

# **Corpus Studies on the Use and Framing of Metaphor in Popular Economic Discourse**

Dongman Cai

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The chapters of the thesis based on work from jointly-authored publication is Chapter 1 Chapter 2 Chapter 3 Chapter 5 Chapter 6

This jointly-authored publication investigates metaphor used with *protectionism* and *free trade* in *China Daily* and *Financial Times*. In this thesis I study metaphor used with *protectionism* and *free trade* in 8 newspapers .

My contribution in the publication: I built China Daily Corpus and Financial Times Corpus; I identified metaphors used with *protectionism* and *free trade* in the two corpora; I prepared drafts of some sections and checked the final manuscript.

My co-author's contribution in the publication: My supervisor wrote and checked the manuscript.

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## Abstract

Metaphor patterns used with topics related to trade disputes in popular economic discourse and metaphorical frames suggested by them provide insights into the way metaphor expresses ideological standpoints to similar economic issues in a specific genre. However, systematic and replicable metaphor research procedures to capture metaphor patterns used with trade disputes and their underlying metaphorical frames were not available.

This research aims at capturing metaphor patterns used by journalists from China, the UK and the US to write about trade disputes and the way they seem to frame and evaluate in a systematic and replicable way. To achieve this, this research developed an analytical model that captured three types of metaphor patterns emerging from discourse: metaphor scenario, systematic metaphor and metaphoreme. Guided by this model, this research revised existing research procedures for metaphor analysis from a corpus-linguistic approach in popular economic discourse. Throughout the procedures, this research implemented each procedure with the aim of selecting salient and meaningful information that served to address my research questions. For instance, I built three representative specialized corpora, which provided basis for me to identify salient and meaningful metaphors used with the topics. At the stage of metaphor analysis, I carried out a step-by-step examination of scenario-based and semantics-based metaphorical framings in my data following a bottom-up fashion.

This research was the first to investigate the way metaphor was used to frame trade disputes between China, the EU and the US. My key findings were as follows: 1) Some socio-cultural similarities were observed in metaphor patterns used with core trade disputes topics in UKPEDC and USPEDC but not in CPEDC. For instance, UKPEDC and USPEDC seemed to show cultural preferences for using metaphor scenarios associated with more competitive behaviours in game/sports and certain specific game/sports which were less salient in Chinese cultures. 2) Both systematic metaphor and metaphor scenario were observed in three corpora to write about core trade disputes topics but metaphoreme *victim* and *target* were observed in CPEDC to frame unfair trade practices targeted at China as negative entities; 3) Metaphor patterns at different levels seemed to coherently complement each other to show similar evaluative slant towards topics but slight differences in the

framing implications they suggested; 4) Metaphor patterns in CPEDC seemed to always frame unfair trade practices as negative entities. Metaphor patterns in UKPEDC seemed to frame unfair trade practices in a more negative way than in USPEDC.

The findings of this research contribute to adding empirical insights into the pool of knowledge of the nature and framing function of metaphor in discourse. They also suggest important pedagogical implications for ESP teaching and learning.

## Table of Contents

<b>Acknowledgements</b> .....	<b>iii</b>
<b>Abstract</b> .....	<b>v</b>
<b>Table of Contents</b> .....	<b>vii</b>
<b>List of Tables</b> .....	<b>xii</b>
<b>List of Figures</b> .....	<b>xiv</b>
<b>Chapter 1 Introduction</b> .....	<b>1</b>
1.1 Research Rationale and Significance .....	1
1.2 Research Questions .....	3
1.3 Research Content.....	5
1.4 Context of Investigation .....	10
1.5 Structure of the Thesis.....	12
<b>Chapter 2 Metaphor</b> .....	<b>14</b>
2.1 Conceptual Metaphor Theory.....	14
2.1.1 Main Claims of Conceptual Metaphor Theory .....	15
2.1.2 Critiques of Conceptual Metaphor Theory .....	18
2.2 Scenarios.....	20
2.3 The Discourse Dynamics Framework for Metaphor .....	23
2.3.1 Metaphor and Discourse as Complex System.....	23
2.3.2 Comparison with Conceptual Metaphor Theory .....	27
2.4 Metaphor in Economic Discourse .....	30
2.4.1 Functions of Metaphor in Economic Discourse .....	30
2.4.2 Metaphor and Framing in Discourse .....	34
2.4.3 Previous Studies in Popular Economic Discourse .....	40
2.5 An Analytical Model of Metaphorical Framing .....	48
<b>Chapter 3 Corpus Design and Construction</b> .....	<b>51</b>
3.1 Corpus Design .....	51
3.1.1 Corpus Size .....	51
3.1.2 Corpus Representativeness.....	53
3.1.3 Corpus Balance .....	55
3.2 Justification for a New Corpus .....	56
3.3 Corpus Construction .....	60
3.3.1 Decision on Sampling Frame .....	60

3.3.2 Decision on Additional Query Terms .....	62
3.4 Pre-processing .....	67
3.4.1 Format Standardization.....	67
3.4.2 Filename Standardization .....	71
3.5 Description of My Corpora .....	74
3.5.1 Corpus Size and Representativeness .....	74
3.5.2 Corpus Sources .....	78
3.6 Corpus Analysis.....	79
3.6.1 Frequency and Dispersion .....	79
3.6.2 Collocation and Semantic Prosody .....	80
3.7 Summary .....	82
<b>Chapter 4 Metaphor Identification and Annotation in Corpus.....</b>	<b>83</b>
4.1 Metaphor Identification Approaches: MIP & MIPVU.....	83
4.1.1 Theoretical Perspectives of MIP and MIPVU .....	83
4.1.2 Operationalization of Key Notions of MIP and MIPVU.....	84
4.2 Metaphor Identification within Discourse Dynamics Approach .....	92
4.2.1 Metaphor Identification: Vehicle and Topic.....	92
4.2.2 Vehicle Grouping Coding and Topic Coding .....	94
4.3 My Metaphor Identification Approach: Adapted MIP .....	97
4.3.1 Revisions of MIP and the Rationale for Using Learners’ Dictionaries.....	97
4.3.2 Adapted MIP .....	103
4.4 Metaphor Annotation Approaches.....	105
4.4.1 Computational Perspective .....	105
4.4.2 Corpus Perspective.....	106
4.5 Overview of Wmatrix.....	108
4.6 Metaphor Analysis Using Wmatrix .....	112
<b>Chapter 5 Operationalization of Adapted MIP and Use of Wmatrix ....</b>	<b>116</b>
5.1 Procedure for Using Learner’s Dictionaries in Adapted MIP.....	116
5.1.1 Boundaries of Lexical Units.....	116
5.1.2 Establishing Contextual Meaning.....	118
5.1.3 Establishing a More Basic Meaning .....	122
5.1.4 Incongruity but Comparability.....	124
5.2 Process of Vehicle Grouping and Topic Coding.....	126

5.3 Wmatrix as a Filter for Finding Metaphor Candidates in My Corpus .....	130
5.4 Inter-rater Reliability of Identified Metaphors and Vehicle Groupings .....	135
5.4.1 Rationale of Using Cohen $\kappa$ to Measure Inter-rater Reliability .....	135
5.4.2 Report on Reliability of My Inter-coding Process .....	138
<b>Chapter 6 Findings and Discussion: Part One .....</b>	<b>147</b>
6.1 Metaphors Used Frequently in Popular Economic Discourse .....	147
6.1.1 Findings of Frequently Used Metaphor in Popular Economic Discourse .....	147
6.1.2 Discussions of Frequently Used Metaphor in Popular Economic Discourse .....	150
6.2 Quantitative Findings and Discussions of Metaphor Used with Search Terms .....	156
6.2.1 Frequency and Dispersion of Search Terms .....	156
6.2.2 Frequency of Metaphors Co-occurring with Search Terms .....	157
6.2.3 Discussions of Quantitative Findings .....	162
6.3 Metaphors Used to Write about <i>Protectionism</i> .....	165
6.3.1 Fight/war Metaphor Writing about <i>Protectionism</i> .....	165
6.3.2 Organism Metaphor Writing about <i>Protectionism</i> .....	171
6.3.3 Movement Metaphor Writing about <i>Protectionism</i> .....	176
6.3.4 Victim, Fire and Monster Metaphor Writing about <i>Protectionism</i> .....	179
6.4 Protectionism, Metaphors and Framing .....	184
6.4.1 Metaphor Scenarios Framing <i>Protectionism</i> .....	184
6.4.2 Systematic Metaphors and Metaphoreme Framing <i>Protectionism</i> .....	189
6.5 Metaphors Used to Write about <i>Free Trade</i> .....	198
6.5.1 Organism Metaphor Writing about <i>Free Trade</i> .....	198
6.5.2 Fight/war Metaphor Writing about <i>Free Trade</i> .....	200
6.5.3 Game/sports Metaphor Writing about <i>Free Trade</i> .....	201
6.6 Free Trade, Metaphors and Framing .....	203
6.6.1 Metaphor Scenarios Framing <i>Free Trade</i> .....	203
6.6.2 Systematic Metaphors Framing <i>Free trade</i> .....	205
6.7 Summary .....	207

<b>Chapter 7 Findings and Discussion: Part Two</b> .....	<b>210</b>
7.1 Quantitative Findings of Four Metaphors Writing about Topics Related to Trade Disputes .....	210
7.2 Metaphors Used with Topics Related to Trade Disputes .....	212
7.2.1 Fight/war Metaphor Writing about Topics Related to Trade Disputes .....	212
7.2.2 Game/sports Metaphor Writing about Topics Related to Trade Disputes .....	218
7.2.3 Physical Damage Metaphor Writing about Topics Related to Trade Disputes .....	223
7.2.4 Weather Metaphor Writing about Topics Related to Trade Disputes .....	227
7.3 Metaphor Scenarios Framing Topics Related to Trade Disputes	230
7.4 Systematic Metaphors and Metaphoreme Framing Topics Related to Trade Disputes .....	235
7.5 Summary .....	244
<b>Chapter 8 Conclusions</b> .....	<b>246</b>
8.1 Research Summary .....	246
8.2 Research Contributions .....	249
8.2.1 Theoretical Contributions .....	250
8.2.2 Methodological Contributions .....	250
8.3 Research Implications .....	252
8.3.1 Implications for metaphor researchers .....	252
8.3.2 Implications for ESP Teaching and Learning .....	253
8.4 Directions for Future Research .....	254
8.5 Research Reflections .....	256
<b>List of References</b> .....	<b>258</b>
<b>List of Abbreviations</b> .....	<b>284</b>
<b>Appendix A Supplementary Materials of Chapter Three</b> .....	<b>286</b>
A.1 Questionnaire: Reading Preferences for English Newspapers on Economic/Business Issues .....	286
A.2 Number for Each Trade Disputes Field in Each File Name .....	289
A.3 Information of Originally Produced or Reproduced from Other Sources .....	291
<b>Appendix B Supplementary Materials of Chapter Four</b> .....	<b>292</b>
B.1 Procedure of MIP .....	292
B.2 Procedure of MIPVU .....	293

B.3 9 Randomly Generated Numbers and the Title information for the 9 Sample Texts.....	294
<b>Appendix C Supplementary Materials of Chapter Five .....</b>	<b>296</b>
C.1 Randomly Generated Numbers and the Title information for the 6 Sample Texts.....	296
C.2 Inter-coding Manual for Metaphor Identification.....	298
C.3 Inter-coding Manual for Vehicle Grouping .....	300
<b>Index.....</b>	<b>303</b>

## List of Tables

Table 3.1 Economy/business-related English corpora released between 2000 and 2015 .....	57
Table 3.2 Demographic information of respondents.....	61
Table 3.3 Additional query term selected based on keyness analysis of pilot CPEDC .....	65
Table 3.4 Additional query term selected based on keyness analysis of pilot UKPEDC.....	65
Table 3.5 Additional query term selected based on keyness analysis of pilot USPEDC.....	66
Table 3.6 Seven pieces of information in the name of each text.....	73
Table 3.7 Quantitative information of three corpora .....	75
Table 4.1 Comparison of attributes among <i>GAME</i> , <i>SPORTS</i> and <i>WAR</i> .....	96
Table 5.1 Most relevant semantic tags for four studied vehicle groupings.....	133
Table 5.2 Quantitative information of metaphors under each USAS tag in three corpora .....	134
Table 5.3 Results of level of agreement between me and co-rater A on five vehicle groupings.....	143
Table 5.4 Results of level of agreement between me and co-rater B on four vehicle groupings.....	144
Table 5.5 Results of level of agreement between me and co-rater B on four vehicle groupings.....	145
Table 6.1 Quantitative details of 15 sample texts .....	147
Table 6.2 Top ten vehicle groupings in the 15 sample texts .....	149
Table 6.3 Numbers of occurrences of search terms in each corpus ..	156
Table 6.4 Numbers of occurrences of metaphor used with search terms.....	158
Table 6.5 Vehicle groupings for metaphors used with the term associated with <i>protectionism</i> .....	158
Table 6.5 Vehicle groupings for metaphors used with the term associated with <i>protectionism</i> (continued) .....	159
Table 6.6 Vehicle groupings for metaphors used with the phrase associated with <i>free trade</i> .....	161
Table 6.7 Types of <i>FIGHT/WAR</i> grouping for metaphors used with <i>protectionism</i> .....	167



Table 6.8 Types of <i>ORGANISM</i> grouping for metaphors used with <i>protectionism</i> .....	173
Table 6.9 Vehicle terms for <i>MOVEMENT</i> grouping used with <i>protectionism</i> .....	177
Table 6.10 Vehicle terms for <i>FIRE</i> grouping used with <i>protectionism</i> in UKPEDC and USPEDC .....	182
Table 6.11 Vehicle terms for <i>ORGANISM</i> used with <i>free trade</i> .....	198
Table 6.11 Vehicle terms for <i>ORGANISM</i> used with <i>free trade</i> (continued).....	199
Table 6.12 Vehicle terms for <i>FIGHT/WAR</i> used with <i>free trade</i> .....	201
Table 6.13 Vehicle terms for <i>GAME/SPORTS</i> used with <i>free trade</i> in CPEDC and UKPEDC.....	202
Table 7.1 Number and percentages of metaphorically-used tokens in each metaphor group.....	211
Table 7.2 Types of <i>FIGHT/WAR</i> grouping for metaphors used with topics related to trade disputes.....	214
Table 7.2 Types of <i>FIGHT/WAR</i> grouping for metaphors used with topics related to trade disputes (continued).....	215
Table 7.3 Vehicle terms for <i>GAME/SPORTS</i> used with topics related to trade disputes .....	220
Table 7.4 Vehicle terms for <i>PHYSICAL DAMAGE</i> used with topics related to trade disputes .....	224
Table 7.4 Vehicle terms for <i>PHYSICAL DAMAGE</i> used with topics related to trade disputes (continued).....	225
Table 7.5 Vehicle terms for <i>WEATHER</i> used with topics related to trade disputes .....	228

## List of Figures

Figure 1.1 Examples of network of linguistic metaphors used with <i>free trade or protectionism</i> in my data.....	9
Figure 1.2 Structure of my thesis .....	12
Figure 2.1 An analytical model of metaphorical framing in popular economic discourse .....	48
Figure 3.1 Respondents' preferences for English newspapers for economic news.....	62
Figure 3.2 A screenshot of wrongly presented quotation mark in <i>Financial Times</i> .....	68
Figure 3.3 A screenshot of text opened in traditional text editors.....	68
Figure 3.4 A screenshot of non-ASCII characters in concordance lines of texts from <i>Financial Times</i> .....	69
Figure 3.5 A screenshot of unwanted non-ASCII characters in concordance lines .....	69
Figure 3.6 Codes written with python for replacing unrecognizable characters in the raw materials .....	70
Figure 3.7 A screenshot of correctly presented characters in concordance line after programming.....	70
Figure 3.8 A screenshot of presentation of square brackets in concordance lines in Wmatrix 4 .....	70
Figure 3.9 A screenshot of presentation of square brackets in concordance lines in AntConc 3.5.8 .....	71
Figure 3.10 A screenshot of presentation of non-ASCII characters in texts in sublime text 2. ....	71
Figure 3.11 A screenshot of non-ASCII characters in titles of texts .....	72
Figure 3.12 A screenshot of automatically generated path of each file in my corpora.....	72
Figure 3.13 A screenshot of texts in my corpora with unique digital number file names .....	74
Figure 3.14 The number of news reports published per annum in each corpus between 2001 and 2017 .....	76
Figure 3.15 The number of texts and tokens of reportage and editorial in each corpus .....	76
Figure 3.16 Type-token ratio (TTR) of reportage and editorial in each corpus .....	77
Figure 3.17 Type-token ratio of each addition of a new segment in three corpora .....	78

Figure 3.18 Sources of texts from <i>Global Times</i> .....	79
Figure 4.1 Main semantic categories in the USAS tagset (Archer et al., 2002, p.2) .....	109
Figure 4.2 A screenshot of a text from UKPEDC with USAS and POS tags .....	110
Figure 4.3 A screenshot of USAS tags assigned to the word <i>party</i> when conducting frequency analysis at semantic level .....	111
Figure 4.4 A screenshot of USAS tags assigned to the word <i>party</i> after using <i>Domain Tag Wizard</i> function .....	111
Figure 5.1 A screenshot of 10 metaphorical citations of <i>bullet</i> in a random sample of 100 citations in BNC (1994) .....	120
Figure 5.2 A screenshot of 6 metaphorical citations of <i>football</i> in a random sample of 500 citations in BNC (1994) .....	121
Figure 5.3 A screenshot of 5 metaphorical citations of <i>vampire</i> in a random sample of 100 citations in BNC (1994) .....	121
Figure 5.4 A screenshot of vehicle terms assigned to more than one grouping in Excel .....	127
Figure 5.5 A screenshot of vehicle groupings with a degree of overlap.....	128
Figure 5.6 Organism metaphor as a hierarchical system with subdivisions.....	129
Figure 5.7 Examples of USAS tags depicting lexis from <i>FIGHT/WAR</i> in 15 sample texts.....	132
Figure 5.8 A screenshot of concordance analysis of USAS tag G3 <i>War</i> in UKPEDC with the help of Wmatrix.....	133
Figure 5.9 Inter-coding process of metaphor identification and vehicle grouping in this study .....	137
Figure 5.10 Examples of collaborative metaphor annotation with co-rater A on eMargin.....	138
Figure 5.11 Examples of collaborative metaphor annotation with co-rater B on eMargin.....	140
Figure 5.12 Examples of inter-coding with co-rater A on vehicle grouping of 126 vehicle terms .....	142
Figure 5.13 Examples of inter-coding with co-rater B on vehicle grouping of 116 vehicle terms used with the search terms.....	144
Figure 5.14 Examples of inter-coding with co-rater B on vehicle grouping of 405 vehicle terms within nine semantic tags .....	145
Figure 6.1 A screenshot of 14 citations of <i>target of</i> used metaphorically among a random sample of 100 citations in BNC (1994) .....	171

Figure 6.2 A screenshot of 30 citations of <i>victim of</i> used metaphorically among a random sample of 100 citations in BNC (1994) .....	180
Figure 6.3 A screenshot of 20 citations of metaphorical <i>attack</i> suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994) .....	190
Figure 6.4 A screenshot of 20 citations of metaphorical <i>fight against</i> suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994) .....	191
Figure 6.5 A screenshot of 20 citations of metaphorical <i>a barrage of</i> suggesting negative semantic prosody among 83 citations in BNC (1994) .....	192
Figure 6.6 A screenshot of 8 citations of <i>weapon</i> used metaphorically among a random sample of 200 citations in BNC (1994) .....	193
Figure 6.7 A screenshot of 16 citations of metaphorical <i>breeding ground for</i> suggesting negative semantic prosody among 46 citations in BNC (1994).....	194
Figure 6.8 A screenshot of 5 citations of metaphorical <i>sore</i> suggesting negative semantic prosody among 138 citations in BNC (1994) .....	194
Figure 6.9 A screenshot of 20 citations of metaphorical <i>bout of</i> suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994) .....	195
Figure 6.10 A screenshot of 3 citations of <i>contagion of</i> suggesting negative semantic prosody among 9 citations in BNC (1994).....	195
Figure 6.11 A screenshot of 10 citations of metaphorical <i>back away</i> suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994) .....	196
Figure 6.12 A screenshot of 7 citations of metaphorical <i>slide towards</i> suggesting negative semantic prosody among 23 citations in BNC (1994).....	197
Figure 6.13 A screenshot of 20 citations of metaphorical <i>descent into</i> suggesting negative semantic prosody among 64 citations in BNC (1994).....	197
Figure 6.14 A screenshot of 25 citations of metaphorical <i>champion of</i> suggesting positive semantic prosody among a random sample of 200 citations in BNC (1994) .....	206
Figure 7.1 A screenshot of 10 citations of <i>arm-wrestling</i> in BNC (1994).....	221
Figure 7.2 Frequency of top 3 involved economic blocs as cause of physical damage in three corpora.....	225

Figure 7.3 Frequency of top 5 involved economic blocs as object of physical damage in three corpora.....	226
Figure 7.4 A screenshot of 5 citations of <i>sunlit</i> used metaphorically among 135 citations in BNC (1994) .....	230
Figure 7.5 A screenshot of 20 citations of metaphorical <i>fend off</i> suggesting negative semantic prosody among 139 citations in BNC (1994) .....	236
Figure 7.6 A screenshot of 20 citations of metaphorical <i>defuse</i> suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994) .....	237
Figure 7.7 A screenshot of 20 citations of metaphorical <i>level playing field</i> suggesting neutral semantic prosody among 79 citations in BNC (1994).....	238
Figure 7.8 A screenshot of 20 citations of metaphorical <i>destroy</i> suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994) .....	240
Figure 7.9 A screenshot of 10 citations of metaphorical <i>storm</i> suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994) .....	242
Figure 7.10 A screenshot of 20 citations of metaphorical <i>turbulence</i> suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994) .....	242
Figure 7.11 A screenshot of 15 citations of metaphorical <i>an avalanche of</i> suggesting negative semantic prosody among 48 citations in BNC (1994).....	243
Figure 7.12 A screenshot of 20 citations of metaphorical <i>a flood of</i> suggesting negative semantic prosody among 159 citations in BNC (1994) .....	244

## **Chapter 1 Introduction**

### **1.1 Research Rationale and Significance**

As we are living in a world characterized by inexorable trends of globalization, no economic blocs can rise by its own without impacting other countries' interests (Sun and Wang, 2018). Economic relationship between three superpowers China, the EU and the US defines the shape of global economy amid globalization (Barns-Graham, 2020). Trade disputes among them do not only affect their own economies but also impact global economy as a whole (Goulard, 2020). Due to the impact on global economy and national relationship, trade disputes among three superpowers always dominate economic news and people's daily conversation. The dominance of such economic event in economic news may be explained by media's preferences to report negative and controversial economic stories (Damstra and Boukes, 2021). Damstra and Boukes (2021, p.29) write that "the media functions as a crucial mediator for information about the national state of the economy". Although "there is no direct link between the discourse and the real world" (Teubert, 2005, p.3), the study of discourse does help to find how the real world is talked and may influence people's confidence and expectations about the economic reality (Damstra and Boukes, 2021; Lischka, 2016).

Popular economic discourse which has a big readership and plays a very important role in constructing and shaping public stances are always used as a medium by discourse communities from these three superpowers to convey underlying stances towards trade disputes among them (Happer and Philo, 2013). The underlying stances may construct and shape the mainstream stances towards trade disputes among the three superpowers. Happer and Philo (2013, p.322) assume that "in any controversial area there will be competing ways of explaining events and their history". Response of different discourse communities to trade disputes among three powers seems to suggest their ideological battle for their legitimacy and social interests (Happer and Philo, 2013). Thus, it is of great significance to investigate the way mainstream discourse communities in each area such as newspapers from China, the UK and the US convey their underlying stances towards trade disputes among them.

Due to its explanatory and persuasive functions, metaphor is ubiquitously used in economic news reports to enhance their framing function in informing the public of what happens in the economic world and constructing their beliefs and attitudes (Charteris-Black, 2004; Happer and Philo, 2013). On the one hand, metaphor is frequently used in economic news reports to explain more abstract economic concepts and activities such as *employment* and *inflation* (Charteris-Black and Ennis, 2001). On the other hand, metaphor can be used as a framing device to construct and evaluate by highlighting some properties of an economic topic but hiding its other properties (Semino, 2008). For instance, Wolf and Polzenhagen (2003) find that aggression and hostility are highlighted when trade is described in terms of WAR while cooperation is highlighted when trade is described in terms of FRIENDSHIP. They claim that “ideological patterns may arise from the application of a particular metaphor and the neglect of alternative ones” (p.268). Thus, investigating the way metaphor is used by journalists from China, the UK and the US to frame trade disputes among three superpowers potentially gives clues to the underlying evaluation and ideology conveyed by different discourse communities. However, there are still no relevant studies that investigate the way metaphor is used as a framing device in economic news to frame and evaluate trade disputes between China, the EU and the US following a corpus-linguistic approach.

Corpus linguistics is particularly helpful in providing empirical data on metaphor use in economic news and also beneficial in cross-cultural studies (Charteris-Black and Musolff, 2003). Based on linguistic evidence from three self-built corpora consisted of English news reports from China, the UK and the US newspapers on trade disputes, this research provides some insights into how metaphor expresses ideological standpoints to similar economic issues with cross-cultural similarities and differences in a specific genre. These findings contribute to testing the effectiveness of applying existing metaphor theory in a very specific genre and thus updating understanding and application of existing theoretical frameworks and concepts in popular economic discourse or related registers. These findings are also potentially beneficial for ESP teaching and learning. The field of ESP recognises the importance of pedagogical role of metaphor in specific genres, for example, in articles by Charteris-Black (2000), Charteris-Black and Ennis (2001), Charteris-Black and Musolff (2003), Ho and Cheng (2016), Lindstromberg (1991), Rodriguez (2003) and Skorczynska (2010) in the journal *English for Specific Purposes* (ESP). The corpora developed in this research are representative of language use in ESP domains and thus are potentially

valuable in providing an account of metaphor use of particular ESP domains and providing pedagogical implications for ESP teaching and learning.

## **1.2 Research Questions**

The objective of this research is to capture metaphor patterns used by journalists to talk about trade disputes among three superpowers and the way they use the patterns to interpret and frame trade disputes in a systematic and reliable way. To achieve this objective, I aim at addressing the following research questions.

### **Overarching Research Question:**

How is metaphor used by journalists from China, the UK and the US to frame topics related to trade disputes?

1) What metaphors are used frequently in popular economic discourse corpus?

1a what metaphors are used frequently in a corpus of Chinese Popular Economic Discourse?

1b what metaphors are used frequently in a corpus of UK Popular Economic Discourse?

1c what metaphors are used frequently in a corpus of US Popular Economic Discourse?

2) Which metaphors are used to write about topics related to trade disputes in three corpora?

3) How do the metaphors used frame topics related to trade disputes in each of the three corpora?

4) What similarities and differences are there in metaphor framing across the three corpora?

To address research questions above, I need three specialized corpora consisting of texts about trade disputes between China, the EU and the US from mainstream newspapers from China, the UK and the US. I also need an analytical framework that guides me to better capture the way metaphor seems to frame and evaluate the event in discourse. However, at the moment there are no off-the-peg popular economic discourse corpora on trade disputes among three superpowers. Existing metaphor research procedures and analytical framework to metaphorical framing in discourse



also need to be revised to better satisfy my needs to address my research questions.

There is a growing body of studies on metaphor used to frame various economic events such as *financial crisis* (López and Llopis, 2010) and *currency disputes* (Liu, 2015) in popular economic discourse. Most previous studies of metaphor and framing in popular economic discourse follow similar research procedures as follows:

- 1) Deciding Conceptual Metaphor Theory as theoretical framework;
- 2) Building a new corpus based on particular economic topics;
- 3) Deciding metaphor identification approach: MIP (Pragglejaz Group, 2007) or MIPVU (Steen et al., 2010);
- 4) Identifying metaphors in the compiled corpus based on results of sample texts or randomly selected concordance lines writing about certain topics; or starting from source domain/vehicle grouping, which takes a traditional small corpus-big corpus approach (Charteris-Black, 2004);
- 5) Formulating conceptual metaphor;
- 6) Analysing the way conceptual metaphor is used to frame economic topics.

The procedures above show that most previous metaphor studies in popular economic discourse investigated the framing implications of metaphors at the level of conceptual metaphor (Charteris-Black and Ennis, 2001; O'Mara-Shimek et al., 2015). Semino et al. (2018) write that studying the frame suggested by conceptual metaphor has the advantage of capturing regular and general correspondences between domains. However, metaphor patterns identified following Conceptual Metaphor Theory (Lakoff and Johnson, 1980/2003) are less replicable and relatively arbitrary since Conceptual Metaphor Theory does not provide explicit restraints on the level of generality when formulating conceptual metaphors based on linguistic metaphors (Herrmann, 2013). Most previous metaphor studies in popular economic discourse also have not clearly explained the notion of framing and its relation to conceptual metaphor. They appeared to make claims on metaphorical framings of dominant conceptual metaphor based on assumption of pre-existing mappings in our mind. The analysis of metaphorical framings at this level has limitations in detecting framing implications of local patterns emerging from discourse and may capture

framing implications in a less systematic and replicable way (Semino et al., 2018). Methodologically, most previous metaphor studies in popular economic discourse have not clearly justified the way they designed and constructed their specialized corpora in terms of corpus representativeness, size and balance. However, a representative specialized corpus lays foundations for later stages' metaphor identification and analysis to capture underlying stances suggested by metaphor patterns used with discussed topics.

### **1.3 Research Content**

To better address my four research questions above, I revised existing metaphor research procedures in popular economic discourse and made them more systematic and replicable. My revised metaphor research procedures were as follows.

- 1) Building my popular economic discourse corpora that were based on three corpus criteria: representativeness, size and balance;
- 2) Developing metaphor identification approach that could fit better in metaphor identification in my data by adapting MIP (Pragglejaz Group, 2007);
- 3) Using Wmatrix (Rayson, 2008), a web-based program that allows concordance analysis at semantic level to filter metaphors in large-scale specialized corpora; Identifying metaphors co-occurring with topics related to trade disputes;
- 4) Carrying out inter-coding of metaphor identification;
- 5) Carrying out vehicle groupings of identified linguistic metaphors and inter-coding of vehicle groupings;
- 6) Organizing semantically-based vehicle groupings to suggest systematic metaphor and identifying the network of vehicle groupings to suggest metaphor scenario;
- 7) Identifying metaphor scenario and systematic metaphor suggested by linguistic metaphors used with topics related to trade disputes;
- 8) Analysing the way metaphor patterns emerging from discourse were used to frame and evaluate topics related to trade disputes.

My research procedures above were based on my analytical model which integrated ideas from framing theory (Entman, 1993) and metaphor

theories (Cameron and Deignan, 2006; Cameron, 2010a; Musolff, 2016). My analytical model has followed the direction of previous studies which suggested integrated approach to study metaphorical framing in discourse (Bogetić, 2019; Cameron et al. 2010; Dekavalla and Montagut, 2018; Semino et al., 2018). For instance, Dekavalla and Montagut (2018, p.74) write that “metaphors not only may operate as frames in themselves, but they can also combine in hierarchies of metaphoric frames which together co-construct superordinate metaphoric or non-metaphoric frames”. They claim that mixed metaphors expressed by subordinate metaphors from different source domains can conceptually construct clusters of metaphoric frames to suggest overarching metaphorical or non-metaphorical frame of the same target domain. For instance, they write that JOURNEY and STANDOFF suggest two different metaphorical frames at level two but interconnect conceptually since they share common semantic threads-movement. They claim that JOURNEY and STANDOFF could work together to construct the overarching process frame at level one: “the Catalan situation is a process” (p.78). They also claim that at level three of the metaphoric frame network, metaphor scenarios which are associated with the different source domains in mixed metaphors at level two can also suggest clusters of metaphoric frames. These metaphoric frames suggested by different metaphor scenarios of STANDOFF frame such as deal scenario, violence scenario and surrender scenario at level three are connected to overarching process frame since they co-construct different types of the process frame. Bogetić (2019) also suggests integrating cognitive-based approach and scenario-oriented approach to capture metaphorical framings in discourse through multi-level of conceptualization. In this research, I combined discourse dynamics approach and metaphor scenario approach to capture metaphorical framings in discourse following a bottom-up fashion, which is similar to Cameron et al.’s practice of finding systematicity in metaphor use although they do not explicitly propose the idea of integrating discourse dynamics approach to metaphor and framing theory.

My analytical model understood metaphor as nodes embedded in a network of dynamic discourse to frame and co-frame (Dekavalla and Montagut, 2018; Schön, 1993) and borrowed the idea of salience and selection from framing theory (Entman, 1993). Framing is about a structure of point of views. The nature of framing is highlighting salient and meaningful information in communication, which is similar to ideological function of metaphor to highlight and hide. Thus, the idea of salience and selection guides my design and implementation of research procedures from corpus

design and construction to identification and analysis of metaphor patterns to frame trade disputes in my corpora. That is, throughout my research procedures, I need to implement each procedure with the aim of selecting salient and meaningful information that serves to address my research questions.

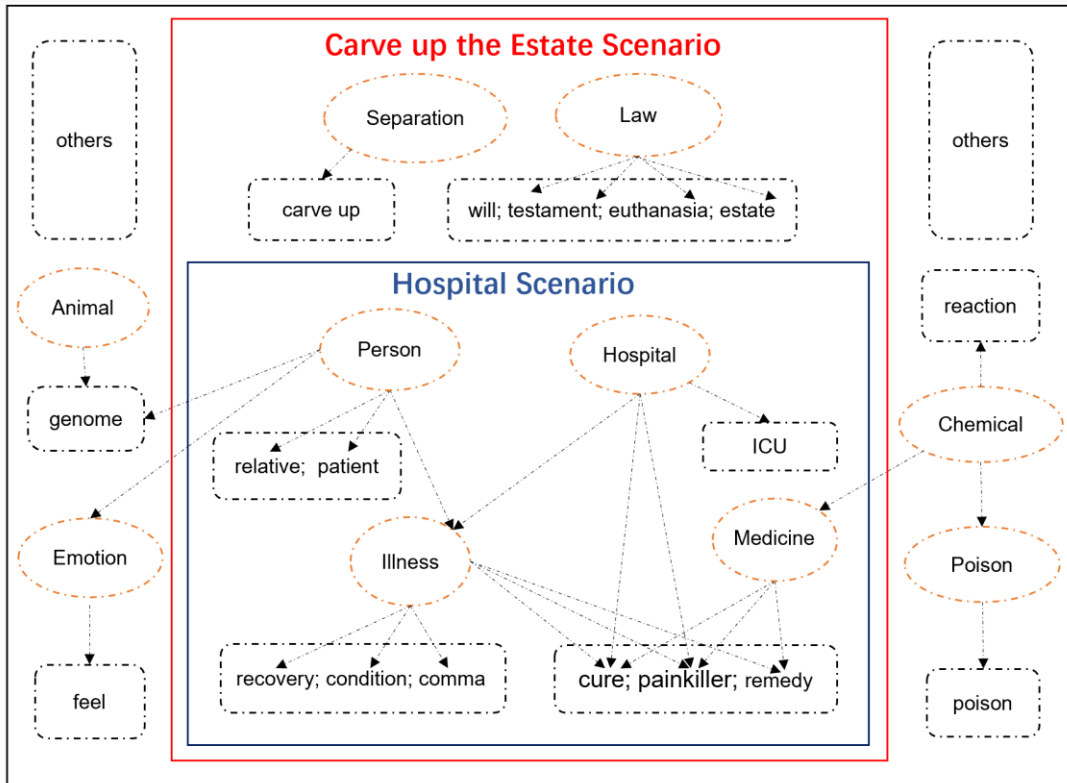
At the stage of corpus design and construction, I need three specialized corpora that achieve an acceptable level of both recall and precision, which means that I need to collect available and relevant texts as many as possible in my corpora (Chowdhury, 2004; Gabrielatos, 2007). Following Gabrielatos' (2007) practice, I used both core query terms such as *Sino-EU disputes* and additional query terms such as *protectionism* to collect texts from 8 newspapers with 3 from China, 3 from the UK and 2 from the US to collect available and relevant texts as many as possible. My three corpora consist of 1.3 million words in total. Representative specialized corpora focusing on trade disputes provides basis for me to identify salient and meaningful metaphors used with topics related to trade disputes as many as possible.

At the stage of metaphor identification and annotation in my corpora, I need a metaphor identification approach that allows me to identify metaphors for both experts and non-experts which are both popular economic discourse' readership (Skorczynska and Deignan, 2006). The metaphor identification approach applied in my data was adapted from MIP (Pragglejaz Group, 2007). When identifying metaphors from large-scale specialized corpora, I used Wmatrix (Rayson, 2008) which allowed me to carry out concordance analysis at semantic level to generate open-lists of metaphor candidates for vehicle groupings frequently used in my data. I identified all linguistic metaphors within the lists, which helps to identify linguistic metaphors within salient vehicle grouping as many as possible.

At the stage of inter-coding, I need to decide the numbers of co-raters, numbers of items to be coded and categories assigned to items since the three factors influence which methods I choose to measure inter-rater reliability of metaphor identification and vehicle groupings (Artstein and Poesio, 2008). Artstein and Poesio (2008) write that researchers need to report reliability of their hand-coded data if they want to use the hand-coded data to support an empirical claim. Choosing an adequate measure of inter-rater reliability helps me to identify more unambiguous metaphors and better organize vehicle groupings, which lays foundations for my later stages' identification of salient and meaningful metaphor patterns in a more replicable way. In this research, I have chosen coefficient Cohen  $\kappa$  (Cohen,

1960) to measure inter-rater reliability of metaphor identification and vehicle groupings in my data since it is more adequate than percent agreement in indicating inter-rater reliability (Artstein and Poesio, 2008).

At the stage of identifying metaphor patterns suggested by linguistic metaphors emerging from dynamic discourse, I identified metaphoreme, systematic metaphor and scenario. Cameron and Deignan (2006, p.686) define metaphoreme as “a bundle of relatively stable patterns of language use, with some variation, that, for the time being, describes how people are using the lexical items”. They find that the same linguistic metaphor repeatedly used to write about a certain topic may follow relatively fixed grammatical patterns and affective restrictions. For instance, they find that “baggage” appears to be a metaphoreme that conveys negative evaluations of past memories and experience since “baggage” tends to fix as a noun with pre-modifier and tends to collocate with lexis with a negative slant when it is used in metaphorical sense (p.679). Identifying metaphor patterns of both systematic metaphor and metaphor scenario is also helpful for me to identifying more salient and meaningful metaphor patterns that seem to frame trade disputes as Henderson (1994, p.359) writes that “the relationship between metaphor and narrative is continuously reinforced”. In this research, I understand systematic metaphor as “a collecting together of related linguistic metaphors that evolve and are adapted as the discourse proceeds” (Cameron, 2010a, p.91). I formulated systematic metaphor by combining vehicle grouping which consisted of a number of linguistic metaphors from the same semantic field, and key discourse topics the grouping refers to, for instance, *protectionism* and *free trade*. I understand metaphor scenario as metaphor working together to create a series of linked events with a set of social-cultural entrenched expectations and evaluations (Cameron et al., 2010; Musolff, 2016). I formulated metaphor scenario by grouping together a number of linguistic metaphors that are from the same semantic field or various semantic fields to create mini-narratives or fully-developed narratives, and write about similar topics. I explain the advantage of formulating both systematic metaphor and metaphor scenario to study the way they seem to frame topics related to trade disputes with examples of network of linguistic metaphors in Figure 1.1 below. All the linguistic metaphors in Figure 1.1 come from my data and are used to write about either *protectionism* or *free trade*.



**Figure 1.1** Examples of network of linguistic metaphors used with *free trade* or *protectionism* in my data

As shown in Figure 1.1, linguistic metaphors emerging from my data and suggesting the same semantic field are put in each dotted-line rectangle, such as *cure* and *painkiller*. Each vehicle grouping suggested by linguistic metaphors from the same semantic field is put in each orange dotted-line oval, for instance, *cure* and *painkiller* in *MEDICINE*. Figure 1.1. shows that there are always more than one vehicle grouping candidate for some linguistic metaphors. For instance, *cure* can be categorized into *ILLNESS*, *MEDICINE* and even *HOSPITAL*. If I categorize *cure* into *MEDICINE* and only analyse systematic *ILLNESS* that are frequently used with topics related to trade disputes, the salient and meaningful information suggested by *cure* may be ignored. However, if I also take the relationship between different vehicle groupings into consideration, *cure* either being grouped in *MEDICINE* or *ILLNESS* is part of a *HOSPITAL* scenario. As shown in Figure 1.1, linguistic metaphor suggesting systematic *PERSON*, *HOSPITAL*, *ILLNESS* and *MEDICINE* used with *free trade* seem to work together to create a series of linked mini-narratives that suggest *HOSPITAL* scenario within the boundary of blue rectangle. Linguistic metaphors suggesting *HOSPITAL* scenario may further work together with other groupings such as *LAW* and *SEPARATION* to suggest *CARVE UP THE ESTATE* scenario within the boundary of red rectangle. Figure 1.1 gives only a very small picture of the possible relationship between

systematic metaphor and scenario. However, it suggests the advantage of analysing both systematic metaphor and metaphor scenario to capture more salient and meaningful frames the two patterns may suggest. On the one hand, investigating both patterns may contribute to offsetting of the situation in which the framing effects of salient and meaningful linguistic metaphors are ignored due to their being grouped in other less frequently used vehicle groupings. On the other hand, analysing the frame that both patterns seem to suggest may allow me to get weighted framing implications, which means that I may capture more attitudinal preferences and evaluations suggested by metaphorical framings of both metaphor patterns (Semino et al., 2018).

Based on metaphors patterns suggested by linguistic metaphors used with topics related to trade disputes as shown in Figure 1.1, I need to build a case to figure out the frame that these metaphor patterns seem to suggest. I build a case to identify the frame that may be suggested by metaphor scenario which consists of mini-narratives following a narrative sequence (Deignan, 2017b). For instance, mini-narratives such as war-related linguistic metaphors suggesting war declaration, military confrontations and outcome of war seem to suggest WAR scenario that follows the narrative of military confrontations in history. If these mini-narratives seem to impose narrative sequence on the discussed topics, I then analyse narrative elements such as the roles of participants in the scenario. For instance, I analysed the roles of trade partners in relation to the topic *unfair trade practices* and referred to shared knowledge and sometimes cultural specific knowledge in literature. These two parts of information may suggest the metaphorical implications and evaluations informed by this scenario. I build a case to identify the frame that may be suggested by systematic metaphor with help of reference corpus BNC (1994) which can provide me cumulative evidence that suggests collocation patterns of linguistic metaphors (Deignan, 2017b). Metaphoreme has a relatively clear evaluative slant so it seems to suggest framing implications and evaluations directly.

#### **1.4 Context of Investigation**

In this section, I briefly introduce the context of trade disputes among three economic blocs China, the EU and the US to support my claim about the importance of this event in the real economic world. This context further supports the significance of investigating the way metaphor is used as a framing device by journalists from three economic blocs to convey their

stances and evaluations towards the events and shape the public's expectation about the event.

Amid globalization, the economy of China, the EU and the US are strongly interlinked and trade disputes among them have domino effects on the global economic growth and even individuals' daily life in the economic world (Plummer, 2019). Three superpowers are always among each other's list of biggest trading partners even through their rankings on the list change. For instance, China is the EU's second largest trading partner behind the US but in 2020 China overtakes the US and becomes EU's largest trading partners (China Daily, 2021).

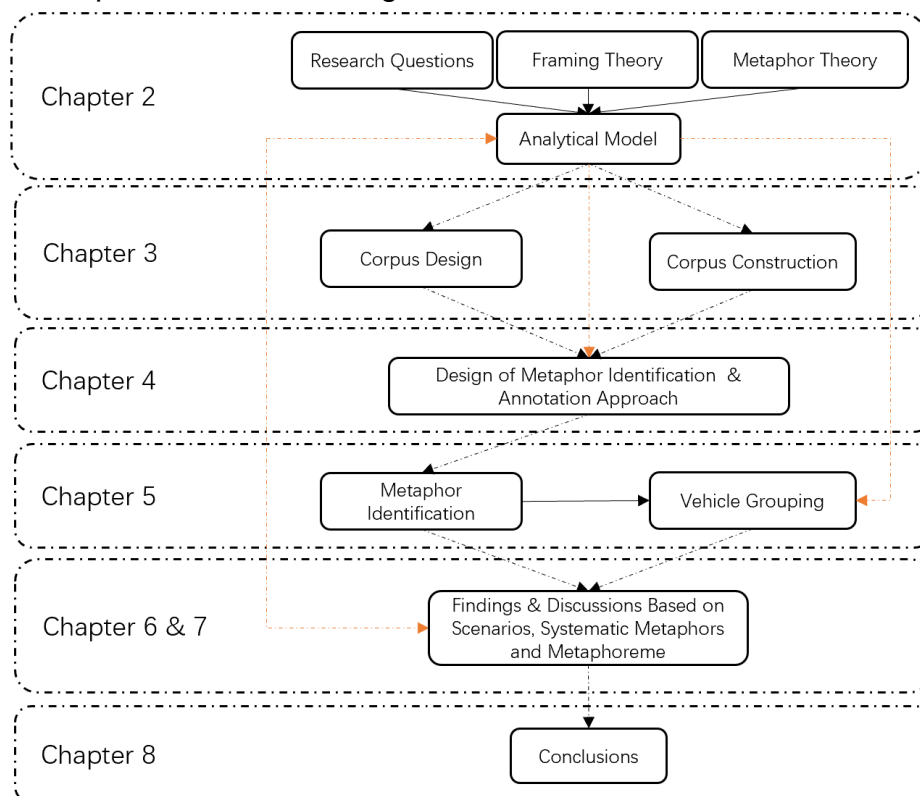
However, due to various factors such as trade imbalance, different market economy status, and less effective role of WTO in maintaining a rule-based global trading system, trade disputes, especially Sino-US trade disputes, are escalating (Dadush, 2019). In terms of trade imbalance, the US trade deficit with China was \$345.2 billion in 2019 and the EU trade deficit with China was €164 billion in 2019 (United States Census Bureau, 2020; Eurostat, 2020). The US trade deficit and the EU trade deficit with China were because of the US and the EU importing more from China than exporting to China. Amadeo (2020) claims about the negative impact of trade deficit on weakening domestic industries and reducing job opportunities. In term of market economy status, the EU and the US involve in international trade with market economy status while China is still a WTO member with non-market economy status. The year 2016 witnessed China's accession to the WTO for 15 years, which marked that China should be automatically considered a market economy status after joining WTO 15 years. However, there were different voices among different developed markets such as the EU and the US on whether China should be granted market economy status (MES) or not. Whether China being treated as a market economy or not greatly influences WTO's dispute settlement of anti-dumping or anti-subsidy cases. Puccio (2015) writes that since China is not granted market economy status, trade partners can use a surrogate country method to evaluate normal value of China's exports, which has proven to lead to higher anti-dumping duties on China. For instance, the EU and the US use the price and cost of a third alternative country as the normal value rather than China's domestic value, which increases the likelihood of China's exports being evaluated as dumping (Kim and Ahn, 2019; Puccio, 2015). Meanwhile, higher anti-dumping duties from the EU and the US make China more likely to face protectionism.



To sum up, the trade relationship is important for the three economic blocs and the global economy but faces ongoing tensions which may lead to the surge of protectionism and a collapse of rule-based global trading system (Dadush, 2019). Thus, this research examined the way metaphor was used by journalists from mainstream newspapers from China, the UK and the US to frame topics related to trade disputes. In this research, I built three specialized corpora consisting of news reports on trade disputes between China, the EU and the US between 2001, the date of China's accession to the WTO and 2017. These news reports were collected from *China Daily*, *Global Times*, *People's Daily*, *Financial Times*, *Guardian*, *Times*, *New York Times* and *Wall Street Journal*. On the one hand, I investigated the way metaphor seemed to frame the core topics in trade disputes: *protectionism* and *free trade* in three corpora. On the other hand, I investigated the way fight/war metaphor, game/sports metaphor, physical damage metaphor and weather metaphor seemed to frame topics related trade disputes in three corpora.

## 1.5 Structure of the Thesis

My thesis consists of 8 chapters. The structure of my thesis from Chapter 2 to Chapter 8 is shown in Figure 1.2.



**Figure 1.2** Structure of my thesis

As shown in Figure 1.2, guided by my research questions, I reviewed related metaphor theories and some ideas from framing theory in Chapter Two. At the end of this chapter, I established an analytical model for metaphorical framings in popular economic discourse, which guided the structures and contents from Chapter Three to Chapter Seven. Guided by my analytical model in Chapter Two, I designed and built my three specialized corpora in Chapter Three, which provided basis for my investigation of metaphor used with trade disputes between China, the EU and the US. In Chapter Four, I reviewed three metaphor identification approaches with the purpose of developing adapted MIP and my approach to annotate metaphors in my three corpora. The aim of this chapter was to develop metaphor identification and annotation approach that helped me identify salient and meaningful metaphors used with topics related to trade disputes as many as possible. In Chapter Five, I explained the way I carried out metaphor identification and vehicle grouping in my data, which provided a more replicable approach to identify metaphor patterns in my data. In Chapter Six and Chapter Seven, I presented my findings of metaphor patterns used with topics related to trade disputes and compared the way they seemed to frame and evaluate the discussed topics in three corpora. In Chapter Eight, I clearly stated answers to my main research questions and evaluated my contributions for knowledge of this field. I also discussed the theoretical and methodological implications of this study for research and in practice, make recommendations for future work on the topic and reflect on limitations of using learners' dictionaries in metaphor identification.

## **Chapter 2 Metaphor**

Current research into metaphor includes cognitive, discourse and corpus approaches. All three challenge and reject the assumption of traditional literal-figurative distinction of metaphor, starting from a metaphorical-non-metaphorical distinction instead (Cameron and Low, 1999; Lakoff, 1993). That is, metaphor is pervasive in our everyday language rather than a kind of figurative language which is different from everyday literal language and only used for poetic and rhetorical purposes (Lakoff and Johnson, 1980/2003; Lakoff, 1993). Different understandings of the nature of metaphor lead to different theoretical and methodological focuses of metaphor research (Cameron, 1999). In this chapter, I first compare and discuss focuses of three theoretical frameworks. Second, I discuss functions and previous studies of metaphor in economic discourse. Third, I describe and justify an analytical framework that is applied in my analysis to address my research questions.

### **2.1 Conceptual Metaphor Theory**

Gibbs (2011, p.530) writes that “the proposal that metaphor is as much a part of ordinary thought as it is of language has been voiced by rhetoricians, philosophers, and others for hundreds of years”. Gibbs (2011, p.530) also writes that metaphor as part of our thought “has gained its greatest attention in the last 30 years with the rise of “conceptual metaphor theory” (CMT) within the field of cognitive linguistics”. Before Conceptual Metaphor Theory (Lakoff and Johnson, 1980/2003), there were already scholars such as Schön (1993) and Reddy (1993) treating metaphor as a matter of thought. Schön (1993) argues that metaphor is not a figure of speech which seems anomaly in everyday language. He finds that different “generative metaphors” are used in framing problems of social policy and influence our direction towards problem-solving (p.137). Reddy’s argument (1993) is consistent with Schön’s view that problem-setting is a more crucial process than problem-solving in problematic situations. Reddy (1993) investigates metaphor use in framing communication problems. Reddy (1993, p.166) finds that a framework of “conduit metaphor” is used to explain the way English speakers conceptualize communication. His study anticipates quite a lot about conceptual metaphors over numerous examples (Lakoff, 1993).

Lakoff and Johnson (1980/2003) proposed Conceptual Metaphor Theory. They prompt metaphor studies shifting to “a more overtly cognitive position” (Cameron, 1999, p.9). Due to its significant influence on metaphor studies from cognitive perspective, Conceptual Metaphor Theory is introduced in this section in terms of two points: 1) main claims of Conceptual Metaphor Theory; 2) critiques of Conceptual Metaphor Theory.

### **2.1.1 Main Claims of Conceptual Metaphor Theory**

Several authors have listed the central tenets of Conceptual Metaphor Theory, for example, Deignan (2005), Kövecses (2017a), Lakoff and Johnson (1980) and Lakoff (1993). The central tenets that they have listed overlap slightly. For instance, they all have discussed the conceptual and embodied nature of metaphor. Some authors such as Lakoff and Johnson (1980) and Deignan (2005) also discuss metaphor’s potential role in presenting our particular views on reality by hiding and simplifying some properties of an abstract topic. These three central tenets are also discussed in following sections.

#### **The Conceptual Nature of Metaphor**

The most central tenet of CMT is that metaphor is conceptual in nature (Kövecses, 2017a; Lakoff, 1993). Lakoff (1993, p.203) claims that “the locus of metaphor is not in language at all, but in the way we conceptualize one mental domain in terms of another”. That is, conceptual metaphor as part of our conceptual system governs the way we think about abstract concepts in terms of other concepts (Kövecses, 2017a; Kövecses, 2018). Within Conceptual Metaphor Theory, Lakoff (1993, p.203) defines metaphor as “a cross-domain mapping in the conceptual system”. That is, metaphor is a cognitive process of thinking about something in terms of another (Semino, 2008).

Conceptual Metaphor Theory makes distinctions between linguistic metaphor and conceptual metaphor (Kövecses, 2017a; Deignan, 2005) and gives primacy to conceptual metaphor (Lakoff, 1993). Lakoff (1993) claims that metaphorical correspondences pre-exist in our mind and are fixed as part of our conceptual system. He also claims that once pre-existing metaphorical correspondences in our mind are activated, source domain is projected onto target domain automatically and unconsciously. In the example of “We’re driving in the fast lane on the freeway of love”, properties of JOURNEY domain are automatically mapped onto LOVE domain once underlying conceptual metaphor LOVE IS A JOURNEY is activated (Lakoff, 2008,

p.29). Conceptual Metaphor Theory also makes claims on the nature of source domain and target domain. Dancygier (2017, p.71) writes that “In CMT, the assumption is that the source domain is rich in conceptual structure, and that that structure is basically concrete in nature”. That is, source domain is usually more concrete, and more directly and physically experienced (Kövecses, 2017a; Lakoff, 1993). Dancygier (2017, p.71) writes that “The target domain is enriched with conceptual structure from the source domain, such as the arguing parties will eventually be seen as winners or losers”. That is, within Conceptual Metaphor Theory, the target domain tends to be more abstract and with less concrete structure that we are familiar with (Dancygier, 2017; Kövecses, 2017a; Lakoff, 1993).

### **Metaphor Grounded in Embodied Experience**

Another core tenet of Conceptual Metaphor Theory is that conceptual metaphor is grounded in our embodied experience (Kövecses, 2017a; Ritchie, 2006). Lakoff and Johnson (1980/2003, p.5) claim that “[t]he essence of metaphor is understanding and experiencing one kind of thing in terms of another”. They add that “*we feel that no metaphor can ever be comprehended or even adequately represented independently of its experiential basis*” (p.19, italics in original). That is, embodied experience plays a very important role in cross-domain mapping in conceptual metaphor. Ritchie (2003) writes that our abstract thought is expressed by mapping embodied source domain to target domain. For instance, Lakoff and Johnson (2003, p.256) write that we express emotion in terms of our experience of physical temperature in conceptual metaphor “AFFECTION IS WARMTH” which is realized by linguistic metaphors such as “He’s a warm person”. They write that this embodied experience arises from our childhood experience of “being held affectionately by a parent” (p.256). On this experiential basis, a person with passion is understood in terms of physical warmth. Similarly, Lakoff and Johnson (1980/2003, p.255) claim that an increase in quantity is directly grounded in our experience of increase in height like pouring water into a glass in the example of “MORE IS UP”.

Gibbs et al. (2004, p.1192) also write that our cognition is “grounded in and structured by various patterns of our perceptual interactions, bodily actions, and manipulations of objects”. These patterns are experiential gestalts which are developed into “image schemata” or “embodied schemata” by Johnsons (1987, pp.23). Kövecses (2017a, p.18) claims that image schemata emerging from “our recurrent experience of world” provide embodied basis for people’s conceiving of many abstract concepts. For

instance, Gibbs et al. (2004) write that CONTAINMENT image schema primarily comes from people's recurring experience of body as a container being filled with sweat when feeling hot. They add that this CONTAINMENT image schema serves as source domain and is mapped onto target domain ANGER to form conceptual metaphor ANGER IS HEATED FLUID IN A CONTAINER. In this sense, Gibbs et al. (2004) claim that Conceptual Metaphor Theory has made contributions to the understanding of the embodiment claim through image schemas.

### **Metaphor is Potentially Ideological**

Another tenet of Conceptual Metaphor Theory is that conceptual metaphor is potentially ideological (Lakoff and Johnson, 1980/2003; Deignan, 2005). Not any conceptual metaphor can completely construct a particular target domain since source domain and target domain are never identical (Deignan, 2005; Henderson, 1994). Any pair of cross-domain mapping is only part of conceptual metaphors reflecting our certain views of the target domain. That is, ideology behind conceptual metaphors can be conveyed by highlighting some aspects of reality but hiding others (Lakoff and Johnson, 1980/2003; Kövecses, 2017a). Lakoff and Johnson (1980/2003, p.106) find that "ARGUMENT" domain can be constructed in terms of "WAR" domain, "BUILDING" domain and "CONTAINER" domain to create different realities. For instance, WAR domain can highlight fierce aspects of an argument in which there is winner and loser. BUILDING domain can highlight structure of an argument which can be teared down.

In specialized discourse, Wolf and Polzenhagen (2003) also find that different conceptual metaphors have different ideological implications. For instance, they show that aggression and hostility are highlighted in conceptual metaphor TRADE IS WAR while cooperation and common interests are highlighted in conceptual metaphor TRADE IS FRIENDSHIP. That is, different source domains can be projected onto the same target domain to create different realities (Kövecses, 2017a). Goatly (2007, p.12) understands the phenomenon whereby the same target domain is variously conceptualized by a range of source domains from quite different "semantic fields or conceptual schemas" as "diversification". He understands the opposite of diversification as "multivalency" whereby the same source domain is used to characterize different targets within its scope (p.13). For instance, FIRE as a source domain can be used to refer to both LOVE domain and ANGER domain (Kövecses, 2010).

### **2.1.2 Critiques of Conceptual Metaphor Theory**

Conceptual Metaphor Theory has played an important role in metaphor studies, for instance, being used as analytical framework for inferring underlying attitudes in economic discourse (Eubanks, 2000; Wolf and Polzenhagen, 2003). However, it has also received lots of critical voices such as Cameron et al. (2009), Deignan (2017a), Gibbs (2011) and Semino and Demjén (2017). Conceptual Metaphor Theory has been criticized in terms of theoretical and methodological issues as follows.

First, one strong objection of Conceptual Metaphor Theory lies in its claim of unidirectional relationship between language and thought (Cameron and Deignan, 2006; Semino, 2008; Semino and Demjén, 2017). Cameron et al. (2009) criticize that Conceptual Metaphor Theory treats linguistic metaphor only as top-down instantiation of conceptual metaphor from thought to language. They add that it “seriously downplays the influence of language on metaphor and the importance of the specifics of the language-using situation in which metaphor occur” (p.64). In similar vein, Semino (2008, p.10) criticizes that Conceptual Metaphor Theory over-emphasizes the importance of conceptual metaphor and pays little attention to “the textual manifestations of metaphor and for authenticity of the linguistic data that is adduced as evidence”. That is, Conceptual Metaphor Theory puts extreme emphasis on thought in metaphor and ignores different functions linguistic metaphors can perform in specific discourse (Deignan, 2010).

Second, it is argued that arguments supporting Conceptual Metaphor Theory are circular. One cannot identify conceptual metaphor based on linguistic metaphors and claim the existence of linguistic metaphors based on fixed and pre-existing conceptual mapping (Gibbs, 2011; Kövecses, 2017a). This problem of circular reasoning leads to the problem of non-falsifiability of existence of conceptual metaphor. Gibbs (2006, p.14) writes “[this] language-thought-language reasoning process never really explores the true non-linguistic, conceptual basis for metaphors”. Deignan (2017a, p. 188) also writes that “Language cannot provide definitive proof of conceptual structures and processes”. In response to this criticism, there have been more and more psychological studies that focus on studying the role non-linguistic knowledge play in structuring our understanding of abstract concepts (Gibbs, 2006; Gibbs, 2011). For instance, Reid and Katz (2018) test the possible presence of conceptual metaphors based on Deese-Roediger-McDermott (DRM) false memory paradigm. Reid and Katz (2018) ask participants to read a list of seemingly unrelated metaphorical

expressions. These expressions are related to a non-presented conceptual metaphor, for example, IDEAS ARE FOOD. Reid and Katz (2018) find that more false recognitions occurred for new metaphor expressions that share conceptual mapping with underlying conceptual metaphor than two control lures that do not share the mapping. Psychological experiments provide possibility to test the assumption of pre-existing contextual metaphor. However, purely linguistic data is insufficient to prove the presence of conceptual mapping in our mind (Cameron, 2010c).

Third, objection to Conceptual Metaphor Theory also concerns methodological issues. Conceptual Metaphor Theory is criticized of extrapolating conceptual metaphors based on intuitively invented and decontextualized data (Semino et al., 2004; Gibbs, 2011; Kövecses, 2017a; Deignan, 2017a). To ensure representativeness and rigor of findings, scholars such as Deignan (2017a), Koller (2006) and Semino (2017) emphasize the necessity and benefits of corpus analysis in conceptual metaphor study. Semino (2017) writes that metaphor studies from corpus-linguistic perspective have some findings supporting Conceptual Metaphor Theory and some new findings that are not discussed in Conceptual Metaphor Theory. For instance, Deignan (2008, p.293) shows that “studying linguistic metaphors in naturally occurring data has not produced findings that contradict contemporary metaphor theory, but it has suggested that other factors [such as linguistic context, genre, culture and ideology] affect metaphor choice”. Conceptual Metaphor Theory is also criticized for having no explicit criteria of conceptual metaphor identification (Deignan, 2008; Pragglejaz Group, 2007; Semino, 2017). That is, Conceptual Metaphor Theory does not provide explicit restraints on the level of generality when formulating conceptual metaphors based on linguistic metaphors (Herrmann, 2013). Without explicit criteria, identification of the level of conceptual mapping based on linguistic data becomes very subjective and arbitrary (Musolff, 2016; Semino, et al., 2018). For instance, Semino (2006, p.43) suggests metaphorical expressions such as “*rapped* his decision” are better treated as realizations of the more general conceptual metaphor ANTAGONISTIC COMMUNICATION IS PHYSICAL CONFLICT rather than restricting it to ARGUMENT IS WAR. Deignan (2017a) finds it becomes even more difficult to formulate conceptual metaphor when there is only one or very limited number of linguistic metaphors from a certain source domain in a limited number of texts. She suggested the use of corpus evidence to corroborate whether the limited number of linguistic metaphors is a realization of a conceptual metaphor or only demonstrate a one-shot mapping. She borrows



the concept of one-shot metaphor from Lakoff (1987). She writes that if there are no instances of other linguistic metaphors from the same semantic field but only zero or more instances of the same linguistic metaphor in larger corpus of similar texts, the linguistic metaphor may suggest a one-shot mapping.

To avoid the danger of overgeneralization of conceptual mapping based on linguistic metaphors, Musolff (2004) suggests metaphor analysis at a more specific level of conceptual mapping-scenario level, which is discussed in Section 2.2.

## **2.2 Scenarios**

Musolff (2015) claims that Conceptual Metaphor Theory is insufficient to capture irregular linguistic patterns and evaluative bias emerging from authentic data. Musolff (2004) proposes to investigate metaphor at more specific level of conceptual structure-scenario. The scenario-oriented approach to metaphor, working as a link between cognitive-oriented approaches and discourse-based approaches, complements the inadequacy of metaphor analysis at general-domain level (Kort, 2017; Musolff, 2006; Semino, et al., 2018). Musolff (2006, p.35) writes that the importance of focusing on specific scenarios is as follows:

To capture attitudinal preferences and discursive trends that are characteristic for particular discourse communities, we need to look beyond the domain-level and focus on specific scenarios and their argumentative uses.

Musolff (2006, p.36) adds that “the analysis of source scenarios as focal areas of source domains provides a platform to link the conceptual side of metaphor to its usage patterns in socially situated discourse”. In this section, I discuss how scenario is defined and its function, and examine how it can be applied in metaphor analysis.

‘Scenario’ introduced by Musolff (2004) in metaphor analysis develops from ‘scene’ discussed by Fillmore (1975) and ‘scenario’ by Lakoff (1987). Fillmore (1975, p.124) understands scene as “any kind of coherent segment of human beliefs, actions, experiences or imaginings”. Lakoff (1987, pp.285-6) understands that scenario consists of ontology (e.g. “a sequence of events”) and “is structured by a SOURCE-PATH-GOAL schema in the time domain”. Musolff (2016, p.30) defines scenario as:

a set of assumptions made by competent members of a discourse community about the prototypical elements of a concept, that is, participants, 'dramatic' story lines and default outcomes, as well as ethical evaluations of these elements, which are connected to the social attitudes and emotional stances that are prevalent in the respective discourse community.

Based on the definition above, a metaphor scenario can be understood as a combination of events with a set of social-cultural entrenched expectations and evaluations (Cameron et al., 2010). Musolff (2006) writes that a scenario provides the default information of a source concept. The default information reflects prevalent value judgement of a discourse community so it plays a significant role in metaphorical argument and reasoning (Musolff, 2006). Musolff (2015, p.44) adds that "[scenarios] combine snippets of encyclopaedic knowledge to arrive at a default conclusion or evaluation that is based on common sense experience". For instance, presumptive knowledge about contemporary MARRIAGE scenario in most discourse communities is that a couple only consists of two members and a third person in the marriage is the mistress (Musolff, 2006). A mistress has lower status than that of a spouse and negatively influences the family (Musolff, 2006). Musolff (2006, p.24) writes that based on the assumption of conventional MARRIAGE scenario France and Germany are conceptualized as a couple with metaphors such as "*Franco-German marriage*" while UK is conceptualized as a mistress with metaphors such as "makes Tony Blair either *lover* or *mistress*". This scenario maps onto the development of EU with implication of possible influence of UK on EU family. Musolff (2016, p.31) writes that a scenario is not random selection of conceptual elements from more abstract domain but is based on "a particular set of presuppositions that are chosen for specific argumentative purposes". For instance, the conceptual element of showing hostility is selected from WAR metaphor to form WAR DECLARATION scenario (Musolff, 2016). He also claims that alternative scenario may also deviate from the default one to achieve pragmatic and rhetoric effects in specific contexts. For instance, he finds that default scenario of FATHERHOOD metaphor with a positive slant about its authority and responsibility can be changed with an alternative scenario with an opposite slant. He shows an alternative scenario in which the authority of *founding fathers* is challenged with the following example from his corpus: "The EU's *founding fathers* simply did not envisage that the accession of new countries would trigger mass population movements across Europe" (p.35). He also finds that HEALTHY HEART scenario realized by reoccurring

patterns of “at heart of Europe” can develop into its counter-scenario realized by linguistic metaphors such as “coronary in Europe’s new heart” (p. 43). He writes that opposite ROTTEN/SICK HEART scenario emerges in the context of EU governance problems. He adds that the pragmatic and rhetorical effect which a counter scenario can achieve depends on two possible factors. On the one hand, he writes that whether the alternative/counter scenario is accepted/rejected by readers depends on their beliefs, views and experiences. On the other hand, he writes that once readers link the counter scenario with the default version as background materials, pragmatic and rhetorical effect of counter scenario can be achieved.

Musolff (2006, p.28) claims that “it appears that [scenarios] are ubiquitous and constitute essential feature of metaphor use in public discourse register”. He writes that scenarios enable writers to “build narrative frames” for conceptualization and evaluation of socio-political or socio-economic issues (p.36). That is, different attitudinal bias and preferences in respective discourse communities can be captured when a particular scenario is chosen by a discourse community to convey their view on reality (Musolff, 2006; 2016). For instance, he finds that within the LOVE-MARRIAGE scenario British media tends to show negative attitudes towards France and German partnership in European Union by depicting France and German as a couple with marriage crisis which may cause marital breakdown. Within the same scenario, he finds that German media tends to describe problematic France and German partnership as married partners with marital problem which is a threat that must be averted. That is, metaphor analysis at the level of scenario can better capture the frame in which a problem is set and influence views towards problem-solving (Schön, 1993). Musolff (2016) also finds that metaphor scenarios with richer conceptual structure allows more flexibility than abstract domains in framing topics in public discourse. He writes that scenarios do not strictly follow logical or ontological presumption. He shows that when conceptualizing the topic of euro currency, FAMILY metaphor at scenario level allows inferences of 11 member states sharing the same currency as one child (euro currency) having 11 fathers.

In metaphor analysis, the evidence for scenarios is derived from data, for instance, frequency, distribution and collocation of linguistic metaphors (Musolff, 2016; Semino et al., 2018). Deignan (2017b) writes that the typical evaluation of a scenario cannot be evidenced in single citations and can be identified with the help of a number of collocations of lexis suggesting the

scenario. Motivated by data rather than being introduced a priori, Musolff (2016, p.133) concludes that “the scenarios-oriented approach helped us to refine our understanding of the metaphors’ degree of entrenchment in their sociocultural setting and the power to ‘frame’ its discourse”. However, the aim of scenario still limits to capturing specific patterns of conceptual structures. To capture systematicity of the forms and functions of context-sensitive metaphorical expressions in real discourse, a framework for metaphor analysis at linguistic level is discussed in next section.

## **2.3 The Discourse Dynamics Framework for Metaphor**

Since Conceptual Metaphor Theory has limitations in providing an explanatory account for language patterns of specific metaphors, Cameron et al. (2009, p. 68) propose the discourse dynamics framework for metaphor, which emphasizes “interaction between language and thinking”. In this section, I first describe this framework in terms of the nature of metaphor, theoretical assumption, terms and theoretical focus. Then I justify its applicability for my study by comparing it with Conceptual Metaphor Theory.

### **2.3.1 Metaphor and Discourse as Complex System**

#### **Metaphor as Multi-dimensional**

The discourse dynamics framework for metaphor is a significant advance in discourse-based approaches to metaphor (Cameron, 2010a). Inspired by complex system view to language and discourse (Larsen-Freeman and Cameron, 2008), Cameron (2010a) writes that this framework dissolves dichotomous understanding of the nature of metaphor either as a linguistic matter or a cognitive phenomenon. She writes that this framework assumes “interconnectedness of the dimensions of metaphor in use (linguistic, cognitive, affective and cultural)” (p.78), which indicates that metaphor is multidimensional. This framework understands the relationship between language and thought as interactional within a complex discourse system (Cameron et al., 2009; Cameron and Deignan, 2006). That is, what people say and write reflects and influences the way they think (Cameron et al., 2009).

#### **Terms Used in the Framework**

Since theoretical assumptions of this framework and Conceptual Metaphor Theory vary from each other, similar terms are used differently, and new terms are introduced. *Vehicle terms* and *topics* are introduced to replace source domain and target domain (Cameron et al., 2010). Within Conceptual

Metaphor Theory, *vehicle terms* are only instantiations of source domain in conceptual mapping (Lakoff, 1993). This framework uses *vehicle terms* to avoid assumption of static and pre-existing conceptual mapping (Cameron and Maslen, 2010). Cameron and Maslen (2010, p.103) also write that “In conventional formulation, a linguistic metaphor consists of a vehicle term combined with a topic term”. For instance, in the linguistic metaphor “a black hole of debt”, *debt* is the topic while *black hole* is the vehicle term (Cameron et al., 2010, p. 103). However, in Conceptual Metaphor Theory, linguistic metaphors are linguistic expressions used metaphorically to realize a cross-domain conceptual mapping (Kövecses, 2017; Deignan, 2005). Rather than assuming a fixed and static conceptual structure in the mind, this framework postulates the interconnectedness between metaphor and discourse context (Cameron et al., 2009; Cameron, 2010a). It replaces conceptual metaphor with *systematic metaphor* which is usually in “small italic capitals” to capture linguistic patterns emerging from naturally occurring discourse in specific context (Cameron et al., 2009; Cameron, 2010a).

### **Emergence and Temporary Stability of Metaphors**

Within this framework, Cameron et al. (2009, p. 64) write that metaphor is understood as “a temporary stability emerging from the activity of interconnecting systems of socially-situated language use and cognitive activity”. That is, metaphor is an emergent phenomenon arising from the discourse and can stabilize with certain degree of variability in the discourse process (Cameron, 2010a; Cameron and Deignan, 2006). Cameron (2010a, p. 82) adds that discourse where metaphor occurs is “a dynamic system that is in continual flux and working on various interconnected dimensions and timescales”. Larsen-Freeman and Cameron (2008) write that emergent attractors such as texts or face-to-face conversation are produced in the trajectory of discourse. It is easy to understand spoken language as a dynamic process with conventionalized and emergent patterns (Cameron, 2010b). Although written text itself is not dynamic, Cameron (2010b) writes that it can be treated as an attractor in the trajectory of a compositional system. In this compositional system, a writer is influenced by different factors such as socio-cultural factors and writing conventions (Larsen-Freeman and Cameron, 2008). The discourse dynamic system where metaphor is used can be identified across different timescales and levels of social organization (Cameron, 2010a). Cameron et al. (2009) claim that metaphor in discourse arises from interaction of individuals’ interconnected sub-systems such as dynamic linguistic system, cognitive system or affective

system. These interconnected systems in local discourse activity are also connected into wider systems such as focus group at discourse event timescale or socio-cultural groups at phylogenetic timescale to frame a topic (Cameron, 2010a; Cameron et al., 2009). For instance, Cameron (2010a, p.81) shows that linguistic metaphors e.g. “terrorism to me, it’s... it’s a sneaky way” in episodes of a focus group discussion on the topic of terrorism take place on microgenetic timescale and are part of individual discourse activities. Cameron (2010a, p.86) finds that one discourse participant uses linguistic metaphor “*sneaky*” and connects it with another metaphor “*bullying*” on microgenetic timescale to convey negative attitudes towards terrorism. As the discussion moves on, she shows that the participant adapts the linguistic metaphor from bullying behaviour to war field, for example, “terrorism ...is just a—an invisible enemy”) (p.81). She claims that metaphor used by the focus group at discourse event timescale can be connected to broader sociocultural groups who share knowledge about bullying behaviour and war to reinforce negative framing of terrorism. She adds that “metaphor shifting” plays a key role in connecting linguistic metaphors on different timescales (p.89). Cameron (2008, p.45) understands metaphor shifting as “changes and adaptations made to the metaphor as talk or text proceeds”. Cameron (2010a, pp.90-1) writes that “vehicle development”, as one type of metaphor shifting, leads to “extended metaphor” on short timescale and “systematic metaphor” on longer timescale. In a similar vein, Semino (2008, p.25) understands extension, one type of metaphor pattern, as a situation whereby

several metaphorical expressions belonging to the same semantic field or evoking the same source domain are used in close proximity to one another in relation to the same topic, or to elements of the same target domain.

