, syntactic categories, headedness, and inheritance links in the previous two sections. In this part of the analysis, they are compared from those four aspects.

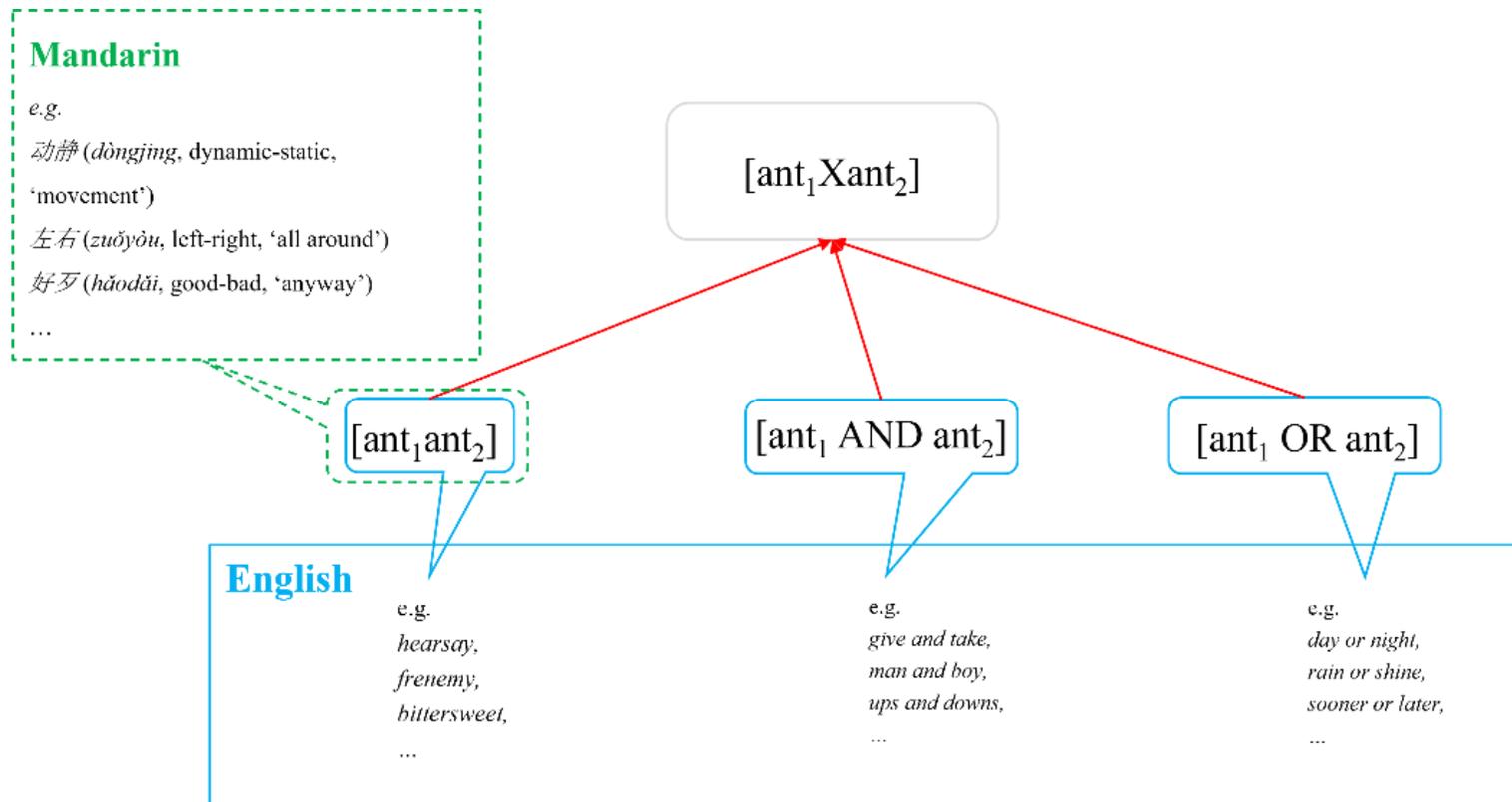
#### 5.3.1 Comparison of the schemas of English and Mandarin antonym constructions

The form-meaning schema of English and Mandarin antonym constructions have been described in Section 5.1.1 and Section 5.2.1. In this section, the similarities and the differences in this regard are observed and described. In form, English and Mandarin antonym construction share one form with English having two more phrasal forms (Figure 5.7); in meaning, most patterns are shared between English and Mandarin except for the right headedness with the non-head modifier and the extended use of neutralized right-headedness (Figure 5.7).

The form shared by English and Mandarin antonym constructions is the juxtaposition of a pair of antonym elements [ant<sub>1</sub>ant<sub>2</sub>] (Figure 5.7). Examples for English are *hearsay*, *frenemy*, *bittersweet*, etc. Examples for Mandarin are 动静 (*dòngjìng*, dynamic-static, ‘movement’), 左右 (*zuǒyòu*, left-right, ‘all around’), 好歹 (*hǎodǎi*, good-bad, ‘anyway’), etc.

With this form [ant<sub>1</sub>ant<sub>2</sub>], however, English antonym construction has one semantic pattern that has not been found in Mandarin antonym construction. In English, the form [ant<sub>1</sub>ant<sub>2</sub>] can be used as right-headed with the non-head semantically included as the modifier as represented by ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’ (Figure 5.7). Examples are *dead alive* or *humblebrag*. *Dead alive* refers to being alive yet without vitality that can be grasped with ‘ALIVE<sub>2</sub> that is DEAD<sub>1</sub>’ put in the context (5.36a); *humblebrag* (5.36b) means to brag with the pretense of being humble that can be abstracted as ‘BRAG<sub>2</sub> that is HUMBLE<sub>1</sub>’. Yet that does not occur in Mandarin antonym construction.

- (5.36) a. ... why did we make a mistake of choosing this dead alive human, incompetent leader.  
 b. ... the video could be a humblebrag to ‘tell me you rich without telling me you rich’.



**Mandarin**

e.g.

动静 (*dòngjìng*, dynamic-static,

'movement')

左右 (*zuǒyòu*, left-right, 'all around')

好歹 (*hǎodǎi*, good-bad, 'anyway')

...

[ant<sub>1</sub>Xant<sub>2</sub>]

[ant<sub>1</sub>ant<sub>2</sub>]

[ant<sub>1</sub> AND ant<sub>2</sub>]

[ant<sub>1</sub> OR ant<sub>2</sub>]

**English**

e.g.

*hearsay,*

*frenemy,*

*bittersweet,*

...

e.g.

*give and take,*

*man and boy,*

*ups and downs,*

...

e.g.

*day or night,*

*rain or shine,*

*sooner or later,*

...

More generalized construction

The form schema or the instantiations of English antonym construction

The form schema or the instantiations of Mandarin antonym construction

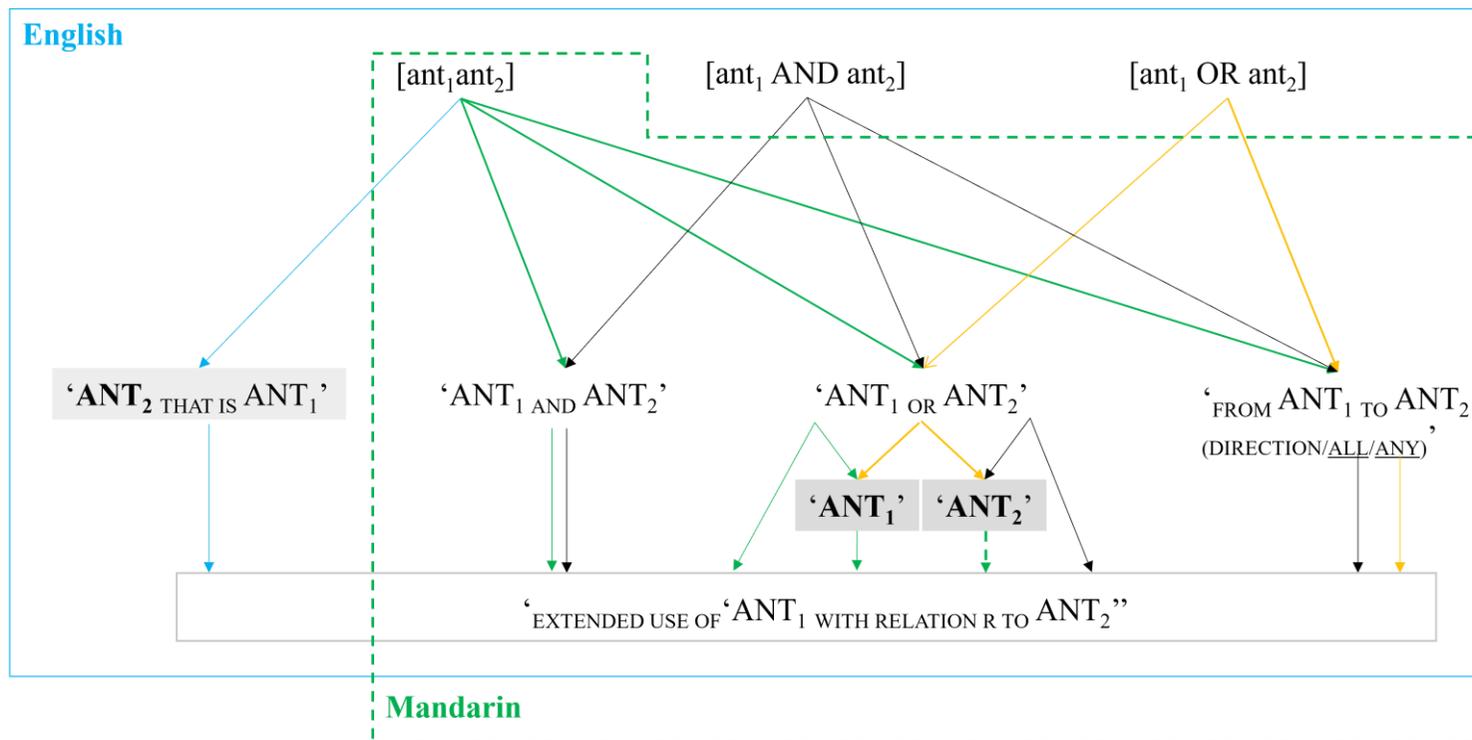
The connections between English/Mandarin antonym construction and more generalized construction

**Figure 5.7 Comparison of the forms of English and Mandarin antonym constructions**

English antonym constructions have two more forms (Figure 5.7). One is with the lexical connector *and* in-between the antonym elements as represented by [ant<sub>1</sub> AND ant<sub>2</sub>], and the other the lexical connector *or* as in [ant<sub>1</sub> OR ant<sub>2</sub>]. Examples are (*through*) *thick and thin*, (*go*) *hot and cold*, *boom-or-bust*, or *win or lose*. With the form [ant<sub>1</sub> AND ant<sub>2</sub>], English antonym construction can be used with the semantic patterns ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’, ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’, ‘ANT<sub>2</sub>’, and ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>(ALL)’ in addition to relevant extended use (Figure 5.7). With the form [ant<sub>1</sub> OR ant<sub>2</sub>], it is the semantic patterns ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’, ‘ANT<sub>1</sub>’, ‘ANT<sub>2</sub>’, and ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>(ANY)’ that can be expressed in addition to the relevant extended use (Figure 5.7).

Notably, all those semantic patterns can occur in the singular form [ant<sub>1</sub>ant<sub>2</sub>] in Mandarin. 儿女 (*érnǚ*, son-daughter, ‘son and daughter’) (5.18a) is an example of ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’; 是非 (*shìfēi*, right-wrong, ‘right or wrong’) (5.18b) is an example of ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’; 东西 (*dōngxī*, east-west, ‘from east to west’) in 东西走向 (*dōngxī zǒuxiàng*, east-west go-direction, ‘orientation from east to west’) (5.19c) can exemplify ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>(DIRECTION)’; 大小 (*dàxiǎo*, big-small, ‘all’) in 大小官吏 (*dàxiǎo guānlì*, big-small official-officer, ‘all the officers (from big to small)’) (5.16a) is an example of ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>(ALL)’; 高矮 (*gāo’ǎi*, tall-short, ‘any’) in 无论高矮 (*wúlùn gāo’ǎi*, no-discuss tall-short, ‘anyone (from big to small)’) (5.19b) is an example of ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>(ANY)’. 好歹 (*hǎodǎi*, good-bad, ‘bad’) (5.31b) can be right headed as ‘ANT<sub>2</sub>’ and 动静 (*dòngjīng*, dynamic-static, ‘movement’) (5.20a) is left headed ‘ANT<sub>1</sub>’. Moreover, the right headedness with a neutralized head in Mandarin can also be used in an extended way as other meaning patterns, for instance, 兄弟 (*xiōngdì*, elder-brother-younger-brother, ‘I (a humble claim of himself)’) (5.23b). That, however, has not been found in English.

In sum, English and Mandarin antonym constructions have one form in common, which is [ant<sub>1</sub>ant<sub>2</sub>]. Also, English has two more forms [ant<sub>1</sub> AND ant<sub>2</sub>] and [ant<sub>1</sub> OR ant<sub>2</sub>]. With the singular form [ant<sub>1</sub>ant<sub>2</sub>], Mandarin antonym construction can have all the semantic possibilities communicated by the three English forms except the right headed with a non-head modifier ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’. All those are summarized in Figure 5.8 on the following page.

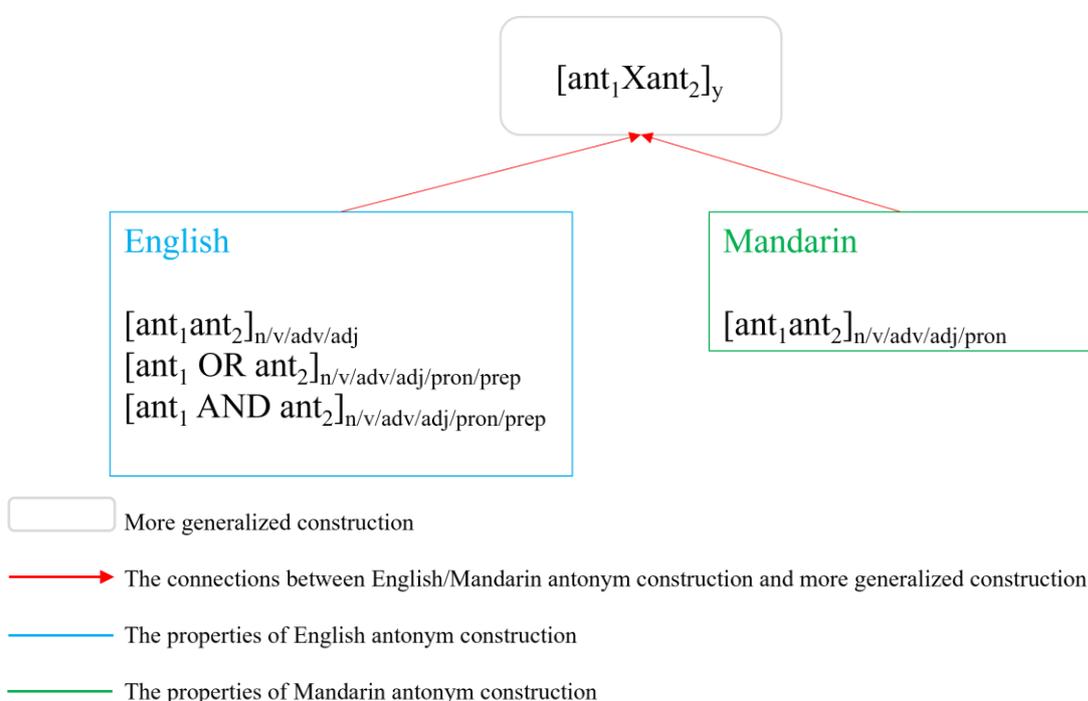


- The form-meaning schema of English antonym construction
- - - - -→ The form-meaning schema of Mandarin antonym construction
- —→ —→ —→ The connections between forms and meaning patterns
- - - - -→ The meaning pattern that only occurs in Mandarin
- Head** The meaning pattern of one-headedness with the headed slot in bold

**Figure 5.8 Comparison of the form-meaning schemas of English and Mandarin antonym constructions**

### 5.3.2 Comparison of the syntactic categories of English and Mandarin antonym constructions

The syntactic categories of English antonym construction have been observed in context (Section 5.1.2) and those of Mandarin antonym construction have been summarized from previous studies and exemplified (Section 5.2.2). English and Mandarin antonym constructions share five syntactic categories, which are a noun, a verb, an adverb, an adjective, and a pronoun (Figure 5.9). Yet English can have one more syntactic category of being a preposition (Figure 5.9). However, the similarities and the differences of the syntactic categories of the antonym constructions between English and Mandarin are more than that, which is clarified in this section.



**Figure 5.9 Comparison of the syntactic categories of English and Mandarin antonym constructions**

Firstly, being a noun or being an adjective are the first two syntactic categories in both English and Mandarin collections (Figure 5.10). Nominal antonym constructs occur most often in both collections with 76% in English and 91% in Mandarin. Adjective is the second in both collections that it accounts for 70% in English and 29% in Mandarin. In general, the percentage of nominal and adjective constructs in the English collection are very similar with the nominal being 6%

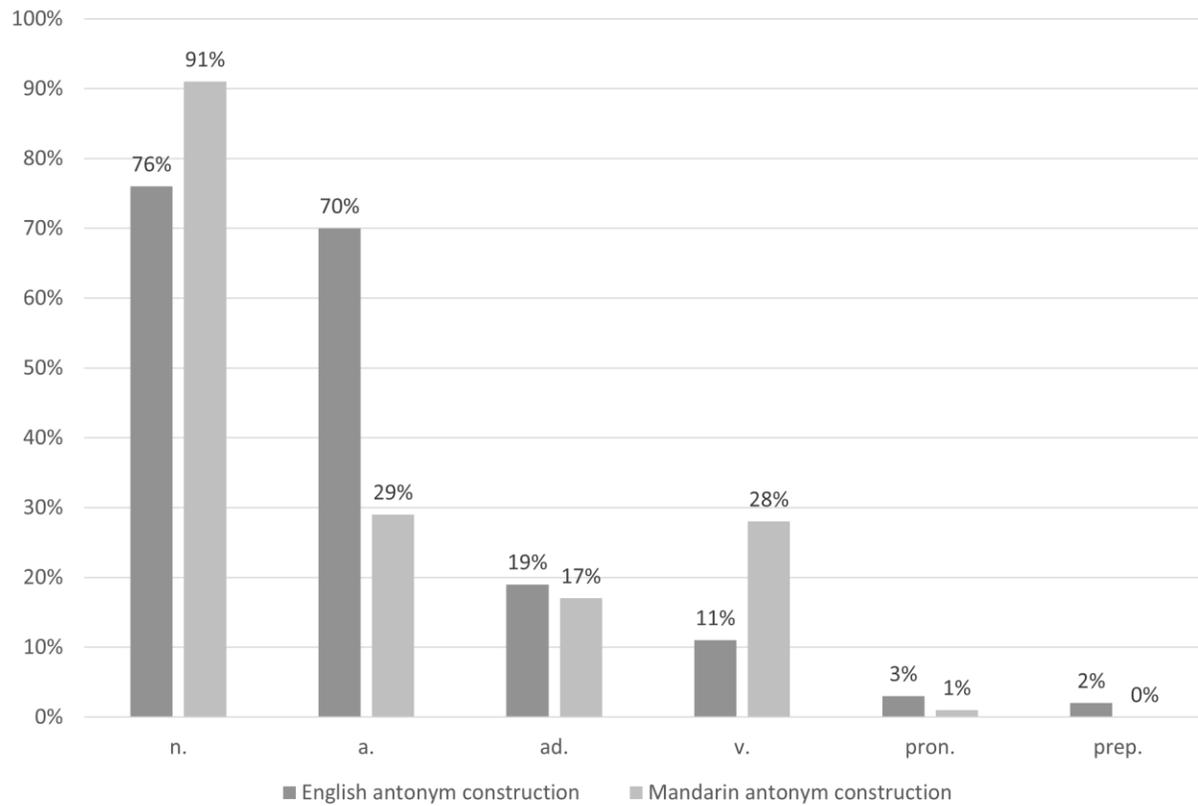
higher. In contrast, the nominal constructs in the Mandarin collection are three times those for the adjective.

Secondly, adverbs and verbs are the next most in both collections, but the English collection has more adverbs and Mandarin has more verbs (Figure 5.10). The adverbial accounts for 19% in the English collection, which is slightly more than the verb 11%. In Mandarin, however, it is the other way round. The verb accounts for 28% in the Mandarin collection, which is more than the adverbial 17%. Also, the percentage of verbs in the Mandarin collection is very close to the second highest percentage, which is only 1% less than the adjective.

Furthermore, pronouns are found in both collections but rare (Figure 5.10). There are five items identified as pronouns in the English collection and are only found with the two forms [ant<sub>1</sub> AND ant<sub>2</sub>] and [ant<sub>1</sub> OR ant<sub>2</sub>]. They are *nothing and nobody*, *one and other*, *this and that*, *one or other*, and *this or that*. That accounts for 3% of the English collection. In Mandarin, only two items can be pronouns. They are 多少 (*duōshǎo*, much-little, ‘how much’) and 彼此 (*bǐcǐ*, that-this, ‘each other’). That accounts for 2% of the Mandarin collection.

Lastly, prepositions are found in the English collection but not in the Mandarin collection (Figure 5.10). There are four items are identified as prepositions in the English collection and only occur in the two forms [ant<sub>1</sub> AND ant<sub>2</sub>] and [ant<sub>1</sub> OR ant<sub>2</sub>]. They are *to and fro*, *on and off*, *up and down*, and *on or off*. That accounts for 2% of the English collection. None is identified in the Mandarin collection.

This section has compared the syntactic categories of English and Mandarin antonym constructions. The five syntactic categories of being a noun, an adjective, an adverb, a verb, and a pronoun have been identified in both the English and the Mandarin collections, whereas proposition has only been found in English. Being a noun ranks the most and an adjective the second in both collections. Being an adverb comes the third and a verb the fourth in English, but it is the reverse in Mandarin. Pronouns are rare in both collections and prepositions are only found in the English collection. Those differences are to be discussed in Chapter 6.



**Figure 5.10 Differences and similarities of the syntactic categories of English and Mandarin antonym constructions**

Notes: the abbreviations for the syntactic categories: n. – noun; a. – adjective; ad. – adverb; v. – verb; pron. – pronoun; prep. – preposition.

### 5.3.3 Comparison of the headedness of English and Mandarin antonym constructions

The head here refers to the semantic center of the antonym construction and the headedness here is delimited to single head. Two types of headedness have been observed in the antonym constructions for this study. One is right headedness with the non-head element semantically included as a modifier; the other can be right or left headed with the non-head element neutralized. Each occurs differently in English and Mandarin antonym constructions (Figure 5.11), which are specified in this section.

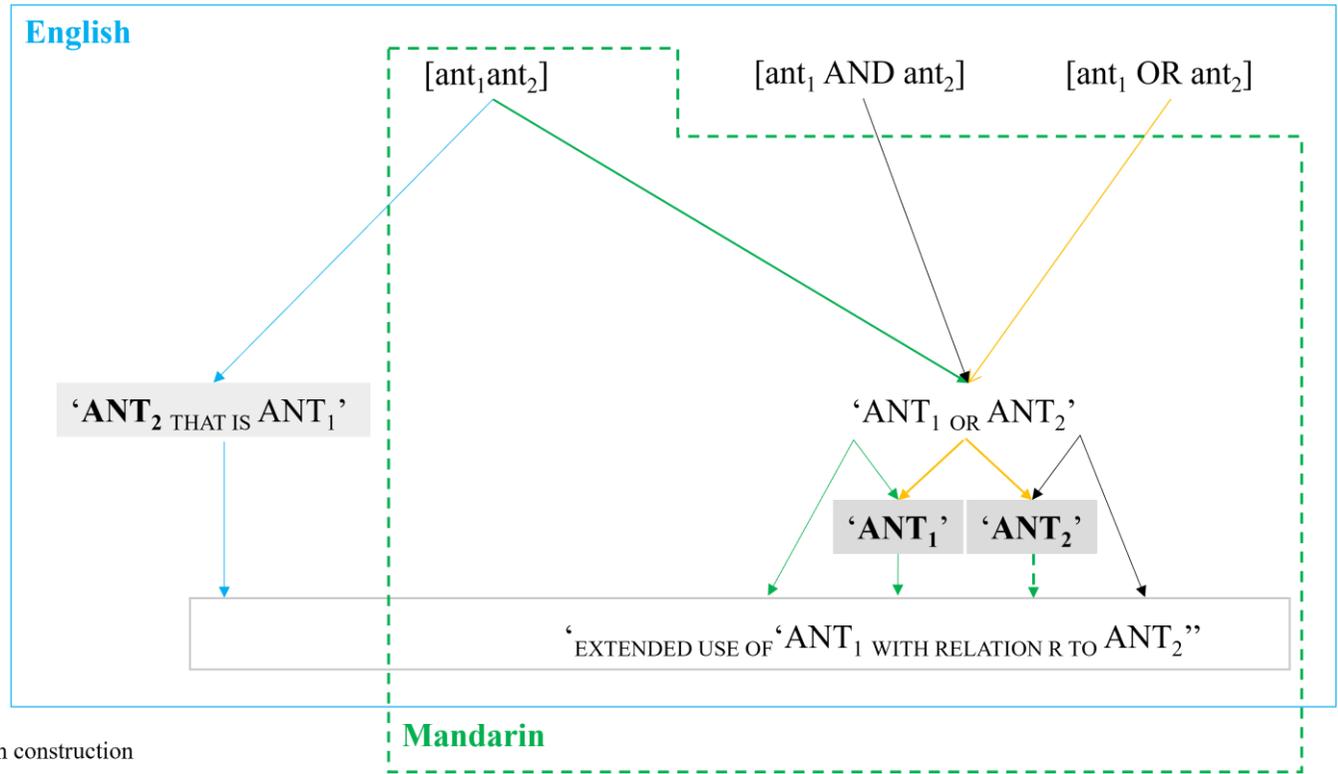
Firstly, the right headedness with the non-head element as the modifier ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’ only occurs in the English form [ant<sub>1</sub>ant<sub>2</sub>]. That was exemplified by *dead alive* (5.36a) and *humblebrag* (5.36b). In both cases, the semantic emphasis is placed on the second antonym element. The schema for the former is expressed as ‘ALIVE<sub>2</sub> that is DEAD<sub>1</sub>’ and that for the latter is ‘BRAG<sub>2</sub> that is HUMBLE<sub>1</sub>’.

Secondly, the headedness with a neutralized head ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’ occurs in both English and Mandarin antonym constructions with different properties. In Mandarin, there can be left or right headed, which is contextual. That has been exemplified by 好歹 (*hǎodai*, good-bad, ‘good; bad’) (5.31). With the same combination, 好歹 (*hǎodai*, good-bad, ‘good; bad’) is left headed ‘good<sub>1</sub>’ in the context of (5.31a), whereas right headed ‘bad<sub>2</sub>’ in (5.31b). Yet when there is a fixed head, it must be left headed, for instance, 教学 (*jiào/xué*, teach-learn, ‘teaching’) and 忘记 (*wàngjì*, forget-remember, ‘to forget’).

In English, the neutralized headedness differs among the three forms. For the form [ant<sub>1</sub>ant<sub>2</sub>], it can only be left headed ‘ANT<sub>2</sub>’ when the non-head element is neutralized. Examples are *hearsay* or *nitwit*. For the form [ant<sub>1</sub> AND ant<sub>2</sub>], it can only be right headed ‘ANT<sub>2</sub>’ when the non-head element is neutralized. That has been exemplified by *something and nothing/nothing and something* (5.15). In both cases, the semantic emphasis is laid upon the second slot despite the same pair of antonym elements. For the form [ant<sub>1</sub> OR ant<sub>2</sub>], it can be right or left headed, which is contextual. That has been exemplified by *something or nothing* in (5.14). With the same combination, it is right headed ‘NOTHING<sub>2</sub>’ in (5.14a) whereas left headed ‘SOMETHING<sub>1</sub>’ in (5.14b).

In general, the antonym constructions can be headed in English and in Mandarin. The headedness with a neutralized non-head element happens to both languages, but the right

headedness with a non-head modifier only happens to English antonym construction.