Dorst (2017) also adds that systematic metaphor is metaphor patterns with temporarily stability.

Cameron et.al. (2010, p.145) write that “the idea of systematic metaphor is at the heart of metaphor analysis”. Cameron (2010a, p.91) defines it as “a collecting together of related linguistic metaphors that evolve and are adapted as the discourse proceeds”. Cameron et al. (2010, p.129) add that systematic metaphor can also be understood as “metaphor trajectory” since it is a number of linguistic metaphors around closely connected topics across different timescales. Systematic metaphors are identified by researchers based on semantic characteristics of linguistic metaphors in specific contexts,

which is discussed in detail in Chapter 4 (Cameron, 2010a). Cameron (2010a, p.91) claims that “a systematic metaphor may be more than just aggregation of linguistic metaphors pulled together by an analyst” (p.91). She treats systematic metaphor as “a kind of temporary stabilization in the dynamics of thinking-and-talking”, which can be adapted as discourse continues (p.91). There is no interaction between readers and the writer in the compositional system. However, Cameron (2010b) writes that written data is dialogic since the writer appears to have idealized readers in mind and may be influenced by previous writers in the dynamics of thinking-and-writing. Thus, systematic metaphors in written language is also temporary stabilization at discourse community level on longer timescale. Metaphor trajectory in the discourse can also be connected to multiple systems on other timescales and levels of social organization and thus contributes to understanding of people’s attitudes and values (Cameron et al. 2009). Cameron et al. (2010, p.117) write that studying systematic metaphors identified in discourse helps researchers to “capture the cognitive and affective information about the participant in discourse”. For instance, Cameron et al. (2010, p.132) find that systematic “*VIOLENT PHYSICAL ACTION*” is used to talk about terrorism to convey negative evaluation of the danger and pain caused by terrorism. This systematic metaphor is realized by a collection of linguistic metaphors such as “bullying” and “killing” (Cameron et al., 2010, p.132). They also claim that a large number of related linguistic metaphors in a set does not necessarily mean the importance of a systematic metaphor. That is, some systematic metaphor with a small number of linguistic metaphors may also be powerful. They write that it’s the analysts’ responsibility to decide whether a systematic metaphor is important and relevant to the research questions.

Cameron and Deignan (2006) also claim that linguistic and conceptual patterns of metaphor emerge on a short timescale can stabilize as the preferred resources for expressing ideas and concepts on longer scale at discourse community level. They term the notion of “metaphoreme” to capture stability of patterns or rules at lexical level but with extension of semantic, pragmatic and affective meanings (p.686). They define “metaphoreme” as “a bundle of relatively stable patterns of language use, with some variation, that, for the time being, describes how people are using the lexical items” (p. 686). They examine the use of metaphoreme “baggage” and “walk away from” in a 59-million-word section of the Bank of English (pp. 678-680). They find that both metaphoreme “baggage” and “walk away from” used in discourse follow grammatical and linguistic restrictions, and affective

restrictions. For instance, they find that metaphoreme “baggage” linguistically “tends to fix as noun with pre-modifier (e.g. emotional, excess, a lot of) and/or verb (e.g. carry, dump, get rid of)” (p.679). Pragmatically, metaphoreme “baggage” tends to express negative evaluation of past memories and experience (Cameron and Deignan, 2006). Cameron et al. (2009, p.68) also find that the frequency of linguistic metaphor “*a flaw in the system*” in the corpus shows relative stability linguistically and conceptually. They find that this metaphoreme is used to convey discourse participants’ dissatisfaction toward authorities’ response to terrorism.

Both systematic metaphor and metaphoreme are ways to capture stability of patterns of metaphor emerging from dynamic discourse systems at linguistic level (Semino et al., 2018). However, they are different in the categories of linguistic metaphors whose emergent patterns’ stability are studied (Semino et al., 2018). Metaphoreme aims at capturing the relatively stable behaviours of a single linguistic metaphor in the discourse system (e.g. its collocation). Systematic metaphor aims at capturing behaviours of a number of linguistic metaphors in the discourse under the same vehicle grouping to conceptualize a certain topic (Semino et al., 2018).

### **Systematicity in Metaphor Use**

Cameron et al. (2010) claim that systematic metaphor is the starting point of systematicity investigation to reveal people’s ideas, stances, value or attitudes in real-world discourse. They add that systematic metaphor may also be complemented with other types of metaphor systematicity at more generalized levels such as metaphor frames and metaphor scenarios. They write that systematic metaphor emerging from metaphor analysis may suggest “ways of ‘framing’ the ideas, attitudes and values of discourse participants” (p.137). They suggest the use of large-scale corpus when making claims about metaphor framing across the discourse community. They understand metaphor scenario, which is one kind of metaphor-related narratives, as “the cognitive version of metaphorical narrative systematicity [working at social-cultural level]” (p.138). They also write that claims about metaphor systematicity at any level need to avoid overgeneralization and always stick to empirical data.

### **2.3.2 Comparison with Conceptual Metaphor Theory**

Cameron (2010a, p.91) writes that both Conceptual Metaphor Theory and the discourse dynamic framework for metaphor claim to “reflect metaphorical patterns of thinking”. Although her framework was inspired by Conceptual



Metaphor Theory, the two frameworks are based on different theoretical assumptions (Cameron, 2010a; Cameron et al., 2009). This framework rejects an assumption of the formulation of metaphor based on pre-existing fixed metaphorical mappings across discourse communities in Conceptual Metaphor Theory (Cameron, 2010a; Lakoff, 1993). It holds that linguistic metaphors may be produced based on pre-existing conceptual metaphor but linguistic data is insufficient to test this assumption (Cameron, 2010a; Cameron, 2010c). Gibbs and Cameron (2008, pp.64-5) claim that conceptual mapping in Conceptual Metaphor Theory is only one of seven forces that shape metaphor use. They add that the other forces such as “previously understood metaphorical utterances”, “conventional talk in specific socio-cultural groups” and “specific language and culture” can also shape how metaphor is used in discourse (pp. 65-7). The discourse dynamics framework takes these different forces into consideration and holds that linguistic metaphor can be used in discourse in different ways on different timescales and social organizations (Cameron, 2010a).

Different theoretical assumptions between the two frameworks also lead to differences in their theoretical focus. Cameron (2010a) writes that Conceptual Metaphor Theory gives primacy to thought over language, discourse communities over individuals and abstract formulation over context-specific instantiations. Caballero (2003, p.145) argues that “the interest in unearthing the cognitive motivations and processes at work in metaphor has led to neglect of its linguistic realization and discourse role”. The heart of the discourse dynamic framework for metaphor lies in studying the linguistic metaphors that occur in the texts and grouping them based on their semantic fields with no implications that there are permanent conceptual mappings associated with, or underlying them (Cameron, 2010a; Cameron et al., 2009). This framework allows metaphor analysis of different levels of systematicity to reflect people’s ideas, stances, value or attitudes in real-world discourse. For instance, metaphor scenario, as one type of metaphor patterns, is identified at the level of discourse community while systematic metaphor works at other different timescales and social organizations (Musolff, 2016; Cameron et al, 2010).

Since my study aims to capture language patterns of specific metaphors and the way people use them to convey attitudes and evaluations, the discourse dynamics framework for metaphor is the most appropriate theoretical framework. First, this framework can be applied to account for language patterns and meanings emerging from natural-occurring discourse

in a discourse dynamics system. Deignan (2017a, p.195) writes that “research into metaphor is increasingly recognizing that every language community is composed of different speakers, with different experiences and interests, and that we cannot assume a shared, static set of conceptual structures”. Second, the framework avoids the assumption of a static and pre-existing mapping in Conceptual Metaphor Theory. Third, generalization of metaphor systematicity is formulated based on empirical data. Systematic metaphor is identified based on a collection of linguistic metaphors falling into the same semantic group and talking about closely related topics (Cameron, 2010a). Fourth, this framework is more adequate in capturing people’s attitudes and ideas in discourse since it identifies systematicity of metaphor use at more specific levels rather than highly abstract domain level. Some scholars argue that central mapping between two broad conceptual domains is inadequate to capture attitudinal bias, preferences, or framing implications of specific patterns in natural-occurring discourse (Musolff, 2016; Semino et al., 2018). Conceptual metaphor that aims at capturing regularities cannot account for the unique and irregular semantic behaviour of many linguistic metaphors (Kövecses, 2008; Dobrovolskij et al., 2005). For instance, Kövecses (2008, p.171) writes that it is not easy to explain the meaning and semantic behaviour of “split hair” by tracing it back to pre-existing conceptual metaphor since no such conceptual metaphor motivating it can be found. Semino, et al. (2018) find that conceptual metaphor BEING ILL WITH CANCER IS A VIOLENT CONFRONTATION is used to frame cancer experience with patients at the role of fighter and cancer at the role of enemy. However, they find that it is at other more specific levels that the evaluation of the relationship between patients and cancer is detected. They find that “fighter” is a metaphoreme used by patients at linguistic level to frame patients in an empowered position (e.g. “...I was a born fighter and saw my determination to prove them wrong.”) (p. 639).

Although this framework is mainly developed to trace metaphor use in the dynamics of talking-and-thinking, it is possible to be applied in written data (Cameron, 2010b; Knapton and Rundblad, 2018). Knapton and Rundblad (2018, p.392) write that this framework can be applied to investigate “how metaphors in written texts can build relationships between writers and readers and can provide structure to a stretch of discourse”.

## **2.4 Metaphor in Economic Discourse**

### **2.4.1 Functions of Metaphor in Economic Discourse**

The role of metaphor in economics has been debated by economists themselves as well as linguists (Klamer and Leonard, 1994; Henderson, 1994; Herrera-Soller and White, 2012). McCloskey (1983) attacks positivists' claim that language in economics should be entirely literal to avoid ambiguity and imprecision. He writes that economics is different from pure science fields such as physics and mathematics that follow an entirely modernist method. He adds that "economics is heavily metaphorical" with examples such as "game theory", "depression" and "equilibrium" (pp. 502-3). However, this rhetorical perspective of economics as a discursive practice full of metaphors doesn't mean that economic language all relies on metaphors (Bicchieri, 1988; Klamer and Leonard, 1994). A traditional literal-figurative distinction of metaphor in economics should be rejected (Bicchieri, 1988; Klamer and Leonard, 1994; Henderson, 1994). Metaphor should not be an anathema being avoided by economists or be used by economist in a meaningless way. Metaphor is used in economic discourse because it can serve a range of functions (McCloskey, 1983; Klamer and Leonard, 1994).

Goatly (2011) discusses thirteen metaphorical functions within Halliday's (1994) model of meta-functions. Ideational meta-function is about the way people use language to represent and describe experience and reality in the world (Halliday, 1994). For instance, Goatly (2011) writes that metaphorical model of computer as human brain fulfilling the function of explanation and modelling corresponds to ideational meta-function. Interpersonal meta-function refers to how language is used to communicate with others, influence others or express evaluation. Goatly (2011, p.163) writes that metaphor such as "GOODNESS IS PURITY" cannot only reflect or interpret reality but also construct reality and contribute an ideological interpretation, which can be related to interpersonal meta-function. Textual function refers to the use of language to organize ideas/message at level of texts (Halliday, 1994). Metaphor as one kind of linguistic device can also be used by speakers/writers to signal ideational and interpersonal coherence (Thompson, 2014). Dvorak (2012, p.17) writes that metaphor performs a textual meta-function by "organiz[ing] interpersonal and ideational meanings into a flow of information that exhibits cohesion and coheres with its context of situation". Deignan et al. (2013) also discuss metaphor functions within specific genres. They find that Littlemore's (2001) categorization of five metaphor functions in academic lectures can be fitted into Halliday's (1994)

model of meta-functions. For instance, they write that metaphor fulfilling evaluative function, which is among Littlemore's (2001) categorization of five metaphor functions in academic lectures, corresponds to interpersonal meta-function. They find that interpersonal function seems to be a very significant function fulfilled by metaphors in academic lectures.

Metaphor in economics also tends to fulfil functions that can be considered within three meta-functions described by Halliday (1994). Klamer and Leonard (1994) summarize three functions of metaphor in economics: pedagogical, heuristic and theory-constitutive. Pedagogical metaphor and heuristic metaphor contributing to describing abstract economic topics or understanding new concepts express ideational meta-function (Halliday, 1994; Deignan, 2012; Deignan et al., 2013). Klamer and Leonard (1994, p.31) writes that pedagogical function refers to "illuminate and clarify an exposition and could be omitted without affecting the argumentation". This function is found less important and less common in economics (Klamer and Leonard, 1994; Skorczynska and Deignan, 2006). Skorczynska and Deignan (2006, p.95) find that "illustrating" was the main pedagogical function in their data. Heuristic metaphor for economists provides a new perspective to the known and serves as a tool to understand the unknown (Klamer and Leonard, 1994; Resche, 2012). Klamer and Leonard (1994, p.35) claim that "in a scientific context, a metaphor becomes heuristic when it stimulates the construction of analogical system". For instance, the human capital metaphor plays a heuristic role by analogizing people's expenditures on education, training course or health care to investment in physical capitals like bank account or stock shares (Becker, 1994; Bicchieri, 1988). Many metaphor studies either in general discourse or in genre-specific discourse concentrate on ideational function of metaphor (Caballero, 2003; Deignan, 2012; Goatly, 2011). However, interpersonal and textual functions of metaphor may be more important and more relevant to framing and evaluation (Goatly, 2011; Deignan, 2012; Knapton and Rundblad, 2018).

Knapton and Rundblad (2018, p.393) claim that "Metaphor can serve an interpersonal function through, for example, creating a sense of community or expressing attitudes". Constitutive metaphor in economics, as the third function discussed by Klamer and Leonard (1994), can express a strong interpersonal function. Klamer and Leonard (1994, p.40) write that "constitutive metaphor function[s] as <windows for the implied vision>". They claim that constitutive metaphor is essential to our thinking. "Theory-constitutive", coined by Boyd (1993, p.485), is defines as "constitut[ing], at

least for a time, an irreplaceable part of the linguistic machinery of a scientific theory: cases in which there are metaphors which scientists use in expressing theoretical claims for which no adequate literal paraphrase is known". Black (1962, p.267) writes that "metaphorical thought is a distinctive mode of achieving insight, not to be construed as an ornamental substitute for plain thought". That is, different constitutive metaphors can frame different economic thinking on reality (Klamer and Leonard, 1994). For instance, *THE ECONOMY IS A MECHANISM* (Mirowski, 1989) and *THE ECONOMY IS A LIVING ORGANISM* (Marshall, 1898) are two dominant theory-constitutive metaphors in the development of economics. Within mechanism metaphor, Resche (2012, p.84) finds that workers are treated as "cogs in the wheel" and a company needs to be repaired or restructured when facing problems. Within organism metaphor, a company is a human being who has life cycle (Resche, 2012). When it is ill, a doctor and treatment are needed (Resche, 2012).

Metaphor also fulfils a persuasive and ideological function in economics (McCloskey, 1983; McCloskey, 1995; Herrera-Soller and White, 2012). This function can be treated as an extension of theory-constitutive function (Cai and Deignan, 2019). Boers and Demecheleer (1995, p.673) write that "our reasoning about economics may be predisposed by a number of conventional metaphorical models." They add that "A community's conventional metaphorical models are a reflection of the predominant ideology of that community at that time" (p.677). For example, Smith (1776, p.349) argues that individuals are driven by self-interest economic behaviours, but interests of the public can be maximized by "invisible hand" rather than government interference. This invisible hand metaphor tends to be persuasive and advocates free trade ideology (Bishop, 1995; Boers and Demecheleer, 1995). Metaphor in discourse can express more than one function simultaneously (Boers and Demecheleer, 1995; Goatly, 2011; Deignan, 2012; Resche, 2001). For instance, the invisible hand metaphor primarily fulfilling the function of "filling terminological gaps" has an ideational function (Skorczynska and Deignan, 2006, p. 97; Resche, 2001). Meanwhile, it can evaluate and shape ideas by foregrounding some aspects of the topic and backgrounding others (Boers and Demecheleer, 1995; Resche, 2001), which fulfils an interpersonal function.

Metaphor use in economic discourse can also "contribute to the textual metafunction by creating structure and cohesion" (Knapton and Rundblad, 2018, p.393). Dorst (2017, p.293) writes that "To understand the functions

and effects of metaphor in discourse, researchers need to take into consideration the many different textual realizations of linguistic metaphors, and the many different types of patterns they can form". That is, it is important to understand the interplay of metaphors in organizing information in a text (Goatly, 2011). Dorst (2017) discusses several metaphor patterns, for instance, metaphor clustering and mixed metaphor. Dorst (2017, p.291) puts it that

Studying metaphor patterns allows us to determine how language users introduce, develop, negotiate, challenge, reject and adapt metaphors within the context of the discourse event in order to achieve their rhetorical goals and meet the needs of their addressees.

For instance, Koller (2003) discusses how the position of metaphor clusters in business discourse influences rhetorical functions they may serve. Koller (2003, p.94) finds that metaphor clusters or alternative metaphors used in the introduction part of journalism tend to fulfil "a defining function". She also finds that metaphor used in the middle of texts tends to have argumentative functions while contributing to a persuasive function when used in the end part of texts. Sullivan (2019) understands mixed metaphors as linguistic metaphors from quite different and incompatible source domains occurring close to each other within the same sentence. One typical example she gives is "Ahmadinejad wields axe to cement his position" which suggests an impossible scenario in which an axe is used to cement something (Sullivan, 2019, p.7).

Economic discourse comes in more than one variety, for instance, scientific economic discourse and popular economic discourse. They can be treated as two different genres since they have different recognizable communicative purposes or serve different functions (Deignan et al., 2013; Herrera-Soller and White, 2012). These two genres are at different points on the continuum of economic discourse (Herrera-Soller and White, 2012). For instance, Skorczynska and Deignan (2006, p.88) define popular economic discourse as "journalistic texts that deal with current economic and business matters for an audience of both experts and non-experts and seek to inform and entertain more generally". Based on this definition, four attributes of popular economic discourse may be concluded: timeliness, economic-related, proximity and information-providing. The very basic property of popular economic discourse is information-providing. Timeliness implies that economic and business event must be something that has just happened

recently (Auwal, 2015). For proximity, Auwal (2015, p. 51) writes that “[it] could be either geographical or psychological proximity”, which means the nearness of an event to the audiences because people are only interested in something that is related to them. This definition also implies that the audiences of popular economic discourse are both experts and non-experts (Skorczynska and Deignan, 2006). Boers (2000, p.141) adds that popular economic discourse is “rather specialized but at the same time fairly popular (and often argumentative)”. That is, popular economic discourse assumes a bigger readership than scientific economic discourse.

Skorczynska and Deignan (2006) find different functions are expressed by genre-specific metaphors in scientific economic discourse and popular economic discourse. They find that 90% of genre-specific metaphors are used to express the function of “filling terminological gaps” in popular economic discourse (p.97). However, they find that metaphors in scientific economic discourse are used more to fulfil interpersonal function. In their data, they also find that a relatively high proportion of metaphors in popular economic discourse are common to general language. Charteris-Black (2004) claims that the functions of metaphor economic journalists want to express may be influenced by their primary purposes--to describe economic events as non-experts or predict economic process as experts. For either purposes, metaphors in popular economic discourse play an important role in describing and reasoning abstract economic concepts and phenomena (Charteris-Black, 2004; Cardini, 2014). To describe an abstract topic, metaphor, especially conventional ones that are part of discourse community’s acceptable value system, tends to express attention-attracting function (Charteris-Black, 2004; Cardini, 2014). Metaphor can simultaneously express an illustrating function in popular economic discourse when being intended for non-expert readers. Charteris-Black (2004, p.137) also writes that “the ideological aspect of metaphor is of importance in financial reporting where it seems that metaphors are central to the activity of communicating economic event”. That is, metaphors play a very important role in constructing public attitudes and shaping public opinions in popular economic discourse (Happer and Philo, 2013). Thus, this research focuses on examining the framing function of metaphor in popular economic discourse within Halliday’s (1994) model of meta-functions.

## **2.4.2 Metaphor and Framing in Discourse**

### **Frames and Framing**

Framing theory was first proposed in the field of psychology by Bateson (1972) and then, further developed by Goffman (1974) from a sociological perspective. Bateson (1972) understands frame as physical picture frame which is externalization of human beings' psychological characteristics. Rather than treating frame as a psychological concept explaining individual behaviours, Goffman (1974) defines it in the realm of sociology and applies it to explain collective behaviours in real social practice. Since then, this theory has become popular and is discussed and developed in various disciplines such as mass communication (e.g. De Vreese, 2005; Entman, 1993) and applied linguistics (e.g. Fillmore, 1976; Kövecses, 2017b; Sullivan, 2013). The concept of frame or framing is understood in various ways in different disciplines.

In the field of communication, Entman (1993, p.52) defines framing as follows:

*to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described" (italics in origin).*

The definition above indicates that the nature of framing is a communicative process involving selection and salience (Entman, 1993). Entman (1993, p.93) writes that salience means foregrounding some information of a subject of a communication by repetition "or by associating them with culturally familiar symbols". This way of organizing information in a text tends to enhance logical relationship between what is said and the context, which seems to fulfil Halliday's (1994) textual meta-function. The definition also indicates that different realities may be constructed when different aspects of a reality are selected, which primarily relates to Halliday's (1994) interpersonal meta-function. Tversky and Kahneman (1981) find that when the same situation is framed or formulated in different ways that even cause no consequential changes, there is a shift in individuals' preferences for decision options and even the actual experiences of outcomes. For example, they performed two experiments which asked respondents to make decisions on programs to combat an unusual disease which was expected to kill 400 out of 600 people. In each experiment, they asked a group of respondents to make decisions on two alternative programs. Program A and Program B in the first experiment framed the solutions to combat the disease in terms of lives being saved (e.g. "If Program A is adopted, 200 people will



be saved”) while Program C and Program D in the second experiment framed the same solution in terms of death (“If Program C is adopted 400 people will die”) (Tversky and Kahneman, 1981, p.453; Entman, 1993). Tversky and Kahneman (1981) find that 72% of respondents in the first experiment favour Program A and only 22% of respondents in the second experiment favour Program C. The definition above also indicates four functions a frame in texts may fulfil: problem-setting, diagnosing causes, making evaluation and suggesting solutions (Entman, 1993).

Entman (1993) also writes that frames can be located at least four different elements in the process of communication: communicator/ sender, the text, the receiver, and the culture. De Vreese (2005) claims that the four elements in the process of communication above can be integrated in the framing process. He writes that there are three different framing stages: (media) frame-building, (individual) frame-setting, and framing effect at individual level and societal level. Media frame, focusing on salience of attributes of news events, is built as a result of interaction between external factors to journalism such as interest groups, economic factors, elites, and internal factors such as journalists’ ideology, news organization’s attitudes and values (Ardèvol-Abreu, 2015; De Vreese, 2005; McCombs et al., 1997; Scheufele, 1999). The process of individual frame-setting involves the public’s interpretation and evaluation of reality (Ardèvol-Abreu, 2015; De Vreese, 2005).

In the field of applied linguistics, the framing process of selection and salience is understood in a more restricted sense than that of the field of mass communication. What can be selected and highlighted is limited to linguistic units rather than any pieces of information e.g. multimodal information. Ritchie (2013, p.106) understands framing as “the process of using words and phrases to establish a particular way of thinking about a topic or social interaction”. This process is influenced by such factors as prior knowledge, culture-based and conventional knowledge, communicative purposes (Entman, 1993; Lakoff, 2004; Ritchie, 2013; Semino et al., 2018). There are different understandings of the level of generality of a frame (Bogetić, 2019). Sullivan (2013, p.27) understands frame as a set of sub-domains of a domain of Conceptual Metaphor Theory. She writes that frame aims at capturing more specific conceptual structures in conceptualization of knowledge than domain and image schema. However, frame is more schematic conceptual structure than a scenario and thus can be treated as conceptual structure at a level below domain but above scenario (Musolff,

2016; Kövecses, 2017b; Fillmore, 1975). From a different perspective, Croft and Cruse (2004, p.18) claim that frame is at the same level of conceptual structure as that of domain. They claim that “[both of frames and domains are] symbolized by the specialized vocabulary used by members of the community” (p.18). Following Croft and Cruse’s (2004) understanding of frame, I understand frame in a broader sense which is conceptual structure realized by words and expressions of a discourse community and can be activated at different levels e.g. linguistic level, scenario level to change the way people think about something.

### **Metaphor and Framing in Discourse**

Schön (1993, p.137) understands the relationship between metaphor and framing in discourse as follows:

“metaphor” refers both to a certain kind of product-a perspective or frame, a way looking at things-and to a certain kind of process-a process by which new perspectives on world come into existence.

That is, metaphor is both a product of framing and part of the process of framing (Schön,1993). When metaphor is used in authentic discourse, it can be both a linguistic and framing device (Cameron et al., 2010; Semino et al., 2018). As a linguistic device, metaphor is a tool that language users usually use to talk about something unknown or more abstract in terms of something we are familiar with and more concrete at lexical level. A cluster of linguistic metaphors with similar semantic meanings emerging from discourse indicates the way language users describe the topic they are talking about (Cameron et al., 2010). As a framing device, metaphor is a tool that language users use to situate and integrate something in a frame with certain properties highlighted or hidden to convey evaluation (Schön,1993; Semino, 2008; Semino et al., 2018). Semino (2008, p.91) gives detailed explanations about function of metaphor as a framing device as follows:

the choice of one metaphor rather than another has consequences for how a particular issue is ‘framed’ or structured, which aspects are foregrounded and which backgrounded, what inferences are facilitated, what evaluative and emotional associations are triggered, what courses of action appear to be possible and so on.

The quotation above shows the power of metaphor to build frames of particular events by highlighting some aspects and backgrounding others, and triggering evaluation of the events with framing effects. Metaphor can work as one kind of carriers of frames in the discourse dynamics system to

represent, construct, interpret and evaluate a particular topic or social reality in various discourse (Semino, 2008). In similar vein, Burgers et al. (2016) claim about the importance of metaphor in shaping public discourse in the process of framing various societal issues.

The role of metaphor as a frame-building device can be played at different levels in discourse to construct topics with framing implications on evaluation, ideology, rhetorical effects and so on (Semino et al., 2018). Framing is about a structure of point of views and not only one word as it is in evaluation. For instance, metaphor creates stories or scenarios which lead readers to think it in certain views (Musolff, 2017). These metaphorical frames used to construct topics can be an indication of whether speakers/writer think that something is good or bad (Semino et al., 2018; Thompson, 2014). There is a growing body of studies on framing implications of metaphor on evaluation at different levels in different discourses (Bogetić, 2019; Burgers et al., 2019; Ritchie and Cameron, 2014; Schön, 1993; Semino et al., 2018).

From cognitive perspective, Schön (1993) claims that framing in public policy debates often involves metaphors. Schön (1993) finds that when urban housing problems are constructed by different metaphors, different views and solutions to this problem are proposed. He finds that framing urban housing problems as DISEASE implies the need for urban renewal by removing the slum that is something decayed and diseased. He also finds that if urban housing problems are constructed with a NATURAL COMMUNITY frame, this alternative frame suggests reinforcing and rehabilitating residents in the slum rather than dislocating them. Following the model of critical metaphor analysis (Charteris-Black, 2004), Burgers et al. (2019, p.57) study how conceptual metaphor "POOR GOVERNANCE IN US POLITICS IS SWAMP" is employed to uncover framing implications on evaluation by building and transforming the metaphorical frame of SWAMP. Burgers et al. (2019, p.58) find that the same metaphor is used by political proponents for Trump governance and political opponents differently. For instance, they find that Trump tends to use "DRAIN THE SWAMP" frame to positively positioning himself as an outsider who makes efforts to solve the problem of poor governance. However, they also find that the opponents of Trump recasting the original frame and transforming it into a non-narrative frame with negative criticism of Trump as part of the SWAMP frame.

While conceptual metaphor provides "overarching frames which inform and influence discourse" (Cameron et al., 2010, p.138), metaphor framing

from discourse-based perspective tends to be warranted by empirical data. Framing implications of metaphor on evaluation of issues can be explained by different types of systematicity of metaphor emerging from data (Cameron et al., 2010; Semino et al., 2018). For instance, Ritchie and Cameron (2014) study linguistic metaphors used in a public meeting between public officials and community members on the issue of a fatal shooting. They find that an adversarial and deceptive frame suggested by linguistic metaphors such as “smoke and mirrors” is used by the community with the hope to change the existing police system (p.214). However, an openness and collaboration frame suggested by linguistic metaphors such as “opening up our minds and hearts” is used by the public officials with the hope to strengthen mutual understanding of the issue (Ritchie and Cameron, 2014, p.214). They also find that contradictory frames constructed by different linguistic metaphors in discourse have led to failure of the meeting. Thus, studying the choices and patterns of metaphor at linguistic level does help to build frames that can influence social interaction and give clues to people’s interpretation and evaluation of an issue (Ritchie and Cameron, 2014; Semino et al., 2018).

Furthermore, Semino et al. (2018) write that studying metaphorical frames at which level of generality should be linked to the research aims. They argue for the importance of researchers’ awareness of drawing conclusions at the right level. They also argue for theoretical and practical merits of integrating different levels of metaphor analysis to adequately account for framing implications of metaphor. They write that studying metaphorical framing at cognitive level has the advantage of “[not only capturing] the implications for thought and communication of relatively state, entrenched, but also very general correspondences between domains in conceptual structure” (p.634). At this level, they find that the VIOLENCE metaphor tends to be the dominant conceptual metaphor used by patients to frame the experience of illness. However, they find that metaphorical framings at lower level of generality should be supplemented to capture specific patterns and variations of metaphors used in specific contexts. At scenario level, they find that the same linguistic metaphor “battle” can suggest different scenarios such as “PREPARING FOR BATTLE” and “OUTCOME OF BATTLE” which indicate patients’ attempt to defeat illness at different stages (p.636). For instance, they find that OUTCOME OF BATTLE scenario may put patients at an empowered position or a disempowered position since there is win and lose in a battle against illness. They also analyse metaphorical framings at linguistic level to capture patients’ patterns and choices of specific linguistic metaphors in constructing experience of illness.

Their findings at this level provide some professional implications for healthcare professional on choice of linguistic metaphors to achieve intended framing effects on patients. Following similar line of research, Bogetić (2019) proposes discursive metaphorical frame (DMF) which integrates Conceptual Metaphor Theory (Lakoff, 1993) with scenario-oriented approach to metaphor (Musolff, 2006). She writes that DMF aims at capturing “the complex, systematic metaphorical representations of a particular issue across a particular discourse” (p.7). She compares DMFs used in Serbian and British newspapers in constructing the topic of language. She finds great similarities of DMFs used by both newspapers at level of conceptual metaphor. For instance, she finds that in both newspapers the VIOLENCE metaphor is the dominant domain which negatively frames detrimental factors on language as an attacker and language as a victim in a violent attack with linguistic metaphors such as “**raping** our vocabulary” (p.14). To identify the full DMF, she digs deeper into sub-domains of central elements of this metaphor such as attackers and the targets being attacked. She finds similarities in framing implications of two dominant scenarios “ONE-SIDED ATTACK scenario” and “DEFENCE BY OTHERS scenario” used to write about language in her data (p.18). She claims that both scenarios negatively frame language as a victim being passively and unidirectionally attacked. She also identifies cross-linguistic differences emerging from the discourse. For instance, she find that both “FOREIGN ENEMY” scenario and “LINGUISTIC-NATIONAL VICTIM” scenario are dominant in Serbian newspaper but less notable in the English data (pp.19-20). She suggests that these two dominant scenarios in Serbian newspapers seem to convey a negative evaluation of threat of foreign languages posed to Serbian language and the nation as a whole.

Thus, framing analysis at different levels of generality of metaphor, on the one hand, contributes to better accounting for the role of metaphorical frames in reflecting conceptualization of the reality. On other hand, it also plays a very important role in capturing similarities and differences of metaphorical frames in cross-linguistic and cross-corpus metaphor studies.

### **2.4.3 Previous Studies in Popular Economic Discourse**

There have been a number of studies investigating metaphor used to write about economic events in popular economic discourse. A wide range of economic topics are of great interest to metaphor researchers, for instance, stock market crash (Charteris-Black and Ennis, 2001; O’Mara-Shimek et al., 2015); economic crisis (Ho, 2016); European debt crisis (Arrese and Vara-

Miguel, 2016; Joris et al, 2018); Euro-trading (Charteris-Black and Musolff, 2003); and battle of defeating inflation (Sardinha, 2012). Three common points can be found in existing studies of metaphor in popular economic discourse: 1) there is a large number of studies conducted within the framework of Conceptual Metaphor Theory, sometimes integrated with other frameworks such as critical discourse analysis; 2) these studies tend to take a corpus-linguistic approach; 3) there is a large number of comparative studies.

### **Comparative Studies**

There has been a growing body of studies comparing how metaphors are used to write about the same economic issue in popular economic discourse of different countries within western context with the help of corpora (Cai and Deignan, 2019). Semino (2002) examines metaphorical representations of the Euro based on corpora of English and Italian newspapers over the period when the Euro was introduced at the beginning of 1999. Based on Conceptual Metaphor Theory, she finds that most dominant metaphorical patterns are shared between the two languages, but differences exist in their frequencies and linguistic realizations due to both cultural and attitudinal differences toward this topic. For instance, BIRTH/NASCITA metaphor is the most salient metaphor pattern in both languages due to personification used to describe introduction of the Euro as birth. However, she also detects differences in their “uses of novel realizations” (p.7). She shows that Italian section conceptualizes the Euro as *a sturdy baby* suggesting either neutral or positive views of the Euro since lexical items relating to BIRTH/NASCITA metaphor tend to collocate with lexemes from HEALTH/FITNESS metaphor. However, the English section in her data tends to construct the concept of the Euro as *a heavyweight baby* (Semino, 2002). She claims that BIRTH/NASCITA metaphor mixed with BOXING metaphor “might evoke the grotesque image of a baby heavyweight boxer” and convey a negative view of the euro (p.117). She explains that “the differences in their frequencies and linguistic realizations is, partly as a result of differences in the nature and status of particular source domains in the two cultures and partly as a result of differences in the dominant attitudes to the Euro in the two countries” (p.5).

Similarly, Charteris Black and Ennis (2001) also find considerable similarities shared by two languages in both conceptual and linguistic metaphors writing about the October 1997 stock market crash. They also detect some differences in preferences for particular linguistic metaphors.

For instance, their English data shows a preference for linguistic metaphors relating to nautical and liquid movement while the Spanish counterpart favors metaphors related to psychological mood and personality. Charteris-Black and Ennis (2001) explain that this may be due to socio-cultural differences between two countries. Deignan (2003) claims that there is possibility that some metaphors are used more frequently in some cultures. For instance, she finds that metaphor about horse-racing in English has no counterparts in Spanish. However, Arrese and Vara-Miguel (2016) find no statistical differences in the influence of nation variables and cultural variables on metaphor use in their data. They conduct a comparative study on metaphors used to write about European sovereignty debt crisis in 24 newspapers of six European countries e.g. United Kingdom and Italy. Their study is based on an integrated framework of Conceptual Metaphor Theory and critical discourse analysis. They find that DISEASE metaphor and NATURAL metaphor are two most frequently used metaphors in their data to write about the Euro crisis. They claim that these two inanimate metaphors indicate that the crisis is out of individuals' control since the crisis is constructed as a natural phenomenon influenced by external factors. They report that there is no significant difference in use of metaphor in newspapers from six countries in terms of three factors socio-economic context, types of newspapers and countries with/without debt problem or not. However, they find that WAR metaphor is an exception of the conclusion since 'countries with debt problems' tends to use WAR metaphor slightly differently from 'countries without debt problems' due to their different "confrontational climate" and possible cultural reasons (p.150).

There are also studies comparing metaphor use in popular economic discourse in western context with non-western context. For instance, based on Conceptual Metaphor Theory, Chow (2014) examines the influence of socio-cultures on conceptualization of ECONOMY as BODILY MOVEMENT in UK context and a non-western context Hong Kong. She finds similarities in the use of motion verbs such as "*leap forward*" in UK corpus; "踏, stepped" in HK corpus to realize BODILY MOVEMENT metaphor in both corpora (pp.13-14). However, she finds that this metaphor is conceptualized in a different way due to socio-cultural differences. She writes that ECONOMY constructed as BODILY MOVEMENT tends to refer to the movement of a traveller and emphasizes the location and direction in which economy is moving in her HK corpus. However, she finds that ECONOMY constructed as BODILY MOVEMENT triggers a possible FIGHTING scenario and emphasizes more on bodily movement of economy in her UK corpus.

However, differences of metaphor use to construct economic issues in popular economic discourse may not always be socio-cultural. O'Mara Shimek et al. (2015) investigate the relationship between the editorial positionings of three US newspapers and the use of metaphor on the topic of 2008 stock market crash. Their study is also based on Conceptual Metaphor Theory. They find that *New York Times* and *Wall Street Journal* with 'liberal' positioning favour more frequent use of ANIMATE-BIOLOGY metaphor than INANIMATE-MECHANISTIC metaphor to construct the topic of stock crash. Based on this setting of problem, they claim that the logic of problem-solving for a living being is transferred to that in stock market. That is, more interventionist economic policies are advocated to solve stock market crash (O'Mara Shimek et al., 2015). However, they find that *Washington Times* with a 'conservative' editorial positioning prefers to construct the stock crash with an INANIMATE-MECHANISTIC metaphor, for example, "THE STOCK MARKET IS A MACHINE" (p.114). They claim that *Washington Times* tends to favour "laissez-faire economic approaches" when *Washington Times* chooses to construct STOCK MARKET as NATURAL PHENOMENON that follows natural rules and out of human control (p.118).

### **Metaphor as a Framing Device in Popular Economic Discourse**

Burger (2016, p.250) writes that "metaphors provide frames of thinking about societal topics". That is, metaphor can be used as an important framing device in popular economic discourse since choice of metaphor is non-neutral and non-arbitrary (Cai and Deignan, 2019; McCloskey, 1983; O'Mara Shimek et al., 2015). A growing body of metaphor studies in popular economic discourse focus on examining framing function of metaphor and their framing implications on evaluation and ideology. For instance, Koller (2005) examines metaphor in popular economic discourse on the topic of mergers and acquisitions (M&A) based on an integrated framework of critical discourse analysis and Conceptual Metaphor Theory. Koller (2005) claims that metaphor is strongly connected to ideology. She writes that "Metaphor thus not only proves to be an interface between the cognitive structure underlying a discourse, on the one hand, and the ideology permeating it, on the other hand" (p.206). She built a 164,509-word popular economic discourse which consists of texts on the topic of mergers and acquisitions (M&A) between 1997 and 2000. What Koller (2005) built is a specialized corpus that restricted to one topic (Philip, 2012). Her metaphor identification in her data starts from predefined list of lexemes from three interested source domains: FIGHTING, MATING and FEEDING. She finds that these



metaphors are selectively used to characterize popular economic discourse on the topic of mergers and acquisitions. She also finds that FIGHTING metaphor, showing dominance in discourse in terms of frequency, fits into an EVOLUTIONARY STRUGGLE scenario with MATING and FEEDING metaphors. She explains that the three metaphors fit into an EVOLUTIONARY STRUGGLE scenario in the sense that they all are related to corporate restructuring/survival which can be treated as a natural evolutionary process. Koller (2005) suggests that the dominant use of FIGHTING metaphor socio-cognitively (re-) establishes the discursively social practice of mergers and acquisitions as a masculinized domain since fighting tends to indicate aggression. She also adds that EVOLUTIONARY STRUGGLE scenario in which the process of corporate restructuring/survival is constructed as a process of evolution in the natural world tends to promote neoliberal ideology that advocating free market.

There are also other corpus studies of metaphorical framings in popular economic discourse taking target domains/topics as a starting point. That is, these studies investigate what source domains/vehicles are used to describe the target domains/topics. For instance, Sardinha (2012) discusses key metaphors used in depicting Brazilian economy's battle of planning and defeating inflation with the help of corpora. His corpora consist of president speeches and magazine reports about Brazilian economy during from 1964 to 2010. Sardinha (2012, p.104) writes that "the economic policies in Brazil have been dominated by long-lasting metaphors, which shaped thinking and action". That is, metaphor can provide frames that may influence thinking or actions on economic policies. For instance, he finds that WEALTH IS A CAKE realized by linguistic metaphors such as "cake rising" are used in period of military rules (1964-1985) to suggest economic strategy aiming at economic growth and efficiency. However, he also finds that critics of this metaphor blame causing larger gap in income distribution on this metaphor. He writes that during Lula's administration (2002-2010), WEALTH IS A CAKE realized by linguistic metaphors such as "sharing the cake" is used again to promote the initiative of helping a large section of population out of poverty (p.119).

Liu's (2015) analysis examines how metaphor is used to construct the topic of Sino-US currency disputes to express an ideological slant. He built two specialized corpora that consisted of texts on currency disputes from 2001 to 2011 from *China Daily* and *New York Times*. He only takes interests in reportage about the topic and excludes commentaries and letters-to-the-editor. Rather than analysing metaphors in the whole corpora, he limits his

analysis to the clauses that include three interchangeably key terms related to Renminbi (yuan, Renminbi, and currency) since Renminbi is core to reports on currency disputes. After building his corpora, he randomly sampled 1000 citations which consist of 400 citations of both yuan and currency and 200 for Renminbi from each corpus and identified metaphors co-occurring with the three key terms. He identified five dominant metaphors used by both newspapers to frame the same topic: “PHYSICAL MOVEMENT, MACHINE, HEALTH/STRENGTH, PHYSICAL CONFLICT/WAR, and VICTIM” (p.344). For instance, he finds that lexis such as “manipulate” and “manipulator” as linguistic realization of VICTIM are key words in two corpora comparing to BNC sample corpus (p.352). He also finds that *New York Times* prefers to frame Renminbi “as a manipulated victim”, which means that Renminbi is a victim of government manipulation (pp.352-353). He claims that framing implications of a manipulated victim suggests *New York Times*’ preference for neoliberal ideology that advocates free-market and less government governance. This potential neoliberal ideology seems to be justified by the US’s request for appreciation of Renminbi as a move pursuing free-market system. He also finds that *China Daily* prefers to frame Renminbi as “a victim of wrongful accusations [of other countries]” (p.353). He explains that the INNOCENT VICTIM frame suggests an underlying scapegoat ideology, which seems to legalize China’s request for not appreciating Renminbi since China is not responsible for US’s economic woes.

López and Llopis (2010) compare metaphors used to frame the topic of financial crisis in two sets of financial corpora: 1) one English corpus before Spain acknowledging financial crisis and the other English corpus after that; 2) one Spanish corpus before Spain acknowledging financial crisis and the other Spanish corpus after that. Their study is based on Conceptual Metaphor Theory. They apply metaphorical pattern analysis proposed by Stefanowitsch (2006) to facilitate metaphor identification. Stefanowitsch (2006, p.66) understands metaphors patterns as “a multi-word expression from a given source domain (SD) into which one or more specific lexical item from a given target domain (TD) have been inserted”. He writes that metaphor pattern analysis starts from target lexemes rather than target domain. Following metaphorical pattern analysis (Stefanowitsch, 2006), López and Llopis (2010) only focus on metaphorical expressions relevant to 23 pre-defined key words such as *crisis*, *debt*. They categorize metaphors identified in their data into three types: “those based on THE GREAT CHAIN OF BEING, those based on the PATH SCHEMA and those based on the metaphor ACTIONS ARE EVENTS” (p.3310). For instance, they find differences in

metaphor that is based on PATH SCHEMA in two sets of corpora. They show that Spanish corpus before Spain acknowledging financial crisis positively frames economy as a trajectory “which still moved ‘upmarket’” while Spanish corpus after that negatively frames economy as a trajectory “which moved downwards” (p.3310). They also find that most PATH SCHEMA metaphors in their English data are used to negatively frame economy before Spain announces the existence of crisis. The differences in framing implications of PATH SCHEMA metaphor on evaluating crisis in two sets of corpora can be explained by the direction of international news flow from centre e.g. the US and the UK to periphery e.g. Spain (López and Llopis, 2010; Al-Menayes, 2014). Differences in metaphor based on ACTIONS ARE EVENTS are also detected in their data. They find that although the same WAR frame is used to construct ECONOMY, it is used to frame the financial crisis positively in their Spanish corpus but negatively in the English corpus.

Previous studies above indicate that comparing frames achieved by metaphor use to write about the same economic topic potentially gives clues to the underlying evaluations and ideologies conveyed by different discourse communities. However, most of previous metaphor studies in popular economic discourse have limitations in their levels of metaphors analysis which are linked to framing implications of metaphor. They all use Conceptual Metaphor Theory as their basic theoretical framework. As mentioned in Section 2.3.2, Semino et al. (2018) write that conceptual metaphor may account for relatively stable framing implications but has limitations in detecting framing implications emerging from discourse. They also write that discourse-based studies focusing on the choices and patterns of linguistic metaphors can better explain how metaphor act as a framing device to construct topics. That is, a theoretical framework focusing on use of linguistic metaphors has advantages over Conceptual Metaphor Theory to capture the power of metaphorical framing emerging from discourse. As discussed in Section 2.3.1, the discourse dynamics framework for metaphor starts from linguistic metaphors emerging from natural-occurring discourse and allows finding metaphor patterns at different timescales and levels of social organization (Cameron et al., 2010). Thus, it is the most appropriate theoretical framework for this study which takes interests in use and patterns of linguistic metaphors and their framing implication on evaluation and ideology.

Methodologically, studies above indicate the important role of corpus in metaphor analysis in popular economic discourse. Tissari (2017) writes that

corpora are used in linguistic research due to their advantages in rapid interrogating through a large-scale of data and allowing researchers' quantitative analysis on linguistic information. When studies focus on metaphor use in corpora, Krennmayr (2015, p.543) writes that quantitative information from corpora such as frequency of citations of the same metaphorical expression tends to "paint a picture of how commonly metaphor is used in newspapers, what types of metaphors are most prominent". Previous corpus studies above on framing functions of metaphor in popular economic discourse demonstrate two significant approaches of metaphor identification in large-scale specialized corpora. One approach starting from target domain/topics mainly identifies metaphors that co-occur with relevant target domains/topics in their self-built specialized corpora (Stefanowitsch, 2006; López and Llopis, 2010; Liu, 2015; Chow, 2014). Cameron and Maslen (2010) claim that dynamic real-world language use plays a powerful role in helping people understanding specific social issues. Burgers (2016) also writes that studying metaphors in discourse may shed light on understanding people's dynamic conceptualization of the issue. That is, studying metaphors occurring with central economic topics is a good starting point to examine framing implications of evaluation on the issues.

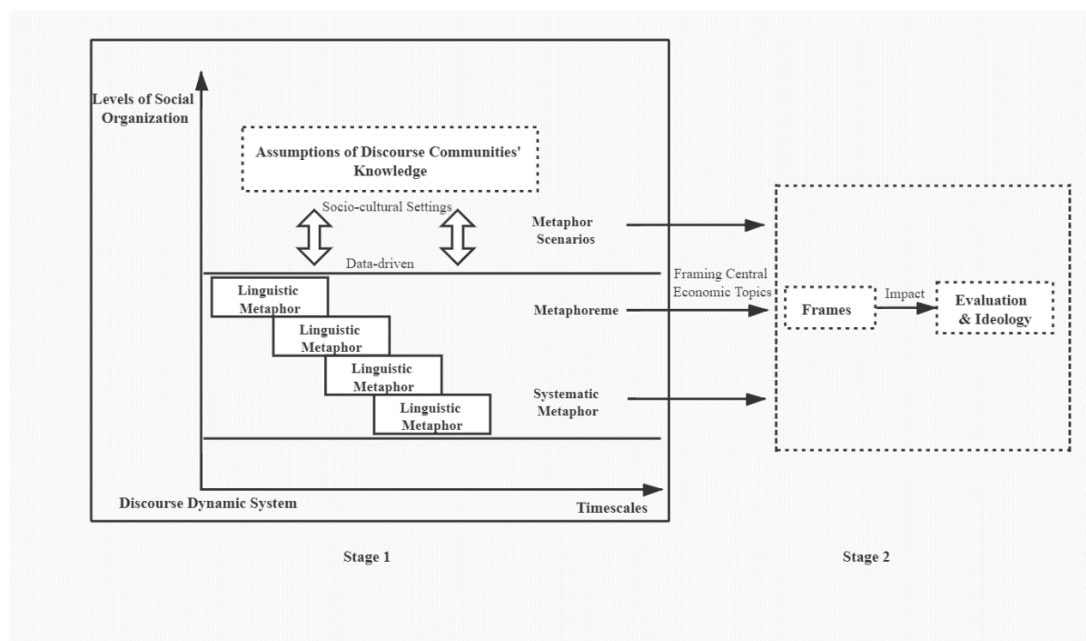
The other approach starts from source domains/vehicles and investigates which target domains/topics are described through specific source domains/vehicles. For instance, Koller (2003) starts from generating a list of lemmas belonging to the semantic fields of interested source domains with thesauri and glossary helping to corroborate the membership of the lemmas within respective source domains. Charteris-Black (2017) maps out semantic field related to race by searching for phrases and compound forms of race such as *race against time*, which provides a list of candidates for identifying metaphor keywords. Charteris-Black (2004) starts from generating a list of lexemes belonging to various source domains based on results of metaphor identification in a small corpus first. He then searches the list of lexemes belonging to interested source domains in a larger corpus. His approach takes a traditional small corpus-big corpus approach (Charteris-Black, 2004; Cameron and Deignan, 2003; Tissari, 2017).

Nacey et al. (2019) write that making a decision about which approach is more appropriate depends on one's research aims. This study follows a corpus-linguistic approach to examine how metaphor as a framing device are used to construct central economic issues in the context of trade

disputes involving China, the EU and the US. Both approaches of extracting metaphors from large-scale specialized corpora are applied in this study. That is, I investigate both metaphors co-occurring with *protectionism* and *free trade*, and relevant vehicle groupings used to write about core trade disputes topics. However, different from a traditional small corpus-big corpus approach, I identify linguistic metaphors from relevant vehicle groupings based on an open-ended list of lexemes with the help Wmatrix (Rayson, 2008), which is discussed in detail in Chapter 5.

## 2.5 An Analytical Model of Metaphorical Framing

Based on literature review above, an analytical model that integrates the discourse dynamics framework for metaphor (Cameron, 2010a) and framing theory (Schön, 1993; Entman, 1993; Semino, 2008) is formulated. This analytical model aims to account for procedures and rationale of my research design in my study. Meanwhile, my research questions are designed based on this model.



**Figure 2.1** An analytical model of metaphorical framing in popular economic discourse

As shown in Figure 2.1, I start from linguistic metaphor. The discourse dynamics framework for metaphor with advantages in finding systematicity of linguistic metaphors across different timescales and levels of social organization was developed as the first part of my analytical model. Metaphor occurring from discourse is identified at linguistic level. Popular economic discourse where metaphor occurs will be represented by popular

economic discourse corpora on the topic of trade disputes involving China, the EU and the US. Details about corpus design and construction will be discussed in Chapter Three. The theoretical framework used in this study also provides methodological implications for choosing metaphor identification approach that focuses on identifying linguistic metaphor rather than conceptual metaphor, which is further discussed in Chapter Four. At the first stage of metaphor analysis, the focus lies in two points: 1) identifying linguistic metaphors and metaphor patterns emerging from discourse; 2) capturing regularity and variations of metaphor patterns. Three types of metaphor patterns are identified: systematic metaphor, metaphoreme and metaphor scenario. As mentioned in Section 2.2, metaphor scenario is used to refer to instances of different linguistic metaphors combining to create a series of relevant events with a set of social-cultural entrenched expectations and evaluations. As mentioned by Deignan (2017b) in Section 2.2, the typical evaluation of a scenario can be identified with the help of collocation patterns of lexis suggesting the scenario. However, in this study I do not identify the evaluation of a scenario with the help of cumulative evidence from a reference corpus but carry out collocation analysis of lexis suggesting systematic metaphor. At scenario level, I focus on identifying a series of recurring narratives which are suggested by a number of linguistic metaphors and follow a narrative sequence. A series of these metaphorical mini-narratives may lead to implications of a structure of point of views. As mentioned in Section 2.3.1, systematic metaphor is used to refer to a number of different linguistic metaphors sharing the same semantic meaning and writing about similar topic. As mentioned in Section 2.3.1, metaphoreme is used to refer to instances of the same linguistic metaphor that shows fixed linguistic and affective restrictions. Whether a linguistic metaphor is an example of a metaphoreme should refer to its use in larger corpus. If these instances do not show fixed linguistic and affective restriction, they may be freestanding linguistic metaphors that are part of a systematic metaphor. Since the stage of finding metaphor pattern closely sticks to linguistic data in my corpora, it is put in a solid line box.

After metaphor patterns are identified, next stage moves on to examine the way metaphor frames core trade disputes topics with implications on evaluation of economic reality and underlying ideology. Framing theory was added as the second part of my analytical model. As shown in Figure 2.1, at stage two this study aims to identify frames achieved based on metaphor patterns formulated at stage one. At this stage, I need to work towards an argument that metaphors frame topics related to trade disputes in a

particular way with the help of larger-size corpus. Since stage 2 is not evidenced in my linguistic data and allow more researchers' flexibility and interpretation, it is put in a dotted line box.

To examine how metaphor is used to frame topics related to trade disputes by different discourse communities, research questions need to be addressed step by step. Research question one and two focus on identification of metaphor patterns used with topics related to trade disputes by different discourse communities. Research question three focuses on gathering different evidence either from larger-sized corpus or metaphor patterns identified at stage 1 to build a case to show the particular way metaphor frame topics related to trade disputes. Research question four focuses on comparison of framing implications on evaluation and ideology across different discourse communities.

## **Chapter 3 Corpus Design and Construction**

In this chapter, I first discuss the criteria of a good corpus in terms of corpus size, representativeness, and balance. In reference to these criteria and my research questions, I review some pre-existing business/economy-related corpora to justify the need to build my own corpora from scratch. I then discuss how I attempt to set up three corpora in a way that is suitable for my research purposes. Finally, I introduce details about my three corpora.

### **3.1 Corpus Design**

#### **3.1.1 Corpus Size**

Sinclair (2004, p.189) writes that “small is not beautiful; it is simply a limitation”. However, mega-corpus is not necessarily best (Koester, 2010). Carter and McCarthy (1995, p.143) write that

huge corpora often throw up vastly unmanageable numbers of occurrences of common grammatical features (e.g. the articles), resulting in compilers of dictionaries and grammars having to work with a sub-sample anyway.

There is no ideal size for a corpus and the acceptable size of a corpus depends on the purpose of a corpus and the kind of language to investigate (Flowerdew, 2004; Koester, 2010; Nelson, 2010; Stefanowitsch, 2020). Lee (2010, p.114) writes that “specialized corpora are usually smaller in scale than general language corpora precisely because of their narrower focus”. Koester (2010, p.68) adds that “While specialised corpora may vary in size, an important point is that such corpora do not need to be as large as more general corpora to yield reliable results.” For instance, Nelson (2010) claims that a corpus used for lexicographical purposes and investigating language as a whole should be created as large as possible. When the purpose of a corpus is pedagogical or to give insights into lexico-grammatical features used in a special area of language, a smaller-sized corpus can be as useful (Baker, 2006; Clancy, 2010; Koester, 2010; Nelson, 2010).

A smaller-sized corpus is more manageable and has easier access to the context of texts in the corpus (Flowerdew, 2004; Koester, 2010; Nelson, 2010), which makes it more suitable for studies in the field of English for specific purposes (ESP). Nelson (2010, p.56) writes that “one million words was deemed a reasonable sample size in order to achieve a representative



picture of Business English". Nelson (2000) built a Business English Corpus (BEC) that contained one million words including spoken (44%) and written (56%) texts. The Business English Corpus (Nelson, 2000) aims at identifying the lexis of Business English and testing the similarities and differences between the lexis of Business English in published materials and that found in real-life business. Nelson (2000) suggests that by comparing BEC to BNC Sampler corpus of general English as a reference corpus, the keyword list obtained can be used to identify business lexis and examine the similarities and differences of lexis used in BE context and general English context. However, Nelson (2010) adds that there are also other cases in which researchers may not pre-determine the target size since the size is decided following sampling procedures. For instance, Nelson (2000) surveyed the popularity of Business English books actually used by teachers and students and finally decided a total of 33 books to be the samples of his Published Material Corpus (PMC). After deciding what contents from each book to be included in the corpus, Nelson (2000) got his Published Material Corpus with final size of 593,294 words. While his work was carried out a number of years ago, the principle still holds.

Stefanowitsch (2020, p.37) claims that "in the age of world wide web, corpus size is practically limited by technical considerations". Size is no longer as critical an issue because these days it is easier to build sizeable corpora. For instance, to compare use of metaphor in construction of the commonly used word 'economy' within economic discourse in Britain and Hong Kong, Chow (2010) built two economic newspapers corpora. All texts that contained search words 'economy' and 'finance' and published in *Guardian* in 2006 composed her British economic discourse corpus with 4.2 million words. All texts that contain search word 'economy' and published in *Hong Kong Economic Journal* in 2006 composed her Hong Kong economic discourse corpus with 5.2 million words. To examine use of emotion metaphors in the media coverage of the global financial crisis of 2008, Ho (2016) built a popular economic discourse corpus with texts collected from three U.S. broadsheets, *USA Today*, *New York Times* and *Washington Post* on the topic of global financial crisis from 15 September 2008 to 15 March 2009. Only texts with headlines and contents related to the topic of financial crisis were collected in her corpus (Ho, 2016). The final overall size of Ho's Corpus of Global Financial Crisis was about one million words. However, both Chow's (2010) and Ho's (2016) study didn't not clearly explain their sampling procedures leading to the overall size of their corpora. In Chow's (2010) corpus design, she did not explain why only sampled texts published

in the two selected newspapers in 2006. During the sampling procedures, Ho (2016) did not explicitly explain the kind of language she wanted to investigate and why she only collected texts on the topic of financial crisis from three American newspapers rather than other sources. However, different decisions made on which kind of language to investigate and which newspapers to be included can lead to different final overall size of a corpus. Raineri and Debras (2019, p.4) write that “A corpus may be small but more representative of a language, variety or register than larger ones if sampling is based on systematic, linguistically-motivated decisions”. Thus, size of a corpus tends to be less important than sampling and corpus representativeness and is closely related to them during corpus design (Bauer and Aarts, 2000; Koester, 2010; Raineri and Debras, 2019).

### **3.1.2 Corpus Representativeness**

A corpus is different from an archive since it is designed to be representative of a particular language or a language variety (Baker, 2006; McEnery et al., 2006). Thus, corpus design inevitably involves sampling (Baker, 2006; McEnery et al., 2006). To make sure that the sample selected in a corpus can be appropriately used as the basis for generalizations concerning the studied variety, representativeness has become a main concern in corpus design (Biber, 1993; McEnery et al., 2006; Nelson, 2010). Corpus representativeness is not precisely defined and always can only be achieved at a reasonable level (Tognini-Bonelli, 2001; Kilgariff et al., 2006; Sinclair, 2005). No matter how representativeness is defined, it is closely linked to research questions and research purposes (McEnery et al., 2006). If a researcher wants a corpus which is representative of real-life language used by financial services professionals in this fields, the published financial English materials will not be representative at an acceptable level (Warren, 2010).

Biber (1993, p.243) understands representativeness as “the extent to which a sample includes the full range of variability in a population”. Target population and a sampling frame are crucial to sampling in corpus design and should be first defined prior to any sampling (e.g. text selection criteria) (Biber, 1993; McEnery et al., 2006). Biber (1993, p.243) writes that target population can be defined by “the boundaries of the population” and “hierarchical organization within the population”. Johansson et al. (1978) exemplify this with the Lancaster-Oslo/Bergen Corpus (LOB). They write that with purpose of representing general British English, the target population of LOB consists of all written English texts published in 1961 in the United

Kingdom as the boundaries and 15 categories and other sub-categories within 15 categories as hierarchical organization of population. Target population can be further operationalized by setting up the sampling frame (Biber, 1993). Johansson et al. (1978) also exemplify this with the LOB. They write that the sampling frame of LOB was collections of all published books listed in The British National Bibliography Cumulated Subject Index, 1960-1964 (B.N.B.), and all periodicals and newspapers based on the indexing of Willing's Press Guide, 1961.

To evaluate whether a sample can be used to investigate the variability in a target population, Biber (1993) claims that both situational and linguistic criteria should be taken into consideration. He writes that situational criteria such as genre/register distinctions are based on criteria external to corpus and can be determined prior to corpus construction. He adds that genre/register distinctions should precede over linguistic criteria during corpus design.

Some scholars such as Clear (1992) criticize the entire use of external criteria to build a representative corpus. Clear (1992, p.29) argues that "A corpus selected entirely on external criteria would be liable to miss significant variation among texts since its categories are not motivated by textual (but contextual factor)". Linguistic criteria as one measure of representativeness is also treated as problematic by some scholars (e.g. Bauer and Aarts, 2000; Clear, 1992; McEnery et al., 2006). Achieving representativeness based on internal criteria may risk circularity (McEnery et al., 2006). There is no prior way to know the distribution of linguistic features before we build a representative corpus (Bauer and Aarts, 2000; McEnery et al., 2006). However, McEnery et al. (2006, p.14) add that "if the distribution of linguistic features is pre-determined when the corpus is designed, there is no point in analysing such a corpus to discover naturally occurring linguistic feature distribution". To solve this dilemma, Biber (1993, 256) suggests that "the compilation of a representative corpus should proceed in a cyclical fashion". He suggests that researchers can compile a pilot corpus in which linguistic variations can be investigated. The linguistic features observed in the pilot corpus can then be used as internal criteria to provide a basis for specific sampling decisions in formal corpus construction (Biber, 1993).

However, most existing genre-specific and specialized corpora (e.g. Ho, 2016; Nelson, 2000; Wright and Brookes, 2019) were built based on only external criteria and did not follow a cyclical process. For instance, Wright and Brookes (2019) built a specialized corpus to study language ideologies

in the right-leaning UK newspapers. The target population and the sampling frame of their corpus were the same: all six right-leaning UK national newspapers. Sampling on texts from all six right-leaning UK national newspapers was based on external criteria (e.g. the topic of speaking English). During the sampling procedures, Wright and Brookes (2019) only included texts with candidate query term 'speak\* English' in the headline and the lead paragraph.

After a corpus is compiled, the representativeness of a specialized corpus can be measured by the degree of saturation at lexical level (McEnery and Wilson, 2001). However, there are still few studies of specialized corpora attempting to evaluate the degree of saturation after compiling their corpora. McEnery et al. (2006, p.16) claim that "saturation is only concerned with lexical features". There are still limited tools available to evaluate corpus representativeness at other levels such as sentence type saturation, morphological saturation (Tognini-Bonelli, 2001; Cohen et al., 2016; McEnery et al., 2006). McEnery et al. (2006) write that to measure saturation of a corpus, researchers first divide the corpus into segments with equal-sized tokens and then calculate type/token ratio of each segment. They claim that if each addition of a new segment yields relatively stable type/token ratio, a corpus is treated as saturated at lexical level. When compiling a corpus in a cyclical process, researchers can use saturation as a measure of lexical features in pilot corpus. The result of saturation may give insights into sampling of internal criteria, which helps researchers to achieve both situational and linguistic representativeness in formal corpus construction.

### **3.1.3 Corpus Balance**

The notion of balance is rather vague but very important in corpus design (Clancy, 2010; McEnery et al., 2006; Sinclair, 2005). There is still no scientific way to measure whether a corpus is well-balanced. That is, decisions on corpus balance such as what text categories to be included and what proportion of each category, to some extent, still rely on intuition (McEnery et al., 2006; Sinclair, 2005). For instance, decisions on which text categories to be included and what proportion of each category to achieve balance in the Brown corpus were based on experts' knowledge and judgement (McEnery et al., 2006). McEnery et al. (2006) write that nowadays, it is popular for corpus creators to follow previous corpus models to build their own corpus. Potts and Baker (2012) add that the American English 2006 (AmE06) and the British English 2006 (BE06) aimed at achieving

corpus balance by using the Brown model (500 written samples of 2000 words each and consisting of 15 text categories). Technology has enabled compilation of mega-corpus with size of 100 million words (e.g. BNC (1994)) or even larger size such as Corpus of Contemporary American English (COCA 2019) with 1 billion words. More modern corpus models such as BNC model are followed by researchers to achieve corpus balance. For instance, the design of the American National Corpus (ANC), which intended to be a counterpart of BNC, followed the framework of BNC (Ide, 2009; Lee, 2010). However, there are also some differences between two corpora. McEnery et al. (2006, p.16) write that although a previous corpus model can be referred to achieve better corpus balance, “the acceptable balance of a corpus is determined by its intended use”. For instance, ANC only included texts produced after 1990 but BNC contained texts produced between 1960 and 1993. ANC also added web data such as weblog. Ide (2009) explains that changes made by ANC when following BNC model are due to the purpose to achieve genre balance to represent contemporary American English.

Achieving a reasonable balance of a specialized corpus relies more heavily on purposed-specific surveys or advice from experts in the field rather than previous corpus models (Nelson, 2000; Warren, 2010). For instance, as mentioned in previous sections, Nelson (2000) surveyed popularity of Business English books of 1996 in the market to achieve corpus balance and representativeness by including business English materials actually used by teachers and students. Warren (2010) adds that the balance of Hong Kong Financial Services Corpus (HKFSC) was achieved by referring to experts’ judgement and advice about the text types actually used by professionals and the proportions of each text type.

### **3.2 Justification for a New Corpus**

Nelson (2010, p.54) writes that “before any decision is made regarding corpus creation, a great deal of thought needs to be given to whether or not an existing corpus would serve the purposes of your research”. McEnery et al. (2006, p.59) add that “there are thousands of corpora in the world, but many of them are created for specific research projects and are thus not publicly available”. I searched online corpora of economy/business discourse in specialized databases such as CQPweb at Lancaster<sup>1</sup>, CQPweb at

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<sup>1</sup> The hyperlink of CQPweb at Lancaster is <https://cqpweb.lancs.ac.uk/>

BFSU<sup>2</sup>, list of specialized corpora at Martin Weisser<sup>3</sup> and list of corpus resources at PolyU<sup>4</sup>. I found nine off-the-peg economy/business-related English corpora from these specialized databases, as shown in Table 3.1.

**Table 3.1** Economy/business-related English corpora released between 2000 and 2015

Corpus Name	Source	Size	Availability
Hong Kong Financial Services Corpus	<a href="http://rcpce.engl.polyu.edu.hk/HKFSC/">http://rcpce.engl.polyu.edu.hk/HKFSC/</a>	7.3 M words	freely available online
Business Letters Corpus	<a href="http://www.someya-net.com/concordancer/">http://www.someya-net.com/concordancer/</a>	1 M words	freely available online
Enron email corpus (Enron Corp and Cohen, 2015)	<a href="https://www.cs.cmu.edu/~enron/">https://www.cs.cmu.edu/~enron/</a>	over 0.6 M emails	freely downloadable
Wolverhampton Business English Corpus	<a href="http://catalog.elra.info/product_info.php?products_id=627">http://catalog.elra.info/product_info.php?products_id=627</a>	10 M words	not publicly available
Business English Corpus (Nelson, 2000)	<a href="http://users.utu.fi/micnel/business_english_lexis_site.htm">http://users.utu.fi/micnel/business_english_lexis_site.htm</a>	1 M words	not publicly available
UIBE Business English Corpus (Hardie, 2012; Xu and Wu, 2014)	<a href="http://114.251.154.212/cqp/business/">http://114.251.154.212/cqp/business/</a>	over 2 M words	freely available online
Hong Kong Corpus of Corporate Governance Reports	<a href="http://rcpce.engl.polyu.edu.hk/HKCCGR/default.htm">http://rcpce.engl.polyu.edu.hk/HKCCGR/default.htm</a>	1 M words	freely available online
Heilongjiang University Business English Corpus	/	over 15 M words	not publicly available
Six Business English Corpora in The PolyU Language Bank	<a href="http://langbank.engl.polyu.edu.hk/corpus-search.asp">http://langbank.engl.polyu.edu.hk/corpus-search.asp</a>	/	freely available online

This table shows that there are six freely available business/economy-related corpora, of which the smallest size is one million words and the largest one is 7.3 million words. The target population of my corpora is all daily English newspapers published in China, the UK and the US between 2001 and 2017 on the topic of trade disputes between China, the EU and the

<sup>2</sup> The hyperlink of CQPweb at Beijing Foreign Studies University is <http://114.251.154.212/cqp/>

<sup>3</sup> The hyperlink of list of specialized corpora at Martin Weisser is [http://martinweisser.org/corpora\\_site/spec\\_corpora.html](http://martinweisser.org/corpora_site/spec_corpora.html)

<sup>4</sup> The hyperlink of corpus resources at PolyU is <https://www.polyu.edu.hk/eng/research/13-research/209-corpus-resources/>

US. However, the nine off-the-peg business/economic-related corpora cannot be used to give insights into generalizations concerning my target population and cannot address my research questions.

More details on the nine corpora are given as follows, which justifies my need to compile new corpora for this research.

1) Business English Corpus was compiled by Nelson (2000) and its target population was native speakers' real-life Business English (primarily from the UK and some from the US). It consisted of over one million words with both spoken and written sections from a variety of business genres. Within the written section, 64,291 words of business newspapers were included in writing about business part. This sub-category business newspapers as part of Business English Corpus (Nelson, 2000) cannot be representative of business newspapers as a whole.

2) Wolverhampton Business English Corpus consists of 10,186,259 words from 23 different Web sites within a 6-month period between 1999 and 2000. Its target population is written business English of a wide range of English varieties. It includes various genres such as annual financial reports, business journalism, product descriptions and so on. Business journalism as part of this corpus cannot be representative of business newspapers as a whole.

3) Enron email corpus consists of over 600,000 emails, most of which were produced by senior management of Enron. The earliest version was distributed on March 2, 2004 and the newest version of the dataset is updated on May 7, 2015. However, the target population that Enron email corpus wants to give insights into is real corporate English email. This genre is irrelevant to the genre I want to investigate.

4) Business Letters Corpus was compiled in the context of UK and US business in 2000 with one-million-words. The genre that this corpus aims to investigate is not relevant to the genre I want to investigate.

5) Hong Kong Financial Services Corpus (HKFSC), developed by the Research Centre for Professional Communication in English of the Hong Kong Polytechnic University in 2006-2007, comprises of 7.3 million words. The HKFSC collected written texts from the financial services sector of Hong Kong, covering 25 text types such as fund reports and annual reports. Its target population is authentic English professional communication by professionals in financial services sectors, which is not relevant to the genre I want to investigate.

6) UIBE Business English Corpus compiled at University of International Business and Economics in 2015 in China comprises over 2 million words. It consists of both spoken and written sections. The spoken corpus with 30,3016 words is collected from speech from Ministry of Commerce in US, interviews and so on. The written section consists of annual reports, emails, memos, WTO documents, financial/economy news reports and so on. Economic journalism with 277,894 words was collected from the Wall street Journal, the Economist, the Financial Times and so on. The proportion and size of Economic journalism as sub-genre of UIBE Business English Corpus is not representative for a corpus whose target population is economic journalism as a whole.

7) Heilongjiang University Business English Corpus (HUBEC) comprises of written business English texts of 15, 240,114 words (Li, 2016). Its target population is native speakers' real-life written Business English (British and American English). The sub-genre business journalism as part of HUBEC is not representative for a corpus whose target population is economic journalism.

8) Hong Kong Corpus of Corporate Governance Reports (HKCCGR) consists of 1 million words of corporate governance reports of 217 companies listed on the Hong Kong Stock Exchange. The corpus designed to give insights into generalizations concerning English corporate governance reports in Hong Kong is not representative for a corpus whose target population is another genre.

9) Business Section of the PolyU Language Bank consists of 6 business-related corpora. The PolyU Language Bank developed in the Department of English at Hong Kong Polytechnic University consists of a wide range of written and spoken texts totalling over 20.5 million words. Its business section comprises a range of sub-genres: Corpus of Business Correspondence, Hong Kong Business Reports, UK Business Reports, US Business Reports, Financial Crisis Corpus and PolyU Business Corpus (English). There are few details about the size and composition of these business/economy-related corpora. However, the names of most of these corpora show that these sub-genres are not relevant to the genre I want to investigate. Even though there may be economic journalism section in business section of the PolyU Language Bank, texts in this section cannot be used to address my research questions.

To summarize, the 9 corpora above are either not relevant to the genre I am interested in or not representative of the kind of language I want to



investigate. Thus, I need to build a new corpus whose construction is closely linked to the research purposes (Nelson, 2010; Timmis, 2015).

### **3.3 Corpus Construction**

Situational parameters such as topic (trade dispute), mode (written), genre (economic journalism) and English varieties (China, UK and US) were decided prior to corpus construction. When compiling a specialized corpus, I first set up my sampling frame by surveying popularity of broadsheets actually read by target readers to know economic news. During corpus construction, I followed a cyclical process. That is, I first built my pilot corpora based on completely external criteria such as topic, genre. Then I carried out keyness analysis to identify keywords in pilot corpora compared to reference corpus (Scott, 1997). These keywords were filtered and selected as additional query terms which was used as internal criteria to achieve better representativeness of my formal corpus. The target size of three corpora is closely related to my sampling procedures such as which broadsheets to include, which texts to include and what sample unit to include, for instance, including full texts or extracts.

#### **3.3.1 Decision on Sampling Frame**

##### **Identifying Most Widely Read Daily English newspapers: Questionnaire Design**

Since the target population of my corpora was all English newspapers published in China, the UK and the US between 2001 and 2017 on the topic of trade disputes between China, the EU and the US, I needed a questionnaire to investigate the popularity of daily English newspapers that are actually read by graduates working in financial/business related sectors in the UK, the US and China for economic news. I designed a questionnaire consisting of two parts: 1) demographical information including gender, educational level, working sectors and working places, and 2) reading preferences including reading habit, reading platform, reading frequency, reading selection, reading barriers and influence of information in the newspapers on readers' decision-making. To reduce newspaper sampling bias in the questionnaire design, I searched information of circulation figures for national daily newspapers in China, the UK and the US. There are only three English-language national daily newspapers from China: *China Daily*, *Global Times* and *People's Daily*; so they were all included in the items of

questions in my questionnaire. For the US newspapers, I listed top four US daily national newspapers based on their circulation<sup>5</sup>: *USA Today*, *New York Times*, *Wall Street Journal*, and *Washington Post*. It can be found that these four US newspapers were all quality newspapers. For the UK newspapers, I also listed top four UK daily national quality newspapers based on their circulation<sup>6</sup>: *Times*, *Daily Telegraph*, *Financial Times* and *Guardian*. In total, 11 newspapers and one open item (Others \_\_ please specify) composed question 8 to investigate respondents' reading preferences for newspapers obtain more business/economic news. Questionnaires (see Appendix A.1) finally carried out on graduates working in business/financial-related sectors in China, the US and the UK. Results of this survey helped me to gain a clear picture of demographic information of my respondents and identify the most widely read business section of each newspaper in the three countries.

### Questionnaires Delivery and Analysis

The target population of my survey is all my friends who graduated and worked in business/financial related sectors in the following three countries: China, the UK and the US. Following random sampling, I advertised openly on different social medias. I received 49 responses. Demographic information of 49 respondents are shown in Table 3.2.

**Table 3.2** Demographic information of respondents

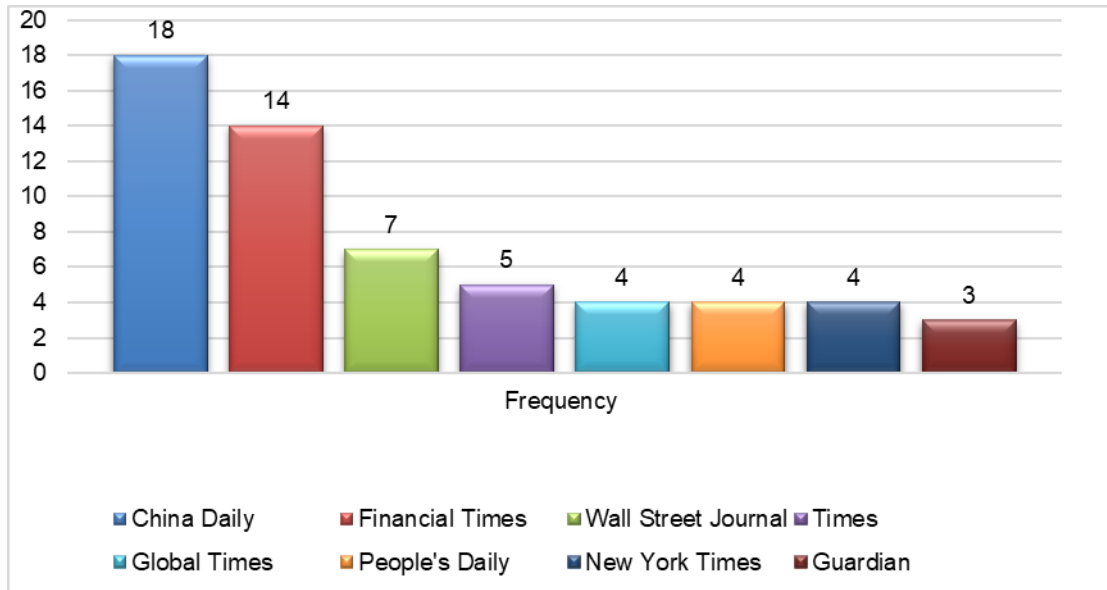
Gender	%	Education	%	Working Place	%	Working Sectors	%
Male	38.8	PhD.	6.1	China	56	Financial/ Business	81.6
Female	61.2	Master	53.1	UK	32	Others	18.4
		Bachelor	36.7	US	12		
		Below bachelor	4.1				

Table 3.2 shows that there were 18.4% of respondents working in other sectors. These sectors comprised hospitality industry, IT, legal service, education, academic research, oil and gas. Among these 49 respondents, 57.1% (28) of them have the habit of reading English-language newspapers. Figure 3.1 below shows that *China Daily* and *Financial Times* were the two

<sup>5</sup> <https://www.cision.com/us/2019/01/top-ten-us-daily-newspapers/>

<sup>6</sup> [https://en.wikipedia.org/wiki/List\\_of\\_newspapers\\_in\\_the\\_United\\_Kingdom\\_by\\_circulation#2020\\_to\\_present](https://en.wikipedia.org/wiki/List_of_newspapers_in_the_United_Kingdom_by_circulation#2020_to_present)

most popular newspapers among them. No respondents selected *USA Today* and *Daily Telegraph* for knowing economic news. One respondent selected the open item 'Others \_\_ please specify' with the answer of *BBC*. Respondents showed similar preferences for reading the other six newspapers for economic news.



**Figure 3.1** Respondents' preferences for English newspapers for economic news

Based on the results of respondents' selection of English-language national newspapers, the sampling frame of my corpus finally consisted of 8 national daily newspapers with 3 from China *China Daily*, *Global Times*, *Peoples' Daily*; 3 from the UK *Financial Times*, *Guardian* and *Times*; and 2 from the US *New York Times* and *Wall Street Journal*.

### 3.3.2 Decision on Additional Query Terms

Deciding what texts to include in a corpus based on query terms is a trade-off between recall and precision (Chowdhury, 2004). Chowdhury (2004, p.99) writes that "recall refers to the proportion of relevant materials retrieved by a system [while] precision refers to the proportion of retrieved documents that are relevant". Gabrielatos (2007, p.6) explains that if researchers emphasize more on recall ratio of data collection, "[they] "create a corpus which does contain all available relevant texts, albeit at the expense of irrelevant texts also being included". For instance, researchers can use more than one query terms rather than only one query term, which means increasing "indexing exhaustivity" (Chowdhury, 2004, p.99), to increase the level of recall. As long as the texts contain any of the given query terms, they can be retrieved from the sampling frame even though these terms are less relevant

to the subject matter. That is, a corpus being created as larger as possible takes precedence over contents relevance in a corpus. Gabrielatos (2007, p.6) also adds that if researchers emphasize more on precision ratio of data collection, “[they] create a corpus in which all the texts are relevant, but which does not contain all relevant texts available in the database”. For instance, by retrieving more specific query terms, which means “term specificity” (Chowdhury, 2004, p.99), researchers can get higher precision ratio. Only texts with the specific query terms that are closely related to the desired topic are included in the corpus. That is, contents of a corpus being relevant to research topics take precedence over the size of corpus.

Gabrielatos (2007) built a specialized corpus for project Discourses of Refugees and Asylum Seekers in the UK Press 1996–2006. His corpus achieved an acceptable level of both recall and precision by using both core query terms (refugee\* OR asylum seeker\*) and additional query terms (e.g. Afghanistan, camp(s), attacks) that were relevant to core query terms. He (2007) writes that when an article discusses issues related to refugees or asylum seekers, it may explicitly or implicitly use these two terms. By introducing additional query terms that may be indirectly related to refugees or asylum seekers, he increased the recall ratio of his data collection without greatly reducing precision ratio. For instance, he writes that if using only core query terms to collect texts from his sampling frame, the size of a corpus in the project was estimated to be 35-40 million words. By using also additional query terms to collect texts, a 140 million word corpus was built (Baker et al., 2008). That is, by introducing additional query terms, Gabrielatos (2007) built a corpus containing a larger proportion of all relevant texts with only small decrease in precision.

However, Gabrielatos (2007) also notes that if additional query terms are not selected in a scientific way, they may cause return of a high proportion of texts irrelevant to core query terms. He suggests that two indicators-relative query term relevance (RQTR) and keyness analysis-can be used to triangulate decisions on issue of selecting additional query terms. He finds that two indicators do not seem to correlate with each other but can supplement with each other. He claims that “[RQTR is] a suitable technique on its own in other instances, particularly when an appropriate reference corpus is not available” (p.33). There were available reference corpora for my research, so the selection of additional query terms was based on keyness analysis. Keyness analysis aimed at identifying key terms in my pilot corpora by comparing their frequency in the pilot corpora to their

frequency in reference corpora. Contemporary reference corpora were needed in my study to avoid that “[keyness was bound to] favor words referring to entities, concepts which were not current in the period represented by the reference corpus” (Gabrielatos, 2007, p.13).

To select additional query terms for formal corpus compilation, I first compiled three pilot corpora in which texts were collected based on core query terms within my sampling frame. My three pilot corpora were collected based on core query terms *Sino-EU*, *Sino-US*, *EU-US*, *trade dispute(s)*, *trade conflict(s)*, *trade war*, *trade friction(s)*. Each pilot corpus consisted of 50 texts which published between 2004 and 2017. Pilot Chinese Popular Economic Discourse (CPEDC) consisted of 26, 579 tokens. Pilot UK Popular Economic Discourse (UKPEDC) consisted of 27, 591 tokens and its US counterpart pilot USPEDC consisted of 35, 282 tokens. Three reference corpora (2 general corpora of different English varieties and one business specialized corpus) were used to help select additional query terms. They were British English 2006 (BE06) with 929,862 tokens, American English 2006 (AmE06) with 966,609 tokens and BNC2014-business with about 1 million tokens.

Keyness analysis was carried out with the help of software LancsBox (Brezina et al., 2020). Three reference corpora were available in LancsBox (Brezina et al., 2020). Results of keyness analysis of three pilot corpora are shown in Table 3.3, Table 3.4 and Table 3.5. The three tables show that key words identified in three pilot corpora were quite similar even using different reference corpora. Additional query terms were selected from the top 50 key words in three pilot corpora, with proper noun (e.g. Gucht, Sino-EU, MOFCOM), personal pronoun (e.g. its, he), preposition (e.g. on, between) and numbers (e.g. dates, years) excluded. Proper noun (e.g. Sino/ China, EU and US) was already part of core query terms and no more proper noun needed to be selected as additional query terms. For the other three categories, they were quite general terms which could return a large number of irrelevant texts if being selected as additional query terms.

**Table 3.3** Additional query term selected based on keyness analysis of pilot CPEDC

Reference Corpus	Rank	Type	Freq	LL
BNC2014 Business				
	4	anti-dumping	66	491.25
	12	tariffs	44	295.45
	15	protectionism	37	275.39
	55	anti-subsidy	16	119.09
BE06				
	5	anti-dumping	66	481.91
	11	tariffs	44	321.28
	17	protectionism	37	260.97
	42	anti-subsidy	16	116.83
AmE06				
	4	anti-dumping	66	457.92
	12	tariffs	44	294.30
	15	protectionism	37	254.78
	41	anti-subsidy	16	116.96

**Table 3.4** Additional query term selected based on keyness analysis of pilot UKPEDC

Reference Corpus	Rank	Type	Freq	LL
BNC2014 Business				
	7	subsidies	47	329.79
	14	anti-dumping	31	228.48
	15	tariffs	35	228.07
	20	protectionism	26	191.63
BE06				
	6	subsidies	47	307.11
	10	tariffs	35	253.01
	11	anti-dumping	31	224.09
	17	protectionism	26	179.45
AmE06				
	5	subsidies	47	294.95
	10	tariffs	35	227.71
	11	anti-dumping	31	204.22
	15	protectionism	26	173.86

**Table 3.5** Additional query term selected based on keyness analysis of pilot USPEDC

Reference Corpus	Rank	Type	Freq	LL
BNC2014 Business				
	4	tariffs	120	785.43
	14	subsidies	42	273.34
	36	anti-dumping	26	179.20
	69	protectionism	17	117.17
BE06				
	3	tariffs	120	810.26
	18	subsidies	42	252.08
	27	anti-dumping	26	175.55
	53	protectionism	17	107.13
AmE06				
	3	tariffs	120	776.15
	14	subsidies	42	240.51
	25	anti-dumping	26	152.48
	45	protectionism	17	102.27

As was shown in Table 3.3, key word ‘anti-subsidy’ was slightly out of top 50 list when BNC2014-Business used as reference corpus but within top 50 list when using the other two references corpora. Table 3.5 also shows that key word ‘protectionism’ was also out of top 50 list when BNC2014-Business and BE06 being used as reference corpora but within top 50 list when using AmE06 as reference corpus. Key word ‘anti-subsidy’ and ‘protectionism’ were still selected as the additional query terms since they are closely related to the topic of trade disputes. As shown in Table 3.3, 3.4 and 3.5, four key words having high relevance to the core query terms were selected as my additional query terms: *anti-subsidy/subsidies*, *tariffs*, *anti-dumping* and *protectionism*. Selection of additional query terms was also supplemented by my subjective assessment of the relevance of candidate query terms to core query terms. After reading texts from three pilot corpora, I also selected another two terms as additional query terms: *market economy status* and *trade imbalance*. In brief, my additional query terms were as follows:

*anti-dumping* OR *anti-subsidy/subsidies* OR *protectionism/protectionist* OR *tariff(s)* OR *market economy status* OR *trade imbalance*

Once additional query terms were decided, I also used core query terms *Sino-EU*, *Sino-US*, *EU-US* as the Agent to pair with each additional query

term to collect texts in my corpora, for instance, *Sino-EU*, *protectionism* and *Sino-EU*, *anti-dumping*. My three corpora consist of texts collected based on two kinds of query terms from 8 newspapers' websites and Nexis UK<sup>7</sup>: 1) using only core query terms; 2) using different combinations of core query terms with additional query terms.

### **3.4 Pre-processing**

Based on my sampling frame, core query terms and additional query terms, I collected 2292 texts in which only headlines and the content of news were included and information of authors and dates were excluded. Both reportage and editorial including core and additional query terms were collected in my corpora. After compilation of my corpora, I standardized character encoding format and filename of them. Texts from each online newspaper were stored with different character encoding systems. Without pre-processing, some characters may be not recognizable by corpus analysis tools. For instance, there were a few foreign characters such as González Durántez or special symbols such as \$, £ here and there in texts from my corpora. These types of content in the texts may not be recognized accurately by corpus analysis tools and may affect count of corpus size. A standardized file-naming system was also needed so as to give each file a unique identity and contributed to easy identification of files in the corpus.

#### **3.4.1 Format Standardization**

Each online newspaper has its own character encoding system. If there are problems with its build-in character encoding format, some foreign characters or special symbols may not be presented correctly in ASCII character. Some can be recognized by eyes. For instance, some texts in *Financial Times* cannot correctly present quotation mark, as shown in Figure 3.2. I solved these problems manually.

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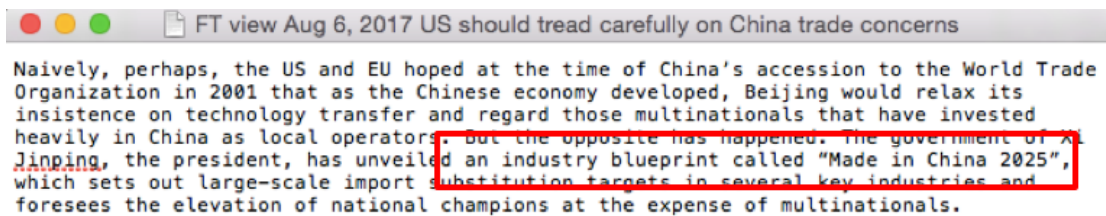
<sup>7</sup> <https://advance.lexis.com>





**Figure 3.2** A screenshot of wrongly presented quotation mark in *Financial Times*

There are also other problems caused by the build-in character encoding format of each online newspaper, which is not recognized with eyes in traditional text editors but only with software such as AntConc 3.5.8 (Anthony, 2019), Wmatrix 4 (Rayson, 2008) and Sublime Text 2.



**Figure 3.3** A screenshot of text opened in traditional text editors

When I stored texts in plain text files 'txt', the build-in character encoding format was stored as well. For instance, quotation marks in the example of "Made in China 2025" was correctly present when opened in traditional text editors, as was shown in Figure 3.3. However, they cannot be recognized by AntConc 3.5.8, as was shown in Figure 3.4.



**Figure 3.4** A screenshot of non-ASCII characters in concordance lines of texts from *Financial Times*

Figure 3.4 shows that quotation marks in the example of “*Right now*” and “*Made in China 2025*” were presented in non-ASCII characters \xA1\xB0 and \xA1\xB1, which was due to non-compatibility between build-in character encoding format of the online newspaper and AntConc 3.5.8. There were also other non-ASCII characters such as \x2\x82\xac for pound and \xA0 for space, which affected the result of concordance analysis as was shown in Figure 3.5. These problems cannot be solved manually but with the help of Python. By running the codes written with Python in Figure 3.6, the non-ASCII characters in the raw materials were replaced with right characters.

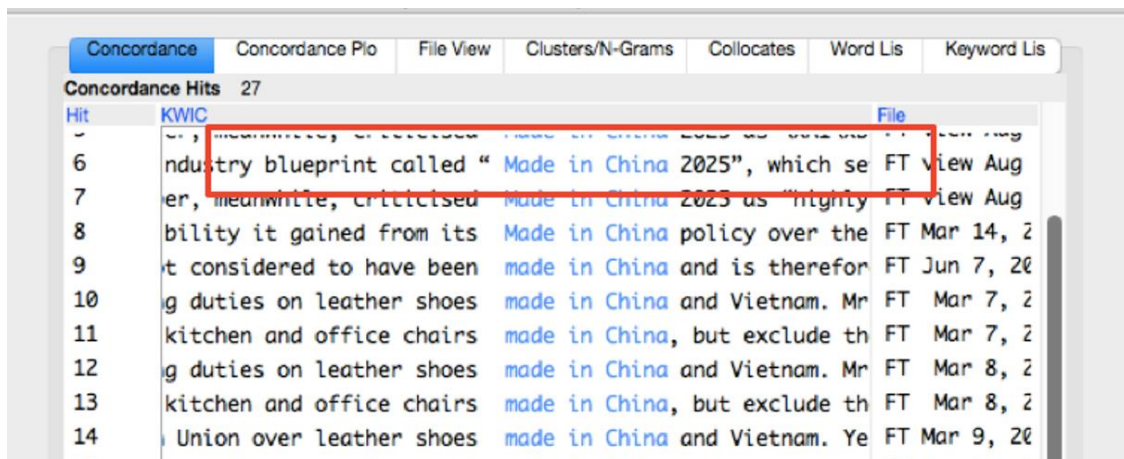


**Figure 3.5** A screenshot of unwanted non-ASCII characters in concordance lines

```
1 f = open("Path", "r")
2
3 filename = f.readline()
4
5 while 1:
6     if not filename:
7         break
8     fc = open(filename.strip("\r\n"), "r")
9     temp = fc.read().replace("\xe2\x80\x98", "").replace("\xe2\x80\x99", "").\
10 .replace("\xe2\x80\x9c", "").replace("\xe2\x80\x9d", "").replace("\xe2\x80\x93", "").\
11 .replace("\xa1\xb1", "").replace("\xa1\xb0", "").replace("\xa1\xaa", "").replace("\xa1\xaf", "").\
12 .replace("\xc2\xa0", " ").replace("\xc2\x88", "").replace("\xc3\xa8", "").replace("\xe2\x82\xac", "pound").\
13 .replace("\xcc\x81", "").replace("\xa0", "").replace("\xc2", "").replace("\xa3", "")
14 fc.close()
15 fw = open(filename.strip("\r\n"), "w")
16 fw.write(temp)
17 fw.close()
18 filename = f.readline()
19 f.close()
```

**Figure 3.6** Codes written with python for replacing unrecognizable characters in the raw materials

After replacing the unrecognizable characters, texts were presented correctly in AntConc 3.5.8., as shown in Figure 3.7.



**Figure 3.7** A screenshot of correctly presented characters in concordance line after programming

When processing texts in Wmatrix 4, there was no problems with presentation of quotation marks since they were omitted. However, there were other non-ASCII characters such as ‘&lsqb;’ and ‘&rsqb;’ for square brackets, as was shown in Figure 3.8. However, square brackets can be correctly presented in AntConc 3.5.8, as was shown in Figure 3.9.

3 occurrences.		Extend context
its co-operation in dealing with	North Korea . The signing of the presidential	1 More   Full
on as he seeks Chinas backing on	North Korea . Given Trumps transactional appr	2 More   Full
ailure to bring into line &lsqb;	North Korea &rsqb; , the China Daily said . B	3 More   Full

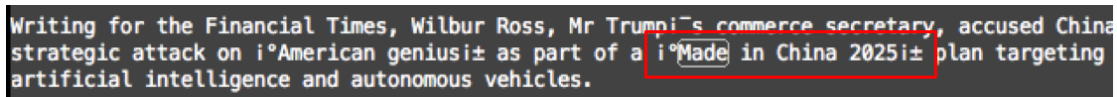
**Figure 3.8** A screenshot of presentation of square brackets in concordance lines in Wmatrix 4



Hit	KWIC	File
1	ation in dealing with North Korea.\xA0 The signing of t	FT Aug 14, 2
2	\xA1\xAFs backing on North Korea.\xA0 \xA1\xB0Given Tr	FT Aug 14, 2
3	e to bring into line [North Korea],\xA1\xB1 the China Dc	FT Aug 14, 2

**Figure 3.9** A screenshot of presentation of square brackets in concordance lines in AntConc 3.5.8

That is to say, when my corpora were processed in different software packages, there may be different unrecognizable characters to be dealt with. After a corpus was built, researchers should pre-processing the raw materials in a corpus to make it suitable for data investigation. When I skimmed the texts in my corpora to have better understanding of contexts to help my metaphor identification in later stage, I used Sublime Text 2 to open each text since all non-ASCII characters were recognizable with eyes in Sublime Text 2, as shown in Figure 3.10. This software is an advanced text editor designing for code, markup and prose. With the help of it, I also corrected most non-ASCII characters manually.

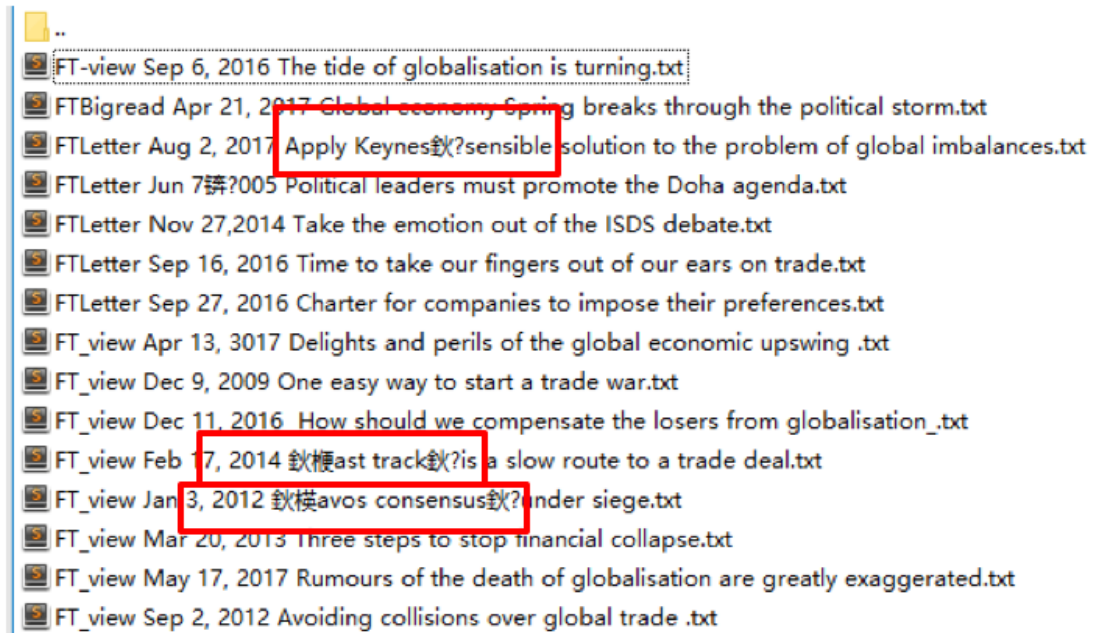


**Figure 3.10** A screenshot of presentation of non-ASCII characters in texts in sublime text 2.

### 3.4.2 Filename Standardization

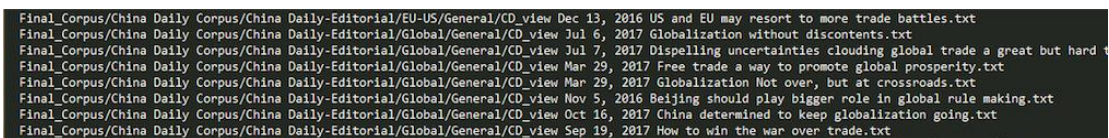
When naming each file, it was better not to copy the title directly from online newspapers since it faced the same problem as was mentioned in Section 3.4.1. The build-in character encoding format was also stored in the name of the file. That is, unrecognizable characters were also not avoidable when putting files into programming tools to extract useful information from each text or to generate path for each text, as was shown in Figure 3.11.





**Figure 3.11** A screenshot of non-ASCII characters in titles of texts

To solve this problem, scholars such as Oakey (2008) used a digital numbers file-naming system. I also used a file-naming system with digital numbers representing newspaper name, reportage/editorial, countries involving in the trade disputes and fields of trade disputes. This digital number can be generated automatically as long as the path to each text in the corpus was available. Before giving each text a name with digital numbers, the path of each text was needed. As long as each text was categorized into corresponding sub-corpus and useful information such as publication dates were tagged standardly in each text, the path of each text can be generated automatically by programming. For instance, during corpus building, I put information such as the title, date, year and authors/sources of the news in angle bracket in the first line of each file, for example, < Aug 28, 2016 Trump campaign benefits from criticism of trade imbalances by Wilbur Ross>. An example of path of each file generated automatically was shown in Figure 3.12.



**Figure 3.12** A screenshot of automatically generated path of each file in my corpora

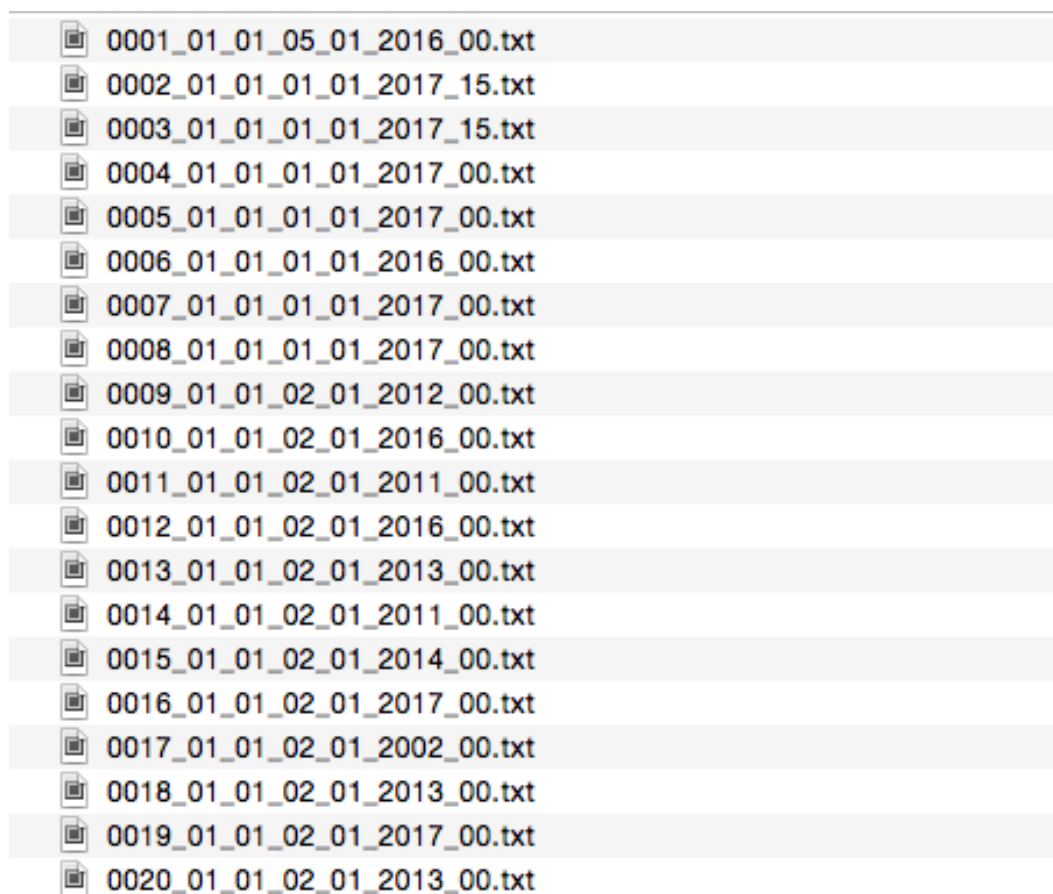
After path of each text was generated, newspaper names, reportage/editorial, countries involving in trade disputes and fields of trade disputes were then replaced by certain digital numbers. To give each text a unique identity, I set the following file-naming rules, as shown in Table 3.6.

This table shows that there are seven pieces of information in the name of each text.

**Table 3.6** Seven pieces of information in the name of each text

<b>Seven pieces of information</b>	<b>Digital number rules</b>
1 <sup>st</sup> piece of information: text order	from 0001 to 2292
2 <sup>nd</sup> piece of information: newspaper name	from 01 to 08: <i>China Daily, Global Times, People's Daily, Financial Times, Guardian, Times, New York Times, and Wall Street Journal</i>
3 <sup>rd</sup> piece of information: newspaper type	from 01 to 02: editorial and reportage
4 <sup>th</sup> piece of information: countries involving in the trade disputes	from 01 to 05: Global, Sino-EU, Sino-EU-US, Sino-US, EU-US
5 <sup>th</sup> piece of information: the fields that trade disputes taking place	from 01 to 53: General, Market Economy Status, Shoes etc. More details are given in Appendix A.2
6 <sup>th</sup> piece of information: the year when the piece of news was published	from 2001 to 2017
7 <sup>th</sup> piece of information: sources of the news	from 00 to 21 originally produced, AFP, Agencies etc. More details are given in Appendix A.3

Table 3.6 shows that the sources of news are also included in the name of each text. This information is important in studying how metaphor is used to construct an issue in popular economic discourse. When the piece of news was reproduced from other sources, the metaphor used may also reflect the stance of other sources.



**Figure 3.13** A screenshot of texts in my corpora with unique digital number file names

Based on file-naming rules in Table 3.6, each text had a unique identity, as shown in Figure 3.13.

### 3.5 Description of My Corpora

#### 3.5.1 Corpus Size and Representativeness

I built my three corpora with 1.3 million words in total. Brezina (2018) writes that different tools such as Sketch Engine, LancsBox, AntConc count tokens differently in terms of the way they define tokens and their treatment of punctuation, hyphenated words, clitic and other non-letters. The default definition of tokens in AntConc (Anthony, 2019) only treats letters as words. Other non-letters such as numbers, punctuations are not calculated when totalling tokens up. Hyphenated words such as *low-cost* and clitic such as *China's* are counted as two tokens in AntConc. LancsBox treats tokens as running words and does not calculate punctuations when totalling tokens up (Brezina, 2018). LancsBox counts each letter or number separated by space or punctuation as one token (Brezina, 2018). Sketch Engine (Kilgarriff et al., 2014) counts both words and non-words which start with non-letter as

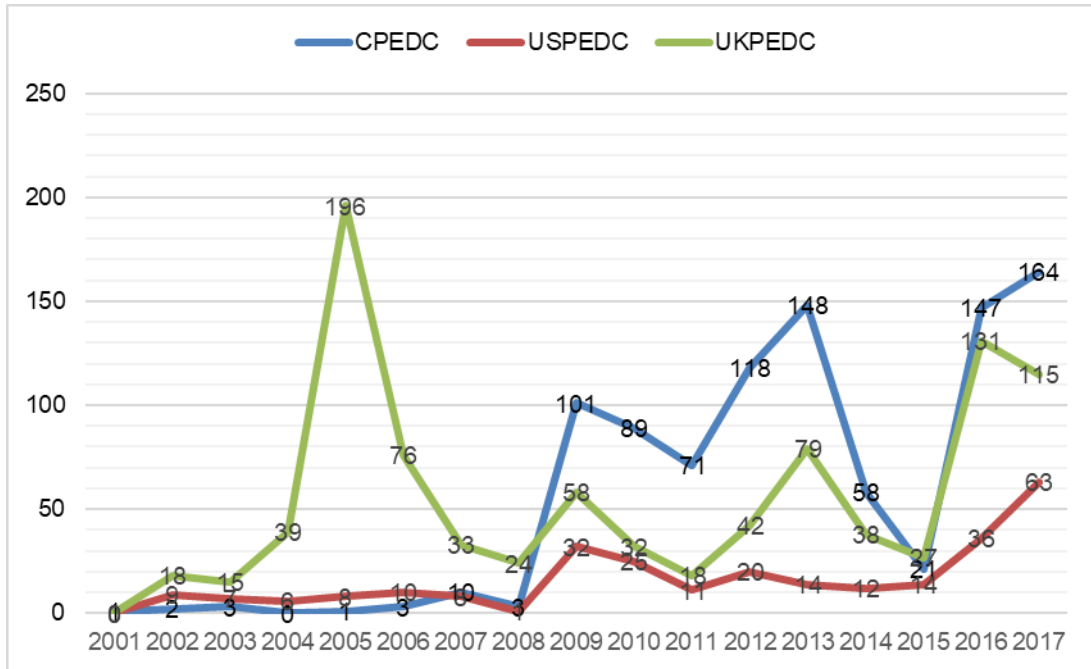
tokens. Brezina (2018) writes that when reporting exact token counts, researchers should also report the tool used to calculate the tokens. I used Sketch Engine (Kilgarriff et al., 2014) to count words of my corpora. Details about quantitative information of three corpora are shown in Table 3.7. This table shows that average text length of USPEDC is much longer than that of the other two corpora which share similar average text length. This table also shows that the number of words in CPEDC and UKPEDC is quite similar and is more than twice larger than that in USPEDC.

**Table 3.7** Quantitative information of three corpora

Corpus name			Date range		Number of texts	Number of words	Avg text length
Chinese	Popular	Economic	Nov	2001-Dec	1075	537,644	514
Discourse Corpus (CPEDC)			2017				
UK	Popular	Economic	Nov	2001-Dec	941	536,436	582
Discourse Corpus (UKPEDC)			2017				
US	Popular	Economic	Nov	2001-Dec	276	222,721	831
Discourse Corpus (USPEDC)			2017				
Total					2292	1,296,801	

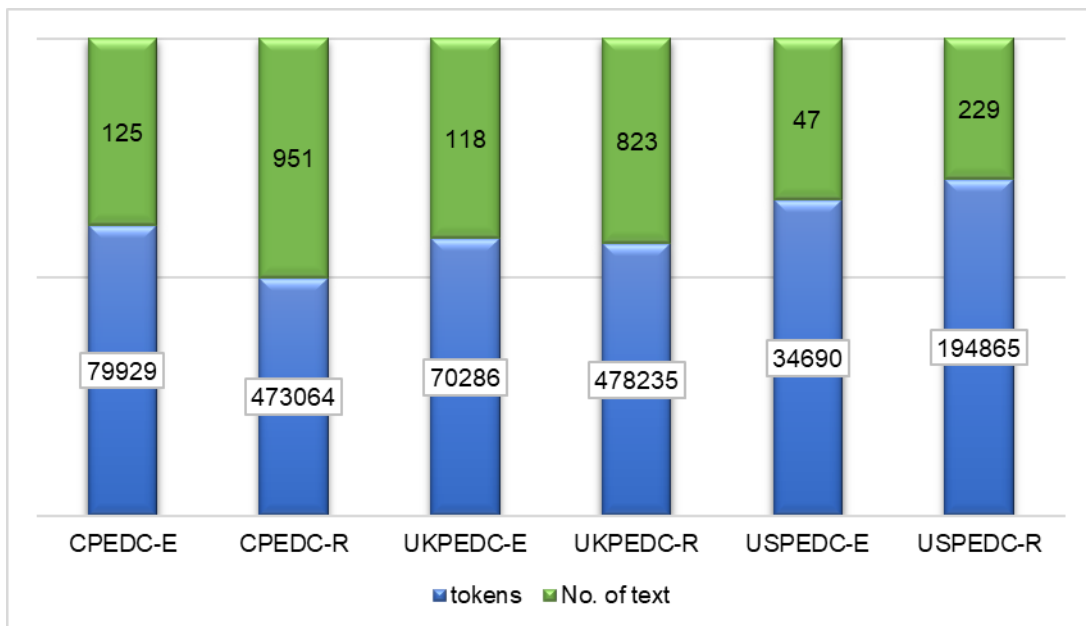
The number of news reports published per annum in each corpus is given in Figure 3.14. This figure shows that the number of texts on the topic of Sino-EU/US trade disputes in CPEDC dramatically increased after 2008. For instance, a large number of texts were on the topic of Sino-EU solar panel disputes published in 2013 and a number of texts on increasing protectionism, China's market economy status and Sino-US/EU trade disputes published in 2016 and 2017. This figure also shows that there was a very large number of texts published in 2005 in UKPEDC. Most texts published in 2005 were on the topic of Sino-EU/US textile trade disputes. Figure 3.14 also shows that the number of texts published after 2008 in three corpora shares similar increasing and decreasing tendency. For instance, the number of news reports published in 2015 was rather small but increased dramatically in 2016, especially for CPEDC and UKPEDC.



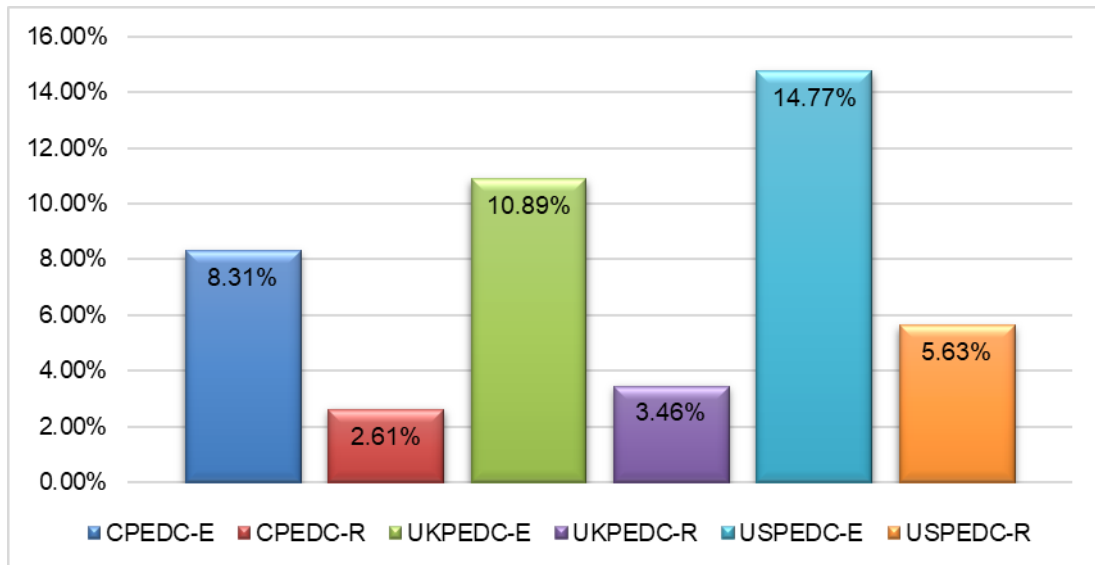


**Figure 3.14** The number of news reports published per annum in each corpus between 2001 and 2017

Each of my corpora comprises two types of texts: reportage and editorial. Reportage focuses on reporting fact about news while editorial focuses on commenting on or reviewing the news. Figure 3.15 shows the number of texts and tokens of reportage and editorial in each corpus, which is the results calculated by AntConc 3.5.8. Figure 3.15 shows that the number and tokens of editorial in each corpus were much lower than those of reportage.



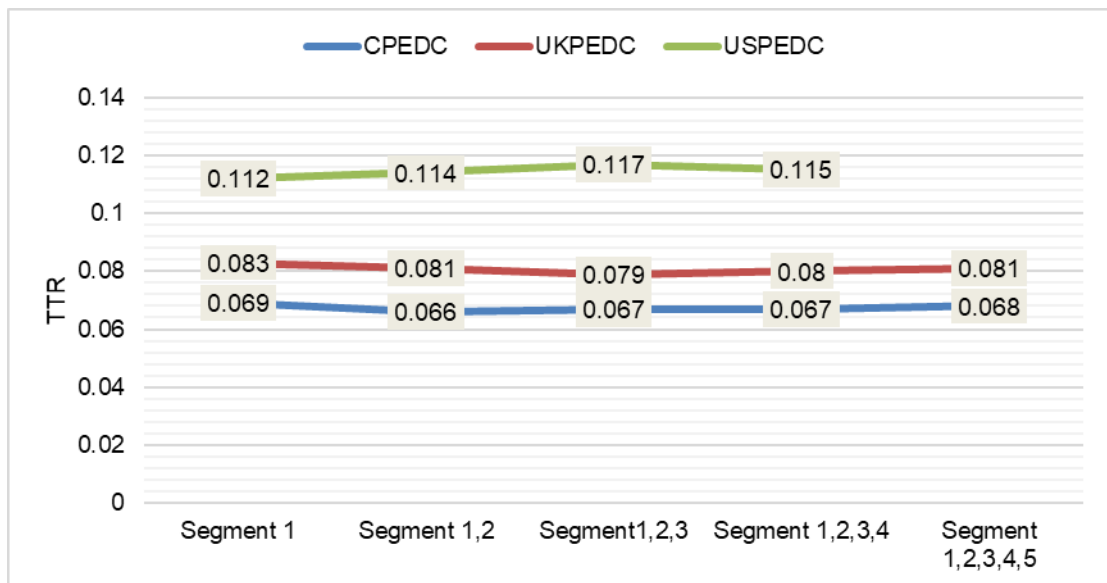
**Figure 3.15** The number of texts and tokens of reportage and editorial in each corpus



**Figure 3.16** Type-token ratio (TTR) of reportage and editorial in each corpus

Figure 3.16 compares the Type-Token Ratio (TTR) of reportage and editorial in each corpus. This figure shows that TTR of reportage in each corpus is much lower than that of editorial, which indicates that reportage has less lexical variations than editorial. Both the TTR of reportage and that of editorial of CPEDC are the lowest among three corpora. This figure also shows that both the TTR of reportage and that of editorial of USPEDC are about one time higher than that of reportage and editorial in CPEDC. That is, lexical variations of reportage and editorial were slightly smaller in CPEDC than in UKPEDC and much smaller in CPEDC than in USPEDC.

As is mentioned in Section 3.1.2, the representativeness of a specialized corpus can be measured by saturation at lexical level (McEnery and Wilson, 2001). To measure the saturation of my corpora, CPEDC and UKPEDC were first divided into five segments with equal-sized tokens. USPEDC was divided into four equal-sized segments since it has much less tokens. Then I calculated Type-Token Ratio of each segment with the help of AntConc 3.5.8, as in Figure 3.17.



**Figure 3.17** Type-token ratio of each addition of a new segment in three corpora

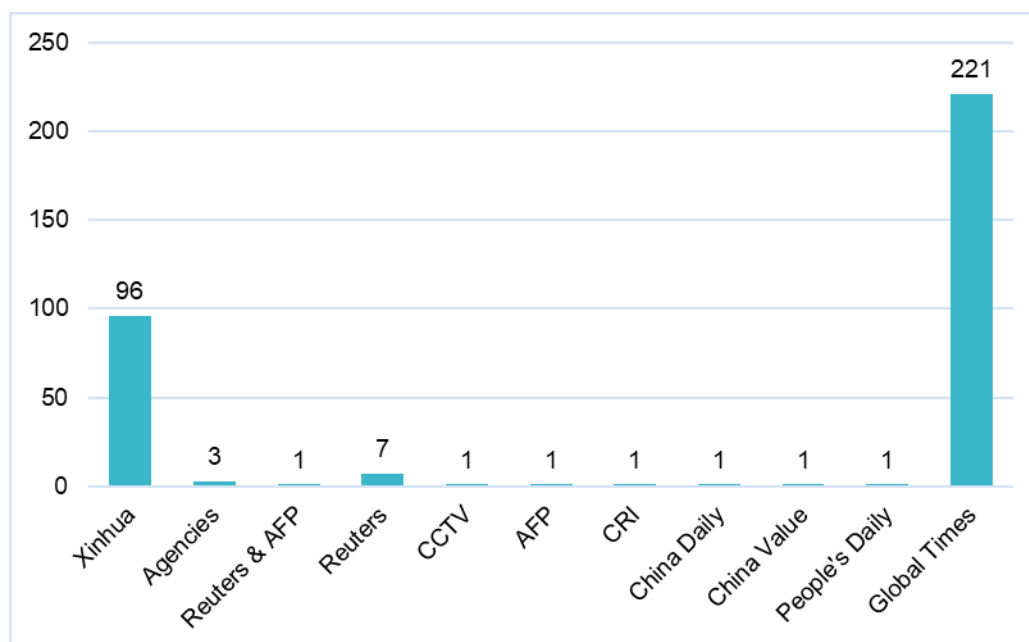
Figure 3.17 shows that three curves of type/token ratio in each corpus are asymptotic. That is, the curve of lexical growth is flattening out with each addition of a new segment in three corpora, which indicates that three corpora are saturated at lexical level.

### 3.5.2 Corpus Sources

With regard to sources of my corpus, I am not interested in individual writer information since I don't study individual stance. Baker (2006, p.72) writes that "Discourses within newspapers are usually the result of collaboration between multiple contributors". That is, all news reports do not belong to an individual author. Information about sources of each text in my corpora is important for my conclusion of metaphor use by different newspapers. For instance, a piece of news may come from *Reuters* and be reproduced with slight differences by *Financial Times*. The conclusion I can make is whether metaphors are regarded as acceptable by *Financial Times*.

In UKPEDC, more than 90% of texts were originally produced by *Financial Times* (only 1 text from *Reuters*) and *Times* (2 texts from *Agencies*). There were 88% of texts originally produced by *Guardian* with 5 texts from *Reuters*, 2 texts from *Associated Press*, 8 texts from *Observer* and 9 texts from *Guardian* and *Agencies*. In USPEDC, all texts in *Wall Street Journal* were originally produced and more than 90% of texts in *New York Times* were originally produced with 2 texts from *Associated Press*, 3 texts from *Bloomberg News* and 11 texts from *Reuters*. There were 58% of texts

from *China Daily* originally produced and 41% of text from *Xinhua Agency*. There were only 27.4 % of texts from *People's Daily* originally produced. 40.7% of them overlapped with those from *China Daily* and 6.7% of them overlapped with *Global Times*. There were also another 25.2% of them from *Xinhua Agency*.



**Figure 3.18** Sources of texts from *Global Times*

Figure 3.18 shows that texts from *Global Times* had a wider range of sources. This figure shows that 66% of texts were originally produced in *Global Times* and 28.7% of texts were from *Xinhua Agency*. This figure also shows 5.3% of texts were from other sources.

## 3.6 Corpus Analysis

### 3.6.1 Frequency and Dispersion

Scholars such as Brezina (2018), Gries (2008) and Egbert et al. (2020) criticize the only use of frequency as an indicator of a word's importance in a corpus. Brezina (2018) writes that the frequency of a word may be misleading due to what Kilgariff (1997) calls wheel problem which means the distribution of a word is severely skewed in a corpus. Dispersion is claimed to be a better indicator of a word's importance in a corpus (Brezina, 2018; Egbert et al., 2020; Gries, 2008). Egbert et al. (2020) write that there are already a number of dispersion measures available to calculate the distribution of a word or phrase throughout the parts of corpus, for instance, Deviation of Proportions (Gries, 2008) and  $D_A$  (Burch et al., 2017). They claim that Deviation of Proportions (DP) measures the distribution of a word

across arbitrary and equal-sized corpus parts while  $D_A$  (Burch et al., 2017) measures the distribution of a word across linguistically meaningful corpus parts such as texts and registers since  $D_A$  can also be used to calculate distribution of a word in unequal-sized corpus parts. In this research, DP is used to measure the importance of the search terms that I am interested in across arbitrary and equal-sized corpus parts. The formula for DP proposed by Gries (2008) is as follows:

$$DP = \frac{1}{2} \sum_{i=1}^n |E_i - O_i|$$

In this formula,  $n$  refers to the total number of equal-sized corpus parts.  $E_i$  refers to expected proportions of a word or phrase in the  $i^{\text{th}}$  equal-sized corpus parts.  $O_i$  refers to observed proportions of a word or phrase in the  $i^{\text{th}}$  equal-sized corpus parts. DP is half of the sum of absolute value of differences between  $E_i$  and  $O_i$  of each equal-sized corpus part. The value of DP is between 0 and 1, with 1 indicating extremely uneven distribution of a word or phrase and 0 perfectly even distribution (Gries, 2008; Brezina, 2018).

### 3.6.2 Collocation and Semantic Prosody

In corpus linguistics, the word *collocation* can be understood by following a statistical approach or a non-statistical approach (Main, 2017; Sardinha, 2006; Sinclair, 1991; Xiao and McEnery, 2006). A non-statistical approach to *collocation* was taken by scholars such as Firth (1968), Sardinha (2006) and Sinclair (1991). For instance, Sinclair (1991, p.170) writes that “Collocation is the occurrence of two or more words within a short space of each other in a text”. McEnery and Hardie (2012, p.126) understand this non-statistical approach as “*collocation-via-concordance*”, which means that researchers can observe collocation behaviours of lexis by manually scanning each concordance line of the lexis. A statistical approach to *collocation* was taken by scholars such as Hoey (1991), Hunston (2002) and O’keefe et al. (2007). For instance, Hunston (2002, p.12) writes that “collocation is the statistical tendency of words to co-occur”. That is, the co-occurrence of lexis is observed at level of statistical significance rather than being expected due to chance (Hoey, 1991; McEnery and Hardie, 2012; Sardinha, 2006; Xiao and McEnery, 2006). There are a number of association measures used to measure different collocation relationship between a node and a collocate in specified span (Brezina, 2018; Hunston, 2002; Xiao and McEnery, 2006). For instance, Hunston (2002, p.73) writes that “MI-score is a measure of strength of collocation; t-score is a measure of certainty of collocation”. She

writes that “MI-score measures the amount of non-randomness present when two words co-occur” (p.71). T-score is the certainty with which we can argue that there is an association between the words (Kilgarriff et al., 2014). The non-statistical definition of collocation is adopted in this research since what seems to be more important for this research is to preserve as much data on the evaluative slant of linguistic metaphors as node words as possible, rather than filtering out data because they are non-statistical relevance (Main, 2017; Sardinha, 2006). Thus, when using concordance lines to observe evaluative collocates of node words, there is no need for the collocates to be statistically significant (Main, 2018).

Xiao and McEnery (2006, p.105) write that “The collocation meaning arising from the interaction between a given node and its typical collocates might be referred to as *semantic prosody*” (italics in original). Although there are different views on the way the concept of semantic prosody is used in corpus linguistics (Hunston, 2007; Main, 2017), Xiao and McEnery (2006) understand semantic prosody as a feature of the node word which can be both individual words such as *cause* and phrases such as *set in*. They claim that “if a word has typical collocates with an affective meaning, it may take on that affective meaning even when used with atypical collocates” (p.107). That is, semantic prosody of a node word observed in a set of concordance lines may transfer from one context to another (Hunston, 2007).

In this research, linguistic metaphors as node words are said to have a negative, positive or neutral semantic prosody if their frequent co-occurrence of collocates are observed to express a particular evaluative meaning in a set of concordance lines in BNC (1994). When there are more than 200 citations of the given node word in BNC (1994), I usually check its semantic prosody in 200 randomly sampled concordance lines. When there are less than 200 citations of the given node word, I check its semantic prosody in all the citations. Main (2017, p.48) writes “for a collocate to be considered evidence of semantic prosody, a clearly observable close syntactic relationship is required”. For instance, in the example “*such failures can cause. However, one difficulty the*”, he writes that *failures* is collocational evidence of negative semantic prosody of *cause* but *difficulty* is not (p.48). Regarding window span of collocates, he decides a 4:4 span to check evaluative collocates of given node words via concordance analysis. However, he also examines collocates in much larger spans in some cases as he explains that “varying span sizes are primarily employed to allow for observation of antecedents of pronoun subjects and referents of general

nouns, as well as structurally complex collocates” (p.27). In this research, I follow the way Main (2017) observes collocates which has clear syntactic relationship with the give node words and within a 4:4 span or even larger span if necessary in concordance lines as evidence to examine evaluative nature of the linguistic metaphors suggesting systematic metaphor.

### **3.7 Summary**

To be concluded, in this chapter I justified the need of compiling my own corpora and explained the process of my corpus design and construction. I justified the need of compiling my own corpora by reviewing nine off-the-peg business/economy-related corpora in terms of corpus representativeness. I then explained the way I made decisions on newspapers to be included as my sampling frame and additional query terms. My corpus construction started with external criteria such as the topic and genre I was interested in. Based on the external criteria, I built my three pilot corpora by collecting texts with core query terms such as *Sino-EU trade disputes* from 8 newspapers. I then conducted keyness analysis to identify keywords related to trade disputes in my pilot corpora in reference to three corpora BNC2014 Business, BE06 and AmE06. The keyness analysis supported my decisions on additional query terms that were used as internal criteria for my formal corpus construction. After compiling my corpora, I also standardized their format to avoid the distraction of erroneous formats of foreign characters, special symbols and punctuations in concordance and collocation analysis in corpus analysis tools. Finally, I introduced corpus size, representativeness and sources of my corpora. I also added some brief discussions on two indicators of a word's importance in a corpus and two important concepts *collocation* and *semantic prosody* in corpus linguistics to explain the way I examine evaluative nature of the linguistic metaphors suggesting systematic metaphor and metaphoreme in my data.

## **Chapter 4 Metaphor Identification and Annotation in Corpus**

Identifying metaphors in discourse data is the basis for metaphor-led discourse analysis (Cameron, 2010b). That is, metaphor identification is the first step for later investigation of metaphor use from corpus-linguistic approach or discourse approach or both. In this chapter, I discuss how metaphors are identified in my corpora. First, I compare MIP and MIPVU in terms of their theoretical perspectives and operationalization of key notions. Second, I discuss metaphor identification within discourse dynamics framework for metaphor and explain the metaphor identification approach I used in my study. Third, I review methodological issues on metaphor annotation in terms of corpus and computational perspectives. Finally, I discuss how previous studies used Wmatrix (Rayson, 2008) to assist metaphor annotation in their corpus.

### **4.1 Metaphor Identification Approaches: MIP & MIPVU**

#### **4.1.1 Theoretical Perspectives of MIP and MIPVU**

Steen (2017) compares two metaphor identification approaches MIP (Pragglejaz Group, 2007) and MIPVU (Steen et al., 2010) in terms of their theoretical perspectives on the relation between metaphor and language. He notes that to clarify the relation between metaphor and language, three distinctions can be made: 1) treating metaphor as system or usage; 2) treating metaphor as language or thought; 3) treating metaphor in language as a sign or behaviour. He claims that decisions made on each perspective may influence operationalization of different notions in metaphor identification.

In terms of system or usage perspective, Steen (2017) argues that MIP (Pragglejaz Group, 2007) understands language as a matter of system and regards metaphor as a construction in the language system which is the result of interaction and variation over diachronic, geographical or social factors. Thus, etymology is one possible factor in identifying basic meaning of a lexical unit in MIP (Pragglejaz Group, 2007). For instance, Steen (2017) writes that if taking etymology into consideration, the word *fervent* with contextual meaning of an emotional sense (intense) has a basic meaning of a temperature sense (hot) and is identified as metaphor. He adds that following MIPVU, however, historical temperature sense (hot) of the word



*fervent* cannot be its basic meaning. He claims that MIPVU (Steen et al., 2010) understands metaphor from usage perspective and focuses on word use in context without taking etymology into consideration.

In terms of perspectives on metaphor as language or thought, Steen (2017, p.137) claims that MIP takes a linguistic approach and MIPVU takes a conceptual approach. He writes that the focus of MIP is identifying linguistic metaphors. In contrast, MIPVU claims to take linguistic metaphor identification as the first step (Steen et al., 2010; Steen,2017). The focus of MIPVU is identifying conceptual metaphors realized by linguistic metaphors (Steen et al., 2010).

In terms of perspectives on metaphor in language as a sign or behaviour, Steen (2017) claims that both MIP that focuses on forms and meaning of linguistic metaphor and MIPVU that identifies conceptual metaphors through linguistic metaphors take a sign-oriented approach. He writes that both metaphor identification approaches study metaphor in language as symbolic systems. He adds that a sign-oriented perspective involves “the lexico-grammatical structure and function that has been abstracted away from psychological or social processes by linguists” (p.137). For instance, Steen (2007) writes that when conceptual mapping of metaphor in usage are approached from a sign-oriented perspective, researchers investigate how conceptual structures pair with linguistic forms to be metaphorical. He also writes that when linguistic form and meaning of metaphor in usage are approached from a sign-oriented perspective, researchers investigate how linguistic form and meaning pair to be metaphorical.

#### **4.1.2 Operationalization of Key Notions of MIP and MIPVU**

This section turns to compare operational criteria of MIP and MIPVU, which relates to the issues of “the degree of explicitness of the procedure” (Steen, 2017, p.142; Veale et al., 2016). Steen et al. (2010, p.12) write that “linguistic expressions of underlying cross-domain mapping can be found at many levels of linguistic organization” such as morphology and syntax but “the most popular level in metaphor research is the level of the words, or lexical unit”. The unit of analysis of my study is also at the level of lexical units. Steen (2017) claims that both MIP and MIPVU take an inductive approach, which means that both of them start from examining language use that can be identified as indirect and incongruous in context without assumptions about pre-existing cross-domain mapping. In this section, I discuss operational criteria of identifying linguistic metaphors without

assumptions of pre-existing cross-domain mapping. In this section, I compare operationalization of three key notions in MIP and MIPVU: sense inventories, lexical units, and indirectness and incongruity. Specific procedures of MIP and MIPVU refer to Appendix B.1 and Appendix B.2.

The first issue is operationalization of selection and use of sense inventories in MIP and MIPVU. Dictionaries are used in both MIP and MIPVU. Pasma (2012, p.70) writes that researchers should make decisions on issues such as “the kind of tools available (like dictionaries and corpora), and lexico-grammatical properties that need additional classification and exemplifications” in order to apply selected metaphor identification method in a consistent and replicable way. With regard to choices of tools used in metaphor identification, Deignan (2015a, p.145) writes that “the ideal way of determining basic meaning is by analysis of concordance citations sampled from an appropriate corpus”. However, she also adds that “metaphor analysts might not have the time, training or inclination to carry out a concordance analysis for themselves” (p.151). Thus, she writes that “a dictionary developed on corpus principles is a good alternative to using corpus data directly” (p.145). Krennmayr (2008, p.113) also writes that “instead of relying on intuition, using dictionaries serving as a norm of reference makes identification metaphor more reliable”. Dorst and Reijniere (2015) add that choice of different dictionaries such as native speaker’s dictionaries and learner’s dictionaries leads to different results in identified metaphors. Different dictionaries may give different results on categories of a multiword expression, which can lead to different results of unit of analysis. Both kinds of dictionaries are used in MIP and MIPVU but the dictionaries selected are slightly different. Within MIP, two dictionaries are selected as external sense inventories. Praggeljaz Group (2007, p.16) suggest that researchers can refer to *Macmillan English Dictionary for Advanced Learners* (MEDAL; Rundell and Fox, 2002) since it is “a corpus dictionary based on a fairly recent corpus of contemporary English” . Praggeljaz Group (2007, p.16) also suggest the use of the *Shorter Oxford English Dictionary on Historical Principles* (SOEDHP; Little et al, 1973) as “a supplementary information for etymology”. MIPVU (Steen et al., 2010) uses *Longman Dictionary of Contemporary English*<sup>8</sup> as a second external inventory for checking difficulty cases that are not straightforward by using MEDAL alone. When a decision could not be made after using the two contemporary

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<sup>8</sup> Online available freely at <https://www.ldoceonline.com/>

dictionaries, a third dictionary Oxford English Dictionary (OED) is used in MIPVU (Steen et al.2010).

Metaphor scholars, either following MIP or MIPVU, use dictionaries to help determine boundaries of lexical units, establish contextual meaning and basic meaning of a lexical unit to ensure consistency and replicability (Deignan, 2015a; Krennmayr, 2008; Pragglejazz Group, 2007; Steen et al. 2010). However, Dorst and Reijnierse (2015, p.142) write that “the dictionary only gives us definitions, not decisions”. Dorst et al. (2013) give specific guidelines of using dictionaries to establish basic meanings of three groups of problematic cases describing chemical process, colours and concrete objects. Following MIPVU, Dorst et al. (2013) prefer a human-oriented sense over non-human sense when establishing basic meanings of lexical units. They write that a concrete and human-oriented sense in dictionaries is the most ideal choice for establishing a more basic meaning. However, language is so complex that no one-size-fits-all rules are available to establish basic meaning. For instance, they find that although there is a human-oriented and concrete sense of “*react*”, a non-human and concrete sense of “*react*” is established as the basic meaning since there is a mapping between psychological reaction and chemical process (p.89). Despite the human-oriented approach, they write that concreteness is also important in establishing basic meanings of lexical units. They add that the process of establishing basic meaning should not be independent of establishing the contextual meaning since systematic mapping between two meanings is very important. Veale et al. (2016, p.59) also claim that “sense identification was viewed as a responsibility of the annotators that did not demand an adherence to external sense inventories”. That is, to some extent, annotators can have their own understanding of readers’ intuition about the sense for a given word/expression (Veale et al., 2016). Veale et al. (2016, p. 59) write that although these may lead to additional subjectivity, annotators’ judgements can contribute to identify “commonly perceived sense rather than those that are theoretically available”. For instance, they explain this advantage using *attitude* in the example “*His negative attitude toward the new employee surprised me*” (p. 59). They write that based on the senses of *attitude* in MEDAL, sense 3 ‘the position of your body’ can be basic meaning of *attitude* in this example so *attitude* is identified as a metaphor. However, they write that this basic meaning as contemporary usage may surprise annotators. In this case, annotators can refer to large-sized corpora such as COCA and BNC (1994) to confirm their intuition. Thus,

it is important to explicitly explain what external sense inventories are used and how they are used either following MIP or MIPVU or adapt them.

Second, different interpretations of lexical units lead to quite different operational criteria in identifying metaphors. Following MIP, researchers interpret lexical units as lemmas as Pragglejaz Group (2007, p.15) write that lexical units are “all single headwords in dictionary” and word classes of lexical units are ignored. For instance, following MIP, Pragglejaz Group (2007, p.28) write that *squirrel* as a verb in the example “*He squirreled away their savings*” is identified as a metaphor since clear link between the meanings of *squirrel* as a verb and as a noun is assumed for many speakers. Nacey (2013) adds that *squirrel* as a verb is identified as a metaphor not because there is any tension between its basic and contextual meaning but because it has *squirrel* as a noun as its etymology. In contrast, MIPVU views lexical units as word classes. Steen et al. (2010, p.16) write that MIPVU operationalizes lexical units as word classes because “word classes have the closest connections with conceptual and referential classes like entities, processes, and attributes”. For example, they write that MIPVU makes distinctions between *dog* as noun and *dog* as verb since the referent of *dog* as an animal is different from *dog* as a typical human action. Following MIPVU, *dog* as noun cannot not be the basic meaning of *dog* as verb so *dog* as verb is a non-metaphorical-related word.

As well as different decisions on lexical units, MIP and MIPVU also have different decisions on the boundaries of multi-word units. Veale et al. (2016, p.57) write that “different decisions regarding the identification of lexical units can lead to serious disagreement”. There are no problems in deciding lexical units of single orthographic words but problems arise in making decisions on multiword expressions due to the “arbitrariness” (Wray, 2008; Ron, 2011, p. 24) of multiword expressions. That is to say, the formation of some multiword expressions cannot be easily explained by grammatical rules (Wray, 2008). Pragglejaz Group (2007, p.26) write that “if a multi-word unit can be semantically decomposed, then we considered each component word as a lexical unit; otherwise, we considered the multi-word item as a single lexical unit”. They discuss their treatment of decomposability of polyword, phrasal verb, idioms, fixed collocations and proper names. Nattinger and DeCarrico (1992, p.38) write that polywords such as *of course* as short phrases “[are] continuous and allow no variability”. Thus, following MIP polywords are treated as a single lexical unit (Pragglejaz Group, 2007). Pragglejaz Group (2007) write that phrasal verbs in most cases are treated as a single lexical

unit. They explain that “[phrasal verbs are] not the semantic sum of their pairs [and] cannot be decomposed without loss of meaning” (p.26). Although some exceptional cases such as *eat up*, *give it up* are observed, they write that these separable examples are just a small set in phrasal verbs. They also write that most of idioms, to some extent, are semantically decomposable for speakers. For instance, they claim that people can find metaphoricity in separate components *spill* and *beans* in the example of *spill the beans*. MIPVU’s (Steen et al. 2010) understanding of decomposability of idioms is consistent with that of MIP (Pragglejaz Group, 2007). MIPVU also treats each component of an idiom as a single unit (Steen et al. 2010). With regard to fix collocations, Pragglejaz Group (2007) write that “the degree of collocation between any two or more words can range from completely fixed, through semi-fixed, to insignificant statistically” (p.27). They regard fixed collocations as semantically decomposable since they claim that “collocations have no requirement of semantic opacity”. With regard to proper names, they suggest treating them as a single lexical unit.

Steen (2017, p.148) claims that based on MIP, “MIPVU explicates some of the operational criteria that were left undecided in MIP”. When making decisions on boundaries of lexical units, Steen et al. (2010) follows most Part Of Speech annotation rules in BNC (1994) since they use BNC baby that was sampled from BNC (1994) as their corpus. Following MIPVU, all words with an independent POS tag in BNC baby is treated as separate lexical units. BNC has its own special POS tagging rules<sup>9</sup> for multi-word units. For instance, when two or more words are given a single word class tag, they are multi-word units that are tagged with an additional XML element (<mw>) and treated as a single lexical unit. For instance, polyword *of course* is given the tag of multiword adverbs <mw c5= “AV0”> and each individual word also receives its POS tag. Steen et al. (2010) modify POS tags of phrasal verbs, some compounds, and some proper names in their corpus. Phrasal verbs are not treated as a single lexical unit in BNC and each phrasal verb receives an independent verb tag following an AVP tag (adverbial particle) (Steen et al., 2010). However, Steen et al. (2010, p.28) write that “phrasal verbs function as linguistic units designating one action, process, state or relation in the referential dimension of the discourse” so they are treated as a single lexical unit like polywords. To give phrasal verb the right POS tag, Steen et al. (2010) also make distinctions among phrasal

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<sup>9</sup> Wordclass Tagging in BNC XML at  
<http://www.natcorp.ox.ac.uk/docs/URG/posguide.html#guidelines>

verbs, prepositional verb and freely combining of Verb + Particle sequences. There is no distinction between phrasal verbs and prepositional verb in the three dictionaries used by MIPVU (Steen et al., 2010). However, they write that BNC codes distinguish between phrasal verbs (Verb + AVP code e.g. *take off*) and prepositional verb (Verb + PRP code e.g. *look at*). They follow the BNC codes and treat lexical units coded as prepositional verb as separable units and those coded as phrasal verb as a single unit. They also summarize some criteria that can be applied to make distinctions between phrasal verb and prepositional verb in the dictionaries as follows.

In **prepositional** verbs:

-The preposition and following noun can be moved to the front of the sentence, which is not possible with phrasal verb particles (e.g. *Up into the sky she looked* but not *\*Up information she looked*).

-An adverb can be inserted before the preposition (e.g. *She ran quickly down the hill* but *\*She ran viciously down her best friends*).

-The preposition can be moved to the front of a wh-word (e.g. *Up which hill did he run?* but not *\*Up which bill did he run?*)

In **phrasal** verbs:

-The adverbial particle can be placed before or after the noun phrase acting as objective of the verb, which is not possible for the prepositional verbs (e.g. *She looked the information up* but not *\* She looked his face at*).

-If the noun phrase is replaced by a pronoun, the pronoun has to be placed in front of the particle (e.g. *The dentist took all my teeth out > The dentist took them out* but not *She went through the gate >\* She went it through*).

Steen et al. (2010, p.30)

The three rules above (“fronting”; “adverb insertion”; “where questions”) to exclude phrasal verbs from prepositional verbs are part of the seven tests of throw-out approach to phrasal verb proposal by Darwin and Gray (1999, pp.78-80). Darwin and Gray (1999) suggest a throw-out approach which assumes all verbal + particle combinations as potential phrasal verbs. Only after tests which suggest the verbal + particle combination as prepositional

verbs should the combination be excluded from phrasal verbs. For instance, after comparing two example “*Up into the sky she looked at*” and “*Up information she looked*”, Steen et al. (2010, p.30) find that more flexibility of preposition in syntactic behaviour of verb + particle combination can help to rule out phrasal verbs. This throw-out approach is relatively straightforward and can be followed to make distinctions phrasal verbs and prepositional verbs to decide lexical units.

With regard to compounds, Steen et al. (2010) write that they consist of three types: “as one word, as two hyphenated words, and as two separate words” (p.30). Compounds as one word or as two hyphenated words receive only one POS tag in BNC. However, Veale et al. (2016) write that the number of POS tags is not necessarily equal to that of lexical units. Steen et al. (2010) suggest that those compounds which are not listed in the dictionaries are novel formation of two words with hyphen and should be treated as two lexical units. For compounds as two separate words, they refer to “a tell-tale signal for metaphor identification” in selected dictionaries (p.31). For instance, they write that *nuclear power* with the primary stress on the second word and secondary stress on the first word is regarded as two separable lexical units each with its own POS tag in their corpus. They adds that examples such as *power plant* that displays a reversed stress pattern are treated as a single lexical. However, dictionary only gives stressing pattern of a small numbers of compounds so it is problematic to decide the decomposability of compounds as separate words following the tell-tale signal in dictionaries.

As is mentioned in previous section, Pragglez Group (2007) treat proper names as a single lexical unit. However, Steen et al. (2010) follow a different practice. They treat proper names as separate units since each component of proper names has a POS tag in BNC. For instance, *New York* is regarded as two lexical units following MIPVU but a single lexical unit in MIP. I follow the practice of MIP since proper names are also not semantic sum of each component and are not decomposable.

Another important issue is the operational criterion for metaphor as “indirectness by similarity” (Steen et al., 2010, p.15). Steen et al. (2010, p.10) write that “indirectness is a good start point for finding metaphor in language” but it is not sufficient. Steen (2017, p.140) explains that “there may be more forms of indirectness and incongruity in language use, for instance, in paradox and oxymoron”. That is, only when there are both indirectness and similarity between contextual meaning and basic meaning of a lexical unit

can the lexical unit be determined as metaphor (Pragglejaz Group, 2007; Steen, 2017). MIP and MIPVU operationalize criterion of indirectness in different ways. MIP only identifies incongruity and indirectness in word use (Steen, 2017; Krennmayr and Steen, 2017). Krennmayr (2011) suggests that whether two senses at word use level are sufficiently distinct depends on whether the contextual and the basic senses are listed as two separate, numbered sense descriptions in the dictionaries. However, Deignan (1997, p.72) writes that “not all entry divisions are made on the basis of perceived difference in meaning, many splits do seem to reflect fine semantic distinctions”. Dictionaries can be helpful to decide incongruity between contextual and basic meanings of a lexical item with related but distinct senses (e.g. *green*) (Deignan, 1997). However, there are also some lexical items whose separate senses having no semantic gaps (e.g. *have*, *design*). It is annotators’ responsibility to decide when separate senses in dictionaries are semantically distinct. If a lexical item with incongruous contextual meaning and basic meaning, it can be either non-metaphorical polysemy or metaphorical polysemy (Deignan, 2015b). The boundaries between metaphorical polysemy refer to conventional metaphor and the boundaries between non-metaphorical polysemy refer to dead metaphor or other semantic relations (Deignan, 2015b). Only when contextual meaning of a lexis unit can be evoked by its more basic meaning, can we say that both meanings are related by similarity and can we label the lexical unit as metaphorically used.