- The form-meaning schema of English antonym construction
- - - The form-meaning schema of Mandarin antonym construction
- →    → The connections between forms and meaning patterns
- - - → The meaning pattern that only occurs in Mandarin
- Head**    The meaning pattern of one-headedness with the headed slot in bold

**Figure 5.11 Comparison of the headedness of English and Mandarin antonym constructions**

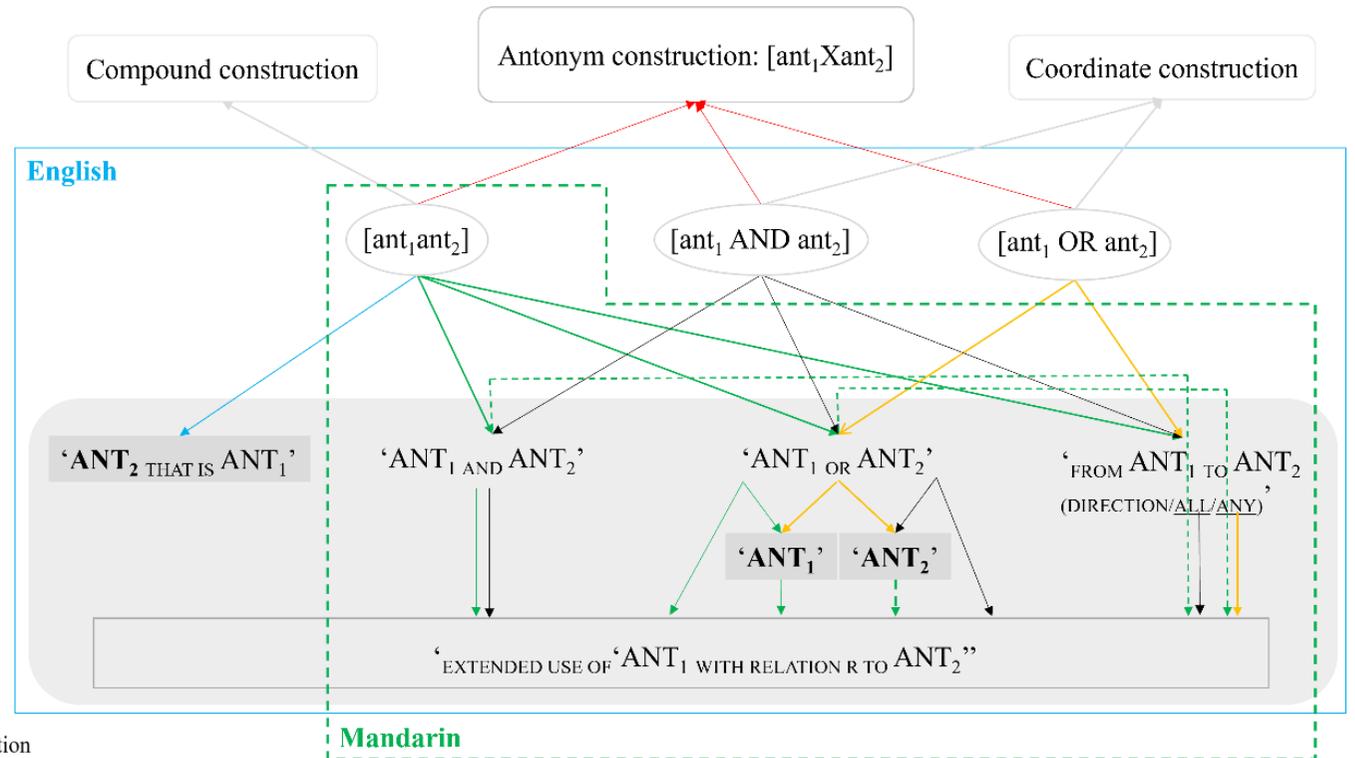
### 5.3.4 Comparison of the inheritance links of English and Mandarin antonym constructions

The inheritance links of the antonym constructions in English and Mandarin have been explored respectively in Section 5.1.4 and Section 5.2.4. Mainly three aspects that have been explored. The first connection is the connection between the antonym construction for this study and a more generalized construction. The next is the meaning inheritance from antonym elements. The third is the headedness with the non-head element included or neutralized. The common ground and differences of those aspects are summarized and presented in Figure 5.12 on the following page, which are specified in this section.

Firstly, the antonym construction in Mandarin inherits from the compound construction, whereas that in English inherits from the compound construction and the coordinate construction (Figure 5.12). There are three forms in English antonym construction. They are [ant<sub>1</sub>ant<sub>2</sub>], [ant<sub>1</sub> AND ant<sub>2</sub>] and [ant<sub>1</sub> OR ant<sub>2</sub>]. The first one belongs to the compound construction in English and the rest two belongs to the coordinate construction. Mandarin antonym construction only occurs in the first form [ant<sub>1</sub>ant<sub>2</sub>] and it belongs to the compound construction in Mandarin.

Secondly, the sense of direction as schematized as ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>’ is an attribute from the antonym elements in both English and Mandarin, which is slightly different between the two languages (Figure 5.12). The sense of direction can communicate three types of meanings in use. One is the original meaning direction, the other two are the senses of inclusiveness and exhaustiveness. The three meaning patterns spread among the three forms in English. With the form [ant<sub>1</sub>ant<sub>2</sub>] in English, it is the sense of direction that is communicated. For instance, *rural-urban* can be schematized as ‘FROM RURAL<sub>1</sub> TO URBAN<sub>2</sub> (DIRECTION)’ in the given context (5.15a). With the form [ant<sub>1</sub> AND ant<sub>2</sub>], it is the sense of inclusiveness that is communicated. For instance, *root and branch* can be schematized as ‘FROM ROOT<sub>1</sub> TO BRANCH<sub>2</sub> (ALL)’ in the given context (5.16c). With the form [ant<sub>1</sub> OR ant<sub>2</sub>], it is the sense of exhaustiveness that is communicate. For instance, *day or night* can be schematized as ‘FROM DAY<sub>1</sub> TO NIGHT<sub>2</sub> (ANY)’ in the given context (5.16b).

The three uses of the sense of direction take the same singular form [ant<sub>1</sub>ant<sub>2</sub>] in Mandarin. The sense of direction can be demonstrated by 左右 (*zuǒyòu*, left-right, ‘from left to right’) in 左右排列 (*zuǒyòu páiliè*, left-right-row-column, ‘arrangement from left to right’). The sense of inclusiveness can be demonstrated by 上下 (*shàngxià*, upward-downward, ‘all (from the



— The form-meaning schema of English antonym construction

- - - The form-meaning schema of Mandarin antonym construction

□ More generalized construction

○ The form schema of English/Mandarin antonym construction

■ The meaning schema of English/Mandarin antonym construction

→ The connections between English/Mandarin antonym construction and more generalized construction

→ The connections between forms and meaning patterns

→ The meaning pattern that only occurs in Mandarin

**Head** The meaning pattern of one-headedness with the headed slot in bold

**Figure 5.12 Comparison of the inheritance links of English and Mandarin antonym constructions**

senior to the junior’)) (5.32b) where it can be schematized as ‘<sub>FROM</sub> UPWARD<sub>1</sub> TO DOWNWARD<sub>2</sub> (ALL)’. The sense of exhaustiveness can be demonstrated by 迟早 (*chízǎo*, late-early, ‘on any condition (from early to late)’)) (5.33a) where it can be schematized as ‘<sub>FROM</sub> LATE<sub>1</sub> TO EARLY<sub>2</sub> (ANY)’.

Third, English and Mandarin share one inheritance link of headedness, which takes different properties in the two languages. The headedness ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’ with the non-head element neutralized can occur in both languages and in each case considered as inherited from the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ (Figure 5.9). Yet in English, the placement of the head is contextual for the form [ant<sub>1</sub> OR ant<sub>2</sub>] (e.g. something or nothing (5.14); it must be right headed for the form [ant<sub>1</sub> AND ant<sub>2</sub>] (e.g. something and nothing (5.15) and it left headed for the form [ant<sub>1</sub>ant<sub>2</sub>] (e.g. nitwit). In Mandarin, the placement of the head is contextual (e.g. 好歹 (*hǎodai*, good-bad, ‘good or bad’) (5.30)) for the singular form [ant<sub>1</sub>ant<sub>2</sub>] but it must be left headed if the head placement is fixed (e.g. 忘记 (*wàngjì*, forget-remember, ‘to forget’)).

There is one more headedness link, which only occurs in English antonym construction. It is right headed with the non-head element semantically included as schematized as ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’ (Figure 5.12). Take *dead alive* (5.36a) and *humblebrag* (5.36b). It is considered inherited from the right-headedness of English compounding. However, the compound construction in Mandarin has the property of right headedness with the non-head element included as the modifier, for instance, 白夜 (*báiyè*, white-night, ‘white night’). Here the semantic center is placed on the right slot ‘NIGHT<sub>2</sub>’ with the left slot ‘WHITE<sub>1</sub>’ to modify it, suggesting that it is a night in time but not as dark as a usual night. Such right headedness, however, is not inherited by the antonym construction in Mandarin.

Mandarin and English antonym constructions also share the inheritance links between the semantic patterns ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ and ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ and the form [ant<sub>1</sub>ant<sub>2</sub>] (Figure 5.12). Yet those two semantic properties also occur to the form [ant<sub>1</sub> AND ant<sub>2</sub>] in English, and the coordinative ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ is coerced in the English form [ant<sub>1</sub> OR ant<sub>2</sub>] (Figure 5.12).

In sum, the inheritance links between English and Mandarin antonym constructions are a mixture of similarities and differences. English and Mandarin share the inheritance links between the compound construction and the form [ant<sub>1</sub>ant<sub>2</sub>], but the right headedness ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’ is inherited in English but not Mandarin. English and Mandarin share the inheritance link between the sense of direction ‘<sub>FROM</sub> ANT<sub>1</sub> TO ANT<sub>2</sub>’ and the antonym elements. Yet its uses to communicate the

senses of direction, inclusiveness, and exhaustiveness respectively takes a different form in English but all take the singular form in Mandarin. English and Mandarin share the link between the neutralized headedness ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’ and the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’. Yet the neutralized headedness varies among the three forms in English.

## 5.4 Summary

This chapter has observed and compared the antonym constructions between English and Mandarin from the perspectives of form-meaning schema, syntactic categories, headedness, and inheritance links (Figure 5.13).

English and Mandarin antonym constructions share the generalized form [ant<sub>1</sub>Xant<sub>2</sub>]. The form is further specified as [ant<sub>1</sub>ant<sub>2</sub>], [ant<sub>1</sub> AND ant<sub>2</sub>] and [ant<sub>1</sub> OR ant<sub>2</sub>] in English but only [ant<sub>1</sub>ant<sub>2</sub>] in Mandarin.

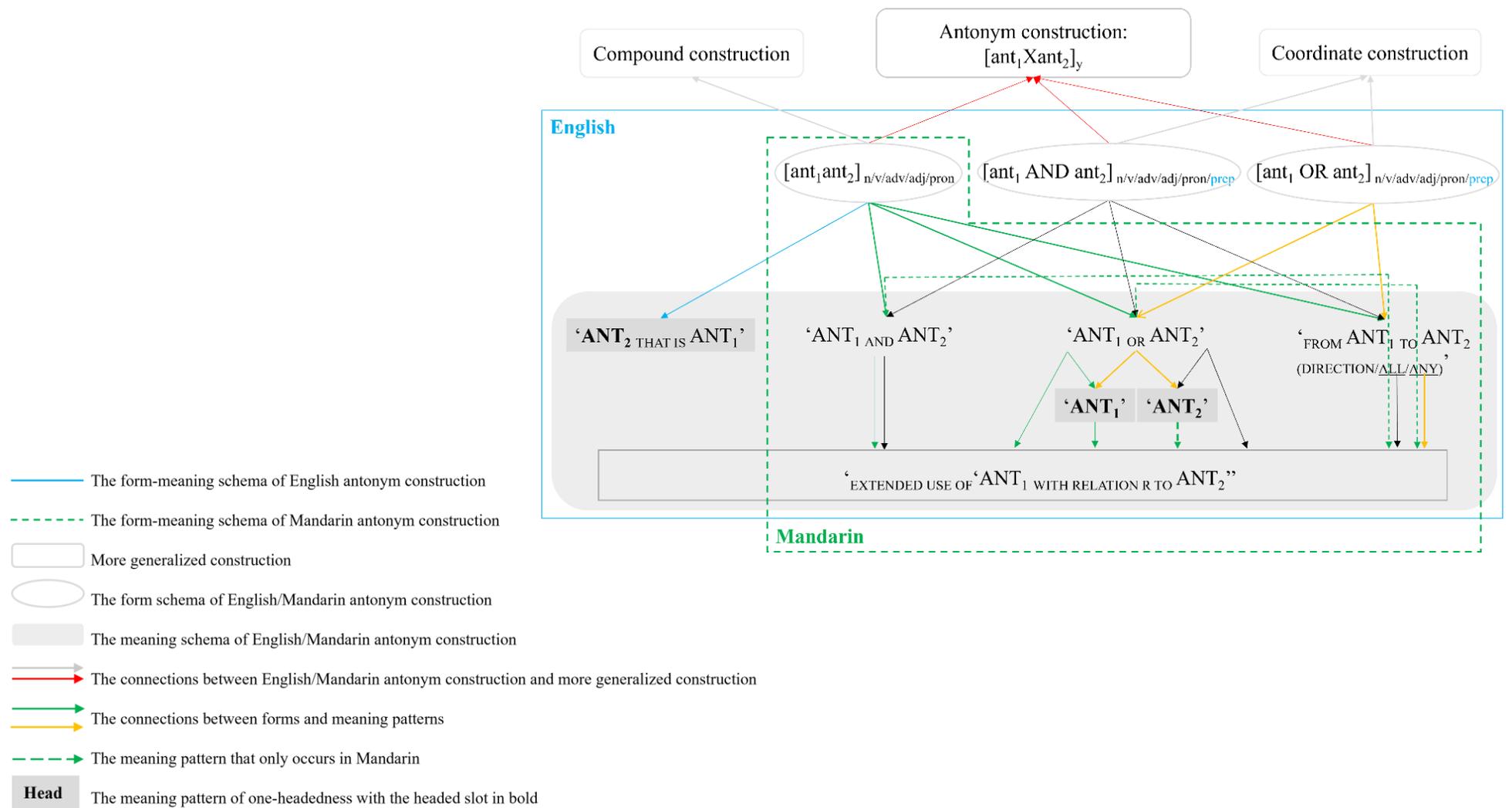
With the three forms in English and one in Mandarin, five syntactic categories are shared. They can be a noun, a verb, an adverb, an adjective, or a pronoun. Being a noun occurs the most in both collections. However, the English form [ant<sub>1</sub> AND ant<sub>2</sub>] can be a preposition, which is not found in Mandarin antonym construction.

Headedness are found in both English and Mandarin antonym constructions. Yet right headed with a non-head modifier only happens to the English form [ant<sub>1</sub>ant<sub>2</sub>]. The headedness with a neutralized head is found with both English and Mandarin antonym constructions. In Mandarin, it can be left or right headed with the non-head element neutralized. Which of the two antonym elements to be the head is contextual. When there is a fixed head, it must be left headed. In English, [ant<sub>1</sub>ant<sub>2</sub>] can be only left headed when the non-head is neutralized, [ant<sub>1</sub> AND ant<sub>2</sub>] can only be right headed, and [ant<sub>1</sub> OR ant<sub>2</sub>] can be left or right headed, which is contextual.

For the inheritance links, Mandarin and English antonym constructions share most in general. English and Mandarin inherit the semantic properties ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ and ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ from the compound construction. However, the right headedness ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’ is inherited in English and but not in Mandarin. English and Mandarin both inherit the sense of direction ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>’ from the antonym elements. Yet the varied uses communicating the senses of

direction, inclusiveness, or exhaustiveness with the three forms in English take one singular form in Mandarin. English and Mandarin share the link between the neutralized headedness ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’ and the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’. Yet the neutralized headedness varies among the three forms in English.

The common properties and the differences of all the four aspects of form-meaning schema, syntactic categories, headedness, and inheritance links identified between English and Mandarin antonym constructions are to be discussed in Chapter 6.



**Figure 5.13 Differences and similarities of English and Mandarin antonym constructions**

## Chapter 6 Discussion and Future Directions

This study first identified, collected and curated the co-occurrence of antonyms on lexical level in English and Mandarin, and then observed and compared the two collections from the perspective of Construction Grammar to answer four research questions:

- 1) What are the key characteristics of the lexicalized antonym construction in English and in Mandarin?
- 2) To what extent do the constructions share properties between English and Mandarin?
- 3) How effective is Construction Grammar in the analysis and comparison of the antonym constructions between English and Mandarin?
- 4) What are the implications of this study for contrastive linguistics and typological parameters?

With the two curated collections, English and Mandarin antonym constructions have been observed and compared from the aspects of form-meaning schema, syntactic categories, headedness, and inheritance links in the previous chapter. The key findings on the four aspects are discussed in this chapter, throughout which the previous studies will be related, and the unanswered questions will be included. Section 6.1 discusses the key characteristics in the examination and comparison of English and Mandarin antonym constructions. Construction Grammar has proven effective throughout the observation and comparison, which is discussed in Section 6.2. English and Mandarin are from two unconnected language families. The similarities and differences between English and Mandarin antonym constructions may shed a light on typological parameters in cross-linguistic comparison, which are discussed in Section 6.3. The value of Construction Grammar to contrastive linguistics and typological parameters is also included.

### **6.1 Discussion and future directions for research on antonym construction**

To examine and compare the key characteristics of the lexicalized antonym constructions in

English and in Mandarin, the antonym constructs in both languages were identified, collected, and curated for their oppositeness (Section 4.2) and the status of being lexicalized (Section 4.3). With those two collections, similarities and differences have been explored between English and Mandarin (Chapter 5). Although English has two more forms and one more meaning pattern, both languages have used the unity or contrast between the pair of antonym elements to communicate more than a binary set; although English antonym construction has one more syntactic category of preposition, both collections have the tendency towards nominalization and adverbialization; although both left and right headedness have been found in both collections, English tends to be right headed while Mandarin tends to be left headed considering the antonym construction in this study. Based on the multi-inheritance links in both collections, it is argued that morphological and syntactic observations should be bridged rather than divided in the observation of antonym constructions. Yet that is not an exhaustive exploration of English and Mandarin antonym constructions. At least the sequence order, the register, the extended use of the collections, and the Mandarin coordinate antonyms on syntactic level are left open. All these are specified in this section.

### **6.1.2 Key characteristics of antonym construction**

This section discusses the key characteristics observed in English and Mandarin antonym constructions, including their common and different properties. The antonym constructions in both languages make use of the unity or the contrast inherent in antonymy to communicate the meanings more than a binary contrast; tend to be nominalized or adverbialized in contextual use; have the property of neutralized headedness; and have multi-inheritance links related to both forms and meanings. However, English and Mandarin antonym constructions have shown language-specific properties by the side of the common characteristics. All these are specified and discussed in this section.

#### ***Unity and contrast***

The first key characteristic is that both English and Mandarin antonym constructions have used the unity and the contrast between the pair of antonym elements to communicate more than a binary contrast. That can be inferred from the observation of the semantic patterns in English and

Mandarin antonym constructions. The use of the unity in the pair of antonym elements can be evidenced by the semantic patterns ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ and ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>(DIRECTION/ALL/ANY)’.

The semantic pattern ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ demonstrates the unity in antonymy because the textual meaning of the relevant construct firstly relies on the common property of the pair of antonym elements. English forms can be used in this way are [ant<sub>1</sub>ant<sub>2</sub>] and [ant<sub>1</sub> AND ant<sub>2</sub>]. Take *buy-sell* and *wife-and-mother* (6.1) for English. The meaning of *buy-sell* here (6.1a) is based on the semantic pattern ‘BUY<sub>1</sub> AND SELL<sub>2</sub>’ and can be interpreted as ‘business’ or ‘transaction’. That is because ‘business’ is the common property shared by *buy* and *sell*. The semantic pattern of *wife-and-mother* here (6.1b) is ‘WIFE<sub>1</sub> AND MOTHER<sub>2</sub>’. It is abstracted in the context as a Mrs. Such status is shared by being the wife of her husband and being the mother of her children. An example for Mandarin is 父母 (*fùmǔ*, father-mother, ‘parents’) (6.1c). The semantic pattern is ‘FATHER<sub>1</sub> AND MOTHER<sub>2</sub>’ considering both are equally included. The meaning ‘parents’ is just the hypernym shared by 父 (*fù*, ‘father’) and 母 (*mǔ*, ‘mother’).

- (6.1) a. Social commerce is not like any other sales where buy-sell is more transactional.  
 b. ... the commute gives her a crucial chance to switch from work mode to wife-and-mother mode.  
 c. 父母 是 不可 替代的  
*fùmǔ shì bùkě tìdàide*  
 father-mother be not-likely substitute-replace-of  
*Father-mother* are of no replacement.  
 ‘Parents are of no replacement.’

The semantic pattern ‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub>(DIRECTION/ALL/ANY)’ is considered the use of the unity in antonymy because the sense of direction is based on the common scale shared by the pair of antonyms. Take *day or night* (‘all the time (from day to night)’) for English and 日夜 (*riyè*, day-night, ‘all the time (from day to night)’) for Mandarin. Both antonym elements in the former or the latter share the sense of time. The sense of direction suggested in the constructs formulated by them is just based on the scale of time with one always earlier than the other, as represented by the semantic pattern ‘FROM DAY<sub>1</sub> TO NIGHT<sub>2</sub>(ANY)’ for both constructs (5.16b; 5.34a). The same is true with the other two forms [ant<sub>1</sub>ant<sub>2</sub>] (5.4) and [ant<sub>1</sub> AND ant<sub>2</sub>] (5.8) in English when the two antonym elements together suggest a sense of direction.

The use of the contrast in the pair of antonym elements can be evidenced by the semantic patterns of headedness. There are two types of headedness in the antonym constructions for this

study. One is the right headedness with the non-head element semantically included, which is schematized as ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’. This semantic pattern relies on the contrast between the right head and the left non-head modifier to amplify the meaning of the construct in the context. It is only found in the English form [ant<sub>1</sub>ant<sub>2</sub>] in the collection. Take *dead alive* (6.2). *Dead alive* here is right headed with *alive* as the semantic head. It means that the leader is physically living yet with some impractical competence. With the sharp contrast between *dead* and *alive*, the incompatibility of the leader is highlighted.

(6.2) ... why did we make a mistake of choosing this dead alive human, incompetent leader.

The other type of headedness is when the non-head element is semantically neutralized, which is schematized as ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’. This type of headedness was considered specific to Mandarin but not English (Shao, 2019). However, it has been identified in both English and Mandarin collections. This pattern is considered as the use of the contrast in antonymy due to its connection to the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’. Take (a) *yes-or-no* (vote). Here, the semantic pattern of *yes-or-no* can be schematized as ‘YES<sub>1</sub> OR NO<sub>2</sub>’. The context can be interpreted as ‘a vote for or against’. *Yes/no* here are just two choices with one can be an alternative of the other. Such replacement is based on the binary contrast between them as indicated by ‘for/against’.

The use of antonymy in both English and Mandarin collections can be based on unity or contrast but that conclusion seems to differ from previous assumptions. It was assumed that Mandarin tended to emphasize the unity composed by antonym pairs, whereas English the contrast (Murphy, 2003; Chan, 1967). However, such cultural perspective is not supported by the linguistic facts in this study. Both unity and contrast have been used linguistically in English and Mandarin based on the findings in this study. In Mandarin, the use of contrast in the antonym construction can be evidenced by the constructs with neutralized headedness like 好歹 (*hǎodai*, good-bad, ‘good; bad’) (5.31), 动静 (*dòngjìng*, dynamic-static, ‘movement’) (5.30), 教学 (*jiàoxue*, teach-learn, ‘teaching’) (6.8a), or 质量 (*zhìliang*, quality-quantity, ‘quality’). In English, the unity in antonymy has been relied on in formulating the antonym constructs as exemplified by *buy-sell* (6.1a), *wife-and-mother* (6.1b) and *day or night* (‘all the time (from day to night)’) (5.16b). Both unity and contrast in antonymy are used in English and Mandarin on lexical level to communicate meanings more than a binary contrast.

### *Nominalization, adverbialization and other syntactic categories*

The second key characteristic is that both English and Mandarin collections have the tendency towards nominalization and adverbialization. The tendency towards nominalization can be evidenced by the percentage of the nouns, which are the highest in both English and Mandarin collections (Figure 5.10). This is considered related to the semantic properties specific to the joint of a pair of antonym elements. Firstly, the joint tends to express a superordinate shared by the pair of antonym elements. *Man and wife* refers to a married couple; 粗细 (*cūxì*, thick-thin, ‘width’) refers to the measurement of width or thickness. Secondly, a conflicting entanglement can be expressed based on the common ground of the pair of antonyms. Take *love-hatred* and 沉浮 (*chénfú*, sink-float, ‘ups and downs’). With the joint a common scale is shaped by the pair of antonym elements. It is ‘feelings’ for *love-hatred* and ‘happenings’ for 沉浮 (*chénfú*, sink-float, ‘ups and downs’). Based on that common ground, the oppositeness between the antonyms is included to show a conflict in feeling or in daily life. Either the superordinate or the conflicting complex, it is a concept generalized from the equal inclusion of both antonym elements. Such generalization tends to be a noun.

The property of nominalization has been noticed in Mandarin antonym construction (e.g. Wei, 2017; Feng, 2016; Zhang, 2018) and observed in English coordinating items (e.g. Norrick, 1988). However, the links between the semantic property of the antonym construction and its tendency to be nominalized were not exposed. The meaning pattern of the combination being a sum of the coordinating elements has been noticed in the observation of coordinate compounds (Sauer and Schwan, 2017b; Arcodia et al., 2010; Malkiel, 1959). According to Sauer and Schwan (2017b), ‘a higher unity’ (189-190) is communicated by the juxtaposition of a pair of elements including antonyms. Examples are *births and deaths* (‘the circle of life’), *men and women* (‘people, mankind’), *sons and daughters* (‘children’), etc. (189-190) The same semantic pattern has also been observed in Mandarin antonym construction (Zhang, 2018; Yang, 2007a; Tan, 1989). As Yang (2007a) has put it, ‘ $AB > A+B$ ’ when the meaning of the combination is a generalization like 大小 (*dàxiǎo*, big-small, size). As has been discussed, it is the generalization in being a superordinate of the coordinating elements that facilitates the combination to be a noun. Such property of coordinating compounds has been inherited by the antonym construction.

In addition to nominalization, both English and Mandarin antonym constructions can be adverbialized. The tendency towards adverbialization is unlikely to be evidenced by the percentage

in either collection. The constructs that can be used as an adverb only account for 19% in the English collection and 17% in Mandarin. Yet being an adverb is found related to the semantic property of inclusiveness ALL and exhaustiveness ANY in the antonym construction. There is a sense of inclusiveness ALL in the following *day and night* (6.3a) and 始终 (*shǐzhōng*, beginning-end, ‘all (from beginning to end)’ (6.3c) and both play the role of an adverb in the exemplification. It is the sense of exhaustiveness ANY that is indicated in *rain or shine* (6.3b) and 反正 (*fǎnzhèng*, negative-positive, ‘anyway’) (6.3d) and the role of the construct in the exemplification is adverbial. The sense of inclusiveness or exhaustiveness is related to the sense of direction that is assumed inherent in the antonym elements. That has been observed and analyzed in the inheritance links of the antonym constructions in English (Section 5.1.4) and in Mandarin (Section 5.2.4). It will be discussed again in the following part on the inheritance links in this section.

(6.3) a. But here you are fighting day and night to make things possible.

b. This party takes place rain or shine, every weekend of the year...

c. 始终	如一
<i>shǐzhōng</i>	<i>rúyī</i>
beginning-end	like-the same
<i>beginning-end</i>	the same
‘All the same’	

d. 反正	我	是	住	这儿
<i>fǎnzhèng</i>	<i>wǒ</i>	<i>shì</i>	<i>zhù</i>	<i>zhè'er</i>
Negative-positive	I	am	live	here
I do live here <i>negative-positive</i> .				
‘I do live here on any condition.’				

The adverbialization in Mandarin antonym construction has been noticed (e.g. Wei, 2017; Feng, 2016; Li, 2015; Xiao, 2012; Liu and Li, 2010). In the observation of English coordinating items, Norrick (1988) has also noticed that the combination could be adverbialized in context as exemplified by *hammer and tongs* (3.7a). In both cases, however, the motivation for adverbialization has not been clarified. As having been discussed, the adverbialization in the antonym construction is related to the sense of inclusiveness or exhaustiveness in antonym co-occurrence. Such sense has been captured by Murphy (2006) and Jones et al. (2012) in the observation of antonym co-occurrence on syntactic level (Section 3.2). What distinguishes this study from their observation (Jones et al., 2012; Murphy, 2006) is that antonym co-occurrence can

be as close as being semantically compounded and function as an adverb on lexical level like *day and night* (6.3a) or *rain or shine* (6.3b). Meanwhile, it can be concluded that the property is inherited from antonym elements on the condition that it is shared by the antonym co-occurrence on both lexical and syntactical levels. The sense of inclusiveness and exhaustiveness has also been captured by Zhang (2018) in her observation of Mandarin antonym construction, which is named 周遍性 (*zhōubiànxìng*, all-pervasive-property, ‘pervasiveness’). Also, it has been distinguished between ALL and ANY (Zhang, 2018). With this study, the connection between such property and adverbialization is exposed.

Prepositions are found in the English collection but not Mandarin, which is assumed a typological difference. At least four constructs in the English collection can be used as a preposition. They are *on and off*, *on or off*, *to and fro*, and *up and down*. Take *up and down* (6.4). Here *up and down* is placed before the noun phrase *the Soho street* to indicate where and how to look from the window. However, none of the antonym constructs in the Mandarin collection can be used as a preposition.

(6.4) I opened the window to look up and down the Soho street where I work.

In fact, it has been observed that Mandarin tends to have less prepositions and uses less prepositions than English (Section 2.2). There are about 285 prepositions in English including those phrasal, but around 80 in Mandarin (Peng, 1980). For the meaning communicated through prepositions in English, it tends to be expressed by verbs or just omitted in Mandarin. Take two examples from Zhao and Zhang (2017). In (6.5a), it can be a prepositional *for*-phrase to indicate the time in English. In Mandarin, however, there is no preposition at all (Zhao and Zhang, 2017). In (6.5b), it can be a prepositional *by*-phrase to indicate the way to go back home in English, whereas it has to be a verb to communicate the same meaning in Mandarin (Zhao and Zhang, 2017). For the prepositional antonym constructs in English, the semantic equivalence has been found in the Mandarin collection when they are used as verbs. It could be 上下 (*shàngxià*, upward-downward) to express the prepositional *on and off*, *on or off*, and *up and down*, and 来回 (*lái huí*, to-fro) for *to and fro*, and *up and down*.