Steen (2007, p.323) suggests that it is crucial to “shift the notion of indirectness from linguistic signs to conceptual structures”. Steen et al. (2010, p.10) claim that conceptualizing metaphor as a cross-domain mapping suggests “a view of metaphor in language as based on indirectness plus similarity”. Steen (2017, p.149) writes that “MIPVU focuses on incongruity and indirectness at the level of concepts and referents”. Based on this understanding of incongruity and indirectness, Steen et al. (2010, p.15) also identify another two types of metaphor: “direct metaphor” and “implicit metaphor”. They write that direct metaphor involves indirect conceptualization but expresses directly in word use. For instance, they write that even though there is no incongruity and indirectness at the level of word use in the example “*Sometimes it’s like someone took a knife, baby, edgy and dull*”, there is reference shift from love relationship towards a cutting scenario (p.15). In this case, there is no tension between basic meaning and contextual meaning of *knife* but incongruity and similarity of conceptual structure between broken love relationship and a cutting scenario. Steen et



al. (2010) write that implicit metaphor involves incongruity and indirectness implicitly at conceptual level. For instance, they identify *it* in the example *Naturally, to embark on such a step is not necessarily to succeed immediately in realizing it* as implicit metaphor (p.15). They explain that “in discourse analysis, the discourse would have to show the previous concept *step* instead of the cohesive element *it*”. Following MIPVU, two more categories of metaphor are identified. However, since this study focuses on metaphor use in language, I follow the practice of MIP and only need to identify incongruity and indirectness in word use.

As well as the operational criteria discussed above, there are other ambiguous problems needing further discussion. For instance, Krennmayr (2017, p.282) writes that there are two possible perspectives to identify metaphor in the example “A party can’t even decide its name [...] (BNC-Baby)”. She writes that if *party* is interpreted metonymically, people in the party can perform the action of decision-making and *decide* is not a metaphor. She adds that if this example is interpreted as personification, *decide* is metaphor due to personification. When interpreting similar cases, Steen, Biernacka, Dorst, Kaal, Rodríguez and Pasma (2010) also write that personification is saved as possibly metaphorical. No matter which perspective researchers choose, Krennmayr (2017, p.173) states the importance of making their decisions on operational criteria clearly and follow them consistently. In this study, I interpret similar cases in term of personification perspective.

## **4.2 Metaphor Identification within Discourse Dynamics Approach**

After comparing MIP and MIPVU in terms of theoretical perspectives and operationalization of different notions, this section turns to discuss metaphor identification within discourse dynamics approach, which is one of the procedures of metaphor-led discourse analysis (Cameron and Maslen, 2010). Metaphor-led discourse analysis consists of several procedures such as vehicle grouping coding and topic coding, and identifying systematicity in metaphor use (Cameron, 2010b).

### **4.2.1 Metaphor Identification: Vehicle and Topic**

Identifying metaphors in discourse data is the basis for metaphor-led discourse analysis. To identify linguistic metaphor in use, Cameron and Maslen (2010, p.102) give an operational definition of linguistic metaphor as “words or phrases that can be justified as somehow anomalous, incongruent or ‘alien’ in the on-going discourse, but that can be made sense of through a transfer of meaning in the context”. This definition indicates that vehicle terms must have both the following attributes: 1) “semantically incongruent with the topic of the discourse” and 2) supporting a transfer of meaning from vehicle terms to topic (Cameron and Maslen, 2010, p.102). The two attributes are identical to incongruity and comparability in MIP and MIPVU. Based on the operational definition, Cameron and Maslen (2010, pp.103-4) adapt MIP (Pragglejaz, 2007) and propose the following metaphor identification procedure:

1. The researcher familiarizes her/himself with the discourse data.
2. The researcher works through the data looking for possible metaphors.
3. Each possible metaphor is checked for:
  - (a) its meaning in the discourse context;
  - (b) the existence of another, more basic meaning;
  - (c) an incongruity or contrast between these meanings, and a transfer from the basic to the contextual meaning.
4. If the possible metaphor satisfies each of the above, it is coded as metaphor, usually by underlining or listing.

Cameron and Maslen (2010, pp.103-4)

In terms of unit of analysis in discourse, Cameron and Maslen (2010) question MIP’s (Pragglejaz Group, 2007) and MIPVU’s (Steen et al., 2010) proposal of taking metaphorically used words as their unit of analysis. They write that “metaphor may extend beyond a single word to surrounding language” (p.108). They suggest identification of vehicle terms such as *flaw in the system* and *opposing sides* rather than metaphorically used words (p.107). They add that “the discourse dynamics approach would identify *flaw in the system* as a metaphor vehicle, whereas an individual word approach would find three metaphorically used words” (p.108). In Deignan’s (2017b, p.416) study, she also identifies a set of words as a single lexical unit rather than split them into separate words since she “took a more phraseological

perspective on text than earlier MIP-led work". Some vehicle terms can be group into multi-word expressions that are listed in dictionaries, such as idiom "*bite off your tongue*", polywords "*of course*" (Steen et al., 2010, p.16). Some vehicle terms such as "*flaw in the system*" and "*in the first place*" (Cameron, et al., 2010, p.119) consist of a set of words that are not listed in the dictionaries so researchers need to make decisions on the beginning and ending of a vehicle terms more intuitively. Following discourse dynamics approach, Cameron and Maslen (2010, p.110) write that metaphorical similes such as "*terrorism...it's not like war*" which are called direct metaphor in MIPVU are also identified since there is incongruity between vehicle term (*like war*) and the topic (*terrorism*). Cameron and Maslen (2010) also discuss other issues such as the role of etymology and personification. Regardless of the decisions researchers made during each step of metaphor identification, they write that it is important to keep notes on the decisions and follow them consistently across the data and researchers to ensure trustworthiness which is proposed by Schmitt (2005) in metaphor identification. In my study, I borrow the term 'vehicle terms' from the discourse dynamics framework for metaphor (Cameron, 2010a) but I choose lexical units rather than a set of words whose beginning and ending are decided intuitively as the unit of analysis to ensure replicability of metaphor identification. In this study, I decide the beginning and end of a lexical unit with the help of selected dictionaries.

#### **4.2.2 Vehicle Grouping Coding and Topic Coding**

After vehicle terms are identified, the next step is vehicle grouping coding and topic coding. Vehicle terms are coded into different groups according to their semantic meanings (Cameron et al., 2009). For instance, Cameron et al. (2010, p.126) write that "*fight*" in example "*a fight for the future of the country*" and "*win*" in the example "*we have to win*" share similar semantic meaning and are grouped in the *FIGHT* grouping. Cameron (2007) writes that by grouping vehicle terms, researchers capture the local level of metaphor use. However, the process of vehicle grouping is not straightforward and rather interpretative (Cameron et al., 2010). Cameron et al. (2010) write that there are two approaches to vehicle grouping labelling: designing new labels and using labels from previous studies. When creating new grouping labels, they write that "A guiding principle is that the label should cover all the vehicles included in the set and, as far as possible, only those" (p.124). For example, they write that vehicle grouping *TARGET* rather than vehicle grouping *MILITARY* is more appropriate to label instances of vehicle terms

“*target*” since *MILITARY* is at too high level of generality (p.124). When using previous studies’ grouping labels, they write that researchers should make sure that they tailor the labels to their discourse data. For instance, “*barrier*” was categorized into *BUILDING* by Charteris-Black (2004, p.73) but into *JOURNEY* by Berentson-Shaw (2018, p.53). Whether labelling *barrier* as *BUILDING* or *JOURNEY* depends on researchers’ discourse data. Two approaches of vehicle grouping labelling are supplementary. Researchers can take labels from previous studies as a starting point and create their labels when necessary or create labelling in a bottom-up fashion and borrow from others’ labels when necessary (Cameron et al., 2010). In my study, I follow the bottom-up fashion to group my vehicle terms. Cameron et al. (2010) also suggest organizing vehicle groupings following a recursive procedure. At the first round of vehicle grouping, Cameron et al (2010, p.122) suggest giving a second candidate vehicle grouping for vehicle terms that may need further discourse evidence, for instance, giving vehicle grouping 1 *MOVEMENT* and vehicle grouping 2 *CONTAINER* for “*comes into*”. As groupings proceed, they write that researchers can decide whether to integrate or subdivide vehicle groupings to make them better to represent patterns and themes in the discourse. Cameron and Maslen (2010) claim that organizing category integration with subdivisions can better overcome the problem of overlap and allow more adequacy in entailment analysis. For instance, White (2003) shows that there are three possible types of *ORGANISM* grouping: *PLANT*, *ANIMAL* and *HUMAN BEING*. He claims that “all three sub-domains share common or overlapping features so that certain metaphorical expressions could be assigned to two or even three of these” (p.136). He adds that there are also some properties being exclusive to certain subdivisions such as intellectual property of human being. There are other vehicle groupings that share both similar and different properties, for instance, *GAME*, *SPORTS* and *WAR* grouping. Koller (2003) writes that it is better to integrate *GAME* and *SPORTS* but keep *WAR* separate. A set of metaphors relating to *WAR* emphasized competitive and conflicting attributes and involved death while *GAME/SPORTS* highlighted rule-bound and competitive but less aggressive features without death (Koller, 2003; Ritchie, 2017), as shown in Table 4.1.

**Table 4.1** Comparison of attributes among *GAME*, *SPORTS* and *WAR*

<b>Metaphor</b> <b>Attributes</b>	<b>Game</b>	<b>Sports</b>	<b>War</b>
Competition	Yes	Yes	Yes
Rule-bound	Yes	Yes	No
Cooperation	No	Yes	Yes
Involving death	No	No	Yes
Involving violence	No	No	Yes
Playfulness	some extent		

**Examples from** Koller (2003) and Ritchie (2017)

In addition to categories integration, Cameron et al (2010) also suggest subdivisions of certain general metaphors to make the groupings adequate to accommodate the variety of vehicle terms they contains. For instance, they write that *MOVEMENT* grouping can be subdivided into “*MOVEMENT (SOURCE)*”, “*MOVEMENT (PATH)*” and “*MOVEMENT (GOAL)*” (p.123). Regardless of the approaches researchers follow to adapt their vehicle groupings, Cameron et al. (2010) write that it is important for them to code similar items consistently especially within large-scale data and collaboratively code with other analysts for cross-check.

Cameron et al. (2009, p.74) write that “The topic of a linguistic metaphor is the real world referent of the vehicle word or phrase”. When organizing topic groupings for a large number of vehicle terms, they suggest that it is more practical to only use a limited set of key discourse topics that are relevant to research questions and research topics to code the vehicle terms. For instance, they category all their vehicle groupings into four key topics: “*responses to terrorism*”, “*terrorism*”, “*communication about terrorism*” and “*other*” (p.24). Cameron (2007) claim that systematic metaphors emerge during the process of bringing together a set of vehicle terms that related to the same topic. For instance, Cameron et al. (2010, p,131) write that by assigning a set of vehicle terms such as “it is a form of bullying” and “hit and run” to the topic “*terrorism*”, systematic metaphor *TERRORISM IS VIOLENT PHYSICAL ACTION* can be formulated.

This key topic coding which works well in Cameron et al.’s (2010) data may not work in other types of discourse that involve various topics with similar importance. Thus, researchers should tailor topic coding to their data

to better link local level of metaphor use to discourse level. To ensure the rigor of systematic metaphor approach, vehicle grouping coding and topic coding should also use collaborative discussion and be cross-checked by other analysts (Maslen, 2017).

### 4.3 My Metaphor Identification Approach: Adapted MIP

#### 4.3.1 Revisions of MIP and the Rationale for Using Learners' Dictionaries

##### Revisions of MIP

After reviewing and comparing three metaphor identification approaches, I decide to adapt MIP (Pragglejaz Group, 2007) to make it more workable for metaphor identification in my corpora. Steen et al. (2010) write that MIP has focused on identifying the most frequent and typical category of metaphor, which they called indirect metaphor. Following MIP, I also identify indirect metaphors. My revisions of MIP consist of five points. Each point is discussed with examples from my data:

- 1) I remove the role of etymology as one possible factor in identifying basic meaning of lexical units. Even when some ambiguous cases arise, I do not take etymology of basic meanings into consideration. Following adapted MIP, *scapegoat* in the example *The China Scapegoat* is not a metaphor since it does not have a more basic contemporary meaning.
- 2) I interpret lexical units as word classes rather lemmas. That is, basic meaning and contextual meaning of lexical units are established within word class boundary. Following adapted MIP, *peak* in the example *the protectionism arising during this particular crisis may have peaked* is not a metaphor since the meaning of *peak* as a noun cannot be the basic meaning of *peak* as a verb.
- 3) I use external sense inventories that are slightly different from the ones used in MIP. In addition to MEDAL<sup>10</sup>, I also check *Longman Dictionary of Contemporary English* (LDOCE) to find typical and contemporary use of a word. *Cambridge Dictionary Business English*<sup>11</sup> are also referred to

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<sup>10</sup> Online available freely at <https://www.macmillandictionary.com/>

<sup>11</sup> Online available at <https://dictionary.cambridge.org/dictionary/business-english/>

when identifying contextual meaning of specialist terminology in economic/trade field.

- 4) I give explicit guidelines for using selected dictionaries to decide the boundaries of multi-word units.
- 5) I do not use MIP on every word and exclude prepositions and delexical verbs (e.g. *make, on*) following Deignan et al. (2019).

### **Rationale for Using Learners' Dictionaries**

As mentioned above, two learners' dictionaries, MEDAL and LDOCE, are used in adapted MIP to assist identifying the unit of analysis, basic meaning and contextual meaning. Learners' dictionaries are used in metaphor identification since they attempt to give central, typical and contemporary uses of a word (Deignan, 2015a). Deignan (2015a, pp.151-3) lists three advantages of using learners' dictionaries as follows:

- 1) learners' dictionaries have a stronger tradition of using corpus data than native speakers' dictionaries;
- 2) they describe the most frequent words of the language, carefully presenting each of their senses, typical collocates and grammatical patterns, with notes about connotation, style and register unlike native speaker's dictionaries traditionally covering 'hard' or specialist words, and sometimes giving some history;
- 3) they give a truer picture of the way that words are used, from corpus evidence.

Despite the advantages of using a learner's dictionary in metaphor identification explained by Deignan (2015a), scholars such as MacArthur (2015) criticize this practice. MacArthur (2015) uses MEDAL to test whether a number of speaking verbs used to activate "the act of writing". She identifies verbs 'saying' used with a potentially metaphorical sense in transcript of a feedback discussion between a university lecturer and an undergraduate student. She writes that the first sense of 'say' in MEDAL "does not really tell us whether it is speech or writing or both that is being specified here" (p.130). She also writes that MEDAL only provides "metaphorically-expressed, pedagogically-oriented definitions, aimed at non-native speakers of English" so "[it] is not a good dictionary for the purpose of looking for precise definitions of the basic meanings of words" (p.134). It is true that MEDAL or other learners' dictionaries have limitations. They don't help to identify a more basic senses in some cases, for instance, those that

have general meanings but have separate senses in dictionaries such as *have*, *design*. For instance, the description sense of *have* in examples such as *have dark eyes* and possession sense in examples such as *have a car* are separate senses in MEDAL. However, MEDAL does not tell us whether there is semantic gap between these two senses. They also don't tell the exact categories multiword expressions belong to, which makes the decision of unit of analysis less straightforward. Further, learners' dictionaries may not be helpful in identifying contextual meaning of business specialist terminology in my corpora such as *lending* as a noun in the example *strengthening their lending capacities in terms of providing crisis assistance* from my data.

Learners' dictionaries are not always in line with theoretical views since they are designed for language learners rather than metaphor researchers. However, it doesn't mean that learners' dictionaries are not valuable for metaphor researchers (Dorst and Reijniere, 2015). Dorst and Reijniere (2015) write that metaphors identified with the help of learner's dictionaries and native speaker's dictionaries are the same in some cases. They argue that "the choice of dictionary should depend on the goal of the analysis rather than the native speaker status of the analyst or the person producing the text" (p.142). They also add that which dictionaries to use depends on the texts being analysed. For instance, they write that if studying metaphor use in Shakespeare, a native speaker's dictionary may be more useful since a native speaker's dictionary gives etymology of a word and is useful to study non-contemporary use of metaphor in Shakespeare's work. Since I study metaphor use in popular economic discourse, contemporary corpus-based learners' dictionaries are more useful for me. In my study, I use MEDAL and LDOCE in parallel in my study, which is different from the practice of MIPVU which only checks LDOCE as a second opinion when there is conflation of meaning in MEDAL. I use both dictionaries in parallel since two dictionaries can provide more possibilities on issues such as candidate basic meanings and single entry of multi-word expressions. For instance, if using MEDAL as the main dictionary, *rule out* in the example from my data *One option they should swiftly rule out is to provide long-term nationalisation* is not a metaphor but is a metaphor if using LDOCE in parallel. There is only one sense of *rule out* 'to stop considering something as a possibility' in MEDAL but three senses in LDOCE. Among the three senses, sense 3 'to state that someone will not be able to take part in a sports event' can be used to establish the more basic meaning of *rule out*.



MEDAL and LDOCE may be insufficient to identify lexical units without contextual meanings in the two dictionaries. When contextual meaning of a lexical unit cannot be found in the two dictionaries, Steen et al. (2010, p.34) write that there are two possible approaches to tackle this issue: 1) “use other preferably specialized dictionaries to find out the specific contextual meaning of a term”; 2) “assume that metaphor is metaphor to general language user”. They write that as a general language user, we may not be able to establish the contextual meaning of a term when there is no contextual meaning identified with the contemporary dictionaries but we may establish a contextual meaning at non-technical level based on the basic meaning. They follow the second approach and suggest marking this kind of specialist terminology as metaphor-related word with special code “WIDLII”. Since their data cover different registers, it is reasonable for them to follow the second approach to identify metaphor for general language users. However, as mentioned by Skorczynska and Deignan (2006) in Section 2.4, the target readers of popular economic discourse are both experts and non-experts. Metaphor for both target audiences need to be identified in my study so I follow the first approach and use a learner’s dictionary for business purposes *Cambridge Dictionary Business English* to find out the contextual meaning of a lexical unit such as *crisis-hit* from my data at technical level. For instance, with the help of *Cambridge Dictionary Business English*, I chose ‘experiencing a difficult financial situation’ as the contextual meaning of *crisis-hit* in the example *the crisis-hit EU* from my data.

### **Decisions on boundaries of multi-word units**

The use of dictionaries to decide types of multi-word expressions in my corpora is further discussed in Chapter Five. In this section, I explain my decision-making on lexical units of multi-word expressions based on previous reviews.

Boundaries among multiword expressions are not completely clear as Deignan (2015b, p.13) writes that:

there is a continuous cline between regular collocations, more fixed sets, such as idiomatic expressions, through to phrasal verbs and polywords such as *of course*, with no gap or identifiable point at which a line can be drawn to separate lexical units from groups of individual words that happen to collocate regularly.

That is, they can be regarded as collocations with different degrees of fixedness in a spectrum. Which point of the spectrum the multi-word

expressions belong to is interpretative. For instance, Adelnia and Dastjerdi (2011) follow Baker's (1992, p.63) view that "[phrasal verbs have] frozen patterns allowing little or no variation in form" and treat phrasal verb as one category of idiom. However, both MIP and MIPVU treat idioms differently from phrasal verbs. As is mentioned in Section 4.1.2, both approaches treat each component of an idiom as a separate unit.

As is mentioned by Veale et al. (2016) in Section 4.1.2, different decisions on decomposability/non-decomposability of multi-word expressions can lead to different results of lexical units and disagreements on the contextual and basic meanings of the lexical units. Here I discuss my decision-making on decomposability of five categories of multi-word expressions. Decision-making on lexical units of polywords such as *of course*, proper name such as *United Kingdom*, phrasal verbs and prepositional verbs are relatively straightforward. Following MIP, I treat polywords, proper names and phrasal verb as a single lexical unit. Following grammatical rules, I separate phrasal verb from prepositional verb in dictionaries and treat each component of prepositional verb as a separate unit.

I treat compounds with separate words as separate lexical units without taking their stressing pattern into consideration. Following the practice of MIPVU, my decision-making on the decomposability of compounds with two hyphenated words depends on whether they are conventional or novel use, which can be decided with the help of dictionaries. If a compound is a conventional use, I treat it as a single lexical unit. If it is novel, I treat it as separated units. Following MIP, I tend to regard idioms in my corpora as semantically decomposable but also allowing some flexibility for exceptional cases. The rationale of treating most idioms as decomposable is further explained as follows.

Moon (1998) writes that whether interpreting idiom as decomposability or non-decomposability depends on the researchers' own definition of idiom. Fernando and Flavell (1981, p.19) add that "idiomaticity is a phenomenon too complex to be defined in terms of a single proper". For instance, Wood (1986, p.2) defines idiom as "a complex expression which is wholly non-compositional in meaning and wholly non-productive in form". Nattinger and DeCarrico (1992, p.33) hold similar view with Wood (1986) and treat idiom as "complex bits of frozen syntax, whose meanings cannot be derived from the meaning of their constituents". Following these definitions, idioms tend to be non-decomposable. However, the non-decomposability of idiom is also

challenged by other scholars such as Gibbs and Nayak (1989) and Langlotz, (2006). Gibbs and Nayak (1989, p.104) propose “idiom decomposition hypothesis”, which means idioms are assumed partially decomposable. They claim that “idiom phrases exist on a continuum of analysability from highly decomposable to semantically non-decomposable” (p.107). That is, idioms have a cline of decomposability. This is a reasonable way to look at the complex idiomaticity in language. Gibbs and Nayak’s (1989) understanding of partially decomposable idioms also allows other possibilities of idioms and thus is theoretically more encompassing. Langlotz (2006, p. 36) writes that

the decomposition hypothesis argues that a great number of idiomatic constructions are semantically decomposable or analysable with the specific meanings of their parts contributing independently to their overall figurative meanings.

Gibbs and Nayak (1989) add that degrees of idiom decomposability are determined by the idioms’ semantic transparency and syntactic productivity. They also write that the higher degree of semantic transparency an idiom has, the more likely it has syntactic productivity. For instance, they explain that each component of “*lay down the law*” have a direct relation to its overall meaning enforcing the rules (p.105). They call this type of idioms as “normally decomposable” (p.105). They find that this type of idiom tends to have more syntactical productivity (p.105). For example, they write that *lay down the law* can be passivized without changing its original meanings. Gibbs (1993) writes that there are also idioms whose component parts have a metaphorical relation to the holistic meaning of the idiom such as *spill* in *spill the beans* referring to revealing, which is called “abnormally decomposable” idioms by Gibbs and Nayak (1989, p.106). Gibbs (1993) claims that *spill* in the idiom maps the act of pouring liquid out of a container onto the act of letting out beans, which refers to the materials/information that are revealed. Thus, metaphorical meaning of *spill the beans* is revealing a secret. Gibbs (1993, p.63) adds that *Let off steam* is the same case in which we can easily find its individual parts *let off* and *steam* contributes to “idiomatic referents release and anger”. This type of idioms with a lower degree of semantic transparency tend to have limited syntactic productivity (Gibbs and Nayak, 1989). That is, “abnormally decomposable” idioms such as *spill the beans* allows little or no variation in form since its individual components are not in the same semantic field as their idiomatic referents (e.g. revealing a secret) (Gibbs and Nayak, 1989, p.106). In addition to decomposable idioms discussed above, there are other semantically non-

decomposable idioms each component of which contributes little to the understanding of their idiomatic meaning, for example, *kick the bucket*, *by and large*. In my study, I follow the practice of MIP and treat most idioms whose individual parts can make contributions to its idiomatic meaning as separate units.

#### **4.3.2 Adapted MIP**

To sum up, adapted MIP (Pragglejaz Group, 2007) followed in this research is as follows.

1. I familiarize myself with the discourse data to establish a general understanding of meanings in context (Pragglejaz Group, 2007).

2. I determine the boundaries of lexical units in my data. Multi-word expressions (MWEs) consist of more than one word and can find their entry as a whole in selected dictionaries. I first decide the type of MWEs and then follow pre-defined rules to count lexical units of MWEs. The way I annotate lexical units of five types of MWEs is as follows.

(a) Idioms: idioms tend to be treated as semantically decomposable but also allow some flexibility. I check whether an idiom's components make contributions to its overall meaning by using MEDAL and LDOCE in parallel. If an idiom is regarded as semantically decomposable, I count each component part as a single lexical unit and manually mark each of them with an ID tag. If an idiom is regarded as semantically non-decomposable, I count the idiom as a single lexical unit and mark it with an ID tag.

(b) Polyword: polyword is counted as a single lexical unit. A polyword as a single lexical unit is manually annotated with a POLY tag.

(c) Phrasal verbs and prepositional verbs: There is no distinction between phrasal verbs and prepositional verbs in MEDAL and LDOCE. Decision-making on whether a verb is prepositional or phrasal can be demonstrated using grammatical rules. I break a prepositional verb down and manually give each lexical unit a Prep p tag. I treat phrasal verb as a single lexical unit and manually give it a PV tag

(d) Compound words: The unit of analysis of different types of compound words varies from one to one. I check compounds comprising two hyphenated words in MEDAL and LDOCE. If they such as *low-cost*, *arm-twisting* are listed in these dictionaries, I treat them as a single lexical unit and manually marked it with a Com tag. If they are not listed in these dictionaries, I treat them as separable lexical units and manually mark each

unit with a Com tag. I treat compounds as separate words such as *deep freeze* as separate lexical units and manually marked each unit with a Com tag.

If necessary (e.g. specialist terminologies), I also check Cambridge Dictionary Business English.

3. Each lexical unit is checked for its contextual meaning first and then existence of a more basic contemporary meaning with the help of MEDAL and LDOCE, operationalization of which is further discussed in Chapter Five. If both a contextual meaning and a more basic meaning exist, I check whether there are incongruity and comparability between these two meanings.

4. If yes, mark the lexical unit as metaphor.

Following adapted MIP above, I identified metaphors in 9 randomly sampled texts from my corpora, which helps me establish a general understanding of key discourse topics in my data and provides me guidance on preparing my metaphor inter-coding manual. The 9 sample texts with 3 sample texts from each corpus were selected based on the results of random number generator (<https://www.calculator.net/random-number-generator.html>) since my three corpora following digital number file-naming rule. Results of 9 randomly generated numbers and the title of the 9 texts are presented in Appendix B.3.

After metaphor identification, there are two ways to count metaphors within one clause. Some scholars such as De Landtsheer (2015) count each metaphorically used word and multiword expression within one clause as one instance of linguistic metaphor even though they are from the same vehicle grouping. Other scholars such as Boers (1999), Semino (2002) and Liu (2015) follow an opposite practice. They count different metaphorical words and expressions in a clause and related to the same vehicle grouping as one instance of linguistic metaphor. As mentioned by Semino (2008) in Section 2.3.1, different metaphorical words and expressions from the same semantic field used in close proximity to write about the same topic is one type of metaphor pattern-extended metaphor. In this study, I follow the practice of Boers (1999), Semino (2002) and Liu (2015) in counting the number of metaphorical words and expression in a clause.

## 4.4 Metaphor Annotation Approaches

### 4.4.1 Computational Perspective

Automatic metaphor identification is still a challenging issue in corpus-assisted metaphor studies (Demmen et al., 2015) and natural language processing (Florou, 2013; Shutova, 2013; Gao et al., 2018; Li et al., 2020). There are already two reliable metaphor identification approaches MIP (Pragglejaz group, 2007) and MIPVU (Steen et al., 2010) in metaphor studies but they are not automatic. With regard to metaphor modelling in NLP, Shutova et al. (2013, p.301) write that previous computational metaphor models “rely on task-specific hand-coded knowledge and operate on a limited domain or a subset of phenomena” in a specific type of discourse such as *Wall Street Journal*. CorMet (Mason, 2004) is claimed to be a computational and corpus-based conventional metaphor extraction system which is treated by Shutova (2013, p.277) as “the first system designed to discover source-target domain mapping automatically”. CorMet (Mason, 2004) doesn't rely on hand-based knowledge bases but WordNet (Fellbaum, 1998), which makes it sound promising. However, it still limits in analyzing large corpora of specific metaphor domains and hasn't been further developed since its presentation in 2004. To fill the gap, Shutova et al. (2013, p.301) propose an “open-domain statistical model of metaphor processing in unrestricted text”, which means that the model searches for metaphors from unrestricted domains in general corpus British National Corpus (BNC) without relying on hand-coded knowledge. Shutova et al. (2016, p.160) propose a state-of-the-art metaphor identification method that utilizes both linguistic and visual knowledge since they believe that “vision can play a particularly important role when metaphorically projecting imagery across domains”. They test the performance of their method on two manually metaphor annotated datasets: Mohammad et al.'s (2016) dataset and Tsvetkov et al.'s (2014) dataset. Mohammad et al. (2016) annotate verbs in WordNet (Fellbaum, 1998) for metaphoricity and their dataset consists of only those verbs tagged by at least 70% of 10 annotators as metaphorical or literal use. Shutova et al. (2016) extract 647 verb–noun pairs from Mohammad et al.'s (2016) dataset, 316 of which are metaphorical and 331 literal use. Tsvetkov et al. (2014) create a dataset annotating adjective–noun pairs for metaphoricity and divide it into two parts: a training set and a test set. These two datasets are selected because they have annotated metaphorical and literal use of the same word. Shutova et al. (2016, p.167) claim that their method can be applied to identify metaphors in unrestricted

text in any domain since “it relies on automatically acquired lexical knowledge, in the form of linguistic and visual embedding, and is otherwise resource-independent”. However, in their study, their model only experiments on verb-noun and adjective-noun for metaphoricity. If testing on other types of metaphors, there may be some differences in the performance of their method.

Rather than restricting metaphor detection in limited forms of linguistic context, for instance, only focusing on metaphor in SVO sentence structure or metaphor of certain POS, recent studies on metaphor detection in NLP start to design models for detecting metaphors in complete sentences despite their POS (Gao et al., 2018). This is because the availability of some large-scale metaphor annotated corpora as training dataset for computational metaphor modelling, for instance, VU Amsterdam Corpus (Steen et al., 2010) and TOEFL-corpus (Beigman Klebanov et al., 2018).

Although there is continuous progress in approaches to automatic metaphor identification in NLP (Shutova et al., 2016; Gao et al., 2018; Li et al., 2020), they are still not fully comprehensive and reliable for corpus-linguistic approach to metaphor use in context (Demmen et al., 2015). Shutova et al. (2013, p.305) write that “From an NLP viewpoint, not all metaphorical expressions are equally important”. They add that only those cases “whose metaphorical sense is significantly distinct from its original literal sense and cannot be interpreted directly” are the focus of metaphor detection in NLP (p.305). However, for metaphor identification from corpus linguistic perspective, any cases either highly conventional or deliberately used in a novel way are the target of metaphor identification following reliable metaphorical identification approaches such as MIP and MIPVU. Thus, automatic metaphor identification in large-scale corpora for corpus study are still constrained (Demmen et al., 2015).

#### **4.4.2 Corpus Perspective**

Metaphor identification in large-scale datasets is time-consuming but there are already some metaphor annotated datasets that are licensed for research use. Veale et al. (2016, pp. 64-7) divide them into three groups:

- 1) “categorized collection of metaphors”, for instance, The Master Metaphor List (Lakoff et al., 1991) lists 69 conceptual metaphors that are categorized into four groups (event structure metaphors, mental events metaphors, emotions metaphor and others);

2) “annotation of specific constructions or target expressions”, for instance, TroFi Metaphor Dataset (<http://natlang.cs.sfu.ca/software/trofi.html>) (Birke and Sarkar, 2006) consists of literal and nonliteral usage clusters for 50 English verbs. Based on TroFi, it automatically generates clusters that contains sentences using these words from The 1987-89 Wall Street Journal (WSJ) Corpus Release 1;

3) “full-text annotations”, for instance, VUAmsterdam Corpus (Steen et al, 2010; Krennmayr and Steen, 2017) annotates 187,570 lexical units across all part-of-speech in texts from BNC-Baby corpus comprising four registers (academic, conversation, fiction and news) following MIPVU procedure, which is freely available online.

The first group consists of limited source domains and target domains and metaphor listed doesn't come from natural-occurring discourse. The second group only annotates certain specific metaphors such as verbal metaphor. In the last group, metaphors annotated in VUAmsterdam Corpus come from nature-occurring discourse covering four registers without restricted source domain and target domain. I need to identify metaphors in my own corpora so these corpora with metaphors annotated cannot be used in my research.

As mentioned in Section 2.4.3, there are four approaches to identifying metaphors in large-scale corpus (Nacey et al., 2019):

- 1) starting from target domain/topics (Stefanowitsch, 2006);
- 2) starting from starting from source domain/vehicle terms (Charteris-Black, 2004);
- 3) searching tuning devices of metaphor such as *kind of* (Cameron and Deignan, 2003);
- 4) identifying all possible metaphors in corpus such as VUAmsterdam Corpus (Krennmayr and Steen, 2017).

The first approach can work well for identifying metaphors in specialized corpus with specific topics (Liu, 2015). The second and third approaches are traditional small corpus-big corpus approach. Demmen et al. (2015, p.209) criticize that “[this approach only] enables researchers to find further instances of previously identified expressions”. Veale et al. (2016, p.55) add that this traditional approach may be biased but is acceptable if the research purpose “focuses only on certain culturally, politically and pedagogically interesting metaphor”. The fourth approach is ideal but impractical for



individual researchers since it is quite time-consuming. Koller et al. (2008, p.143) write that “a semantic annotation approach represents a valuable additional tool for researchers interested in analysing the use and function of metaphor in naturally occurring discourse on a large scale”. Demmen et al. (2015, p.209) write that Wmatrix (Rayson, 2008) with UCREL Semantic Analysis System (USAS) tagger (Rayson et al., 2004) can facilitate metaphor identification in large datasets by providing open-ended sets of metaphor candidates within semantic fields. Although Wmatrix is not designed for metaphor analysis, its usability has been discussed and evaluated by various scholars such as Krennmayr (2011), Deignan and Semino (2010), and Hardie et al. (2007) and proven to be a tool that can assist large-scale metaphor identification despite its certain limitations. Although there are still few researchers applying Wmatrix in metaphor identification in economic discourse, Wmatrix (2008) has been used in some metaphor studies in different discourse (Krennmayr, 2011; Demmen et al., 2015), which is further discussed in Section 4.6.

Since my three corpora comprise about 1.3 million words, it is impractical to manually annotate all metaphors in them. Rather than taking a traditional small corpus-big corpus approach which provides a pre-defined list of metaphor, Wmatrix (Rayson, 2008) is applied to assist metaphor annotation in my corpora. Wmatrix is introduced in next section.

#### **4.5 Overview of Wmatrix**

Wmatrix (Rayson, 2008) is a web-based program that can be used for corpus analysis and for assisting metaphor identification. It contains the UCREL semantic analysis system (USAS) taggers (Rayson et al. 2004) which can annotate semantic fields of each word automatically at semantic level and CLAW taggers that can annotate part-of-speech of each word automatically at POS level. It also has other functions (e.g. keyword analysis) at word level, which is similar to other corpus analysis tools that focus on analysis at word level such as WordSmith Tools 7 (Scott, 2017), CQPweb (a web-based corpus analysis system) (Hardie, 2012), AntConc (Anthony, 2019), LancsBox (Brezina et al., 2020) and Sketch Engine (Kilgarriff et al., 2014).

Before uploading my three corpora with 2292 files into Wmatrix, I concatenated them by using ‘cat’ command in terminal of my Mac. For instance, I performed the command as follows: ‘cat 1.txt 2.txt > 12.txt’. Then the content of 1.txt and 2.txt are concatenated automatically and put into a

new file named 12.txt. In my study, I concatenated the 2292 files with 'cat' command and obtained 3 files as three corpora. After uploading the 3 files into Wmatrix, I conducted all my analysis in the Advanced Interface of Wmatrix because it has many more functions such as frequency list of words, POS and USAS tag, and concordance analysis and keyness analysis at three levels. Wmatrix provides 12 reference corpora (referring to <http://stig.lancs.ac.uk/cgi-bin/wmatrix3/help.pl#norm>) such as BNC Sampler written and British English 2006 (BE06) and allows for adding new reference corpora.

Rayson (2008) writes that the USAS tagset in Wmatrix is originally based on the Longman Lexicon of Contemporary English (McArthur, 1981) and later revised to contain 21 major discourse fields as shown in Figure 4.1, which has been expanded into 232 sub-fields (Archer et al., 2002). An upper-case Letter is used to represent the top-level semantic fields and digital numbers are used to indicate sub-fields (Archer et al., 2002).

A general and abstract terms	B the body and the individual	C arts and crafts	E emotion
F food and farming	G government and public	H architecture, housing and the home	I money and commerce in industry
K entertainment, sports and games	L life and living things	M movement, location, travel and transport	N numbers and measurement
O substances, materials, objects and equipment	P education	Q language and communication	S social actions, states and processes
T time	W world and environment	X Psychological actions, states and processes	Y science and technology
Z names and grammar			

**Figure 4.1** Main semantic categories in the USAS tagset (Archer et al., 2002, p.2)

When USAS runs on a text in Wmatrix, each word in the text is tagged with corresponding semantic tags and POS tags, as shown in the Figure 4.2. The examples in Figure 4.2 are from the text *Airbus and Boeing could both*

*lose battle of the skies* from UK popular economic discourse corpus. Figure 4.2 shows that there are three columns: the first column listing POS tags, the second one listing the words in the running text and the third one listing USAS tags. Some words have more than one semantic tag. In the tag set of each word, a slash '/' is used to indicate double membership of categories, which means a word has two categories at the same time (Archer et al., 2002; Rayson, 2008). For instance, *bell*, an object that can make a ringing sound, is assigned with double membership of O2 *Objects Generally* and X3.2 *Sensory: -sound*. Archer et al. (2002, pp.1-2) also write that letters f, n, m represent "female, neuter and male" and "a left square bracket followed by 'i' indicates a multi-word unit".

AT	The	Z5
NN1	bell	O2/X3.2 O4.4
VHZ	has	Z5 A9+ A2.2 S4
VVN	sounded	X3.2 Q2.2 A8 N3.1%
II	on	Z5
DD1	another	A6.1- N5++
NN1	round	N5 K5.1 M1 F2 B3 F1 K2% G3%
II	in	Z5
AT	the	Z5
NN1	slug	L2mfn G3 F2 E3-
NN1	fest	Z99
II	between	Z5
AT	the	Z5
NN2	worlds	W1 S5+c A4.1 N5+
MC	two	N1 T3 T1.2
JJ	dominant	S7.1+ A11.1+ A11.2+
NN	aircraft	M5fnc
NN2	manufacturers	A1.1.1/S2mfc

**Figure 4.2** A screenshot of a text from UKPEDC with USAS and POS tags

Hardie et al. (2007) write that the ordering of USAS tags in each word's list of semantic tags is a reflection of the likelihood of the candidate's semantic fields. The semantic tag in the first place of each word is the most likely tag in a given context so Wmatrix only considers the first tag from each word's tag list for frequency analysis, concordance analysis and keyness analysis (Hardie et al., 2007; Krennmayr, 2011). For instance, the first tag in the tag string of *party* is *K1/S1.1.3+* that represents the celebration/entertainment sense and the second tag is *G1.2* that represent political party. When conducting frequency list at semantic level sorted by USAS tags, *party* is assigned to the semantic category K1 as shown in Figure 4.3 since this category is in the first place.

Word	Semtag	Frequency	Relative Frequency	
holiday	K1	5	0.00	Concordance
played	K1	6	0.00	Concordance
plays	K1	7	0.00	Concordance
break	K1	8	0.00	Concordance
audience	K1	13	0.00	Concordance
breaks	K1	22	0.01	Concordance
play	K1	26	0.01	Concordance
party	K1	39	0.01	Concordance

**Figure 4.3** A screenshot of USAS tags assigned to the word *party* when conducting frequency analysis at semantic level

However, when checking the 39 concordance lines of *party*, 35 of them represent political party and should be assigned with G1.2 in the first place. Koller et al. (2008, p.153) suggest “perform[ing] the domain pushing function to change the ranking of tags”. To change the ordering of each word’s USAS tag list, I use ‘Domain Tag Wizard’ feature in Wmatrix to increase the likelihood of the preferred semantic fields. For instance, after enter G1.2, G or G1 as preferred semantic fields in *Domain Tag Wizard*, the first tag in the tag string of *party* becomes G1.2 and the tag K1/S1.1.3+ moves to the second place. When conducting frequency list sorted by USAS tags in UKPEDC, *party* is assigned to the semantic category G1.2 as shown in Figure 4.4 since this category is in the first place.

Word	Semtag	Frequency	Relative Frequency	
policymakers	G1.2	17	0.01	Concordance
human_rights	G1.2	18	0.01	Concordance
populist	G1.2	18	0.01	Concordance
unions	G1.2	18	0.01	Concordance
elections	G1.2	19	0.01	Concordance
centre	G1.2	35	0.01	Concordance
republican	G1.2	36	0.01	Concordance
union	G1.2	37	0.01	Concordance
party	G1.2	39	0.01	Concordance

**Figure 4.4** A screenshot of USAS tags assigned to the word *party* after using *Domain Tag Wizard* function

Wmatrix tutorial (on <http://ucrel.lancs.ac.uk/wmatrix/> ) also introduces that it allows for adding new words, multi-word-expressions and introducing a completely new semantic tag to USAS dictionary by performing *My Tag Wizard function*. To create my own supplementary word list, I can find words from unknown words list and edit words that are incorrectly tagged by USAS dictionary. If there are words like *globalization* in the unknown word list or words I think are incorrectly tagged, I can copy the line containing the unknown words receiving a Z99 tag or the incorrectly tagged words into a local file and edit the tags. I then uploa the local file to the Wmatrix and

merge it with the standard Wmatrix dictionaries. I can also create totally new semantic tag or a personal multi-word-expression list for my data following similar procedures mentioned above. In brief, Wmatrix's allowing for extending the USAS dictionary is valuable for metaphor identification.

Krennmayr (2011, p.194) claims that the function of key semantic field analysis by comparing to a reference corpus such as BNC sampler "gives a good indication of the overall content and the most prominent topics of the text". Detailed studies on the overused semantic fields may help to find potential source domains or vehicle terms (Krennmayr, 2011). For instance, she conducts a key domain analysis to find overused semantic fields in a text from *Guardian* on topic of Palestinian-Israeli conflict in reference to BNC-Baby Written. One of the overused semantic fields is *architecture, houses and buildings* which is obviously different from the topic of the text and is regarded as source domain candidate (Krennmayr, 2011). She then conducts concordance analysis to check the occurrences in this semantic field following MIPVU (Steen et al., 2010) and eleven out of twelve occurrences are labelled as metaphor. Further discussions on metaphor studies with the help of Wmatrix are presented in next section.

#### **4.6 Metaphor Analysis Using Wmatrix**

Due to its great value in facilitating metaphor analysis in large-scale datasets, Wmatrix has been used in a growing body of corpus-assisted metaphor studies (Deignan and Semino, 2010; Demmen et al., 2015; Hardie et al., 2007; Semino et al., 2017).

Hardie et al. (2007) re-analyze metaphor analysis of two earlier studies by using the USAS tool in Wmatrix (Rayson, 2008). They re-analyze Semino and Swindlehurst's (1996) study on MACHINE, WAR and ORGANISM metaphor in Ken Kesey's *One Flew Over the Cuckoo's Nest* and Koller's (2004) study on the same metaphors in business magazines. For the first study, Hardie et al. (2007) first generate an electronic version of the novel and carry out key semantic domain analysis in reference to the Imaginative Writing section of BNC sampler with the help of Wmatrix. They find that the most overused semantic domain is 'Medicines and Medical Treatment', which indicates the topic of the novel. Since they want to compare similar metaphors in the novel studied by Semino and Swindlehurst (1996), semantic tag O2 *Objects generally* which includes expressions under MACHINE source domain and N3.2+ *Size: Big* among the top 8 overused domains are discussed. They examine sets of expressions under semantic tag O2 *Objects generally* and

find that around half of them are literally-used and non-literally-used respectively, which supports Semino and Swindlehurst's (1996) analysis. In order to test Semino and Swindlehurst's (1996) claim of the cut-off point of the novel, Hardie et al. (2007) divide the novel into two halves. By conducting key semantic analysis, Hardie et al. (2007) find that semantic tag O2 *Objects generally* are the second most overused domain in both halves. They also find that more metaphorically used expressions are in the first half than in the second half under MACHINE source domain, which is similar to Semino and Swindlehurst's (1996) analysis. Hardie et al. (2007) also study WAR source domain that is not discussed in Semino and Swindlehurst's (1996) study. They find that G3 *Warfare, defence and the army; weapons* is overused but expressions under this domain are mostly used literally.

In a second study, Hardie et al. (2007) also generate an electronic version and conduct key semantic domain analysis in reference to BNC Sampler CG Business with the help of Wmatrix. Since Koller (2004) identifies all potential metaphors used to describe businesswomen, Hardie et al. (2007) utilize broad-sweep search function in Wmatrix to find all possible tags related to MACHINE, WAR and ORGANISM domain to overcome the limitations of Wmatrix program that only considers a word's first tag when categorizing semantic fields. Then they compare MACHINE, WAR and ORGANISM metaphor use in two genres. Hardie et al. (2007) suggest the potential applicability of using Wmatrix in analysing metaphorical patterns in discourse.

Deignan and Semino (2010) conduct key semantic field analysis by using USAS tool in Wmatrix to compare a speech by Tony Blair with the context-governed section of the spoken part of the BNC sampler as a reference corpus. They find that 44 semantic fields are overused with a log likelihood value of 6.63. The top five semantic fields are *Politics, Alive, Education in General, People and Government*, which gives an overview of topic in the Blair's speech. They focus on semantic field related to movement which consists of nine more specific semantic fields, for instance, M1 *Moving, coming and going*. They examine overused semantic fields under *Movement* tag and find that four sub-domains are overused: M1 *Moving, coming and going*, M2 *Putting, pulling, pushing, transporting*, M6 *Location and direction* and M8 *Stationary*. They find that M6 *Location and direction* is overused with the highest value of log likelihood (17.69), which indicates that "Blair uses expressions to do with location and direction unusually frequently in the speech" (p.179). After further checking the concordance of occurrences in

M6, they find that 63% of the occurrences are used metaphorically, which indicates Blair's frequent use of metaphors related to location and direction. Deignan and Semino (2010, p.176) also suggest "examin[ing] all semantic fields that are likely to correspond to metaphorical source domain, whether or not they are overused to a statistically extent".

Demmen et al. (2015) investigate the use of VIOLENCE metaphor for cancer and end-of-life by different stakeholders based on a 1.5-million-word Metaphor in End-of-life Care Corpus (MELC) with the help of Wmatrix. They write that USAS tagger in Wmatrix "can be used to search for all expressions belongs to particular semantic fields that are likely to correspond to the source domains of CMT" (p.209). Their corpus consists of two parts: circa 300,000 words semi-structured interviews and 1.2 million words sampling from online forum. Since they focus on VIOLENCE metaphor, they first identify seven semantic domains that are potential for metaphorical expressions of VIOLENCE by using USAS tagger in Wmatrix. Then they conduct concordance analysis of occurrences under the seven domains. Their concordance results were exported to *Microsoft Excel* spreadsheets for manual metaphor identification following MIP (Pragglejaz Group, 2007). They identified 2,268 VIOLENCE metaphors relevant to cancer and end-of-life in the MELC and find that VIOLENCE metaphors are used differently by patients, careers and health professionals. For instance, they find that VIOLENCE metaphor is used by patients "to express different topics, especially the patients' relationships with their illness and other people, and processes of coping with the illness and with the treatment" (p.221).

Semino et al. (2017, p.61) also compare use of VIOLENCE metaphor and JOURNEY metaphor by patients and health professionals based on "500,134 words of online forum contributions by patients on a UK-based website dedicated to cancer" and "253,168 words of online forum contributions, blog entries and comments by health professionals on a UK-based website" with the help of Wmatrix. First, three of their team members manually identified metaphor of a 15,000-word sample from each corpus following MIP (Pragglejaz Group, 2007). They then formed a list of linguistic expressions with corresponding semantic fields that are to be investigated in two complete corpora, which follows a small corpus-big corpus approach. However, their later searching not only focused on a list of the pre-selected words. They also searched for linguistic metaphors within relevant semantic tags in two complete corpora with the help of Wmatrix. For instance, they searched for linguistic metaphors within semantic tags relevant to VIOLENCE

metaphor and JOURNEY metaphor in their data with the help of Wmatrix. In this way, they get an open-ended set of metaphor candidates under both metaphor domains. The procedure of their metaphor identification assisted by Wmatrix is followed in this study. In their study, Semino et al. (2017) find that VIOLENCE metaphor and JOURNEY metaphor are used more frequently by patients than health professionals. They also find that both VIOLENCE metaphor and JOURNEY metaphor can be used positively and negatively. They claim that “a blanket rejection of VIOLENCE metaphor and uncritical promotion of JOURNEY metaphor would deprive patients of positive functions of the former and ignore the potential pitfalls of the latter” (p.60).

It can be found that Wmatrix has been applied in different contexts such as fiction discourse, health and care discourse and economic discourse in aiding metaphor identification following similar procedures:

- 1) identifying key semantic fields based on comparison to a reference corpus (Deignan and Semino, 2010) or finding most relevant USAS tags for studied vehicle groupings based on the results of manual metaphor identification of sample texts (Demmen et al.,2015) ;
- 2) carrying out concordance analysis at semantic level;
- 3) checking for metaphoricity of metaphor candidates under the concordance lines.

Wmatrix appears to be valuable for assisting metaphor identification with USAS tagger, the function of broad-sweep search and domain push. Combining with concordance analysis of occurrences under relevant semantic tags, an opened-ended set of metaphorical expressions would be available, which overcomes limitations of searching for pre-selected expressions in traditional small corpus-big corpus approach (Charteris-Black, 2004; Cameron and Deignan, 2003).



## **Chapter 5 Operationalization of Adapted MIP and Use of Wmatrix**

The aims of this chapter are threefold. First, I explain how adapted MIP is applied to identify metaphors in my corpora with the help of selected dictionaries and how vehicle groupings are conducted based on linguistic metaphors that are identified by following adapted MIP. Second, I explain how Wmatrix can function as a filter to find metaphor candidates in my corpora following adapted MIP. Third, I explain how I conduct inter-rater reliability test and report reliability test results of metaphor identification and vehicle grouping in my data. Reliable inter-coding process of metaphor identification and vehicle groupings in this chapter provides basis for metaphor analysis of my research.

### **5.1 Procedure for Using Learner's Dictionaries in Adapted MIP**

In Section 4.3.2, I presented complete metaphor identification procedure in my data. Following this procedure, I need to identify the unit of analysis, establish contextual meaning of the unit, establish basic meaning of the unit, and decide whether two meanings are incongruous but comparable step by step after having a general understanding of the entire text. As is mentioned in Section 4.3.1, two online learner's dictionaries MEDAL and LDOCE are used in parallel to facilitate each procedure of adapted MIP and make adapted MIP more reliable. However, dictionaries only provide us definitions rather than decisions, as mentioned by Dorst and Reijniere (2015) in Section 4.1.2. Thus, this section explains my procedures for using the dictionaries to make decisions on each step of adapted MIP, with examples from my data. Meanwhile, I also describe problems encountered during each step of metaphor identification using dictionaries and explain my solutions.

#### **5.1.1 Boundaries of Lexical Units**

After having a general understanding of the entire text, identifying boundaries of lexical units is the first step in adapted MIP. As is mentioned in Section 4.1.2, there are no problems in deciding lexical units of single orthographic words, but problems arise in making decisions on multi-word expressions. This section discusses procedures for using the dictionaries to assist decision-making on the categories a multiword expression belongs to.

Six categories of multi-word expressions are discussed here: idioms, phrasal verbs, prepositional verbs, polywords, compound words, proper names.

The dictionaries are not perfect but a good compromise for decision-making on the category a multiword expression belongs to. As is mentioned in 4.3.1, MEDAL and LDOCE give a multi-word expression a single entry but do not tell its exact type. For instance, both prepositional verbs such as *look at* and phrasal verbs such as *get back* have a single entry and are labelled as phrasal verb in two dictionaries. When a multiword expression is marked as a phrasal verb in the dictionaries, I follow grammatical rules to separate prepositional verbs from phrasal verbs. For instance, *went through* in the example *the United States trade representative, who went through a litany* is treated as prepositional verbs since the noun phrase *a litany* in this example cannot be replaced by a pronoun (*\* the United States trade representative, who went it through*). *prop up* in the example *accused the nation of protectionism to prop up its domestic industry* is treated as a phrasal verb since it can pass the test of pronoun replacement (*accused the nation of protectionism to prop it up*). When testing whether a phrasal verb listed in the dictionaries should be treated as a prepositional verb, I also found some examples of intransitive verbs standing alone with the structure of verb + adv + prep in my data, for instance, *chipped away at* in the example *it also chipped away at trust between nations*. They are treated as phrasal verbs.

Both polywords and idioms have a single entry and are labelled as phrase in two dictionaries. When a multiword expression is marked as phrase in the dictionaries, I check it in Kilgarriff's BNC word frequency list (on <http://www.kilgarriff.co.uk/BNClists/variances>) which includes 8189 word-part-of-speech pairs occurring 100 times or more in the sample taken from written part of BNC. If the phrase with underscored words such as *in\_line\_with* and *by\_way\_of* in the list, I treat it as a polyword. If the phrase is not in the list, for instance, *in return* and *by the way*, I treat it as an idiom, which can also be checked in Cambridge Dictionary Business English if necessary. Some idioms may not be listed in the dictionaries. For instance, *kick into gear* in example *ties between the two nations have kicked into high gear* cannot be found in the dictionaries but *get into gear* which has the same meaning has its single entry in the dictionaries. However, I still follow the results of dictionaries to decide the types of multi-word expressions so as to keep consistency of identification. Thus, I didn't treat *kick into gear* as an idiom but treat *get into gear* as an idiom.

Sometimes two dictionaries also show different understandings of the entry words or expressions. For instance, *low-cost* in the example *unfairly accuses it of dumping low-cost exports into American markets* cannot be found in MEDAL but can be found in LDOCE. If only using MEDAL as the main dictionary, *low-cost* is not a conventional compound so *low* as an adjective and *cost* as a noun should be counted separately. However, if I use LDOCE in parallel, the unit of analysis is *low-cost* as a compound. I also check some business-related multiword expressions such as *crisis-hit* in Cambridge Dictionary Business English, as mentioned in Section 4.3.1.

After categories of a multiword expression are decided, the units of analysis are counted based on pre-defined rules about decomposability of them, as is discussed in Section 4.3.1. For instance, *chain reaction* in the example *chain reaction of trade protectionist measures* has a single entry in both dictionaries so is treated as a compound with separated words. *chain reaction* is counted as two lexical units without taking stress patterning into consideration since LDOCE only gives stressing pattern of a small number of compounds, which makes decision-making on lexical units of a compound problematic and inconsistent. English is often inconsistent about uses of hyphen. Some compounds with separated words in my data can only find their hyphenated forms in the dictionaries, for instance, *bait and switch* in the example *decided to do the bait and switch trick*. I follow the results in the dictionaries and keep records of it. Thus, *bait and switch* listed in the dictionaries as *bait-and-switch* is treated as a conventional hyphenated compound and is counted as a single lexical unit. Once lexical units are decided, I discuss how I establish contextual meaning of a word with the help of the dictionaries in next section.

### **5.1.2 Establishing Contextual Meaning**

As mentioned by Steen et al. (2010) in Section 4.1.2, most conventional contextual meanings can be found in general learners dictionaries. To establish contextual meaning of business specialist terminology in my data, I refer to Cambridge Dictionary Business English, as mentioned in Section 4.3.1. If the words such as *isulative* as an adjective having no entry in dictionaries, I check the entry of their base forms to establish their contextual meanings. However, some difficulties arise when establishing contextual meanings of novel terms, novel metaphor and words or expressions related to personification, which is discussed as follows.

#### **Novel Metaphor and Novel Terms**

There is a minority of cases whose contextual meaning cannot be determined with the help of the dictionaries: novel metaphor and novel terms. As mentioned by Auwal (2015) in Section 2.4.1, journalists tend to report news in a way that makes target audiences feel that the news is closely related to them. They may use terms that target readers are physically or psychologically familiar with. To ensure relatedness of an event to the target audiences and attract their attention as well, journalists may deliberately use lexis that is familiar to them in a novel way. For instance, *bullet* in citation (1), *football* and *tennis* in citation (2), and *vampire* in citation (3) are lexical items commonly having their entry in dictionaries, but their contextual meaning cannot be established by dictionaries.

- (1) “The truth is, we are loading the gun now,” said one commission official. “Eleven **bullets** now, 47 on August 6.”  
(*Financial Times* 2013)
- (2) China is playing **football** while we're playing **tennis**. (*Wall Street Journal* 2017)
- (3) When doom-mongers predicted that the Great Recession would lead to the **vampire** of 1930s protectionism rising from the dead, they may have been watching the wrong graveyard.  
(*Financial Times* 2012)

These lexical items with no contextual meanings in dictionaries are understood as novel metaphor (Steen et al. 2010; Krennmayr, 2008). Novel metaphors are not the aim of most dictionaries as Deignan (2015b, p.7) writes: “it is not the job of a dictionary to cover all possible meanings of a word”. Deignan (2015b) writes that whether a meaning would be included as a separate sense by lexicographers depends on whether this meaning is sufficiently central and typical, which can refer to concordance data in large corpora to help make decisions. However, Cameron and Deignan (2006) also add that there are no clear cut-off points between conventionalized and novel use by calculating the frequency of citations. When novel metaphors are used more frequently, they may become conventionalized. Thus, I tend to understand conventional and novel metaphor at different ends of a spectrum. I refer to BNC (1994) with the help of Sketch Engine or COCA to establish contextual meaning of novel metaphors, which is explained with the examples in (1), (2) and (3) above. Frequency of their metaphorical use may indicate their degree of novelty.

The 100-million-word BNC (1994) contain 1184 citations of *bullet*. A random sample of 100 citations of *bullet* were checked in context. I found 90 citations of *bullet* were used literally, and 10 citations of *bullet* were used metaphorically. Among the 10 citations, there are 4 citations of conventional compound word having their entry in dictionaries: *magic bullet*, *bullet train*, *bullet point*, as in Figure 5.1. However, no citations were related to international trade strategies. Thus, I need to use my intuition and refer to some expert knowledge to establish the contextual meaning. Based on background of Sino-EU solar panel trade disputes, I established the contextual meaning of *bullet* as *EU member states adopting 47% tariffs to fight against unfair trade practice*.

	<input type="checkbox"/> Details	Left context	KWIC	Right context ↑
1	<input type="checkbox"/> ⓘ	Written miscell... concern and realise that no one has a 'magic	<b>bullet</b>	' solution to the software crisis. </s><s> He
2	<input type="checkbox"/> ⓘ	Written books a... v's pop platitudes. </s><s> In 1990 SUGAR	<b>BULLET</b>	(pictured opposite) are an Edinburgh trio fig
3	<input type="checkbox"/> ⓘ	Written books a... tire; then he would be in control.' </s> <s>	<b>Bullets</b>	are funny things; they rarely do what is exp
4	<input type="checkbox"/> ⓘ	Written books a... urther even one of the eight twelves' living	<b>bullets</b>	could have cut through the atmosphere cre
5	<input type="checkbox"/> ⓘ	Written books a... service in the form of several small calibre	<b>bullet</b>	holes. </s><s> Alter two long years of hard
6	<input type="checkbox"/> ⓘ	Written books a... odies which are proving effective as magic	<b>bullets</b>	in identifying and destroying brain tumours
7	<input type="checkbox"/> ⓘ	Written miscell... ey properly demanded from you (see next	<b>bullet</b>	point b). </s><s> It is in your interest, ours
8	<input type="checkbox"/> ⓘ	Written books a... easonablelooking newsletter, adorn it with	<b>bullet</b>	points, drop capitals, drop shadows, extra f
9	<input type="checkbox"/> ⓘ	Written books a... e bedside table, decorated with turquoise	<b>bullet</b>	shapes and nickel silver handles, inspired l
10	<input type="checkbox"/> ⓘ	Written books a... d to include a new track like the Japanese	<b>Bullet</b>	trains or the french TGV. </s><s> He said t

**Figure 5.1** A screenshot of 10 metaphorical citations of *bullet* in a random sample of 100 citations in BNC (1994)

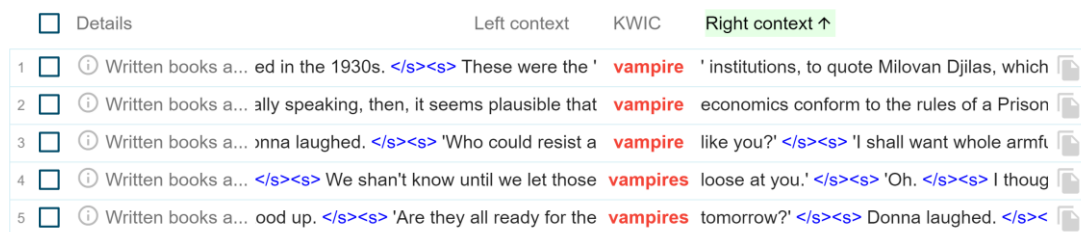
The 100-million-word BNC (1994) contain 6694 citations of *football*. A random sample of 500 citations of *football* were checked in context. I found that only 6 citations were used metaphorically, as in Figure 5.2. Among the 6 citations, there are 3 citations of *political football* which metaphorically describes an under discussed yet not resolved political issue as a football being kicked back and forth. Another 3 citations metaphorically transfer different properties of a football such as the shape of a football or football as a game such as football courage to topics in other domains. However, none of the 6 citations are business-related. The 100-million-word BNC (1994) contain 2809 citations of *tennis*. A random sample of 500 citations of *tennis* were checked in context. I found that all of the 500 citations were used literally. Thus, I need to use my background knowledge about rules and properties of football and tennis and refer to the context of citation (2) to establish their contextual meaning. Based on background of US's criticizing China's status of free market, I established the contextual meaning of *football* as less freer market in which companies participate in

market trading with state support such as subsidies and the contextual meaning of *tennis* as more freer market in which companies participate in trade activities without state support.



**Figure 5.2** A screenshot of 6 metaphorical citations of *football* in a random sample of 500 citations in BNC (1994)

The 100-million-word BNC (1994) contain 190 citations of *vampire*. A random sample of 100 citations of *vampire* were checked in context. I found that only 5 citations were used metaphorically, as in Figure 5.3. Two out of the five citations were related to economic topics such as vampire economics, and with contextual meaning of economic policies that gain benefits by exploiting other parties, which can be contextual meaning of *vampire* in citation (3).



**Figure 5.3** A screenshot of 5 metaphorical citations of *vampire* in a random sample of 100 citations in BNC (1994)

To report recently economic events, some novel terms such as *Belt and Road* that have no entry in dictionaries may also be used by journalists. I refer to a reference corpus COCA to establish contextual meanings of newly coined terms,. If there are no occurrences or there are occurrences in COCA but providing no help in establishing contextual meaning. I need to use my intuition and refer to some expert knowledge to establish the contextual meaning, which is explained with *Belt and Road* in citation (4).

- (4) Thus far, ***Belt and Road's*** outlay has been tiny compared with Beijing's ambitions -and indeed with its domestic investment (*Financial Times* 2017).

There is one citation of *Belt and Road* in COCA. However, this citation doesn't provide me enough context to establish its contextual meaning. Thus,

I refer to some expert knowledge with the help of official website introducing this initiative (<https://www.beltrroad-initiative.com/belt-and-road/>) to establish its contextual meaning. I established the contextual meaning of *Belt* in citation (4) as the building of a Silk Road Economic Belt and *Road* as a 21st-century Maritime Silk Road.

### **Personification**

As is mentioned in Section 4.1.2, problems arise when researchers can give two different analyses that seem equally plausible, for instance, identifying metaphor in “A party can’t even decide its name” (Krennmayr, 2017, p.282; Steen, Biernacka, Dorst, Kaal, Rodríguez and Pasma, 2010). Following previous scholars’ practice, similar cases in my data are interpreted from personification perspective rather than metonymically. For instance, both *Brussels* as a city in citation (5) and *the WTO* as an organization in citation (6) were only interpreted literally as non-human agents. The action of decision-making can only be performed by human agents so *decide* in (5) and (6) is metaphor due to personification (Steen, Biernacka, Dorst, Kaal, Rodríguez and Pasma, 2010).

- (5) Brussels must **decide** this year whether to support or oppose this plan. (*Financial Times* 2016)
- (6) In the next year, the WTO is due to **decide** whether the EU can continue to restrict genetically modified foods. (*Financial Times* 2014)

### **5.1.3 Establishing a More Basic Meaning**

Following adapted MIP, I understand a more basic meaning as more concrete, precise and human-oriented sense in dictionaries. In most cases, establishing basic meanings of lexical units in dictionaries is straightforward. However, problems arise when there is more than one more basic meaning available in selected dictionaries, which is discussed with examples from my data.

As is mentioned by Dorst et al. (2013) in Section 4.1.2, when making decisions among more than one basic meaning, three factors that should be taken into consideration are human-oriented sense, concreteness and comparability. Following Dorst et al. (2013), I prefer a human-oriented and concrete sense to be established as a more basic meaning of a lexical unit when there is more than one potential basic meaning. Thus, ‘human standing sense’ (human and concrete sense) of *rise* in citation (7) in the dictionaries is preferred over its ‘building going upward sense’ (non-human

and concrete sense) to be a more basic meaning of *rise* as a verb. There are two potential more basic meanings of *gutting* in citation (8): 'remove animal organs sense' and 'destroy inside of a building sense' in the dictionaries. I chose 'remove animal organs sense' which is more human-oriented and more concrete as a more basic meaning of *gutting*.

(7) If global prices **rise** in response, that will just encourage more mothballed Chinese production to resume. (*Wall Street Journal* 2017)

(8) Quite a few Americans believe that defeating new trade agreements and **gutting** existing ones would protect American jobs and stabilize our economy. (*New York Times* 2009)

I also take comparability between the contextual meaning established in last step and more basic meaning established in this step into consideration. More detail about comparability between two meanings are discussed in Section 5.1.4. If there is no comparability between a human-oriented and concrete sense and the contextual meaning established in last step but comparability between a non-human and concrete sense and the contextual meaning, I choose the non-human and concrete sense as a more basic meaning. For instance, *marks* in citation (9) has three potential more basic meanings in MEDAL and LDOCE: 'write on something sense', 'damage sense', and 'something showing the position of something sense'. The first one sense is human-oriented and concrete and the other two are non-human and concrete. I established 'something showing the position of something sense' as a more basic meaning of *marks* since there is comparability between 'showing position sense' and 'showing something happen sense'.

(9) The Trump administration, on the other hand, seems to be limiting the US' global role, which **marks** a departure from decades of consensus (*China Daily* 2017).

The process of establishing a more basic meaning becomes much less straightforward when different categories of basic meanings compete for each other. Two types of problematic cases are discussed:

- 1) two non-human and concrete senses competing to be a more basic meaning e.g. *bright* in citation (10);
- 2) a human and abstract sense and non-human and concrete sense competing to be a more basic meaning e.g. *blunt* in citation (11).



To establish a more basic meaning of *bright* in citation (10), I checked the senses of *bright* as an adjective in two dictionaries. Three senses in LDOCE which separates 'light sense' and 'sunny sense' and two senses in MEDAL which integrates 'light sense' and 'sunny sense' are candidates for a more basic meaning of *bright*. 'sunny sense' is only a specialization of 'light sense' so I treated them as one sense. Both 'light sense' and 'colour sense' are non-human and concrete. I chose 'light sense' as a more basic meaning of *bright* since there is comparability between strong shining light and the feeling of hope, warm and being successful (Kövecses, 2000).

(10) As President Xi Jinping visits the United States this week, history tells us that Sino-US economic cooperation is win-win, and we look forward to a ***bright*** future. (*China Daily* 2015)

There are two candidate senses in the dictionaries to be a more basic meaning of *blunt* in citation (11): 'speaking honestly sense' which is a human and abstract sense and 'not sharp sense' which is a non-human and concrete sense. I chose the non-human and concrete sense as a more basic meaning of *blunt* since it is more concrete and can be mapped onto the contextual meaning 'not well-worked methods sense'.

(11) Trade litigation is a ***blunt*** instrument. (*New York Times* 2014)

Thus, when problems arise in establishing a more basic meaning of a lexical units, comparability between a more basic meaning and the contextual meaning is a very important factor to consider.

#### **5.1.4 Incongruity but Comparability**

As is discussed in Section 4.1.2, a lexical item is marked as a metaphor when there are both incongruity and comparability between its contextual meaning and more basic meaning. Deignan (1997) writes that when deciding whether two senses in dictionaries are related but sufficiently distinct in dictionaries, there must be discernible semantic gap between contextual meaning and basic meaning. In most cases, contextual meaning and basic meaning established from senses with separated numbers are sufficiently distinct, as suggested by Krennmayr (2011) in Section 4.1.2. For instance, the contextual meaning of *weapon* in citation (12) was established with sense 2 ('an action, piece of information, piece of equipment used to win') and its more basic meaning was established with sense 1 ('something that you use to fight with or attack someone with') in LDOCE. The two senses are from different semantic domains and thus are incongruous.

(12) If China keeps it up, other countries are likely to use their last available **weapon** — protectionism. (*New York Times* 2010)

However, problems arise when annotators establish the same lexical item with different basic meanings, and one of the candidate basic meaning is specific meaning of the contextual meaning. For instance, *abuse* in citation (13) as a borderline case was taken out to be discussed with co-rater B<sup>12</sup>. I and co-rater B used different senses to establish the basic meaning of *abuse*, which led to disagreement in whether there was incongruity between two senses.

(13) China resolutely opposes the **abuse** of protectionist measures, the Chinese Ministry of Commerce. (*New York Times* 2009)

I used sense 2 'the use of something in a bad, dishonest, or harmful way' from MEDAL to establish both contextual meaning and basic meaning of *abuse*. I chose the general meaning in sense 2 'the use of something in a bad, dishonest, or harmful way' from MEDAL to establish contextual meaning of *abuse*. I chose a more specific and concrete meaning in sense 2a 'the use of alcohol or illegal drugs in a way that is harmful to your health' to establish its more basic meaning. The two meanings are from senses under the same number with the relationship of general meaning and specific meaning so there was no incongruity between them (Cruse, 1986). I marked *abuse* in (13) as a non-metaphor. However, co-rater B used sense 2 'the use of something in a bad, dishonest, or harmful way' from MEDAL to establish contextual meaning of *abuse* but sense 1 'cruel, violent, or unfair treatment, especially of someone who does not have the power to prevent it' as the more basic meaning. She suggested that there was incongruity between the two meanings and a transferring of meaning from treating somebody with physical violence to using protectionism measure in a harmful way. Thus, she marked *abuse* as a metaphor. After discussion, we still disagreed with each other. Unlike WDLII principle used by MIPVU as is mentioned in Section 4.1.2, borderline cases like *abuse* here with disagreement after discussion were not labelled as metaphor. Meanwhile, separated senses in dictionaries do not necessarily mean semantic gaps between two meanings, as mentioned in Section 4.3.1. For instance, *designed* as a verb in citation (14) has only one sense in MEDAL but two separate numbered senses in LDOCE.

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<sup>12</sup> Co-rater B is a master student of TESOL from School of Education, University of Leeds.

(14) Should the US ignore a WTO ruling, as Mr Trump has threatened in the past, it could lead to the unravelling of the international system **designed** to prevent trade wars. (*Financial Times* 2017)

I chose sense 2 'to plan or develop something for a specific purpose' as the contextual meaning in LDOCE and sense 1 'to make a drawing or plan of something that will be made or built' in LDOCE as the more basic meaning. However, these two senses are both general meanings of 'planning', so they are not semantically distinct. Thus, there is no incongruity between contextual meaning and basic meaning of *designed* in citation (14).

As is mentioned in Section 4.1.2, those cases with incongruity between their contextual meaning and the more basic meaning are marked as metaphors when they can also evoke boundaries between metaphorical polysemy. That is, contextual meaning is metaphorical extension of the more basic meaning. For instance, the contextual meaning 'powerful actions to win in trade field' of *weapon* in citation (12) can be easily evoked by the more basic meaning 'powerful military weapon to win in war' so two meanings are comparable. I marked *weapon* in citation (12) as a metaphor.

Language is so complex that it is not possible and practical to discuss every problematic case arising in each step of adapted MIP. To make sure the reliability of my metaphor identification process, I also carried inter-coding of metaphor identification with co-rater A and co-rater B on different samples of my data. More details about my inter-coding process and the reliability of this process are further discussed in Section 5.4..

## 5.2 Process of Vehicle Grouping and Topic Coding

After identifying vehicle terms following adapted MIP, I categorized them into related vehicle groupings. Following two vehicle coding approaches suggested by Cameron et al. (2010) in Section 4.2.2, labels I allocated to the vehicle groupings, in most cases, were based on semantics of the more basic meaning I established from selected dictionaries. I also referred to vehicle groupings of previous studies when facing difficulties in deciding the labels. I use *stamping out* from citation (15) and *weapon* from citation (16) to explain how I create labels for metaphor vehicles following a bottom-up fashion.

(15) In spite of Mr Chen's comments, both sides hailed this week's encounter as a sign of their commitment...**stamping out**

protectionism. (*Financial Times* 2009)

(16) If China keeps it up, other countries are likely to use their last available **weapon** — protectionism. (*New York Times* 2010)

I chose sense 2 ‘to make a fire stop burning by putting your feet down hard on it’ from MEDAL to establish a more basic meaning of *stamping out* in citation (15). Based on this more basic meaning, I categorized *stamping out* into *FIRE*. Similarly, based on more basic meaning of *weapon* in citation (16), I gave *weapon* the label *FIGHT/WAR*.