- (6.5) a. English: He has been sitting there for quite a long time.  
 Mandarin: 他 已经 坐 那里 很久了。  
*Tā yǐjīng zuò nàlǐ hěnjiǔle.*  
 He has-been sit over-there very-long-yet  
 He has been sitting there *very-long.*  
 ‘He has been sitting there for long.’
- b. English: He went back home by taxi.  
 Mandarin: 他 回家 坐的 出租车  
*Tā huíjiā zuòde chūzūchē.*  
 He return-home take-of out-rent-car  
 He returned home *took* a taxi.  
 ‘He returned home with taking a taxi.’

It needs to be noticed that the percentage of being an adjective is very close to the percentage of being a noun in the English collection (Figure 5.10), which does not happen in the Mandarin collection. The high percentage of adjectives in the English collection is considered related to the multi-word adjectives before a noun in English (Section 2.1.2). As it happens, the multi-word connection is often suggested by hyphenation (Section 2.1.2). It seems that almost all the combinations in the English collection can be used as a multi-word adjective to modify a noun. For instance, *in-out* (*referendum*), *win-lose* (*situation*), *(a) life-and-death* (*threat*), *(a) rise-and-fall* (*floor*), *(a) this-or-that* (*choice*), and *sooner-or-later* (*misery*). Here, *in/out* are prepositions, *life/death* are nouns, *this/that* are pronouns, *sooner/later* are adverbs, and *win/lose* and *rise/fall* are verbs. Yet the constructs they formulate are all used as adjectives in the exemplification after being syntactically joined as suggested by the hyphenation and placed before a noun.

### ***Headedness***

The third key characteristic is that the headedness in the English collection tends to be right whereas that in the Mandarin collection tends to be left. The headedness in this thesis is limited to semantically one-headed (Booij, 2009). There are two types of headedness observed in the antonym construction. One is the right headedness with a non-head modifier, which follows the Right-Hand Head Rule (Williams, 1981). However, this headedness is found in the English collection but not Mandarin (5. 24) (Figure 5.5). Mandarin compounding can be right headed with the non-head as the modifier. For instance, 白夜 (*báiyè*, white-night, ‘white night’). The head here is ‘night’ being modified by the non-head ‘white’. Why such right headedness is inherited in English antonym construction but not Mandarin is unclear based on the present collection and

observation. Yet that seems to add to the tendency to being right headed in the English collection.

The tendency to being right headed in English antonym construction is further verified by the neutralized headedness. Neutralized headedness is the other type of headedness identified in the antonym construction. It is when the non-head element is semantically neutralized. Whether the right or the left element is the head can be contextual. All the three forms in English can occur with the neutralized headedness but varies in head placement. For the form [ant<sub>1</sub> OR ant<sub>2</sub>], it can be either left or right headed, which is context dependent (5.6) (Figure 5.2). As a result, the percentage for left or right is equally 15% (Appendix 4). For the form [ant<sub>1</sub> AND ant<sub>2</sub>], it must be right headed (5.8) (Figure 5.2). The percentage is 4% (Appendix 4). For the form [ant<sub>1</sub>ant<sub>2</sub>], it is left headed when the non-head is neutralized (5.4) (Figure 5.2) but instantiations are limited, which are *dimwit*, *hearsay* or *hear tell* and their variations in the collection. That only accounts for 11% (Appendix 4) of the constructs with this form. It is not even one third of the right headedness with a non-head modifier in this form, which is 35% (Appendix 4).

Different from the English collection, the head placement in Mandarin antonym construction tends to be left. Mandarin antonym construction only occurs with neutralized headedness. Whether the head placement can be context dependent like 好歹 (*hǎodai*, good-bad, ‘good; bad’) in (5.31). That accounts for 46% in the collection (Appendix 9). Yet it tends to be left headed when the head is fixed as exemplified by 动静 (*dòngjìng*, dynamic-static, ‘movement’) (5.30), 教学 (*jiàoxue*, teach-learn, ‘teaching’) (6.8a), 质量 (*zhìliang*, quality-quantity, ‘quality’), 忘记 (*wàngjì*, forget-remember, ‘forget’) (5.33), and 听说 (*tīngshuō*, hear-say, ‘hear’). That accounts for 10% of the collection (Appendix 9). Such fixed left headedness is found in the antonym constructs with a reversed order as in (6.6). After the swap of ‘son’ and ‘daughter’ or ‘male’ and ‘female’, the meanings of both constructs are narrowed down to the left slot ‘daughter’ or ‘female’. It looks as if the left slot weighs more than the right slot here.

- (6.6) a1. 儿女 (*érnǚ*, son-daughter, ‘children’)  
 a2. 女儿 (*nǚér*, daughter-son, ‘daughter’)
- b1. 子女 (*zǐnǚ*, male-female, ‘children’)  
 b2. 女子 (*nǚzǐ*, female-male, ‘lady’)

The observation of the headedness in the antonym construction has expanded the previous

understanding of the headedness in both languages. In English, the headedness always includes the non-head element as the modifier as in the Right-Hand Head Rule (Williams, 1981). However, the neutralized headedness identified in the antonym construction in this study proves that the non-head element can be semantically neutralized. Also, the head placement can be contextual. Moreover, the identification of the left headedness in English adds to the varieties of the headedness in English though the percentage is not dominantly high.

The neutralized headedness was proposed a property distinguishing Mandarin from English (Shao, 2019). Its identification in the English collection, however, has proved that it is a property shared between English and Mandarin. As observed by Yang (2007a), the head placement can be right or left in Mandarin antonym construction. As having been discussed, there is a tendency to be left headed when the head placement is fixed. However, whether such left headedness is an exclusive property of neutralized headedness needs further exploration. Whether the neutralized headedness is specific to the antonym construction with the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’, or it can be found in other coordination construction joined by *or* is a topic beyond this study.

The neutralized non-head element has been proposed to play the role of euphemism in the antonym construction in Mandarin (Liu, 2010; Li, 2005; Liu, 2005). With the comparison between the inclusion and the removal of the non-head element in *something or nothing* (5.14) and *something and nothing* (5.15), the role of euphemism of the non-head element has been confirmed. After removing the non-head element, the voice of the statement becomes firm, and the sense of uncertainty is gone (Section 5.1.3). Such role of euphemism can also find evidence in the form [ant<sub>1</sub>ant<sub>2</sub>] in English. Take *nitwit*. It refers to the same with the non-head element *wit* removed. Yet with *wit* it could be slightly less unpleasant and more acceptable.

### ***Multi-inheritance links and the lexical-syntactic continuum of antonym construction***

One more characteristic is that there are multi-inheritance links in both English and Mandarin collections, which are a mixture of the lexical and syntactic levels. It is thus proposed that morphological and syntactic observations should be bridged rather than divided.

There is no consistent division in form or meaning between morphological and syntactic levels in either English or Mandarin antonym constructions. For the English collection, one form [ant<sub>1</sub>ant<sub>2</sub>] is lexical or morphological and the other two [ant<sub>1</sub> AND ant<sub>2</sub>] and [ant<sub>1</sub> OR ant<sub>2</sub>] are phrasal or syntactic. They are collected for this study because they can be semantically lexicalized.

The antonym constructs with the phrasal forms can still be used as a phrase. Take *stop and go* and *win or lose* (6.7). In (6.7a1), *stop and go* refers to the traffic jam with a picturesque description of how the road is jammed up; in (6.7a2), it is used on phrasal level that it can be paraphrased as ‘how to stop and how to go’. In (6.7b1), *win or lose* is lexicalized as a noun to refer to the risk of the stakes. In (6.7b2), *win or lose* is a phrase that it can be expanded as ‘not going to win or not going to lose’ without the change in the meaning. Considering such use in practice, the lexicalization of the antonym construction seems synchronic.

- (6.7) a1. Thousands simply turn onto Frank Lloyd Wright Boulevard to avoid the stop-and-go, adding the 43,000 drivers on that stretch every day and jamming up one of the city’s main roadways.  
 a2. Learning how to stop and go and control tempo is his next growing point.
- b1. ... suddenly the stakes move from a win or lose to life or death.  
 b2. We are not going to win or lose because we miss some players.

The same combination of the antonym construction in Mandarin can also be used on phrasal level. Take 教学 (*jiàoxue*, teach-learn, ‘teaching’) (6.8). It is lexicalized as a left headed and refers to the activity of teaching or training in (6.8a); in (6.8b), it is used like a phrase that needs to be understood as ‘teaching and learning’.

- |   |                    |
|---|--------------------|
| (6.8) a. 启发式                                  | 教学                 |
| <i>qǐfāshì</i>                                | <i>jiàoxué</i>     |
| open-develop-mode                             | teach-learn        |
| heuristic                                     | <i>teach-learn</i> |
| ‘heuristic’                                   | teaching’          |
| b. 教学   | 相长                 |
| <i>jiàoxué</i>                                | <i>xiāngzhǎng</i>  |
| teach-learn                                   | mutual-grow        |
| <i>Teach-learn</i> reinforce each other.      |                    |
| ‘Teaching and learning reinforce each other.’ |                    |

Such synchronic perspective of lexicalization could be new but similar observation has been proposed in the observation of the Mandarin antonym construction (Yang, 2007a). According to Yang (2007a), the antonym construction in Mandarin should be like a continuum. Some items are semantically loose and function as a phrase like 爱恨 (*àihèn*, love-hate, ‘hate and love’) (Figure 3.5) and others are highly lexicalized with the meaning of the constituent abstracted and absent like 东

西 (*dōngxī*, east-west, ‘something’) (Figure 3.5). Her continuum of lexicalization from phrasal to lexical is based on different constructs. However, it can occur to the same combination. For instance, 动静 (*dòngjìng*, dynamic-static, ‘movement’) (4.3), and 教学 (*jiàoxue*, teach-learn, ‘teaching’) (6.8), and in English, *stop and go* (6.7) and *win or lose* (6.7). However, such synchronic perspective cannot be captured without bridging the observations on the morphological and synchronic levels.

The semantically lexicalized use of the phrasal combination has been considered as compounding items and analyzed on lexical level (Shao, 2019; Arcodia et al., 2010). Following this, it is the lexical properties in the items that are concerned with the phrasal properties being irregular. In fact, the phrasal properties in the semantically lexicalized items mean more than acting as the irregular properties in the domain of lexical. The neutralized headedness in Mandarin antonym construction has always been an academic concern (Ma, 2018; Liu, 2010; Li, 2005; Liu, 2005) and it has been claimed a result of contextual coercion (Ma, 2018). Which of the antonym elements is the head depends on the topic in the context (Section 3.3). However, what motivates such contextual choice has not been explained. With the identification of the contextual neutralized headedness in the English phrasal form [ant<sub>1</sub> OR ant<sub>2</sub>], the neutralized headedness now is explained and rationalized with the inheritance link to the semantic relation of alternative OR.

The specification of the inheritance links for the sense of inclusiveness and exhaustiveness was accessed in a similar way of including and observing the phrasal properties. The sense of inclusiveness and exhaustiveness inherent in antonym co-occurrence has been noticed in English (Jones et al., 2012; Murphy, 2006) and Mandarin (Zhang, 2018) studies. Zhang (2018) has found that such use (周遍性, *zhōubiànxìng*, all-pervasive-property, ‘pervasiveness’) in Mandarin antonym construction can vary from inclusive ALL to exhaustive ANY. Yet the motivation for the variation is not clarified. With the three varied forms of English antonym construction, it has been found that such sense tends to be the original sense of antonym elements in the compounding form [ant<sub>1</sub>ant<sub>2</sub>], gets extended to be inclusive All in the phrasal form [ant<sub>1</sub> AND ant<sub>2</sub>] and exhaustive ANY in another phrasal form [ant<sub>1</sub> OR ant<sub>2</sub>] (Section 5.3.4). Following this, the equal use in the Mandarin antonym construction is also specified and explained (Section 5.3.4).

The phrasal properties in English have facilitated the observation because those properties have been observed as what they are, rather than being squeezed into lexical observation. However, that does not mean they should be analyzed on a phrasal or syntactic level. The phrasal forms have

conveyed lexical properties that might not be discovered in a observation on the phrasal or syntactic level. Murphy (2006) and Jones et al. (2012) have suggested that the senses of inclusiveness and exhaustiveness are related to antonym elements in their presence on syntactic level. A sense of direction or coverage can be defined by the pair of antonym elements (Section 3.2). That has exposed the inheritance links from the antonym elements to the sense of inclusiveness or exhaustiveness in antonym construction. However, the use of such sense has been found related to adverbialization, which is captured in the observation on lexical level. That may not be discovered if the observation takes the phrasal or syntactic perspective.

Therefore, the mixture of lexical and phrasal properties in the antonym construction should be observed as what they are, instead of being limited to lexical or syntactic observation. Following this, the co-existence of lexical and phrasal properties in the antonym construction are acknowledged and accommodated. That makes the lexicalization of the antonym construction in this study a continuum of different formal or semantic tightness. Moreover, the lexical and phrasal use of the same combination adds the dimension of synchronic to lexicalization. As a result, the antonym construction in this study becomes a lexical-syntactic continuum with the divide between morphological and syntactic being bridged.

This section has discussed the common and different characteristics identified between English and Mandarin antonym constructions. Next section will focus on the properties of the antonym constructions that may be worthy of exploration in future.

### **6.1.2 Future directions for research on antonym construction**

Throughout the observation, it has been found that at least four more aspects of antonym constructions are worth exploration. They are the sequence order of the antonym elements, the register for the antonym constructs, the extended use of the identified semantic patterns, and the Mandarin coordinate antonyms on syntactic level.

For the *sequence order* of the antonym elements in the construction, the motivation for the preferred sequence can be explored. There is a preferred order in both English and Mandarin antonym constructions. That can be evidenced by the lower frequency of the items with a reversed order in English (Appendix 1) and the different meanings with reversed orders in Mandarin (Appendix 8). Which of the two antonym elements comes first has been observed related to the

identity of the potential speaker Me (Landsberg, 1995; Cooper and Ross, 1975). It is those favored or more accessible by the potential speaker Me that will come first (Section 3.2). For instance, good tends to come before bad, front before back and up before down, and earlier comes before later. That seems true for the antonyms constructs in English and Mandarin. For instance, 上下 (*shàngxià*, upward-downward, ‘all (from the senior to the junior)’), and *up and down*, 大小 (*dàxiǎo*, big-small, ‘size’) and *great and small*, 好坏 (*hǎohuài*, good-bad; ‘quality’) and *good bad*. In that sense, the applicability of the egocentric principle of the speaker Me to each language can be examined. Other studies have examined the motivations for the sequence order from semantic, morphological, phonological, and cognitive perspectives, or a mixture of all (Section 3.2; Section 3.3). The result is that none of those factors can explain the sequence order consistently. It is assumed that to prioritize semantic, morphological, phonological, or cognitive factors is the decision of the speaker Me in the intermediate speech context. Yet that will need close observation of the sequence order of a broader language data.

Furthermore, there can be antonym constructs with opposite orders between English and Mandarin (Zhang, 2021; Wang and Sha, 2014; Liao, 2006). For instance, it is *young and old* that is most frequent in English, but it must be the elder first in Mandarin as in 祖孙 (*zǔsūn*, grandparent-grandchild, ‘grandparents and grandchildren’). The opposite order in individual cases has been explained (Section 3.4). For instance, the elder 祖 (*zǔ*, ‘grandparents’) come before the younger 孙 (*sūn*, ‘grandchildren’) in Mandarin was considered motivated by the notion that the elder enjoys a higher status in traditional Chinese culture. That may explain this case but not hold in other cases like 弟兄 (*dìxiong*, younger brother-elder brother, ‘male followers or friends’), where the younger comes first. It is assumed that such different orders signify the different identification of the speaker Me in here and now and suggest different contextual demand or cultural values; and that it is always the left slot that is identified by the speaker Me. That yet requires further exploration of a broader antonym construct collection.

Additionally, the reversibility seems different between the English and the Mandarin collections with the former having more reversible counterparts (Appendix 1; Appendix 6). That follows the assumption of coordinating construction (Cheng and Li, 2018; Li, 2018; Liu, 2015; Li, 2011), and the observation in English and Mandarin antonym constructions (Zhang, 2021; Wang and Sha, 2014; Liao, 2006). Yet the motivation for such differences has not been explained (Section 3.4).

For the *register* of the antonym construction, whether it is limited to non-academic use can be explored. It has been observed that the register of coordinating construction tends to be non-academic (Klegr and Čermák, 2008; Norrick, 1988; Malkiel, 1959). The examples include the antonym constructs collected for this study, which are *sooner or later*, and *upwards and downwards* (Section 3.2). Chen (2010) has also assumed that the register for antonym constructions should be informal and literary. Therefore, whether the antonym constructs are limited to non-academic use can be a topic. One way to verify the proposition would be to collect the antonym constructs that communicate an abstract notion but cannot be replaced by a more formal term. There seems to be one in Mandarin. I have not been able to find any other more formal replacements for the left headed 质量 (*zhiliang*, quality-quantity, ‘quality’). However, more instantiations are necessary to verify or refute the claim. In addition, none of such has been found in English. If the claim of non-academic register only applies to English but not Mandarin, that may lead to some typological findings.

The *extended use* of the antonym construction is not explored in this study. The extended use in this study refers to those meaning extension or abstraction based on the meaning patterns identified and schematized in this study. The focus of the extended use in previous literature is the figurative use, which is based on the coordinating items in English (Section 3.2). Two types of metaphor have been observed (Norrick, 1988). One is object-attribute metaphor and the other species-genus synecdoche. An example for the former is *play cat and mouse*; one for the latter would be *bread and butter*. The interpretation of the former is related to the paired members so that it is named object-attribute metaphor; the combination of the latter activates a genus or species so that it is named species-genus synecdoche. How much would such figurative uses be inherited by the antonym constructs in English can be an exploration. Furthermore, there can be similar use in Mandarin antonym construction. For instance, 鸳鸯 (*yuānyāng*, (Mandarin duck) male-female, ‘lovers’) and 长短 (*chángduǎn*, long-short, ‘gossip’). In the former, a couple of ducks are used to refer to a couple of lovers. In the latter, two ends of the measurement of length are used to refer to gossip. Whether the figurative use can be shared between languages, or more types of the figurative use will be identified requires another cross-linguistic examination.

For the *Mandarin coordinate antonyms on syntactical level*, they are not included in the language data collected for this study. The English antonym constructs collected for this study include the coordinate patterns like *(the) ins and outs (of)* (6.9a) or *sooner or later* (6.9b), which

are collected because they can semantically function as a lexical unit. In (6.9a), *if you don't know the ins and outs of AI* can be roughly paraphrased as 'if you don't know AI thoroughly'; in (6.9b), *sooner or later it will show* can be understood as 'finally it will show'. Meanwhile, the compounding antonym constructs in Mandarin can semantically function as a phrase as clarified with *动静* (*dòngjìng*, dynamic-static, 'movement') (4.3). In (4.3a), it is a phrase meaning 'start or stop'; in (4.3b), it is a compound meaning 'movement'. The English and the Mandarin data collected for this study are balanced and equalized due to their being a mixture of lexical forms with phrasal meanings or phrasal meanings with lexical forms. In Mandarin, however, there are also phrasal coordinate antonyms like *上和下* (*shàng hé xià*, upward-and-downward, 'upward and downward') and *老或少* (*lǎo huò shǎo*, old-or-young, 'old or young'). *和* (*hé*, 'and')/*或* (*huò*, 'or') corresponds to *and/or* in English. Those syntactic coordinate antonyms joined by *和* (*hé*, 'and')/*或* (*huò*, 'or') in Mandarin cannot function as a lexical unit. That is why they are not collected for this study. However, a close observation of their connections with the lexicalized antonym binomials collected for this study may reveal typological properties distinguishing Mandarin from English.

- (6. 9) a. ... even if you don't know the ins and outs of AI, you can use it to boost your digital marketing capabilities.  
 b. Please, do not cut corners because sooner or later it will show and the results will be negative.

Section 6.1 has discussed the common and different characteristics identified in English and Mandarin antonym constructions. Firstly, both English and Mandarin antonym constructions have used the unity and the contrast inherent in antonymy to communicate more than a binary contrast. The use of the unity is related to the semantic patterns 'ANT<sub>1</sub> AND ANT<sub>2</sub>' and 'FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION/ALL/ANY)'. The use of the contrast is related to the headed patterns, including neutralized headedness 'ANT<sub>1</sub>'/'ANT<sub>2</sub>' and non-neutralized headedness 'ANT<sub>2</sub> THAT IS ANT<sub>1</sub>'. Secondly, both English and Mandarin collections have a tendency towards nominalization and adverbialization. Nominalization is related to the semantic tendency to express a superordinate shared by the pair of antonym elements; adverbialization is related to the sense of exhaustiveness or inclusiveness in antonym co-occurrence. Thirdly, neutralized headedness can occur in both collections with a tendency to right-headedness in English whereas left in Mandarin. The neutralized non-head element is proposed to play the role of euphemism. However, whether the left headedness is an

exclusive property of neutralized headedness and whether the neutralized headedness is specific to antonym construction with the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ needs further exploration. Fourthly, the morphological and syntactic levels intersect in the multi-inheritance in both English and Mandarin collections. As a result, lexicalization is a continuum that can be synchronic. With this observation, however, at least four more aspects of the antonym constructions are left open. They are the sequence order, the register, the extended use of the antonym constructions, and the Mandarin coordinate antonyms on syntactic level, which may lead to some typological findings.

## **6.2 Discussion and future directions for Construction Grammar**

Construction Grammar has been applied to the comparison of the English and the Mandarin antonym constructions (e.g. Lu et al., 2021; Lu, 2020). However, the equivalence of the antonym construction used on lexical level between the two languages was claimed absent (Section 3.4). Construction Grammar has been applied to the examination of the Mandarin antonym constructions on lexical level (e.g. Lu et al., 2021; Lu, 2020; Ma, 2018; Zhang, 2015; Bi, 2007). Yet the mismatch between the headed meaning patterns and the coordinating forms and the co-existence of headed and non-headed meaning patterns in one construction have not been consistently explained (Section 3.3). English antonym co-occurrence has been concerned but not that on lexical level (Section 3.2). This study, however, has confirmed the effectiveness of Construction Grammar in providing a unified way to explain the matches and mismatches in English or Mandarin antonym constructions and the matches and mismatches between them. It allows for the correspondence of the antonym constructions between English and Mandarin on lexical level. It describes and explains the co-existence of headed and non-headed meaning patterns and captures both common and different syntactic categories of the antonym constructions in the two languages. Moreover, it maps the multi-inheritance links to both forms and meanings in the two collections. It is thus claimed that such examination of multi-aspect and of multi-connection is facilitated by the perspective of usage-based form-meaning pair of Construction Grammar. Additionally, the dimensions of syntactic categories and lexicalization have been expanded, and the divide between morphology and syntax bridged based on the antonym constructs collected for this study. All those are discussed in this section.

### 6.2.1 The effectiveness of Construction Grammar in observation and comparison

Construction Grammar proves effective in the observation and comparison of the antonym constructions between English and Mandarin. It facilitates the correspondence of the use of antonymy on lexical level between English and Mandarin, which was claimed absent (Lu et al., 2021; Lu, 2020; Shao, 2019). That makes the comparison possible. It explains the co-existence of headed and non-headed patterns in the same construction, which requires at least two different theories in previous studies (e.g. Chen, 2016; Wang, 2014; Qian, 2013; Tang, 2010; Shu and Huang, 2008; Jin, 2007; Zeng, 2007). It for the first time exposes the inheritance links to the forms of the antonym constructions, and those to the meanings of antonym elements in both English and Mandarin (Section 3.2; Section 3.3; Section 3.4). Such effectiveness is related to the in-use observation of the antonym construction as a form-meaning pair. All these are discussed in this section.

#### *The correspondence of the antonym constructions between English and Mandarin*

Construction Grammar rationalizes the equivalence of antonym co-occurrence on lexical level between English and Mandarin and makes this comparison possible. Firstly, it is the in-use perspective of the form-meaning pair that enables the correspondence of the antonym constructions on the lexical end between English and Mandarin. As it has been schematized (Section 5.2; Section 5.3; Figure 5.13), the form of the Mandarin antonym construction for this study is limited to the juxtaposition of a pair of antonyms [ant<sub>1</sub>ant<sub>2</sub>]. That is observed as the form of the coordinate compounding construction in Mandarin (Shao, 2019; Arcodia et al., 2010). In contrast, the English collection has two more forms [ant<sub>1</sub> AND ant<sub>2</sub>] or [ant<sub>1</sub> OR ant<sub>2</sub>] (Section 5.1; Section 5.3; Figure 5.13), which are phrasal. The constructs with those coordinating phrasal forms account for 66% of the English collection (Appendix 4). Due to such formal inequivalence, the antonymy co-occurrence on lexical level was not compared between English and Mandarin (Section 3.4).

The comparison of the antonym co-occurrence on lexical level between English and Mandarin could be rationalized without Construction Grammar. For instance, the phrasal combinations [ant<sub>1</sub> AND ant<sub>2</sub>] and [ant<sub>1</sub> OR ant<sub>2</sub>] could be squeezed into compound construction due to their being semantically lexicalized (e.g. Shao, 2019; Arcodia et al., 2010). However, that may end with neglecting the essential characteristics specific to being a mixture of lexical and phrasal in the English and the Mandarin collections (Section 6.1.1 *Multi-inheritance links and the lexical-*

*syntactic continuum of antonym construction*).

With Construction Grammar, however, the correspondence of the antonym co-occurrence on lexical level between English and Mandarin has been rationalized without being squeezed into either lexical or syntactic observation and analysis. Observing the antonym co-occurrence on lexical level as a form-meaning unit has expanded the dimension of the equivalence in contrastive studies from forms (Section 2.1) to form-meaning pair in use. In addition to rationalizing the equivalence of this comparison, such in-use perspective allows the lexical properties to be observed on lexical level and the phrasal properties to be observed on phrasal level. As a result, the antonym construction has been observed from multi-aspects and the multi-connections within the antonym construction are exposed in English and Mandarin, which has never been before (Section 3.2: Section 3.3; Section 3.4).

#### ***Multi-aspect examination of multi-connections***

Construction Grammar has facilitated a multi-aspect examination of multi-connections in the English and the Mandarin antonym constructions. The multi-aspect can firstly be evidenced by the different aspects of the antonym constructions that have been observed. Aside from schematizing the varied form-meaning patterns in the English and the Mandarin antonym collections (Section 5.1.1; Section 5.2.1), this study has been able to capture the syntactic categories (Section 5.1.2; Section 5.2.2), different types of headedness (Section 5.1.3; Section 5.2.3), and the inheritance links (Section 5.1.4; Section 5.2.4) of the antonym constructions in context. Additionally, the exploration of the sequence order of the antonym elements, the register for the use of the antonym construction, and the extended use is likely to be continued within this same theoretical framework (Section 6.1.2).

The multi-aspect can also be evidenced by including and explaining the mismatches in antonym constructions consistently with the same theoretical framework in English and Mandarin. One mismatch is that the antonym constructions in the two collections can be headed or non-headed (Section 5.1.2; Section 5.2.2; Figure 5.13). The co-existence of such in-consistent meaning patterns in the same construction has often led to the combination of two to four theoretical frameworks in the studies on Mandarin (Section 3.3). Another mismatch is the inconsistency between the coordinating forms and the headed meaning patterns in the antonym construction. That is more obvious in the two English forms [ant<sub>1</sub> AND ant<sub>2</sub>] or [ant<sub>1</sub> OR ant<sub>2</sub>]. Regarding the form,

both are considered inherited from the coordinating construction. However, both can be used with the neutralized headedness (Section 5.1.3; Figure 5.13). Those mismatches become more challenging in Mandarin antonym construction because all of them co-exist in a single form [ant<sub>1</sub>ant<sub>2</sub>] (Section 5.2.1; Section 5.2.3; Section 5.2.4), which has always been a problem in theoretical consistency (Section 3.3). However, those mismatches between forms and meanings or across diverse meaning patterns have been observed and explained consistently with Construction Grammar (Section 5.1; Section 5.2).

Moreover, such multi-aspect observation has captured the multi-connections between different meaning patterns, and clarified the role of the antonym elements, the formal schema and that of the context. One connection between different meaning patterns is the inheritance link of the neutralized headedness to the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’. The neutralized headedness ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’ in the antonym construction has been concerned in Mandarin linguistic studies (Ma, 2018; Liu, 2010; Li, 2005; Liu, 2005) and assumed a result of contextual coercion (Ma, 2018). With the notion of inheritance links, its connection to the alternative meaning pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ has been exposed. Following this, the assumption of contextual coercion (Ma, 2018) has been explained and rationalized.

Another connection is the relatedness of the sense of inclusiveness and exhaustiveness to the antonym elements, to the formal schema and to the contextual use. In the observation of antonym co-occurrence on syntactic level, Murphy (2006) and Jones et al. (2012) have noticed the sense property of inclusiveness and exhaustiveness. That overlaps with the observation of the antonym co-occurrence on lexical level as indicated by 周遍性 (*zhōubiànxìng*, all-pervasive-property, pervasiveness) (Zhang, 2018) (Section 3.3). With the perspectives of multi-inheritance links, such sense has been found a mixture of the properties of antonym co-occurrence, the formal schema they are in, and the context of the construct (Section 5.1.4; Section 5.2.4). Furthermore, that sense has been found related to the syntactic category of being an adverb (Section 5.3.2; Section 6.1.1 *Multi-inheritance links and the lexical-syntactic continuum of antonym construction*).