However, the process of vehicle grouping is not straightforward. Problems arise when there is more than one candidate semantic field in the more basic meaning. I provided more than one potential vehicle grouping for each vehicle term at the early stage of vehicle grouping, as suggested by Cameron et al. (2010) in Section 4.2.2. For instance, two possible vehicle groupings were given for *outbreak* and *failure*, as shown in Figure 5.4.

	A	B	C	D	E
1	<b>Vehicle Terms</b>	<b>Vehicle Grouping 1</b>	<b>Vehicle Grouping 2</b>	<b>Sources of Vehicle Terms</b>	<b>Sources of Corpora</b>
	outbreak	FIGHT/WAR	DISEASE	"If nothing is done, you could get an <b>outbreak</b> of protectionism here against China," Mr. Bergsten said in an interview.	USPEDC
2	failure	MACHINE	BODY PART	History is replete with examples of the <b>failure</b> of American protectionism;	CPEDC
3					

**Figure 5.4** A screenshot of vehicle terms assigned to more than one grouping in Excel

The more basic meaning of *outbreak* I established was based on the only sense ‘the sudden start of war, disease, violence etc’ in MEDAL or ‘if there is an outbreak of fighting or disease in an area, it suddenly starts to happen’ in LDOCE. At the early stage, I assigned *outbreak* two possible vehicle groupings *FIGHT/WAR* and *DISEASE*. The more basic meaning of *failure* I established was based on sense 3 ‘a situation in which something such as a machine or an organ in your body stops working correctly’ in MEDAL or sense 5 ‘an occasion when a machine or part of your body stops working properly’ in LDOCE. I assigned *failure* to two possible vehicle groupings *MACHINE* and *BODY PART*. As mentioned by Maslen (2017) in Section 4.2.2, vehicle grouping should be carried out in an iterative and collaborative way. Vehicle groupings at the early stage were cross-checked by co-rater A<sup>13</sup>. After discussion, both I and co-rater A agreed that two potential groupings

<sup>13</sup> Co-rater A is a Ph.D. student from School of Education, University of Leeds. Her research project is metaphor studies on L2 learners’ augmentative writing.

for *outbreak* and *failure* were acceptable. We finally decided to categorize *outbreak* into *DISEASE* and *failure* into *MACHINE*.

Problems also arise when the more basic meaning in the dictionaries does not contain a superordinate word that can be used to determine a vehicle term. I used previous studies' label for these cases whose more basic meaning from dictionaries were not directly helpful in vehicle grouping, for instance, the more basic meaning of *barrier* I established in citation (17) was sense 1 'a bar or gate that stops people or vehicles from entering a place' from MEDAL or sense 2 'a type of fence or gate that prevents people from moving in a particular direction' from LDOCE. The senses in both dictionaries do not contain a superordinate word for *barriers* so I cannot decide its vehicle grouping directly. To deal with this case, I referred to vehicle groupings given to *barrier* in previous metaphor studies. As is mentioned by Charteris-Black (2004) and Berentson-Shaw (2018) in Section 4.2.2, *barrier* can be categorized into *BUILDING* or *JOURNEY*. Motivated by local discourse context such as *erect* in (17), I decided that it was more appropriate to understand *barrier* as a physical entity that can be pulled down. Thus, I categorized *barrier* into *BUILDING*.

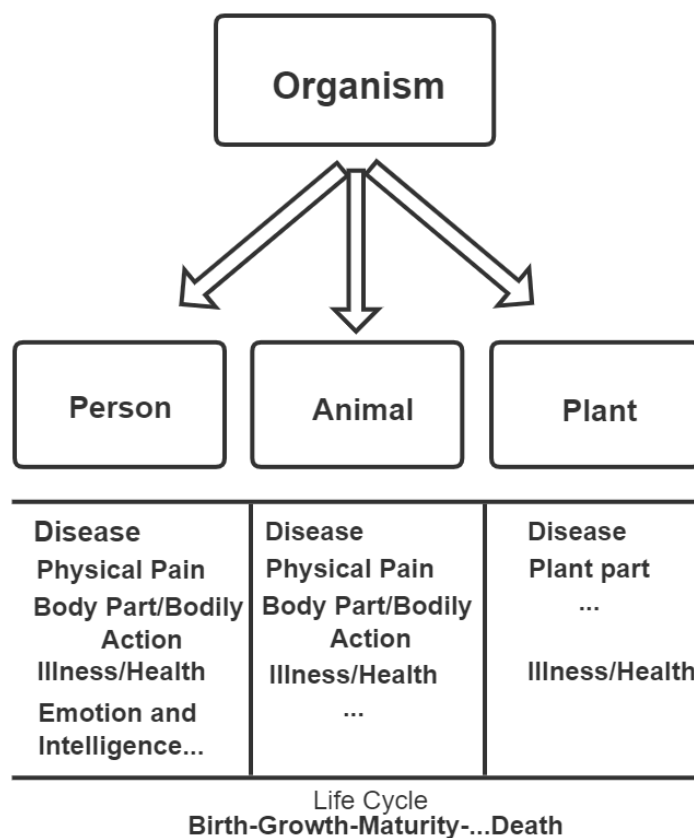
(17) With the US economy on the verge of recovery, we strongly urge our leadership to follow through on G8 commitments to not erect protectionist **barriers**. (*Global Times* 2009)

	A	B	C	D	E
	Vehicle Terms	Sources of Vehicle Terms	Corpora	Vehicle Grouping	Comments
1					
2	push	Pacific Pact Vows to <b>Push</b> Free Trade After U.S. Rejection	USPEDC	BODYILY ACTION	
	suffering	And after <b>suffering</b> the effects from trade protectionism, the world might also have to suffer investment protectionism and barriers to the movement of resources.	CPEDC	PHYSICAL PAIN	also acceptatble as
3	fever	As details of the bill came out, the Ph.D.'s predicted that protectionist <b>fever</b> would soon become <i>contagious</i> , and that other countries would likely start retaliating with their own protectionist policies, which would further hurt American workers	USPEDC	ILLNESS/HEALTH	DISEASE also acceptatble as
4	contagious	As details of the bill came out, the Ph.D.'s predicted that protectionist <i>fever</i> would soon become <b>contagious</b> , and that other countries would likely start retaliating with their own protectionist policies, which would further hurt American workers	USPEDC	DISEASE	DISEASE
5	roots	Robert Lighthizer, Mr Trump's newly approved trade representative, has called in the past for Republicans to return to protectionist <b>roots</b> .	UKPEDC	PLANT	also acceptatble as
6	breeding	History has shown that a crisis is a <b>breeding ground</b> for protectionism, but a protectionist approach is certainly no painkiller for economic woes.	CPEDC	ANIMAL	ORGANISM also acceptatble as
7	growing	The pressures on Mr Mandelson to act against Beijing have intensified, insiders say, since French voters gave vent to <b>growing</b> protectionist feelings in decisively rejecting the EU constitution.	UKPEDC	PLANT	ORGANISM also acceptatble as
8					ORGANISM

**Figure 5.5** A screenshot of vehicle groupings with a degree of overlap

With vehicle grouping proceeding, I adjusted and recoded categories with vague boundaries in Figure 5.4 and those with a degree of overlap in Figure 5.5 to make them better fit my data. Figure 5.5 shows that the labels I

gave to vehicle terms came directly from semantic domains of the actual words. Figure 5.5 also shows that there was a degree of overlap in these groupings, for instance, *fever* being appropriate both in *DISEASE* and *ILLNESS/HEALTH* and *suffering* being appropriate both in *DISEASE* and *PHYSICAL PAIN*. The definition of 'organism' in MEDAL refers to 'a living thing such as a person, animal, or plant, especially an extremely small living thing'. That is, all living things with life cycles are organism in an ecological system, as mentioned by White (2003) in Section 4.2.2.



**Figure 5.6** Organism metaphor as a hierarchical system with subdivisions

Figure 5.6 shows that organism can be treated as a hierarchical system with three subdivisions having both similar and different properties, for instance, all having a life cycle, and all may experience disease. Thus, I integrated vehicle groupings in Figure 5.5 into a more general vehicle grouping *ORGANISM*. There were also other vehicle groupings with a degree of overlap. For instance, I integrated *HEIGHT* metaphor such as *levels* in citation (18) and *SCALE* metaphor such as *fullscale* in citation (19) into one more general grouping *MEASUREMENT*.

(18) The world trading system did not settle down to low **levels** of protectionism. (*Financial Times* 2012)

(19) Even more far-reaching, the US and EU could invite countries to join in a negotiation for a **fullscale** free trade. (*Financial Times* 2008)

As is mentioned in Section 4.2.2, Cameron et al. (2009, p.74) suggest coding topic “by constructing and using a limited set of ‘key discourse topics’ relevant to the research topic and research questions”. I followed their practice and assigned each vehicle term to the following key discourse topics:

*‘trade and economic condition’, ‘unfair trade practices’, ‘trade disputes’, ‘currency disputes’, ‘protectionism’, and ‘free trade’*

I decided these key discourse topics based on the core and additional query terms discussed in Section 3.3 and my general understanding of key discourse topics in the 9 sample texts, as mentioned in Section 4.3.2. In some context, I also coded sub-topics based on these key discourse topics, for instance, *underpriced imports* under the topic of *unfair trade practices*. Then I grouped together vehicle terms from the same vehicle grouping and describing the same key topic, based on which I formulated systematic metaphor emerging from discourse. The process of topic coding is straightforward but vehicle grouping is less straightforward. To ensuring the rigor of systematic metaphor identification, Maslen (2017) suggests three points: 1) data being appropriate for research purposes; 2) cross-checking being necessary for coding; and 3) decision being consistent and replicable. In this study, inter-coding of vehicle grouping was carried out independently with co-rater A and co-rater B on different types of my data. After independently vehicle grouping of three types of my sample data, I discussed the disagreement cases with my co-rater. Some issues raised by our discussion contribute to inform my labelling of the rest. More details about the three types of data and reliability of my inter-coding process of vehicle groupings are further discussed in Section 5.4.

### **5.3 Wmatrix as a Filter for Finding Metaphor Candidates in My Corpus**

As discussed in Section 4.6, there were two approaches of using Wmatrix to assist metaphor studies: 1) starting from overused semantic fields with reference corpus; 2) starting from most relevant USAS tags for interested

vehicle groupings without reference corpus. When carrying out key semantic domain analysis, Wmatrix only catches semantic fields used more frequently and more systematically in the corpus than in the reference corpus. That is, when conducting key semantic domain analysis in my corpora with the help of Wmatrix, the list of overused semantic domains only comprises those semantic fields that are more frequently used in economic discourse. However, it is not helpful in filtering semantic fields that are used as source domains more frequently in economic discourse than in everyday language. For instance, I conducted key semantic domain analysis of 15 randomly sample texts with 10,797 words from my data. As mentioned in Section 4.3.2, I randomly selected texts from my data based on the results of random number generator (<https://www.calculator.net/random-number-generator.html>). I have randomly selected 9 texts from my data, as mentioned in Section 4.3.2. I randomly selected another 6 texts from my data. Results of 6 randomly generated numbers and the title of the 6 texts are presented in Appendix C.1. In total, I randomly selected 5 texts from each corpus. Key semantic analysis on the 15 sample texts shows that war-related semantic field is not among the list of overused items when using British English 2006 (BE06) as a reference corpus. However, results of my manual metaphor identification of the 15 sample texts show that lexis from war-related semantic field is frequently used as metaphors in my data. Since I was interested in how topics related to trade disputes being discussed and developed with metaphors, I searched for metaphor that related to particular vehicle groupings with the help of Wmatrix in three corpora. Based on previous studies discussed in Section 4.6, the application of Wmatrix as a filter to find metaphor candidates in my data consists of three steps:

- 1) identifying most relevant USAS tags for interested vehicle groupings based on results of manual metaphor identification of the 15 sample texts;
- 2) carrying out concordance analysis of identified USAS tags;
- 3) exporting concordance lines into Excel and checking each metaphor candidate for metaphoricity.

Each step is further explained with examples from my data. Based on manual metaphor identification results of the 15 sample texts, I decided the vehicle groupings to be studied. I chose *FIGHT/WAR* and *GAME/SPORTS* that were frequently used metaphors in the 15 sample texts as two vehicle groupings to be studied. I also chose another two less frequent vehicle groupings *PHYSICAL DAMAGE* and *WEATHER* in the 15 sample texts as typical



case studies since they may indicate the way situations and outcomes of trade disputes were written about in terms of these two groups. Although there was a smaller number of linguistic metaphors in these two groupings, they were also related to the research questions and may be powerful in framing central trade topics, as was claimed by Cameron et al. (2010) in Section 2.3.1.

The way I identified most relevant USAS tags for these four vehicle groupings was explained with *FIGHT/WAR* as an example. Based on results of manual metaphor identification of the 15 sample texts, I put a list of lexis from *FIGHT WAR* grouping in plain text txt. and uploaded the list to Wmatrix. Then I utilized broad-sweep search function in Wmatrix, which was mentioned in Section 4.6, to search for USAS tags for lexis from *FIGHT/WAR* grouping. Examples of USAS tags used to depict lexis from *FIGHT/WAR* in the 15 sample texts were given in Figure 5.7. USAS tags for the other three vehicle groupings were identified following the same method (Semino et al., 2017).

	A	B	C
1	<b>Vehicle Terms</b>	<b>Vehicle Grouping</b>	<b>USAS tags</b>
2	battle	FIGHT/WAR	X8+ G3 E3- O2
3	war	FIGHT/WAR	G3 S7.3
4	engagement	FIGHT/WAR	S1.1.1 S4 G3@
5	conflicts	FIGHT/WAR	A6.1- G3 E3-
6	defense	FIGHT/WAR	S8+ G3 G2.1c Q2.2 K5.1 S7.3+ P1
7	fight	FIGHT/WAR	S8- X8+ E3- K5.1
8	barrage	FIGHT/WAR	G3 N5+
9	defuse	FIGHT/WAR	G3 A5.1+/A2.1 M1
10	gun	FIGHT/WAR	G3 O2 O3
11	bullets	FIGHT/WAR	G3 O4.4
12	struggle	FIGHT/WAR	X8+ A12- E3-
13	actions	FIGHT/WAR	A1.1.1 G3
14	indefensible	FIGHT/WAR	A5.1- A1.2-

**Figure 5.7** Examples of USAS tags depicting lexis from *FIGHT/WAR* in 15 sample texts

As is shown in Figure 5.7, all vehicle terms were associated with more than one USAS tag. I searched for USAS tags that were more frequently assigned to lexis from *FIGHT/WAR* grouping, regardless the position of the tag. For instance, as long as a vehicle term was tagged G3, the vehicle term within this semantic tag was counted as once even though G3 was not in the first position e.g. *battle* with semantic tag in the order of X8+ *Trying hard*, G3 *War*, E3- *Violent/Angry* and O2 *Objects generally*. Most relevant semantic tags for four studied vehicle groupings were presented in Table 5.1. In Table

5.1, the first number in the bracket after USAS semantic tag means the number of vehicle terms within each semantic tag. The second number means the total number of vehicle terms within this vehicle grouping, which was based on the results of my manual metaphor identification of 15 sample texts.

**Table 5.1** Most relevant semantic tags for four studied vehicle groupings

Vehicle groupings	Most relevant semantic tags
<i>FIGHT/WAR</i>	G3 <i>Warfare, defence and the army; weapons</i> (34/67) (e.g. <i>cannonballs, weapons</i> ) X8+ (8/67) <i>Trying hard</i> (e.g. <i>battle, struggle</i> ) S8- <i>Hindering</i> (7/67) (e.g. <i>fight, opposed</i> ) E3- <i>Violent/Angry</i> (15/67) (e.g. <i>ferocious, attack</i> )
<i>PHYSICAL DAMAGE</i>	A1.1.2 <i>Damaging and destroying</i> (8/9) (e.g. <i>damage</i> )
<i>GAME/SPORTS</i>	K5.2 <i>Games</i> (15/64) (e.g. <i>hardball</i> ) K5.1 <i>Sports</i> (27/64) (e.g. <i>race</i> ) S7.3+ <i>Competitive</i> (11/64) (e.g. <i>champion</i> )
<i>WEATHER</i>	W4 <i>Weather</i> (4/7) (e.g. <i>fog</i> )

After most relevant semantic tags were decided, I carried out concordance analysis at semantic level, as in Figure 5.8.

844 occurrences.			Extend context
aliatory tariffs , and a trade	war	that would be devastating to EU	1 More   Full
e trade principles or a phoney	war	? China in particular is one of	2 More   Full
l and starts a worldwide trade	war	, the future for the internatio	3 More   Full
about union votes in electoral	battleground	states and conscious that Berni	4 More   Full
ed by most observers as a long	shot	. In Europe , a general suspici	5 More   Full
de agreements are double-edged	swords	: they promote trade between th	6 More   Full
his matters because the Lisbon	treaty	has given MEPs the power to rat	7 More   Full
, should be seen as a warning	shot	by those who take the European	8 More   Full
ing invented the practice in a	treaty	with Pakistan more than half a	9 More   Full
bilateral investment and trade	treaties	. Only 53 cases have been broug	10 More   Full

**Figure 5.8** A screenshot of concordance analysis of USAS tag G3 *War* in UKPEDC with the help of Wmatrix

Then I extracted concordance lines within each semantic tag and identified metaphors in each concordance line manually following adapted MIP. During the process of metaphor identification, I found that there were some differences in categorization rules of multi-word expressions between Wmatrix and three selected dictionaries. As mentioned in Section 4.1.2, this difference may influence decision-making on boundaries of lexical units which is a very important step in metaphor identification. For instance, Wmatrix regards *ripple up* as a multi-word expression but it is not listed as a single entry in MEDAL and LDOCE. To keep consistency of metaphor

identification, I followed the rules of three selected online dictionaries. Thus, I checked *ripple* rather than *ripple up* in the dictionaries to decide whether it was metaphorically used word. Meanwhile, I also found that Wmatrix may not correctly categorize idioms that were not in canonical forms. When other constituents were inserted into the idioms, for instance, *cut off your nose to spite your face* used as *cut off America's nose to spite its face*, Wmatrix usually didn't categorize it as a multi-word expression. In this case, I still followed the rules of the dictionaries. Thus, the number of concordance lines extracted from Wmatrix was different from that of units of analysis, as shown in Table 5.2.

**Table 5.2** Quantitative information of metaphors under each USAS tag in three corpora

Semantic tags	Num. of citations			Unit of analysis			Num. of metaphorical tokens		
	C	UK	US	C	UK	US	C	UK	US
A1.1.2	687	830	300	692	846	308	589	691	245
G3	709	844	351	722	891	358	483	633	214
E3-	837	1731	565	839	1754	569	448	986	307
X8+	652	974	385	651	977	384	373	456	202
S8-	1104	1215	503	1103	1218	503	480	632	266
K5.1	212	285	129	237	330	147	211	251	125
K5.2	22	61	20	24	62	20	7	6	5
S7.3+	343	432	221	342	432	220	95	198	106
W4	234	279	101	234	276	103	71	155	65
Total	4800	6651	2575	4844	6786	2612	2757	4008	1535

**Note:** Due to space limitation, C refers to Chinese Popular Economic Discourse Corpus; UK refers to UK Popular Economic Discourse Corpus; US refers to US Popular Economic Discourse Corpus.

Table 5.2 shows that I identified 8300 metaphors from 14242 units of analysis within 9 relevant semantic tags. During the process of metaphor identification, ambiguous cases that could not be decided even after referring to more discourse context were not included. For instance, the subject of *retaliation* was implicit in citation (20) so it was ambiguous whether *retaliation* was used as personification. *Retaliation* in this citation was not marked as metaphor.

(20) Even when evidence and a legal standing can be assembled, filing WTO complaints and blocking imports can tempt

*retaliation*. (*Financial Times* 2012)

During the process of metaphor identification and vehicle groupings within the 9 most relevant USAS tags, I also carried out inter-coding of a sample of these with co-rater B. More details about reliability of my inter-coding process of metaphor identification and vehicle grouping for this type of data are further discussed in Section 5.4.

## **5.4 Inter-rater Reliability of Identified Metaphors and Vehicle Groupings**

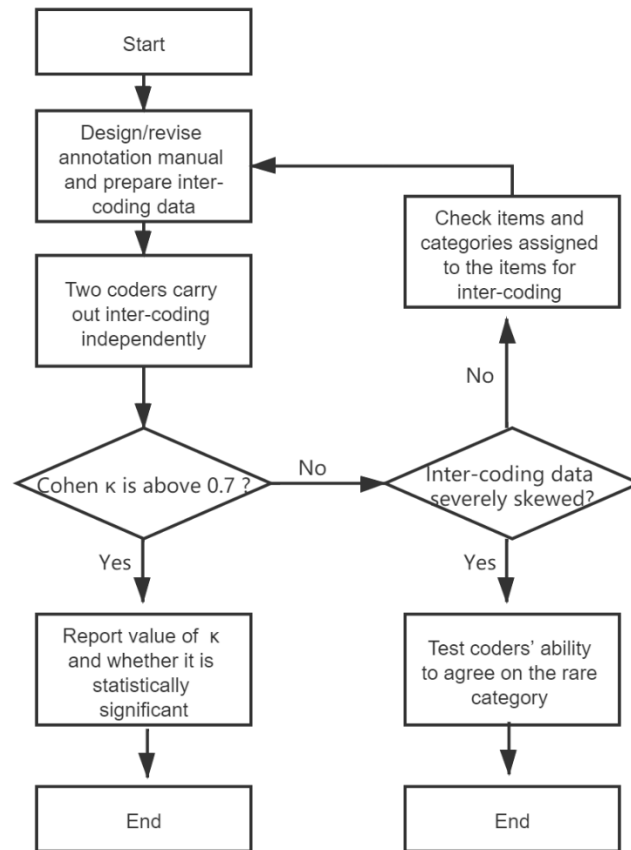
### **5.4.1 Rationale of Using Cohen $\kappa$ to Measure Inter-rater Reliability**

Artstein and Poesio (2008) write that if researchers wish to use hand-coded data labelled with categories to support an empirical claim, they need to test the reliability of the hand-coded data. They also write that “data are reliable if co-raters can be shown to agree on the categories assigned to units to an extent determined by the purposes of the study” (p.557). There are two ways to measure agreement between two co-raters: percent agreement and chance-corrected agreement (Artstein and Poesio, 2008; Krippendorff, 2011). Decision-making on using which agreement measure to test reliability of coding process is influenced by three main factors: the number of coded items, the number of categories assigned to the items, and the number of co-raters (Artstein and Poesio, 2008; Krippendorff, 2011). Scott (1955, p.322, cited in Artstein and Poesio, 2008, p.558) claims that “[percent agreement] is biased in favour of dimensions with a small number of categories”. That is, the smaller number of categories two co-raters can assign to item units, the higher percent agreement is. Krippendorff (2011) adds that when variability among categories is lacking, it is more difficult for co-raters to make distinctions among categories. Within this context, he writes that co-raters are more likely to assign item units into the same category, which leads to extremely high percent agreement but no indication of perfect reliability. Thus, percent agreement is not an adequate measure of reliability and cannot be used alone as a measure to test reliability of metaphor identification and vehicle grouping in this study (Artstein and Poesio, 2008; Krippendorff, 2011).

Artstein and Poesio (2008) discuss three well-known measures of chance-corrected agreement between two co-raters: S (Bennett, Alpert, and Goldstein 1954),  $\pi$  (Scott 1955), and  $\kappa$  (Cohen, 1960). They claim that these

three coefficients have different assumptions on distributions governing two co-raters' random assignment of categories to items and are appropriate for different hand-coded data. For instance, they write that  $\pi$  (Scott, 1955) assumes that two co-raters share a single distribution which means that the probability that random assignment of categories to items are the same between two co-raters. They also write that  $\kappa$  (Cohen, 1960) assumes that two co-raters have different distributions. They add that following  $\kappa$  (Cohen, 1960), the probability that random assignment of categories to items are influenced by co-raters' bias and are different between two co-raters. In this study, I use  $\kappa$  (Cohen, 1960) as a measure to test reliability of coding process between two co-raters. The reasons are threefold. First,  $\kappa$  (Cohen, 1960) corrects agreement by chance caused by factors such as relatively skewed data (Artstein and Poesio, 2008). Using  $\kappa$  (Cohen, 1960) to measure reliability of metaphor identification in my data, to some extent, can correct agreement by chance due to relatively disproportion between lexis marked as metaphors and non-metaphors in texts. Second, I assume that the way co-raters assign categories to items, for instance, assigning a vehicle grouping label to identified metaphor, is influenced by their prior knowledge, which is consistent with the assumption of  $\kappa$  (Cohen, 1960). Third,  $\kappa$  (Cohen, 1960) is frequently used by metaphor researchers to test reliability of their coding process, for instance, Burgers and Ahrens (2020). Using the same coefficient  $\kappa$  (Cohen, 1960) to measure reliability in this study facilitates comparison between my coding process and other metaphor scholars' coding process. Coefficient  $\kappa$  (Cohen, 1960) is, of course, not a perfect measure of reliability for all kind of hand-coded data. Artstein and Poesio (2008) write that  $\kappa$  (Cohen, 1960) does not work well for severely skewed data, which means an extremely large amount of the data falls under one category. To deal with prevalence problems in reliability test, they suggest to test reliability on rare category since "chance-corrected coefficients are sensitive to agreement on rare categories" (p.573). When testing co-raters' agreement on rare categories, they find that the value of  $\pi$  (Scott 1955) and  $\kappa$  (Cohen, 1960) are approximately the same. In my study, I also test agreement on rare categories if my coding data have prevalence problems.

In this study, I treat the inter-coding process of metaphor identification and vehicle grouping as a cyclical process, as shown in Figure 5.9.



**Figure 5.9** Inter-coding process of metaphor identification and vehicle grouping in this study

As shown in Figure 5.9, the agreement score is not the end of inter-coding process but also indicates whether I designed and carried out my inter-coding process in a scientific way. Artstein and Poesio (2008) write that researchers can set different agreement thresholds to satisfy their research purposes. They add that agreement score at and above 0.7 can be an appropriate cut-off point to support a claim in most discourse studies. As shown in Figure 5.9, I also set 0.7 as the agreement threshold in this research. Figure 5.9 shows that when the value of  $\kappa$  (Cohen, 1960) is below 0.7, I need to check whether the inter-coding data I prepared is severely skewed. For example, I need to check whether there are extremely differences in the proportion between items identified as metaphor and non-metaphor. If big differences exist, I should not use this value of  $\kappa$  (Cohen, 1960) to claim reliability of my coding process but need to test on co-raters' agreement on rare category. If my inter-coding data is not severely skewed, I need to check issues such as whether there is clear explanation on distinctions between different vehicle grouping labels I assigned to metaphors in the inter-coding data. For instance, my inter-coding data for

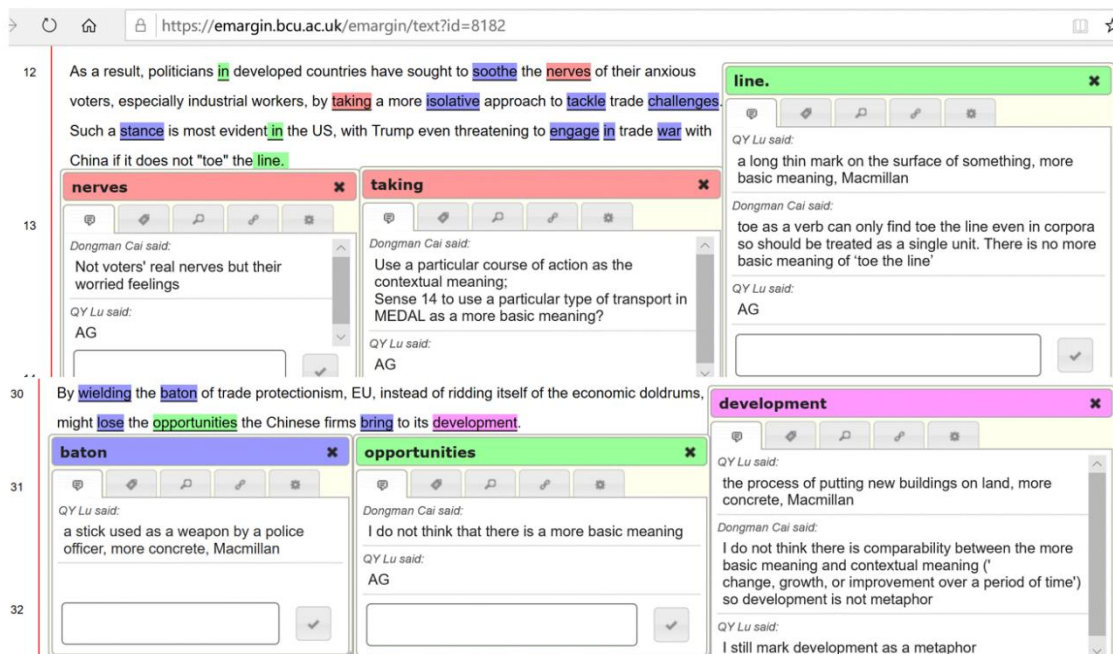
metaphor identification should consist of both items I identified as metaphor and non-metaphor. Otherwise, the value of  $\kappa$  (Cohen, 1960) is negative.

### 5.4.2 Report on Reliability of My Inter-coding Process

In this research, I carried out inter-coding on metaphor identification in four different types of data from my corpora and on vehicle grouping in three types of data. IBM SPSS Statistics 27 was used to calculate Cohen  $\kappa$  (1960) in this research. The process and results of my inter-coding with co-rater A (PhD student) and co-rater B (master student) are reported as follows.

#### Reliability of Metaphor Identification

As mentioned in Section 4.3.2, I identified metaphors in 9 sample texts. Metaphor identification on the 9 sample texts was carried out independently by me and co-rater A. This round of inter-coding of metaphor identification serves to provide me guidance on preparing my metaphor inter-coding manual and raise issues that inform the labelling of the rest of my data. Examples of our inter-coding process is shown in Figure 5.10.



**Figure 5.10** Examples of collaborative metaphor annotation with co-rater A on eMargin

As shown in Figure 5.10, words and multi-word expressions identified as metaphor by both me and co-rater A were marked in blue e.g. *baton*. Those that were labelled as metaphor only by me were marked in red e.g. *nerves* while those that were labelled as metaphor only by co-rater A were marked in green e.g. *opportunities*. Ambiguous cases e.g. *development* were labelled in purple by me and co-rater A. Co-rater A and I further discussed

those that were labelled in green, purple and red and made final decisions. Details on decision-making on ambiguous cases were kept record on eMargin to keep consistency of metaphor identification. The process of metaphor identification of 6139 units of analysis from the 9 sample texts found 802 lexis marked as metaphors by both me and co-rater A. Results show that level of agreement between I and co-rater A on metaphor in the 9 sample texts is almost perfect since the value of Cohen  $\kappa$  is 0.823 with  $p$  value equals to 0.000 (Landis and Koch,1977). During the inter-coding process, I find that main factors causing disagreement between co-rater A and I are as follows.

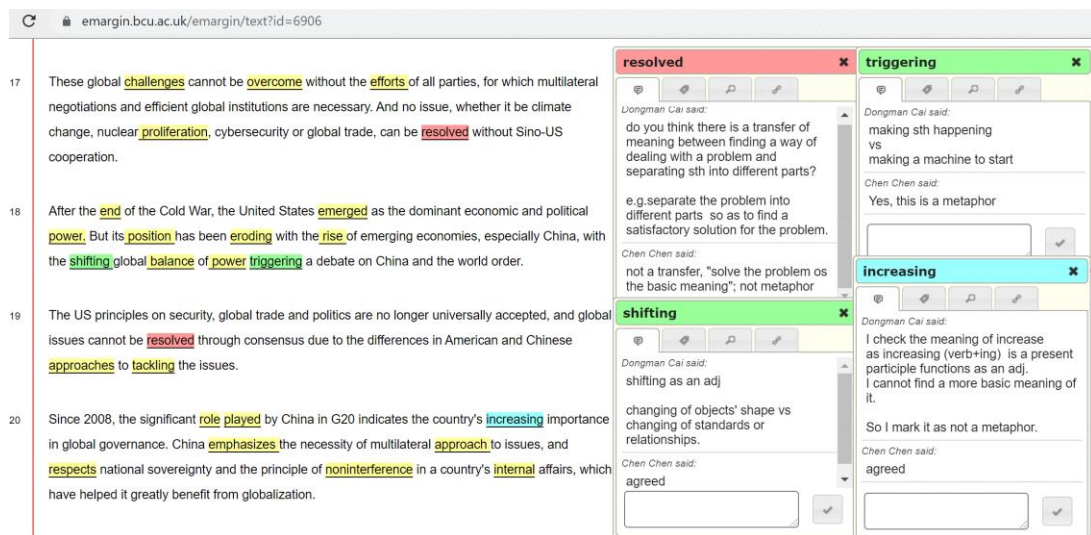
Some disagreement between co-rater A and I on whether the lexis is metaphor or not is due to co-rater A's misunderstanding of rules of adapted MIP. After co-rater A and I identified metaphors in the 9 sample texts independently, I found that co-rater A sometimes chose a more basic meaning of lexis across word class boundary. For instance, co-rater A marked *peak* in the example *this particular crisis may have peaked* as metaphor since she chose a more basic meaning of *peak* as a noun as the more basic meaning of *peak* as a verb. Co-rater A also tended to treat multi-word expressions as a single unit. For instance, she marked *acid test* in *it is the acid test of Western commitment* as non-metaphor since she treated it as a single unit which had no more basic meaning. However, following adapted MIP, I treated *acid test* as two separate units and marked both *acid* and *test* as metaphor.

There are also other reasons that lead to disagreement between co-rater A and me on metaphor identification in the 9 sample texts. For instance, either co-rater A or I may wrongly mark some lexis that are metaphor due to personification as non-metaphor, for instance, *respect* in *China respects national sovereignty*. Co-rater A or I may also disagree on cases whose comparability between the more basic meaning and the contextual meaning are ambiguous such as *resolve* in *global issues cannot be resolved through consensus*. Disagreement may also arise from wrongly marking lexis that is used literally in context as metaphor. For instance, co-rater A marked *table* in *returned to the negotiating table* as metaphor while I marked it as non-metaphor.

To reduce level of disagreement in later stages' inter-coding of metaphor identification, I revised my metaphor inter-coding manual to make it clearer for my co-rater to follow. Details about this manual is given in Appendix C.2.



As is mentioned in Section 5.3, I identified metaphors in 15 sample texts. Metaphors used in the 15 samples texts serve to give an overview of frequently used metaphors in popular economic discourse, which addresses research question one in this research. The reliability of metaphor identification in the 15 sample texts serves to support my claims addressing research question one. Based on the revised manual given in Appendix C.2, Co-rater B and I independently carried out metaphor inter-coding of the 15 sample texts on a collaborative annotation tool eMargin (<http://emargin.bcu.ac.uk/>). Examples of coding on eMargin were illustrated in Figure 5.11.



**Figure 5.11** Examples of collaborative metaphor annotation with co-rater B on eMargin

As shown in Figure 5.11, words or multi-word expressions identified as metaphor by both me and co-rater B were marked in yellow e.g. *eroding*. Those that were labelled as metaphor only by me were marked in green e.g. *shifting* while those that were labelled as metaphor only by co-rater B were marked in cyan e.g. *increasing*. Ambiguous cases e.g. *resolved* were labelled in red by both of us. We further discussed those that were labelled in green, cyan and red, and made final decisions. Details on decision-making on ambiguous cases were kept record on eMargin to keep consistency of metaphor identification. The process of metaphor identification of 8903 units of analysis from the 15 sample texts found 1087 lexis marked as metaphors by both me and co-rater B. During this process, prepositional metaphors are excluded from inter-coding. Results show that level of agreement between me and co-rater B on metaphor in the 15 sample texts is almost perfect since the value of Cohen  $\kappa$  is 0.899 with  $p$  value equals to 0.000 (Landis and Koch, 1977).

Based on the revised metaphor inter-coding manual in Appendix C.2, metaphor inter-coding is carried out on metaphors co-occurring with terms associated with *protectionism* and *free trade*. The reliability of metaphor identification in this part serves to support my claims about the use of metaphor co-occurring with the search terms in my data and addressing research question two to four. Following adapted MIP, I identified metaphors co-occurring with the search terms within a span of 5:5 and with function words excluded. In total, I found 1127 metaphors co-occurring with the search terms in 1054 sentences of the 2879 sentences with 181 prepositional metaphors excluded. I selected 117 lexis co-occurring with the search terms and marked as metaphor by me for inter-coding. The 117 lexis is about 10% of the 1127 lexis that I marked as metaphor. To avoid prevalence problem which means all items falling into one category, I also added another 11 lexis that were marked as non-metaphor co-occurring with the search terms. Co-rater B carried out metaphor identification independently on the 128 lexis co-occurring with the search terms. The process of inter-coding found 116 lexis marked as metaphor by both me and co-rater B. Results show that level of agreement between me and co-rater B on the 128 items is substantial since the value of Cohen  $\kappa$  is 0.786 with  $p$  value equals to 0.000 (Landis and Koch,1977).

Metaphor inter-coding is also carried out on metaphor candidates within nine relevant semantic tags which were generated with the help of Wmatrix, as mentioned in Section 5.3. The reliability of metaphor identification in this part serves to support my claims about the use of metaphor from four studied vehicle groupings in my data and addressing research question two to four. As shown in Section 5.3, I identified 8300 metaphors from lexis within the nine semantic tags. I selected 5% of the 8300 lexis I marked as metaphor and another 100 lexis which are within the nine semantic tags and marked as non-metaphor by me for inter-coding. Co-rater B carried out metaphor identification independently on the 515 lexis within the nine semantic tags. The process of inter-coding found 405 lexis marked as metaphor by both me and co-rater B. Results show that level of agreement between me and co-rater B on the 515 items is substantial since the value of Cohen  $\kappa$  is 0.768 with  $p$  value equals to 0.000 (Landis and Koch,1977).

### **Reliability of Vehicle Grouping**

After testing reliability of metaphor identification in four types of data from my three corpora, I also carried out inter-coding of vehicle grouping on three of the four types of data. I prepared my inter-coding manual for vehicle

grouping based on my inter-coding with co-rater A on 89 out of 104 lexis that were marked as metaphor by both me and co-rater A and within two USAS tags *G3 war* and *A1.1.2 damaging and destroying*. Results of inter-coding show that reliability in the process of vehicle grouping on the 89 metaphors is almost perfect with the value of Cohen  $\kappa$  as 0.805 ( $p=0.000$ ) and percentage of agreement as 88.5% (Landis and Koch,1977). During the inter-coding process, I find that to reduce our disagreement, it is important for us to give a more basic meaning for each metaphor before our labelling, which is helpful to ensure that vehicle grouping is organized based on semantic field of each metaphor. Meanwhile, when there is disagreement between us, we can check whether the disagreement is due to different basic meanings we established for the metaphor.

Reliability of my vehicle grouping in three types of my data are reported as follows: 1) vehicle grouping on 126 metaphors from 9 sample texts; 2) vehicle grouping on 116 metaphors co-occurring with terms associated with *protectionism* and *free trade*; 3) vehicle grouping on 405 metaphors within 9 semantic tags.

As is mentioned above, co-rater A and I identified 802 metaphors from the 9 samples texts from my three corpora. Co-rater A and I carried out vehicle grouping independently on 126 metaphors that I selected from the 802 metaphors. Examples of inter-coding of vehicle grouping on the 126 metaphors are shown in Figure 5.12.

A	B	C	D	E	F	G	H
Tokens	VP by Cai	VP by Lu	Discussion	Basic meaning by Cai	Basic meaning by Lu	Tokens in context	Source
block	Journey	Movement/Journey	Lu: Both movement and journey can be a reasonable label for this metaphor; Cai: it is indeed the case. However, when the lexis involving someone moving along a path or a place, I prefer to give it the label of journey Lu: AG	Cai: to stop something from moving through or along something else; Lu: AG	stop someone from going past you by standing in front of them	Until now the main players in world trade, especially the United States and the European Union, have not only denied China the market economy status but also initiated a large number of anti-dumping investigations against Chinese products and imposed extraordinarily high tariffs to <b>block</b> their sales.	CPEDC
dominant	Organism: gene	Dominance	Lu: more power Not AG Dominance is a better label	AG	dominant gene that always produces a particular characteristic	However, the two <b>dominant</b> trade players seem keen to continue the unfair game even though China should no longer be subjected to the discriminatory rule.	CPEDC
players	Game/sports	Game/sport		AG	someone who plays a particular game or sport	However, the two dominant trade <b>players</b> seem keen to continue the unfair game even though China should no longer be subjected to the discriminatory rule.	CPEDC
pushing	Bodily action	Bodily action		AG	to move someone or something away from their previous position, using part of your body, especially your hands	The US has also been <b>pushing</b> the EU not to recognize China as a market economy.	CPEDC
isolate	Physical separation	Physical separation		Lu: I did not find the adj isolate in the two recommended dictionaries, so I use the basic meaning of the verb isolate	to keep someone in a place away from other people	As a result, politicians in developed countries have sought to soothe the nerves of their anxious voters, especially industrial workers, by taking a more <b>isolate</b> approach to tackle trade challenges.	CPEDC
rises	Bodily action	Movement	Cai: a human-oriented sense Lu: AG	Cai: to stand up Lu: AG	to move upwards or to a higher position	The trend of protectionism, once it <b>rises</b> , will not recede easily	CPEDC
recede	Liquid movement	Movement	Lu: AG	Cai: if water recedes, it moves back from an area that it was covering Lu: AG	to move back from a high point or level	The trend of protectionism, once it rises, will not <b>recede</b> easily	CPEDC
settle	Movement	Settlement	Lu: Not AG Settlement is a better label	Cai: if something such as dust, sand, or snow settles, it falls downwards through the air or water until it reaches the ground or the bottom of something Lu: AG	to make yourself or someone else comfortable and relaxed in a particular place or position (human-oriented)	And they should make concerted efforts to capitalize on the common interests and <b>settle</b> the differences before they turn into conflicts.	CPEDC

**Figure 5.12** Examples of inter-coding with co-rater A on vehicle grouping of 126 vehicle terms

Results of inter-coding show that reliability in the process of vehicle

grouping on the 126 metaphors is almost perfect with the value of Cohen  $\kappa$  as 0.877 ( $p=0.000$ ) and percentage of agreement as 89.7% (Landis and Koch,1977).

Table 5.3 shows that results of level of agreement between me and co-rater A on organism metaphor, fight/war metaphors and game/sports metaphor in the 126 metaphors are almost perfect, which is at a level of statistical significance (Landis and Koch,1977). This table also shows level of agreement between me and co-rater A on movement metaphor and journey metaphor are substantial, which is at a level of statistical significance (Landis and Koch,1977).

**Table 5.3** Results of level of agreement between me and co-rater A on five vehicle groupings

<b>Vehicle Grouping</b>	<b>Value of <math>\kappa</math></b>	<b>Percent Agreement</b>	<b><math>p</math> value</b>
<i>ORGANISM</i>	0.958	98.4%	<.001
<i>MOVEMENT</i>	0.689	94.4%	<.001
<i>JOURNEY</i>	0.734	96%	<.001
<i>FIGHT/WAR</i>	1	100%	<.001
<i>GAME/SPORTS</i>	1	100%	<.001

The relatively low level of agreement between me and co-rater A on movement metaphor and journey metaphor is due to our different understandings of two metaphors, as shown in Figure 5.12. Co-rater A integrated journey metaphor into the group of movement metaphor since she thinks that both of them were about motion and there was no clear boundary between them. I tended to group lexis involving someone moving along a path towards a destination into journey metaphor and group lexis involving physical movement with different directions and speeds as movement metaphor.

Based on results of inter-coding between co-rater B and me on 128 lexis co-occurring with terms associated with *protectionism* and *free trade*, we carried out vehicle grouping independently on the 116 lexis that both of us marked as metaphor. Examples of inter-coding of vehicle grouping on the 116 metaphors are shown in Figure 5.13.

	A	B	C	D	E	F	G	H
1	Tokens rising	VP by Cai Organism: Bodily action	VP by Chen Organism: Bodily action	Discussion	Basic meaning by Cai stand up	Basic meaning by Chen stand up	Tokens in Context In particular, the two sides shall be aware of the specter of protectionism <b>rising</b> from some corners of Europe.	Corpus CPEDC
2	product	Chemical product	Chemical product		a substance that is produced as a result of a chemical reaction in organic (=living) and inorganic (=not living) things	a substance that is produced as a result of a chemical reaction in organic (=living) and inorganic (=not living) things	Actually, US protectionism is not only a <b>product</b> of its economic woes; it's also political theater in the run up to the presidential election.	CPEDC
3	victim	victim	Crime	Cai: victim of crime is very specific; also victim of other bad situations; Chen: AG	someone who has been affected by a bad situation such as an accident or an illness	someone who has been affected by a bad situation such as an accident or an illness	That prompted Yao Jian, the ministry spokesman, to say earlier this month that China has become a major <b>victim</b> of trade protectionism.	CPEDC
4	dangerous	Physical damage	Physical damage		likely to harm or kill someone, or to damage or destroy something	likely to harm or kill someone, or to damage or destroy something	The World Bank regards trade protectionism as the most <b>dangerous</b> factor threatening global trade recovery.	CPEDC
5	free	Crime-prison	Freedom	Cai: I choose 'not held, tied up, or kept somewhere as a prisoner' as the more basic meaning so I think Crime-prison is a better label. Chen: AG	not held, tied up, or kept somewhere as a prisoner	not held, tied or fixed to somewhere	Time to break <b>free</b> of protectionist shackles	CPEDC
6	alarm	Sound/noise	Object		a piece of equipment that makes a loud noise to warn you of danger	an alarm clock	As the "Buy America" provision raises <b>alarms</b> against trade protectionism among state leaders and economists, China on Monday said "no" to a similar plan that bans foreign products in domestic stimulus projects.	CPEDC
7	fight	Fight/ war	Fight/ war		to take part in a war or battle	to take part in a war or battle	Xi's speech advocating open economies and free trade and the <b>fight</b> against protectionism was the second one Van Rompuy wanted to highlight.	CPEDC
8								

**Figure 5.13** Examples of inter-coding with co-rater B on vehicle groupings of 116 vehicle terms used with the search terms

Level of agreement between me and co-rater B on vehicle groupings on the 116 metaphors is substantial with the value of Cohen  $\kappa$  as 0.772 ( $p=0.000$ ) and percentage of agreement as 80.2% (Landis and Koch,1977). Table 5.4 shows that results of level of agreement between me and co-rater B on organism metaphor, fight/war metaphors and game/sports metaphor from the 116 metaphors are almost perfect, which is at a level of statistical significance (Landis and Koch,1977).

**Table 5.4** Results of level of agreement between me and co-rater B on four vehicle groupings

Vehicle Grouping	Value of $\kappa$	Percent Agreement	$p$ value
ORGANISM	0.849	93.1%	<.001
FIGHT/WAR	0.876	96.5%	<.001
GAME/SPORTS	0.876	96.5%	<.001
MOVEMENT	0.491	96.5%	<.001

Table 5.4 above also shows that results of level of agreement between me and co-rater B on movement metaphor in the 116 metaphors are moderate, which is at a level of statistical significance (Landis and Koch,1977). The disagreement on movement metaphor co-occurring with search terms may be due to co-rater B understanding movement in a broader sense than me. For instance, co-rater B categorized *derail* in the example *protectionism would derail* into movement metaphor since she understood *derail* as one kind of vehicle movement. However, I put *derail* in

this case into vehicle metaphor.

Co-rater B and I also carried out vehicle grouping independently on the 405 metaphors within 9 semantic tags and identified as metaphor by both of us. Examples of inter-coding of vehicle grouping on the 405 metaphors are shown in Figure 5.14.

	A	B	C	D	E	F	G	H
1	Left co-text endations , which are aimed at	Tokens breaking	Right co-text a nearly six-year deadlock whic	VP by Chen Physical separation	VP by Cai Physical separation	Discussion	Basic meaning by Chen if you break something, you make it separate into two or more pieces	Basic meaning by Cai if you break something, you make it separate into two or more pieces
2	crises were two	double-edged swords	. On the one hand , the crises	Fight/war:Weapon	Fight/war:Weapon		a weapon with a short handle and a long sharp blade	a weapon with a short handle and a long sharp blade
3	ommitment by lowering tariffs ,	demolishing	non-tariff barriers and widely o	Physical damage	Building destruction	Chen: AG	to completely destroy a building	to completely destroy a building
4	. Sino-EU trade talks aim to	defuse	solar tensions A British resea	Fight/war:Weapon	Fight/war:Weapon		to stop a bomb from exploding by removing its fuse	to stop a bomb from exploding by removing its fuse
5	ed by most observers as a long	shot	. In Europe , a general suspici	Fight/war: weapon	Game/sports	Cai: I prefer the game/sports sense, when hitting the ball at a position where the ball is still too far away from the goal you may fail to put it into the goal. Chen: I prefer the fight/war sense	small metal balls that are fired from a shotgun	an act of throwing, hitting, or kicking a ball, or a ball that has been thrown, hit, or kicked
6	Treasury to urge US and EU to	break down	trade barriers THE TREASURY wi	Physical separation	Building	Cai: refer to the object of break down, building is a better label; Chen: AG	to divide something such as a total amount into separate parts	to hit something such as a door or wall very hard so that it falls down
7								

**Figure 5.14** Examples of inter-coding with co-rater B on vehicle grouping of 405 vehicle terms within nine semantic tags

Level of agreement between me and co-rater B on vehicle groupings on the 405 metaphors is almost perfect with the value of Cohen  $\kappa$  as 0.862 ( $p=0.000$ ) and percentage of agreement as 90.3% (Landis and Koch,1977). Table 5.5 below shows that results of level of agreement between me and co-rater B on physical damage metaphor, fight/war metaphors, game/sports metaphor and weather metaphor in the 405 metaphors are almost perfect, which is at a level of statistical significance (Landis and Koch,1977).

**Table 5.5** Results of level of agreement between me and co-rater B on four vehicle groupings

Vehicle Grouping	Value of $\kappa$	Percent Agreement	$p$ value
PHYSICAL DAMAGE	0.847	99.2%	<.001
WEATHER	0.939	99.2%	<.001
FIGHT/WAR	0.895	95.5%	<.001
GAME/SPORTS	0.941	98.8%	<.001

During the inter-coding process of vehicle grouping on samples from my data, I find that disagreement between me and my co-raters are mainly due to the following four factors:

- 1) Co-rater and I chose a different basic meaning for the metaphor. For instance, I grouped *alarm* in example of *raises alarms against trade protectionism* into sound/noise metaphor with 'a piece of equipment that makes a loud noise to warn you of danger' as the more basic meaning while co-rater B grouped it into object metaphor with 'an alarm clock' as the more basic meaning, as in Figure 5.13. After discussion, co-rater B agreed with me and also grouped *alarm* as sound/noise metaphor.
- 2) Co-rater chose a wrong basic meaning for the metaphor. For instance, co-rater B grouped *fanning* in example *risks fanning protectionism* into machine metaphor since she chose the machine sense of nominal *fan* as the more basic meaning of *fan* as a verb. However, I grouped it into fire metaphor with 'make a fire burn more strongly' as its more basic meaning.
- 3) When there was no superordinate word in the more basic meaning that could help to determine a label for the vehicle term, co-rater and I may categorize it into different vehicle groupings. For instance, co-rater B grouped *blunt* in the example of *avoiding blunt protectionism* into object metaphor and I grouped it into tool metaphor. Both of our groupings were based on the same more basic meaning 'not pointed or sharp'. After discussion, co-rater B agreed with me and also grouped *blunt* as tool metaphor.
- 4) When there was more than one vehicle grouping candidate available for a metaphor, co-rater and I may categorize it into different vehicle groupings. For instance, I grouped *losers* in the example *the losers in free trade* into fight/war metaphor while co-rater B grouped it into game/sports metaphor. Both of our groupings are acceptable. Finally, I chose to give it the label of fight/war and keep consistency when grouping the same lexis in similar context.

Based on discussion with my co-raters, I revised my inter-coding manual for vehicle groupings, as shown in Appendix C.3.

## Chapter 6 Findings and Discussion: Part One

### 6.1 Metaphors Used Frequently in Popular Economic Discourse

#### 6.1.1 Findings of Frequently Used Metaphor in Popular Economic Discourse

As mentioned in Section 5.3, I identified metaphors in 15 randomly selected texts (5 texts from each corpus) with 10,797 words. Following the process of vehicle grouping demonstrated in Section 5.2, I categorized metaphors identified from the 15 sample texts into different vehicle groupings. The most frequently used vehicle groupings in the 15 sample texts can give an overview of metaphor use in popular economic discourse.

As mentioned in Section 5.4, metaphor identification of the 15 sample texts was carried out independently by me and co-rater B on a collaborative annotation tool eMargin and reliability in the process of metaphor identification is almost perfect. The process of metaphor identification is not straightforward. I took out some borderline cases like *abuse*, *resolve* to discuss with co-rater B, as mentioned in Section 5.4. The process of metaphor identification found 1195 metaphors with 432 prepositional metaphors excluded in three corpora. Details about the 15 sample texts are given in Table 6.1.

**Table 6.1** Quantitative details of 15 sample texts

	Corpus		
	CPEDC	UKPEDC	USPEDC
Number of texts	5	5	5
Number of tokens	3244	3609	3994
Number of sentences	122	160	167
Average text length	649	722	799
Number of metaphors	363	440	392
Number of personification metaphors	12	16	11
Metaphor density	11.1%	12.1%	9.8%

As mentioned in Section 3.5, CPEDC refers to Chinese Popular Economic Discourse Corpus. UKPEDC refers to UK Popular Economic



Discourse Corpus and USPEDC refers to US Popular Economic Discourse Corpus. Table 6.1 shows that the average text length is larger in sample texts from UKPEDC and USPEDC than in those that are from CPEDC. Table 6.1 also shows that there are only slight differences in metaphor density of the 15 sample texts.

After metaphor identification, vehicle terms were then categorized into related vehicle groupings. As discussed in Section 5.2, labels allocated to the vehicle groupings were constructed from semantics of the more basic meanings of vehicle terms in a bottom-up fashion. If necessary, some labels were also informed by previous studies. As mentioned in Section 5.4, vehicle groupings were also carried out independently by me and co-rater A on 126 metaphors from 802 lexis we marked as metaphors. Results show that reliability in the process of vehicle grouping with co-rater A is almost perfect.

Raw frequency of metaphors suggesting top ten vehicle groupings, and normalised frequency (per 10,000) for sample texts from each corpus are given in Table 6.2 below. I choose to normalize frequency on the basis of per 10,000 here since there are 10,797 words in the 15 sample texts. Log likelihood test is chosen to test whether the observed differences are statistically significant since it was treated as equivalent with traditional Chi-squared test but can work better with relatively small samples (Dunning, 1993). When expected value in the contingency table is at least five, the results of chi-squared test and log likelihood test are almost identical, but log likelihood test can also work well for expected value less than five (Dunning, 1993). Log likelihood test was conducted by using the UCREL Significance Test System (<http://corpora.lancs.ac.uk/sigtest/>). The threshold value of  $p$  as a measure of evidence to reject null hypothesis is arbitrary (Dahiru, 2008; Singh, 2013). Although  $p < 0.05$  is popular as good evidence to reject null hypothesis, researchers can use more stringent cut-offs such as 0.01, which means that there is strong evidence to reject null hypothesis (Singh, 2013). In this research, I choose 0.01 as the cut-offs of P value to reject null hypothesis.

Table 6.2 below shows that the top four metaphors used in the 15 sample texts are the same. Table 6.2 also shows that *ORGANISM* is the most frequently used metaphor in the 15 sample texts. No significant differences are observed in the frequency of *ORGANISM* in sample texts from three corpora (log-likelihood=0.88,  $p=.644$ ). The frequency of *MOVEMENT* is observed to be slightly higher in sample texts from USPEDC than in those that are from CPEDC and UKPEDC. Significant differences are observed in

the frequency of *MOVEMENT* in sample texts from USPEDC and UKPEDC (log-likelihood=7.18,  $p=.007$ ) but are not observed in the frequency of *MOVEMENT* in sample texts from USPEDC and CPEDC (log-likelihood=1.17,  $p=.280$ ) and from UKPEDC and CPEDC (log-likelihood=2.3,  $p=.129$ ). The frequency of *FIGHT/WAR* is observed to be higher in sample texts from CPEDC and UKPEDC than those that are from USPEDC. Significant differences are not observed in the frequency of *FIGHT/WAR* in sample texts from CPEDC and USPEDC (log-likelihood=4.20,  $p=.040$ ), and in sample texts from USPEDC and UKPEDC (log-likelihood=6.49,  $p=.011$ ).

**Table 6.2** Top ten vehicle groupings in the 15 sample texts

CPEDC			UKPEDC			USPEDC		
Vehicle grouping	freq	norm	Vehicle grouping	freq	norm	Vehicle grouping	freq	norm
<i>ORGANISM</i>	74	228	<i>ORGANISM</i>	96	266	<i>ORGANISM</i>	76	190
<i>MOVEMENT</i>	48	147	<i>FIGHT/WAR</i>	61	169	<i>MOVEMENT</i>	63	158
<i>FIGHT/WAR</i>	47	144	<i>MOVEMENT</i>	43	119	<i>FIGHT/WAR</i>	33	83
<i>AREA/SPACE</i>	28	86	<i>AREA/SPACE</i>	33	91	<i>AREA/SPACE</i>	25	63
<i>GAME/SPORTS</i>	21	65	<i>GAME/SPORTS</i>	33	91	<i>MACHINE</i>	16	40
<i>POSITION</i>	10	31	<i>DISTANCE</i>	19	53	<i>POSITION</i>	16	40
<i>PHYSICAL POWER</i>	10	31	<i>BUILDING</i>	16	44	<i>BUILDING;</i>	15	38
<i>SEEING</i>	9	28	<i>MACHINE</i>	15	42	<i>PHYSICAL POWER</i>	12	30
<i>MACHINE;</i>	7	22	<i>PHYSICAL POWER</i>	11	30	<i>GAME/SPORTS</i>	9	23
<i>VEHICLE</i>	7	22	<i>VEHICLE</i>	8	22	<i>VEHICLE</i>	9	23
<i>DISTANCE</i>	6	18	<i>SEEING</i>	8	22	<i>LIQUID MOVEMENT</i>	9	23
<i>PHYSICAL DAMAGE</i>	5	15	<i>CONTAINER</i>	8	22	<i>DISTANCE</i>	6	15
<i>CHEMICAL PROCESS</i>	5	15	<i>MEDICAL</i>	5	14	<i>SIZE</i>	5	13

Similarities and differences are also observed in the frequency of other vehicle groupings used in the sample texts. For example, Table 6.2 above shows that *GAME/SPORTS* is observed to be more frequently used in sample texts from UKPEDC and CPEDC than those that are from USPEDC. Significant differences are observed in the frequency of *GAME/SPORTS* in sample texts from UKPEDC and USPEDC (log-likelihood=12.7,  $p<.001$ ) and in sample texts from CPEDC and USPEDC (log-likelihood=6.23,  $p=.009$ ). *MACHINE* is more frequently used in sample texts from USPEDC and

UKPEDC than those that are from CPEDC. However, no significant differences are observed in the frequency of *MACHINE* in sample texts from CPEDC and UKPEDC (log-likelihood=1.71,  $p=.191$ ), and in sample texts from CPEDC and USPEDC (log-likelihood=3.01,  $p=.083$ ). *BUILDING* exemplified by linguistic metaphors such as *barriers* in citation (21) is only observed to be frequently used in UKPEDC and USPEDC.

(21) The world's biggest economies have been quietly raising ***barriers*** at their borders... (*Wall Street Journal* 2014)

Table 6.2 also shows that some less frequently used metaphors are only observed in certain corpus, for instance, *PHYSICAL DAMAGE* and *CHEMICAL PROCESS* in CPEDC and *LIQUID MOVEMENT* in USPEDC. Citations suggesting each grouping are given as follows: *harmed* in (22) suggesting *PHYSICAL DAMAGE*, *eroding* in (23) suggesting *CHEMICAL PROCESS* and *flow* in (24) suggesting *LIQUID MOVEMENT*.

(22) Based on his research, China has become the most frequently ***harmed*** country... (*People's Daily* 2013)

(23) But its position has been ***eroding*** with the rise of emerging economies... (*China Daily* 2017)

(24) President Obama should recognize the critical need for a free ***flow*** of trade and finance across the world's borders, especially our own. (*New York Times* 2009)

In brief, the results of vehicle groupings in Table 6.2 show that *ORGANISM* is used most frequently and share similar frequency in the 15 sample texts. *MACHINE* and *FIGHT/WAR* are frequently used and share similar frequency in the 15 sample texts. The results of vehicle groupings in Table 6.2 also indicate that sample texts from USPEDC use more *MOVEMENT* than those that are from UKPEDC. CPEDC and UKPEDC use more *GAME/SPORTS* than those that are from USPEDC. *BUILDING* metaphor is frequently used in sample texts from UKPEDC and USPEDC.

### 6.1.2 Discussions of Frequently Used Metaphor in Popular Economic Discourse

Metaphors identified in the 15 sample texts from three corpora are not, of course, the total number of metaphors in the three corpora. However, frequently used metaphors identified in the 15 sample texts seem to be consistent with those metaphors that are well documented in existing metaphor literature in economic discourse. Thus, frequently used metaphors

found in the sample texts may be representative of frequently used metaphors in three corpora.

The quantitative study in Section 6.1.1 shows that the sample texts in three corpora share similarity in metaphor density. With prepositional metaphors excluded, about 10%-12% of lexis in the sample texts tend to be metaphor. With prepositional metaphors included, about 14%-16% lexis in the sample texts tend to be metaphor, which is similar to Krennmayr's finding (2011) of metaphor density in news which is 16.4% although she and I followed different metaphor identification approaches. This finding seems to indicate that metaphor in related registers tends to share similarity in metaphor density.

The most frequent use of *ORGANISM* in the sample texts is consistent with the predominance of *ECONOMY IS A LIVING ORGANISM* in economic discourse (Cardini, 2014; Charteris-Black, 2004; Chow, 2010; Marshall, 1898; O'Mara Shimek et al., 2015; White, 2003). There are slight differences in types of *ORGANISM* grouping when different economic topics are studied in different studies. However, the number of linguistic metaphors suggesting this metaphor in these studies are still comparable. For instance, in Chow's (2010) comparative study of conceptualization of *economy* in her UK and HK popular economic discourse, she finds that *A LIVING ORGANISM* is observed to write about *economy* most frequently. She finds that types of *ORGANISM* grouping such as life cycle, physical/mental health and bodily actions are used to write about *economy* in her English and Chinese pilot corpora. Similarly, O'Mara Shimek et al. (2015) find that *A LIVING ORGANISM* is frequently used to write about *stock market* in their three corpora consisting of three American newspapers. They observe that types of *ORGANISM* grouping such as disease and health/illness are used to write about *stock market*. By associating economic topics with *ORGANISM*, the physiological knowledge about a living being as a whole with life cycle and as body parts with different functions and healthy status is transferred to facilitate the understanding of different topics in economic discourse (Musolff, 2016; O'Mara Shimek et al., 2015; Resche, 2012; White, 2003). This may further influence stances towards and solutions to the concerned topics (O'Mara Shimek et al., 2015; Schön, 1993). For instance, O'Mara Shimek et al. (2015) find that when the stock market crisis is constructed as an unhealthy living being, rescue-oriented solutions such as interventionist economic policies are more favoured. Similar to their study, economic and trade activities are also associated with different healthy status of a living being in current

research. For instance, *remedies* and *conditions* in (25) indicate that when US domestic solar panel industry is described as an unhealthy living being, steep tariffs on Chinese solar panels are favoured as a cure for problems in U.S. solar panel industry. The following example is from my data.

(25) U.S. Imposes Steep Tariffs on Chinese Solar Panels...In addition, the department announced anti-subsidy duties of 27.64 percent to 49.79 percent for Chinese modules. “These **remedies** come just in time to enable the domestic industry to return to **conditions** of fair trade,” said Mukesh Dulani, president of SolarWorld Americas. (*New York Times* 2014)

Following *ORGANISM*, *MOVEMENT* is also frequently used in the 15 sample texts. *MOVEMENT* frequently used to write about topics in economic and trade domains in my data provides support for others scholars’ claims about its frequent use in popular economic discourse (Cardini, 2014; Charteris-Black and Musolf, 2003; Liu, 2015). *MOVEMENT* is frequently used to write about abstract activities in economic and trade domains since they are grounded in our everyday physical experience (Boers and Demecheleer, 1995; Lakoff and Johnson, 1999). Boers and Demecheleer (1995, p.679) write that “various (abstract) activities in the domain of economics are commonly conceived as motion of a company, organization, industry, country, etc. over a path towards a goal”. For instance, Liu (2015) finds that *PHYSICAL MOVEMENT* is frequently used to write about more abstract activities such as exchange rate change in the domain of currency disputes in his China Daily corpus (English) and New York Times Corpus. Cardini (2014, p.72) also finds that status of economic activities is frequently described as motion with different directions such as *plummet* in his example of *The new drachma would plummet*. Similar to their study, movement metaphor is also frequently used to write about various changes in economic activities in my data. For instance, *lowered* in example (26) indicates that less tariffs on China’s solar panels are downward movement.

(26) Karel De Gucht, the EU trade chief, **lowered** the 47 per cent punitive tariffs Brussels recommended last month to just 11.8 per cent. (*Financial Times* 2013)

*FIGHT/WAR* is another frequently used metaphor used to describe topics in economic and trade domains in my data, which provides support for other scholars’ claims about its frequent use in popular economic discourse (Boers and Demecheleer, 1995; Liu, 2015; Joris et al. 2018). There is 93% of the 15 sample texts corpora containing *FIGHT/WAR*. Since current research focuses

on the topic of *trade disputes* which are economic activities involving fierce competition, it is not surprising to observe such widely use of *FIGHT/WAR* in my data. The normalized frequency (per 10,000 words) of lexis suggesting *FIGHT/WAR* is 58 in sample texts from CPEDC, 67 in sample texts from UKPEDC and 50 in sample texts from USPEDC. This finding is even more frequent than Boers and Demecheleer's (1995) finding that the average number of lexis suggesting *FIGHT/WAR* per 10,000 words is 39.4 in their English popular economic discourse. That is, this finding provides empirical support for Boers and Demecheleer's (1995, p.688) finding that *FIGHT/WAR* is frequently used to "depict a rough and relentless business world" in English popular economic discourse. Flusberg et al. (2018) write that the popularity of war metaphor in public discourse can be explained by its structural knowledge and function. For instance, they find that structural knowledge such as "a conflict between two opposing forces" can be used to facilitate the understanding of a complex and abstract topics (p.4).

*GAME/SPORTS* that shares similar semantics with *FIGHT/WAR* is also frequently used in the sample texts, which supports other scholars' claims about their frequent use in popular economic discourse (Chow, 2010; Joris et al. 2018; Koller, 2003; López and Llopis, 2010). For instance, Koller (2003) observes frequent use of *WAR*, *GAME* and *SPORTS* writing about *marketing and sales*. She finds that different aspects of *marketing* are highlighted when different metaphors are selected. For example, she finds that when using *WAR* aggressive aspects of *marketing* are highlighted while competitive but less aggressive aspects are highlighted when *GAME/SPORTS* is used. That is, *FIGHT/WAR* and *GAME/SPORTS* seem to be conventionally and frequently used to foreground and background different elements in economic and trade topics. The way that these two metaphors are used to foreground and background different aspects of specific trade topics in this study is further discussed in following sections.

Two inanimate metaphors related to *MACHINE* and *BUILDING* are also frequently used in my data. *MACHINE* is frequently used in the 15 sample texts from three corpora, which supports other scholars' claims about its frequent use to describe various economic topics such as *currency disputes* (Liu, 2015) and *economy* (Chow, 2010). Liu (2015) observes that *MACHINE* is frequently used in both his China Daily Corpus (English) and New York Times Corpus to write about *currency disputes*. Chow (2010) observes similar frequency of *MACHINE* in both of her Chinese and English pilot corpora. Similar to her observation, I also did not observed significant differences in

the frequency of lexis suggesting *MACHINE* in the 15 sample texts from three corpora. Some previous studies also observe that *BUILDING* is frequently used to write about various economic topics such as *the Euro crisis* (Joris et al., 2018), *financial crisis* (López and Llopis, 2010) and *trade* (Burgers and Ahrens, 2020). In my data, *BUILDING* is frequently used in sample texts from UKPEDC and USPEDC, which supports some scholars' claims about differences in discourse communities' preferences for this inanimate metaphor. For instance, López and Llopis (2010) observe that *BUILDING* is more favoured by their Spanish Corpus B which was built within the context of financial crisis overtly admitted by Spain media to frame *financial crisis*. Joris et al. (2018) observe frequent use of *BUILDING* frame writing about *the Euro crisis* in 24 European newspapers. They find that *BUILDING* is more favoured by journalists in stronger economies such as Finland and Germany to write about *the Euro crisis*.

Previous studies' findings of frequent use of *MACHINE* and *BUILDING* writing about economic and trade topics give no exact answer to whether these two inanimate metaphors tend to be more favoured by certain languages and cultures. This may be because both findings of current study and previous studies are only based on results of sample texts or randomly selected concordance lines writing about certain topics. Claims based on findings observed in the sample texts or the randomly selected citations may be biased. However, it is fairly universally accepted that the use of metaphor appears to indicate underlying stances and solutions to the discussed events (Charteris-Black, 2004; Joris et al., 2018; Klamer and Leonard, 1994; O'Mara-Shimek et al., 2015; Schön, 1993). For instance, in O'Mara-Shimek et al.'s (2015) study, they find that three US newspapers of different political orientations have different preferences for using an animate or an inanimate metaphor to write about *stock market*. They interpret the newspapers' preferences for an animate or inanimate metaphor following Charteris-Black's (2004) understanding of their implications on the degree of predictivity and human control. For instance, they observe that inanimate metaphor *A STANDING STRUCTURE* exemplified by lexis such as *collapse* and *unstable* are used twice more frequently in *Washington Times* than *New York Times* and *Wall Street Journal* to write about *stock market* (p.118). They find that when crisis in stock market is described with an inanimate metaphor, it appears to be understood as an objective process out of human control and a *laissez-faire* economic approach is favoured.

However, Charteris-Black (2004) has not clearly justified why and how the choice between an animate and inanimate metaphor is related to predictivity and human control of the topics. In orthodox economic thought, economic activities are assumed to be closely associated with properties of machine and rules of physical world, for example, market failure as machine failure (Novak, 2011). However, economy as machine is criticized as reductionism since the agent of economy activities are human beings whose behaviours are more complex and less predictable than the natural and physical phenomenon which follow relatively fixed laws (e.g. the law of gravity) in pure science (Hodgson, 1995; Novak, 2011). That is, when inanimate metaphors such as *BUILDING* and *MACHINE* are used to write about economic activities, these activities seem to be treated as natural and physical phenomenon which are assumed to follow relatively fixed laws and is beyond human control. This perspective can be used to interpret frequent use of the two inanimate metaphors in my data. For instance, when *protectionism* is associated with a physical phenomenon in (27), *protectionism* seems to be treated as a trade phenomenon that is beyond human control. Similarly, when *industry failure* is associated with a falling building in (28), industry failure appears to be treated as a natural phenomenon beyond human control. The following examples are from my data.

(27) In late 1929, intense protectionist **pressure** from farm, labor and business groups prodded the Republican-dominated Congress to pass the disastrous Smoot-Hawley Tariff Act. (*New York Times* 2009)

(28) Mr De Gucht attempted to address those concerns, saying that without reversing the flood of Chinese solar panels into Europe, the industry could eventually **collapse**. (*Financial Times* 2013)

In brief, despite language and cultural differences, the findings of frequent metaphors in my data are generally in line with previous corpus studies on metaphor in popular economic discourse. Gil (2018) claims that this near-universal use of certain metaphors in popular economic discourse may be explained by the need for shared knowledge among different discourse communities to facilitate effective communication among them.



## 6.2 Quantitative Findings and Discussions of Metaphor Used with Search Terms

### 6.2.1 Frequency and Dispersion of Search Terms

Two antonymous terms were searched for in three corpora using the software Sketch Engine (Kilgarriff et al., 2014). There were 2879 sentences containing the search terms in total in three corpora. Raw frequency of each search term, and normalised frequency (per million) for each corpus are given in Table 6.3.

**Table 6.3** Numbers of occurrences of search terms in each corpus

Term	CPEDC		UKPEDC		USPEDC	
	freq	norm	freq	norm	freq	norm
Protectionism /protectionist/ anti-free trade	1140	2120	665	1240	315	1414
Free trade /anti-protectionism/ anti-protectionist	244	454	357	666	158	709

Table 6.3 shows that occurrences of the term associated with *protectionism* outnumber those of the phrase associated with *free trade* in three corpora, especially in CPEDC. This table also shows that the term associated with *protectionism* is 1.7 times more frequent in CPEDC than in UKPEDC and 1.5 times more frequent than in USPEDC. The phrase associated with *free trade* is about 1.5 times more frequent in UKPEDC and USPEDC than in CPEDC. As mentioned in Section 3.6, Deviation of Proportions (DP) is a measure telling distribution of a word or phrase throughout the corpus (Gries, 2008; Brezina, 2018). DP was used to measure the distribution of the terms associated with *protectionism* and *free trade* in three corpora. By calculating DP of the search terms, I can get the information about whether the search terms are evenly distributed or unevenly distributed throughout each corpus. The values of DP: 0.025 in CPEDC; 0.05 in UKPEDC; 0.068 in USPEDC; indicate that the term associated with *protectionism* is evenly distributed in each corpus. However, the phrase associated with *free trade* is unevenly distributed in CPEDC. For instance, *free trade* occurs only 39 times in 0.2 million out of 0.54 million words with DP value of 0.4. The values of DP also indicate an uneven distribution of the phrase associated with *free trade* in UKPEDC (DP=0.105) and USPEDC (DP=0.139). However, the DP values of UKPEDC and USPEDC are closer to 0 than to 1, which signifies a more even distribution of

the phrase associated with *free trade* in UKPEDC and USPEDC than CPEDC.

### 6.2.2 Frequency of Metaphors Co-occurring with Search Terms

As mentioned in Section 5.4, I found 1127 metaphors co-occurring with the search terms with 181 prepositional metaphors excluded. As discussed in Section 4.3.1, prepositional metaphors are excluded since they are not topic-specific and not of interest to this study. Metaphor identification was carried out independently by me and co-rater B on 128 lexis co-occurring with the search terms and 116 lexis were marked as metaphor by both of us, as mentioned in Section 5.4.2. Results show that reliability of my inter-coding process with co-rater B on metaphor identification of the 128 lexis is substantial, as mentioned in Section 5.4.2. When counting the number of metaphorical words and expressions within a clause, I followed the practice of Boers (1999), Semino (2002) and Liu (2015), as mentioned in Section 4.3.2. I counted metaphorical words and expressions in close proximity in a clause and related to the same vehicle grouping as one instance of linguistic metaphor. For instance, I counted metaphorical words such as *go down* and *route* in citation (29) as one instance of linguistic metaphor suggesting *JOURNEY*.

(29) The U.S. decision to **go down** the **route** of protectionism is a major setback for the world trading system. (*New York Times* 2002)

Since the number of occurrences of the term associated with *protectionism* is larger in CPEDC than in UKPEDC and USPEDC, I expect that the number of metaphors co-occurring with the term would also be higher in CPEDC. This is indeed the case. As shown in Table 6.4, the normalized frequency of metaphors used with the term *protectionism* is more than 1.3 times as high in CPEDC than in UKPEDC and USPEDC, which is proportionately slightly lower than the frequency of the term itself would suggest. Similar pattern is observed for the normalized frequency of the phrase *free trade* and the number of metaphors used with it in three corpora. The normalized frequency of metaphors used with the phrase *free trade* is more than 3 times as high in UKPEDC and USPEDC than in CPEDC, which is much higher than the frequency of the phrase itself would suggest.

**Table 6.4** Numbers of occurrences of metaphor used with search terms

Term	CPEDC		UKPEDC		USPEDC	
	freq	norm	freq	norm	freq	norm
Protectionism /protectionist/ anti-free trade	487	906	346	645	141	633
Free trade /anti-protectionism/ anti-protectionist	25	46	87	162	41	184

As discussed in Section 5.2, the process of vehicle grouping is not straightforward and interpretive. Vehicle grouping was also carried out independently by me and co-rater B on the 116 lexis that both of us marked as metaphors, as mentioned in Section 5.4.2. We kept a record of our coding and collaborative discussion to achieve better trustworthiness of vehicle groupings. Results show that reliability of my inter-coding process with co-rater B on vehicle grouping of the 116 metaphors was substantial, as mentioned in Section 5.4.2. Results of level of agreement between me and co-rater B on four frequently used vehicle groupings used with the search terms were also reported in Section 5.4.2. Level of agreement between me and co-rater B is almost perfect on organism metaphor, fight/war metaphors and game/sports metaphor from the 116 metaphors but moderate on movement metaphor.

During the process of analysis, vehicle groupings with less than 3 vehicle terms were excluded from discussion since extremely low frequency of metaphor use may be idiosyncratic ways of writing. As I am attempting to find out about language use in general, an individual's usage is not of interest in this study. Table 6.5 shows that both similarities and differences are observed in the frequency of vehicle groupings used with the term associated with *protectionism* in three corpora.

**Table 6.5** Vehicle groupings for metaphors used with the term associated with *protectionism*

CPEDC			UKPEDC			USPEDC		
Vehicle grouping	freq	norm	Vehicle grouping	freq	norm	Vehicle grouping	freq	norm
<i>FIGHT/WAR</i>	146	272	<i>ORGANISM</i>	84	157	<i>ORGANISM</i>	43	193
<i>ORGANISM</i>	119	221	<i>FIGHT/WAR</i>	45	84	<i>FIGHT/WAR</i>	27	121
<i>GAME/SPORTS</i>	35	65	<i>MOVEMENT</i>	28	52	<i>MOVEMENT</i>	9	40
<i>MOVEMENT</i>	34	63	<i>MACHINE</i>	22	41	<i>GAME/SPORTS</i>	8	36
<i>JOURNEY</i>	23	43	<i>JOURNEY</i>	20	37	<i>JOURNEY</i>	6	27

**Table 6.5** Vehicle groupings for metaphors used with the term associated with *protectionism* (continued)

CPEDC			UKPEDC			USPEDC		
Vehicle grouping	freq	norm	Vehicle grouping	freq	norm	Vehicle grouping	freq	norm
PHYSICAL DAMAGE	20	37	GAME/SPORTS	18	34	MACHINE	6	27
LIQUID MOVEMENT	19	35	LIQUID MOVEMENT	17	32	PHYSICAL SHAPE	6	27
MACHINE	17	32	SOUND	14	26	LIQUID MOVEMENT	6	27
VICTIM	12	22	PHYSICAL SHAPE	12	22	FIRE	4	18
MEDICINE	8	15	BUILDING	11	21	BUILDING	4	18
PHYSICAL POWER	6	11	VEHICLE	11	21	VEHICLE	3	13
WEATHER	5	9	PHYSICAL POWER	11	21	MONSTER	3	13
CHEMICAL REACTION	5	9	PHYSICAL DAMAGE	9	17			
BUILDING	4	7	FIRE	8	15			
MONSTER	3	6	MONSTER	4	7			

Table 6.5 shows that the most frequent vehicle grouping used with the term associated with *protectionism* in UKPEDC and USPEDC is *ORGANISM* but *FIGHT/WAR* in CPEDC. *FIGHT/WAR* co-occurring with the term associated with *protectionism* is used much more frequently in CPEDC than in UKPEDC and USPEDC. Significant differences are observed in the frequency of *FIGHT/WAR* used with *protectionism* in CPEDC and UKPEDC (log-likelihood=34.74,  $p<.001$ ), and in CPEDC and USPEDC (log-likelihood=6.79,  $p=.009$ ). No significant differences are observed in the frequency of *FIGHT/WAR* used with *protectionism* in USPEDC and UKPEDC (log-likelihood=2.13,  $p=.144$ ). There are also no significant differences observed in the frequency of *ORGANISM* used with the term associated with *protectionism* in three corpora: CPEDC and UKPEDC (log-likelihood=0.00,  $p=.958$ ); CPEDC and USPEDC (log-likelihood=2.05,  $p=.153$ ); UKPEDC and USPEDC (log-likelihood=1.97,  $p=.160$ ).

Table 6.5 shows that the third most frequent vehicle grouping used with the term associated with *protectionism* in UKPEDC and USPEDC is *MOVEMENT* but *GAME/SPORTS* in CPEDC. However, no significant differences are observed in the frequency of the two metaphors co-occurring with the term associated with *protectionism* in three corpora: *GAME/SPORTS* (log-likelihood=1.47,  $p=.480$ ) and *MOVEMENT* (log-likelihood=0.57,  $p=.753$ ). There are also no significant differences in the frequency of other vehicle groupings

used with *protectionism* in three corpora, for example, *JOURNEY* (log-likelihood=0.67,  $p=.714$ ), *MACHINE* (log-likelihood=3.71,  $p=.156$ ), *LIQUID MOVEMENT* (log-likelihood=0.50,  $p=.779$ ) and *MONSTER* (log-likelihood=2.28,  $p=.319$ ). Table 6.5 also shows that some vehicle groupings are only observed to be used in certain corpora. For example, *VICTIM* in (30) and *MEDICINE* in (31) are observed to frequently co-occur with the term associated with *protectionism* in CPEDC. The source of citation (31) is originally produced by *Xinhua agency* and reproduced by *People's Daily*. *SOUND* in (32) are observed to frequently co-occur with the term associated with *protectionism* in UKPEDC. *PHYSICAL DAMAGE* frequently co-occurs with the term associated with *protectionism* in CPEDC and UKPEDC, as in (33) and (34). No significant differences are not observed in the frequency of *PHYSICAL DAMAGE* co-occurring with *protectionism* in the two corpora (log-likelihood=1.41,  $p=.235$ ). *PHYSICAL SHAPE* and *FIRE* frequently co-occur with the term associated with *protectionism* in UKPEDC and USPEDC, as in (35) and (36). No significant differences are not observed in the frequency of *PHYSICAL SHAPE* (log-likelihood=0.17,  $p=.680$ ) and *FIRE* (log-likelihood=0.11,  $p=.738$ ) co-occurring with *protectionism* in UKPEDC and USPEDC.

(30) He said China, as the world's largest exporter and supplier of labor-intensive products, will fall **victim** to surging protectionism globally. (*China Daily* 2010)

(31) Protectionism no **painkiller** for Europe. (*People's Daily* 2013)

(32) As the forces of globalisation strengthen, the **drumbeat** of protectionism is growing louder. (*Guardian* 2006)

(33) A British researcher says China is the most frequently **harmed** country by foreign protectionism. (*China Daily* 2013)

(34) Advisers to president-elect Donald Trump ... amid concern that an era of US protectionism would **damage** the global economy. (*Financial Times* 2016)

(35) All the protectionism that has occurred has happened pre-Trump and pre-Brexit and you have to wonder what the rise of populism will do to add a further spice to this protectionist **spiral**... (*Financial Times* 2016)

(36) 'It's our impression that the momentum of reform has slowed down,' he said, adding that the grudging progress was **stoking** protectionism in the United States. (*New York Times* 2003)

To further examine the way metaphor is used to write about and frame the term associated with *protectionism*, I carry out qualitative studies on the following metaphors in Section 6.3 and Section 6.4.

- a) Metaphor used much more frequently in CPEDC than in UKPEDC and USPEDC: *FIGHT/WAR*;
- b) Frequently used metaphors with no significant differences in their frequency in three corpora: *ORGANISM* and *MOVEMENT*;
- c) Less frequently used metaphors with no significant differences in their frequency in three corpora: *MONSTER*;
- d) Metaphors only observed in certain corpora: *VICTIM* in CPEDC, and *FIRE* in UKPEDC and USPEDC.

As mentioned in Table 6.4, occurrences of metaphors co-occurring with the phrase associated with *free trade* is outnumbered by those of metaphors writing about the term associated with *protectionism*. Table 6.6 below shows that the number of metaphors in each vehicle grouping writing about *free trade* is relatively small in each corpus. Since the process of vehicle grouping is interpretive, I should avoid drawing strong conclusions based on the small number of metaphors co-occurring with *free trade*.

**Table 6.6** Vehicle groupings for metaphors used with the phrase associated with *free trade*

CPEDC			UKPEDC			USPEDC		
Vehicle grouping	freq	norm	Vehicle grouping	freq	norm	Vehicle grouping	freq	norm
<i>BUILDING</i>	8	15	<i>FIGHT/WAR</i>	16	30	<i>ORGANISM</i>	17	76
<i>GAME/SPORTS</i>	6	11	<i>BUILDING</i>	16	30	<i>JOURNEY</i>	5	22
<i>JOURNEY</i>	3	6	<i>ORGANISM</i>	11	21	<i>BUILDING</i>	4	18
			<i>MOVEMENT</i>	6	11	<i>FIGHT/WAR</i>	3	13
			<i>RELIGION</i>	6	11	<i>GAME/SPORTS</i>	3	13
			<i>JOURNEY</i>	5	9			
			<i>GAME/SPORTS</i>	5	9			

Table 6.6 shows that metaphors co-occur most frequently with the phrase associated with *free trade* is *BUILDING* in CPEDC, *FIGHT/WAR* in UKPEDC and *ORGANISM* in USPEDC. No significant differences are observed in the frequency of *BUILDING* used with *free trade* in three corpora (log-likelihood=5.03,  $p=.081$ ). However, *ORGANISM* is observed to be used much more frequently in USPEDC than in UKPEDC, which is significant at a

level of statistical confidence (log-likelihood=12.80,  $p < .001$ ). *FIGHT/WAR* is only observed to be used with *free trade* in UKPEDC and USPEDC. No significant differences are observed in the frequency of *FIGHT/WAR* used with *free trade* in UKPEDC and USPEDC (log-likelihood=2.61,  $p = .106$ ). There are also no significant differences in other frequently used metaphors co-occurring with *free trade* in three corpora, for example, *GAME/SPORTS* (log-likelihood=6.35,  $p = .042$ ) and *JOURNEY* (log-likelihood=1.94,  $p = .379$ ). Table 6.6 also shows that *RELIGION* such as *gospel* in citation (37) is only observed to be used with *free trade* in UKPEDC.

(37) Gordon Brown expressly warns against abandoning “the ***gospel*** of free trade”. (*Times* 2009)

More similarities and differences within broad patterns of the following metaphors used to write about and frame the phrase associated with *free trade* are further studied qualitatively in Section 6.5 and Section 6.6.

a) Metaphors frequently used only in UKPEDC and USPEDC: *ORGANISM* and *FIGHT/WAR*.

b) Frequently used metaphors with no significant differences in their frequency in three corpora: *GAME/SPORTS*;

### 6.2.3 Discussions of Quantitative Findings

As reported in Section 6.2.1, CPEDC talks about the topic *protectionism* much more frequently than UKPEDC and USPEDC but talks about *free trade* less frequently. The data itself doesn't explain this observation. This may be explained by different economic systems and market status between the EU, the US and China. China, as a WTO member without market economy status, is more likely to face protectionism from other trade partners and be accused of protectionism from them. Puccio (2015) writes that trade partners using a surrogate country method to evaluate normal value of China's exports has proven to lead to higher anti-dumping duties on China. From China's perspective, much higher anti-dumping duties on China's exports is protectionism from its trade partners. Meanwhile, China's exports are more likely to be treated as dumping into others' market, if trade partners such as the EU and the US use the price and cost of a third alternative country as the normal value rather than China's domestic value (Kim and Ahn, 2019; Puccio, 2015; Tietje and Nowrot, 2011; Washington, 2018). Thus, when reporting trade disputes between China, the EU and the US, it is predicable that Chinese newspapers tend to be more concerned about the topic of *protectionism*. The UK and the US, as mature market

economies in international system, are assumed to have a long history of opposing protectionism (Cai and Deignan, 2019). Cai and Deignan (2019) explain that the relatively low frequency of protectionism may be because opposing protectionism has become part of these market economies' background value. Meanwhile, since the UK and the US are at the stage of financial capitalism, financial capital has a dominant position in these economies (Wen et al., 2020). Advocating free trade is beneficial for globalization of their financial capital (Wen et al., 2020). Thus, it is also predicable that UK newspapers and US newspapers operating under the context of financial capital globalization are more likely to advocate other trade partners to follow free trade and oppose unfair trade practice.

Since CPEDC talks about *protectionism* more frequently than UKPEDC and USPEDC, it is within expectation that the number of metaphors used with *protectionism* is higher in CPEDC than that in UKPEDC and in USPEDC. Similarly, it is within expectation that the number of metaphors used with *free trade* is lower in CPEDC than that in UKPEDC and in USPEDC. As shown in Section 6.2.2, it is also within expectation that more types of metaphors are observed to write about *protectionism* than those that writing about *free trade* in three corpora. For instance, some metaphors such as *wind* and *blowing* in (38) and *storm* in (39) suggesting *WEATHER* are only observed to write about *protectionism* rather than *free trade* in three corpora..

(38) Protectionism's **winds** of change are **blowing**, but the left can make it work. (*Guardian* 2017)

(39) During the trade protectionist **storm** triggered by the financial crisis... (*Global Times* 2009)

Most frequently used metaphors co-occurring with the terms associated with *protectionism* and *free trade* in three corpora, as shown in Section 6.2.2, are generally in line with previous corpus studies on metaphor in popular economic discourse. For instance, despite differences in languages and discourse communities, frequently used metaphors in popular economic discourse such as *ORGANISM*, *MOVEMENT* and *MACHINE* writing about topics like *currency disputes* (Liu, 2015), and *FIGHT/WAR* and *GAME/SPORTS* writing about *the Euro crisis* (Arrese and Vara-Miguel, 2016; Joris et al., 2018) are used with *protectionism* in three corpora. Metaphors such as *ORGANISM* and *GAME/SPORTS* frequently writing about *the Euro crisis* (Joris et al., 2018), and *JOURNEY* writing about *the Euro* (Semino, 2002) are frequently used with *free trade* in three corpora. Similarities are also observed in metaphors co-occurring with both search terms. For instance, lexis suggesting *JOURNEY*



and *GAME/SPORTS* co-occurs with both *protectionism* and *free trade* in three corpora. This similarity may be explained by “multivalency” of metaphor, as mentioned by Goatly (2007, p.13) in Section 2.2.1. Semino (2002) writes that metaphors emerging from our bodily experience of the physical world can be applied to write about a wide range of topics by different discourse communities since they can facilitate our understandings of the particular topic under shared general systems of metaphors.

As mentioned in Section 6.2.2, some metaphors are used more frequently by certain corpus to write about *protectionism* and *free trade*. For instance, CPEDC uses lexis suggesting *FIGHT/WAR* more frequently to write about *protectionism* than UKPEDC and USPEDC. This may be due to China’s non economy status in international trade as mentioned above, which makes China more frequently suffer from or be accused of protectionism from its opponents and tend to treat international trade as a battleground in which every camp struggles for survival (Charteris-Black and Musolff, 2003; Puccio, 2015). USPEDC uses lexis suggesting *ORGANISM* more frequently to write about *free trade* than UKPEDC, which may be explained by following O’Mara Shimek et al.’s (2015) claims about newspapers’ preferences for an animate metaphor. As mentioned in Section 2.4.3, O’Mara Shimek et al. (2015) claim that when *New York Times* and *Wall Street Journal* use *ORGANISM* much more frequently than *Washington Times* to describe *stock crash*, they seem to favour the understanding of *stock crash* as a phenomenon within human control and suggest interventionist economic policies.

As mentioned in Section 6.2.2, some metaphors are only observed to frequently co-occur with *protectionism* and *free trade* in certain corpus. For instance, *drumbeat* suggesting *SOUND* in (40) is used with *protectionism* in UKPEDC with normalized frequency of 2.6 per 100,000, which is similar to Chow’s (2010) finding that *SOUND* is only used with *economy* in her UK English pilot corpora with normalized frequency of 2.0 per 100,000. *gospel* suggesting *RELIGION* in (41) is used with *free trade* in UKPEDC, which is not claimed by other scholars to be frequently used to write about economic topics. The more frequent use of *SOUND* grouping used with *protectionism* and *RELIGION* grouping used with *free trade* in UKPEDC may be due to the discourse community’s cultural preference for them (Deignan, 2003)

(40) As the forces of globalisation strengthen, the ***drumbeat*** of protectionism is growing louder. (*Guardian* 2006)

(41) The ***gospel*** of free trade. (*Times* 2009)

In brief, my quantitative findings of metaphors frequently used with *protectionism and free trade* provide support for others scholars' findings of metaphors used with other economic topics in popular economic discourse (Chow, 2010; Charteris-Black and Musolff, 2003; Joris et al., 2018; López and Llopis, 2010; Liu, 2015). In the following sections, I present my qualitative findings on the frequencies and types of lexis suggesting these patterns and discuss their framing implications in three corpora based on the analytical model shown in Section 2.5.

### **6.3 Metaphors Used to Write about *Protectionism***

Following the analytical model in Section 2.5, three types of metaphor patterns, which are motivated by linguistic metaphors co-occurring with *protectionism*, are examined qualitatively with citations from my data in this section. Any types of metaphor patterns I study should be suggested by at least 3 different linguistic metaphors and the 3 linguistic metaphors should not be in the same text.

#### **6.3.1 Fight/war Metaphor Writing about *Protectionism***

Linguistic metaphors that could be linked to a basic meaning of fight/war but are used to refer to *protectionism* in three corpora were grouped and labelled based on scenarios they suggested. The identification of scenarios suggested by linguistic metaphors is not only based on semantic meanings but also motivated by frequency, distribution and collocation of linguistic metaphors, as is mentioned by Musolff (2016) and Semino et al. (2018), discussed in Section 2.2. Similar to the two approaches applied to label vehicle grouping as discussed by Cameron et al. (2010) in Section 4.2.2, I also follow the two approaches to label scenarios suggested by linguistic metaphors in the following sections. That is, some labels for scenarios were informed from previous studies and some were created by me.

Linguistic metaphors in three corpora all suggest WAR scenario writing about *protectionism*. The use of military forces and weapons with/without declaration of war or stopping use of forces between the period of a ceasefire and a ratification consists WAR scenario (Eagleton, 1938). By using WAR scenario, three discourse communities' shared knowledge about narrative contents of this scenario such as conflicts and adversarial relationship between two opposing forces is associated with *protectionism* for specific argumentative purposes (Flusberg et al., 2018). For instance, narrative contents of WAR scenario such as *weapon, onslaught* in (42), *front,*

*war* in (43) and *battle* in (44) are used to depict competitive relationship between trade partners as opposing forces in military conflicts and involve the use of *protectionism* as weapon to attack the targeted enemies such as cheap Chinese goods in (42) and China's rise (43). Some narrative elements of WAR scenario such as outcome of a war are also observed in three corpora, for instance, preventing *protectionism* successfully as winning victory in a war in (45).

(42) If China keeps it up, other countries are likely to use their last available **weapon** — protectionism — to stop the **onslaught** of artificially cheap Chinese goods. (*New York Times* 2010)

(43) ...the Trump administration now wants to manipulate the global markets to continue making international trade rules and leading the world economy, and thus curb China's rapid rise on the trade **front**. A full-blown trade **war** between China and the US still doesn't seem inevitable, but that shouldn't prevent Beijing from taking measures to cope with the US' trade protectionist **weapon**: Section 301... (*China Daily* 2017)

(44) Haunted by the example of the 1930s, when leading powers became locked in a tit-for-tat protectionist **battle**.... (*Guardian* 2009)

(45) The EU yesterday renewed punitive anti-dumping duties ...issued a five-point strategy for **defeating** protectionism at home and opening markets abroad. (*Guardian* 2006)

To capture use of linguistic metaphors in specific contexts, a set of linguistic metaphors with basic meaning relating to fight and war were also grouped based on systematic metaphor they suggest. *FIGHT/WAR* grouping can perhaps be built up from several more specific types as listed in Table 6.7 below.

**Table 6.7** Types of *FIGHT/WAR* grouping for metaphors used with *protectionism*

Types	Vehicle terms in each corpus			Examples
	CPEDC	UKPEDC	USPEDC	
Battle	attack (v.); battle (n.); defend; fight (v.);oppose; resist	attack(v./n.); battle (n.); defence; fight (v.);oppose; resist	attack (v.); fight(n./v.); oppose; resist	protectionism is the <b>enemy</b> of both ( <i>China Daily</i> 2017)
	ally (n.); campaign (n.); combat (v.); cover (n.); enemy; front (n.); gain ground hit (v.); hit out; lose; shield (v.); wartime; winner	fight back; line (n.); bulwark; camp; capture (v.); defeat (v.); standard- bearer; swipe; war	fight back; backline(n.); assault (n.); hit (v.); pull back; retreat (v.); skirmishing (n.)	In the more protectionist <b>camp</b> ( <i>Financial Times</i> 2005)  it's good that Mr. Trump has <b>pulled back</b> from protectionism ( <i>Wall Street Journal</i> 2017)
Target	target (v./n.)	target (v./n.)	---	Trade protectionism <b>targeting</b> China ( <i>People's Daily</i> 2012)
Weapon	shield(n.); sword; barrage; weapon; aim at;baton brandish; double-edge stick(n.); wield	shield(n.); sword;  broadside(n.);	barrage; weapon;	protectionist measures as a <b>shield</b> against domestic reform ( <i>Times</i> 2005)  <b>Wielding</b> protectionism <b>baton</b> harms China-EU trade ties ( <i>Global Times</i> 2013)

Citation analysis shows that linguistic metaphors in Table 6.7 are perhaps best expressed through systematic metaphor *ADOPTING PROTECTIONISM IS INVOLVING IN A BATTLE* in three corpora. Within this broad pattern, similarities and differences are observed in lexis suggesting this systematic metaphor. As shown in Table 6.7, linguistic metaphors suggesting this systematic metaphor in three corpora share similarity in their conventionality. CPEDC is observed to use a wider range of lexis suggesting this systematic metaphor than UKPEDC and USPEDC. Similarities are observed in some general war-related lexis such as *fight* in (46), *oppose* in (47) and *attack* in (48) used to suggest systematic metaphor *ADOPTING*

*PROTECTIONISM IS INVOLVING IN A BATTLE* in three corpora. However, many linguistic metaphors such as *enemy* in (49), *swipe* in (50) and *quell* in (51) suggesting this systematic metaphor are different in three corpora. The culprit of *protectionism* is specified in (46), (47), (50) and (51) but anonymous in (48) and (49). Citation analysis shows that linguistic metaphors suggesting this systematic metaphor in three corpora write about *protectionism* as either a specified or an anonymous entities with different roles in different contexts, for example, being an enemy in (46), (47), (49) and being a victim in (48) and (50).

(46) Europe ready to **fight** against Trump protectionism. (*Financial Times* 2016)

(47) China strongly **opposes** the serious act of trade protectionism by the US side... (*Global Times* 2009)

(48) Mr. Mandelson has been struggling to devise a twin-track policy — **attacking** protectionism but imposing limited tariffs ... (*New York Times* 2006)

(49) ...China and the US need to build a win-win bilateral relationship, and protectionism is the **enemy** of both, said Barshefsky. (*China Daily* 2017)

(50) Gordon Brown has taken a thinly veiled **swipe** at French and Italian protectionism. (*Financial Times* 2005)

(51) ... underscored the pressures China faces in restricting its textile exports enough to **quell** protectionist sentiment in both the United States and Europe. (*New York Time* 2005)

Table 6.7 also shows that CPEDC uses a wider range of weapon-related lexis than UKPEDC to write about *protectionism* as weapon. CPEDC uses these linguistic metaphors more frequently than UKPEDC. Similarities are observed in local pattern of these linguistic metaphors in CPEDC and UKPEDC. For instance, within systematic metaphor *ADOPTING PROTECTIONISM IS INVOLVING IN A BATTLE*, CPEDC and UKPEDC are found to specify entities using *protectionism* as weapon, as in (52) and (53) or make entities using *protectionism* as weapon anonymous, as in (54) and (55).

(52) A full-blown trade war ... shouldn't prevent Beijing from taking measures to cope with the US' trade protectionist **weapon**: Section 301. (*China Daily* 2017)

(53) It accuses certain EU states of using protectionist measures

as a **shield** against domestic reform. (*Times* 2005)

(54) **Wielding** protectionism **baton** harms China-EU trade ties. (*Global Times* 2013)

(55) “At the same time, there are clear downside risks: political uncertainty, including in Europe; the **sword** of protectionism hanging over global trade...” Lagarde said. (*Guardian* 2017)

Variations are observed in local patterns of linguistic metaphors suggesting this systematic metaphor in three corpora. As mentioned by Dorst (2017) in Section 2.4.2, metaphor patterns imply the way language users achieve their rhetorical goals. Citation analysis shows that both CPEDC and UKPEDC are observed to follow two types of metaphor patterns when using *FIGHT/WAR* to write about *protectionism*: extended metaphor and mixed metaphor. As discussed by Semino (2008) in Section 2.3.1, extended metaphor means that more than one linguistic metaphor from the same semantic field are used in the same sentence to write about *protectionism*, for instance, *ally* and *fight*s in (56), *brandish* and *stick* in (57), and *battle* and *break out* in (58). As discussed by Dorst (2017) and Sullivan (2019) in Section 2.4.1, mixed metaphors means that more than one linguistic metaphor from different semantic fields are used in the same sentence to write about *protectionism*, for instance, *way* from *JOURNEY* and *shield* from *BATTLE* in (59), *nightmare* from *HUMAN DREAM* and *war* from *BATTLE* in (60), and *lose* and *attack* from *BATTLE* and *fodder* from *ANIMAL FOOD* in (61). However, these metaphor patterns are not observed in USPEDC when *FIGHT/WAR* is used to write about *protectionism*.

(56) The commission faces a delicate balancing act ... seen as a possible **ally** in **fight**s against protectionism and climate change. (*Global Times* 2017)

(57) The economic policies and proposals mapped out by Obama shows the new US administration is probably more motivated to **brandish** the protectionist **stick**. (*China Daily* 2009)

(58) A **battle** is set to **break out** between protectionist countries and Europe's free market after the European commission (*Guardian* 2006)

(59) European nations are keen to impose protectionist policies as a **way** to **shield** their resources and their industries. (*Global Times* 2013)

(60) Trade: **nightmare** of a US-China protectionist **war** (*Guardian* 2009)

(61) U.S. protectionists would **lose fodder** to **attack** China. In the end, China's share in the foreign markets will be maintained. (*Global Times* 2009)

Nominal *target* from *FIGHT/WAR* appears to be a metaphoreme used to write about *protectionism* since it tends to have relatively fixed linguistic and affective restrictions in CPEDC. Linguistically, citation analysis shows that nominal *target* always appears in the same grammatical structure when writing about *protectionism*. Nominal *target* always appears to be postmodified by a prepositional phrase in CPEDC, as in (62), (63) and (64).

(62) China... has become a major **target** of rising trade protectionism. (*Global Times* 2012)

(63) Steel fasteners, a widely used part in many industries, have become the **target** of the trade protectionist measures. (*China Daily* 2009)

(64) Since late 2008, China has been a major **target** of trade protectionism worldwide. (*People's Daily* 2011)

For instance, citation analysis shows that the 13 citations of nominal *target* in CPEDC have a metaphorical sense of 'objects directly affected by a bad action'. An example e.g. *The country is a target of criticism for its human rights record* given by LDOCE under sense 3 also shares the same metaphorical meaning.

By checking the use of *target of* as a node word in BNC (1994) with the help of Sketch Engine, I find that the collocates that postmodify *target of* tend to have a negative slant. The 100-million-word BNC (1994) contains 711 citations of *target of*. A random sample of 100 citations of *target of* were checked in context. I found 86 citations of *target of* were used non-metaphorically. Figure 6.1 shows a screenshot of 14 randomly selected, right-sorted citations of *target of* used metaphorically.

	Details	Left context	KWIC	Right context ↓
1	<input type="checkbox"/>	Written books a... /s><s> However, Stanley Baldwin, who was once the	target of	a harsh newspaper campaign, said of his 'press baron
2	<input type="checkbox"/>	Written books a... sackcloth and ashes. </s><s> The Government is the	target of	a drumfire of criticism for its hands-off approach to ind
3	<input type="checkbox"/>	Written books a... ment that" if one of the two states should become the	target of	aggression, then the other side will give the aggressor
4	<input type="checkbox"/>	Written books a... active in the late 1970s and early 1980s were a major	target of	army counter-insurgency policies. </s><s> Tens of tho
5	<input type="checkbox"/>	Written books a... ental directions. </s><s> The project was recently the	target of	Chile's largest ever environmental protest, when 5,000
6	<input type="checkbox"/>	Written books a... nissile, the al-Hijara (" stone"), which could reach" the	target of	evil, when the day of reckoning comes, from any place
7	<input type="checkbox"/>	Written books a... ime. </s><s> Apprehension grew to alarm among the	targets of	his abuse. </s><s> Then the fear of him that had beer
8	<input type="checkbox"/>	Written books a... e Sunday Express . </s><s> Dr Mumby has been the	target of	investigative journalism at least three times; the last of
9	<input type="checkbox"/>	Written books a... st employers of women and therefore one of the main	targets of	possible strike action. </s><s> The same source claim
10	<input type="checkbox"/>	Written books a... ON THE STREET </s><s> Children were the normal	target of	street policing. </s><s> In a historically sanctified relat
11	<input type="checkbox"/>	Written books a... ists identified not only with the left (who had been the	target of	stringent measures before), but also those of the main
12	<input type="checkbox"/>	Written books a... ordinary reader feel that the plaintiff personally is the	target of	the criticism. </s><s> To say" All barristers are thieves
13	<input type="checkbox"/>	Written books a... t people express their antipathy to the British, the real	target of	their hatred is the English, and that Ayr, the rival plant.
14	<input type="checkbox"/>	Written books a... active young heiress Karen might quickly become the	target of	unscrupulous bounty hunters. </s><s> It was no use ti

**Figure 6.1** A screenshot of 14 citations of *target of* used metaphorically among a random sample of 100 citations in BNC (1994)

Citation analysis in Figure 6.1 shows that most right collocates of *target of* such as criticism (2), evil (1), street policing (1) and hatred (1) tend to have a negative slant. For instance, street policing that is aimed at the target-children-is negative. The number in the bracket is frequency of each collocate. Thus, when *target of* is repeatedly used to write about *protectionism*, it shows fixed affective restrictions in CPEDC. That is, this expression tends to negatively write about *protectionism* as an aggressive attacker aiming a weapon at its enemy and China is its targeted enemy.

### 6.3.2 Organism Metaphor Writing about *Protectionism*

As mentioned in Section 6.2.2, three corpora are observed to share similarity in the frequency of organism metaphor used with *protectionism*. A set of linguistic metaphors that imply a discourse community's shared knowledge of a series of narrative contents relevant to organism were labelled based on scenarios they suggested. Similarities and differences are observed in scenarios suggested by linguistic metaphors writing about *protectionism* in three corpora. For instance, a set of linguistic metaphors writing about *protectionism* in three corpora suggests BODY scenario which is informed by Musolff (2016). Musolff (2016) traces origins of NATION AS BODY in western political thought back to pre-Socratic Greek era. He finds that two sub-scenarios of BODY scenario seem to be highlighted: ANATOMY/FUNCTION OF BODY and STATE OF BODY HEALTH. Based on these foundational scenarios, he argues that body politics have been developed and lexicalized in current national political cultures. For instance, he finds that the majority of concepts related to parts of the body, illness or therapies found in his data BODYPOL is absent in historical texts due to the development of medical knowledge. He also adds that all these concepts in BODYPOL except "the BODY



AESTHETIC” can be related to the two foundational scenarios above (p.62). One sub-scenario of BODY scenario- STATE OF BODY HEALTH scenario-is also observed in three corpora describing *protectionism*. Narrative elements of BAD STATE OF BODY HEALTH scenario such as disease making body unhealthy and painful exemplified by *sore* in (65), *fever* and *contagious* in (66), *atrophy* in (67), and bad state of body health exemplified by *unhealthy* in (68) are used to write about *protectionism* in three corpora.

(65) Trade protectionism will be a long-term **sore** for Chinese exports, said Sun. (*China Daily* 2011)

(66) As details of the bill came out, the Ph.D.'s predicted that protectionist **fever** would soon become **contagious**, and that other countries would likely start retaliating with their own protectionist policies, which would further hurt American workers. (*New York Times* 2009)

(67) ... and chief cabinet secretary Takeo Kawamura said protectionism might lead the world economy to "**atrophy**". (*People's Daily* 2009)

(68) Mr Mandelson said he remained firmly opposed to “the **unhealthy** protectionism that is arising in Europe just as it is in America”. (*Financial Times* 2005)

Following the process of systematic metaphor identification discussed by Cameron et al. (2009) in Section 2.3.1 and Section 5.2, linguistic metaphors that could be linked to semantic meaning of organism but are used to refer to *protectionism* were also grouped and labelled based on systematic metaphors they suggested. Linguistic metaphors suggest ORGANISM grouping are listed in Table 6.8.

**Table 6.8** Types of *ORGANISM* grouping for metaphors used with *protectionism*

Types	Vehicle terms in each corpus			Examples
	CPEDC	UKPEDC	USPEDC	
Person	feel; lurk (v.); myopic; naked; short-sighted	feel; genome; instinct; naughty; nurture; old; rise from the dead; vision	dress (v.); mischief;	...after Beijing accused Washington of " <b>naked</b> discriminative protectionism." ( <i>Global Times</i> 2009)  protectionists <b>dressed</b> in free- market clothing ( <i>Wall Street Journal</i> 2017)
Animal	breeding ground; fodder	---	breed (v.); howl (v.)	a crisis is a <b>breeding ground</b> for protectionism ( <i>People's Daily</i> 2013)
Plant	fresh; full-blown; grow; rampant	creeping; grow; root (n.)  rampant	creeping; grow growth	to return to protectionist <b>roots</b> ( <i>Times</i> 2017)
Body part /bodily action	back (n.); nerves;  rise (v.); reject turn (v.); boost (v.) run (v.); suffocate; strangle; touch (v.);	back (n.); hand; side; impulse; rise (v.); reject turn (v.) drop(v.); embrace (v.); face (v.); grip (v.); inclination; push (v.); squeeze; stand (v.);	face (n.); side; impulse; rise (v.); reject	trade protectionism that <b>runs</b> counter to globalization ( <i>China Daily</i> 2017)  <b>hand</b> of trade protectionism <b>squeezing</b> the world economy ( <i>Guardian</i> 2016  The New <b>Face</b> of Protectionism ( <i>New York Times</i> 2009)
Physical pain	hurt (v.); raging (adj.); sore; suffer(v.)	hurt (v.)	hurt (v.)	Trade protectionism will be a long-term <b>sore</b> for Chinese exports ( <i>China Daily</i> 2011)
Health /illness	atrophy; strong	bout; condition; unhealthy;  outbreak	fever; mild; revitalization; contagious; contagion; outbreak	protectionism might lead the world economy to " <b>atrophy</b> " ( <i>People's Daily</i> 2009)  The <b>Contagion</b> of Protectionism ( <i>New York Times</i> 2009)

This table shows that *ORGANISM* grouping can perhaps be built up from several more specific types which were categorized based on Figure 5.6 in Section 5.2. Citation analysis shows that linguistic metaphors in Table 6.8 is perhaps best expressed through systematic metaphor *PROTECTIONISM IS A LIVING ORGANISM* in three corpora. Within this broad pattern, similarities and differences are observed in lexis suggesting this systematic metaphor. As shown in Table 6.8, linguistic metaphors suggesting this systematic metaphor in three corpora share similarity in their conventionality. CPEDC and UKPEDC are observed to use a wider range of lexis suggesting this systematic metaphor than USPEDC. More differences than similarities are observed in lexis of different types of *ORGANISM* used to write about *protectionism*. For instance, different person-related lexis such as *myopic* in (69), *naked* in (70) from CPEDC, *old* in (71), *nurture* in (72) from UKPEDC, and *mischievous* in (73), *dressed* in (74) from USPEDC are used to write about *protectionism*. In (69), *protectionism* is described as a person with problems in eyesight. *Protectionism* is described as a person wearing no clothes in (70) and wearing the wrong clothes in (74). *Protectionism* is described as a person with helpful behaviours in (72) and trouble-making behaviours in (73). Different lexis related to a person's action are also observed in CPEDC and UKPEDC, for instance, *hand* and *squeezing* in (75), and *touch* and *nerve* in (76). In (75), (76) *protectionism* is described as a person with harmful actions.

(69) It is no coincidence that Trump shares a similar view ...Washington should pursue **myopic** protectionism. (*China Daily* 2016)

(70) The WTO decided Friday to rule on China's complaint...after Beijing accused Washington of "**naked** discriminative protectionism." (*Global Times* 2009)

(71) ...a retreat of globalisation and a reduction of trade and cross-border activity that will be followed quickly by the **old** trade protectionism of the past. (*Times* 2009)

(72) Progressive Protectionism, by contrast, aims to **nurture** and rebuild local economies.... international trade in goods.

(73) Over the years trade deals have morphed into beastly, several-thousand-page affairs... too often are exploited for protectionist **mischievous**. (*Wall Street Journal* 2017)

(74) Or are they protectionists **dressed** in free-market clothing? (*Wall Street Journal* 2017)

(75) European lawmakers bias is nothing more than the heavy **hand** of trade protectionism **squeezing** the world economy. (*Guardian* 2016)

(76) Even so, potential protectionism embedded in the provisions still **touched** the **nerve**s of these nations and blocs. (*People's Daily* 2009)

Within systematic metaphor *PROTECTIONISM IS A LIVING ORGANISM*, lexis related to physical pain and breathing difficulties in the body such as *hurt* in (77), *suffer* in (78), and *suffocated* in (79) are observed in CPEDC to describe *protectionism*, as in Table 6.8. Lexis *hurt* and *suffer* are repeatedly used in CPEDC to describe *protectionism*. In (77), US *protectionism* is described as the perpetrator causing physical pain in the body. In (78), *protectionism* is described as physical pain. In (79), *protectionism* is described as the perpetrator causing breathing difficulties in the body. Table 6.8 also shows that lexis related to illness and disease in the body such as *outbreak* in (80), *fever*, *contagious* in (81) from USPEDC, and *outbreak* in (82), *bout* in (83) from UKPEDC are observed to describe *protectionism*. In (80), (81), (82) and (83), *protectionism* is described as disease in the body.

(77) Washington's protectionism not cure for steel woes but to **hurt** manufacturing. (*Global Times* 2016)

(78) China **suffers** from protectionism: MOC. (*People's Daily* 2009)

(79) Cooperation in danger of being **suffocated** through protectionism. (*Global Times* 2009)

(80) In fact, actions against China could trigger an **outbreak** of massive protectionism that could seriously undermine global economic growth. (*New York Times* 2007)

(81) As details of the bill came out, the Ph.D.'s predicted that protectionist **fever** would soon become **contagious**... (*New York Times* 2009)

(82) A risk exists that an **outbreak** of protectionism, ill-timed fiscal expansion...ultimately destroy stability and confidence. (*Financial Times* 2017)

(83) ...that failure to tackle international imbalances could lead to a disastrous **bout** of trade protectionism. (*Times* 2010)

In brief, more differences than similarities are observed in linguistic metaphors suggesting systematic metaphor *PROTECTIONISM IS A LIVING*

*ORGANISM* in three corpora. Lexis from different types of *ORGANISM* grouping are used to describe *protectionism* from different perspectives. For instance, three corpora use person-related lexis to describe *protectionism* as a person with different behavior and characteristics. CPEDC use lexis to describe *protectionism* both as physical pain in the body and entities causing physical pain or breathing difficulties. UKPEDC and USPEDC use lexis to describe *protectionism* as disease in the body.

### 6.3.3 Movement Metaphor Writing about *Protectionism*

As mentioned in Section 6.2.2, three corpora are also observed to share similarity in the frequency of movement metaphor used with *protectionism*. MOTION scenario is widely used to talk about lots of topics since spatial relations are embodied in our bodily experience (Lakoff and Johnson, 1999). Linguistic metaphors in three corpora also suggest MOTION scenario writing about *protectionism*. Three discourse communities' shared knowledge of narrative elements of MOTION scenario such as the path, destination, direction, speed, location and obstacles in a motion are associated with impact of *protectionism* and attitudes towards *protectionism*. Narrative contents of MOTION scenario such as an obstacle in a motion in (84) and changing directions in a motion in (85) are used to describe the impact of *protectionism*. Narrative contents such as backward movement in (86) are used to describe attitudes towards *protectionism*.

(84) The changes contemplated by the EU will lead it towards a more protectionist stance that will **hamper** the global economy and damage developing countries. (*Guardian* 2012)

(85) Britain should make the right decision and maintain its confidence rather than being **swayed** by protectionism. (*China Daily* 2017)

(86) China could plunge the global economy into recession and called on Congress to **back away** from protectionist measures. (*Financial Times* 2006)

To compare specific patterns of movement metaphor in discourse contexts, linguistic metaphors that are from *MOVEMENT* grouping but are used to write about *protectionism* were grouped based on systematic metaphor they suggest. Linguistic metaphors suggesting *MOVEMENT* grouping are listed in Table 6.9.

**Table 6.9** Vehicle terms for *MOVEMENT* grouping used with *protectionism*

Corpus	Vehicle terms	Examples
CPEDC	halt (n./v.); hamper; rise (n.); slide (v.); step (n.);  lift (v.); stop (v.); sway (v.);	Britain should make the right decision and maintain its confidence rather than being <b>swayed</b> by protectionism. ( <i>China Daily</i> 2017)
UKPEDC	halt (v.); hamper; rise (n.); slide (v./n/); step (n.);  back away; descent; lurch (v.); propel; tilt (v.)	Mr Mandelson wants his message in a week of talks on a new EU-China trade pact to be that a damaging <b>descent</b> into protectionism and trade wars can be avoided. ( <i>Times</i> 2006)
USPEDC	rise (n.); stop (v.); swing (n.)	But economic policy makers world-wide worry that a more dramatic <b>swing</b> toward protectionism could lead to even slower growth in coming years. ( <i>Wall Street Journal</i> 2016)

Citation analysis shows that linguistic metaphors in Table 6.9 is perhaps best expressed through systematic metaphor *PROTECTIONISM IS A CONCRETE OBJECT OR LOCATION IN A MOTION* in three corpora. Within this broad pattern, both similarities and differences are observed in lexis used with *protectionism*. Similarities are observed in conventionality of linguistic metaphors suggesting this systematic metaphor in three corpora. CPEDC and UKPEDC are observed to use a wider range of lexis than USPEDC to describe *protectionism*. For instance, *step* in (87), (88) and *hamper* in (89), (90), *halt* in (91), (92) from CPEDC and UKPEDC are used to write about *protectionism*. The same lexis *step* is used to describe *protectionism* from different perspectives in different contexts: *protectionism* as a location or object that we move towards in (87) and as manner of walking in (88). In (89) and (90), *protectionism* is described as an obstacle in a motion. In (91) and (92), *protectionism* is described as an entity that moves or grows by itself.

(87) ... the new proposals of the EU are an indication of another **step** toward protectionism. (*Global Times* 2016)

(88) We believe it was regrettable that such protectionist **steps** were taken under the free trade system. (*Guardian* 2002)

(89) Chen warned that rising trade protectionism could **hamper** the global economic recovery and pose threat of an economic "double-dip". (*Global Times* 2010)

(90) ...a more protectionist stance that will **hamper** the global economy and damage developing countries. (*Guardian* 2012)

(91) ...protectionism and the post-crisis **halt** in the longer-term tendency towards rising trade within "value chains". (*Financial Times* 2016)

(92) Chinese photovoltaic companies on Thursday called on the European Commission to **halt** protectionism. (*China Daily* 2012)

Citation analysis shows that three corpora use different lexis such as *back away* in (93), *swing* in (94) and *slide* in (95) to describe *protectionism* as a concrete object or location that people can approach or avoid, and it is desirable to avoid it.

(93)The head of Caterpillar ... plunge the global economy into recession and called on Congress to **back away** from protectionist measures. (*Financial Times* 2006)

(94) But economic policy makers world-wide worry that a more dramatic **swing** toward protectionism could lead to even slower growth in coming years. (*Wall Street Journal* 2016)

(95) EU's **slide** to protectionism would undermine global efforts to seek a joint solution to the current crisis. (*China Daily* 2007)

Citation analysis also shows that three corpora repeatedly use *rise* to describe *protectionism* as an entity that can get bigger, as in (96), (97) and (98).

(96) The commission's actions have tarnished its image as an advocate of free trade, fuelled the **rise** of protectionism. (*Financial Times* 2013).

(97) ...the European Union (EU) had flexed its trade muscles against China, arousing concerns that protectionism is on the **rise** in the 27-nation bloc. (*Global Times* 2013)

(98) Even if directed at China, a **rise** in U.S. protectionism would hit South Korea, a major exporter of electronics to China. (*Wall Street Journal* 2016)

CPEDC uses *rise* more frequently than UKPEDC but share similarity in the frequency of *rise* with USPEDC when writing about *protectionism*.

### 6.3.4 Victim, Fire and Monster Metaphor Writing about *Protectionism*

As mentioned by Cameron et al. (2010) in Section 2.3.1, some less frequently used metaphors may also be closely related to research questions and powerful in describing a topic. This section further examines the way victim metaphor, fire metaphor and monster metaphor co-occurring with *protectionism*.

Nominal *victim* is metaphorically used 12 times in CPEDC. Nominal *victim* appears to be a metaphoreme used with *protectionism* since it tends to have relatively fixed linguistic and affective restrictions in CPEDC. Linguistically, citation analysis shows that nominal *victim* always appears in the same grammatical structure when writing about *protectionism*. Nominal *victim* always appears to be postmodified by a prepositional phrase as in (99) and (100). There is also a small number of instances of *victim* used in the form of idiomatic phrase *fall victim to something*, as was shown in (101) and (102). In (99), (100), (101) and (102), *protectionism* is described as the culprit and China is specified as the victim of trade protectionism. Citation analysis shows that all instances of *victims* in CPEDC refer to China.

(99) This is also true with China, which has been **victim of** trade protectionism for more than a decade. (*China Daily* 2012)

(100) But the truth is China has become the largest **victim of** US trade protectionism since the outbreak of the global financial crisis. (*Global Times* 2009)

(101) He said China, as the world's largest exporter and supplier of labor-intensive products, will **fall victim to** surging protectionism globally. (*China Daily* 2010)

(102) China's "negotiation-first" diplomacy has prevented it ..., even though it has **fallen victim to** protectionism many a time. (*China Daily* 2009)

Affectively, *victim* collocates with different postmodifying prepositional phrases and seems to imply a negative slant. The affective slant of *victim of* is suggested with the help of citation analysis in BNC (1994). I searched *victim of* as a node word in BNC (1994). The BNC (1994) contains 1742 citations of *victim of*. A random sample of 100 citations of *victim of* were checked in context. I found that 58 citations of *victim of* were used non-metaphorically and 42 citations were used metaphorically. By further



examining right collocates of *victim of*, I found that 30 out of the 42 citations seemed to collocate with lexis such as *conspiracy*, *discrimination*, *villainy* with a disapproving slant, as in Figure 6.2. Figure 6.2 shows a screenshot of the 30 randomly selected, right-sorted citations of *victim of* used metaphorically.

	Details	Left context	KWIC	Right context ↓
1	<input type="checkbox"/>	Written books a... rever, Melancia maintained that he was the innocent	<b>victim of</b>	a politically motivated smear campaign. </s><s> ASI.
2	<input type="checkbox"/>	Written books a... emy Irons, his fans said, it was because he was the	<b>victim of</b>	a feminist-puritanical cabal. </s><s> Bulky as a lumb
3	<input type="checkbox"/>	Written books a... hindsight, it's easy to see that the kids had been the	<b>victim of</b>	a conspiracy. </s><s> The Beeb liked the cut of 'trad
4	<input type="checkbox"/>	Written books a... s later the little five-year-old lay in agony - the latest	<b>victim of</b>	a craze that is claiming thousands of young casualtie
5	<input type="checkbox"/>	Written books a... as Jewish. </s><s> Blacks, musicians and Jews, all	<b>victims of</b>	an oppressive society, were of the same family of mi:
6	<input type="checkbox"/>	Written books a... aps she had begun to realise that she had been the	<b>victim of</b>	an unhappy marriage, rather than simply the cause c
7	<input type="checkbox"/>	Written books a... e. </s><s> Under this scheme investors who are the	<b>victims of</b>	an abuse receive compensation provided the infringe
8	<input type="checkbox"/>	Written books a... where? </s><s> Experts discovered that it was, the	<b>victim of</b>	another misconception. </s><s> 'It had always been
9	<input type="checkbox"/>	Written books a... in Sydney. </s><s> I am a poor widow, </s><s> the	<b>victim of</b>	cannibals. </s><s> They killed my dear husband </s>
10	<input type="checkbox"/>	Written books a... eracy is seen as the key that will somehow free the '	<b>victims of</b>	discrimination, oppression and indignity that illiteracy
11	<input type="checkbox"/>	Written books a... capitalist system and feel that they and Nigeria are	<b>victims of</b>	exploitation within it. </s><s> But objectively, as parti
12	<input type="checkbox"/>	Written books a... </s><s> The Black Forest in Germany has been the	<b>victim of</b>	forest decline, where symptoms such as yellowing le
13	<input type="checkbox"/>	Written books a... to escape from debts and the legal action of certain	<b>victims of</b>	his villainy. </s><s> The idealised concept of Olivia ri
14	<input type="checkbox"/>	Written miscell... ffice building should have become the latest indirect	<b>victims of</b>	IRA terrorism through increased insurance premiums
15	<input type="checkbox"/>	Written books a... be insulting. </s><s> The witness of an insult, or the	<b>victim of</b>	it, will feel that his dignity is impugned and regarded.
16	<input type="checkbox"/>	Written books a... se fragmented times. </s><s> Mainly regarded as a	<b>victim of</b>	McCarthyism amongst his London associates, he ha
17	<input type="checkbox"/>	Written books a... square, tough luck-that platform pub has gone too, a	<b>victim of</b>	No Smoking restrictions. </s><s> Never fear, you cai
18	<input type="checkbox"/>	Written books a... ales and Ozone Layers and laid-off trawler men and	<b>victims of</b>	rain-forest abuse. </s><s> And inevitably: 'I know you
19	<input type="checkbox"/>	Written books a... e all the time. </s><s> I was falling apart' </s><s> A	<b>victim of</b>	sex abuse describes the emotional aftermath </s><s>
20	<input type="checkbox"/>	Written books a... ysteria who never recovered from puerperal fever, a	<b>victim of</b>	sexual repression, and as a hysterical personality wr
21	<input type="checkbox"/>	Written-to-be-s... idly some Ewes die while giving birth, other are the	<b>victims of</b>	sheep worrying. </s><s> Sheep farmer Alison Huntei
22	<input type="checkbox"/>	Written books a... ate" mass and flagrant" human rights violations and	<b>victims of</b>	so-called" ethnic cleansing" should have the right to i
23	<input type="checkbox"/>	Written books a... population). </s><s> Under the legislation individual	<b>victims of</b>	Stasi defamation would be able to see and use their
24	<input type="checkbox"/>	Written-to-be-s... tioned twenty years after woman vanishes. </s> <s>	<b>Victim of</b>	terror. </s><s> Raiders hold knife at baby's throat. </
25	<input type="checkbox"/>	Written books a... me. </s><s> They have also been among the major	<b>victims of</b>	the failure of the government's inner city policies. </s
26	<input type="checkbox"/>	Written books a... ning problems of the 1980s,' but they are as much a	<b>victim of</b>	the lack of a coherent overall strategy as other advic
27	<input type="checkbox"/>	Written books a... d so for more than two hundred and forty years now,	<b>victims of</b>	the great Ko Ming purges of the 1960s, their ruin bec
28	<input type="checkbox"/>	Written books a... l, getting drunk - and making friends. </s><s> Royal	<b>victims of</b>	the parent trap </s><s> By Jaci Stephen </s><s> Wf
29	<input type="checkbox"/>	Written books a... ent that men are useful but disposable. </s><s> The	<b>victims of</b>	their aggressive stance are their children. </s><s> W
30	<input type="checkbox"/>	Written books a... a barren zone. </s><s> And also to those innocent	<b>victims of</b>	this jape who might even have put their cars in for th

**Figure 6.2** A screenshot of 30 citations of *victim of* used metaphorically among a random sample of 100 citations in BNC (1994)

As mentioned in Section 6.2.2, fire metaphor is observed to relatively frequently used in UKPEDC and USPEDC to write about *protectionism*. Two corpora share similarity in the frequency of fire metaphor used with *protectionism*. A number of linguistic metaphors that imply a discourse community's shared knowledge of a series of narrative contents relevant to fire were labelled based on scenarios they suggested. Charteris-black (2016) writes that fire appears to be like an organism following a life cycle as follows: starting a fire, causing a fire to grow and causing a fire to stop or end. Narrative contents of FIRE scenario such as starting a fire as in (103), (104), causing a fire to grow in (105), (106), and causing a fire to stop in (107),

(108) are used to write about *protectionism* in UKPEDC and USPEDC. In citations (103) to (108), *protectionism* is described as fire at different stages of fire's life cycle as mentioned by Charteris-black (2016).

(103) Rising Chinese imports since the lifting of global quotas on January 1 has **sparked** a protectionist response on both sides of the Atlantic. (*Financial Times* 2005)

(104) In a broadside against the plan, Lord Mandelson said ...created a serious danger of **igniting** protectionist trade confrontations. (*Times* 2009)

(105) But Mr. Geithner's rhetoric is nonetheless tactless and risks **fanning** protectionism in Congress. (*New York Times* 2009)

(106) Limited growth, unequal outcomes and a huge debt overhang from previous decades **stoked** economic nationalism and protectionism. (*Guardian* 2016)

(107) The Treasury secretary's comments risk stoking those protectionist **embers**. (*New York Times* 2009)

(108) In spite of Mr Chen's comments, both sides hailed this week's encounter as a sign of their commitment to improving bilateral trade ties and **stamping out** protectionism. (*Financial Times* 2009)

To compare specific patterns of fire metaphor in discourse contexts, linguistic metaphors that are from *FIRE* grouping but are used with *protectionism* were grouped based on systematic metaphor they suggest. Linguistic metaphors suggest *FIRE* grouping are listed in Table 6.10. Citation analysis shows that linguistic metaphors in Table 6.10 are perhaps best expressed through systematic metaphor *PROTECTIONISM IS FIRE* in three corpora. Table 6.10 shows that there is a wider range of lexis suggesting this systematic metaphor in UKPEDC than in USPEDC.

**Table 6.10** Vehicle terms for *FIRE* grouping used with *protectionism* in UKPEDC and USPEDC

Corpus	Vehicle terms	Examples
UKPEDC	fan (v.); fire (n.); ignite; spark(v.); stamp out; stoke	The 2002 US trade barriers <b>ignited</b> a protectionist <b>fire</b> that quickly spread across the world. ( <i>Financial Times</i> 2009)  Rising Chinese imports since the lifting of global quotas on January 1 has <b>sparked</b> a protectionist response on both sides of the Atlantic. ( <i>Financial Times</i> 2005)
USPEDC	fan (v.); ember; stoke	But Mr. Geithner's rhetoric is nonetheless tactless and risks <b>fanning</b> protectionism in Congress. ( <i>New York Times</i> 2009)

Within this broad pattern, similarities and differences are observed to write about *protectionism* in UKPEDC and USPEDC. Lexis such as *fire*, *ignite* from UKPEDC and *ember* from USPEDC are observed to co-occur with *protectionism*, as in (109), (110) and (111). In (109), *protectionism* is described as fire that widely spreads. In (110) and (111), *protectionism* is described as dangerous fire. Similar lexis such as *fanning* in (112), (113) and *stoking* in (114), (115) are used to describe *protectionism* as fire burning more brightly and strongly.

- (109) The 2002 US trade barriers **ignited** a protectionist **fire** that quickly spread across the world. (*Financial Times* 2009)
- (110) In a broadside against the plan, Lord Mandelson said national schemes to...created a serious danger of **igniting** protectionism. (*Times* 2009)
- (111) The Treasury secretary's comments risk **stoking** those protectionist **embers**. (*New York Times* 2009)
- (112) But Mr. Geithner's rhetoric is nonetheless tactless and risks **fanning** protectionism in Congress. (*New York Times* 2009)
- (113) Rising imports and (greatly exaggerated) claims of job losses are **fanning** protectionist sentiment in the US and EU. (*Financial Times* 2005)
- (114) ... he said, adding that the grudging progress was **stoking** protectionism in the United States. (*New York Times* 2003)

(115) Peter Mandelson, the Trade Commissioner, had spent several days in China to present the message that the European bloc's trade deficit was **stoking** protectionist measures. (*Times* 2007)

As mentioned in Section 6.2.2, a small number of linguistic metaphors suggesting monster metaphor are observed in three corpora. These linguistic metaphors seem to suggest systematic metaphor *PROTECTIONISM IS FRIGHTENING MONSTER/GHOST*. Although the frequency of lexis suggesting this systematic metaphor is too low to be indicative of metaphor use in general, one point that can be observed is that lexis suggesting this systematic metaphor always appears to be postmodified by a prepositional phrase, as in citations (116) to (120).

(116) When doom-mongers predicted that the Great Recession would lead to the **vampire** of 1930s protectionism rising from the dead, they may have been watching the wrong graveyard. (*Financial Times* 2012)

(117) The **specter** of protectionism has also appeared (*New York Times* 2009)

(118) ... and the European Union by denying China its deserved status, making itself the "third domino" in unleashing the **monster** of protectionism, which isn't good news for the global economy. (*China Daily* 2016)

(119) The **ghost** of 1930s protectionism is looming over the International Monetary Fund (IMF). (*Guardian* 2016)

(120) In particular, the two sides shall be aware of the **specter** of protectionism rising from some corners of Europe. (*China Daily* 2017)

(121) This is protectionism **raising its ugly head**, and an all-around dreadful strategy. (*New York Times* 2005)

In (116), *vampire* suggesting this systematic metaphor is used in a novel way to describe the recurring and selfishness of 1930 protectionism in history, as discussed in Section 5.1.2. In (117), (119) and (120), the frightening spirits of dead people are used in a conventional way to describe *protectionism*. In (118) and (121), *protectionism* is described as an ugly monster.

## 6.4 Protectionism, Metaphors and Framing

### 6.4.1 Metaphor Scenarios Framing *Protectionism*

As mentioned in Section 6.3, frequent use of linguistic metaphors suggesting WAR scenario, BAD STATE OF BODY HEALTH scenario and MOTION scenario are observed in three corpora to write about *protectionism*. FIRE scenario is observed in UKPEDC and USPEDC to write about *protectionism*. As mentioned by Musolff (2017) in Chapter Two, metaphor scenarios have implicit evaluative bias which may shape readers' structure of point of views. Collocation analysis of lexis suggesting metaphor patterns is carried out at systematic level rather than scenario level, as mentioned in Section 2.5. This section discusses the way *protectionism* seems to be framed in terms of a series of narratives used across texts in my data.

A number of linguistic metaphors suggesting WAR scenario seem to impose a narrative sequence on *protectionism* in three corpora (Deignan, 2017b). A narrative sequence such as opposing forces engaging in a battle or skirmish on a battleground in (122) (123) (124), and using weapons to defend themselves from attack in (125) or to attack their enemy in (126), (127) seems to be imposed on *protectionism* in three corpora.

- (122) Haunted by the example of the 1930s, when leading powers became locked in a tit-for-tat protectionist **battle** that is widely blamed for precipitating the Great Depression. (*Guardian* 2009)
- (123) ...both sides should channel their political capital into encouraging mutually beneficial arrangements rather than entering into protectionist **battles**, said Huang. (*China Daily* 2012)
- (124) But when protectionist **skirmishing** starts, economic logic often breaks down. (*New York Times* 2007)
- (125) China is poised to **defend** its exports against escalating protectionism. (*China Daily* 2017)
- (126) But Trump's protectionist measures are **targeted at** cheap manufactured goods, rather than the high-end services Britain provides... (*Guardian* 2016)
- (127) Mr. Mandelson has been struggling to devise a twin-track policy — **attacking** protectionism but imposing limited tariffs — to win support from southern countries like Italy...

(*New York Times* 2006)

The narrative sequence within WAR scenario seems to frame trade partners' roles in relation to *protectionism* in different ways in three corpora. Within WAR scenario, CPEDC seems to frame China as the party from camp opposite to *protectionism*. China may ally with other trade partners to fight against *protectionism*, as in (128), (129). China may be attacked by its trade partners who come from *protectionism* camp, as (130), (131). However, attack from *protectionism* camp on China seems to be ineffective, as in (132), (133), (134). Citations (128) and (134) were from texts originally produced by Xinhua.

- (128) China is willing to work with other WTO members to **fight** trade protectionism (*China Daily* 2016)
- (129) China and Switzerland jointly **fight** the rising global trade and investment protectionism. (*Global Times* 2017)
- (130) It is likely China will focus more attention on bilateral economic and trade relations with EU member states if Brussels is intent on protectionist measures **aimed at** Beijing, Lewis says. (*China Daily* 2013)
- (131) Even under a **barrage** of trade protectionist measures and a worsening global trade environment, Chinese trade data showed upbeat signs in November... (*Global Times* 2016)
- (132) The US levied high anti-dumping taxes on China's tires, wire trays and other goods. The protectionist actions **shielded** the jobs in a limited range of industries, but **harmed** the interests of workers in downstream industries in the US. (*Global Times* 2010)
- (133) U.S. protectionists would **lose** fodder to **attack** China. In the end, China's share in the foreign markets will be maintained. (*Global Times* 2009)
- (134) By **wielding** the **baton** of trade protectionism, EU, instead of ridding itself of the economic doldrums, might **lose** the opportunities the Chinese firms bring to its development. (*Global Times* 2013)

UKPEDC and USPEDC seem to frame trade partners with dual-roles in relation to *protectionism*. Some trade partners such as the EU and the US

may use *protectionism* as a weapon to defend themselves as in (135) and (136) or attack others, as in (137) and (138). They may act as attackers targeting *protectionism*, as in (139) and (140).

(135) It accuses certain EU states of using protectionist measures as a **shield** against domestic reform. (*Times* 2005)

(136) The former Irish Prime Minister urged the new Administration to respect the decision taken by the world's 20 leading economic nations in Washington last November not to resort to protectionism as a **defence** against the current crisis. (*Times* 2009)

(137) Where Trump's Protectionism Could **Hit** the Hardest. (*Wall Street Journal* 2017)

(138) Even if directed at China, a rise in U.S. protectionism would **hit** South Korea, a major exporter of electronics to China. (*Wall Street Journal* 2016)

(139) Mr. Mandelson has been struggling to devise a twin-track policy — **attacking** protectionism but imposing limited tariffs ... (*New York Times* 2006)

(140) The communique of the recent G7 in Sicily referred to support for **fighting** protectionism and a rules-based international order. (*Guardian* 2017)

The framing implications of WAR scenario used with *protectionism* seem to suggest China's determination to fight against *protectionism* in international trade in CPEDC and suggest trade partners' contradictory stances towards *protectionism* in UKPEDC and USPEDC.

BAD STATE OF BODY HEALTH scenario seems to frame *protectionism* in three corpora as a negative entity in three corpora. A narrative sequence about disease seems to be imposed on *protectionism* in three corpora. The mini-narratives about the spread of a disease in (141) and (142), symptoms of illness in (143) and (144), and use of medicine in (145), (146) and (147) are grounded in our bodily experience of physical world. Citation (146) is originally produced by Xinhua agency.

(141) A risk exists that an **outbreak** of protectionism,...will ultimately destroy stability and confidence. (*Financial Times* 2017)

- (142) "If nothing is done, you could get an **outbreak** of protectionism here against China, Mr. Bergsten said in an interview". (*New York Times* 2003)
- (143) For all these years, political and business leaders of the Asian country...marking a stark contrast to the **raging** economic protectionism... (*China Daily* 2016)
- (144) As details of the bill came out, the Ph.D.'s predicted that protectionist **fever** would soon become **contagious**... (*New York Times* 2009)
- (145) I think that there is a real risk that governments and businesses will see protectionism as the necessary **medicine** in these **conditions** but it is also the **poison** as far as the **recovery** is concerned," he said. (*Times* 2009)
- (146) Protectionism no **painkiller** for Europe. (*People's Daily* 2013)
- (147) Protectionist **remedies**, even legal ones like this, impede that growth without providing long-term replacements for vulnerable, trade-threatened jobs. (*New York Times* 2009)

BAD STATE OF BODY HEALTH scenario above also seems to be frequently used to frame various economic problems in previous studies in popular economic discourse, for instance, *the Euro crisis* (Joris et al., 2018) and *the stock crash* (O'Mara-Shimek et al., 2015). Joris et al. (2018) write that when disease frame is used with *the Euro crisis*, the crisis seems to be represented as a natural event which is out of human control. Unlike fire that may play various roles such as heating, illuminating and killing in different contexts (Charteris-Black, 2016), disease seems to always suggest threats and uncontrollability (Arrese and Vara-Miguel, 2016). Thus, the framing implications of some linguistic metaphors suggesting BAD STATE OF BODY HEALTH scenario in three corpora seem to indicate uncontrollability of *protectionism* and hazard of *protectionism* to trade partners in international trade.

MOTION scenario seems to frame *protectionism* as a path or a direction in three corpora. A narrative sequence of someone or something moving from a starting point along a path towards a direction or returning to the starting point seems to be imposed on *protectionism* in three corpora, as in



(148), (149) (150), (151), (152) and (153). Citation (152) is originally produced by Xinhua agency.

(148) Opinion is divided as to whether this dispute - while breaking ground by using a particular trade law for the first time - is likely by itself to **set off** a protectionist **spiral**. (*Financial Times* 2009)

(149) "The U.S. decision to **go down** the **route** of protectionism is a major setback for the world trading system," said Pascal Lamy, the European Commission's top trade official. (*New York Times* 2002)

(150) "China is not only continuing but accelerating many of the protectionist **approaches** they've taken in the past to promote economic development," said Michael R. Wessel...( *New York Times* 2009)

(151) ...when Donald Trump and Bernie Sanders have helped move US trade policy in a much more protectionist **direction**. (*Guardian* 2016)

(152) "**Going back to** protectionism is immature and selfish", Surve said. (*China Daily* 2017)

(153) While Sweden and others have warned against a **return** to old-style protectionism... (*Financial Times* 2005)

These mini-narratives are grounded in our embodied experience of motion and journey (Gibbs et al., 2004). The mini-narratives in CPEDC and UKPEDC seem to frame *protectionism* as a wrong path or direction, as in (154), (155), (156), (157) and (158). Citations (156) and (158) are originally produced by Xinhua agency. The framing implications of MOTION scenario in CPEDC and UKPEDC seem to suggest the negative impact of *protectionism* in international trade.

(154) They have to realise that once they start down that protectionist **path** it's a **descent** into chaos, her aides said. (*Guardian* 2009)

(155) ...once the U.S. resorts to the policy of economic nationalism and **embarks on** the old, beaten **track** of trade protectionism. (*People's Daily* 2009)

- (156) When meeting in Davos last month, ...called for a resumption of stalled free trade talks to combat a **dangerous turn** to protectionism. (*China Daily* 2009)
- (157) He warned that a more protectionist stance was not on the cards: "The protectionist **route** is a **cul-de-sac**." (*Guardian* 2005)
- (158) EU's proposed tougher trade rules open **dangerous road** toward protectionism. (*China Daily* 2016)

A narrative sequence of starting a fire, causing a fire to grow and stopping the fire also seems to be imposed on *protectionism* in UKPEDC and USPEDC (Charteris-Black, 2016), as mentioned in Section 6.3.4. However, mini-narratives in two corpora do not seem to provide information indicating the natural of the fire such as wildfire that is out of human control and the function of fire such as heating, illuminating and killing (Charteris-Black, 2016). Due to a relatively small number of lexis suggesting FIRE scenario in UKPEDC and USPEDC and the ambiguous nature of fire (Charteris-Black, 2016), strong claims should be avoided to make on the framing implications of linguistic metaphors suggesting this scenario used with *protectionism* in UKPEDC and USPEDC.

#### 6.4.2 Systematic Metaphors and Metaphoreme Framing *Protectionism*

As mentioned in Section 2.5, I identify semantic prosody of linguistic metaphors suggesting systematic metaphor with the help of evidence from a large number of their collocates in BNC (1994) (Deignan, 2017b). Systematic *FIGHT/WAR* in three corpora seems to frame *protectionism* as a negative entity in some contexts and as a neutral entity in other contexts. I checked the evaluative slant of frequent and less frequent linguistic metaphors suggesting *ADOPTING PROTECTIONISM IS INVOLVING IN A BATTLE*. For instance, I checked semantic prosody of linguistic metaphors such as *attack*, *fight against*, *oppose*, *resist* in (159), (160), (161), (162) from three corpora, and *a barrage of* and *weapon* in (163), (164) from CPEDC and USPEDC in BNC (1994). Citation (159) was originally produced by *Observer*.

- (159) In a barely disguised **attack** on Trump and fellow protectionists, it warned leaders to put more effort into mitigating the effects of globalisation. (*Guardian* 2016)
- (160) Speaking on June 16, shortly after the Shanghai textile deal, he warned that this could be just the beginning of his **fight against** protectionism. (*Financial Times* 2005)

- (161) ...to strengthen communication and cooperation and jointly **oppose** trade protectionism. (*New York Times* 2009)
- (162) Both sides are expected to restate commitments to **resisting** protectionism that they made at the recent G-20 summit in London... (*Wall Street Journal* 2017)
- (163) The disruptive shock helped deliver Donald Trump to the Oval Office on a **barrage of** protectionism rhetoric. (*Wall Street Journal* 2017)
- (164) Investment Protectionism is a new US **weapon**. (*China Daily* 2017)

I found that *attack*, *fight against* and *a barrage of* in metaphorical sense seemed to be used in negative contexts. I searched lemma *attack* as a node word in BNC (1994). The BNC (1994) contains 16528 citations of both verbal and nominal *attack*. A random sample of 200 citations of *attack* were checked in context. I found that 101 citations of *attack* were used non-metaphorically and 99 citations were used metaphorically. Among the 99 citations, 4 citations were used in sports context such as *an attacking batman*, *an attacking player* and excluded from further evaluation analysis. By further examining semantic prosody of metaphorical *attack*, I found that there were 41 out of the 95 citations of metaphorical *attack* suggesting negative semantic prosody, as in Figure 6.3.