It is the observation of the form-meaning pair in actual use within the framework of Construction Grammar that allows for the key findings of diverse levels. Such a perspective does not prioritize form or meaning in the observation of the behavior of a construct. Instead, it looks at the behavior of the language data in actual use. The connection between coordinating forms and headed meaning patterns could be a problem (Section 3.3) because it presupposes that coordinating

patterns only lead to coordinating meaning. That is a judgement based on form first. As happens in the antonym construction, natural language does not always follow this presupposition. Considering the co-existence of headed and non-headed meaning patterns to be inconsistent is another result of similar judgement (Section 3.3). It has been presupposed that headed meanings can only occur to those identified headed patterns and non-headed meanings to those non-headed patterns. However, natural language is not always so consistent as the identified linguistic rules of form-meaning consistency. The perspective of observing form-meaning pair in use without prioritizing either form or meaning undoes those presuppositions of consistency and observes and describes the language as it should be.

This section has discussed the effectiveness of Construction Grammar in the observation and comparison of the antonym construction in English and Mandarin, which is credited to its observing language data in use as a form-meaning pair. In the next section, how such perspective has included other linguistic notions, expanded their dimension, and broadened their application to linguistic analysis will be discussed.

### **6.2.2 Construction Grammar and other linguistic notions**

Construction Grammar proves effective in including and expanding rather than excluding other linguistic notions. Throughout the observation and analysis, the dimensions of syntactic category and lexicalization are expanded. Syntactic category is identified with formal properties in English, but in Mandarin it is contextual (Lou and Mei, 2000; Xie, 1998; Li, 1924). In the observation of antonym constructions in this study, however, the syntactic categories in both prove contextual. In that sense, syntactic categories take on a sense of function, which expands its dimension in describing natural languages. Lexicalization is often the description of a diachronic perspective (e.g. Brinton and Traugott, 2005). In this observation, however, the co-existence of the lexical and phrasal meaning patterns in the same construction adds to it a sense of synchronic. Following this, the binary division between morphological and syntactic observation can be bridged. Both are discussed in this section.

#### ***Syntactic category and in-use observation***

The in-use perspective of Construction Grammar has added a sense of function to the notion

of syntactic category. English antonym construction can have formal properties related to syntactic category. For instance, *up/down* are prepositions, but *ups/downs* are nouns with the modification from the nominal inflection. However, *man and boy* has the form of a noun but is used as an adverb in (6.10). The identification of being an adverb here (6.10) is based on the function and placement of *man and boy* in the sentential context. That is also the way to identify the syntactic category of Mandarin antonym construction (Section 5.2.2). Moreover, the identification of the syntactic category in Mandarin has been observed contextual (Lou and Mei, 2000; Xie, 1998; Li, 1924). In that sense, it might be concluded that syntactic category is not just about form. It can be related to the role of a linguistic unit in context. Such dimension of being functional of syntactic category is facilitated and rationalized by the in-use observation of antonym construction within the framework of Construction Grammar.

(6.10) *On a personal level, this writer has known frustration man and boy.*

#### ***Lexicalization and lexical-syntactic continuum***

The in-use perspective of Construction Grammar has added a sense of synchronic to the notion of lexicalization. In the observation of the antonym constructions in actual use, the parameter of lexicalization that is often diachronic (e.g. Brinton and Traugott, 2005) seems to be synchronic. The lexicalization of coordinating construction in English (e.g. Sauer and Schwan, 2017b; Arcodia et al., 2010; Malkiel, 1959) and the lexicalization of the antonym construction in Mandarin (e.g. Zhang, 2018; Wei, 2017; Feng, 2016; Li, 2015; Xiao, 2012; Liu and Li, 2010; Tan, 1989) have been noticed and examined. However, the focus they share is the result of being lexicalized, taking the diachronic perspective of lexicalization. Instead, Yang (2007a) has proposed that the antonym construction is an open and alive continuum that some new and temporary combinations are semantically more phrasal while others are more lexical (Figure 3.5). That seems to add a synchronic perspective to lexicalization. Based on this study, the co-existence of phrasal and lexical in the same combination has been identified as exemplified (6.7; 6.8) and discussed in the previous section (Section 6.1.1). In that sense, lexicalization may have one more dimension of being synchronic apart from being diachronic from the perspective of Construction Grammar.

Following this, the division between morphological level and syntactic level seems to be bridged based on the antonym constructions in this study. As argued in Section 2.2.3, the division

between morphological and syntactic should be bridged considering the aim of capturing natural languages in use in Construction Grammar. All constructions are assumed ‘to be part of a lexicon-syntax continuum’ (Hoffmann and Trousdale: 2013: 1) including the irregular one from the form-first perspective.

Moreover, more linguistic facts can be uncovered if the linguistic units are allowed to be what they are. That can be evidenced by the form-meaning complex in the antonym constructions in this study. There is no consistent line between morphological and syntactic in the antonym construction in this study given that the syntactic form can be used on morphological level (Section 5.1.1; Section 6.1.1) and the morphological form can be used on phrasal level (Section 5.2.1; Section 6.1.1). However, it is the phrasal forms in the English collection that have facilitated the specification of the inheritance links between neutralized headedness ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’ and the alternative semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ (Section 6.1.1); it is the lexical observation of the phrasal forms in context that has related the sense of inclusiveness and exhaustiveness to adverbialization (Section 6.1.1). For such a mixture of lexical and phrasal properties to be observed consistently without being squeezed into a lexical or phrasal observation, the line between morphological and syntactic may need to be removed. Following this, lexicalization is synchronic. The antonym construction in this study becomes the lexical end of the lexical-syntactic continuum of antonymy co-occurrence.

Section 6.2 has discussed the effectiveness of Construction Grammar in the observation and comparison of the antonym constructions in English and in Mandarin. The perspective of examining language as a form-meaning pair in use allows for a linguistic equivalence including form, meaning and use between languages; and enables an observation of multi-aspects and multi-connections. The in-use observation adds the dimension of function to syntactic category and the parameter of synchronic to lexicalization. That observation may need more verification in future discussion, but it has captured the intersection of the phrasal and lexical domains in the antonym construction without prioritizing morphological or syntactic. As a result, the antonym construction exploration in this study makes the lexical end of the lexical-syntactic continuum of antonym co-occurrence. However, the whole lexical-syntactic continuum of antonymy use will need far more relevant studies.

### **6.3 Discussion and future directions for contrastive linguistics and typological parameters**

As suggested in Section 2.1.1, this study has taken a bidirectional perspective to examine and compare the antonym co-occurrence on lexical level between English and Mandarin within the framework of Construction Grammar. The bidirectional perspective proves effective in revealing the common use of antonymy on lexical level between English and Mandarin without covering their language-specific properties. That verifies the observation that ‘crosslinguistic variation is constrained’ (Croft et al., 2010: 202) (Section 2.2.4). Such effectiveness has been facilitated by the in-use observation of the antonym construction as a form-meaning pair following Construction Grammar. Therefore, it is proposed that construction could be an effective parameter in contrastive observation across languages. These points are discussed in this section.

#### ***Antonym co-occurrence on lexical level with language-specific properties***

The comparison of the antonym constructions between English and Mandarin has conveyed essential language-specific properties. Firstly, it has certified the proposition that English tends to be hypotaxis and Mandarin parataxis by Nida (1982) (Section 2.1.2). Without counting the extended use, the ratio of form to meaning in English is 3:6, whereas that in Mandarin is 1:5 (Figure 5.13). With the lower form-to-meaning ratio, Mandarin antonym constructions are more context-dependent in its interpretation. That can be further supported by the head placement. The head placement of the neutralized headedness can be context dependent. Yet Mandarin proves more flexible than English. Such contextual headedness is limited to one of the three English forms [ant<sub>1</sub> OR ant<sub>2</sub>]. The identified ones account for 15% of that form but 2% of all the English collection (Appendix 4). In Mandarin, however, that can happen to those constructs that can be used with the alternative semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ and have no fixed head. That accounts for 46% in the Mandarin collection (Appendix 9).

Secondly, it has been confirmed that the head placement in the English collection tends to be right whereas in the Mandarin collection it tends to be left (Section 6.1.1). The Right-Hand Head with the non-head modifier has been identified in the English collection but not Mandarin. The identification of the neutralized headedness in English and the left headedness has added to the headedness varieties in English but does not amount to overthrow its general tendency to be right

headed (Section 2.1.2; Section 5.1.3; Section 5.3.3; Section 6.1.1). In Mandarin, the neutralized headedness is contextual in the head placement but when there is a fixed head, it tends to be the left (Section 5.2.3; Section 5.3.3; Section 6.1.1).

The third difference is related to the syntactic category. The absence of the prepositions but greater number of verbs in the Mandarin collection (Figure 5.10) confirms that Mandarin has few prepositions and that the meaning of the prepositions in English is often communicated by verbs or omitted in Mandarin (Section 2.1.2; Section 6.1.1).

One more difference is the property of a multi-word adjective before a noun, the joint relation of which is often suggested by hyphenation (Section 2.1.2). That occurs in English but not in Mandarin (Section 5.3.2; Section 6.1.1). It has explained the higher ratio of the adjectives in the English collection (Figure 5.10) that are more than double of Mandarin (Section 5.3.2; Section 6.1.1).

On top of the differences, the comparison has conveyed that English and Mandarin share the use of binary opposites to communicate the meanings more than a binary contrast.

Firstly, the decoding of the binary opposites is shared between English and Mandarin. They both see the contrast inherent in the pair of binary opposites (Section 5.3.1; Section 6.1.1). They both understand the pair of binary opposites as two prototypes, two ends, two extremes or two alternatives. Meanwhile, they also share in seeing the unity, the commonality, or the common scale inherent in the binary opposites (Section 5.3.1; Section 6.1.1). The oppositeness between the pair of antonyms must be based on the common ground they share. As a result, they share in seeing the possibility of using the complex of contrast and unity in antonyms to define a group, to describe a tangle, to communicate a concept or to set a condition (Section 5.3.1; Section 6.1.1).

Secondly, the encoding of the understanding of the binary opposites is shared between English and Mandarin. They both have encoded the unity or commonality inherent in the antonym pairs with the coordinate semantic relation ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’ to suggest a concept, a domain, a group, or a tangle (Section 5.3.1; Section 6.1.1). They both have encoded the contrast between the pair of antonyms into the alternative semantic relation ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ to suggest alternatives or an extreme condition. They both have encoded the contrast into headedness to reduce the unpleasantness with the role of euphemism as in the neutralized headedness ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’ (Section 5.3.3; Section 5.3.4; Section 6.1.1). Also, they both have encoded the complex of two opposite ends on a common scale to show direction, inclusiveness, or exhaustiveness as in ‘FROM

ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION/ALL/ANY)' (Section 6.1.1). All those have led to the overlap of the syntactic categories, the headedness, and the inheritance links between English and Mandarin antonym constructions (Section 5.3; Section 6.1.1).

It can be concluded now that English and Mandarin share the decoding and encoding of antonym co-occurrence on lexical level with their own language-specific characteristics. In addition to the diverse ways to organize the specific linguistic signs like form-meaning correlation and semantic center placement, English and Mandarin share in their understanding of the binary opposites and the use of such understanding on lexical level to communicate meanings more than a binary contrast. That has confirmed that 'crosslinguistic variation is constrained' (Croft et al., 2010: 202). However, how much this would be shared across languages would need many more cross-linguistic examinations of the antonym co-occurrence on lexical level.

#### ***Form-meaning pair in use as a typological parameter***

The process of unpacking the common use of antonym co-occurrence on lexical level between English and Mandarin has proved effective in the bidirectional comparison without prioritizing either language. That is credited to the theoretical framework of Construction Grammar. Therefore, it is proposed that construction could be a parameter for an effective observation and comparison of languages.

Construction Grammar has facilitated the bidirectional comparison of the antonym constructions without prioritizing either English or Mandarin (Chapter 5; Section 6.1). It has rationalized the equivalence of the antonym co-occurrence on lexical level between English and Mandarin (Section 6.2.1), making this comparison possible and revealing (Section 6.1). In the examination, it has included rather than excluded the linguistic notions of syntactic category and lexicalization, expanding their dimension and thus their application to the analysis (Section 6.2.2).

Most of all, the divide between morphological and syntactic has been bridged in the observation and analysis of this study with the notion of construction (Section 6.1.1; Section 6.2.2). As proposed in Section 2.2.4, either the morphological or the syntactic properties in a linguistic observation should be allowed a proper perspective without being squeezed into either. The possibility of this proposition has been verified in the consistent examination of the mixture of the lexical and phrasal properties in the antonym construction in this study (Section 6.1.1; Section 6.2.2). Such consistent analysis is facilitated by examining the antonym construction as a form-

meaning pair in use (Section 5.1.1; Section 5.2.1; Section 6.1.1; Section 6.2.2).

All the effectiveness of the observation and comparison, however, is credited to the perspective of observing the form-meaning pair of the antonym construction in use. That could not have happened if it is the form-first parameter that was taken (Section 2.1.2; Section 3.4). Therefore, construction is proposed to be a parameter in contrastive studies across languages.

To examine and compare a linguistic unit as a form-meaning pair in use does not prioritize a language, a linguistic notion, or an aspect of the linguistic facts. As noted by Leino (2010) in comparing the argument structure constructions in English and Finnish, the correspondence between languages within Construction Grammar is ‘not in any single respect’ (132) (Section 2.2.4). It needs to take into consideration the form and the meaning of the linguistic unit, including the contextual meaning.

Such a parameter allows for a case-specific decision on balancing how general or specific the form-meaning equivalence needs to be between or across languages. That explains why the construction correspondence for this study differs from that for the argument structure construction (Section 2.2.4). For the argument structure construction, the correspondence is described as encoding a scene or situation that is common to human experience. That has been expressed in the Isomorphic Mapping Hypothesis (Goldberg, 2006; Lidz et al., 2003) and Scene Encoding Hypothesis (Goldberg, 1995) (Section 2.2.4). The argument structure constructions are ‘completely schematic templates’ (Hoffmann, 2022) to be filled with more substantive constructions. Also, it is the construction of a sentence.

In contrast, the antonym construction for this study is a mixture of lexical and phrasal properties. The correspondence lies in encoding the understanding of a pair of binary opposites on lexical level. It means that English and Mandarin share a binary-opposite way to observe the world and organize such observation into words as antonym pairs. Also, both share the interpretation of such binary contrast (Section 6.1.1) and use such interpretation on lexical level to communicate meanings more than the binary opposites (Section 6.1.1). Therefore, the antonym construction for this study is partly schematic with the templates limited to the substantive elements of antonyms as [ant<sub>1</sub>Xant<sub>2</sub>]. It makes the lexical end of the lexical-syntactic continuum of antonym co-occurrence.

Section 6.3 has discussed the implication of this study for contrastive linguistics and typological parameters. Firstly, even two languages as distant as English and Mandarin differ with

a limit. Typological differences have been inherited in the antonym constructions in both languages. English tends to be hypotaxis and Mandarin parataxis as evidenced by more forms in English. Although both can be left or right headed, English tends to be right headed and Mandarin tends to be left. Compared with English, Mandarin has less prepositions, the role of which are carried out by verbs. All those differences aside, however, English and Mandarin share the understanding of antonymy. Both languages have used the unity and the contrast inherent in antonym pairs on lexical level to communicate meanings more than a binary contrast. Yet how much this would be shared across languages needs far more contrastive studies across languages. Secondly, construction could be an effective typological parameter in future cross-linguistic examinations. It is the in-use observation of the antonym construction as a form-meaning pair without prioritizing form or meaning that has facilitated this bidirectional comparison and made the findings possible. It is the same in-use observation of the antonym construction that has added the synchronic dimension to lexicalization and made it accessible to bridge the divide between morphological and syntactic. However, that proposal needs further confirmation in future cross-linguistic examination.

## CONCLUSION

Building on Chapter 5, this chapter discussed the key findings in examining and comparing the antonym constructions in English and Mandarin, followed by suggestions for future directions. Section 6.1 discussed the common and different properties identified between the English and the Mandarin collections. English and Mandarin share in the understanding and the use of antonymy on lexical level with their language-specific properties. Section 6.2 discussed the effectiveness of Construction Grammar in observing, analyzing, and comparing English and Mandarin antonym construction. Construction Grammar proves effective in unpacking and explaining the linguistic facts in the antonym constructions with bridging the division between morphological and syntactic levels. Section 6.3 concluded that the comparison of antonym constructions between English and Mandarin has verified that languages differ with a limit, and that construction could be an effective parameter in future contrastive studies.

## **Chapter 7 Conclusion**

With the aim of examining and comparing the antonym co-occurrence on lexical level in English and Mandarin, this study collected and curated the antonym constructs from both languages, and observed and compared the two collections from multi-aspects within the framework of Construction Grammar. This chapter summarizes the key findings of the study and evaluates the contribution from the study. The unresolved issues of the study are assessed subsequently with future directions suggested.

### **7.1 Findings and implications**

This study identified and collected the items of antonym co-occurrence on lexical level from in-use English and Mandarin to examine and compare within the framework of Construction Grammar. The identified items were curated for antonymy consistency and the status of being lexicalized. After the curation, there were 105 antonym constructs in English and 161 for Mandarin. The two collections were examined and compared from the perspectives of form-meaning schema, headedness, syntactic categories, and inheritance links. It was found that the antonym constructions in both languages make use of the unity and contrast inherent in antonymy to communicate the meanings more than a binary contrast; can be nominalized or adverbialized in use; have the property of neutralized headedness; and have multi-inheritance links with forms and meanings. In addition to the common characteristics, language-specific properties were also conveyed.

This study has demonstrated the universality of antonymy between English and Mandarin. Firstly, the understanding of oppositeness is shared and accessible for its justification across languages. Antonym pairs can be specific to a language, but the common understanding of oppositeness has made it possible to justify it on a language-specific basis. Such justification, however, is facilitated by the contextual minimal contrast between a pair of antonyms defined in usage-based RC-LC (Murphy, 2003).

Secondly, the observation and use of antonym co-occurrence on lexical level is shared between English and Mandarin. Although the phrasal forms have distinguished English antonym constructs from those in Mandarin, the overlap of the meaning patterns, inheritance links and syntactic categories between the two languages has certified that the understanding and use are

shared between the two languages. The unity and contrast inherent in the antonym co-occurrence are captured by both languages and encoded on lexical level to express a unit, a complex, or a condition. Further research incorporating the same design and more languages would be of value in verifying the universal understanding and use of antonymy on lexical level.

In addition to the common properties, this study has further confirmed the language-specific properties of English and Mandarin. The adjective antonym constructs in English proves high, which is a result of its property of the multi-word adjective before a noun. This property has not been noticed before in the morphological comparison between English and Mandarin. The absence of prepositions in the Mandarin collection and the slightly higher ratio of verb antonym constructs has further verified the difference between English and Mandarin in syntactic categories. English uses more prepositions than Mandarin. The meanings communicated with prepositions in English tend to be communicated with verbs or omitted in Mandarin. More forms identified in English antonym constructions have also confirmed that English is hypotaxis and Mandarin parataxis.

This study has also confirmed that there is no consistent division in terms of forms or meaning patterns in both English and Mandarin antonym constructions. The phrasal forms in English can be used on lexical level; the compounding form in Mandarin can be used as a phrase. The meaning pattern of neutralized headedness has been identified in the coordinative forms in English; the same compounding form in Mandarin can be used as coordinative or headed. That partly explains why the previous studies on Mandarin antonym construction had problems in theoretical consistency.

The systematic analysis and comparison of those inconsistencies has certified the effectiveness of Construction Grammar. To examine form-meaning connection in use allows for a case-specific examination without prioritizing a certain aspect of linguistic facts. It also reduces the possible bias in prioritizing an identified linguistic rule like form-first and proves more open to natural languages. Such usage-based perspective has rationalized the English and Mandarin correspondence in the antonym constructions, the functional aspect of syntactic category in contextual observation, and expanded the dimension of lexicalization to synchronic and bridged the divide between morphological and syntactic.

It can be concluded now that this is an effective bidirectional comparison. This study has originally schematized and compared the antonym co-occurrence on lexical level between English and Mandarin from the perspective of Construction Grammar consistently without prioritizing either language. This study has originally confirmed that both English and Mandarin have captured

the unity and contrast inherent in antonymy and used them on lexical level to communicate meanings more than a binary contrast. That finding, however, does not conceal the typological differences between English and Mandarin that English is hypotaxis and Mandarin parataxis. This study has proved the effectiveness of Construction Grammar in the bidirectional observation of the co-existence of headed and non-headed uses, and the co-existence of lexical and phrasal properties. Following this the divide between morphological and syntactic get bridged in this study. Therefore, construction is proposed to be a typological parameter in future contrastive studies. Additionally, this bidirectional comparison has bridged two linguistic notions between English and Mandarin. They are headedness and 偏义 (*piānyì*, lean-meaning, ‘semantically asymmetry’), and the sense of inclusiveness and exhaustiveness and 周遍性 (*zhōubiànxìng*, all-pervasive-property, pervasiveness). However, this is not an exhaustive examination. The unresolved issues are summarized in the following section followed by the possible aspects for future exploration.

## 7.2 Limitations and future directions

As has been identified in previous discussion, several issues in this study remain unsolved. They will be summarized below, followed by the possible directions for future studies.

Mainly three issues remain unresolved in this study. Firstly, the right-hand headedness with a non-head modifier ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’ was coerced in the Mandarin collection but not English. Broader data collection may be necessary to overthrow it or to further verify and explain why it is coerced. Secondly, the alternative meaning pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ is linked to the neutralized headedness ‘ANT<sub>1</sub>’/‘ANT<sub>2</sub>’. The alternative relation allows one of the antonym elements to be chosen as the one meaningful in the context. That seems to add the property of headedness to the alternative pattern. However, is that a result of being slotted by the antonym elements, or it can also occur to other uses of the alternative meaning pattern is unclear. To answer this question, the uses of the alternative meaning pattern with other substantive elements rather than antonyms needs to be examined.

Thirdly, coercion in Construction Grammar seems to be related to form-specific priorities. The English form [ant<sub>1</sub> AND ant<sub>2</sub>] seems to prioritize the right head over the left in neutralized headedness. The English form [ant<sub>1</sub> OR ant<sub>2</sub>] seems to prioritize the alternative-relevant meaning patterns over the coordinative ‘ANT<sub>1</sub> AND ANT<sub>2</sub>’. The English form [ant<sub>1</sub>ant<sub>2</sub>] seems to prioritize

the property of multi-word adjective before a noun over being a preposition. In the Mandarin antonym construction, it seems to prioritize the neutralized headedness over the right-hand headedness with a non-head modifier. Those form-related priorities could be overthrown or further confirmed by broader collection of antonym constructs. However, all the priorities seem to be form-related, either the different forms in a single language or across languages. If they were verified, then coercion could be a typological parameter where a list of don'ts is related to the construct forms in discussion.

Additionally, at least four more aspects that can be observed and compared based on the data collection in this study, including the sequence order of the antonym elements, the register, the extended use of the antonym constructions in the English and the Mandarin collections, and the coordinate antonyms on phrasal level in Mandarin.

Both English and Mandarin antonym elements have a preference in the order of the antonym elements (Appendix 1; Appendix 6). Two aspects can be looked at in this regard. One is the motivation for which of the two antonym elements comes first. As clarified in Section 6.1, it has been assumed that the one that comes first tends to be what is chosen and identified with by the potential speaker Me. A comparison of such identification could lead to cultural similarities or differences. The other is how much is the sequence order related to the meaning of the combination. It seems that the reversed sequence order is far less in Mandarin than in English. Moreover, a reversed one can have a different meaning in Mandarin (Section 6.1).

The register for the coordination construction in English has been concerned (Section 3.1). It has been assumed that the combinations as collected for this study tends to be non-academic in English. A broader data collection is necessary to argue for or against this assumption. Yet this assumption may not apply to Mandarin. The antonym construct 质量 (*zhiliang*, quality-quantity, 'quality') cannot be replaced by any more formal items. The meaning, however, should be needed in academic context. If that assumption applies to English but not Mandarin, it may expose certain typological differences between English and Mandarin.

The extended use in this study has been captured (Section 5.1.1; Section 5.2.1) but not observed in depth. The extended meaning here refers to the figurative or any other extended uses based on the semantic patterns schematized in this study. As metaphor could be related to human cognition, its observation and comparison may expose certain common or different ways of cognition in the two languages.

Furthermore, the antonym constructs collected for this study do not include the Mandarin coordinate antonyms on syntactical level because they cannot function as a lexical unit as those in English (Section 6.1.2). However, an observation of the relation of those phrasal coordinate antonyms in Mandarin to the lexical antonym binomials collected for this study may reveal certain typological properties distinguishing Mandarin from English.

With those aspects observed and clarified, the understanding of the antonymy use on lexical level should be expanded and it will be one step ahead toward the lexical-syntactic continuum of antonym co-occurrence.

To conclude, this study could be the first systematic constructional comparison of the antonym co-occurrence on lexical level between English and Mandarin. It is a joint analysis with the same analytical framework of Construction Grammar for two individual collections of the antonym constructs in English and Mandarin. It has conveyed how much the decoding and encoding of antonymy on lexical level overlap in the two languages. Further research including other languages will be of value in identifying the universality of antonym co-occurrence on lexical level. The identification of the common properties between English and Mandarin antonym constructions, however, does not cover the language-specific properties. All this is facilitated by the in-use observation of the antonym constructs as form-meaning pairs within Construction Grammar. Therefore, it is proposed that Construction Grammar can be an effective framework for further unpacking typological properties and language universals.

## Appendices

### Appendix 1: Candidates for English antonym constructs

Notes:

1. The reversed order of the candidate follows ‘//’ when it can be retrieved in the corpus. So is the in-use frequency.
2. The form of the candidate construct follows the one with the highest frequency when there are varieties of spaced, non-spaced, and dashed.