	<input type="checkbox"/> Details	Left context	KWIC	Right context ↑		
1	<input type="checkbox"/> <input type="radio"/> Written books a...	in, Mick Caulfield); Upton AA 0, Heswall 4.	</s><s> Clarke	attacks	'bogus' UK asylum seekers </s><s> BRITAIN must tighten	
2	<input type="checkbox"/> <input type="radio"/> Written books a...	ay victim ? - lined up.'	</s><s> Taken aback by this vitriolic	attack	, Luce decided she'd had enough. </s><s> A flush of anger	
3	<input type="checkbox"/> <input type="radio"/> Written books a...	who recover often live in fear of a second, potentially fatal,		attack	, but a new test, pioneered in Australia by Dr John Bourke :	
4	<input type="checkbox"/> <input type="radio"/> Written books a...	t anxiety'.	</s><s> The client worries about having a panic	attack	, or feeling sick, or not coping or any of a number of catastr	
5	<input type="checkbox"/> <input type="radio"/> Written books a...	<s> Many clients tell us that deep down they know a panic		attack	, or any particular acute symptom of anxiety, is not harmful	
6	<input type="checkbox"/> <input type="radio"/> Written-to-be-s...	ngton in Oxfordshire was suffering the first pains of a heart		attack	, when his GP told him the agony was caused by a bad ber	
7	<input type="checkbox"/> <input type="radio"/> Spoken context-...	lefeated for the leadership.	</s><s> You've had your heart	attack	, you've been out of action for three months and yet, when	
8	<input type="checkbox"/> <input type="radio"/> Written books a...	make women, both on the inside and the outside of it, feel		attacked	, vilified, stuck and lonely. </s><s> To feel compassion for r	
9	<input type="checkbox"/> <input type="radio"/> Written books a...	ccessor Margaret Thatcher as 'barmy' in his latest stinging		attack	. </s><s> 'All her former intimates say openly that she's ba	
10	<input type="checkbox"/> <input type="radio"/> Written books a...	¿ </s><s> Every year, 80,000 people suffer their first heart		attack	. </s><s> Those who recover often live in fear of a second,	
11	<input type="checkbox"/> <input type="radio"/> Written books a...	anding a weekend at Strathspeld when she died of a heart		attack	. </s><s> I heard the news from a guy I knew who still livec	
12	<input type="checkbox"/> <input type="radio"/> Written books a...	d on for another year and then died suddenly from a heart		attack	. </s><s> One of the medical responsibilities had been to a	
13	<input type="checkbox"/> <input type="radio"/> Written books a...	ghter of the marriage.	</s><s> Hannington died of a heart	attack	17 November 1966, shortly after attending Hammersmith F	
14	<input type="checkbox"/> <input type="radio"/> Written books a...	s of Islam, and" ethnic fanaticism" (the latter an allusion to		attacks	against Coptic Christians). </s><s> He said that" intellectu	
15	<input type="checkbox"/> <input type="radio"/> Written books a...	give him a terrible fright.	</s><s> He's had one minor heart	attack	already, I wouldn't like to cause him another.' </s><s> 'Thei	
16	<input type="checkbox"/> <input type="radio"/> Written books a...	ed to the room where she explained about Philippott's heart		attack	and his subsequent convalescence at the Bellevue Hospite	
17	<input type="checkbox"/> <input type="radio"/> Written books a...	ilthy and whole.	</s><s> But instead we worry about heart	attacks	and hardening of the arteries: human nature is too concern	
18	<input type="checkbox"/> <input type="radio"/> Written books a...	let for women's talents, many women who published were		attacked	as whores. </s><s> Early in the century especially, there w	
19	<input type="checkbox"/> <input type="radio"/> Written books a...	Darlington is in the middle of a severe recession has been		attacked	as political propaganda by outraged Tories. </s><s> Conse	
20	<input type="checkbox"/> <input type="radio"/> Written books a...	ate August 1832 the West India Merchants' Committee still		attacked	as thoroughly improper the abolitionist practice of pledging	

**Figure 6.3** A screenshot of 20 citations of metaphorical *attack* suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994)

The BNC (1994) contains 655 citations of *fight against*. A random sample of 200 citations of *fight against* were checked in context. I found that 38 citations of *fight against* were used non-metaphorically and 162 citations were used metaphorically. There were 96 out of the 162 metaphorical citations suggesting negative semantic prosody. The 96 citations collocated with lexis with a negative slant were used in various contexts such as disease, crime, politics, economy, terrorism and racism, as in Figure 6.4.

	Details	Left context	KWIC	Right context
1	Written books a...	e police force. </s><s> Maza had gained a high reputation for leading the	fight against	" narco-terrorism" over the previous six years and he also claimed several
2	Written books a...	n Ireland. </s><s> They will cost £1 each and the cash will be used in the	fight against	a killer disease. </s><s> The Ulster Cancer Foundation is marking its silve
3	Written books a...	ld Holly Newell. </s><s> Holly, from Hainault, east London, is winning her	fight against	a similar cancer to the Wilm's tumour which killed Leonora. </s><s> As La
4	Written books a...	at's all. </s><s> If you've fouled up, you're on your own.' </s><s> Manville	fought against	a rising anger. </s><s> Hayman was right, despite the apparent unfairnes:
5	Written books a...	iH: </s><s> Rosamund Jordan (LibDem) has pledged to do all she can to	fight against	age discrimination. </s><s> She said 'a massive programme of reforms' w
6	Written books a...	Aids fight </s><s> SCIENTISTS are claiming a major breakthrough in the	fight against	Aids. </s><s> The 'molecular knife' - an enzyme designed to stop the viru:
7	Written books a...	jects have remained fully funded: those in the fields of health, justice, the	fight against	Aids and Venice. </s><s> The considerable public and social implications
8	Written books a...	ention of which was viewed as subversion at the time, and his record as a	fighter against	all forms of injustice is impressive: </s><s> He led from the front the camp:
9	Written books a...	r should be struggling to liberate themselves from men. </s><s> They are	fighting against	all types of repression and injustice found in our country. </s><s> They ha
10	Written books a...	> New hope in fight against Alzheimer's </s><s> AN important step in the	fight against	Alzheimer's disease was revealed yesterday. </s><s> British scientists ha
11	Written books a...	ers took time off before their Grand Slam match against Wales to join the	fight against	bone marrow disease. </s><s> They have also managed to persuade mo:
12	Written books a...	Stalinism. </s><s> Thus Mandel had set out the three levels at which the	fight against	bureaucratization must be waged by the 'revolutionary vanguard': </s><s>
13	Written miscell...	adful disease. </s><s> Discovering new treatments and techniques in the	fight against	cancer is the aim of the Tenovus research teams. </s><s> Will you help re
14	Written books a...	</s><s> Joy had surrounded her final hours. </s><s> Now, after her long	fight against	cancer, she rested in the arms of Jesus for evermore. </s><s> Louis frow
15	Written books a...	n the Outer Hebrides will be unveiled today as a promising weapon in the	fight against	cancer. </s><s> Cancer specialists from the United Kingdom, continental
16	Written-to-be-s...	Read in studio </s><s> A police force has introduced a new weapon in its	fight against	car crime. </s><s> A thermal imaging camera, which can find and follow s
17	Written books a...	been possible. </s><s> The greatest achievements were obtained in the	fight against	communicable disease. </s><s> Many of the great killers were mastered,
18	Spoken context...	erm, to recent Government announcements which you say will make the	fight against	crime less effective. </s><s> A freeze on the number of police officers, but
19	Written books a...	in the past have been filled by officers in order to free more police for the	fight against	crime. </s><s> The pilot scheme backed in principle by the committee yee
20	Written books a...	s in Islam. </s><s> Children between eight and twelve seem too young to	fight against	cultural racism in school; it is as though they are almost stunned into acc

**Figure 6.4** A screenshot of 20 citations of metaphorical *fight against* suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994)

The BNC (1994) contains 83 citations of *a barrage of*. Among the 83 citations, 3 citations were used non-metaphorically and 80 citations were used metaphorically. There were 34 out of the 80 metaphorical citations being used with collocates with a negative slant. Figure 6.5 shows a screenshot of 20 randomly selected, right-sorted citations of metaphorical *a barrage of* suggesting negative semantic prosody. Based on evaluation analysis above, the framing implications of systematic metaphor *ADOPTING PROTECTIONISM IS INVOLVING IN A BATTLE* in three corpora seem to suggest threats protectionism poses to trade partners.

	Details	Left context	KWIC	Right context
1	<input type="checkbox"/>	Written books a... he frail and malodorous body from head to toe, enduring in silence	a barrage of	abuse and complaint the while. </s><s> Then she coaxed her empl
2	<input type="checkbox"/>	Written books a... ice shutters from being wrecked, while inside Michaela was getting	a barrage of	abuse. </s><s> Afterwards viewers sent a deluge of complaints abt
3	<input type="checkbox"/>	Written miscell... scourage us from using rail at all. </s><s> Although ScotRail faced	a barrage of	bad publicity over the cycle ban in 1991, and although some of the
4	<input type="checkbox"/>	Written books a... w at the helm of Sugar, he's in dire danger of finishing the job with	a barrage of	bittersweet songwriting and fretful fretwork. </s><s> Danny Ecclest
5	<input type="checkbox"/>	Written books a... l Smith and the Cabinet's Investment Programmes Committee with	a barrage of	complaints against cuts in their forward programmes, but Smith ser
6	<input type="checkbox"/>	Written books a... nSoft Inc - began by marketing the product strongly, but later faced	a barrage of	complaints and problems over speed and stability, and reportedly k
7	<input type="checkbox"/>	Written books a... er existed, could always be invented. </s><s> He was confused by	a barrage of	conflicting ideologies. </s><s> The sneer had turned into a lump in
8	<input type="checkbox"/>	Written books a... b includes looking after under-21 teams. </s><s> Taylor has faced	a barrage of	criticism and calls for his resignation since last week's defeat. </s><s>
9	<input type="checkbox"/>	Written books a... o opposition from these two quarters, however, they were faced by	a barrage of	criticism from Luis Carrero Blanco, from the Traditionalist Minister c
10	<input type="checkbox"/>	Written books a... a penalty shoot-out was needed to settle the tie, and the FA faced	a barrage of	criticism when Liverpool became the first team to reach and FA Cup
11	<input type="checkbox"/>	Written books a... tch 43 years ago. </s><s> Manager Graham Taylor, already facing	a barrage of	criticism for his team selections and match strategies, was visibly s
12	<input type="checkbox"/>	Written books a... urage economic investment in North East Wales. </s><s> Despite	a barrage of	criticism Mr Rees pressed ahead with plans for Theatr Clwyd in Mo
13	<input type="checkbox"/>	Written books a... Privately British officials believe Mr Patten will now have to endure	a barrage of	criticism from China over the next few weeks, following Prime Minis
14	<input type="checkbox"/>	Written books a... ances where hearing is most difficult, in practice aid-users find that	a barrage of	distorted sounds can interfere with concentration. </s><s> This is le
15	<input type="checkbox"/>	Written books a... Everton star Adrian Heath. </s><s> The Quakers had to withstand	a barrage of	early pressure, with both Biggins and Stein causing problems in the
16	<input type="checkbox"/>	Written books a... last night unconditionally withdrew his comments, which provoked	a barrage of	highly critical and angry complaints from black community groups a
17	<input type="checkbox"/>	Written books a... I snooped through drawers of drawers and subjected my chums to	a barrage of	impertinent questions. </s><s> All that 'can't judge a book by its co
18	<input type="checkbox"/>	Written books a... > The Scottish Office minister Lord James Douglas-Hamilton faced	a barrage of	interventions from Labour MPs as he defended the move. </s><s>
19	<input type="checkbox"/>	Written books a... ><s> Newspapers said they would not report matches and carried	a barrage of	irate letters. </s><s> A Yorkshire Post reader suggested that the Ki
20	<input type="checkbox"/>	Written books a... illets on which she rides </s><s> Ave Regina Coelorum! </s><s> In	a barrage of	noise </s><s> Our Lady of Gunpowder </s><s> blooms on the hori

**Figure 6.5** A screenshot of 20 citations of metaphorical *a barrage of* suggesting negative semantic prosody among 83 citations in BNC (1994)

I found that *oppose*, *weapon*, *resist* in metaphorical sense seemed to collocate with lexis with a neutral slant. The BNC (1994) contains 5940 citations of verbal *oppose*. A random sample of 200 citations of *oppose* were checked in context. I found that 7 citations of *oppose* were used non-metaphorically and 193 citations were used metaphorically. Among the 193 citations, there were 58 citations of *as opposed to* which were not relevant to strong disagreement sense and were excluded from evaluation analysis. I found that only 17% of 135 metaphorical citations seemed to collocate with lexis such as *filthy fuel* and *revisionism* with a negative slant. There were 71.9% of the metaphorical citations with neutral semantic prosody.

The BNC (1994) contains 5806 citations of *weapon*. A random sample of 200 citations of *weapon* were checked in context. I found that 192 citations of *weapon* were used non-metaphorically and 8 citations were used metaphorically. By further examining semantic prosody of metaphorical *weapon*, I found that it seemed to suggest neutral semantic prosody although there was one citation *a shock new weapon-AIDS* whose evaluation seemed negative, as in Figure 6.6.

	Details	Left context	KWIC	Right context ↑
1	<input type="checkbox"/>	Written books a... so the paperback of Asterix and the Secret	<b>Weapon</b>	(Hodder & Stoughton, £3.99), which has a
2	<input type="checkbox"/>	Written books a... , is to launch a fightback with a shock new	<b>weapon</b>	- AIDS. </s><s> Handsome Costa hunk Jer
3	<input type="checkbox"/>	Written books a... act as a lobby, using science as a political	<b>weapon</b>	. </s><s> 'Scandinavians now accept that t
4	<input type="checkbox"/>	Written books a... d has size 17 feet, could be Cadle's secret	<b>weapon</b>	. </s><s> Though unlikely to figure in Engle
5	<input type="checkbox"/>	Written books a... e NME , will now share with you our secret	<b>weapon</b>	. </s><s> 1) </s><s> Spend the entire '80s
6	<input type="checkbox"/>	Written books a... s, however, rapidly proved a double-edged	<b>weapon</b>	. </s><s> The same critical and questioning
7	<input type="checkbox"/>	Written books a... the government's armoury. </s><s> These	<b>weapons</b>	are not used to restrain the growth rates of
8	<input type="checkbox"/>	Written books a... hat attack. </s><s> We use evidence as a	<b>weapon</b>	in an argument, the Japanese use it as an

**Figure 6.6** A screenshot of 8 citations of *weapon* used metaphorically among a random sample of 200 citations in BNC (1994)

The BNC (1994) contains 3385 citations of *resist*. A random sample of 200 citations of *resist* were checked in context. I found that 12 citations of *resist* were used non-metaphorically and 188 citations were used metaphorically. By further examining collocates of *resist*, I found that only 19.6% of metaphorical *resist* seemed to show negative semantic prosody with collocates with a negative slant such as *disastrous collective suggestions*, *evil* and *recession* as evidence. There were 78.7% of the metaphorical citations showing neutral semantic prosody.

To sum up, my finding that the evaluative slant of systematic *FIGHT/WAR* metaphor used with *protectionism* in three corpora seem to vary from context to context is in line with Flusberg et al.'s (2018) claim that the meanings and framing implications of *WAR* frame depend on context but some examples suggesting this frame seem to have a clear negative slant, for instance, the War on Poverty.

Some linguistic metaphors suggesting systematic *ORGANISM* in three corpora seem to frame *protectionism* as a negative entity. I checked collocates of linguistic metaphors such as *breeding ground for*, *sore* from CPEDC in (165), (166), *bout of* from UKPEDC in (167) and *contagion of* from USPEDC in (168) in BNC (1994).

(165) History has shown that a crisis is a ***breeding ground for*** protectionism, but a protectionist approach is certainly no painkiller for economic woes. (*People's Daily* 2010)

(166) Trade protectionism will be a long-term ***sore*** for Chinese exports, said Sun. (*China Daily* 2011)

(167) ...failure to tackle international imbalances could lead to a disastrous ***bout of*** trade protectionism. (*Times* 2010)

(168) The ***Contagion*** of Protectionism (*New York Times* 2009)



I found that *breeding ground for*, *sore*, *bout of* and *contagion of* in metaphorical sense seemed to be used in negative contexts. The BNC (1994) contains 46 citations of *breeding ground for*. I found that 30 out of the 46 citations were used as metaphors. Among the 30 metaphorically used citations, I found that 53.3% of them suggested negative semantic prosody, with collocates with a negative slant, for instance, *crime*, *illegal activities* as evidence. Figure 6.7 shows a screenshot of the 16 right-sorted citations of metaphorical *breeding ground for* suggesting negative semantic prosody.

	Details	Left context	KWIC	Right context ↑
1	<input type="checkbox"/>	Written books a... oms and odd corners, all of which are hibernating havens and	<b>breeding grounds for</b>	all manner of enemies. </s><s> It is not very clever to spray ar
2	<input type="checkbox"/>	Written books a... areas, which not only house society's drop-outs, but are also	<b>breeding grounds for</b>	crime and radical political activity The Brazilian government he
3	<input type="checkbox"/>	Written books a... res which have blotted our cityscapes and too often provided	<b>breeding grounds for</b>	crime and delinquency. </s><s> The Government is spending
4	<input type="checkbox"/>	Written books a... e particularly prone to contamination and have often been the	<b>breeding ground for</b>	diseases such as dysentery or salmonellosis. </s><s> Calmic
5	<input type="checkbox"/>	Written books a... n. </s><s> The 'cities of inner despair' were conceived as the	<b>breeding ground for</b>	disorderly protest, and however hard the Government tried to l
6	<input type="checkbox"/>	Written books a... nkenness and brawling. </s><s> Worse still, the camps were	<b>breeding grounds for</b>	fever, and Battle in 1809 suffered severely from a typhoid outb
7	<input type="checkbox"/>	Written books a... grasp and get into the canoe. </s><s> Anpetuwi was small - a	<b>breeding ground for</b>	gossip, and she'd probably end up regretting it if she turned ar
8	<input type="checkbox"/>	Written books a... ir free and irregular communities and enthusiastic piety were	<b>breeding grounds for</b>	heresy. </s><s> The women who joined such communities we
9	<input type="checkbox"/>	Written books a... run properly so that the islands can avoid becoming potential	<b>breeding grounds for</b>	illegal activities. </s><s> However, there is nothing to suggest
10	<input type="checkbox"/>	Written books a... </s><s> 'Intractable bastards, the Ukrainians. </s><s> Bloody	<b>breeding ground for</b>	KGB men and members of the Politburo.' </s><s> 'A generaliz
11	<input type="checkbox"/>	Written books a... ps with the problem of young offenders will result in 'a natural	<b>breeding ground for</b>	long-term criminality and even terrorism', the RUC Police Fede
12	<input type="checkbox"/>	Written books a... re-specific rules and procedures of turn-taking provide ample	<b>breeding ground for</b>	misunderstanding. </s><s> Entering and leaving conversation
13	<input type="checkbox"/>	Written books a... t Egyptians and their eager embrace of foreign influences is a	<b>breeding ground for</b>	political unrest and religious fundamentalism which, increasing
14	<input type="checkbox"/>	Written books a... ating with levels of grinding poverty - inescapable, and classic	<b>breeding ground for</b>	so much anti-social behaviour including crime. </s><s> Struct
15	<input type="checkbox"/>	Written books a... : and their public face. </s><s> And this vacuum is the perfect	<b>breeding ground for</b>	the inflation of self-doubt and self-criticism, and increasingly ur
16	<input type="checkbox"/>	Written books a... in my work, is that they breed a certain ignorance, can be the	<b>breeding ground for</b>	very extreme, absurd emotional releases.' </s><s> In Cave's v

**Figure 6.7** A screenshot of 16 citations of metaphorical *breeding ground for* suggesting negative semantic prosody among 46 citations in BNC (1994)

The BNC (1994) contains 138 citations of nominal *sore*. I found that 5 out the 138 citations were used as metaphors. When *sore* is used as metaphor, threats of pain and wound seem to be transferred to frame topics with negative associations such as *fascism* and *a cancerous body politics*, as in Figure 6.8.

	Details	Left context	KWIC	Right context ↑
1	<input type="checkbox"/>	Written books a... longer sounds to me. </s><s> They are scrapes and	<b>sores</b>	, mockers of failure, players in a relentless team of a
2	<input type="checkbox"/>	Written books a... st way to fight fascism was to eliminate the festering	<b>sores</b>	allegedly caused by some Jewish elements, by exho
3	<input type="checkbox"/>	Spoken context-... about old people's homes, they've been two running	<b>sores</b>	in this authority and hopefully today in both of them v
4	<input type="checkbox"/>	Written books a... y want no part of it. </s><s> Old scores and opened	<b>sores</b>	</s> <s> IT GROWS ever harder to see the decision
5	<input type="checkbox"/>	Written books a... : 'Pop can be treated as the vile pus that drips from	<b>sores</b>	of a cancerous body politic.' </s><s> Its only value is

**Figure 6.8** A screenshot of 5 citations of metaphorical *sore* suggesting negative semantic prosody among 138 citations in BNC (1994)

The BNC (1994) contains 366 citations of *bout of*. A random sample of 200 citations of *bout of* were checked in context. I found that 129 citations were used as metaphors and 71 as non-metaphors. I found that 103 out of the 129 citations suggested negative semantic prosody with collocates such as *appalling abuse*, *cold-blooded brutality* with a negative slant as evidence.

Figure 6.9 shows a screenshot of 20 right-sorted citations of metaphorical *bout of* suggesting negative semantic prosody.

	Details	Left context	KWIC	Right context ↑
1	Written miscell...	...sly calm. </s><s> His pain had receded a little, as though this latest	<b>bout of</b>	agony had overloaded some circuits of his brain's pain-response cen
2	Written books a...	...sh 30 times in two years and experienced severe mood swings and	<b>bouts of</b>	anger. </s><s> She and her husband were on the brink of breaking u
3	Written miscell...	...ikful to my right hon. Friend for his timely action, following the recent	<b>bout of</b>	appalling abuse in Oxford and the north of England and the immense
4	Written books a...	...heir thunder. </s><s> 'We'll be back,' promises Peron after a closing	<b>bout of</b>	chainsaw frenzy. </s><s> If Faust return to creative hibernation this r
5	Written books a...	...nd two male cousins. </s><s> Yet while Shah Jehan was capable of	<b>bouts of</b>	cold-blooded brutality, he was still the most aesthetically sensitive of
6	Written books a...	...f subsequently become" increasingly irrational and incoherent... with	<b>bouts of</b>	depression when he displays verbal and physical aggression". </s><s>
7	Written books a...	...d to be a lot more cheerful and appeared to have recovered from his	<b>bout of</b>	depression of the previous evening. </s><s> 'See you later, Boyo,' he
8	Written books a...	... Doctor Staples said. </s><s> 'Periods of elation followed by	<b>bouts of</b>	depression. </s><s> Delusions of physical disease are common in th
9	Written books a...	...bish'. </s><s> Indeed, he even reveals that he has recovered from a	<b>bout of</b>	depression: 'What right have I to be depressed? </s><s> I'm luckier t
10	Written books a...	...ill-tale symptom of AIDS) began to spread. </s><s> He also suffered	<b>bouts of</b>	depression and confusion. </s><s> The doctors rated his chances as
11	Written books a...	...rong and teenagers often experience violent mood swings, including	<b>bouts of</b>	depression. </s><s> When depression is severe, it is an illness requi
12	Written books a...	...for the French, one could detect a degree of masochism in the ritual	<b>bouts of</b>	depression following an unpolished, yet solid and competent perform
13	Written books a...	...nts hit even fatter, a score approaching double figures and an instant	<b>bout of</b>	depression. </s><s> But it is impossible for anyone to feel depress
14	Written books a...	...ted nest lined with Liza's fauvist daubs where she and I lay after our	<b>bouts of</b>	dirty love, toking and talking, turning the world inside out. </s><s> Th
15	Written books a...	...d that over the year he had become affected by simple, inexplicable	<b>bouts of</b>	fear. </s><s> He hated the car and he hated himself in it; he hated w
16	Written books a...	... thanks.' </s><s> She drank it, it was consoling. </s><s> Her father's	<b>bouts of</b>	fury weren't strategic, they never achieved anything but trouble for hi
17	Written books a...	...to go, he was tired of the coroner's constant bad temper and sudden	<b>bouts of</b>	fury. </s><s> He loved the fat knight but on this occasion dearly wish
18	Written books a...	...ament. </s><s> They've already given him a taste of the castor oil, a	<b>bout of</b>	gaol, a bit of a beating, just a tickle, a caress of their united methods.
19	Written books a...	... - they finally split up in 1969. </s><s> She had suffered during long	<b>bouts of</b>	Hopper's depression, rages and his obsession with James Dean. </s>
20	Written books a...	... TE - the main Tamil separatist group) since the eruption of the recent	<b>bout of</b>	hostilities in June [see pp. 37529-30; 37611; 37654]. </s><s> Althoug

**Figure 6.9** A screenshot of 20 citations of metaphorical *bout of* suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994)

The BNC (1994) contains 9 citations of *contagion of*. I found that the 9 citation were all used in metaphorical sense. There were 3 citations suggesting negative semantic prosody, as in Figure 6.10

	Details	Left context	KWIC	Right context ↑
1	Written books a...	...ntinuing to be ignored or suppressed. </s><s> In that respect, the	<b>contagion of</b>	American fundamentalism certainly augurs ill. </s><s> Nevertheless
2	Written books a...	... get. </s><s> Pre-Conquest families have a special immunity to the	<b>contagion of</b>	capitalism, defined by Disraeli as the bankers who came into Engla
3	Written books a...	... they left him they would leave him dead. </s><s> But not even the	<b>contagion of</b>	disgrace had touched him through his king's disastrous venture; for

**Figure 6.10** A screenshot of 3 citations of *contagion of* suggesting negative semantic prosody among 9 citations in BNC (1994)

Based on evaluation analysis above, the framing implications of some linguistic metaphors suggesting *protectionism* as systematic *ORGANISM* in three corpora also seem to suggest threat of *protectionism* in international trade.

Some linguistic metaphors suggesting *PROTECTIONISM IS A CONCRETE OBJECT OR LOCATION IN A MOTION* in CPEDC and UKPEDC seem to negatively frame *protectionism* as concrete object or location that people should avoid. I checked semantic prosody of linguistic metaphors such as *back away*, *slide towards*, *slide to* and *descent into* in (169), (170), (171) and (172) in BNC (1994).

(169) The head of Caterpillar ... plunge the global economy into recession and called on Congress to **back away** from protectionist measures. (*Financial Times* 2006)



(170) ... fear is a **slide towards** greater protectionism since Mr Trump became US president.. (*Financial Times* 2017)

(171) EU's **slide to** protectionism would undermine global efforts to seek a joint solution to the current crisis. (*China Daily* 2007)

(172) ...a new EU-China trade pact to be that a damaging **descent into** protectionism and trade wars can be avoided. (*Times* 2006)

I found that *back away*, *slide towards*, *slide to* and *descent into* in metaphorical sense seem to suggest negative semantic prosody. The BNC (1994) contains 273 citations of *back away*. A random sample of 200 citations of *back away* were checked in context. There were 20 citations being used as metaphors and 180 used as non-metaphors. I found that 10 out of the 20 metaphorical citations suggested negative semantic prosody with collocates such as *philandering comments* and *levity* with a negative slant as evidence, as in Figure 11.

	Details	Left context	KWIC	Right context
1	<input type="checkbox"/> <input type="radio"/>	Written books a... </s></s>	But most of the mealtime was spent with her either	backing away from his leading philandering comments, or racking her brain
2	<input type="checkbox"/> <input type="radio"/>	Written books a... ientists to develop non-nuclear defences is part of a plan to	back away	from an offensive strategy based on the homeless MX missi
3	<input type="checkbox"/> <input type="radio"/>	Written books a... tside. </s></s>	Slipping the toolcase into his overalls, Craig	backed away from the strange phenomenon. </s></s> 'Damn right I am. </
4	<input type="checkbox"/> <input type="radio"/>	Written books a... minister Edward Heath last night as Tory MPs appeared to	back away	from a full-scale rebellion over the imposition of VAT on dom
5	<input type="checkbox"/> <input type="radio"/>	Written books a... whips it became clear that potential rebels were prepared to	back away	from a rebellion in the hope of wringing more concessions fr
6	<input type="checkbox"/> <input type="radio"/>	Written books a... ok he gave me was positively frightening. </s></s>	I tried to	back away from my levity. </s></s> 'Someone else will take your kids to
7	<input type="checkbox"/> <input type="radio"/>	Written books a... ing a scrap of common ground on which we could mutually	back away	from the argument. </s></s> 'I naturally believe that the finan
8	<input type="checkbox"/> <input type="radio"/>	Written books a... round the door were likely to end up like Conor unless they	backed away	from their relentless hedonism, from their incessant living fo
9	<input type="checkbox"/> <input type="radio"/>	Written books a... I pest. </s></s> 'Horse shit!' </s></s> 'What?' </s></s> Milena	backs away	in disgust. </s></s> But this word is mine. </s></s> I have ma
10	<input type="checkbox"/> <input type="radio"/>	Written books a... at. </s></s>	Such wormy words would surely make an eagle	back away in fear. </s></s> But not Woil. </s></s> He wavered and dithe

**Figure 6.11** A screenshot of 10 citations of metaphorical *back away* suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994)

The BNC (1994) contains 19 citations of *slide to* with *slide* as a noun. I found 3 out of the 19 citations were used as metaphors and 2 out of the 3 metaphorical use appeared to suggest negative semantic prosody, for instance, collocating with lexis such as *shame* and *slump* with a negative slant. The BNC (1994) contains 23 citations of *slide towards* with *slide* both as a noun and a verb. I found 13 out of the 23 citations were used as metaphors and 53.8% of the 13 metaphorical use appeared to suggest negative semantic prosody, as in Figure 6.12.

	Details	Left context	KWIC	Right context ↑
1	<input type="checkbox"/>	Written books a... east. </s><s> Meanwhile the eastern states are	<b>sliding towards</b>	a budget deficit of DM50 billion this year and mar
2	<input type="checkbox"/>	Written books a... ed it with horrified fascination, and saw it start to	<b>slide towards</b>	him. </s><s> The membrane broke open and he
3	<input type="checkbox"/>	Written books a... ening already. </s><s> How can this frightening	<b>slide towards</b>	hopelessness be reversed? </s><s> How can we
4	<input type="checkbox"/>	Written books a... economic statistic can be blamed for the recent	<b>slide towards</b>	panic it is the balance of payments figures. </s><
5	<input type="checkbox"/>	Written books a... such situations. </s><s> Johnny Marr began to	<b>slide towards</b>	potential alcoholism, drinking a bottle of Remy M.
6	<input type="checkbox"/>	Written-to-be-s... rt two: Save Our Speedway. </s><s> Is Swindon	<b>sliding towards</b>	Skid Row? </s><s> What a load of bull... the bid
7	<input type="checkbox"/>	Written books a... dy evidence, well before the election, of an India	<b>sliding towards</b>	ungovernability. </s><s> The lofty idea that India

**Figure 6.12** A screenshot of 7 citations of metaphorical *slide towards* suggesting negative semantic prosody among 23 citations in BNC (1994)

	Details	Left context	KWIC	Right context ↑
1	<input type="checkbox"/>	Written books a... film graphically and with total honesty describes the writer's	<b>descent into</b>	a hell of her own making on a 'Mexican vacation from feminis
2	<input type="checkbox"/>	Written books a... </s><s> But it was also in keeping with the felt rapidity of the	<b>descent into</b>	a new barbarism that the advance of lawlessness should be
3	<input type="checkbox"/>	Written books a... uldn't even agree to that, greedy cow.' </s><s> The sudden	<b>descent into</b>	abuse took McLeish by surprise and he realized he must hav
4	<input type="checkbox"/>	Written books a... rop of whiskey, and at what point he began his calamitous	<b>descent into</b>	alcoholism is not easy to determine. </s><s> He was not act
5	<input type="checkbox"/>	Written books a... he world on the path to a second global war. </s><s> As the	<b>descent into</b>	anarchy accelerated in the later 1930s, the British peace mo
6	<input type="checkbox"/>	Written books a... was with the course of the ancient empire on its long, slow	<b>descent into</b>	barbarism. </s><s> Elder Seth had known Gibbon, and appe
7	<input type="checkbox"/>	Written books a... </s><s> A catalogue of misconceived ideas has preceded our	<b>descent into</b>	chaos. </s><s> They include the misguided, idealistic suppo
8	<input type="checkbox"/>	Written books a... and then sub-real, and finally sub-human, a straightforward	<b>descent into</b>	common or garden madness. </s><s> The flight from Mosco
9	<input type="checkbox"/>	Written books a... it will reopen today. </s><s> Nobody has forgotten the rapid	<b>descent into</b>	currency chaos, rampant inflation and food riots which greet
10	<input type="checkbox"/>	Written books a... xcited Brenton, signifying at a stroke both Western Europe's	<b>descent into</b>	cynical consumerism and the wiping out of history. </s><s> T
11	<input type="checkbox"/>	Written books a... d Marriage; a Christian writer makes a great scandal of 'the	<b>descent into</b>	darkness of the Expositor and the priestess'. </s><s> There
12	<input type="checkbox"/>	Written-to-be-s... ed up about his controversial life. </s><s> That included his	<b>descent into</b>	drug addiction and his relationship with his father, the Duke c
13	<input type="checkbox"/>	Written books a... ons within himself he seemed unable to control. </s><s> His	<b>descent into</b>	drunkenness and sexual dissipation filled him with self-disgu
14	<input type="checkbox"/>	Written books a... e more frenetic the activity seemed to be - like some sort of	<b>descent into</b>	Hades. </s><s> It does all appear remarkably accessible on
15	<input type="checkbox"/>	Written books a... or happiness. </s><s> The journey, however, proves to be a	<b>descent into</b>	hell, for Comala turns out to be a ghost town which has been
16	<input type="checkbox"/>	Written books a... </s><s> In traditional epic there is a visit to the Underworld, a	<b>descent into</b>	Hell, which may or may not be the point of Book vii, with its c
17	<input type="checkbox"/>	Written books a... prised few who had followed that institution's relatively quiet	<b>descent into</b>	insolvency. </s><s> Word of total closure came just one wee
18	<input type="checkbox"/>	Written books a... viated timescale is often used to describe the rapidity of the	<b>descent into</b>	lawlessness. </s><s> 'Twenty Years Ago', which conveys the
19	<input type="checkbox"/>	Written books a... eport on the realities of trench warfare and chart his gradual	<b>descent into</b>	madness. </s><s> His songs are equally forceful and direct,
20	<input type="checkbox"/>	Written books a... ing out of control. </s><s> And play Van Gogh, he caught the	<b>descent into</b>	madness perfectly. </s><s> It gave roth a chance to underlin

**Figure 6.13** A screenshot of 20 citations of metaphorical *descent into* suggesting negative semantic prosody among 64 citations in BNC (1994)

The BNC (1994) contains 64 citations of *descent into* with *descent* as a noun. I found 42 out of the 64 citations were used as metaphors and 28 out of the 42 metaphorical use appeared to be used with collocates with a negative slant, for instance, *hell* and *abuse*. Figure 6.13 above shows a screenshot of 20 right-sorted citations of metaphorical *descent into* suggesting negative semantic prosody.

As discussed in Section 6.3.1 and Section 6.3.4, *target* and *victim* in CPEDC appear to be a metaphoreme that tends to collocate with lexis with negative association. Thus, metaphoreme *target* and *victim* in CPEDC seems to frame *protectionism* as a negative entity. The framing implications of both metaphoreme *target* and *victim* seem to specify threats that *protectionism* poses to China's trading in international trade.

## 6.5 Metaphors Used to Write about *Free Trade*

### 6.5.1 Organism Metaphor Writing about *Free Trade*

As mentioned in Section 6.2.1, organism metaphor is used much more frequently in USPEDC than in UKPEDC to write about *free trade*. Linguistic metaphors suggesting BODY scenario are observed in UKPEDC and USPEDC to write about *free trade*. As mentioned in Section 6.3.2, the label of BODY scenario is informed by Musolff (2016). Narrative contents of BODY scenario such as bad state of body health in (173), (174) are associated with *free trade*. In (173), *free trade* is presented as a body with blocked arteries. In (174), *free trade* is described as a weak body.

(173) Although ThyssenKrupp's steel operations might benefit in the near term ...when the **arteries** of free trade are unclogged. (*Financial Times* 2016)

(174) But given that Chinese policies are unfair to American businesses and workers...but **fragile** regime of global free trade. (*New York Times* 2005)

Linguistic metaphors with basic meanings related to a living organism but referring to *free trade* were also grouped based on systematic metaphor they suggest. Citation analysis shows that linguistic metaphors in Table 6.11 appear to suggest systematic metaphor *FREE TRADE IS LIVING BEING* in UKPEDC and USPEDC.

**Table 6.11** Vehicle terms for *ORGANISM* used with *free trade*

Corpus	Vehicle terms	Examples
UKPEDC	push (v.)  artery; boost (v.); digest; fruit; heartless; impediment; pumpkin; relative (n.); robust; strain (n.); unclogged; wallow;	But that is no good reason not to act ..., so as to move on to the rest of the agenda before the free-trade coach turns into a <b>pumpkin</b> . ( <i>Times</i> 2006)  Free trade <b>wallows</b> in political correctness. ( <i>Times</i> 2003)

**Table 6.11** Vehicle terms for *ORGANISM* used with *free trade* (continued)

<b>Corpus</b>	<b>Vehicle terms</b>	<b>Examples</b>
USPEDC	push (v.)  back (n.); embrace (v./n.); fragile; growth; hand in hand; revive; strengthen; turn (v.); position (n.);	But given that Chinese policies are unfair ... and that they jeopardize the increasingly important but <b>fragile</b> regime of global free trade. ( <i>New York Times</i> 2005)  Hence free trade and investment need to go <b>hand in hand</b> . ( <i>Wall Street Journal</i> 2017)

Within this broad pattern, linguistic metaphors in UKPEDC are observed to be used in a more novel way than in USPEDC, as shown in (175) and (176). In (175), the way that blood cannot flow around the body when arteries are blocked, with catastrophic consequences are creatively used to describe the way goods and money cannot flow. In (176), vehicle metaphor creatively mixes with plant metaphor to describe *free trade*. Progress of *free trade* being disrupted is creatively associated with the story of Cinderella whose magic carriage turns into a pumpkin at midnight. When *free trade* becomes a pumpkin, it is an entity being lack of mobility.

(175) Although ThyssenKrupp's steel operations might benefit in the near term ...when the **arteries** of free trade are **unclogged**. (*Financial Times* 2016)

(176) But that is no good reason not to act ..., so as to move on to the rest of the agenda before the free-trade **coach** turns into a **pumpkin, immobilised** by elections in the US and France, the expiry of the US Administration's "fast-track". (*Times* 2006)

Lexis related to body part/bodily action are also observed to write about *free trade* in UKPEDC and USPEDC, as in (177), (178), (179), (180), (181) and (182). In (177), (178) and (179), *free trade* is described as a person. In (180), *free trade* is described as a direction someone push towards. In (181), *free trade* is described as a person or a large animal. In (182), *free trade* is described as a concrete object which is not possible to say whether it is a person or thing.

(177) When free trade's **heartless relatives digest** Doha's last will and testament, they will find it contains euthanasia clauses. (*Times* 2006)

(178) Mr. Wei said that the United States was wrong to feel

threatened by China and should **embrace** free trade. (*New York Times* 2017)

(179) Hence free trade and investment need to go **hand in hand**. (*Wall Street Journal* 2017)

(180) But the US and EU said that the flurry of disputes would not derail the global **push** towards freer trade. (*Financial Times* 2005)

(181) Free trade **wallows** in political correctness. (*Times* 2003)

(182) Pacific Pact Vows to **Push** Free Trade After U.S. Rejection. (*Wall Street Journal* 2017)

### 6.5.2 Fight/war Metaphor Writing about *Free Trade*

As mentioned in Section 6.2.1, fight/war metaphor is observed to be frequently used in UKPEDC and USPEDC to write about *free trade*. As mentioned by Eagleton (1938) in Section 6.3.3, WAR scenario consists of the use of military forces and weapons with/without declaration of war. Citation analysis shows that linguistic metaphors in two corpora suggest WAR scenario. Narrative contents of a WAR scenario such as winner in a battle in (183), a group of soldiers in (184) and enemy in (185) are used to write about *free trade* in UKPEDC and USPEDC.

(183) That **battle** looked to have been decisively **won** by the free traders in the early 1990s. (*Wall Street Journal* 2016)

(184) In fact, the free trade **brigade**, which encompasses most mainstream politicians, ...seems to be on evangelical overdrive. (*Times* 2009)

(185) The International Monetary Fund voiced fears yesterday about growing protectionist pressures and warned that a **retreat** from free trade could trigger a crisis for the global economy. (*Guardian* 2005)

To capture the use of lexis from *FIGHT/WAR* grouping in specific context, linguistic metaphors from this grouping were also grouped based on systematic metaphor they suggest. Citation analysis shows that linguistic metaphors in Table 6.12 seem to suggest systematic metaphor *ACTIONS ON FREE TRADE IS MILITARY ACTIONS* in UKPEDC and USPEDC.

**Table 6.12** Vehicle terms for *FIGHT/WAR* used with *free trade*

<b>Corpus</b>	<b>Vehicle terms</b>	<b>Examples</b>
UKPEDC	assault (n.); attack (v.); brigade; defend; defence; defender; loser; retreat; win (v.)	But events this month - including wildcat strikes and now an <b>assault</b> on free trade ... ( <i>Financial Times</i> 2005)
USPEDC	battle (n.); defeat (v.); front line; loser; win (v.)	That <b>battle</b> looked to have been decisively <b>won</b> by the free traders in the early 1990s. ( <i>Wall Street Journal</i> 2016)

As shown in Table 6.12, linguistic metaphors suggesting this systematic metaphor are highly conventional war-related lexis. Table 6.12 also shows that there is a wider range of lexis used in UKPEDC than in USPEDC to write about *free trade*. Citation analysis shows that war-related lexis such as *defend* in (186), *attack* in (187) from UKPEDC and *defeat* in (189) from USPEDC are used to write about different roles of *free trade*. In (186) *free trade* is described as an entity being protected from attack in a battle while in (187) *free trade* is described as the enemy to be attacked. In (188), *free trade* is described as a loser in a battle.

(186) German business chiefs prepare to **defend** free trade in US. (*Financial Times* 2017)

(187) There is concern that the EU remains vulnerable ... whip up public support by **attacking** free trade and open markets. (*Financial Times* 2017)

(188) SPARTANBURG, S.C.—Milliken & Co., one of the largest U.S. textile makers, has been on the **front lines** of nearly every recent **battle** to **defeat** free-trade legislation. (*Wall Street Journal* 2015)

### 6.5.3 Game/sports Metaphor Writing about *Free Trade*

Since there is a relatively small number of instances from game/sports metaphor used with *free trade*, it is better to avoid making strong claims based on them. As mentioned in section 6.3, any types of metaphor patterns I study should be suggested by at least 3 different linguistic metaphors from different contexts. Citation analysis shows that CPEDC and UKPEDC are observed to use linguistic metaphors suggesting GAME/SPORTS scenario to write about *free trade*. Narrative contents of a GAME/SPORTS scenario such as

winning a race in (189) and leaving sports field in (190) are associated with *free trade*.

(189) China's success after its entry into the WTO has proved ...will **win** in the **race** for the silver line of the global free trade. (*China Daily* 2016)

(190) ... in which the **defenders** of free trade are either switching sides, like Germany, or **leaving the field**, like the UK. (*Financial Times* 2016)

Linguistic metaphors with basic meaning related to game/sports but referring to *free trade* were also grouped based on systematic metaphor they suggest. Linguistic metaphors suggest systematic metaphor *FREE TRADE IS GAME/SPORTS* were observed in CPEDC and UKPEDC, as in Table 6.13.

**Table 6.13** Vehicle terms for *GAME/SPORTS* used with *free trade* in CPEDC and UKPEDC

Corpus	Vehicle terms	Examples
CPEDC	champion (n.); race (n.) stance; win (v.)	China's success after its entry into the WTO has proved ...will <b>win</b> in the <b>race</b> for the silver line of the global free trade. ( <i>China Daily</i> 2016)
UKPEDC	champion (n.); defender; leave the field; opponent; stance;	... in which the <b>defenders</b> of free trade are either switching sides, like Germany, or <b>leaving the field</b> , like the UK. ( <i>Financial Times</i> 2016)

Within this broad pattern, similarities are observed in conventionality of lexis used with *free trade*, as in Table 6.13. Table 6.13 also shows that both similar and different lexis are used in CPEDC and UKPEDC to write about *free trade*, as in (191), (192), (193) and (194).

(191) It's regretful that the EU, an important rule-maker and **champion** of free trade, balks at living up to its obligations. (*China Daily* 2017)

(192) Beijing will seek to usurp America's traditional role as the **champion** of free trade and open markets. (*Guardian* 2017)

(193) China's success after its entry into the WTO has proved ...will **win** in the **race** for the silver line of the global free trade. (*China Daily* 2016)

(194) We should notice here that the strongest **opponents** to

free trade in textiles are in fact those southern European countries in which distribution remains highly fragmented...  
(*Financial Times* 2005)

In (191) and (192), *free trade* is described as one kind of game/sports competition. In (193), *free trade* is described as an entity that players compete for in a game/sports. In (194), *free trade* is described as a player in a game/sports.

## 6.6 Free Trade, Metaphors and Framing

### 6.6.1 Metaphor Scenarios Framing *Free Trade*

As mentioned in Section 6.5, linguistic metaphors suggesting BODY scenario and WAR scenario are observed in UKPEDC and USPEDC to write about *free trade*. Linguistic metaphors suggesting GAME/SPORTS scenario are observed in CPEDC and UKPEDC to write about *free trade*. No narrative sequence related to BODY scenario appears to be imposed on *free trade* in UKPEDC and USPEDC. There is also no narrative sequence related to GAME/SPORTS scenario appearing to be imposed on *free trade* in CPEDC and UKPEDC. With a very limited number of broken mini-narratives within BODY scenario and GAME/SPORTS scenario, I have not enough evidence to show the way the two scenarios appear to frame *free trade* in my data. However, a narrative sequence related to WAR scenario appears to be imposed on *free trade* in UKPEDC and USPEDC.

The narrative sequence within WAR scenario seems to frame trade partners with different roles in relation to *free trade*. Trade partners in international trade may act as defenders or attackers of *free trade*, in (195), (196), (197). They may also act as losers in relation to *free trade* in (198), (199) and (200). Within this scenario, international trade partners appear to act as defenders of *free trade* and *free trade* always appears to be a winner. Thus, the framing implications of WAR scenario in UKPEDC and USPEDC seem to suggest *free trade* as the mainstream of international trade.

(195) German business chiefs prepare to **defend** free trade in US. (*Financial Times* 2017)

(196) ...the EU remains vulnerable to anti-establishment movements that whip up public support by **attacking** free trade and open markets. (*Financial Times* 2017)



- (197) SPARTANBURG, S.C.—Milliken & Co., one of the largest U.S. textile makers, has been on the **front lines** of nearly every recent **battle** to **defeat** free-trade legislation. (*Wall Street Journal* 2015)
- (198) That **battle** looked to have been decisively **won** by the free traders in the early 1990s... (*Wall Street Journal* 2016)
- (199) Free trade has **won**: adapt or die is the only option left to us (*Guardian* 2016)
- (200) While it was recognised that there could be **losers** from free trade in the developed economies, these **losers** were thought to be few and temporary, compared to the gainers, who were many and permanent. (*Financial Times* 2016)

Single citation suggesting scenarios such as CARVING UP ESTATE scenario is creatively used with *free trade* in UKPEDC. CARVING UP ESTATE scenario creatively used with *free trade* in UKPEDC seems to frame *free trade* as a pitiful family member of the patient Doha. As in (201), relationship between the stalled Doha round and members hampering its progress are creatively explained with a fully-developed story of carving up the estate. The stalled Doha round seems to be a patient in intensive care unit while Doha members such as US are the patient's family members who leave the patient to die and prepare to carve up the estate. However, leaving the patient to die seems not to bring any benefit to the heartless family members. That is, without making Doha negotiation moving on, Doha members such as US will have much more loss than gains.

- (201) THE Doha Round has spent so long in the World Trade Organisation's **intensive care unit** ...With the **patient deep in coma**, ... prepare to **carve up the estate**. Doha has been left to **die** because the United States believes that its potential to enlarge markets is too modest to justify further compromise,....Trade rounds have stalled many times, but never totally broken down. When free trade's **heartless relatives digest** Doha's **last will and testament**, they will find it contains **euthanasia** clauses. They may realise that they may end up worse off if they refuse to make a last, concerted effort at a **cure**.

Within the Doha family, *free trade* appears to be powerless to help when other family members refuse to cure the Doha patient that is deep in coma.

The framing implications of CARVING UP ESTATE scenario seem to suggest a disadvantaged position of *free trade* in the Doha family.

### 6.6.2 Systematic Metaphors Framing *Free trade*

Linguistic metaphors suggesting systematic metaphor *ACTIONS ON FREE TRADE IS MILITARY ACTIONS* in UKPEDC and USPEDC seem to frame *free trade* as a neutral entity under protection of trade partners in some contexts but frame *free trade* as a negative entity in other contexts. I checked semantic prosody of linguistic metaphors such as *defender of*, *attack* and *defeat* in (202), (203) and (204) in BNC (1994).

(202) Only Sweden and Denmark - traditionally the Union's staunchest **defenders of** free trade - voted against it. (*Financial Times* 2005)

(203) ...there is concern that the EU remains vulnerable to anti-establishment movements that whip up public support by **attacking** free trade and open markets. (*Financial Times* 2017)

(204) S.C.—Milliken & Co., one of the largest U.S. textile makers, has been on the front lines of nearly every recent battle to **defeat** free-trade legislation. (*Wall Street Journal* 2015)

I found that *defender of* in metaphorical sense seemed to suggest neutral semantic prosody. The BNC (1994) contains 113 citations of *defender of*. I found that 96 citations were used as metaphors and 17 citations as non-metaphors. There were 7 out of the 96 metaphorical citations appearing to collocate with lexis with a positive slant, for instance, *democracy* and *liberty*. The other 89 metaphorical citations seemed to collocate with lexis with a neutral slant. As mentioned in Section 6.4.2, I found that metaphorical *attack* seems to suggest negative semantic prosody among a random sample of 200 citations of *attack* in the BNC (1994). I found that verbal *defeat* in metaphorical sense also seemed to suggest negative semantic prosody. The BNC (1994) contains 2638 citations of verbal *defeat*. A random sample of 200 citations of *defeat* were checked in context. I found that 56 citations of *defeat* were used non-metaphorically and 144 citations were used metaphorically. Among the 144 citations, there were 9 citations using with collocates with a negative slant such as *the power of evil* and *terrorism*. There were also 89 citations used in competition contexts such as *game* and *election*. Within the competition contexts, targets being defeated seemed to

be losers.

Linguistic metaphors suggesting systematic *GAME/SPORTS* in CPEDC and UKPEDC seem to frame *free trade* as a neutral entity that trade partners were in support of. I checked semantic prosody of linguistic metaphors such as *champion of* in (205) and (206) in BNC (1994). Citation (206) was originally produced by *Xinhua agency*.

(205) Nevertheless, now that China might be seen as the **champion of** free trade and state-driven capitalism... (*Financial Times* 2016)

(206) China has become a **champion of** free trade...an Argentine expert in international law has said. (*China Daily* 2016)

I found that most citations of *champion of* in metaphorical sense seemed to suggest neutral semantic prosody. The BNC (1994) contains 334 citations of *champion of*. A random sample of 200 citations of *champion of* were checked in context. I found that 112 citations were used as metaphors and 88 citations as non-metaphors. There were 22.3% of the 112 metaphorical citations appearing to suggest positive semantic prosody, as in Figure 6.14. There were 8% the 112 metaphorical citations appearing to use with collocates with a negative slant such as *the oppressed*, *the poor*, and *the unreleased and overlooked* and 69.7% appearing to use with collocates with a neutral slant.

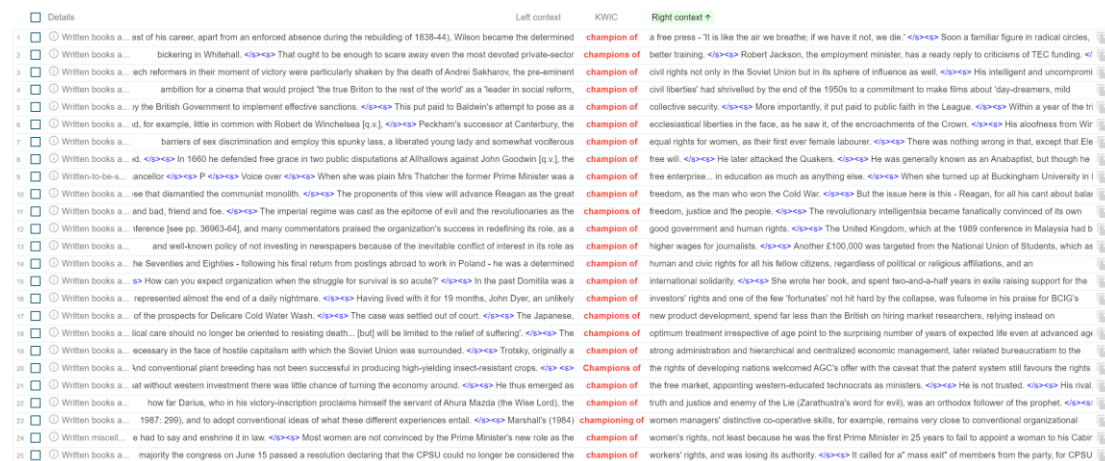


Figure 6.14 A screenshot of 25 citations of metaphorical *champion of* suggesting positive semantic prosody among a random sample of 200 citations in BNC (1994)

## 6.7 Summary

In this chapter, I first addressed research question one. I reported frequently used metaphors found in 15 sample texts, which may be representative of frequently used metaphors in three corpora. I found that more similarities than differences were observed in frequently used metaphors in 15 sample texts. Frequently used metaphors such as *ORGANISM*, *MOVEMENT*, *FIGHT/WAR*, *GAME/SPORTS* and *MACHINE* in the 15 sample texts generally fitted in current knowledge of frequently used metaphor in popular economic discourse despite language and culture differences. However, some problems were observed when making comparisons between findings of most frequent metaphors in current study and in previous studies.

Due to lack of effective automatic metaphor identification tools and time-consuming metaphor annotation in large-scale corpus, current study and previous studies annotated part of metaphors in the corpora with various annotation approaches. Some studies annotated metaphors describing certain topics in randomly selected citations following MIP (Liu, 2015; Pragglejaz Group, 2007). Some annotated metaphorical expressions containing lexemes from relevant target domains in their corpus without specifying their metaphor identification approaches (López and Llopis, 2010; Stefanowitsch, 2006). Some annotated metaphors from a top-down approach. For instance, Arrese and Vara-Miguel (2016) only annotated one to two more salient metaphors suggesting each of the six predefined conceptual metaphors in each article to describe *the Euro crisis*. Various metaphor identification and annotation approaches applied in sample texts or randomly selected concordance lines writing about certain topics can lead to different results on the number of identified linguistic metaphors. After metaphor identification and annotation, there is another problem that no explicit restraints are given on the level of generality when formulating metaphors patterns such as conceptual metaphors and scenarios based on linguistic metaphors (Deignan, 2017a; Herrmann, 2013; Musolff, 2016). As a result, the same label such as *ORGANISM*, *MACHINE* may not mean the same level of generality. For instance, linguistic metaphors suggesting *ORGANISM* emerging from discourse in current study include all living beings including human beings, animals, plants and their life cycle. However, in some studies such as Chow's (2010) study *ORGANISM* only includes human beings and life cycle and in O'Mara Shimek et al.'s study (2015) *ORGANISM* only includes human beings. Similar linguistic metaphors may also be put in completely different or slightly different labels, for instance, *collapse* with label of *A*

*STANDING STRUCTURE* in O'Mara-Shimek et al.'s (2015) study, with label of *CONSTRUCTION* in Joris et al.'s (2018) study and with label of *BUILDING* in current study. The problem of labelling metaphor patterns is especially obvious in metaphor studies following bottom-up fashion. Thus, it's of great significance for metaphor researchers to explicitly explain their metaphor identification and annotation approaches, and the approach categorizing linguistic metaphors into metaphors patterns on the decided level of generality in their study.

Second, I addressed research question two to four by focusing on metaphors used with terms associated with *protectionism* and *free trade*. Both similarities and differences were observed in metaphors used with the two antonymous terms in my data. For instance, both *JOURNEY* and *GAME/SPORTS* were observed to be used with the two antonymous terms in three corpora. Some metaphors such as *LIQUID MOVEMENT* and *MACHINE* were only observed to be used with *protectionism* in three corpora. Generally, metaphors frequently used with the search terms in my data were in line with previous findings of frequently used metaphors used with other economic topics in popular economic discourse despite language and culture differences. My qualitative analysis of metaphor used with *protectionism* and *free trade* was carried out in terms of three types of metaphor patterns: metaphor scenario, systematic metaphor and metaphoreme.

At the level of metaphor scenarios, linguistic metaphors suggesting WAR scenario, BAD STATE OF BODY HEALTH scenario and MOTION scenario were observed to be used with *protectionism* in three corpora. BAD STATE OF BODY HEALTH scenario seemed to frame *protectionism* as a negative entity in three corpora and suggest uncontrollability and detriment of *protectionism*. Differences were observed in the way WAR scenario seemed to frame *protectionism* in three corpora. The framing implications of WAR scenario seemed to suggest China's determination to fight against *protectionism* in CPEDC and suggest trade partners' contradictory stances towards *protectionism* in UKPEDC and USPEDC. MOTION scenario in three corpora seemed to frame *protectionism* as a path or a direction in three corpora. However, some linguistic metaphors suggesting MOTION scenario in CPEDC and UKPEDC seemed to frame *protectionism* as a wrong path or direction. Linguistic metaphors suggesting BODY scenario and WAR scenario in UKPEDC and USPEDC and suggesting GAME/SPORTS scenario in CPEDC and UKPEDC were used to write about *free trade*. However, narrative sequence only appeared to be imposed on WAR scenario to frame *free trade*

as the mainstream of international trade in UKPEDC and USPEDC. Single citation suggesting CARVING UP ESTATE scenario was creatively used with *free trade* in UKPEDC and seemed to frame *free trade* as a family member with a disadvantaged position in the Doha family.

At the level of systematic metaphor, systematic *FIGHT/WAR*, *ORGANISM*, *MOVEMENT* were observed to be used with *protectionism* in three corpora. Similarities were observed in conventionality of lexis suggesting these systematic metaphors in three corpora. Differences were also observed in types of lexis and local patterns of lexis suggesting them to write about *protectionism* in three corpora. Linguistic metaphors suggesting systematic *FIGHT/WAR* in three corpora seemed to frame *protectionism* as a negative entity in some contexts and as a neutral entity in other contexts. Some linguistic metaphors suggesting systematic *ORGANISM* in three corpora seemed to frame *protectionism* as a negative entity. The framing implications of *ORGANISM* seemed to suggest threat and uncontrollability of *protectionism* in three corpora. Some linguistic metaphors suggesting systematic *MOTION* metaphor in CPEDC and UKPEDC seemed to negatively frame *protectionism* as concrete object or location that people should avoid.

Linguistic metaphors suggesting *ORGANISM*, *FIGHT/WAR* in UKPEDC and USPEDC, and *GAME/SPORTS* in CPEDC and UKPEDC were observed to be used with *free trade*. Linguistic metaphors suggesting *ACTIONS ON FREE TRADE IS MILITARY ACTIONS* in UKPEDC and USPEDC seemed to frame *free trade* as a negative entity in some contexts and a neutral entity under protection of trade partners in other contexts. Linguistic metaphors suggesting *FREE TRADE IS GAME/SPORTS* in CPEDC and UKPEDC seemed to frame *free trade* as a neutral entity that trade partners were in support of.

At level of metaphoreme, metaphoreme *target* and *victim* in CPEDC seemed to negatively frame *protectionism* as a hazard for China's trading with other trade partners in international trade.

## Chapter 7 Findings and Discussion: Part Two

### 7.1 Quantitative Findings of Four Metaphors Writing about Topics Related to Trade Disputes

As mentioned in Section 5.3, I chose to study fight/war metaphor and game/sports metaphor since they were frequently used in the 15 sample texts. I also chose physical damage metaphor and weather metaphor as typical case studies. Citation analysis shows that about 93% of fight/war metaphor, physical damage metaphor and game/sports metaphor identified within relevant semantic tags as listed in Table 7.1 are used to write about similar topics related to trade disputes such as *market economy status* and *trade disputes* in three corpora. There are about 80% of weather metaphor identified within relevant semantic tags used to write about similar topics related to trade disputes in three corpora.

Table 7.1 below reports quantitative information of four studied metaphors within relevant semantic tags writing about topics related to trade disputes in each corpus. For instance, following process of metaphor identification in Chapter 5, I identified about 50% out of all tokens within relevant semantic tags K5.1 *Games*, K5.2 *Sports* and S7.3+ *Competitive* in three corpora as game/sports metaphor. Although other semantic tags in three corpora may also be relevant to the identification of four studied metaphors, I have identified a good number of tokens for the four metaphors from 9 selected semantic tags in Table 7.1. During the process of metaphor identification with the help of Wmatrix as discussed in Chapter 5, I found 4533 linguistic metaphors within four studied vehicle groupings with 1518 in CPEDC, 2185 in UKPEDC and 830 in USPEDC. Log likelihood test is also chosen to test whether the observed differences in the frequency of studied metaphors within relevant semantic tags in three corpora are statistically significant, as discussed in Section 6.1.1.

**Table 7.1** Number and percentages of metaphorically-used tokens in each metaphor group

Metaphor	CPEDC		UKPEDC		USPEDC	
	num.	%	num.	%	num.	%
Physical damage metaphors within semantic tag A.1.1.2 <i>Damaging and destroying</i>	400	57.8	370	43.7	127	41.2
Fight/war metaphor within semantic tags G3 <i>warfare</i> , E3- <i>Violent/Angry</i> , X8+ <i>Trying hard</i> , S8- <i>Hindering</i>	775	23.4	1261	26	437	24.1
Game/sports metaphor within semantic tags K5.1 <i>Sports</i> , K5.2 <i>Games</i> , S7.3+ <i>Competitive</i>	279	46.3	418	50.7	217	56.1
Weather metaphor within semantic tag W4 <i>Weather</i>	64	27.3	136	49.3	49	47.6

As shown in Table 7.1, CPEDC has a higher number of tokens identified as physical damage metaphor within A.1.1.2 *Damaging and destroying* than UKPEDC and USPEDC. Significant differences are observed in the number of tokens identified as physical damage metaphor in CPEDC and UKPEDC (log-likelihood=30.24,  $p<.001$ ), and in CPEDC and USPEDC (log-likelihood=23.52,  $p<.001$ ). No significant differences are observed in the number of tokens identified as physical damage metaphor in USPEDC and UKPEDC (log-likelihood=0.58,  $p=.447$ ). Table 7.1 also shows that UKPEDC has a higher number of tokens identified as fight/war metaphor than CPEDC and USPEDC. Significant differences are observed in the number of tokens that were identified as fight/war metaphor in CPEDC and UKPEDC (log-likelihood=7.55,  $p=.006$ ). However, no significant differences are observed in the number of tokens identified as fight/war metaphor in USPEDC and UKPEDC (log-likelihood=2.70,  $p=.0101$ ), and in CPEDC and USPEDC (log-likelihood=0.33,  $p=.567$ ). UKPEDC also has a higher number of tokens identified as game/sports metaphor than CPEDC and USPEDC. No significant differences are observed in the number of tokens identified as game/sports metaphor in USPEDC and UKPEDC (log-likelihood=3.02,  $p=.082$ ), and in CPEDC and UKPEDC (log-likelihood=2.77,  $p=.096$ ). However, CPEDC has a higher number of tokens identified as game/sports metaphor than USPEDC, which is significant at a level of statistical confidence (log-likelihood=9.08,  $p=.002$ ). Table 7.1 also shows that



UKPEDC has a higher number of tokens that were identified as weather metaphor than CPEDC and USPEDC. Significant differences are observed in the number of tokens identified as weather metaphor in CPEDC and UKPEDC (log-likelihood=25.96,  $p < .001$ ), and in CPEDC and USPEDC (log-likelihood=12.8,  $p < .001$ ). However, no significant differences are observed in the number of tokens identified as weather metaphor in USPEDC and UKPEDC (log-likelihood=0.09,  $p = .768$ ).

In brief, results of log-likelihood test above indicate that CPEDC tends to use physical damage metaphor more frequently than USPEDC and UKPEDC when talking about topics related to trade disputes. CPEDC tends to use fight/war metaphor and weather metaphor less frequently than UKPEDC when talking about topics related to trade disputes. However, CPEDC tends to use weather metaphor and game/sports metaphor more frequently than USPEDC when talking about topics related to trade disputes. CPEDC shares similar frequencies of fight/war metaphor with USPEDC and shares similar frequencies of game/sports metaphor with UKPEDC. The frequency of four studied metaphors within 9 relevant semantic tags is similar in UKPEDC and USPEDC. More similarities and differences in the way four metaphors are used to write about central trade topics in three corpora are examined qualitatively in Section 7.2.

As mentioned above, I have identified a good number of tokens from the four metaphors writing about topics related to trade disputes based on 9 relevant semantic tags. Since the same word is always given the same semantic tag in Wmatix, tokens from the same 9 semantic fields are filtered following equal proportion in three corpora. Tokens filtered from the 9 semantic fields with the help of Wmatrix suggests representativeness of all tokens that are candidates of four studied metaphors. Thus, the four studied metaphors filtered with the help of Wmatrix are assumed to be representative of use of the four metaphors in three corpora.

## **7.2 Metaphors Used with Topics Related to Trade Disputes**

### **7.2.1 Fight/war Metaphor Writing about Topics Related to Trade Disputes**

Linguistic metaphors with a basic meaning of fight/war but used with different central trade topics were grouped and labelled based on scenarios they suggested. Citation analysis shows that linguistic metaphors in three corpora suggest WAR scenario which seems to follow the narratives of military

confrontations in history when writing about trade disputes. Narrative contents of a WAR scenario such as before the start of a possible battle in (207), war declaration in (208), military confrontations during a war (209) and outcome of a war in (210) are associated with topics related to trade disputes in three corpora. In (207) and (208), possible trade conflicts between China and EU are associated with possible military hostilities. In (209), *takeover* is associated with military confrontations. In (210), Sino-EU trade disputes are associated with ceasefire in a battle.

(207) Risk of trade **war looms** as solar panel dispute heads to EU. (Global Times 2012)

(208) China has **declared war** on European wine producers, in an apparent tit-for-tat spat about solar panel tariffs. (*Financial Times* 2013)

(209) The Chinese founder of Wahaha has framed himself as a patriot **defending** his nation's honour from rapacious foreign **invaders**. (*Financial Times* 2008)

(210) The **ceasefire** between Brussels and Beijing brings to a close the two bruising trade disputes with China that have coloured Karel De Gucht's stint as EU trade commissioner. (*Financial Times* 2014)

Citation analysis shows that narrative contents about military confrontations during a war are observed to be used much more frequently than other narrative contents such as outcome of a battle to associate with a wide range of topics related to trade disputes such as *financial crisis*, *market economic status* in three corpora. Citation analysis also shows that some narrative contents of a WAR scenario such as war declaration and outcome of a war tend to only focus on *trade disputes* in three corpora.

To capture more regularities and variation within the broad patterns of suggested scenario, a set of linguistic metaphors in Table 7.2 were also grouped based on systematic metaphors they suggest.

**Table 7.2** Types of *FIGHT/WAR* grouping for metaphors used with topics related to trade disputes

Types	Vehicle terms in each corpus			Examples
	CPEDC	UKPEDC	USPEDC	
general fighting	fight (v./n.); fight back; grapple; resist; struggle(v./n.); tussle;	fight (v./n.); fight back; grapple; resist; struggle(v./n.); tussle; fight off;	fight (v./n.); fight back; grapple; resist; struggle(v./n.);	...raising the temperature in the trade <b>tussles</b> between the two countries ( <i>Financial Times</i> 2010)
general war	aggressive; aggressively; battle(v./n.); battlefield; battleground; embattled; skirmish(v.); war; warfare; wartime	aggressive; aggressively; battle(v./n.); battlefield; battleground; embattled; skirmish(v.); war; warfare; warlike	aggressive;  battle (v./n.); battleground;  embattled; skirmish(v./n.); war; warfare;	The <b>skirmish</b> over chicken exports comes... ( <i>Wall Street Journal</i> 2016)
military strategy /actions	arm(v.); attack(v./n.); barrage; beleaguered; clash(v./n.); combat (v.); defuse; fend off; hit(v.) shoot	arm(v.); attack(v./n.); barrage; beleaguered; clash(v./n.); combat(v./n.); defuse; fend off; hit (v.);  assault(n.); belligerent; offensive; raid; aggression; besiege; bloodbath; crossfire; ceasefire; invade; incursion; invasion; self-defence; shoot down; under fire	arm(v.); attack (v./n.); barrage; beleaguered; clash(v./n.); combat(v.); defuse; fend off; hit(v.) shoot; assault(n.); belligerent; offensive; raid; pull back; under siege	The global system of trade is <b>under siege</b> ... ( <i>Wall Street Journal</i> 2016)  Companies have <b>besieged</b> Mr De Gucht with complaints about their treatment in China. ( <i>Financial Times</i> 2012)  Authorities in Beijing <b>raided</b> shops and beauty salons ( <i>Times</i> 2002)  Sino-EU trade talks aim to <b>defuse</b> solar tensions ( <i>People's Daily</i> 2013)
weapon	ammunition; firepower; shot(n.); weapon; daggers; missile; sword	ammunition; firepower; shot(n.); weapon; arsenal;gun volley(n.) torpedo (n.); armoury; bullet; cannon; cannonball; rocket(n.); sword;	ammunition; firepower; shot(n.); weapon; arsenal; gun; volley (n.) torpedo (v.); artillery;	the <b>sword</b> of protectionism hanging over global trade ( <i>Guardian</i> 2017)  generate lots of economic <b>firepower</b> but less employment ( <i>Wall Street Journal</i> 2016)

**Table 7.2** Types of *FIGHT/WAR* grouping for metaphors used with topics related to trade disputes (continued)

Types	Vehicle terms in each corpus			Examples
	CPEDC	UKPEDC	USPEDC	
armed force	force (n.); troop	force (n.); troop warrior; army; brigade; invader; squad	force (n.);  warrior	A negotiation <b>troop</b> formed by staff from China's Ministry of Commerce ( <i>China Daily</i> 2013)  the politicians hand over to the trade <b>warriors</b> (Times 2002)
military ranks	officer	officer; lieutenant	officer; lieutenant; chief of staff	President Trump and his <b>lieutenants</b> on trade have railed against what they believe is an imbalanced global trade system. ( <i>Times</i> 2017)
military area	---	<b>fortress</b> ; minefield;	---	We have worked hard with the US in recent years to tread carefully through many potential <b>minefields</b> .

*FIGHT/WAR* grouping can perhaps be built up from several more specific types based on their semantic meanings, as in Table 7.2. Citation analysis shows that linguistic metaphors from a wide range of types of *FIGHT/WAR* grouping in Table 7.2 suggest systematic metaphor *TRADE DISPUTES BETWEEN TRADE PARTNERS ARE BATTLES BETWEEN COUNTRIES* in three corpora. Within this broad pattern, similarities and differences are observed in linguistic metaphors used with *trade disputes* in three corpora. Most linguistic metaphors suggesting this systematic metaphor in three corpora are conventional. Conventional lexis such as *war* and *fight* are used most frequently to write about *trade disputes* in three corpora. Some linguistic metaphors with basic meaning related to weapon are observed to be used in a novel way in three corpora. For instance, in (211) powerful legal approach in trade disputes is creatively described as heavy artillery available to countries in a battle.

(211) Filing a case against another country is the heaviest **artillery** available to countries in trade disputes (*New York Times* 2010)

The novelty of *artillery* was checked in BNC (1994), as mentioned in Section 5.1.2. The BNC (1994) contains 728 citations of *artillery*. A random sample of 300 citations for *artillery* were checked in context. Citation analysis shows that 299 citations of *artillery* were used non-metaphorically and only 1 citation was used metaphorically. In this citation, strong and direct criticism is described as heavy artillery. Some linguistic metaphors with basic meaning related to weapon may also be conventionally used in three corpora, as in (212), (213) and (214). In (212) and (213), both China and US are depicted as parties using weapons of war. In (214), the solar panel manufacturing industry in the United States and Europe is aggressive and described in war metaphor. Citation analysis also shows that UKPEDC and USPEDC use linguistic metaphors referring to more destructive weapons than CPEDC to describe *trade disputes*, as in (215), (216).

(212) It is time for China to prepare a number of “**missiles**” aimed at the US Commerce Department. (*Global Times* 2012)

(213) US President Barack Obama took a **shot** at China, complaining to the WTO that Beijing is abusing trade laws. (*Global Time* 2012)

(214) The solar panel manufacturing industry in the United States and Europe has begun a **volley** of trade cases against imports... (*New York Times* 2012)

(215) As Europe prepares to build a wall...the EU’s **cannons** are being primed to open a devastating retaliation in a different trade dispute with the United States. (*Times* 2002)

(216) His plan allowed many American exporters to reduce their taxes ... But the W.T.O. eventually **torpedoed** the effort. (*New York Times* 2017)

More differences are observed in frequency and lexis suggesting this systematic metaphor in three corpora. For instance, the number of lexis suggesting this systematic metaphor is larger in CPECD than in UKPEDC and USPEDC. This may be explained by quite frequent use of lexis *war* and *fight* in CPEDC. Citation analysis shows that the same lexis *war* in different contexts is used to indicate different possibility of outbreak of trade disputes in CPEDC and UKPEDC. CPEDC uses *war* in the context in which trade disputes are more likely to be avoided as in (217), (218) while UKPEDC uses *war* in the context in which trade disputes are more likely to take place

as in (219), (220).