Items	Candidates for English antonym constructs	In-use frequency
1	activo-passive	0
2	Adam and Eve//Eve and Adam	5199//54
3	all and singular	44
4	all and some	0
5	all or none//none or all	518//39
6	all or nothing//nothing or all	11723//2
7	apples and oranges//oranges and apples	2468//119
8	back and forth//forth and back	146202//268
9	back and fore//fore and back	51//15
10	back and forward//forward and back	1225//1140
11	before and after//after and before	71190//115
	before after//after before	1358//337
12	bittersweet//sweetbitter	42422//291
13	black and white	132736//8831
	black-white//white-black	1554//357
14	boom and bust//bust and boom	6013//72
	boom-or-bust	2231
	boom-bust	1746
15	buy and sell//sell and buy	22569//955
	buy-sell//sell-buy	941//84
	bought and sold//sold and bought	16169//448
16	cat and dog//dog and cat	1503//2698
17	cat and mouse//mouse and cat	11100//24
18	cause and effect//effect and cause	10296//126
19	chalk and cheese//cheese and chalk	2089//23
20	chicken-and-egg//egg-and-chicken	1204/4
21	come and go//go and come	28832//537
	coming or going//going or coming	876//76
22	cost-benefit//benefit-cost	133448//1009
23	cut-and-cover//cover and cut	377//13
24	day and night//night and day	50639//10570
	day or night//night or day	8214//599
25	dead and alive//alive and dead	580//470

	dead alive//alive dead	226//11
26	dimwit	769
	dim-witted	2679
	dim-wittedness	63
27	do-or-die//die or do	17614//93
28	dos and don'ts	167
29	double or nothing	1478
30	double or quits	59
31	each and all	469
32	end or mend	0
33	facts and figures//figures and facts	26001//136
34	fast and loose//loose and fast	4301//78
35	feast or famine//famine or feast	1032//17
	feast and famine//famine and feast	273//17
36	fingers and toes//toes and fingers	2738//260
37	flora and fauna//fauna and flora	17585//4486
38	fore and aft//aft and fore	923//3
39	frenemy	2309
40	front back//back front	172//109
41	front-rear//rear front	178//15
42	give and take//take and give	10582//318
	give or take//take or give	7012//42
43	good bad//bad good	875//91
44	great and small//small and great	2883//156
45	grey-white//white-grey	207//149
46	happy sad//sad happy	812//48
47	hand and foot//foot and hand	1774//237
	hands and feet//feet and hands	10751//1208
48	hands and knees//knees and hands	4531//100
49	hate-like//like-hate	227//3
50	head or tail//tail or head	544//16
	heads or tails//tails or heads	992//1
51	hear tell	91
52	hearsay	14377
53	heaven and earth//earth and heaven	2849//794
54	hen and chickens//chickens and hen	62//1
55	hen and egg//egg and hen	6//5
56	here and there//there and here	58527//340
57	here and now//now and here	17924//259
	here-and-nowness	2
58	hide-and-coop	0
59	hide and seek//seek and hide	8221//27
60	high and low//low and high	16095
	highs and lows//lows and highs	25177//466
	in high and low	
	high-low //low-high	2890//171

61	hit or miss//miss or hit	5553//63
	hit and miss//miss and hit	7330//67
	hitty-missy	0
62	hither and thither//thither and hither	528//3
63	hot and cold//cold and hot	14163//867
	hot-cold//cold-hot	151//13
64	humblebrag	553
65	icy-hot	177
66	in and out//out and in	156717//1905
	ins and outs/outs and ins	15383//11
	the ins and outs (of sth)	
	in-out//out-in	987//26
67	inside-outside//outside-inside	794//59
68	kill or cure//cure or kill	73//3
69	left and right//right and left	32028//7604
	left-right//right-left	3777//1003
70	length and breadth	11674
71	life and work//work and life	9838//4402
	life and works	1749
72	life or death//death or life	12688//738
	life and death//death and life	37565//1604
73	ladies and gentlemen//gentlemen and ladies	18351//205
74	lords and ladies	821//10
75	lost and found	3696
76	love-hate//hate love	6180/173
	love hating	44
77	love-hatred	5
78	make or break//break or make	27412//119
79	make or mar//mar or make	1439//23
80	male-female//female-male	2572//200
81	man and boy//boy and man	434/132
82	man and wife//wife and man	1605//3
83	man and woman//woman and man	20734//1280
	man-woman//woman-man	526//13
84	man or beast//beast or man	159//9
	man-beast//beast-man	121//103
85	masculine-feminine//feminine-masculine	77//9
86	mend or end	4
87	more and less//less and more	624//158
	more or less	107838
88	needle and thread	836/14
89	new-old//old-new	1602//173
90	nitwit	522
91	nothing and nobody//nobody and nothing	331//121
92	north and south//south and north	52188//5047
	north-south//south-north	23394//579

93	noughts and crosses	335
94	now and then	45051
	now then	4029
95	on and off//off and on	119885//11128
	on or off	16050
	on-off//off-on	5955//93
96	one and all	7267
97	one and another	467
	one another //one-another	258147//386
98	one and other//other and one	628//444
	one or other	2472//40
99	one-many	7
100	one or two	133944
	one-two	18118
101	open and shut	3030//59
102	open-and-shet	0
103	over or under	1061
	over and under	871
	over under	1584
104	pass-fail//fail-pass	422//1
105	pen and ink	1892
106	plants and animals//animals and plants	11353//5088
107	plus-minus//minus plus	4297//8
108	profit and loss//loss and profit	6342//60
	profit or loss//loss or profit	3628//75
109	public-private//private-public	43586//3262
110	push and pull//pull and push	5767//373
	push-pull//pull-push	1767//28
111	rank and file	15718
	in rank and file	28
	rank-and-filer	10
112	rain or shine//shine or rain	18577//6
113	rich and poor//poor and rich	15498//904
114	right or wrong//wrong or right	19086//1089
	rightly or wrongly//wrongly or rightly	5952//94
	right-wrong//wrong-right	29//6
115	rise and fall//fall and rise	23856//1221
	rise-fall//fall rise	17//8
	rising-falling//falling-rising	8//4
116	root and branch//branch and root	3197//16
117	rural-urban//urban-rural	4129//3016
118	sale or return	85
119	short and long//long and short	8728//6959
	short-long//long-short	6941//1050
120	something or nothing//nothing or something	110//49
	something and nothing //nothing and something	128//17

121	song and dance//dance and song	12273//540
122	sooner or later//later or sooner	29266//35
123	stop-start//start-stop	7739//2244
	stop-and-start//start and stop	611//272
	stops and starts//starts and stops	1479//1341
124	stop-go//go-stop	974//20
	stop-and-go	2284//2
125	strengths and weaknesses//weaknesses and strengths	22729//877
126	sweet and sour//sour and sweet	4750//167
	sweet-sour//sour-sweet	489//121
127	take or leave//leave or take	556//72
128	there and then//then and there	12166//6972
	there then	4154
129	thick and thin//thin and thick	8404//203
130	this and that//that and this	14523//1020
	this or that//that or this	12499//86
131	to and fro//fro and to	9071//5
	toing and froing	590
132	top and bottom//bottom and top	14757//660
	tops and bottoms	1008
133	top and tail//tail and top	227//3
	topping and tailing/top and tailing	34/15
	top or tail//tail or top	2//1
	top-tail	2
134	top and bott	0
135	tops and drops	0
136	tops and lops	0
137	Tragicomedy	1516
	Tragicomic	1688
138	trick or treat	4852
	trick-or-treater	251
	trick-or-treating	8447
139	true-false//false-true	72//4
140	up and down//down and up	162146//580
	ups and downs//downs and ups	66918//412
141	upward and downward//downward and upward	495//48
142	upwards and downwards	194
143	wet and dry//dry and wet	3710//1897
144	whole and some	26
145	whole or none	0
146	wife and mother//mother and wife	8652//2827
	wife-mother//mother-wife	12//10
147	win or lose//lose or win	13918//298
	win-lose (situation)//lose-win (situation)	584//40
148	yes-no//no-yes	381//6
	yes and no//no and yes	7520//180

	yes or no//no or yes	11465//100
149	yea and nay	0
	yea-nay	0
150	young-old//old-young	87//24
	young and old//old and young	27231//3528

## Appendix 2: English pairs of antonymy elements retained after antonymy curation

Notes: the oppositeness of each pair of antonyms was identified based on the definition by Löbner (2013), which are quoted with examples as below:

1. Contrary refers to the ‘opposite extremes on a scale’ (214) like *big/small*, *war/peace*, and *love/hate*; or the ‘opposite directions on an axis’ (214) like *above/below*, *before/after*, and *lock/unlock*, which are also considered directional opposites.
2. Complementary refers to ‘either-or alternatives within a given domain’ (214) like *even/odd* or *girl/boy*.
3. Converse refers to ‘reversed roles (relations only)’ (214) like *buy/sell*, *wife/husband*, and *employee/employer*.

No.	Pairs of antonym elements	Twoness	Oppositeness		
		A unit of two	Converse	Complementary	Contrary
1	Adam/Eve	first human couple in Bible: man vs woman		√	
2	all/none	occurrence: fully occurring vs not at all			√
3	all/nothing	occurrence: fully occurring vs not at all			√
4	back/forth (fore/forward)	horizontal direction: back vs forward			√
5	back/front	horizontal direction: back vs forward			√
6	before/after	time: earlier vs later			√
7	black/white	darkness: most vs least			√
8	boom/bust	business/economy/development: good vs bad			√
9	buy/sell	business: money out goods in vs money in goods out	√		
10	cat/mouse	catching game: catcher vs catchee	√		
11	cause/effect	happenings: start vs end	√		
12	chalk/cheese	handy white chunk for potential English natives: non-edible vs edible		√	
13	come/go	move: to vs from			√
14	cost/benefit	money: out vs in		√	
15	day/night	twenty-four hours of a day: light vs dark			√
16	dead/alive	life: with life vs without life		√	
17	dim/wit	intelligence: less vs more			√
18	dos/don'ts	actions: yes vs no		√	
19	fall/rise	vertical movement: downward vs upward			√
20	fast/loose	fixedness: more vs less			√
21	feast/famine	food: too much vs not enough			√
22	fingers/toes	tips: of hands vs of feet		√	

23	first/last	sequence: before all the rest vs after all the rest			√
24	flora/fauna	creatures: plants vs animals		√	
25	foot/hand	body limbs: lower vs higher		√	
26	fore/aft	time: earlier vs later			√
27	friend/enemy	relation: good vs bad			√
28	give/take	hand activity: in vs out		√	
29	good/bad	quality: high vs low			√
30	great/small	Strength: strong vs weak			√
31	grey/white	darkness: darker vs lighter			√
32	hate/like	emotion: against vs for			√
33	heads/tails	two sides of a coin: one vs the other		√	
34	hear/say	activity of talking: told vs telling	√		
35	hear/tell	activity of talking: told vs telling	√		
36	heaven/earth	world: upward sky vs downward ground			√
37	here/now	present occasion: place vs time		√	
38	here/there	place: near/far			√
39	hide/seek	reversed roles in the game: cover vs uncover	√		
40	high/low	height: more vs less			√
41	hit/miss	target: on vs off		√	
42	hither/thither	move toward: here vs there			√
43	hot/cold	temperature: high vs low			√
44	humble/brag	self-identity: low vs high			√
45	icy/hot	temperature: low vs high			√
46	in/out	place: in vs out		√	
47	inner/outer	place: in vs out		√	
48	ladies/gentlemen	gender: female vs male		√	
49	life/death	life: with life vs without life		√	
50	lords/ladies	gender: male vs female		√	
51	lost/found	belongings: absent vs present	√		
52	love/hate	emotion: for vs against			√
53	love/hatred	emotion: for vs against			√
54	make/break	behavior: create vs damage		√	
55	make/mar	behavior: create vs damage		√	
56	male/female	traditional gender: male vs female		√	
57	man/beast	walking beings: human vs non-human		√	
58	man/boy	stage of a male: mature vs immature			√
59	man/wife	traditional couple: male vs female		√	
60	man/woman	traditional gender: male vs female		√	
61	masculine/feminine	gender: male vs female		√	
62	more/less	amount: increasing vs decreasing			√
63	new/old	existence: coming vs gone			√
64	nit/wit	wisdom: less vs more			√
65	north/south	directions			√
66	nothing/nobody	none: nonhuman vs human		√	

67	old/young	age: more vs less			√
68	on/off	status: connected vs disconnected		√	
69	one/other	two: one vs other		√	
70	open/shut	status of an object: unblocked vs blocked		√	
71	outside/inside	place: out vs in		√	
72	over/under	vertical placement: top vs bottom			√
73	pass/fail	exam result: successful vs unsuccessful		√	
74	plants/animals	creatures: plants vs animals		√	
75	plus/minus	maths: add vs take away		√	
76	poor/rich	wealth: little vs much			√
77	profit/loss	money in business: in vs out		√	
78	pros/cons	attitude: for vs against			√
79	public/private	ownership: group vs individual		√	
80	push/pull	movement: make forward vs backward			√
81	rain/shine	weather: unpleasant vs pleasant			√
82	rear/front	two sides: back vs front	√		
83	right/left	horizontal direction: one side vs opposite side			√
84	right/wrong	assessment: yes vs no		√	
85	root/branch	plant stem: underground vs above ground			√
86	rural/urban	living area: countryside vs city			√
87	sad/happy	mood: down vs up			√
88	sale/return	treatment to goods: sold vs returned (not sold)		√	
89	short/long	length			√
90	something/nothing	thing: yes vs no		√	
91	song/dance	body performance: voice vs voiceless movements		√	
92	sooner/later	time: earlier vs later			√
93	start/stop	movement: yes vs no		√	
94	stop/go	development: no vs yes		√	
95	strengths/weaknesses	quality of strength: more vs less			√
96	sweet/bitter	pleasantness of taste: more vs less			√
97	sweet/sour	pleasantness of taste: more vs less			√
98	take/leave	treatment to sth: take vs not take		√	
99	then/there	future or past occasion: time vs space		√	
100	thick/thin	width: bigger vs smaller			√
101	this/that	to refer to sth vs sb: near vs far			√
102	to (ing)/fro (ing)	Movement: toward vs from			√
103	top/bottom	of sth: highest part vs lowest part			√
104	tragedy/comedy	situation: sad vs happy			√
105	true/false	fact: more vs less			√
106	up/down	vertical direction: up vs down			√
107	upward/downward	vertical direction: up vs down			√
108	wet/dry	moisture: with vs without			√
109	whole/none	answers: all correct vs none correct			√

110	wife/mother	role of a married woman: in relation to a husband vs in relation to children		√	
111	win/lose	result: good vs bad		√	
112	wine/dine	meal: eat vs drink		√	
113	yes/no	answer: positive vs negative		√	

### Appendix 3: Contextual examples for English antonym constructs

Codes	NOW Context with the time
E-1	2023: life ain't no fairytale, life ain't no Adam and Eve, there ain't no soulmates, there ain't no one person out there
E-2	2023: Rather than all or none, we might think of it on a continuum. /2022: This kind of a mindset of all or none is unhealthy, and one needs to maintain balance.
E-3	2023: That's the all or nothing bet on the outcome. /The all or nothing approach to setting resolutions is the main reason for quitting.
E-4	2023: The storytelling is back and forth but very smoothly done. /So to see players arguing or having a bit of a back-and-forth is unusual.
E-5	2016: He had this ring on and kept slapping me with his back and fore hand. /2016: There are lots of back and fore with respect to the budget.
E-6	2020: It's all a bit back and forward now with neither side looking overly dangerous, and the game is becoming increasingly scrappy
E-7	2023: When I saw a particularly impressive before-and-after I couldn't stop looking at the photo and decided I wanted to create a
E-7	2022: In a post on his Instagram page, he put up a before-after video montage on his achievement promising to tell more about his weight loss journey.
E-8	2023: A gifted storyteller, her song's poetic themes straddle the bittersweet paradox of human experience in love, life and family.
E-9	2022: AP K Candidate Bisau should be told in black and white that no amount of propaganda will make us change our minds. /2021: We want to see the order in black and white because without the order, the landowner can just resume the tree cutting again...
E-9	2023: The black-white mentality is pervasive from the president of the country to the GSN...
E-10	2023: Boom and bust managers, like Potter, will be gone almost as quickly as they arrive./2023: We've seen similar boom and bust towns across North America that have lived and died at the hands of one large/2023: deal with severe environmental harm and the aftermath of a boom and bust employment cycle./2023: The report cited the boom and bust of the higher-skilled tech and oil sectors as examples of the temporariness of cyclical labour
E-10	2023: Thursday's weather will be a classic spring-like case of boom or bust. /2023: When a roster is as boom or bust as this one, there's at least the potential that it goes boom.
E-10	2023: Don't invest money in boom-bust and stock market.
E-11	2022: the portfolio manager is the one making the final buy and sell decisions
E-11	2023: Social commerce or buy-sell via social media has been steadily gaining popularity in India. /2023: Social commerce is not like any other sales where buy-sell is more transactional.
E-11	2019: changes to end America's bought-and-sold election practices

E-12	2023: a cat and mouse start signalled the gravity of the contest/2023: ... the cat and mouse relationship between Agballah and the stakeholders played out during the recent elections ...
E-13	2022: Superstition is all cause and effect. /2022: people are sometimes too quick to claim a direct cause and effect.
E-14	2023: India's sibling CEOs have some commonalities but at other times they're like chalk and cheese.
E-15	2022: It's not good for them or the community to just allow these come-and-go sort of programs
E-15	2018: ... don't know if we are good or bad, coming or going fluctuations.
E-16	2023: ... the choice of discount rates plays a key role in those cost-benefit estimates.
E-17	2017: But here you are fighting day and night to make things possible.
E-17	2017: The distinctive effect is visible by day or night, whether the vehicle is moving or stationary... /2016: Day or night, no one in this room could tell the difference. /We can see every single person who crosses the border day or night, and we can follow their path
E-18	2022: But they alone live who live for others, the rest are more dead and alive.
E-18	2020: why did we make a mistake of choosing this dead alive human, incompetent leader
E-19	2023: No dimwit could have achieved this feat.
E-20	2003: Many don't appear to understand the dos and do nots of clearing their windscreen.
E-21	2023: That amounts to playing fast and loose with the facts that lead to his defeat at the polls on March 18.
E-22	2023: He can be a bit feast or famine as a scorer, but Thomas showed that he wasn't scared of the stage.
E-22	2022: I call it the feast and famine effect, where you either have too much coming in or not enough. /2022: Contemporary diet culture has put millions of us on an endless of treadmill of self famine and feast, making it tough to recognize and respect our body's cues.
E-23	2023: ... when I say that I'm still crossing my fingers and toes for that encounter. 2023: every day I saw him counting his fingers and toes.
E-24	2023: Like flora and fauna, limestone formations can degenerate if unprotected.
E-25	2023: the seat base slides fore and aft by 20cm if you need to give some of that space to the third row
E-26	2023: His death a few weeks later after a private battle with cancer triggered an outpouring of remembrances from the endless list of celebrities, fellow designers and influencers who called him a friend, frenemy or inspiration.
E-27	2022: Up until six years ago, politicians would have some give and take on legislation, but got things accomplished.
E-27	2020: De Niro has made -- give or take the odd cameo -- 100 movies. /2020: these figures are about as aggressively average as you can get, give or take a few hours or runs.
E-28	2016: Obama blasted food prices up a good bad 30% the first couple years in office and another 30% in the last few years... /2016: I am looking for something that's bad. I mean in a good bad way, and if anyone is listening please offer me something like that.
E-29	2022: The history of humankind is replete with dreadful accounts of nations, great and small, that were built around the subject of religion. /2022:

	9honey pets will celebrate all creatures great and small with information, advice, tips and the latest news on our beloved furry/2021: Stephen Jay Gould examines the puzzles and paradoxes great and small that build nature's and humanity's diversity and order.
E-30	2023: as I took aim at the black thing streaking across the grey-white sky, I knew that I had to act quickly or the disc would fall
E-31	2023: It's like a chaotic beauty; a blend of happy-sad. /2022: In the picture, the mom-daughter can be seen sharing a happy-sad moment. /2020: Thanks for all the seemingly endless work meetings, awkward birthday parties, and sad happy hours.
E-32	2023: However, if you opt for a wife who will wait on you hand and foot, keep your home clean and safe, raise impeccable children, you must be...
E-32	2022: He's an extremely talented player, intelligent player, real good hands and feet technique.
E-33	2023: Conservatives were found to be less protected from potential hate-like speech on ChatGPT than liberals, according to new data.
E-34	2023: who never see anything good in whatever government does. Head or tail, you never win with them. /2023: So, head or tail, it is all about Wike's bruised ego and internal survival.
E-34	2023: ... you'd have a terrible time trying to make heads or tails of what the motivations for the many races in Azeroth are.
E-35	2023: I downloaded the kindle audio version FernBritton as I wanted to hear tell the story in his own voice.、 、 2020: ... I hear tell that there are even some amongst us who don't know the difference between a median and a mean
E-36	2023: Mr Ketso warned the people against spreading fake news and hearsay. /2022: I am a lawyer and I don't believe in hear say
E-37	2023: During campaigns, they promise heaven and earth but when they get to power, they don't fulfil the promises.
E-38	2023: But he still feels jarringly out of place, with a here-and-there American accent shakier than in his recent, triumphant West End turn/2021: We've had a few setbacks here-and-there with closes and injuries, but we've tried to keep it the same...
E-39	2023: this report takes a significant step forward to bring the future to the here-and-now.
E-40	2023: Since we ourselves are too busy doing hide and seek with objective truths, we obviously cannot pass such truths to others
E-41	2022: Donahue recalled her career high and low came in the 1929 World Series against the Philadelphia Athletics. /2021: Mark Ravenhill's first autobiographical play which explores the way culture high and low had impacted his mother's life and that of his family. /2022: the bulk of the Indian people want equality and mutual respect, not a high-and-low nation./2021: Every country has its high-and-low in the long continuum of evolving.
E-41	2023: ... the couple got unlucky as the highs and lows of stardom began to halt their relationship.
E-41	2023: The stock is forming a higher high-low on the weekly chart.
E-42	2023: ... but that doesn't work across all apps and feels a bit hit or miss. (It's useful for utilities like a calculator, however.)
E-42	2022: Finding a routine and treatment that works may take some hit and miss, but once you've figured it out with help from a sleep professional.../2022: However, in lower light the performance can become more hit and miss.
E-43	2023: People running hither and thither looking for LP gas and shortages of all essential foods, goods and medicines? / 2022: It may look tedious going hither and thither but the day will end on a high note of satisfaction.

E-44	2023: Voters who want Albanese to succeed will go hot and cold on ideas with every change in his message.
E-44	2023: Eilish has a hot-cold relationship with social media.
E-45	2023: ... other commenters were envious, with one remarking that the video could be a humblebrag to " tell me you rich without telling me you rich ".
E-46	2023: said Narwal, whose father Rahul had an Icy Hot patch waiting for her on the bench at the Sport for Life Centre. /2021: I'd barely taken out my coffee mug before the icy-hot chills transformed into full-on flames. /2021: ... so I didn't accidentally get pepper juice in my bedicy-hot. The icy-hot sensation was stronger now, but surely it would go away soon. /2022: People would put Icy-Hot on my locker combo. They would freeze my knives. /2022: An icy-hot paradox of a film, and one of the year's peak achievements,
E-47	2023: Guests no longer want a quick in-and-out holiday/ 2023: The multistorey building boasts a large sales centre, multiple service bays for quick in-and-out services and even a vehicle repair shop for minor cosmetic repairs. /2023: his first international engagement upon becoming prime minister - but it was a one-day, in-and-out trip.
E-47	2023: even if you don't know the ins and outs of AI, you can use it to boost your digital marketing capabilities
E-47	2023: You can play week in-out and you are not a national team player. /2023: Cameron also thought that whenever he decided to step down as prime minister, an in-out EU referendum would be central to the leadership campaign. /Our lodge was modern, practical and offered the perfect in-out flow with the scenic setting.
E-48	2023: He has an excellent combination of size, length and power, and inside-outside versatility. /2023: That outside-inside defensive versatility -- an ability to guard every position -- helps set him apart.
E-49	2020: I stand inside the door blinking to left and right, like a mouse.2021: But when our beliefs and customs are attacked right and left by laws, they are nowhere to be seen. /2022: But I'm having seizures left and right, " she explained in the social media video.
E-49	2023: it (smartphone) was the world's first foldable smartphone with a left-right foldable design.
E-50	2022: It's a matter of life or death here. I can't stress that enough. We need your help, please/2022: This War Of Mine forces you to make literal life or death decisions that are disturbingly plausible and rarely have a happy ending
E-50	2019: The musician has been on the verge of life and death several times, that is why he got the nickname " bulletproof. "
E-51	2023: My dear colleagues, ladies and gentlemen, there is a lot to learn from this brief narrative. /2023: It is in view of this ladies and gentlemen that we are setting the following agenda and urging Governor Uba Sani to, as a matter of urgency, put mechanisms in place to implement them to place Kaduna State ahead of other states in the health sector.
E-52	2023: ... a more diverse and representative guest list of British society than the lords and ladies will grace the occasion.
E-53	2022: The couple donated the clothes they bought in Rome to the cruise's lost and found in case any other passengers found themselves in a similar situation /2012: if there were, the Don't Bothers wouldn't have to scavenge their equipment from another team's lost and found.
E-54	2023: I have a love hate relationship with the gym, sometimes I go and I feel good but I do.../2023: Sports fans think of themselves as part of the

	team they love-hate. /2023: My relationship with exercise is a little bit of a love-hate. I love doing it when I'm doing it - I have so much
E-55	2019: ... while Noelle, under her helmet of hair, stares at her with complex sibling love-hatred.
E-56	2023: Why' strategic business building' is a make-or-break for Indonesian startups/2023: t's make-or-break time, and we can't wait to find out! /2020: Your habit will either make or break you depending on whether it is a bad or good habit.
E-57	2023: choices that could make or mar their lives. / 2023: it is a make or mar year.
E-58	2023: Anything outside male female or having a different feeling of what is assigned - that's what I... /2023: Especially as we saw a male female divide with a third (33%) more men than women /2022: At a polling unit in Erin Osun, the female male voters ratio is in favor of the women so far. /2022: Is this an adult size brain, is this a female male?
E-59	2022: As a parallel odyssey of man and boy unfolds, the narrative leads from lush forest to urban jungle, from the endless possibilities of imagination, to a dream accomplished, set amidst the streets and skyline of New York City, in the shadow of the iconic Chrysler Building. /2022: On a personal level, this writer has known frustration man and boy.
E-60	2020: ... share her wedding day picture with Ahad to declare that they are finally man and wife.
E-61	2016: ... share her wedding day picture with Ahad to declare that they are finally man and wife.
E-61	2022: During an earlier family meeting, her husband sat silently as his family ridiculed and insulted her, calling her a 'man-woman' who was taking up space in their son's/brother's house. /2023: Tabu believes that a man-woman relationship is a complicated thing...
E-62	2023: By extension, the word is also applied to those areas where man or beast may reside safe and unthreatened.
E-62	2022: Morbius turns into a vampiric man-beast who drains the blood of everyone...
E-63	2023: However, he decided to eschew the masculine-feminine divide entirely, as he doesn't like that system himself. /2022: I'm masculine feminine. I'm a tomboy with a soft edge.
E-64	2020: Trump's more-and-less strategy also helped him with those who wanted a bristly, muscular America... /2020: But there are also these massive swings of people who are doing more and less of the same thing.
E-64	2020: There are a very large number of airlines that are more or less breaking even and... facing losses. /2020: ... they more or less fight for their own empowerment
E-65	2023: School officials and team management have turned to a new-old, tried-and-tested blueprint... /You can discover new old friends at reunions, shared activities...
E-66	2023: ... the former governor is not a nitwit politician.
E-67	2023: We know who we are and we know what is ours. Nothing and nobody will take that from us.
E-68	2017: We have a north-and-south divide here in England/2017: The croppies had to lie down and accept it. # He has done exactly the right thing, allowing the next generation the time and opportunity to develop the strategy for power North and South.

E-68	2023: Featured fossils were first found on Rajmahal Hills - which run north-south for 193 kilometres from Sahibganj in Jharkhand to Rampurhat in West Bengal.
E-69	2023: hey have comfortable cushioned insoles, a pull tab on the back for easy on-and-off, and a bow decoration on the top. /2023: We have this chemistry between us and it's been helping us to work hard for each other, play and have fun together on-and-off the field. /2023: Despite having to face this challenge, we have had on-and-off talks.
E-69	2020: He's comfortable on-or-off the ball, and helps the offense flow.
E-69	2023: The drawcord pull-tie laces creates a quick-and-easy on-off ... /2023: They later got back together again and had an on-off relationship from 2013 to 2017.
E-70	2021: While some horns are positioned to allow users to speak to one-and-other, others face upwards to catch the general sounds of the city.
E-70	2015: ... many expected Barcelona to collapse into itself amidst rumours of unrest and talk of the one-or-other departures of manager Luis Enrique and talisman Lionel Messi.
E-71	2023: The case against turning the big four into a biggish eight is far from open and shut, not least as the commercial logic of the split is in many ways getting more compelling. /2023: Asiwaju Bola Ahmed Tinubu is, and remains, an open and shut case for the Office of President of the Federal Republic of Nigeria.
E-72	2023: These exercises are pass-fail to ensure the facility team can respond to an event promptly/2023: If we only see it in binary terms such as pass-fail, we erase all the success we've had along the way.
E-73	2023: Global warming is causing changes in the habitats of plants and animals, leading to the extinction of some species and the decline of others...
E-74	2023: The sample-wide margin of error is plus-minus three percent.
E-75	2020: Once I realised that and began working on my emotions instead of my systems, my profit and loss account began to change for the better. /2023: It (Education) is not like some other industries where you talk about profit and loss.
E-75	2023: With sustainability, it is not just about looking at the bottom line profit or loss.
E-76	2023: He has also expressed interest in public-private partnerships to fund solutions for the energy crisis
E-77	2023: After a push and pull, Kiguta walked away due to what she described as irreconcilable editorial differences. /2023: We also need to ensure that women are able to stay employed and that they don't drop out due to various push and pull factors.
E-77	2023: It's the kind of mental push-pull that makes strategy games so much fun. /2023: the push-pull between reliable small refinements and incomplete major additions is evident
E-78	2023: Come rain or shine, a warm boot will take you far. /2023:While the festivities will continue " rain or shine, " Quibete emphasized the importance of considering the health of the participants and audience./2023: The market is held rain or shine
E-79	2023: As one encounters fellow citizens of all classes, high and low, rich and poor, it is becoming increasingly difficult to find good people .../2023:

	Our meeting is to bring perspective to this pandemic that has affected the poor and rich, those in informal settlements and posh estates, and irrespective of faith, and
E-80	2020: Right or wrong, it's very pleasant to break something from time to time. /2021: the " right " decisions, or if anything can be reduced to a simple right-or-wrong anymore.
E-80	2023: Even those who have rightly or wrongly won the election would be wasting time and resources tackling court cases rather than settling...
E-80	2023: here will be no right-wrong story but only a story of choices. /2022: But look where it's left us: unable even to agree on good-bad, right-wrong, up-down, weak-strong, better-or-worse.
E-81	2018: Another company that has experienced a remarkable rise and fall is Anchor Group. /2018: a rise and fall mechanism
E-81	2021: Siren for fire: rise-fall tones, 3 cycles/2020: the rise-fall of Harry Mosco
E-81	2022: All this argues for a continuance of rising-falling tensions as North Korea hones its weapons and military systems
E-82	2023: Only with root and branch reform will public faith in the Met be restored. /2023: I'm the root and branch of David. " /2023: ... while these amendments are often intended to defeat constitutionalism in the thicker sense defined above, populists appear content (or even motivated) to work within a formal constitutional framework rather than to reject it root and branch.
E-83	2023: The continuous rural-urban migration will increase the demand for housing in urban centers.
E-84	2023: In any shop now you will find stacks of books left by publishers on sale or return. /2023: in sale or return stores
E-85	2022: The long and short of it is that the commissioner's job is not political. /2022: Innovative PrimeXBT trading tools let traders go short and long with leverage to build an unstoppable portfolio that fights back against inflation.
E-85	2021: One example to watch for is Pennsylvania Firefly, which has a short-long (" dot-dash ") pattern. /2020: What's your plan in the short-long term? Will you need to approach the bank for a loan,
E-86	2022... she could talk about something or nothing for an infinite amount of time./2022: Whether they turn into something or nothing, the fact of the matter is they continue to give us evidence that .../2022: I keep track of all that movement while pondering on something or nothing. Usually nothing, in fairness. /2022: Why don't you take a chance? You could wind up with something or nothing.
E-86	2022: have known Ian a long time. It is something and nothing, people try and make something of it. /2022: he kept rolling his ankle and it was something and nothing, but they found there was no stability in his ankle. /2017: These words are all floating together and they all mean nothing and something.
E-87	2023: ... forcing an INEC hierarchy steeped in electoral scandal to make song and dance of disowning the declaration.
E-88	2023: Please, do not cut corners because sooner or later it will show and the results will be negative.
E-89	2023: This year has been stop-start because of a viral infection which has been really frustrating... /2023: The 48-volt mild hybrid system improves efficiency by helping out with stop-start and coasting.

E-89	2023: ... against the virus, credited with saving millions of lives as other countries struggled with stop-and-start lockdowns. /2023: Although the show opener, Calgary's Lindsay Ell, played a disjointed set that seemed to have a lot of stop-and-start to it, she did pull off a first: s
E-89	2023: I've had a lot of stops and starts but I accept that's been a part of my story.
E-90	2023: The range does not drop a lot too and driven in stop-go traffic/2023: ... the story of the Chinese economy over the last decade or so has been one of stop-go...
E-90	2023: I was trying to avoid the stop-and-go's.
E-91	2023... so we've really learnt to play on each other's strengths and weaknesses.
E-92	2023: ... to the best of our abilities, through thick and thin, through sweet and sour. /2023: ... the match-up between the former India captain and Nitin Menon as the duo share a sweet-and-sour bond on the field.
E-92	2023: The story of e-waste has been described as a sweet-sour story because e-waste contains both hazardous and valuable materials. /2022: that perfect balance of sweet-sour
E-93	2010: He had always been an immediate, there-and-then kind of guy; keen to know, find out, explain, move on/2010: It's a record that has gorged on the then-and-there as much as the here-and-now.
E-93	2010: That's only solid basis for your words; written records by those who WERE there-then support mine.
E-94	2023: But I never forget that she has stuck to me through thick and thin, in sickness and in health. /2023: We have been here before and we will stand with our community, thick and thin.
E-95	2023: Who was macking whom, cheating on so-and-so, doing this-and-that, being a such-and-such? /2021: I know a lot of people saw when I posted the media is this-and-that. That's not meant for everybody. /2012: I'm studying this-and-that by listening to internet lectures.
E-95	2023: It's not a this-or-that choice/2022: We must stop pretending that we don't know this-or-that about animal sentience.
E-96	2023: Such to-and-fro creates the impression of aimless actionism rather than purposeful activity... /2023: ... you don't have to pay for fuel to ferry the aircraft to and fro, which you were going to buy in dollars. /2023: Parents also witnessed relief from having to commute to and fro health centres to queue for hours for vaccines for their babies only to be told to return at a later time because the available vaccines were exhausted. /2023: The entire operation from request to the IAF to successfully evacuating the persons into IAF hospital ended in little over an hour including to and fro travel... /2023: That was the start of two years of me toing and froing to doctors, yet always having my illness dismissed.
E-96	2023: We are still confronted with the toing and froing of the politicians from one party to another and back again. /2023: So after a bit of toing and froing, we signed the lease without really knowing what was next.
E-97	2022: The only difference is that it's difficult to spot the top and bottom of the market as we can only judge by past sales that have gone through... /2023: While Airbnb beat top-and-bottom line expectations for the first quarter/2022: If the top-and-bottom bezels design of the original iPad seemed too outdated for you to tolerate, then...

E-97	2023: This pattern was formed after a series of lower tops and bottoms of the previous several months.2018: Picking tops-and-bottoms in markets is nigh-on impossible, /2014: The British denim jeans brand also displays a unique British-inspired tops-and-bottoms collection.
E-98	2023: The eagerness to bow before authority is an everyday Indian tragicomedy.
E-98	2023: The works often balance precisely in the zone of the tragicomic, whether it's about masculinity, beauty, power or love.
E-99	2022: How can I get past that sensory true-false test of learning wine, but enjoy it more?
E-100	2022: I opened the window to look up and down the Soho street where I work.
E-100	2023: no single individual can be held responsible for the ups and downs of the global oil market
E-100	2023: ... investor is forced to go through an interest cycle that would have an upward and downward phase.
E-101	2023: The insects can survive cold and hot temperatures, as well as wet and dry climates. /2023: For the last three years, we've just had wet and dry. It does get a little colder in the winter, but not like it used to...
E-102	2020: She stood firm as the First Lady, and continued with her role as a wife and mother while supporting her husband at the same time. / 2020: the commute gives her a crucial chance to switch from work mode to wife-and-mother mode
E-102	2021: ... are on their way to the neighbouring village to bring back the wife-mother, who has fled the home.
E-103	2022: ... suddenly the stakes move from a win or lose to life or death. / 2022: I only view things on a win or lose basis, which is very shallow!
E-103	2023: Currently, New Zealand over invests in property speculation that has win-lose effects to different societal groups. /2023: The only possibility is a win-lose outcome, which tells us more about the West's worldview than anything else.
E-104	2023: There is always a yes-no, there is no right and wrong but why is it that startup founders have.../2023: The fusion and stove debates show why getting technology right requires moving beyond simplistic yes-no shouting matches.
E-104	2022: Find out what is your yes-and-no food list by maintaining a food diary. /2020: Yes and no is the answer. Money can be evil or lead to evil if..
E-104	2021: only 37% prefer to vote Yes or No for the entire set at one go. /2020: What you get back is a Yes or No on whether your password has been exposed.
E-105	2021: Its too simplistic to argue on a young-old divide. /2020: 61 per cent were young-old, 31 per cent old-old and 8 per cent oldest old/2020: He is a young-old customer of ours, very charming, very outgoing, very wealthy and he likes/2017: ... he's an old-young boy in that team; young in the enthusiastic way he plays the game,/2019:Some gerontologists have started to subdivide old into " Young-Old ", which runs from 60 to about 75 and bargains for activity,
E-105	2023: There will be a variety of engaging activities for young and old...

## Appendix 4: Semantic patterns of English antonym construction

Notes:

1. This appendix included four tables.
2. The first three tables include the semantic patterns observed in NOW corpus for each of the three forms of the English antonym constructs. The headedness for each form was calculated at the end of each table.
3. The headedness of the English antonym construction was calculated and presented in Table 4.
4. The basic semantic patterns listed were identified on a general corpus observation. It is not exhaustive. The antonym constructs can be used with the semantic patterns in addition to those listed.

**Table 1** The semantic patterns of the English form [ant<sub>1</sub>ant<sub>2</sub>]

Codes	English antonym constructs: [ant <sub>1</sub> ant <sub>2</sub> ]	Identified semantic patterns				
		'ANT <sub>2</sub> THAT IS ANT <sub>1</sub> '	'ANT <sub>1</sub> '	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION)'
E-7	before after			'ANT <sub>1</sub> AND ANT <sub>2</sub> '		
E-8	bittersweet	'ANT <sub>2</sub> THAT IS ANT <sub>1</sub> '		'ANT <sub>1</sub> AND ANT <sub>2</sub> '		
E-9	black-white			'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	
E-10	boom-bust			'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION)'
E-11	buy-sell			'ANT <sub>1</sub> AND ANT <sub>2</sub> '		
E-16	cost-benefit			'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	
E-18	dead alive	'ANT <sub>2</sub> THAT IS ANT <sub>1</sub> '				
E-19	dimwit		'ANT <sub>1</sub> '			
E-19	dim-witted		'ANT <sub>1</sub> '			
E-19	dim-wittedness		'ANT <sub>1</sub> '			
E-26	frenemy	'ANT <sub>2</sub> THAT IS ANT <sub>1</sub> '		'ANT <sub>1</sub> AND ANT <sub>2</sub> '		
E-28	good bad	'ANT <sub>2</sub> THAT IS ANT <sub>1</sub> '		'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	

E-30	grey-white	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-31	happy sad	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-33	hate-like	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-35	hear tell		‘ANT <sub>1</sub> ’			
E-36	hearsay		‘ANT <sub>1</sub> ’			
E-41	high-low	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-44	hot-cold			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-45	humblebrag	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’				
E-46	icy-hot	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-47	in-out			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-48	inside-outside			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION)’
E-49	left-right			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-54	love-hate			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-54	love hating			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-55	love-hatred			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-58	male-female			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-61	man-woman			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-62	man-beast	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-63	masculine-feminine			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-65	new-old	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-66	nitwit		‘ANT <sub>1</sub> ’			
E-68	north-south			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION)’
E-69	on-off			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-72	pass-fail				‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-74	plus-minus				‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-76	public-private			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-77	push-pull			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-80	right-wrong	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’			‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	

E-81	rise-fall			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-81	rising-falling			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-83	rural-urban			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION)’
E-85	short-long	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-89	stop-start			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-90	stop-go			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-92	sweet-sour	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-93	there then			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-98	tragicomedy	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-98	tragicomic	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		
E-99	true-false			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-102	wife-mother	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-103	win-lose (situation)			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-104	yes-no			‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
E-105	young-old	‘ANT <sub>2</sub> THAT IS ANT <sub>1</sub> ’		‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	
<b>Items in all</b>	55	19	6			

Notes: *Hearsay* can be used as right headed ‘ANT<sub>2</sub> THAT IS ANT<sub>1</sub>’ according to the instantiation from OED (5.12; 5.13) (Section 5.1.3). However, all the meaning patterns in this table is based on NOW Corpus. For the consistency in data source, here it is not included. When there is a right-headed *hearsay* retrieved in NOW Corpus, the data will be modified.

**Table 2** The semantic patterns of the English form [ant<sub>1</sub> OR ant<sub>2</sub>]

Codes	English antonym constructs: [ant <sub>1</sub> OR ant <sub>2</sub> ]	Identified semantic patterns			
		‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	‘ANT <sub>1</sub> ’	‘ANT <sub>2</sub> ’	‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ANY)’
E-2	all or none	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
E-3	all or nothing	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
E-10	boom-or-bust	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			

E-15	coming or going	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-17	day or night	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ANY)'
E-22	feast or famine	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ANY)'
E-27	give or take	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ANY)'
E-34	head or tail	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ANY)'
E-34	heads or tails	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ANY)'
E-42	hit or miss	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-50	life or death	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-56	make or break	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-57	make or mar	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-62	man or beast	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-64	more or less	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-69	on or off	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-70	one or other	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-75	profit or loss	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-78	rain or shine	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-80	right or wrong	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'ANT <sub>1</sub> '	'ANT <sub>2</sub> '	
E-80	rightly or wrongly	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-84	sale or return	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
E-86	something or nothing	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'ANT <sub>1</sub> '	'ANT <sub>2</sub> '	
E-88	sooner or later	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ANY)'
E-95	this or that	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'ANT <sub>1</sub> '	'ANT <sub>2</sub> '	'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ANY)'
E-103	win or lose	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ANY)'
E-104	yes or no	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'ANT <sub>1</sub> '	'ANT <sub>2</sub> '	
<b>Items in all</b>	27		4	4	

**Table 3** The semantic patterns of the English form [ant<sub>1</sub> AND ant<sub>2</sub>]

Codes	English antonym constructs: [ant <sub>1</sub> AND ant <sub>2</sub> ]	Identified semantic patterns			
		'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'ANT <sub>2</sub> '	'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)'
E-1	Adam and Eve	'ANT <sub>1</sub> AND ANT <sub>2</sub> '			
E-4	back and forth	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-5	back and fore	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-6	back and forward	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-7	before and after	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-9	black and white	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-10	boom and bust	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-11	buy and sell	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-11	bought and sold	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-12	cat and mouse	'ANT <sub>1</sub> AND ANT <sub>2</sub> '			
E-13	cause and effect	'ANT <sub>1</sub> AND ANT <sub>2</sub> '			
E-14	chalk and cheese	'ANT <sub>1</sub> AND ANT <sub>2</sub> '			
E-15	come and go	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-17	day and night	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-18	dead and alive	'ANT <sub>1</sub> AND ANT <sub>2</sub> '			
E-20	dos and don'ts	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-21	fast and loose	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-22	feast and famine	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-23	fingers and toes	'ANT <sub>1</sub> AND ANT <sub>2</sub> '			
E-24	flora and fauna	'ANT <sub>1</sub> AND ANT <sub>2</sub> '			
E-25	fore and aft	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		
E-27	give and take	'ANT <sub>1</sub> AND ANT <sub>2</sub> '			
E-29	great and small	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'ANT <sub>2</sub> '	
E-32	hand and foot	'ANT <sub>1</sub> AND ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)'

E-32	hands and feet	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-37	heaven and earth	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-38	here and there	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-39	here and now	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-39	here-and-nowness	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-40	hide and seek	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-41	high and low	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-41	highs and lows	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-42	hit and miss	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-43	hither and thither	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-44	hot and cold	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-47	in and out	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-47	ins and outs	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-49	left and right	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-50	life and death	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-51	ladies and gentlemen	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-52	lords and ladies	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-53	lost and found	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-59	man and boy	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-60	man and wife	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-61	man and woman	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-64	more and less	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’		
E-67	nothing and nobody	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-68	north and south	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-69	on and off	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-70	one and other	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’		
E-71	open and shut	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-73	plants and animals	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			

E-75	profit and loss	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-77	push and pull	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-79	rich and poor	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-81	rise and fall	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-82	root and branch	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-85	short and long	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-86	something and nothing	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’	‘ANT <sub>2</sub> ’	
E-87	song and dance	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-89	stop-and-start	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-89	stops and starts	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-90	stop-and-go	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-91	strengths and weaknesses	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-92	sweet and sour	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-93	there and then	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-94	thick and thin	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-95	this and that	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-96	to and fro	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-96	toing and froing	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-97	top and bottom	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-97	tops and bottoms	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-100	up and down	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-100	ups and downs	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-100	upward and downward	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-101	wet and dry	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
E-102	wife and mother	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			
E-104	yes and no	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’		‘ANT <sub>2</sub> ’	
E-105	young and old	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (ALL)’
<b>Items in all</b>	79			3	

**Table 4** The headedness tendency of English antonym construction

<b>Three forms of English antonym construction</b>		<b>Right-headedness</b>		<b>Left-headedness</b>
		<b>Non-neutralized: 'ANT<sub>2</sub> THAT IS ANT<sub>1</sub>'</b>	<b>Neutralized: 'ANT<sub>2</sub>'</b>	<b>Neutralized: 'ANT<sub>1</sub>'</b>
[ant <sub>1</sub> AND ant <sub>2</sub> ]	79 items		3 items	
[ant <sub>1</sub> OR ant <sub>2</sub> ]	27 items		4 items	4 items
[ant <sub>1</sub> ant <sub>2</sub> ]	55 items	19 items		6 items
<b>Total items (including variants)</b>	161	19	7	10

## Appendix 5: Syntactic categories of English antonym construction

Notes:

1. This appendix includes two tables.
2. The syntactic categories in Table 1 were identified in NOW corpus. It is not an exhaustive observation. Each construct can have more syntactic categories than those listed in the table.
3. The abbreviations for the syntactic categories: n. – noun; a. – adjective; ad. – adverb; v. – verb; pron. – pronoun; prep. – preposition.
4. The ratio of each syntactic category is calculated and presented in Table 2.

**Table 1** The syntactic categories of English antonym constructs

Codes	English antonym constructs	Identified syntactic categories					
E-1	Adam and Eve	n.					
E-2	all or none	n.	a.				
E-3	all or nothing	n.	a.				
E-4	back and forth	n.		ad.			
E-5	back and fore	n.	a.	ad.			
E-6	back and forward		a.	ad.			
E-7	before and after	n.	a.				
E-7	before after	n.	a.				
E-8	bittersweet	n.	a.				
E-9	black and white	n.	a.				
E-9	black-white		a.				
E-10	boom and bust	n.	a.				
E-10	boom-or-bust	n.	a.				
E-10	boom-bust	n.	a.				
E-11	buy and sell		a.		v.		
E-11	buy-sell	n.	a.				
E-11	bought and sold		a.				
E-12	cat and mouse	n.	a.				
E-13	cause and effect	n.	a.				
E-14	chalk and cheese	n.					
E-15	come and go	n.	a.		v.		
E-15	coming or going		a.				
E-16	cost-benefit		a.				
E-17	day and night	n.	a.	ad.			
E-17	day or night	n.		ad.			
E-18	dead and alive	n.	a.				
E-18	dead alive	n.	a.				
E-19	dimwit	n.					

E-19	dim-witted		a.				
E-19	dim-wittedness	n.					
E-20	dos and don'ts	n.					
E-21	fast and loose	n.	a.	ad.			
E-22	feast or famine	n.	a.				
E-22	feast and famine	n.	a.				
E-23	fingers and toes	n.					
E-24	flora and fauna	n.					
E-25	fore and aft	n.	a.	ad.			
E-26	frenemy	n.					
E-27	give and take	n.	a.		v.		
E-27	give or take				v.		
E-28	good bad		a.				
E-29	great and small	n.	a.				
E-30	grey-white	n.	a.				
E-31	happy sad	n.	a.				
E-32	hand and foot	n.		ad.			
E-32	hands and feet		a.				
E-33	hate-like	n.	a.		v.		
E-34	head or tail	n.					
E-34	heads or tails	n.					
E-35	hear tell				v.		
E-36	hearsay	n.			v.		
E-37	heaven and earth	n.					
E-38	here and there		a.	ad.			
E-39	here and now	n.		ad.			
E-39	here-and-nowness	n.					
E-40	hide and seek	n.	a.				
E-41	high and low	n.	a.	ad.			
E-41	highs and lows	n.					
E-41	high-low	n.	a.				
E-42	hit or miss	n.	a.		v.		
E-42	hit and miss	n.	a.		v.		
E-43	hither and thither		a.	ad.			
E-44	hot and cold		a.	ad.			
E-44	hot-cold//cold-hot		a.				
E-45	humblebrag	n.			v.		
E-44	icy-hot	n.	a.				
E-45	in and out		a.	ad.			
E-46	ins and outs	n.					
E-47	in-out	n.	a.				
E-48	inside-outside		a.				

E-49	left and right	n.	a.	ad.			
E-49	left-right		a.				
E-50	life or death	n.	a.				
E-50	life and death	n.	a.				
E-51	ladies and gentlemen	n.					
E-52	lords and ladies	n.					
E-53	lost and found	n.	a.				
E-54	love-hate	n.	a.		v.		
E-54	love hating a.		a.				
E-55	love-hatred n.	n.					
E-56	make or break	n.	a.		v.		
E-57	make or mar	n.	a.		v.		
E-58	male-female	n.	a.				
E-59	man and boy	n.		ad.			
E-60	man and wife	n.					
E-61	man and woman	n.					
E-61	man-woman	n.	a.				
E-62	man or beast	n.					
E-62	man-beast	n.	a.				
E-63	masculine-feminine		a.				
E-64	more and less		a.				
E-64	more or less			ad.			
E-65	new-old		a.				
E-66	nitwit	n.	a.				
E-67	nothing and nobody	n.				pron.	
E-68	north and south	n.	a.	ad.			
E-68	north-south	n.	a.				
E-69	on and off	n.	a.	ad.			prep.
E-69	on or off		a.	ad.			prep.
E-69	on-off	n.	a.				
E-70	one and other		a.			pron.	
E-70	one or other		a.			pron.	
E-71	open and shut	n.	a.				
E-72	pass-fail	n.	a.				
E-73	plants and animals	n.					
E-74	plus-minus	n.	a.	ad.			
E-75	profit and loss	n.	a.				
E-75	profit or loss	n.					
E-76	public-private		a.				
E-77	push and pull	n.	a.		v.		
E-77	push-pull	n.	a.				
E-78	rain or shine	n.		ad.	v.		

E-79	rich and poor	n.	a.				
E-80	right or wrong	n.	a.				
E-80	rightly or wrongly			ad.			
E-80	right-wrong	n.	a.				
E-81	rise and fall	n.	a.				
E-81	rise-fall	n.	a.				
E-81	rising-falling		a.				
E-82	root and branch	n.	a.	ad.			
E-83	rural-urban		a.				
E-84	sale or return	n.	a.				
E-85	short and long	n.	a.				
E-85	short-long	n.	a.				
E-86	something or nothing	n.					
E-86	something and nothing	n.					
E-87	song and dance	n.					
E-88	sooner or later			ad.			
E-89	stop-start	n.					
E-89	stop-and-start	n.	a.				
E-89	stops and starts	n.					
E-90	stop-go	n.	a.				
E-90	stop-and-go	n.	a.				
E-91	strengths and weaknesses	n.					
E-92	sweet and sour	n.	a.				
E-92	sweet-sour	n.	a.				
E-93	there and then	n.	a.	ad.			
E-93	there then			ad.			
E-94	thick and thin	n.	a.	ad.			
E-95	this and that		a.			pron.	
E-95	this or that		a.			pron.	
E-96	to and fro	n.	a.	ad.	v.		prep.
E-96	toing and froing	n.					
E-97	top and bottom	n.	a.				
E-97	tops and bottoms	n.					
E-98	tragicomedy	n.					
E-98	tragicomic		a.				
E-99	true-false	n.	a.				
E-100	up and down	n.	a.	ad.			prep.
E-100	ups and downs	n.					
E-100	upward and downward		a.	ad.			
E-101	wet and dry	n.	a.				
E-102	wife and mother	n.	a.				
E-102	wife-mother	n.	a.				

E-103	win or lose	n.	a.		v.		
E-103	win-lose (situation)		a.				
E-104	yes-no	n.	a.				
E-104	yes and no	n.	a.				
E-104	yes or no	n.	a.				
E-105	young-old	n.	a.				
E-105	young and old	n.	a.				
<b>Items in total</b>	161	123	114	31	17	5	4

**Table 2** The ratio of each syntactic category of English antonym constructs

<b>Three forms of English antonym construction</b>		<b>Items for each syntactic category</b>					
		<b>n.</b>	<b>a.</b>	<b>ad.</b>	<b>v.</b>	<b>pron.</b>	<b>prep.</b>
	[ant <sub>1</sub> AND ant <sub>2</sub> ]	68	53	23	6	3	3
	[ant <sub>1</sub> OR ant <sub>2</sub> ]	18	16	6	6	2	1
	[ant <sub>1</sub> ant <sub>2</sub> ]	37	45	2	5	0	0
<b>Total items (including variants)</b>	161	123	114	31	17	5	4
<b>Ratio of each syntactic category</b>		76%	70%	19%	11%	3%	2%

## Appendix 6: Candidates for Mandarin antonym constructs

Notes:

1. Only one English interpretation is included here for each item. There could be more for each in actual use.
2. The reversed order of the antonym constructs in Mandarin is rare and can end with a different meaning. Therefore, the reversed order is only included when it leads to different meanings.

Items	Candidates for Mandarin antonym constructs	Pinyin	Morpheme-to-morpheme glossing	English Interpretation	In-use frequency
1	哀乐	<i>āilè</i>	joys-sorrows	joys and sorrows	1035
2	爱憎	<i>àizēng</i>	love-hate	love and hate	417
3	安危	<i>ānwēi</i>	safe-dangerous	risk	1363
4	凹凸	<i>āotū</i>	concave-convex	bump	801
5	捭阖	<i>bǎihé</i>	advance-retreat	trick; intrigue	170
6	褒贬	<i>bāobiǎn/bian</i>	praise-criticize	criticize	584
7	跋涉	<i>báshè</i>	scale mountains-ford rivers	trudge	2032
8	本末	<i>běnmò</i>	tree roots-tree tops	a whole story	368
9	标本	<i>biāoběn</i>	branches-roots	sample	3362
10	表里	<i>biǎolǐ</i>	inside-outside	inside and outside; from inside to outside; interior and exterior	652
11	彼此	<i>bǐcǐ</i>	this-that	likewise	12447
12	冰炭	<i>bīngtàn</i>	ice-fire	conflict	53
13	宾主	<i>bīnzhǔ</i>	guest-host	guests and hosts	1912
14	裁缝	<i>cáiféng/feng</i>	cut off-sew up	a tailor	803
15	沧桑	<i>cāngsāng</i>	(the colour of) water-the trees in fields	ups and downs	2622

16	操纵	<i>cāozòng</i>	impose control-lift control	to manipulate	3723
17	拆建	<i>chāijiàn</i>	deconstruct-construct	tear down and build	64
18	拆装	<i>chāizhuāng</i>	dissemble-install	dissemble and install	103
19	长短	<i>chángduǎn</i>	long-short	gossip	2190
20	唱和	<i>chàng hè</i>	sing-follow or respond	responsiveness	472
21	朝野	<i>cháoyě</i>	court or government-folk	the government and the public	954
22	沉浮	<i>chénfú</i>	sink-float	ups and downs	739
23	成败	<i>chéngbài</i>	success-failure	success or failure	2495
24	乘除	<i>chéngchú</i>	multiplication-division	calculation	90
25	晨昏	<i>chénhūn</i>	dawn-dusk	dawn and dusk	127
26	迟早	<i>chízǎo</i>	late-early	sooner or later	1757
27	弛张	<i>chízhāng</i>	relaxation-tension	relaxation and tension	12
28	窗户	<i>chuānghu</i>	window-door	window	5009
29	传习	<i>chuánxí</i>	teach-learn	to teach and to learn	193
30	出没	<i>chūmò</i>	appear-disappear	haunt	1362
31	出纳	<i>chūnà</i>	cash out-cash in	cashier	741
32	春秋	<i>chūnqiū</i>	spring-autumn	age	5599
33	出入	<i>chūrù</i>	out-in	differences	7206
34	雌雄	<i>cíxióng</i>	female-male	winner or loser	669
35	存亡	<i>cúnwáng</i>	live-die	existent or extinct	1557
36	粗细	<i>cūxì</i>	thick-thin	width	526
37	丹青	<i>dānqīng</i>	red-green	painting	485
38	旦夕	<i>dàn xī</i>	morning-evening	in a short while	537
39	大小	<i>dàxiǎo</i>	big-small	at least	17975
40	得失	<i>déshī</i>	gain-lose	good and bad	2691
41	颠末	<i>diānmò</i>	top-bottom	from the start to the end; all	7

42	敌我	<i>díwǒ</i>	enemies-us	friend and/or foe	587
43	敌友	<i>díyǒu</i>	enemy-friend	enemy or friend	41
44	动静	<i>dòngjìng/jìng</i>	dynamic-static	dynamic	2561
45	东西	<i>dōngxī</i>	east-west	something	78203
46	断续	<i>duànxiù</i>	breaking-continuing	intermittent	1336
47	多寡	<i>duōguǎ</i>	many-few	quantity	382
48	多少	<i>duōshǎo/shao</i>	many-few	how much	43183
49	恩仇	<i>ēnchóu</i>	mercy-revenge	mercy and revenge	211
50	恩怨	<i>ēnyuàn</i>	grateful-resentful	hatred	811
51	方圆	<i>fāngyuán</i>	square-circle	all around	1710
52	反正	<i>fǎnzhèng</i>	negative-positive	anyway	8385
53	肥瘦	<i>féishòu</i>	fat-slim	size of clothes	195
54	凤凰	<i>fēnghuáng</i>	male phoenix-female phoenix	bird of good luck	3686
55	丰歉	<i>fēngqiàn</i>	good harvest-bad harvest	good and/or bad harvest	84
56	腹背	<i>fùbèi</i>	back-belly	front and back; close relationship	130
57	夫妇	<i>fūfù</i>	husband-wife	married couples	11027
58	父母	<i>fùmǔ</i>	father-mother	parents	22046
59	俯仰	<i>fǔyǎng</i>	head down-head up	a short while	199
60	父子	<i>fùzǐ</i>	father-son	father and son	3149
61	纲目	<i>gāngmù</i>	outline or generalization-details or specification	classification and introduction of plants and animals	547
62	甘苦	<i>gānkǔ</i>	sweetness-bitterness	experiences, especially sufferings	743
63	干群	<i>gànqún</i>	cadres-the masses	the government and the public	1766
64	干支	<i>gānzhī</i>	main stems-subordinate stems	Chinese dating system <i>Ganzhi</i>	396
65	高矮	<i>gāoǎi</i>	tall-short	height	237
66	高低	<i>gāodī</i>	high-low	after all	5511

67	功过	<i>gōngguò</i>	merit-fault	merits or faults; performance; contribution	468
68	公婆	<i>gōngpó</i>	husband's father-husband's mother; male-female	a couple	392
69	供求	<i>gōngqiú</i>	supply-demand	supply and demand	4861
70	攻守	<i>gōngshǒu</i>	offend-defend	offend and defend	462
71	公私	<i>gōngsī</i>	public-private	public and private	1146
72	购销	<i>gòuxiāo</i>	purchase-sale	purchase and sale in economics/commerce	3157
73	官兵	<i>guānbīng</i>	officials-soldiers	officials and soldiers	17686
74	广袤	<i>guǎngmào</i>	width-length	vast	841
75	贵贱	<i>guìjiàn</i>	expensive-cheap	social status	432
76	规矩	<i>guīju</i>	(instrument for drawing) circles-squares	rules; established practice	4720
77	古今	<i>gǔjīn</i>	ancient-contemporary	at all times	3765
78	国家	<i>guójiā</i>	nation-family	country	443639
79	寒暑	<i>hán shǔ</i>	winter-summer	winter and summer	753
80	行列	<i>hángliè</i>	row-column	procession	7543
81	寒热	<i>hánrè</i>	cold-hot	malaria	276
82	寒暄	<i>hánxuān</i>	cold-warm	greetings	746
83	好歹	<i>hǎodǎi</i>	good-bad	at least	1136
84	好坏	<i>hǎohuài</i>	good-bad	at least	2419
85	好恶	<i>hàowù</i>	like-dislike	interest	457
86	黑白	<i>hēibái</i>	black-white	good and bad	2668
87	横竖	<i>héngshù</i>	horizontal-vertical	anyway	319
88	厚薄	<i>hòubó</i>	thick-thin	closeness	208
89	狐狸	<i>hú li</i>	fox-raccoon dog	fox	1757
90	缓急	<i>huǎnjí</i>	no rush-urgent	urgency	505
91	晦明	<i>huìmíng</i>	light-darkness	light and darkness; changes	13

92	毁誉	<i>huǐyù</i>	slander-good name	reputation	224
93	祸福	<i>huòfú</i>	disaster-luck	disaster	458
94	呼吸	<i>hūxī</i>	exhale-inhale	breathe	10372
95	呼应	<i>hūyìng</i>	call-response	coherent	1676
96	加减	<i>jiājiǎn</i>	addition-subtraction	addition and subtraction; gains and loss	665
97	奖惩	<i>jiǎngchéng</i>	reward-punishment	reward and punishment	1410
98	奖罚	<i>jiǎngfá</i>	reward-punishment	reward and punishment	380
99	将士	<i>jiàngshì</i>	officer-soldier	officers and soldiers	2654
100	奸宄	<i>jianguì</i>	evil inside-evil outside	evil	13
101	剪接	<i>jiǎnjiē</i>	cut-join	cut and join	164
102	教学	<i>jiào/jiāoxué</i>	teach-learn	teaching	20027
103	交接	<i>jiāojiē</i>	give-take	befriend	3166
104	嫁娶	<i>jiàqǔ</i>	marry a man-marry a woman	marriage	363
105	稼穡	<i>jiàsè</i>	sowing-reaping	farming	70
106	借贷	<i>jièdài</i>	borrow-loan	to borrow	1562
107	姐妹	<i>jiěmèi</i>	elder sister-younger sister	female fellows	5615
108	接送	<i>jiēsòng</i>	pick up-see off	pick up and see off	1497
109	进出	<i>jìnchū</i>	in-out	income and expenditure	19590
110	经络	<i>jīngluò</i>	main channel-sub channel	physical channels for energy in traditional Chinese medicine'	582
111	经纬	<i>jīngwěi</i>	longitude-latitude	main points	2649
112	进退	<i>jìntuì</i>	advance-retreat	social behaviours	1370
113	今昔	<i>jīnxī</i>	the present-the past	today and yesterday	332
114	紧张	<i>jǐnzhāng</i>	tension-relaxation	in short supply	32032
115	集散	<i>jísàn</i>	gather-distribute	gather and distribute	1937
116	吉凶	<i>jíxiōng</i>	good luck-bad luck	fortune	354

117	绝续	<i>juéxù</i>	break off-continue	break off and continue	30
118	军民	<i>junming</i>	soldiers-civilian	military and civilian	6064
119	聚散	<i>jùsàn</i>	gather-spread	coming together and separating	208
120	巨细	<i>jùxì</i>	big-small	all	338
121	举止	<i>jǔzhǐ</i>	lift-stop	manner	2791
122	开关	<i>kāiguān</i>	turn on-turn off	a switch	1908
123	考妣	<i>kǎobǐ</i>	deceased father-deceased mother	deceased parents	39
124	可否	<i>kěfǒu</i>	yes-no	can you...	2309
125	快慢	<i>kuàimàn</i>	quick-slow	anyway	426
126	宽窄	<i>kuānzhǎi</i>	broad-narrow	width	95
127	昆仲	<i>kūnzhòng</i>	elder brother-younger brother	brothers	47
128	枯荣	<i>kūróng</i>	wither-blossom	ups and downs	121
129	来回	<i>láihuí</i>	to-fro	repeatedly	5339
130	老少	<i>lǎoshào</i>	old-young	all people	2393
131	劳逸	<i>láoyì</i>	work-play	to work and/or take a break	174
132	劳资	<i>láozi</i>	workers-people owning the capital	labour and capital	1410
133	冷暖	<i>lěngnuǎn</i>	cold-warm	sufferings	1032
134	利弊	<i>lìbì</i>	wanted-unwanted	good and bad; gains and losses	873
135	利钝	<i>lìdùn</i>	sharp-blunt	sharp or blunt	32
136	利害	<i>lìhài/hai</i>	profit-loss	excellent	2653
137	离合	<i>líhé</i>	separation-reunion	clutch	631
138	里外	<i>lǐwài</i>	inside-outside	or so	3004
139	录放	<i>lùfàng</i>	record-show	to record and to play	152
140	买卖	<i>mǎimài</i>	buy-sell	a deal	9374
141	矛盾	<i>máodùn</i>	spear-shield	struggling	30200
142	没有	<i>méiyǒu</i>	nothing-something	nothing	421666

143	面目	<i>miànmù</i>	face-eyes	appearance	5072
144	明灭	<i>míngmiè</i>	flash on-flash off	flicker	107
145	名实	<i>míngshí</i>	reputation-reality	in name	600
146	母女	<i>mǔnǚ</i>	mother-daughter	mother and daughter	1363
147	南北	<i>nánběi</i>	south-north	form south to north; against south and toward north	11682
148	男女	<i>nánnǚ</i>	male-female	grown-up	14929
149	内外	<i>nèiwài</i>	inside-outside	or so	39828
150	能否	<i>néngfǒu</i>	can-cannot	can you...	14425
151	浓淡	<i>nóngdàn</i>	heavy-light	the strength of colour, flavour, or feeling, etc.	223
152	女儿	<i>nǚér</i>	daughter-son	daughter	27226
	儿女	<i>érnǚ</i>	son-daughter	children	7422
153	女士	<i>nǚshì</i>	lady-gentleman	lady	12159
154	女子	<i>nǚzǐ</i>	female-male	lady	36246
	子女	<i>zǐnǚ</i>	male-female	children	11676
155	赔赚	<i>péizhuàn</i>	losses-gains	losses and gains	17
156	批零	<i>pīlíng</i>	wholesale-retail	selling in economics/commerce	435
157	平仄	<i>píngzè</i>	level tones-oblique tones	tones; classical Chinese rhythmic poetry	173
158	牝牡	<i>pìnǚ</i>	male-female	male and female	24
159	铺盖	<i>pūgài</i>	spread-cover	bedding	801
160	强弱	<i>qiángruò</i>	strong-weak	intensity	1206
161	前后	<i>qiánhòu</i>	front-back	or so	11847
162	乾坤	<i>qiánkūn</i>	sky-earth	a situation	881
163	阡陌	<i>qiānmò</i>	(of path) south north-west east	road	197
164	起伏	<i>qǐfú</i>	rise-fall	changes	3904

165	起降	<i>qǐjiàng</i>	take off-land	(of an airplane) to take off and land	1186
166	起居	<i>qǐjū</i>	get up-live	daily living	1479
167	起落	<i>qǐluò</i>	take off-fall off	success or failure	834
168	情理	<i>qínglǐ</i>	sensibilities-senses	common sense	1902
169	轻重	<i>qīngzhòng</i>	light-heavy	importance	4871
170	清浊	<i>qīngzhuó</i>	clear-muddy	clear or muddy	117
171	亲疏	<i>qīnshū</i>	close-distant	closeness	270
172	起讫	<i>qǐqì</i>	beginning-end	the beginning and the end	64
173	弃取	<i>qìqǔ</i>	abandon-adopt	abandon or adopt	24
174	起止	<i>qǐzhǐ</i>	start-stop	start and stop	161
175	去就	<i>qùjiù</i>	leave-take	leave or take (a position)	2983
176	去留	<i>qùliú</i>	leave-stay	leave or stay	727
177	取舍	<i>qǔshě</i>	accept-reject	choose	877
178	曲直	<i>qūzhí</i>	curvy-straight	reasonable and unreasonable	314
179	任免	<i>rènmiǎn</i>	appoint-remove	to hire or dismiss	1918
180	人物	<i>rénwù</i>	somebody-something	somebody	38137
181	日夜	<i>rìyè</i>	day-night	around the clock	6276
182	日月	<i>rìyuè</i>	sun-moon	the sun and the moon; livelihood	1786
183	荣辱	<i>róngǔ</i>	honour-disgrace	reputation	1037
184	榫凿	<i>ruìzáo</i>	mortise-tenon	mortise and tenon; compatibility	13
185	僧尼	<i>sēngní</i>	Buddhist monks-Buddhist nuns	Buddhism members	203
186	僧俗	<i>sēngsú</i>	monkish people-not monkish people	people inside and outside Buddhism	201
187	善恶	<i>shàn' è</i>	good-evil	good and evil	921
188	赏罚	<i>shǎngfá</i>	reward-punishment	to reward and to punish	219
189	上下	<i>shàngxià</i>	upward-downward	or so	21061
190	山水	<i>shānshuǐ</i>	mountain-river	landscape	4892

191	舍得	<i>shěde</i>	willingness to lose-possibility to gain	(be) willing to (give, lose, etc.)	1713
192	胜负	<i>shèngfù</i>	victory-defeat	result	2871
193	升降	<i>shēngjiàng</i>	rising-falling	rising and falling	1534
194	盛衰	<i>shèngshuāi</i>	flourish-decline	ups and downs	361
195	生死	<i>shēngsǐ</i>	life-death	life	6533
196	深浅	<i>shēnqiǎn</i>	deep-shallow	a situation	665
197	参商	<i>shēnshāng</i>	Orion-Antares	distant relationship; split relationship	19
198	伸缩	<i>shēnsuō</i>	stretch out-draw back	flexibility	446
199	是非	<i>shìfēi</i>	yes-no	gossip	20028
200	是否	<i>shìfǒu</i>	yes-no	likely	48103
201	诗歌	<i>shīgē</i>	poetry-songs	poetry	5754
202	时空	<i>shikong</i>	time-space	spacetime	3411
203	始末	<i>shǐmò</i>	beginning-end	the whole story	601
204	师生	<i>shīshēng</i>	teachers-students	teachers and students	5066
205	始终	<i>shǐzhōng</i>	beginning-end	throughout	31700
206	收发	<i>shōufā</i>	receive-deliver	a worker receiving and delivering things	839
207	手脚	<i>shǒujiǎo</i>	hands-feet	conspiracy	3221
208	授受	<i>shòushòu</i>	give-take	contact	212
209	首尾	<i>shǒuwěi</i>	head-tail	the whole story	532
210	收支	<i>shōuzhī</i>	income-expenditure	income and expenditure	5162
211	手足	<i>shǒuzú</i>	hands-feet	brothers	1836
212	水旱	<i>shuǐhàn</i>	flood-drought	flood and drought	413
213	水火	<i>shuǐhuǒ</i>	fire-water	misery; two incompatible things	855
214	睡觉	<i>shuìjiào</i>	sleep-awake	sleep	7560
215	水土	<i>shuǐtǔ</i>	water-earth	environment	5514
216	舒卷	<i>shūjuǎn</i>	unwind-wind	unwind and wind	74

217	疏密	<i>shūmì</i>	distant-close	dansity; closeness	175
218	朔望	<i>shuòwàng</i>	(per month in lunar calendar) the first day-the middle day	the first and the middle days per lunar month	64
219	输赢	<i>shūyíng</i>	lose-win	loss	545
220	死活	<i>sǐhuó</i>	dead-alive	anyway	942
221	松紧	<i>sōngjǐn</i>	loose-tight	size	216
222	榫卯	<i>sǔnmǎo</i>	tenon-mortise	tenon and mortise	49
223	损益	<i>sǔnyì</i>	decrease-increase	loss and profit	542
224	夙夜	<i>sùyè</i>	morning-evening	from morning to evening; always; at all times	42
225	天地	<i>tiāndì</i>	sky-earth	space	11033
226	天渊	<i>tiānyuān</i>	heaven-hell	heaven and hell; completely different like heaven and hell	93
227	题跋	<i>tíbá</i>	preface-postscript	comment	262
228	听讲	<i>tīngjiǎng</i>	hear-tell	listen to	626
229	听说	<i>tīngshuō</i>	hear-say	hear	18000
230	头尾	<i>tóuwěi</i>	head-tail	trace	236
231	吞吐	<i>tūntǔ</i>	swallow-spit	talking	3027
232	图书	<i>túshū</i>	pictures-books	books	19341
233	往返	<i>wǎngfǎn</i>	to-fro	repeatedly	3003
234	往复	<i>wǎngfù</i>	go-return	to and fro	521
235	往还	<i>wǎnghuán</i>	forth-back	to contact	178
236	忘记	<i>wàngjì</i>	forget-remember	to forget	13555
237	往来	<i>wǎnglái</i>	go-come	to have contact with	11560
238	问答	<i>wèndá</i>	question-answer	to question and to answer	999
239	翁姑	<i>wēngū</i>	husband's father-husband's mother	husband's parents	20
240	文武	<i>wénwǔ</i>	literary-military	various skills	1476

241	遐迩	<i>xiá'ěr</i>	far-near	all around	1069
242	咸淡	<i>xiándàn</i>	salty-light	salty or light	64
243	向背	<i>xiàngbèi</i>	support-oppose	loyalty	228
244	详略	<i>xiánɡlüè</i>	detailed-generalized	detailed and generalized	68
245	先后	<i>xiānhòu</i>	former-latter	in order	47391
246	霄壤	<i>xiāorǎng</i>	sky-earth	disparate	40
247	消息	<i>xiāoxi</i>	disperse-stop	news; message	50907
248	消长	<i>xiāozhǎng</i>	decrease-increase	disparity	353
249	行藏	<i>xíngcáng</i>	do's-don'ts	do's and don'ts	98
250	兴衰	<i>xīngshuāi</i>	thriving-declining	boom and bust	1740
251	兴亡	<i>xīngwáng</i>	prosperous-dead	the rise and fall (of a nation or a country)	568
252	行止	<i>xíngzhǐ</i>	go-stop	behaviour; whereabouts	170
253	兄弟	<i>xiōngdì/di</i>	elder brother-younger brother	(a friendly way to name) a younger man	18673
	弟兄	<i>dìxiong</i>	younger brother-elder brother	male followers or friends	3387
254	修短	<i>xiūduǎn</i>	long-short	length	21
255	休戚	<i>xiūqī</i>	joys-sorrows	all happenings	399
256	翕张	<i>xīzhāng</i>	pull back-stretch out	pull back and stretch out	12
257	玄黄	<i>xuánhuáng</i>	sky color-earth color	sky and earth	47
258	轩轻	<i>xuānzhì</i>	high-low	high or low; good or bad	49
259	序跋	<i>xùbá</i>	preface-postscript	preface and postscript	247
260	虚实	<i>xūshí</i>	false-true	the reality	627
261	妍媸	<i>yánchī</i>	beautiful-ugly	beautiful and/or ugly	14
262	扬弃	<i>yángqì</i>	carry forward (the good)-abandon (the bad)	abandon	686
263	仰卧	<i>yǎngwò</i>	look up-lie down	to lie on one's back	475
264	炎凉	<i>yánliáng</i>	hot-cool	unfair treatment to people depending on their popularity	231

265	言行	yánxíng	(human behaviour) with talking-without talking	behaviour	2798
266	盈亏	yíngkuī	wax-wane	profit and loss	2507
267	迎送	yíngsòng	welcome-farewell	welcome and farewell	349
268	因果	yīnguǒ	cause-effect	the relation of cause and effect	1923
269	隐现	yǐnxiàn	cover-uncover	cover and/or uncover	154
270	阴阳	yīnyáng	feminine-masculine	the knowledge of the transfer between opposites	2182
271	衣裳	yīshang	upper clothes-lower clothes	clothes	2921
272	异同	yìtóng	different-same	disagreement	542
273	依违	yīwéi	compliance-violation	indecisive	36
274	抑扬	yìyáng	fall tone-rise tone	rising and falling tones; emotional	375
275	挹注	yìzhù	(of liquid) take out-pour in	take out and pour in	9
276	优劣	yōuliè	advantages-disadvantages	quality	1343
277	幽明	yōumíng	darkness-light	darkness and light	65
278	远近	yuǎnjìn	far-near	distance	2107
279	源流	yuánliú	river source-river flow	origin and development; filiation	949
280	原委	yuánwěi	start-end	the whole story	643
281	鸳鸯	yuānyāng	(Mandarin duck) male-female	lovers	928
282	宇宙	yǔzhòu	space-time	universe	10056
283	臧否	zāngpǐ	compliment-criticize	evaluate	96
284	皂白	zàobái	black-white	right and wrong	368
285	早晚	zǎowǎn	morning-evening	sooner or later	1933
286	赠答	zèngdá	give-repay	to give and receive presents	33
287	增减	zēngjiǎn	increase-decrease	to increase or to decrease; change	768
288	涨跌	zhǎngdiē	rise-fall	to rise and to fall; changes	1472

289	瞻顾	<i>zhāngù</i>	look forward-look back	ponder	17
290	朝夕	<i>zhāoxī</i>	morning-evening	a short while	1228
291	正负	<i>zhèngfù</i>	positive-negative	positive and negative	559
292	正误	<i>zhèngwù</i>	right-wrong	right and/or wrong	111
293	真假	<i>zhēnjiǎ</i>	true-false	true or false	1062
294	质量	<i>zhìliàng</i>	quality-quantity	quality	76862
295	治乱	<i>zhìluàn</i>	governance-disorder	order and chaos	456
296	中外	<i>zhōngwài</i>	China-foreign	China and foreign countries	21708
297	中西	<i>zhōngxī</i>	China-western	China and European countries	9722
298	昼夜	<i>zhòuyè</i>	day-night	round the clock	3761
299	装卸	<i>zhuāngxiè</i>	load-unload	to load and unload; to assemble and disassemble	1248
300	主次	<i>zhǔcì</i>	main-minor	importance	332
301	珠玑	<i>zhūjī</i>	spherical bead-not spherical bead	spherical and non-spherical beads	145
302	姊妹	<i>zǐmèi</i>	elder sister-younger sister	siblings	1795
303	纵横	<i>zònghéng</i>	vertical-horizontal	move about freely	11771
304	尊卑	<i>zūnbēi</i>	upper class-lower class	social status	248
305	作息	<i>zuòxī</i>	work-rest	schedule	460
306	左右	<i>zuǒyòu</i>	left-right	to influence	50360
307	祖孙	<i>zǔsūn</i>	grandparent-grandchild	grandparent and grandchild; grandparents and grandchildren	350

## Appendix 7: Mandarin pairs of antonymy elements retained after antonymy curation

Notes: the oppositeness of each pair of antonyms was identified based on the definition by Löbner (2013), which are quoted with examples as below:

1. Contrary refers to the ‘opposite extremes on a scale’ (214) like *big/small*, *war/peace*, and *love/hate*; or the ‘opposite directions on an axis’ (214) like *above/below*, *before/after*, and *lock/unlock*, which are also considered directional opposites.
2. Complementary refers to ‘either-or alternatives within a given domain’ (214) like *even/odd* or *girl/boy*.
3. Converse refers to ‘reversed roles (relations only)’ (214) like *buy/sell*, *wife/husband*, and *employee/employer*.

No.	Pairs of antonym elements	Twoness	Oppositeness		
		A unit of two	Converse	Complementary	Contrary
1	哀/乐 ( <i>āi/lè</i> , ‘joys/sorrows’)	Mood: bad vs good			√
2	爱/憎 ( <i>ài/zēng</i> , ‘love/hate’)	Feeling for sb/sth: love vs hate			√
3	安/危 ( <i>ān/wēi</i> , ‘safe/dangerous’)	Situation: safe vs dangerous			√
4	凹/凸 ( <i>āo/tū</i> , ‘concave/convex’)	Surface: lower part vs higher part			√
5	褒/贬 ( <i>bāo/biǎn</i> , ‘praise/criticize’)	Comment: speak high vs speak low			√
6	本/末 ( <i>běn/mò</i> , ‘tree roots/tree tops’)	Tree: root under the ground vs branch above the ground			√
7	彼/此 ( <i>bǐ/cǐ</i> , ‘this/that’)	Double sides: that vs this		√	
8	标/本 ( <i>biāo/běn</i> , ‘branches/roots’)	Tree: branch above the ground vs root under the ground			√
9	表/里 ( <i>biǎo/lǐ</i> , ‘inside/outside’)	Space: outer vs inner		√	
10	宾/主 ( <i>bīn/zhǔ</i> , ‘guest/host’)	People in an event: those invited vs those inviting	√		

11	裁/缝 ( <i>cái/féng</i> , ‘cut off/sew up’)	Tailoring: cut off vs sew up			√
12	操纵 ( <i>cāo/zòng</i> , ‘impose control/lift control’)	Control: hold vs release			√
13	长/短 ( <i>cháng/duǎn</i> , ‘long/short’)	Length: long vs short			√
14	沉/浮 ( <i>chén/fú</i> , ‘sink/float’)	Vertical movement: fall vs rise			√
15	成/败 ( <i>chéng/bài</i> , ‘success/failure’)	Result: good vs bad			√
16	迟/早 ( <i>chí/zǎo</i> , ‘late/early’)	Time: late vs early			√
17	出/没 ( <i>chū/mò</i> , ‘appear/disappear’)	Tracks of sb: visible vs invisible			√
18	出/纳 ( <i>chū/nà</i> , ‘cash out/cash in’)	Money: give out vs take in		√	
19	出/入 ( <i>chū/rù</i> , ‘out/in’)	Action related to a space: go out vs come in		√	
20	传/习 ( <i>chuán/xí</i> , ‘teach/learn’)	Study activity: to teach vs to learn	√		
21	春/秋 ( <i>chūn/qiū</i> , ‘spring/autumn’)	Seasons in a circle: two disconnected one			√
22	雌/雄 ( <i>cí/xióng</i> , ‘female/male’)	Gender: female vs male		√	
23	粗/细 ( <i>cū/xì</i> , ‘thick/thin’)	Thickness: thick vs thin			√
24	存/亡 ( <i>cún/wáng</i> , ‘live/die’)	Being: exist vs non-exist		√	
25	大/小 ( <i>dà/xiǎo</i> , ‘big/small’)	Size: big vs small			√
26	旦/夕 ( <i>dàn/xī</i> , ‘morning/evening’)	Time of the day: morning vs evening			√
27	得/失 ( <i>dé/shī</i> , ‘gain/lose’)	Achievement: gain vs loses		√	
28	动/静 ( <i>dòng/jìng</i> , ‘dynamic/static’)	Movement: move vs does not move		√	
29	东/西 ( <i>dōng/xī</i> , ‘east/west’)	Directions along the same line: east vs west			√
30	断/续 ( <i>duàn/xù</i> , ‘breaking/continuing’)	Actions to a progress: disconnect vs connect			√
31	多/寡 ( <i>duō/guǎ</i> , ‘many/few’)	Quantity: many vs few			√
32	多/少 ( <i>duō/shǎo</i> , ‘many/few’)	Quantity: much vs little			√
33	恩/仇 ( <i>ēn/chóu</i> , ‘mercy/revenge’)	Relation: like vs dislike			√
34	恩/怨 ( <i>ēn/yuàn</i> , ‘grateful/resentful’)	Relation: like vs dislike			√
35	反/正 ( <i>fǎn/zhèng</i> , ‘negative/positive’)	Two sides: negative vs positive		√	

36	肥/瘦 ( <i>fēi/shòu</i> , ‘fat/slim’)	Body with flesh: fat vs thin			√
37	凤/凰 ( <i>fèng/huáng</i> , ‘male phoenix/female phoenix’)	Phoenix: male vs female		√	
38	夫/妇 ( <i>fū/fù</i> , ‘husband/wife’)	Couple: male vs female	√		
39	父/母 ( <i>fù/mǔ</i> , ‘father/mother’)	Parents: male vs female		√	
40	俯/仰 ( <i>fǔ/yǎng</i> , ‘head down/head up’)	Vertical movement of the head: downward vs upward			√
41	甘/苦 ( <i>gān/kǔ</i> , ‘sweetness/bitterness’)	Taste: sweet vs bitter			√
42	干/支 ( <i>gān/zhī</i> , ‘main stems/subordinate stems’)	Tree stem: main vs subordinate			√
43	纲/目 ( <i>gāng/mù</i> , ‘outline or generalization/details or specification’)	Record of herbs or animals: main/generalized vs subordinate/specified			√
44	高/低 ( <i>gāo/dī</i> , ‘high/low’)	Height: high vs low			√
45	高/矮 ( <i>gāo/ǎi</i> , ‘tall/short’)	Height: high vs low			√
46	功/过 ( <i>gōng/guò</i> , ‘merit/fault’)	Contribution: right vs wrong			√
47	供/求 ( <i>gòng/qiú</i> , ‘supply/demand’)	A relation in economy: supplying vs supplied	√		
48	公/婆 ( <i>gōng/pó</i> , ‘husband's father/husband's mother; male/female’)	Parents of the life-partner: male vs female		√	
49	攻/守 ( <i>gōng/shǒu</i> , ‘offend/defend’)	Strategies in a battle: attack vs defend	√		
50	公/私 ( <i>gōng/sī</i> , ‘public/private’)	Belongs: public vs private		√	
51	购/销 ( <i>gòu/xiāo</i> , ‘purchase/sale’)	Business: buy vs sell	√		
52	贵/贱 ( <i>guì/jiàn</i> , ‘expensive/cheap’)	Social classes: top vs bottom			√
53	寒/热 ( <i>hán/rè</i> , ‘cold/hot’)	Temperature: low vs high			√
54	寒/暑 ( <i>hán/shǔ</i> , ‘winter/summer’)	Temperature: low vs high			√
55	寒/暄 ( <i>hán/xuān</i> , ‘cold/warm’)	Temperature: low vs high			√
56	行/列 ( <i>háng/liè</i> , ‘row/column’)	Written arrangement: horizontal vs vertical			√
57	好/歹 ( <i>hǎo/dǎi</i> , ‘good/bad’)	Evaluation of sth: good vs bad			√
58	好/坏 ( <i>hǎo/huài</i> , ‘good/bad’)	Evaluation of sth: good vs bad			√
59	好/恶 ( <i>hào/wù</i> , ‘like/dislike’)	Feeling for sb/sth: love vs hate			√

60	黑/白 ( <i>hēi/bái</i> , ‘black/white’)	Darkness: much vs little			√
61	横/竖 ( <i>héng/shù</i> , ‘horizontal/vertical’)	Of a line: horizontal vs vertical			√
62	厚/薄 ( <i>hòu/bó</i> , ‘thick/thin’)	Width: thick vs thin			√
63	呼吸 ( <i>hū/xī</i> , ‘exhale/inhale’)	Breath: breathe out vs breathe in		√	
64	呼/应 ( <i>hū/yìng</i> , ‘call/response’)	Communication: call vs answer	√		
65	缓/急 ( <i>huǎn/jí</i> , ‘no rush/urgent’)	Emergency: no vs yes			√
66	毁/誉 ( <i>huǐ/yù</i> , ‘slander/good name’)	Fame: bad vs good			√
67	祸/福 ( <i>huò/fú</i> , ‘disaster/luck’)	Fortune: bad vs good			√
68	集/散 ( <i>jí/sàn</i> , ‘gather/distribute’)	Of people or stuff: gather vs disperse			√
69	吉/凶 ( <i>jí/xiōng</i> , ‘good luck/bad luck’)	Fortune: good vs bad			√
70	加/减 ( <i>jiā/jiǎn</i> , ‘addition/subtraction’)	Calculation: being added vs being subtracted			√
71	嫁/娶 ( <i>jià/qǔ</i> , ‘marry a man/marry a woman’)	To marry: the man vs the woman	√		
72	奖/惩 ( <i>jiǎng/chéng</i> , ‘reward/punishment’)	Treatment to certain behaviour: reward vs punishment			√
73	奖/罚 ( <i>jiǎng/fá</i> , ‘reward/punishment’)	Treatment to certain behaviour: reward vs punishment			√
74	将/士 ( <i>jiàng/shì</i> , ‘officer/soldier’)	Army: those with titles vs those without titles		√	
75	交/接 ( <i>jiāo/jiē</i> , ‘give/take’)	A relation: give vs receive	√		
76	教/学 ( <i>jiào/xué</i> , ‘teach/learn’)	Study activity: to teach vs to learn	√		
77	姐/妹 ( <i>jiě/mèi</i> , ‘elder sister/younger sister’)	Sisters: elder vs younger	√		
78	接/送 ( <i>jiē/sòng</i> , ‘pick up/see off’)	Treatment of sb: pick up when coming vs see off when leaving			√
79	进/出 ( <i>jìn/chū</i> , ‘in/out’)	Of a space: into vs out of			√
80	进/退 ( <i>jìn/tuì</i> , ‘advance/retreat’)	Horizontal movement: forward vs backward			√
81	紧/张 ( <i>jǐn/zhāng</i> , ‘tension/relaxation’)	Tension: much vs little			√
82	经/络 ( <i>jīng/luò</i> , ‘main channel/sub channel’)	Energy channel in the body: main vs subordinate			√
83	经/纬 ( <i>jīng/wěi</i> , ‘longitude/latitude’)	Distance measurement in degrees: east-west vs north-south			√
84	聚/散 ( <i>jù/sàn</i> , ‘gather/spread’)	Of people: gather vs disperse			√

85	巨/细 (jù/xì, 'big/small')	Of sth: big vs small			√
86	开/关 (kāi/guān, 'turn on/turn off')	Of a surface: uncover vs cover		√	
87	可/否 (kě/fǒu, 'yes/no')	Possibility: yes vs no			√
88	快/慢 (kuài/màn, 'quick/slow')	Speed: high vs low			√
89	来/回 (lái/huí, 'to/fro')	Movement with two directions: come vs go			√
90	老/少 (lǎo/shào, 'old/young')	People: elder vs younger			√
91	冷/暖 (lěng nuǎn, 'cold/warm')	Temperature: low vs high			√
92	利/弊 (lì/bì, 'wanted/unwanted')	Properties: good vs bad			√
93	利/害 (lì/hài, 'profit/loss')	Properties: good vs bad			√
94	离/合 (lí/hé, 'separation/reunion')	Of two: being separated vs being together			√
95	里/外 (lǐ/wài, 'inside/outside')	Of a space: inside vs outside		√	
96	买/卖 (mǎi/mài, 'buy/sell')	Business: buy vs sell	√		
97	矛/盾 (máo/dùn, 'spear/shield')	Fighting weapon: that to attack vs that to defend	√		
98	没/有 (méi/yǒu, 'nothing/something')	Belonging: no vs yes			√
99	南/北 (nán/běi, 'south/north')	Directions along a line: south vs north			√
100	男/女 (nán/nǚ, 'male/female')	Gender: male vs female		√	
101	内/外 (nèi/wài, 'inside/outside')	Of a space: inside vs outside		√	
102	能/否 (néng/fǒu, 'can/cannot')	Possibility: yes vs no			√
103	浓/淡 (nóng/dàn, 'heavy/light')	Darkness: much vs little			√
104	女/儿 (nǚ/ér, 'daughter/son')	Children: female vs male		√	
105	女/士 (nǚ/shì, 'lady/gentleman')	People: female vs male		√	
106	女/子 (nǚ/zǐ, 'female/male')	Children: female vs male		√	
107	批/零 (pī/líng, 'wholesale/retail')	Selling in business: wholesale vs retail		√	
108	前/后 (qián/hòu, 'front/back')	Order: before vs after			√
109	乾/坤 (qián/kūn, 'sky/earth')	World: upward sky/downward ground			√

110	起/伏 (qǐ/fú, 'rise/fall')	Vertical movement: rise vs fall			√
111	起/落 (qǐ/luò, 'take off/fall off')	Vertical movement: rise vs fall			√
112	起/降 (qǐ/jiàng, 'take off/land')	Vertical movement: rise vs fall			√
113	阡/陌 (qiān/mò, '(of path) south north/west east')	Roads of two directions in a field: north-south vs west-east			√
114	强/弱 (qiáng/ruò, 'strong/weak')	Strength: strong vs weak			√
115	亲/疏 (qīn/shū, 'close/distant')	Relationship: tight vs loose			√
116	轻/重 (qīng/zhòng, 'light/heavy')	Weight: little vs much			√
117	情/理 (qíng/lǐ, 'sensibilities/senses')	Judgement: sense vs sensibility		√	
118	去/就 (qù/jiù, 'leave/take')	Of a position: leave vs take		√	
119	去/留 (qù/liú, 'leave/stay')	Of a place: leave or stay		√	
120	取/舍 (qǔ/shě, 'accept/reject')	Decision about things: take it vs let it go		√	
121	曲/直 (qū/zhí, 'curvy/straight')	Of a line: not straight vs straight		√	
122	人/物 (rén/wù, 'somebody/something')	Being: human vs non-human		√	
123	任/免 (rèn/miǎn, 'appoint/remove')	For a job: choose sb vs dismiss sb		√	
124	日/夜 (rì/yè, 'day/night')	Day: night vs day			√
125	荣/辱 (róng/rǔ, 'honour/disgrace')	Fame: good vs bad			√
126	僧/尼 (sēng/ní, 'Buddhist monks/Buddhist nuns')	Buddhist people: male vs female		√	
127	僧/俗 (sēng/sú, 'monkish people/not monkish people')	People: Buddhist vs non-Buddhist		√	
128	善/恶 (shàn/è, 'good/evil')	Treatment to others: kind vs unkind			√
129	赏/罚 (shǎng/fá, 'reward/punishment')	Treatment to certain behaviour: reward vs punishment		√	
130	上/下 (shàng/xià, 'upward/downward')	Vertical direction: upward vs downward			√
131	舍/得 (shě/de, 'willingness to lose/possibility to gain')	Achievement: gain vs loses		√	
132	深/浅 (shēn/qiǎn, 'deep/shallow')	Depth: deep vs shallow			√
133	伸/缩 (shēn/suō, 'stretch out/draw back')	Horizontal movement: stretch out vs draw back			√
134	胜/负 (shèng/fù, 'victory/defeat')	Result: win vs loses		√	

135	升降 ( <i>shēng/jiàng</i> , ‘rising/falling’)	Vertical movement: fall vs rise			√
136	盛/衰 ( <i>shèng/shuāi</i> , ‘flourish/decline’)	Development: downward VS upward			√
137	生/死 ( <i>shēng/sǐ</i> , ‘life/death’)	Life: die vs live		√	
138	是/非 ( <i>shì/fēi</i> , ‘yes/no’)	Truth: yes vs no			√
139	是/否 ( <i>shì/fǒu</i> , ‘yes/no’)	Possibility: yes vs no			√
140	时/空 ( <i>shí/kōng</i> , ‘time/space’)	Two dimensions of any event: space vs time		√	
141	始/末 ( <i>shǐ/mò</i> , ‘beginning/end’)	An issue: beginning vs end			√
142	师/生 ( <i>shī/shēng</i> , ‘teachers/students’)	In teaching: those to teach vs those being taught	√		
143	始/终 ( <i>shǐ/zhōng</i> , ‘beginning/end’)	Of sth: beginning vs end			√
144	输/赢 ( <i>shū/yíng</i> , ‘lose/win’)	Result: lose vs win		√	
145	手/脚 ( <i>shǒu/jiǎo</i> , ‘hands/feet’)	Limbs of a body: upper vs lower			√
146	收/发 ( <i>shōu/fā</i> , ‘receive/deliver’)	Of package: receive vs deliver		√	
147	授/受 ( <i>shòu/shòu</i> , ‘give/take’)	A relation: give vs receive	√		
148	首/尾 ( <i>shǒu/wěi</i> , ‘head/tail’)	Of sth: head vs tail			√
149	收/支 ( <i>shōu/zhī</i> , ‘income/expenditure’)	Money: earned vs spent		√	
150	手/足 ( <i>shǒu/zú</i> , ‘hands/feet’)	Limbs of a body: upper vs lower			√
151	水/旱 ( <i>shuǐ/hàn</i> , ‘flood/drought’)	Water coverage: more than enough vs less than enough			√
152	睡/觉 ( <i>shuì/jiào</i> , ‘sleep/awake’)	Body status: sleep vs awake		√	
153	水/土 ( <i>shuǐ/tǔ</i> , ‘water/earth’)	The coverage of the earth: water vs earth		√	
154	死/活 ( <i>sǐ/huó</i> , ‘dead/alive’)	Life: die vs live		√	
155	松/紧 ( <i>sōng/jǐn</i> , ‘loose/tight’)	Tightness: loose vs tight			√
156	损/益 ( <i>sǔn/yì</i> , ‘decrease/increase’)	Achievement: lose vs gain			√
157	题/跋 ( <i>tí/bá</i> , ‘preface/postscript’)	Writings about a book: that at the start of the book vs that at the end of the book		√	
158	天/地 ( <i>tiān/dì</i> , ‘sky/earth’)	World: upward sky/downward ground			√
159	听/讲 ( <i>tīng/jiǎng</i> , ‘hear/tell’)	While talking: hear vs tell	√		

160	听/说 ( <i>tīng/shuō</i> , ‘hear/say’)	While talking: hear vs tell	√		
161	头/尾 ( <i>tóu/wěi</i> , ‘head/tail’)	Of sth: head vs tail			√
162	吞/吐 ( <i>tūn/tǔ</i> , ‘swallow/spit’)	While eating take in vs spit out		√	
163	往/返 ( <i>wǎng/fǎn</i> , ‘to/fro’)	Movement with two directions: go vs come			√
164	往/还 ( <i>wǎng/huán</i> , ‘forth/back’)	Movement with two directions: go vs come			√
165	忘/记 ( <i>wàng/jì</i> , ‘forget/remember’)	Memory: forget vs remember		√	
166	往/来 ( <i>wǎng/lái</i> , ‘go/come’)	Movement with two directions: go vs come			√
167	问/答 ( <i>wèn/dá</i> , ‘question/answer’)	Information: asking for information vs offering information	√		
168	文/武 ( <i>wén/wǔ</i> , ‘literary/military’)	Talents: brain work vs physical work		√	
169	遐/迩 ( <i>xiá/ěr</i> , ‘far/near’)	Distance: far vs near			√
170	先/后 ( <i>xiān/hòu</i> , ‘former/latter’)	Order: before vs after			√
171	向/背 ( <i>xiàng/bèi</i> , ‘support/oppose’)	The direction of a body: toward v backward			√
172	消/长 ( <i>xiāo/zhǎng</i> , ‘decrease/increase’)	Development: downward VS upward			√
173	兴/亡 ( <i>xīng/wáng</i> , ‘prosperous/dead’)	Development: upward vs downward			√
174	兴/衰 ( <i>xīng/shuāi</i> , ‘thriving/declining’)	Development: upward vs downward			√
175	兄/弟 ( <i>xiōng/dì</i> , ‘elder brother/younger brother’)	Brothers: elder vs younger	√		
176	休/戚 ( <i>xiū/qī</i> , ‘joys/sorrows’)	Mood: bad vs good			√
177	序/跋 ( <i>xù/bá</i> , ‘preface/postscript’)	Writings about a book: that at the start of the book vs that at the end of the book		√	
178	虚/实 ( <i>xū/shí</i> , ‘false/true’)	Happenings: false vs true		√	
179	炎/凉 ( <i>yán/liáng</i> , ‘hot/cool’)	Temperature: high vs low			√
180	言/行 ( <i>yán/xíng</i> , ‘(human behaviour) with talking/without talking’)	Personal action: speaking vs those without speaking		√	
181	扬/弃 ( <i>yáng/qì</i> , ‘carry forward (the good)/abandon (the bad)’)	Attitude to history: carry forward (what is good)-abandon (what is bad)		√	
182	衣/裳 ( <i>yī/shang</i> , ‘upper clothes/lower clothes’)	Clothes: upper-clothes lower-clothes			√

183	异/同 (yì/tóng, 'different/same')	Resemblance: no vs yes			√
184	抑/扬 (yì/yang, 'fall tone/rise tone')	Tones: fall vs rise			√
185	因/果 (yīn/guǒ, 'cause/effect')	happening: start-end	√		
186	阴/阳 (yīn/yáng, 'feminine/masculine')	All happenings: negative vs positive		√	
187	盈/亏 (yíng/kuí, 'wax/wane')	Change of the moon: wax vs wane			√
188	迎/送 (yíng/sòng, 'welcome/farewell')	Hosting: welcome (beginning) vs say goodbye (end)			√
189	远/近 (yuǎn/jìn, 'far/near')	Distance: far vs near			√
190	优/劣 (yōu/liè, 'advantages/disadvantages')	Quality: good vs bad			√
191	宇/宙 (yǔ/zhòu, 'space/time')	Two dimensions of any event: space vs time		√	
192	原/委 (yuán/wěi, 'start/end')	An issue: beginning vs end			√
193	鸳/鸯 (yuān/yāng, '(Mandarin duck) male/female')	Mandarin duck: male vs female		√	
194	皂/白 (zào/bái, 'black/white')	Levels of darkness: most vs least			√
195	早/晚 (zǎo/wǎn, 'morning/evening')	Time: early vs late			√
196	增/减 (zēng/jiǎn, 'increase/decrease')	Quantity: increase vs decrease			√
197	涨/跌 (zhǎng/diē, 'rise/fall')	Vertical movement: fall vs rise			√
198	朝/夕 (zhāo/xī, 'morning/evening')	Time of the day: morning vs evening			√
199	真/假 (zhēn/jiǎ, 'true/false')	Facts: correct vs incorrect			√
200	正/负 (zhèng/fù, 'positive/negative')	Two sides: negative vs positive		√	
201	质/量 (zhì/liàng, 'quality/quantity')	Standard: quality vs quantity		√	
202	昼/夜 (zhòu/yè, 'day/night')	Day: night vs day			√
203	主/次 (zhǔ/cì, 'main/minor')	Importance: main vs subordinate			√
204	装/卸 (zhuāng/xiè, 'load/unload')	Goods or the like: load vs unload			√
205	姊/妹 (zǐ/mèi, 'elder sister/younger sister')	Daughters: elder vs younger	√		
206	纵/横 (zòng/héng, 'vertical/horizontal')	Directions: vertical vs horizontal			√
207	祖/孙 (zǔ/sūn, 'grandparent/grandchild')	Grand generation: elder vs younger	√		

208	尊/卑 ( <i>zūn/bēi</i> , 'upper class/lower class')	Classes: upper vs lower			√
209	左/右 ( <i>zuǒ/yòu</i> , 'left/right')	Horizontal directions: left vs right			√
210	作/息 ( <i>zuò/xī</i> , 'work/rest')	Working schedule: work vs rest		√	

## Appendix 8: More English interpretations of Mandarin antonym constructs

Notes:

1. This is not an exhaustive list of all the meaning entries for each construct. The possible meaning entries for each construct could be more than those listed here in actual use.
2. For the constructs varied with two orders, please follow the subscripts 1 and 2.

Codes	English interpretation of Mandarin antonym constructs
M-1	safety and danger; risk
M-2	bump
M-3	comment; criticize
M-4	a whole story (from head to end); (figurative) major and minor
M-5	whole; specimen; example, sample
M-6	each other; (informal) likewise
M-7	to tailor; tailoring; a tailor
M-8	to operate; to manipulate
M-9	good and bad; length; accident or risk; gossip; whatever, however; disadvantages and advantages; accident; loss and gains
M-10	down and up in water; ups and downs
M-11	sooner or later; inevitable
M-12	haunt
M-13	cashier; the job of a cashier
M-14	a year; age; a history book; the time 722-481 BC in China
M-15	in and out; differences
M-16	male and female; winner or loser
M-17	live or die; existent or extinct
M-18	thickness, width; a way of measurement
M-19	in a short while; in a day's time
M-20	size; seniority; a whole family; at least

M-21	gains and loss; success and failure; good and bad
M-22	dynamic; (noise of) movement; situation
M-23	east and west; from east to west; a thing, something; a person
M-24	amount, quantity
M-25	amount, quantity; more or less; a bit; how many, how much
M-26	mercy and hatred; resentment, hatred
M-27	whatever, however, anyway; return to what is right
M-28	size of clothes; meat mixture of fat and lean
M-29	phoenix; bird of good luck
M-30	a married couple, married couples
M-31	father and mother, parents
M-32	manner, behaviour; a short while
M-33	good time and bad time; experiences, especially sufferings
M-34	height
M-35	height; level; whatever, however; after all, in the end
M-36	husband's parents; a couple
M-37	price; social status; whatever, however, anyway
M-38	cold and hot; winter and summer
M-39	rows and columns; procession
M-40	greetings; small talks
M-41	good and bad; bad happenings, danger; at least; however, whatever
M-42	good and bad; quality; bad happenings, danger; at least; however, whatever
M-43	interest, taste
M-44	black and white; right and wrong, good and bad
M-45	whatever, however, anyway
M-46	thickness; (figurative) closeness
M-47	hurry or no hurry; urgency
M-48	slander and compliment

M-49	disaster and/or good luck; disaster
M-50	exhale and inhale, breathe; a short while
M-51	call and answer; coherent
M-52	to teach; teaching
M-53	transition; handover; to meet up with; befriend
M-54	to marry; to get married
M-55	elder and younger sisters, sisters; female fellows
M-56	come in and go out; income and expenditure
M-57	longitude and latitude; main points
M-58	advance and retreat; social behaviours
M-59	nervous; intense; in short supply
M-60	good luck and/or bad luck; fortune
M-61	big and small (things), all
M-62	a switch
M-63	yes or no; can you...
M-64	Speed; anyway
M-65	to and fro; repeatedly
M-66	the old and the young; all one's (extended) families; all people
M-67	cold and warm in temperature; wellbeing; sufferings
M-68	profit and loss; tough, difficult, badly; strict, strictly; excellent
M-69	Inside and outside; or so
M-70	a business, a deal; a shop
M-71	contradictory, inconsistent; contradiction, disagreement; to contradict; struggling
M-72	nothing
M-73	south and north; from south to north; against south and toward north
M-74	male and female, man and woman; grown-up
M-75	inside and outside; or so
M-76	can you...

M-77	the strength of color, taste, passion, etc.
M-78 <sub>1</sub>	daughter
M-78 <sub>2</sub>	sons and/or daughters; children
M-79	lady
M-80 <sub>1</sub>	lady
M-80 <sub>2</sub>	sons and/or daughters; children
M-81	strength; intensity
M-82	the front and the back; from beginning to the end; or so, around
M-83	sky and earth; a situation
M-84	the vertical and the horizontal paths in a field; road; (figurative) things like that
M-85	to rise and fall, to undulate; rising and falling; changes
M-86	(of price, etc.) to rise and fall; (of an airplane) to take off and land; success or failure
M-87	senses and sensibilities; common sense
M-88	weight; priority; awareness, mindfulness; importance
M-89	close and distant relationships; closeness
M-90	to accept or to reject; choose; choice
M-91	reasonable and unreasonable
M-92	somebody; an important person; a hero or heroine in stories; a type of painting
M-93	all day and all night, around the clock
M-94	honour and dishonour; reputation
M-95	from top to bottom; all the staff from top to bottom in an organization; good and bad; or so; the distance from top to bottom; to go upwards and come downwards
M-96	(be) willing to (give, lose, etc.)
M-97	victory or defeat
M-98	life or death; life
M-99	depth; awareness, mindfulness; a situation
M-100	stretch out and draw back; flexibility, flexible
M-101	right and wrong; gossip
M-102	yes or no; likely

M-103	time and space; spacetime
M-104	what has happened from the beginning to the end; the whole story
M-105	the whole process from the beginning to the end; throughout, all along
M-106	to receive and deliver; a worker receiving and delivering things
M-107	behaviour, action; conspiracy
M-108	to give and take; contact
M-109	the beginning and the end; the whole period from the beginning to the end; the whole story
M-110	to take actions; brothers
M-111	sleep
M-112	environment
M-113	win or lose, victory or defeat; loss
M-114	situation, especially a difficult one; whatever, however, anyway
M-115	tightness, size
M-116	loss and profit; to decrease and to increase
M-117	sky and earth; space
M-118	preface and postscript; preface or postscript; comment
M-119	listen to; hear
M-120	hear
M-121	trace, hint
M-122	crowd in and out; ambiguous word, statement, or writing; talking
M-123	to and fro; repeatedly
M-124	to go to and come back; to contact
M-125	to forget
M-126	to and fro; to have contact with
M-127	various talents, various skills; people of various skills or talents
M-128	from faraway to nearby, all over, all around
M-129	to support or oppose; loyalty
M-130	from the former to the latter, in order

M-131	to decrease and to increase; difference, disparity
M-132	boom and bust; development
M-133	the rise and fall (of a nation or a country)
M-134 <sub>1</sub>	elder and younger brothers; younger brother; (a friendly way to name) a younger man; a modest way for a man to name himself
M-134 <sub>2</sub>	younger and/or elder brothers; male followers or friends
M-135	all happenings
M-136	all happenings, the reality; the situation known by an insider
M-137	to carry forward the positive and to abandon the negative; to abandon
M-138	unfair treatment to people depending on their popularity
M-139	behavior, manners
M-140	profit and loss
M-141	welcome and farewell; to receive and to see off
M-142	cause and effect; the relation of cause and effect
M-143	the negative and the positive in the ancient Chinese philosophy; the knowledge of the transfer between opposites
M-144	clothes
M-145	the different and the same; the different, disagreement
M-146	advantages and disadvantages; good and bad; quality
M-147	far and near; from faraway to nearby, distance; all around, all over
M-148	the whole story
M-149	Mandarin ducks; an affectionate couple, lovers
M-150	universe; world
M-151	right and wrong
M-152	mornings and evenings; sooner or later; whenever
M-153	all the time, everyday; a short while, soon
M-154	quality
M-155	day and night; round the clock
M-156	primary and secondary; importance
M-157	elder and younger sisters; siblings

M-158	move about freely
M-159	social status
M-160	work and rest; schedule; manual labour
M-161	left and right sides; nearby, close at hand, to hand; attendant, entourage, courtier; anyway, anyhow; or so; to dominate, to influence

## Appendix 9: Semantic patterns of Mandarin antonym construction

Notes:

1. Two tables are included in this appendix.
2. Table 1 includes the possible semantic patterns of each Mandarin antonym construct. The semantic patterns were identified on a general observation in the corpus CCL. It is not exhaustive. The constructs can be used with the semantic patterns in addition to those listed here.
3. The contextual headedness is not included here. All those Mandarin antonym constructs with the semantic pattern ‘ANT<sub>1</sub> OR ANT<sub>2</sub>’ could be used with left or right headed in context.
4. The ratio of the fixed headedness was calculated and presented in Table 2.
5. For the constructs varied with two orders, please follow the subscripts 1 and 2.

**Table 1** Semantic patterns of the Mandarin form [ant<sub>1</sub>ant<sub>2</sub>]

<b>Codes</b>	<b>‘ANT<sub>1</sub> AND ANT<sub>2</sub>’</b>	<b>‘ANT<sub>1</sub> OR ANT<sub>2</sub>’</b>	<b>‘ANT<sub>1</sub>’</b>	<b>‘ANT<sub>2</sub>’</b>	<b>‘FROM ANT<sub>1</sub> TO ANT<sub>2</sub> (DIRECTION/ALL/ANY)’</b>
M-1	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
M-2	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
M-3	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
M-4	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
M-5	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
M-6	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’				
M-7	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’				
M-8	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’				
M-9	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
M-10	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
M-11	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)’
M-12	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			
M-13	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’				
M-14	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’				

M-15	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-16	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-17	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-18	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-19		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-20	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-21	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-22			'ANT <sub>1</sub> '		
M-23					'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-24		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-25		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-26	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-27		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ANY)'
M-28	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-29	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-30	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-31	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-32	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-33	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-34	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-35	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-36	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-37	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-38	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-39	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-40	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-41	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-42	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-43	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				

M-44	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-45		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ANY)'
M-46	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-47		'ANT <sub>1</sub> OR ANT <sub>2</sub> '		'ANT <sub>2</sub> '	
M-48	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-49	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-50	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-51	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-52	'ANT <sub>1</sub> AND ANT <sub>2</sub> '		'ANT <sub>1</sub> '		
M-53	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-54	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-55	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-56	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-57	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-58	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-59			'ANT <sub>1</sub> '		
M-60	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-61	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-62	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-63		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-64	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-65	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-66	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-67	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-68	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-69	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-70	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-71	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-72			'ANT <sub>1</sub> '		

M-73	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-74	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-75	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-76		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-77	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-78 <sub>1</sub>			'ANT <sub>1</sub> '		
M-78 <sub>2</sub>	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-79			'ANT <sub>1</sub> '		
M-80 <sub>1</sub>			'ANT <sub>1</sub> '		
M-80 <sub>2</sub>	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-81	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-82	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-83	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-84	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-85	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-86	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-87	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-88	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-89		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-90	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-91	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-92			'ANT <sub>1</sub> '		
M-93	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-94	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-95	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-96			'ANT <sub>1</sub> '		
M-97		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-98	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-99	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				

M-100		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ANY)'
M-101	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		'ANT <sub>2</sub> '	
M-102		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-103	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-104	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-105	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-106	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-107	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-108	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-109	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-110	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-111			'ANT <sub>1</sub> '		
M-112	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-113		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-114		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ANY)'
M-115	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-116	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'ANT <sub>1</sub> '		
M-117	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-118	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-119			'ANT <sub>1</sub> '		
M-120			'ANT <sub>1</sub> '		
M-121	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-122	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-123	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-124	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)'
M-125			'ANT <sub>1</sub> '		
M-126	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-127	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-128	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'

M-129	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-130	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-131	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-132	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-133	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-134 <sub>1</sub>	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '		'ANT <sub>2</sub> '	
M-134 <sub>2</sub>	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '	'ANT <sub>1</sub> '		
M-135		'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-136	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-137	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-138	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-139	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-140	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-141	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-142	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-143	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-144			'ANT <sub>1</sub> '		
M-145	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-146	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-147	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-148	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-149	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-150	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				
M-151	'ANT <sub>1</sub> AND ANT <sub>2</sub> '	'ANT <sub>1</sub> OR ANT <sub>2</sub> '			
M-152	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-153	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-154			'ANT <sub>1</sub> '		
M-155	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				'FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)'
M-156	'ANT <sub>1</sub> AND ANT <sub>2</sub> '				

M-157	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’				
M-158	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’				‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)’
M-159	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’				‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL)’
M-160	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’				
M-161	‘ANT <sub>1</sub> AND ANT <sub>2</sub> ’	‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’			‘FROM ANT <sub>1</sub> TO ANT <sub>2</sub> (DIRECTION/ALL/ANY)’

**Table 2** Ratio of fixed headedness of Mandarin antonym construction

Mandarin antonym construction	Fixed headedness		Contextual headedness: those can be used with ‘ANT <sub>1</sub> OR ANT <sub>2</sub> ’
	Left-headed: ‘ANT <sub>1</sub> ’	Right-headed: ‘ANT <sub>2</sub> ’	Left/right-headed
[ant <sub>1</sub> ant <sub>2</sub> ]			
Items in total: 164	17	3	76
Ratio of fixed headedness	10%	2%	46%

## Appendix 10: Syntactic categories of Mandarin antonym construction

Notes:

1. The syntactic categories in the table were identified in the CCL corpus. It is not an exhaustive observation. The construct could be used with more syntactic categories than those identified and listed here.
2. The ratio of each syntactic category was calculated and presented at the end of the table.
3. For the constructs varied with two orders, please follow the subscripts 1 and 2.
4. The abbreviations for the syntactic categories: n. – noun; a. – adjective; ad. – adverb; v. – verb; pron. – pronoun; prep. – preposition.

Items	Identified syntactic categories				
M-1	n.				
M-2	n.	a.			
M-3	n.			v.	
M-4	n.				
M-5	n.				
M-6					pron.
M-7	n.			v.	
M-8	n.			v.	
M-9	n.		ad.		
M-10	n.			v.	
M-11	n.		ad.		
M-12	n.			v.	
M-13	n.				
M-14	n.				
M-15	n.			v.	
M-16	n.				
M-17	n.			v.	
M-18	n.				
M-19	n.	a.			
M-20	n.		ad.		
M-21	n.				
M-22	n.				
M-23	n.	a.			
M-24	n.				
M-25	n.		ad.		pron.
M-26	n.				
M-27			ad.		
M-28	n.				
M-29	n.				

M-30	n.				
M-31	n.				
M-32	n.			v.	
M-33	n.	a.			
M-34	n.				
M-35	n.		ad.		
M-36	n.				
M-37	n.		ad.		
M-38	n.	a.			
M-39	n.	a.			
M-40	n.			v.	
M-41	n.		ad.		
M-42	n.		ad.		
M-43	n.	a.			
M-44	n.	a.			
M-45	n.		ad.		
M-46	n.				
M-47	n.				
M-48	n.			v.	
M-49	n.				
M-50	n.			v.	
M-51	n.			v.	
M-52	n.			v.	
M-53	n.	a.		v.	
M-54	n.			v.	
M-55	n.	a.			
M-56		a.		v.	
M-57	n.	a.			
M-58	n.			v.	
M-59	n.	a.		v.	
M-60	n.				
M-61	n.				
M-62	n.	a.			
M-63	n.		ad.		
M-64	n.	a.			
M-65	n.		ad.	v.	
M-66	n.	a.			
M-67	n.	a.			
M-68	n.	a.			
M-69	n.				
M-70	n.				
M-71	n.	a.		v.	
M-72			ad.	v.	
M-73	n.	a.			

M-74	n.	a.			
M-75	n.		ad.		
M-76			ad.		
M-77	n.	a.			
M-78 <sub>1</sub>	n.				
M-78 <sub>2</sub>	n.	a.			
M-79	n.				
M-80 <sub>1</sub>	n.				
M-80 <sub>2</sub>	n.	a.			
M-81	n.				
M-82	n.		ad.		
M-83	n.				
M-84	n.				
M-85	n.			v.	
M-86	n.	a.		v.	
M-87	n.				
M-88	n.	a.			
M-89	n.	a.			
M-90	n.			v.	
M-91	n.				
M-92	n.				
M-93	n.		ad.		
M-94	n.				
M-95	n.		ad.	v.	
M-96		a.		v.	
M-97	n.	a.			
M-98	n.	a.			
M-99	n.	a.			
M-100	n.	a.		v.	
M-101	n.	a.			
M-102			ad.		
M-103	n.	a.			
M-104	n.				
M-105	n.		ad.		
M-106	n.	a.		v.	
M-107	n.				
M-108	n.			v.	
M-109	n.				
M-110	n.	a.			
M-111				v.	
M-112	n.				
M-113	n.				
M-114	n.		ad.		
M-115	n.	a.			

M-116	n.	a.			
M-117	n.	a.			
M-118	n.				
M-119		a.		v.	
M-120				v.	
M-121	n.				
M-122		a.		v.	
M-123	n.	a.		v.	
M-124				v.	
M-125				v.	
M-126	n.	a.		v.	
M-127	n.	a.			
M-128			ad.		
M-129	n.			v.	
M-130	n.		ad.		
M-131	n.			v.	
M-132	n.			v.	
M-133	n.			v.	
M-134 <sub>1</sub>	n.				
M-134 <sub>2</sub>	n.				
M-135	n.				
M-136	n.	a.			
M-137	n.			v.	
M-138	n.	a.			
M-139	n.				
M-140	n.				
M-141	n.			v.	
M-142	n.	a.			
M-143	n.	a.			
M-144	n.				
M-145	n.				
M-146	n.				
M-147	n.		ad.		
M-148	n.				
M-149	n.				
M-150	n.				
M-151	n.				
M-152	n.		ad.		
M-153	n.		ad.		
M-154	n.				
M-155	n.		ad.		
M-156	n.				
M-157	n.				
M-158	n.			v.	

M-159	n.				
M-160	n.			v.	
M-161	n.		ad.	v.	
Items in total: 164	150	48	28	46	2
Ratio of each syntactic category	91%	29%	17%	28%	1%

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*Zhongguo Yuwen*, (3).

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