- (217) Professor Hai confidently predicted that China and the United States can avert a general trade war through constructive negotiations. (*China Daily* 2003)
- (218) The two leaders also called for negotiations to avoid a trade war between China and the EU. (*China Daily* 2013)
- (219) If it were to go forward, it would also mark the first time the EU has opened a trade investigation...would "view this as a declaration of war". (*Financial Times* 2012)
- (220) Donald Trump may be threatening to start a trade war with China, but it is becoming clear that the US and its geopolitical rival are already skirmishing... (*Financial Times* 2016)

Some linguistic metaphors in Table 7.2 also suggest systematic metaphor *CURRENCY DISPUTES ARE BATTLES* in three corpora. Within this broad pattern, linguistic metaphors used with *currency disputes* are conventional in three corpora. Both similarities and differences are observed in lexis used with *currency disputes* in three corpora. Lexis such as *war* in (221), (222), (223) are frequently used to write about *currency disputes* in three corpora. In (221), (222) and (223), extended metaphor is also observed. Lexis *war* combines with lexis such as *shots, fired* in (221), *battle, win* in (222), and *battlefront* and *wars* in (223) to write about *currency disputes* as battles.

- (221) It is unclear if the result will be a "currency **war**," as Brazil's finance minister recently warned, or if these are just warning **shots, fired** to force Beijing's leadership... (*New York Times* 2010)
- (222) Markets are beginning to talk of currency **wars** again and are recalling the "beggar-thy-neighbour" Great Depression era of the 1930s, when countries raced to devalue their currencies in a **battle** no one would **win**. (*Times* 2017)
- (223) Another **battlefront** opens in currency **wars** (*Global Times* 2010)

Within this broad pattern, there is a variety of war lexis in three corpora. For instance, in (224), (225) and (226) both US and China are depicted as using weapons of war.

- (224) US **fires first shots** in currency **war**. (*Times* 2017)
- (225) Washington must punish China for manipulating its currency—Beijing’s prime **“weapon** of job destruction”. (*Wall Street Journal* 2016)
- (226) Li said China still had the financial **firepower** to **defend** its currency. (*China Daily* 2017)

### 7.2.2 Game/sports Metaphor Writing about Topics Related to Trade Disputes

As mentioned in Section 7.1, linguistic metaphors with basic meaning related to game/sports but referring to topics related to trade disputes in three corpora were identified with the help of Wmatrix. These metaphors seem to suggest GAME/SPORTS scenario in three corpora. Narrative contents of GAME/SPORTS scenario such as game rules in (227), playing fields in (228) and competitors in (229) are associated with topics related to trade disputes in three corpora. In (227), (228), discourse communities’ shared knowledge about rule-bound property of GAME/SPORTS scenario is associated with a set of rules in international trade. In (229), competitive property of GAME/SPORTS scenario is associated with fierce competition between trade partners. However, some linguistic metaphors in three corpora also suggests a counter GAME/SPORTS scenario to write about topics related to trade disputes, as in (230), (231) and (232). In (230), (231) and (232), that game rules are changeable is associated with international trade rules set by powerful economic blocs.

- (227) The current **moves** are all being conducted **within “the rules of the game”** while Mr Trump’s proposed unilateral tariffs would likely put the US in violation of WTO rules. (*Financial Times* 2016)
- (228) This meant working together to ensure that countries observed a **level playing field**, including by avoiding protectionist measures. (*Guardian* 2017)
- (229) But a broader **move** into the United States could turn Chinese solar panel manufacturers into even fiercer **competitors** with their American counterparts. (*New York Times* 2011)
- (230) US and European countries once highlighted free trade...But now they are **changing the game rules**.

(*Global Times* 2012)

(231) “There needs to be some type of negotiation amongst all the parties ...and figure out what are the **new rules of the game.**” (*New York Times* 2014)

(232) Europe shall defend its interests and even more so when one country-as a matter of fact the US-wishes to **change the rules of the game.** (*Financial Times* 2017)

Differences are also observed in linguistic metaphors suggesting GAME/SPORTS scenario to write about topics related to trade disputes in three corpora. For instance, UKPEDC and USPEDC use linguistic metaphors suggesting specific GAME/SPORTS scenario e.g. *tennis*, *football*. Narrative contents of specific GAME/SPORTS scenario such as playing football and playing tennis in (233) and players in a football team, first division football in (234) are observed in UKPEDC and USPEDC to write about topics related to trade disputes. In (233), typical knowledge about the settings of football as team sports (Semino and Masci, 1996; Chateris-Black, 2017) and tennis as an individual sport is transferred to write about US and China’s completely different trade practices. In (234), unfair rules of players from first division football wearing backpacks is associated with unfair trade practices.

(233) As Clyde Prestowitz, a senior trade official in the Reagan administration puts it: “China is **playing football** while we're **playing tennis.**” (*Wall Street Journal* 2017)

(234) Germany's central bankers and business leaders have tended to reject demands that it reduces its trade surplus with the argument that it would be tantamount to punishing Germany for success. In 2014, Jens Weidmann, president of the Bundesbank, compared Germany to a top **football** team: “**First division football** doesn't become any better for getting the **players** to wear backpacks,” he said. (*Financial Times* 2017)

More similarities and differences are observed in these linguistic metaphors used in specific discourse contexts to write about topics related to trade disputes in three corpora. Linguistic metaphors in UKPEDC and USPEDC can be divided into two types of GAME/SPORTS grouping, as in Table 7.3.



**Table 7.3** Vehicle terms for *GAME/SPORTS* used with topics related to trade disputes

Types	Vehicle terms in each corpus			Examples
	CPEDC	UKPEDC	USPEDC	
General game/sports	arena; exercise(v./n.); field (n.); game; goal; play (v.); race(v./n.); compete; competitor;	arena; exercise(v./n.); field (v./n.); game; goal;play(v.); race (v.); compete; competitor;	arena; exercise(v./n.); field (n.); game; goal; play (v.); race (n.); compete; competitor;	<b>fielding</b> complaints from European companies ( <i>Financial Times</i> 2012)  through a free and open level playing field, and it's a fair <b>match</b> ( <i>New York Times</i> 2017)
Specific game/sports	domino	endgame; heavyweight; football; trump (v.);  arm-wrestle; domino; first division; marathon; scrum; spar (v.); trampoline; Whack-a-Mole	endgame; heavyweight; football; trump (v.);  knockout; marathon; spar (v.); tennis; tennis ball; volley (v.);	wrestling with a currency <b>endgame</b> ( <i>Times</i> 2016)  making itself the "third <b>domino</b> " in unleashing the monster of protectionism ( <i>China Daily</i> 2016)  win an <b>arm-wrestle</b> with Brussels over trade ( <i>Guardian</i> 2016)  The <b>tennis ball volleying</b> of the trade legislation ( <i>New York Times</i> 2011)

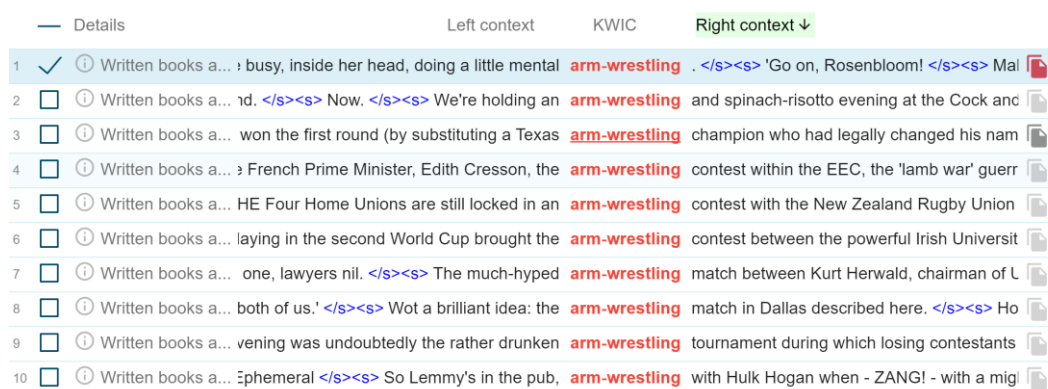
Citation analysis shows that linguistic metaphors from *GAME/SPORTS* grouping in Table 7.3 suggest systematic metaphor *ENGAGING IN TRADE ACTIVITIES IS PLAYING GAME/SPORTS* in three corpora. Similarities are observed in conventionality of general game/sports lexis used to write about *trade disputes* in three corpora. However, UKPEDC and USPEDC are observed to use specific game/sports lexis in a novel way to write about *trade activities*, as in (235) and (236). In (235), an arm-wrestling competition was creatively used to write about trade competition between UK and EU. In (236), a shot of tennis ball before it bounces on the ground is creatively used to write

about preventing the pass of votes on trade registration that punishes the Chinese currency policies too early.

(235) US investment bank Morgan Stanley says the Leave camp would be likely to **win** an **arm-wrestle** with Brussels over trade, at least in relation to cars. (*Guardian* 2016)

(236) The **tennis ball volleying** of the trade legislation underscores the vexing problem that China presents to Congress: Many members, especially those from manufacturing states, want to be seen as doing something about that nation's trade advantages, yet the White House and some leaders in both parties think it is far too risky to actually pull the trigger on a solution. (*New York Times* 2011)

The novelty of *arm-wrestle* and *tennis ball volleying* are checked in BNC (1994), as mentioned in Section 5.1.2. The BNC (1994) contains 0 citation of *arm-wrestle*, 2 citations of *arm-wrestled*, 1 citation of *arm-wrestles*, 10 citations of *arm-wrestling*, 4 citations of *arm wrestle* and 2 citations of *arm wrestling*. I checked all the citations of *arm wrestle*, *arm-wrestle* and their inflections in context. I found that 1 citation of *arm-wrestling* and 2 citations of *arm-wrestled* were used metaphorically. For instance, physical arm-wrestling in the first citation in Figure 7.1 was used metaphorically as mental arm-wrestling in the first citation.



**Figure 7.1** A screenshot of 10 citations of *arm-wrestling* in BNC (1994)

The BNC (1994) contains 9 citation of *volleying*, 45 citations of *volleyed*, 16 citations of *volley* as a verb and 5 citations of *volleys* as a verb. I checked these citations in context. I found that 1 citation of *volleyed* in the example *his name has been volleyed into immortality*, 1 citation of *volley* in example of *Advice started to volley back and forth* and 1 citation of *volleying* in

example *a bumboat women volleying hoarse English* were used as metaphors.

Citation analysis also shows that a wider range of lexis related to both general and specific game/sports are used to write about *trade disputes* in UKPEDC and USPEDC than in CPEDC, as in (237) and (238). In (237), that US should reduce trade imbalance with China step by step rather than going to the extreme is described as a person who chooses to get fit gradually rather than running a marathon immediately. In (238), China as a world-influential steel manufacturer is described as a heavyweight in boxing.

(237) No one is arguing for going "cold turkey" on China trade. Instead, there is need to begin a process of adjustment whereby the US trade deficit is gradually reduced over the next few years. This adjustment will be difficult, but the longer it is delayed the more difficult and dangerous it will be. ***If you are unfit and wish to get fit, it is unwise to go out and immediately run a marathon.*** (*Guardian* 2006)

(238) American steel manufacturers are at a steep disadvantage to the world's ***heavyweight*** producer, China, in two crucial areas: finance and labor costs. (*Wall Street Journal* 2017)

Both similarity and differences are observed in specific game/sports lexis suggesting this systematic metaphor in UKPEDC and USPEDC. For instance, boxing-related lexis such as *heavyweight* in (238) and *sparring* in (239) are used to write about *topics related to trade disputes* in UKPEDC and USPEDC. However, citation analysis also shows that some lexis are only observed in certain corpus, for instance, *trampoline* in (240), *game of whack a mole* in (241) from UKPEDC and *tennis ball volleying* in (242) from USPEDC.

(239) Mr De Gucht has also been ***sparring*** with Beijing over a separate anti-dumping and anti-subsidy investigation. (*Financial Times* 2013)

(240) But while he calls for "***trampoline***" policies that offer a ***springboard*** to new jobs, rather than "safety net" policies, these interventions are rather familiar to Obama-style liberals. (*Financial Times* 2016)

(241) Mr Wolf suggests that this would be a ***game of whack a mole*** in which any fall in the US trade deficit with China

would be offset by a rise with the rest of the world.  
(*Financial Times* 2017)

(242) The **tennis ball volleying** of the trade legislation underscores the vexing problem that China presents to Congress... (*New York Times* 2011)

In (240), liberal trade policies creating new jobs are described as trampoline on which players do jumps in the air. In (241), trade imbalance between trade partners is described as a game of whack a mole.

### 7.2.3 Physical Damage Metaphor Writing about Topics Related to Trade Disputes

Linguistic metaphors that could be linked to semantic meaning of physical damage are used to write about similar topics related to trade disputes such as *currency blip* in three corpora, in (243).

(243) A blip in the currency markets, unless restrained, could ricochet unpredictably through the weakened financial sector, **knocking down** rusted scaffolding and crashing a bank. (*Wall Street Journal* 2005)

Citation analysis shows that linguistic metaphors in three corpora seem to suggest PHYSICAL DAMAGE scenario to write about topics related to trade disputes. Narrative contents of PHYSICAL DAMAGE scenario such as physical damage to others, physical damage to both oneself and others, self-harm or various degree of physical damage are used to write about topics related to trade disputes in three corpora, as in (244), (245), (246), (247) and (248).

(244) SEIA has become nothing more than a tool used by Chinese companies to try and bankrupt and **destroy** American solar manufacturing. (*New York Times* 2014)

(245) Some stubborn US senators require China...Such behavior **harms** the interests of not only the Chinese, but also Americans. (*Global Times* 2010)

(246) It was his idea that a tariff of 45% should be applied to imports from China ...would **shatter** General Motors, all of Hollywood, the music industry, Boeing, the entire state of Washington. (*Guardian* 2016)

(247) To some, the question is not whether one of Europe's oldest industries has a chance of survival but how long it can soldier on. As one industry representative put it at a

recent conference in Brussels, companies face a choice between **Killing** me Softly and **Apocalypse** Now. (*Financial Times* 2004)

(248) There are few things that could do more **damage** to the already battered global economy than an old-fashioned trade war. (*New York Times* 2009)

In (244), narrative contents of physical damage to others are associated with the situation in which China companies harm American solar manufacturing. In (245), narrative contents of physical damage to both oneself and others are used to suggest that US's trade behaviour does harm to both US and China. In (246), narrative contents of self-harming are associated with the situation in which US tariff on China also damages US itself. In (247), narrative contents of different ways of death are associated with the plight of EU's oldest industries. In (248), narrative contents of physical damage are associated with harmful effect of protectionism.

More similarities and differences are observed in linguistic metaphors used in specific contexts in three corpora. Linguistic metaphors in Table 7.4 were grouped based on systematic metaphors they suggest. For instance, a set of linguistic metaphors in three corpora suggest systematic metaphor *UNFAIR TRADE PRACTICES/POLICIES ARE PHYSICAL DAMAGE*. Citation analysis shows that most linguistic metaphors suggesting this systematic metaphor are conventional in three corpora.

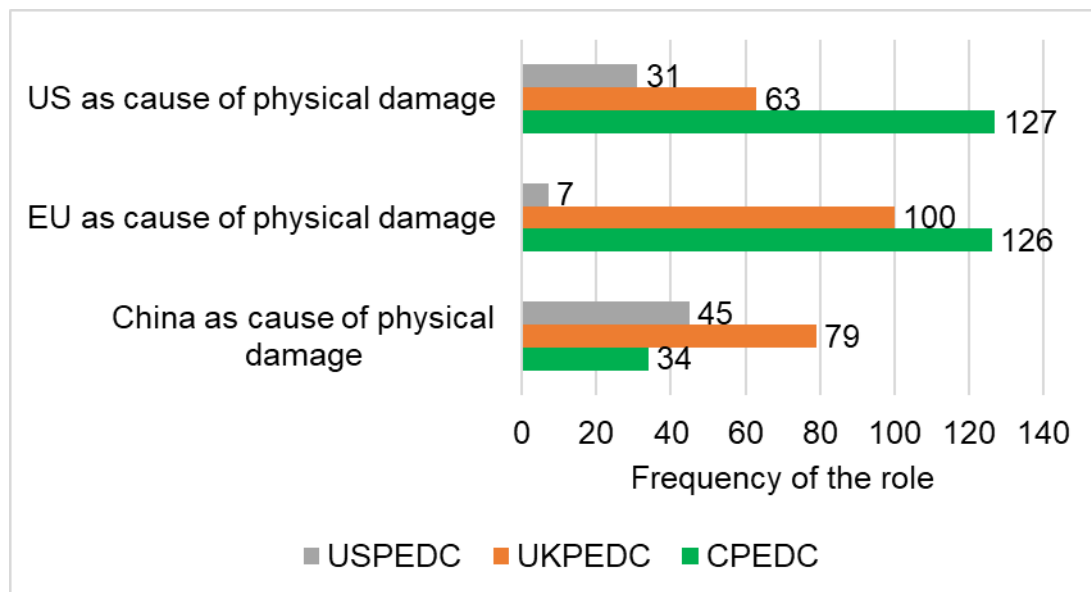
**Table 7.4** Vehicle terms for *PHYSICAL DAMAGE* used with topics related to trade disputes

Vehicle terms in each corpus			Examples
CPEDC	UKPEDC	USPEDC	
break (v.); collide crack (v.); damage (v./n.); damaging (adj.); destroy; harm (v.); victim; wipe out;	break (v.); collide crack (v.); damage (v./n.); damaging (adj.); destroy; harm (v./n.); victim; wipe out;	break (v.); collide crack (v.); damage (v./n.); damaging (adj.); destroy; harm (v.); victim; wipe out;	national interests <b>collided</b> with Brussels' broader trade policy ( <i>Financial Times</i> 2013)  <b>break down</b> global trade barriers ( <i>People's Daily</i> 2009)  <b>wreck</b> the economy ( <i>New York Times</i> 2017)  textiles industry would face <b>annihilation</b> ( <i>Financial Times</i> 2005)
break down	burst; blow up; crash (v./n.); rip up; shatter; wreck (v.); wreckage;  break down	burst; blow up; crash (v./n.); rip up; shatter; wreck (v.); wreckage;	

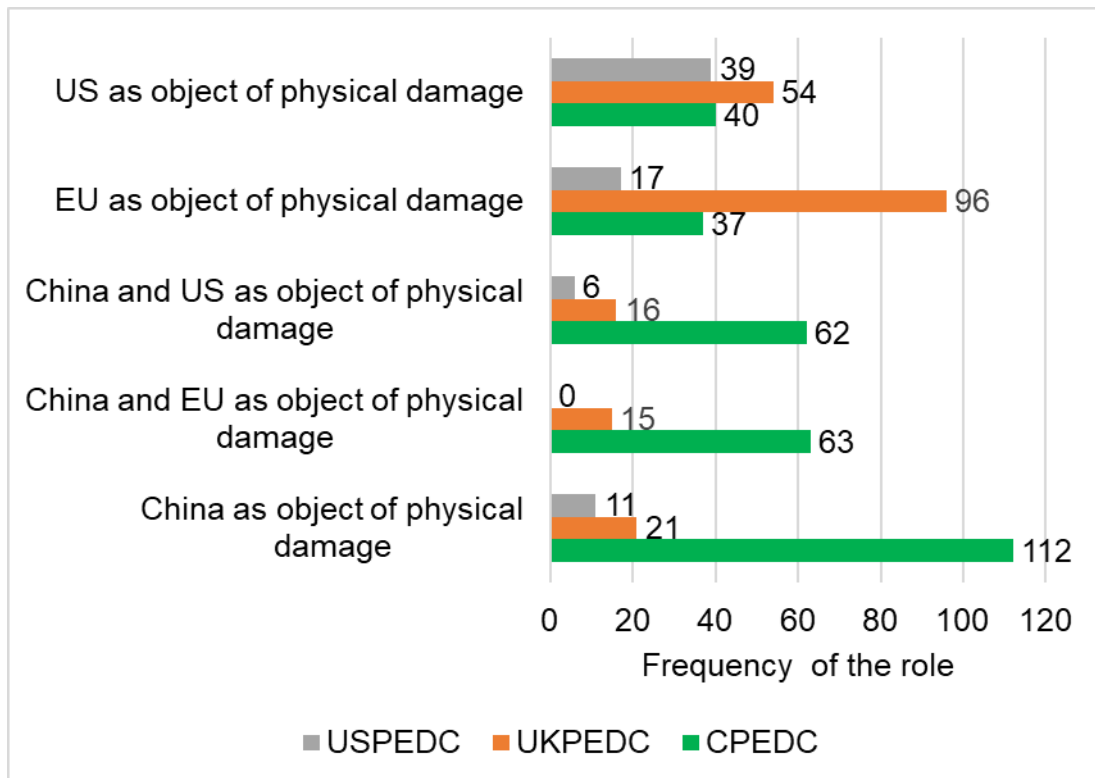
**Table 7.4** Vehicle terms for *PHYSICAL DAMAGE* used with topics related to trade disputes (continued)

Vehicle terms in each corpus			Examples
CPEDC	UKPEDC	USPEDC	
collision;  break up	collision;  annihilation; apocalypse; bust (v.);crush (v.); demolish; destroying (adj.) devastating (adj.); harmful; implode; implosion; maim; pull down; rip (v.); ruinous; rupture; snap; tear up	assassin; knock down; sledgehammer; tear down	U.S. Readies Trade <b>Sledgehammer</b> for China (Wall Street Journal 2017)  recover from the financial <b>implosion</b> (Financial Times 2008)

Table 7.4 shows that a wider range of lexis related to physical damage is used in UKPEDC and USPEDC than in CPEDC to write about *unfair trade practice*. When *unfair trade practices* are adopted by specified entities with specified object of physical damage, differences are also observed in the roles involved economic blocs may play. Frequency of top 3 involved economic blocs as the cause of physical damage are shown in Figure 7.2 while frequency of top 5 involved economic blocs as object of physical damage are shown in Figure 7.3.



**Figure 7.2** Frequency of top 3 involved economic blocs as cause of physical damage in three corpora



**Figure 7.3** Frequency of top 5 involved economic blocs as object of physical damage in three corpora

Figure 7.2 and Figure 7.3 above show that CPEDC describes US and EU more as cause of physical damage and China more as victim of physical damage in CPEDC. For instance, China is described as a victim of physical damage caused by EU's unfair trade practice in (249) and a victim of physical damage caused by US's tariffs in (250).

(249) Since the EU has not regarded China as a market economy, China has fallen **victim** to some unfair and discriminatory EU practice. (*China Daily* 2016)

(250) Chinese export companies have had very small profit margins, which could be **wiped out** by such actions as the currency import tariffs the US Congress is threatening to impose. (*China Daily* 2010)

In contrast, the two figures above show that USPEDC describes China more as the country adopting unfair trade practices and US more as the object of physical damage caused by unfair trade practice. For instance, China's trade practice is creatively described as a killer causing serious physical damage to US jobs in (251). In (252), US steel industry is described as the object of physical damage caused by China's dumping. UKPEDC frequently describes EU both as the party adopting unfair trade practices and the object of

physical damage caused by unfair trade practices. For instance, **wipe out** in (253) is used to describe EU manufacturing and jobs as object of serious physical damage caused by China subsidies. In (254), EU Airbus subsidies is described as cause of physical damage to US industry.

(251) Peter Navarro... calls it a “survival guide” against “the planet’s most efficient **assassin**.” ... And China, he writes, is **killing** millions of U.S. jobs. (*Wall Street Journal* 2016)

(252) That has led to “dumping” of inexpensive steel in American markets, the United States contends, **damaging** the steel industry. (*New York Times* 2006)

(253) ...the planned economy China to give illegal export subsidies to its own solar industry to enable its producers to sell at below cost, and thereby **wipe out** European manufacturing and jobs. (*Financial Times* 2004)

(254) The WTO has concluded that launch aid and other illegal Airbus subsidies **harmed** US industry. (*Guardian* 2011)

The differences observed in the roles played by involved economic blocs may be explained by different discourse communities’ evaluations of unfair trade practices, which is further discussed Section 7.3 and 7.4.

#### **7.2.4 Weather Metaphor Writing about Topics Related to Trade Disputes**

Linguistic metaphors with basic meaning of weather in three corpora are observed to write about topics related to trade disputes such as *China-US trade relations* in (255) and *global economic crisis* in (256).

(255) After the US presidential election last year, many fretted that China-US trade relations would enter a **stormy** season of winter and even run the risk of a trade war. (*China Daily* 2017)

(256) In the current **climate** of the global economic crisis, this raises the concern of a global spiral of protectionism. (*Financial Times* 2009)

These linguistic metaphors seem to suggest BAD WEATHER scenario to write about topics related to trade disputes in three corpora. The typical aspects of BAD WEATHER scenario involve fickleness, unpredictability, uncontrollability, violence and some degree of danger (Kainz, 2016; Ritchie, 2017). For



instance, in (257) EU economic downturn is associated with shared knowledge of uncontrollability and danger of hurricane. In (258), industrial overcapacity which posed threats to global markets is associated with shared knowledge of danger and violence of strong wind.

(257) Mr Mandelson said he was ready to challenge politicians who suggest that we can pull the economic blanket over our head and somehow the economic **hurricane** will pass. (*Financial Times* 2005)

(258) Its deadlock with China comes as the Trump administration seeks to increase pressure on China to curb industrial overcapacity **buffeting** global markets. (*Wall Street Journal* 2017)

Linguistic metaphors with basic meaning to weather but referring to topics related to trade disputes are listed in Table 7.5. Citation analysis shows that linguistic metaphors in Table 7.5 suggest systematic metaphor *TRADE AND ECONOMY CONDITIONS ARE WEATHER* in three corpora. Table 7.5 also shows that UKPEDC uses a wider range of lexis related to weather to write about *trade and economy conditions* than CPEDC and USPEDC.

**Table 7.5** Vehicle terms for *WEATHER* used with topics related to trade disputes

Vehicle terms in each corpus			Examples
CPEDC	UKPEDC	USPEDC	
climate; flood (v.); flurry;	climate; flood (v./n.); flurry;	climate; flood (v./n.); flurry	in a <b>flurry</b> of trade disputes ( <i>Financial Times</i> 2009)
cloud (n.); rain (n.); storm (n.); turbulence; wind (n.);	sunny; torrent; cloud (n.); rain (n.); storm (n.); turbulence; wind (n.);	sunny; torrent;	a <b>sunny</b> portrait of relations between the world's two largest economies ( <i>Guardian</i> 2017)
flooding (n.); stormy; sunlit;	avalanche; choppy; deluge (v./n.) fog (n.); hail (n.); hazy; hurricane; weather (n.)	blustery; buffet (v.)	whip up a <b>storm</b> over domestic economic woes ( <i>China Daily</i> 2016)
			an <b>avalanche</b> of Asian clothing arrived in EU markets ( <i>Times</i> 2009)
			what proved to be <b>blustery</b> trade talks ( <i>New York Times</i> 2013)

Citation analysis shows that linguistic metaphors suggesting this systematic metaphor are observed to be used both in a conventional and creatively way to write about *trade and economic conditions* in three corpora, as in (259), (260), (261) and (262). Good weather is creatively used to describe pleasant conditions for euro in (259) and is conventionally used to describe healthy relations between China and US in (260). In (261), stormy weather is conventionally used to describe obstacles and conflicts in Sino-US trade relations. In (262), rainy and windy weather are creatively used to describe obstacles and conflicts in Sino-US trade relations. Citation analysis also shows that three corpora appear to use lexis related to bad weather much more frequently than those that are related to good weather to write about *trade and economy conditions*.

(259) Martin Wol...said recently in a column that even if the immediate crisis were overcome through such measures, it wouldn't promise a **sunlit** future for the euro. (*China Daily* 2011)

(260) But Xinhua painted a **sunny** portrait of relations between the world's two largest economies, ...US-China ties might spiral out of control under Trump had not come true. (*Guardian* 2017)

(261) Many fretted that China-US trade relations would "enter a **stormy** season of winter and even run the risk of a trade war. (*China Daily* 2017)

(262) He added that links between the two countries had "weathered **wind** and **rain**. (*Guardian* 2017)

The novelty of *sunlit and wind and rain* are checked in BNC (1994), as mentioned in Section 5.1.2. The BNC (1994) contains 135 citations of *sunlit*. After checking their use in context. I found that 130 citations of *sunlit* were used non-metaphorically and only 5 citation was used metaphorically, as shown in Figure 7.4. Figure 7.4 shows that warm and bright properties of sun are creatively used to describe friendly and positive things (Kövecses, 2000).

	Details	Left context	KWIC	Right context ↓	
1	<input type="checkbox"/> ⓘ	Written books a... ibarrassing possibility that these works - kitsch,	<b>sunlit</b>	expressions of heroic physical vigour and seren	
2	<input type="checkbox"/> ⓘ	Written books a... ><s> People were looking at him. </s><s> The	<b>sunlit</b>	Job Centre was quite crowded, he saw now. </s>	
3	<input type="checkbox"/> ⓘ	Written books a... One of them, Peter Cornwell, later published a	<b>sunlit</b>	retrospect of what it was like to be one of Ebor's	
4	<input type="checkbox"/> ⓘ	Written books a... </s><s> So much for his friend J. C. Ibbetson's	<b>sunlit</b>	views of Ullswater and Windermere. </s><s> 'TI	
5	<input type="checkbox"/> ⓘ	Written books a... on the picture, the first shadows on the familiar	<b>sunlit</b>	world of trust. </s><s> Slowly the picture chang	

**Figure 7.4** A screenshot of 5 citations of *sunlit* used metaphorically among 135 citations in BNC (1994)

The BNC (1994) contains 104 citations of *wind and rain*. After checking their use in context. I found that all citations of *wind and rain* were used non-metaphorically.

Citation analysis also shows that UKPEDC seem to use linguistic metaphors suggesting systematic metaphor *UNDERPRICED IMPORTS ARE LARGE AMOUNTS OF WATER*.

(263) Clothing and footwear makers in the EU...suffered damaging shocks after 2005, when an **avalanche** of Asian clothing arrived in EU markets. (*Times* 2009)

(264) The EU found itself **deluged** with Chinese textiles that led to howls of protest from European producers. (*Guardian* 2005)

(265) Washington has warned Brussels against granting China 'market economy status', ...Chinese companies **flooding** US and European markets with unfairly cheap goods. (*Financial Times* 2015)

(266) France has urged Brussels to protect Europe's fragile textiles sector against a **flood** of cheaper Chinese clothing. (*Financial Times* 2005)

The large amounts of threatening water appear to be in different states such as snow and ice in (263) and rain in (264) to write about under-priced imports. Within this broad pattern, EU and US tend to be described as objects of threatening water from China, as in (265), (266).

### 7.3 Metaphor Scenarios Framing Topics Related to Trade Disputes

As mentioned in Section 7.2, WAR scenario, GAME/SPORTS scenario, PHYSICAL DAMAGE scenario and BAD WEATHER scenario are used to write about topics related to trade disputes such as *industrial overcapacities* and *import tariffs*.

This section examines and compares the way these scenarios seem to frame topics related to trade disputes in three corpora.

As mentioned in Section 7.2.1, linguistic metaphors suggesting WAR scenarios used with topics related to trade disputes seem to follow the narratives of military confrontations in history. A series of recurring mini-narratives related to military confrontations seem to frame the roles of involved parties in relation to trade disputes similarly in three corpora. During military confrontations, different involved parties seem to be framed as aggressive and opposing forces in three corpora, as in (267), (268), (269). The way WAR scenario seems to frame involved parties as opposing forces in three corpora may be explained by Flugsberg et al.'s (2018) claim about the tendency of war metaphor in natural discourse to structure adversarial relationships.

(267) China has shown it is equipped with enough **ammunition** to compete with foreign-made goods in the manufacturing sector, Tu noted. (*Global Times* 2015)

(268) The discussions centre on whether to start an investigation under Section 301, a punitive bilateral **weapon** in the US trade **arsenal**. The probe would focus on Chinese rules that require foreign companies to transfer technology to local partners. (*Financial Times* 2017)

(269) In the daunting battle against corporate online espionage worldwide, one major solar company wants to **deploy** a powerful and novel **weapon**: higher tariffs. (*New York Times* 2014)

Linguistic metaphors also suggest a counter WAR scenario which seems to frame outcome of trade disputes in a similar way in three corpora. Three corpora seem to frame *trade disputes* as a battle with no winners, as in (270), (271) and (272).

(270) China's major trading partners also end up **losers** from such **wars** through higher prices, as well as slower development in emerging and strategically important sectors like solar energy. (*Global Times* 2014)

(271) A trade war would have no real **winners** and millions of **losers** in both countries. (*New York Times* 2009)

(272) ... stressed that there would be no **winners** from a trade

**war**, and urged that all countries continued to support the 2015 Paris climate change accord. (*Guardian* 2017)

The counter WAR scenario is against shared knowledge about outcome of a war, either defeat or victory (Flugsberg et al., 2018). The argumentative purposes of a counter WAR scenario may be achieved if the default WAR scenario is used as the background materials (Musolff, 2016). The framing implications of this counter WAR scenario seem to suggest the detriment of a trade disputes for involved parties.

Linguistic metaphors suggesting GAME/SPORTS scenario in three corpora seem to frame the roles of involved parties in central trade and economic activities in different ways. Linguistic metaphors suggesting a series of recurring mini-narratives related to GAME/SPORTS scenario in CPEDC seem to frame involved parties both as competitors from different teams and co-operators from the same team, as in (273), (274) and (275). Citation (275) was originally produced by *Xinhua agency*. Both competition and cooperation as part of GAME/SPORTS scenario in CPEDC are in line with Koller's (2003) and Ritchie's (2017) claim about the properties of game and sports. Linguistic metaphors suggesting a series of recurring mini-narratives related to GAME/SPORTS scenario in UKPEDC and USPEDC seem to frame involved parties as competitors from different teams, as in (276) and (277). A competition frame being highlighted within GAME/SPORTS scenario in UKPEDC and USPEDC is in line with Charteris-Black's (2017) claim about prevalence of the competitive race frame in individualism-oriented culture.

(273) He said China and the EU share growth-related **goals**, such as a bilateral investment treaty and other treaties. (*China Daily* 2017)

(274) Reducing obstacles to trade, whether multilaterally, bilaterally or regionally, should be the common **goal** for all organizations, he says. (*China Daily* 2016)

(275) "The other segment of the market where European supplies have been **competing** with **competitors** from the rest of the world would be protected by the 47.6 percent anti-dumping duty." (*People's Daily* 2013)

(276) Europe and US in **race** to keep TTIP on track (*Financial Times* 2016)

(277) But the result sparked a global **race** to the bottom on price... (*New York Times* 2017)

The differences in the way GAME/SPORTS scenario seems to frame the roles of parties involved in trade and economic activities may be explained by Leung and Au's (2010) claim about the influence of different factors such as risk preference, conflict-management styles underlying Chinese and western cultures on cooperative and competitive behaviours.

As mentioned in Section 7.2.2, linguistic metaphors in UKPEDC and USPEDC also seem to suggest specific GAME/SPORTS scenario used with topics related to trade disputes, which may be explained by cultural preferences for certain game/sports to represent the reality (Maguire et al., 2002). A series of mini-narratives related to specific GAME/SPORTS scenario, as in (278), (279), (280) and (281) seem to frame involved parties in central trade and economic activities as players of a specific game/sports.

(278) To end what the petition referred to as a **game** of **Whac-a-Mole**, the two companies sought blanket global protections to prevent .... (*New York Times* 2017)

(279) America **spars** with China over weak currency. (*Times* 2009)

(280) As Clyde Prestowitz, a senior trade official in the Reagan administration puts it: "China is **playing football** while we're **playing tennis**." (*Wall Street Journal* 2017)

(281) But while he calls for "**trampoline**" policies that offer a **springboard** to new jobs, rather than "safety net" policies, these interventions are rather familiar to Obama-style liberals. (*Financial Times* 2016)

It seems that game/sports such as football, tennis and trampoline is less salient in Chinese culture, which is in line with Deignan's (2003) claims that some metaphors may be used more frequently in some cultures but less frequently in other cultures.

A series of recurring mini-narratives related to PHYSICAL DAMAGE scenario seem to frame the nature of *unfair trade practices* in different ways in three corpora. Within PHYSICAL DAMAGE scenario, CPEDC seems to more frequently frame *unfair trade practices* as harmful behaviours to all involved parties than UKPEDC and USPEDC, as in (282) and (283). Citation in (283) was originally produced by Xinhua agency. In contrast, UKPEDC and USPEDC seem to more frequently frame *unfair trade practices* as harmful practices for parties it targets at, as in (284) and (285). The framing implications of PHYSICAL DAMAGE scenario in CPEDC seem to indicate

detriment of *unfair trade practices* while the framing implications of PHYSICAL DAMAGE scenario in UKPEDC and USPEDC seem to indicate the use of *unfair trade practices* as a tool by involved parties in international trade.

(282) If introduced, such penalties would do great **damage** to both European and Chinese businesses... (*China Daily* 2013)

(283) The artificial barriers to foreign investment raised by the US not only **harm** the US economy, but will also go against the interests of the US public. (*China Daily* 2017)

(284) It is clear that there is an EU industry which still has technological advantages over China...It is clear that if the measures were not extended then all of those achievements would be **destroyed** by Chinese dumping. (*Financial Times* 2017)

(285) U.S. Readies Trade **Sledgehammer** for China. (*Wall Street Journal* 2017)

As mentioned in Section 7.2.4 by Kainz (2016) and Ritchie (2017), shared knowledge of BAD WEATHER scenario consists of fickleness, unpredictability, uncontrollability, violence and some degree of danger. A series of recurring mini-narratives such as *storm* in (286) *stormy* in (287) and *buffeting* in (288) suggesting BAD WEATHER scenario seem to frame trade and economic woes as undesirable entities in three corpora. Citation (287) was originally produced by *Xinhua agency*.

(286) ...when the crisis that made landfall this week was still a gathering **storm** on the financial **oceans**, rather than now, when the damage is already being done. (*Guardian* 2016)

(287) "...many fretted that China-US trade relations would "enter a **stormy season** of **winter** and even run the risk of a trade war," Wang recalled Tuesday ... (*China Daily* 2017)

(288) Its deadlock with China comes as the Trump administration seeks to increase pressure on China to curb industrial overcapacity **buffeting** global markets. (*Wall Street Journal* 2017)

Since we are familiar with the nature and scenario of bad weather, we can easily find common ground between bad weather and bad trade and economic conditions (Flusberg et al., 2018). Thus, the framing implications

of BAD WEATHER scenario seem to suggest uncontrollability of bad trade and economic conditions (Charteris-Black, 2017; O'Mara-Shimek et al., 2015).

#### 7.4 Systematic Metaphors and Metaphoreme Framing Topics Related to Trade Disputes

Linguistic metaphors suggesting systematic metaphor *TRADE DISPUTES BETWEEN TRADE PARTNERS ARE BATTLES BETWEEN COUNTRIES* in three corpora seem to negatively frame the nature of unfair trade practices and trade disputes in some contexts but neutrally frame them in other contexts. I checked semantic prosody of some frequently used linguistic metaphors suggesting this systematic metaphor in three corpora such as *resist*, *defuse*, *attack*, *fight against* and *fend off* and *weapon* in (289), (290), (291), (292), (293), and (294) in BNC (1994).

(289) Mr Mandelson, who became embroiled in a damaging row over imports of Chinese textiles last summer when tens of millions of items of clothing were blocked at EU ports, is said to be **resisting** calls for tariffs... (*Guardian* 2005)

(290) Sino-EU trade talks aim to **defuse** solar tensions. (*China Daily* 2013)

(291) ...the Commerce Department would also establish a task **force** to **attack** unfair trade practices by China and other countries. (*New York Times* 2003)

(292) Commerce Secretary Wilbur Ross told industry executives that this will accelerate the Administration's **fight against** "dumped" goods. (*Wall Street Journal* 2017)

(293) China bid to **fend off** EU shoe tariffs. (*Financial Times* 2006)

(294) Germany has been the most vocal in **opposing** the trade **weapon**, saying that as much as (EURO) 500 billion of annual trade with China could be threatened. (*Times* 2013)

As discussed in Section 6.4.2, I found that 43.2% of metaphorical *attack* and 59.3% of metaphorical *fight against* among a random sample of 200 citations in BNC (1994) seemed to suggest negative semantic prosody. I also found that 78.7% of metaphorical *resist* and 75% of metaphorical *weapon* among a



random sample of 200 citations in BNC (1994) seem to suggest neutral semantic prosody.

By checking semantic prosody of *fend off* and *defuse* in BNC (1994), I found that when they were used in metaphorical sense they seemed to suggest negative semantic prosody. The BNC (1994) contains 139 citations of *fend off*. I found that 31 citations of *fend off* were used non-metaphorically and 108 citations were used metaphorically. By further examining its collocates, I found that 62% of 108 citations of metaphorical *fend off* seemed to collocate with lexis such as *a recession*, and *an unjustified reputation* with a negative slant, as in Figure 7.5.

	Details	Left context	KWIC	Right context
1	<input type="checkbox"/>	Written books a... and bring on the 'crack-up' that feels as if it is only just being	fended off	, as it is. The other way of hiding from others is to be
2	<input type="checkbox"/>	Written books a... necessary enmeshment with Vitor d'Arcos would be sturdily	fended off	. 'No,' Ashley said again. His look was as ch
3	<input type="checkbox"/>	Written books a..., they usually feel like an intrusion and a criticism, and will be	fended off	. When someone says 'Hey, you're whining again', yc
4	<input type="checkbox"/>	Written books a... meant making money. There was that black future to	fend off	: there was the endless black past to staunch and help.
5	<input type="checkbox"/>	Written books a... I forth to New York, worked at Swift to keep myself busy, and	fended off	a lot of very annoying letters from my mother and sister, both
6	<input type="checkbox"/>	Written books a... selves 'It had better be good'. Having done our bit to	fend off	a recession we head home, masters of our fates. Dis
7	<input type="checkbox"/>	Written miscell... oming counterproductive. The concession served to	fend off	a ban that might have been imposed under a private member
8	<input type="checkbox"/>	Written-to-be-s... may be prepared to make concessions on rail privatisation to	fend off	a Conservative backbench rebellion. New rail franchi
9	<input type="checkbox"/>	Written books a... s>< . HOW sickening that President Bush has to	fend off	allegations of a long-ago affair as he gears up for the US elec
10	<input type="checkbox"/>	Written books a... y year is just the sort of development the town needs to help	fend off	an unjustified reputation recently and most controversially fos
11	<input type="checkbox"/>	Written books a... runken attack with a stick or (as he contended) an attempt to	fend off	an attack by the woman who was armed with a carving knife?
12	<input type="checkbox"/>	Written books a... ool teachers of the 'need' for change in school practice, while	fending off	attacks 'from below' on their own curricular practices.
13	<input type="checkbox"/>	Written books a... mpure ingots, maybe the tribes were breeding fast enough to	fend off	being buried alive in swarf and shavings and other detritus. <
14	<input type="checkbox"/>	Written books a... meet again in the future. International: Army tries to	fend off	blame for shelling < By MICHAEL MONTGOMERY </s
15	<input type="checkbox"/>	Written books a... o their best efforts. Subjects that they care about are	fended off	by the pupils with the familiar complaints that they are 'boring'
16	<input type="checkbox"/>	Written books a... ng to express our concern regarding your report 'New Way to	Fend Off	Car Thieves' (Echo February 15). The problems vehi
17	<input type="checkbox"/>	Written books a... n American bid. In the past, Mrs Thatcher had easily	fended off	challenges from Tory 'wets'. When, however, internal
18	<input type="checkbox"/>	Written books a... 'ord Hale... 'lack of communication' Health Secretary	fends off	Commons accusations over decision to mobilise the army in z
19	<input type="checkbox"/>	Written books a... espondent < MINISTERS HAVE failed to find a way of	fending off	Conservative Party conference pressure for extra funds to ea
20	<input type="checkbox"/>	Written books a... VC's letter was to rally its supporters in the townships, and to	fend off	criticism that it attached more importance to pressing on with

**Figure 7.5** A screenshot of 20 citations of metaphorical *fend off* suggesting negative semantic prosody among 139 citations in BNC (1994)

The BNC (1994) contains 272 citations of *defuse* and all its inflections. A random sample of 200 citations of *defuse* and all its inflections were checked in context. I found that 23 citations of *defuse* were used non-metaphorically and 177 citations were used metaphorically. By further examining semantic prosody of metaphorical *defuse*, I found that 149 out of the 177 citations of *defuse* in metaphorical sense seemed to suggest negative semantic prosody. Figure 7.6 shows a screenshot of the 20 randomly selected, right-sorted citations of metaphorical *defuse* suggesting negative semantic prosody.

	Details	Left context	KWIC	Right context ↑
1	Written books a...	I Order Minister Vlok, raised hopes that the tension was being	defused	, but on May 20 police shot dead three blacks at the end of a r
2	Written books a...	o a realistic programme of social-democratic reforms, thereby	defusing	, rather than exploiting, the aggressive industrial mood. </s><s
3	Written books a...	ecomes a source of uncontrolled power that cannot easily be	defused	. </s><s> In short, spell books leak magic. </s><s> Various so
4	Written books a...	are set to cause maximum harm to future generations, can be	defused	. </s><s> The book includes short contributions from a wide ra
5	Written books a...	at means that the issue of his drugsodden kids will have to be	defused	. </s><s> And above all, he's got to keep Rickie out of prison, .
6	Written books a...	The result is that the shock of these artists' social criticism is	defused	. </s><s> For the work of Sherman this show may only confirm
7	Written books a...	nd useful" talks with Chinese leaders in Beijing on Jan. 21-24,	defusing	a potentially damaging conflict over the Hong Kong governmei
8	Written books a...	d to protect Northumberland from direct encroachment and to	defuse	a potentially dangerous rivalry. </s><s> In the latter, at least, it
9	Spoken context-...	up, a working party set up in the heat of an election defeat, to	defuse	a potentially damaging row about the strange phenomenon in
10	Written books a...	t of the moment', a swift apology from Mr. Stewart would have	defused	a tense situation instead of a letter expressing 'regret' belatedl
11	Written books a...	d to protect Northumberland from direct encroachment and to	defuse	a potentially dangerous rivalry. </s><s> In the latter, at least, it
12	Spoken context-...	nwhile the new government of Violetta Chamorro successfully	defused	a week-long strike by leftist opponents. </s><s> Rochelle Wils
13	Written books a...	n Correspondent </s><s> THE GOVERNMENT has moved to	defuse	a growing row over its plan to introduce foreign language teac
14	Written books a...	the fascists in the hope that this would deny him publicity and	defuse	a potentially explosive situation. </s><s> However, some mem
15	Written books a...	ia, had conceded that no British troops would be sent, and so	defused	a potentially dangerous situation (Miliband 1973 pp 79-82). </s
16	Written books a...	ecause Alison isn't you.' </s><s> He had always been able to	defuse	a potentially explosive situation. </s><s> Hillmarden House we
17	Written books a...	David doesn't take you, then I will.' </s><s> Beth's quiet voice	defused	a situation that David was incapable of handling; she knew tha
18	Written books a...	s> 'I'd probably try to make him laugh - that generally helps to	defuse	an awkward situation.' </s><s> Which would be fine if she cou
19	Written books a...	unnecessary. </s><s> I was wrong. </s><s> The resignations	defused	an extremely difficult political situation. </s><s> All attention cc
20	Written books a...	nd I've always got on all right with them. </s><s> 'I hope I can	defuse	any potential incident with a laugh and a smile. </s><s> 'It's be

**Figure 7.6** A screenshot of 20 citations of metaphorical *defuse* suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994)

My finding that framing implications of *TRADE DISPUTES BETWEEN TRADE PARTNERS ARE BATTLES BETWEEN COUNTRIES* in three corpora seem to vary from context to context is in line with Flusberg et al.'s (2018) claim that the meanings and framing implications of *WAR* frame depend on contexts.

Some linguistic metaphors suggesting systematic metaphor *ENGAGING IN TRADE ACTIVITIES IS PLAYING GAME/SPORTS* in three corpora seem to frame trade activities as neutral entities. I checked semantic prosody of frequently used linguistic metaphors such as *level playing field* and *compete with*, and less frequently used ones such as *zero-sum game* in three corpora, as in (295), (296), and (297) in BNC (1994). Citation (296) was originally produced by Xinhua agency.

(295) "It is time for the EU to stop making excuses and instead to join us in negotiating a settlement to remove all WTO-inconsistent subsidies so that our world-class aircraft manufacturers can **compete** on a **level playing field**." (*Financial Times* 2017)

(296) "The other segment of the market where European supplies have been **competing with competitors** from the rest of the world would be protected by the 47.6 percent anti-dumping duty." (*China Daily* 2013)

(297) Mr Trump appears to be playing a dangerous **zero-sum game**: instead of fostering mutually beneficial economic ties, he is upping the ante and thereby raising the possibility that both sides may lose. (*Financial Times* 2017)

I searched *level playing field*, *compete with*, *zero-sum game* and all their inflections as a node word in BNC (1994). I found that all of them in metaphorical sense seemed to suggest neutral semantic prosody. The BNC (1994) contains 79 citations of *level playing field*. I found that all the 79 citations of *level playing field* were used metaphorically. There were 95% of the 79 citations of *level playing field* suggesting neutral semantic prosody. Figure 7.7 shows a screenshot of the 20 randomly selected, right-sorted citations of metaphorical *level playing field* suggesting neutral semantic prosody.

Details	Left context	KWIC	Right context
1 <input type="checkbox"/>	Written books a... try groups have welcomed the proposal as a way to ensure a	level playing field	" across the EC. </s></s> Current national laws and proposals v
2 <input type="checkbox"/>	Written books a... urage small businesses and the self-employed , and ensure a '	level playing field	' for them in competing with their larger counterparts. </s></s> T
3 <input type="checkbox"/>	Written books a... itly acknowledging booksellers' concerns about the need for a '	level playing field	' in dealings between themselves and publishers - said that put
4 <input type="checkbox"/>	Written books a... 9 with the Government that minerals operators should enjoy a '	level playing field	' of high environmental standards which apply right across the i
5 <input type="checkbox"/>	Written books a... al middleman. </s></s> Reuters, friend of the new school of 'the	level playing field	' and enemy of the old boy network is doing everything it can to
6 <input type="checkbox"/>	Written books a... . </s></s> The pools people argue that unless they are given 'a	level playing field	' to compete with the lottery, two of the three leading firms coult
7 <input type="checkbox"/>	Written books a... r initiative, we would like a fair chance to play off Mr Brooke's '	level playing field	' . </s></s> Ethnic purity </s></s> How can people in Scotland pr
8 <input type="checkbox"/>	Written books a... an charges and improve the chances of achieving that elusive '	level playing field	' for UK air taxi operators after 1 January 1993. </s></s> 'With th
9 <input type="checkbox"/>	Written books a... at 'booksellers are not asking for favouritism, we simple need a	level playing field	' , and, he warned, 'Publishers like Heinemann Educational, whc
10 <input type="checkbox"/>	Spoken context... efully be starting the campaign for fairness, a campaign for a	level playing field	' , a campaign for justice under law. </s></s> Colleagues, I secur
11 <input type="checkbox"/>	Written miscell... ></s> Given that we hear so much from the Government about	level playing fields	' , is not it time that we had a level playing field in employment c
12 <input type="checkbox"/>	Written books a... only available to NCM in Cardiff. </s></s> In order to maintain a	level playing field	' , it is important that the Government make access available to
13 <input type="checkbox"/>	Written books a... , gave a cautious welcome to market testing. </s></s> 'Given a	level playing field	' , I do not feel we have much to fear,' he said. </s></s> Eddie Fri
14 <input type="checkbox"/>	Spoken context... any special privileges, they've always asked for a fair deal on a	level playing field	' . </s></s> But what they do ask for, and what we should be calli
15 <input type="checkbox"/>	Written miscell... culties because the European single market will no longer be a	level playing field	' . </s></s> There will be a downside to that. </s></s> We cannot
16 <input type="checkbox"/>	Written miscell... s> We shall continue to stress the need for transparency and a	level playing field	' . </s></s> The Kenyans are absolutely clear about our views on
17 <input type="checkbox"/>	Written books a... ational or EC-wide champions distorts fair competition and the	level playing field	' . </s></s> The 1992 programme has begun to falter amid growi
18 <input type="checkbox"/>	Written books a... trying to compete and the one thing these companies want is a	level playing field	' . </s></s> Lack of uniform enforcement of EC laws meant that c
19 <input type="checkbox"/>	Written books a... e latter has 'guaranteed equal access to the Precision chip - a	level playing field	' . </s></s> Stratus' endorsement further bolsters the credibility o
20 <input type="checkbox"/>	Written miscell... ential while tax discrimination is allowed to persist. </s></s> A	level playing field	' </s></s> 1994 will present the British Government with a crucial

**Figure 7.7** A screenshot of 20 citations of metaphorical *level playing field* suggesting neutral semantic prosody among 79 citations in BNC (1994)

The BNC (1994) contains 797 citations of *compete with* and all its inflections. A random sample of 200 citations of *compete with* and all its inflections were checked in context. I found that only 3 out the 200 citations of *compete with* were used non-metaphorically and 197 citations were used metaphorically. There were 95.9% of the 197 citations of *compete with* suggesting neutral semantic prosody. The BNC (1994) contains 18 citations of *zero-sum game* and 12 citations of *zero sum game*. I found that 17 out of the 18 citations of *zero-sum game* and 8 out of the 12 citations of *zero sum game* were used metaphorically. Only one citation of *zero sum game* in metaphorical sense seemed to suggest negative semantic prosody. All other

citations of *zero sum game* and *zero-sum game* in metaphorical sense seemed to suggest neutral semantic prosody.

As mentioned in Section 7.2.2, some lexis such as *playing football*, *playing tennis* in (298) suggesting *ENGAGING IN TRADE ACTIVITIES IS PLAYING GAME/SPORTS* in UKPEDC and USPEDC are novel metaphor. Novel metaphors used with economic topics in economic discourse may increase vividness and attract readers' attention (Boeynaems et al., 2017). However, to understand the novel metaphor used in context, people may need to associate the metaphor with the topic based on their common ground (Boeynaems et al., 2017; Flusberg et al., 2018). For instance, to understand metaphors in citation (298), people need to associated football as a teamwork and tennis as individual work with trade partners with and without state subsidies (Charteris-black, 2017). The framing implications of novel game/sports metaphors in UKPEDC and USPEDC seem to depend on whether it is easy or difficult to find common ground between the novel metaphor and the topic (Flusberg et al., 2018).

(298) China is playing **football** while we're playing **tennis**.  
(*Wall Street Journal* 2017)

Similar to disease that always seems to suggest threats and uncontrollability as mentioned by Arrese and Vara-Miguel (2016) in Section 6.4.2, physical damage metaphor also seems to always suggest pain and something undesirable in most contexts (Charteris-Black, 2017). Some linguistic metaphors suggesting systematic metaphor *UNFAIR TRADE PRACTICES/POLICIES ARE PHYSICAL DAMAGE* seem to negatively frame *unfair trade practices* in three corpora. I checked semantic prosody of linguistic metaphors such as *destroy*, *victim* in (299), (300) and (301) in BNC (1994).

(299) The bottom line is that Chinese mercantilism is a growing problem, and the **victims** of that mercantilism have little to lose from a trade confrontation. (*New York Times* 2009)

(300) If tariffs and minimum selling prices are imposed on imports to protect domestic production, as Suniva and SolarWorld want, they will **destroy** many of those jobs. (*Financial Times* 2017)

(301) Tariffs would also **destroy** thousands of jobs in the European solar industry," Jerry Stokes, President of Suntech Europe, said Wednesday. (*Global Times* 2012)

I found that *destroy* and *victim* in metaphorical sense seemed to suggest negative semantic prosody. As mentioned in Section 6.3.4, I found that 42 out of 100 random-sampled citations of *victim of* in BNC (1994) were used metaphorically and 30 out of the 42 citations of *victim of* seemed to collocate with lexis with a negative slant. The BNC (1994) contains 6057 citations of *destroy* and all its inflections. A random sample of 200 citations of *destroy* and all its inflections were checked in context. I found that 63 out of the 200 citations of *destroy* were used metaphorically. By further examining semantic prosody of *destroy*, I found that 24 out of the 63 citations of metaphorical *destroy* seemed to collocate with lexis with a negative slant. Most collocates with a negative slant were subjects of *destroy*, as in Figure 7.8.

The screenshot shows a list of 20 citations from the British National Corpus (BNC) for the word 'destroy'. Each citation is numbered 1 through 20 and includes a search icon, a details icon, and a document icon. The word 'destroy' or its inflections (destroyed, destroying) are highlighted in red in each citation. The citations are as follows:

Number	Context	Word
1	Written books a... rards neglect, culminating in damage and destruction, almost	destroyed
2	Written books a... himself, and how he had come to regret the hatred that almost	destroyed
3	Written books a... oints where expanding bourgeois society encountered - and	destroyed
4	Written miscell... e best way of dealing with poisonous views is to expose and	destroy
5	Written books a... hame at the barbarism of those who denounced, seized and	destroyed
6	Written books a... ther than a piece of Romano-Christian propaganda aimed at	destroying
7	Written books a... recipient would surely be justified in abating the nuisance by	destroying
8	Written books a... land will yield up poisonous fruits, so a polluted culture... can	destroy
9	Written books a... us has no heart nor 'Achilles' heal and unless it is completely	destroyed
10	Written books a... n Russia. </s><s> Her father's death when she was eighteen	destroyed
11	Written books a... eafter several attempts were made to despoil and eventually	destroy
12	Written books a... s uranium at Elliot Lake, Ontario, which has been blamed for	destroying
13	Written books a... cident-prone. </s><s> The flight of Asil Nadir on May 4th has	destroyed
14	Written miscell... /s><s> Without Gollum Good could never have succeeded in	destroying
15	Written books a... arde's defeat. </s><s> 'Between them Stalinism and Nazism	destroyed
16	Written books a... it of five deals failed miserably - to the point where they soon	destroyed
17	Written books a... of an international" judeo-masonic-communist" conspiracy to	destroy
18	Written books a... n reverse side of two opposed actions in which each aims to	destroy
19	Written books a... ves rise to the poverty and unemployment 'traps', operates to	destroy
20	Written books a... dismissed commerce: 'Depend upon it, this rage of trade will	destroy

**Figure 7.8** A screenshot of 20 citations of metaphorical *destroy* suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994)

As mentioned in Section 6.3.4, nominal *victim* appears to be a metaphoreme used with *protectionism* since it tends to have relatively fixed linguistic and affective restrictions in CPEDC. Nominal *victim* in CPEDC also appears to be a metaphoreme writing about unfair trade practices since it tends to have relatively fixed linguistic and affective restrictions. Nominal *victim* is metaphorically used 35 times in CPEDC to write about unfair trade practices. Linguistically, citation analysis shows that nominal *victim* always appears in the same grammatical structure when writing about unfair trade practices. Nominal *victim* always appears to be postmodified by a prepositional phrase, as in (302) and (303). Citation analysis also shows that China is always described as the victim of unfair trade practices in 18 out of

the 35 citations of nominal *victim*. Thus, metaphoreme *victim* appears to frame others trade partners' unfair trade practices targeted at China as negative entities in CPEDC.

(302) China's commodities become the biggest **victim of** US anti-dumping and anti-subsidy policies. (*Global Times* 2010)

(303) But the lack of such a status has made China the **victim of** a growing number of dumping charges. (*China Daily* 2010)

Some linguistic metaphors suggesting *TRADE AND ECONOMY CONDITIONS ARE WEATHER* in CPEDC and UKPEDC seem to frame trade and economic conditions as a negative entity in some contexts but a neutral entity in other contexts. However, some linguistic metaphors suggesting this systematic metaphor in USPEDC seem to frame trade and economic conditions as a neutral entity. I checked collocates of linguistic metaphors such as *storm* and *turbulence* from CPEDC and UKPEDC in (304), (305), and *a flurry of* from 3 corpora in (306) in BNC (1994).

(304) the UK was most exposed among the world's big economies to the global slump...the Prime Minister renewed his claims that Britain was better placed than other countries to weather the **storm**. (*Times* 2009)

(305) Both developed and developing economies are seeing falls in growth rates and higher risk of sovereign debt, leading to greater **turbulence** in the international financial market. (*Global Times* 2011)

(306) Scott Canada, a senior vice president at McCarthy Building Companies, said that uncertainty surrounding the case had brought **a flurry of** business this year "to a screeching halt"... (*New York Times* 2017)

The BNC (1994) contains 2644 citations of nominal *storm*. A random sample of 200 citations of nominal *storm* were checked in context. I found that 71 out of the 200 citations of nominal *storm* were used metaphorically. Only 10 out of the 71 metaphorical citations of *storm* seemed to suggest negative semantic prosody, as in Figure 7.9. Another 61 citations of metaphorical *storm* seemed to suggest neutral semantic prosody.



The screenshot shows a list of 10 citations from the BNC (1994) where the word 'storm' is used metaphorically. Each citation is numbered 1 through 10 and includes a search icon, a magnifying glass icon, and a 'Details' button. The text of each citation is truncated, but the word 'storm' is highlighted in red. The right context is visible for each citation, showing the surrounding text. The citations are as follows:

Line	Left context	KWIC	Right context
1	Written books a... dly, because the trees and clumps are rapidly disappearing through the ravages of	storms	and neglect. </s><s> There may have been a body of people, in medieval or even
2	Written books a... week he's had. </s><s> 'He joined the management team in a big way when the	storm	broke over Jason Livingston's drug suspension. </s><s> It would have been far, fa
3	Written books a... his natural rage into play on screen. </s><s> Anger could sweep across him like a	storm	cloud in fast motion and burst all about him in a fury of violently well-picked epithet
4	Written books a... </s><s> The ship suffered damage due to heavy weather conditions. </s><s> The	storm	damage was not treated as a consequence of the collision but as an intervening e
5	Written books a... > I have no facility for tears. </s><s> Yet as soon as this activity began in Vicky, a	storm	of weeping - as I judged the sensation - accumulated in my breast like a storm ove
6	Written books a... ating itself from the comments and stressing its anti-racist policy, failed to quell a	storm	of protest over Mr McNeill's remarks. </s><s> Controversy has also surrounded th
7	Written books a... d they insist that the decision to ban God Save The Queen, which has provoked a	storm	of patriotic protests, was not influenced by the ANC. </s><s> RFU secretary Dudle
8	Written books a... that in 1888 Bismarck's system was still successful. </s><s> It had weathered the	storms	of the Bulgarian crisis. </s><s> Germany was still in touch with both Russia and Au
9	Written books a... n the province of Austria. </s><s> Real last-gasp stuff: it happened in the eye of a	storm	of tears that the whole house must have heard with horror. </s><s> I was still cryin
10	Written books a... as prevented from sailing. </s><s> The Labour Party made its voice heard, and a	storm	of protest blew up in Parliament. </s><s> In Downing Street, the Cabinet began to

**Figure 7.9** A screenshot of 10 citations of metaphorical *storm* suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994)

The BNC (1994) contains 417 citations of *turbulence*. A random sample of 200 citations of *turbulence* were checked in context. I found that 49 out of the 200 citations of *turbulence* were used metaphorically. There were 20 citations of metaphorical *turbulence* suggesting negative semantic prosody, as in Figure 7.10.

The screenshot shows a list of 20 citations from the BNC (1994) where the word 'turbulence' is used metaphorically. Each citation is numbered 1 through 20 and includes a search icon, a magnifying glass icon, and a 'Details' button. The text of each citation is truncated, but the word 'turbulence' is highlighted in red. The right context is visible for each citation, showing the surrounding text. The citations are as follows:

Line	Left context	KWIC	Right context
1	Written books a... ord in Euro-jargon and is being blamed - unfairly - for all the '	turbulence	' in Europe, according to CBI president Sir Michael Angus. </s>
2	Written books a... can anticipate a period of increasing political instability and	turbulence	. </s><s> The second type of political problem that I have ind
3	Written books a... ulgaria and Romania - is in a state of chaos and turmoil and	turbulence	. </s><s> That political amateur, Gorbachev, talks of a Europ
4	Written books a... aining or a new look at tactics) or 'How to address corporate	turbulence	?' a metaphor which may prompt ideas of inter-departmental
5	Spoken context... has he? </s><s> The only person he's had through the tr the	turbulence	and turmoil of the last year is and you wouldn't give her a </s>
6	Written books a... I break-up is often, if not usually, preceded by some years of	turbulence	and unreliability on the part of one or both partners. </s><s> .
7	Written books a... : month </s><s> The Russians are coming Faced with social	turbulence	and resurgent anti-Semitism, many thousands of Soviet Jews
8	Written books a... i. </s><s> Afterwards, Mr Major said he was used to political	turbulence	and the 'rough and tumble'. </s><s> New laws to sack police
9	Written books a... ardments he saw for himself and read about daily. </s><s>	Turbulence	and violent death haunted his adolescence just as repressor
10	Written miscell... re constructed. </s><s> The main uncertainty variable is the	turbulence	in market share movements. </s><s> The research sets out :
11	Written books a... one when governments were prepared simply to ride out the	turbulence	of periodic recessions. </s><s> The advent of policy activism
12	Written books a... r and significance to the otherwise squalid and meaningless	turbulence	of the middle decades of the present century. </s><s> The vi
13	Written books a... :succeeds in only contracting consciousness, sullyng it with a	turbulence	of confusion. </s><s> Like a thief it steals away the wealth of
14	Written books a... , minor nobility, in eighth-century Sussex. </s><s> For all the	turbulence	of the sadly mis-called 'Dark Ages', the drive towards stability
15	Written books a... atred, envy and avarice which had worked him into a hellish	turbulence	of vicious thoughts. </s><s> Was it Mary who allowed him ac
16	Written books a... the same at all values of the Reynolds number. </s><s> The	turbulence	propagates into the neighbouring non-turbulent regions at ea
17	Written books a... transition </s><s> In the last section, we saw an example of	turbulence	suppression when stabilizing stratification was imposed. </s>
18	Written miscell... d won the war, but they lost the peace. </s><s> The political	turbulence	that followed the Civil War was only brought under control by
19	Written books a... ersonality, and very badly' (30). </s><s> She represents the	turbulence	that Serena is unable to eliminate from her life, the residue of
20	Written books a... s crowding through her mind heightened the vague sense of	turbulence	that was growing inside her with the gathering storm. </s><s>

**Figure 7.10** A screenshot of 20 citations of metaphorical *turbulence* suggesting negative semantic prosody among a random sample of 200 citations in BNC (1994)

The BNC (1994) contains 154 citations of *a flurry of*. I found that 144 out of the 154 citations were used metaphorically. There were 87.5% of the 144 citations of metaphorical *a flurry of* suggesting neutral semantic prosody.

Some linguistic metaphors suggesting systematic metaphor *UNDERPRICED IMPORTS ARE LARGE AMOUNTS OF WATER* in UKPEDC seem to frame underpriced imports from China and Asia as negative entities. I checked collocates of linguistic metaphors such as *an avalanche of* and *a*

*flood of* in (307) and (308) in BNC (1994).

(307) Clothing and footwear makers in Europe suffered a severe shock in 2005 when **an avalanche of** clothing arrived in European from Asia. (*Times* 2009)

(308) The EU's top trade official has called on Beijing to cut overcapacity in its steel industry, promising new measures to support European mills threatened by **a flood of** Chinese imports. (*Financial Times* 2016)

I found that *an avalanche of* and *a flood of* in metaphorical sense seemed to suggest negative semantic prosody. The BNC (1994) contains 48 citations of *an avalanche of*. I found that all the 48 citations of *an avalanche of* were used as metaphors. There were 15 out of the 48 citations of *an avalanche of* suggesting negative semantic prosody, as in Figure 7.11.

The screenshot shows a search interface with the following elements:

- Navigation tabs: Details, Left context, KWIC, Right context ↑
- Search results table with 15 rows, each containing a checkbox, a document icon, a snippet of text with 'an avalanche of' highlighted in red, and a document icon.

	Details	Left context	KWIC	Right context ↑
1	<input type="checkbox"/>	Written books a...	come, adding to fears that Botha could bury England with <b>an avalanche of</b> carelessly conceded penalties. </s><s> They are a big, he	<input type="checkbox"/>
2	<input type="checkbox"/>	Spoken context-...	away dads pay seemed the order of the day. </s><s> But <b>an avalanche of</b> complaints has almost overwhelmed the C S A and it come	<input type="checkbox"/>
3	<input type="checkbox"/>	Written books a...	titutes in designated garrison and naval towns, generated <b>an avalanche of</b> controversy and publications. </s><s> The Acts were the s	<input type="checkbox"/>
4	<input type="checkbox"/>	Written books a...	day in cutbacks grimly described by one union leader as ' <b>an avalanche of</b> destruction and misery.' </s><s> The DEFENCE MINISTR	<input type="checkbox"/>
5	<input type="checkbox"/>	Written books a...	ane believed it was important that she was not deluged in <b>an avalanche of</b> everything that was vaguely old; that, for example, French	<input type="checkbox"/>
6	<input type="checkbox"/>	Written books a...	's loft, without supper or a blanket, Gabriel's dreams were <b>an avalanche of</b> frightening pictures. </s><s> He dreamt that Lucie threw h	<input type="checkbox"/>
7	<input type="checkbox"/>	Written books a...	><s> The wave had had its ropes cut and was erupting in <b>an avalanche of</b> fury that would bury everything in its path. </s><s> Of Ted	<input type="checkbox"/>
8	<input type="checkbox"/>	Written books a...	ever she had felt for Richard was long since buried, under <b>an avalanche of</b> hurt and disillusion. </s><s> She had thought herself in lov	<input type="checkbox"/>
9	<input type="checkbox"/>	Written books a...	class; he was inebriated in a world of letters, engulfed by <b>an avalanche of</b> ideas and images, forms and metres, essays and critiques	<input type="checkbox"/>
10	<input type="checkbox"/>	Written books a...	Engineers and electricians' leader Bill Jordan said: 'This is <b>an avalanche of</b> industrial destruction and human misery.' </s><s> DISAST	<input type="checkbox"/>
11	<input type="checkbox"/>	Written books a...	would become cheaper. </s><s> Mud avalanche </s> <s> <b>An avalanche of</b> mud, triggered by an intense and unexpected rainstorm, ki	<input type="checkbox"/>
12	<input type="checkbox"/>	Written books a...	cal that would have smothered both Sweetman and me in <b>an avalanche of</b> nauseating foam. </s><s> 'Step back, Nick!' </s><s> Ellen	<input type="checkbox"/>
13	<input type="checkbox"/>	Written books a...	Cocker spaniels," he quoted, " become overwhelmed with <b>an Avalanche of</b> Rage. </s><s> It only lasts seconds and then they are ove	<input type="checkbox"/>
14	<input type="checkbox"/>	Written books a...	><s> AT least 50 people were feared dead last night after <b>an avalanche of</b> rain-soaked mud buried a gold mining camp. </s><s> Hun	<input type="checkbox"/>
15	<input type="checkbox"/>	Written books a...	the way was the onset at Pirelli in the summer of 1968 of <b>an avalanche of</b> wildcat strikes. </s><s> Another was a dispute at Fiat in sf	<input type="checkbox"/>

**Figure 7.11** A screenshot of 15 citations of metaphorical *an avalanche of* suggesting negative semantic prosody among 48 citations in BNC (1994)

The BNC (1994) contains 159 citations of *a flood of*. I found that all the 159 citations were used metaphorically. I found that 43 out of the 159 citations of *a flood of* seemed to suggest negative semantic prosody. Figure 7.12 shows a screenshot of 20 randomly selected, right-sorted citations of metaphorical *a flood of* collocating with lexis with a negative slant.





**Figure 7.12** A screenshot of 20 citations of metaphorical *a flood of* suggesting negative semantic prosody among 159 citations in BNC (1994)

Thus, the framing implications of systematic metaphor *UNDERPRICED IMPORTS ARE LARGE AMOUNTS OF WATER* in UKPEDC seem to suggest the difficulty control of underpriced imports from China and Asia (Baker and McEnergy, 2005).

## 7.5 Summary

In this chapter, I addressed research question two to four by focusing on four metaphors used with topics related to trade disputes in three corpora. Both similarities and differences were observed in the way four metaphors seem to frame topics related to trade disputes in three corpora. My qualitative analysis of metaphor used with topics related to trade disputes was carried out in terms of three types of metaphor patterns: metaphor scenario, systematic metaphor and metaphoreme.

At the level of metaphor scenario, three corpora seemed to frame involved parties as opposing forces in a battle within WAR scenario and frame trade disputes as a battle with no winners within counter WAR scenario. The framing implications of this counter WAR scenario seemed to suggest the detriment of trade disputes for involved parties. Within GAME/SPORTS scenario, three corpora seemed to frame the roles of involved parties differently. CPEDC seemed to frame involve parties in trade disputes as both competitors and co-operators while UKPEDC and USPEDC seemed to frame involved parties as competitors. Linguistic metaphors in UKPEDC and USPEDC also suggested specific GAME/SPORTS scenario and seemed to frame involved parties in central trade and economic activities as players of

specific game/sports, which suggested their cultural preferences for using certain game/sports to represent the reality. Differences were also observed in the way PHYSICAL DAMAGE scenario seemed to frame unfair trade practices in three corpora. The framing implications of this scenario in CPEDC seemed to suggest detriment of *unfair trade practices* but suggested the use of *unfair trade practices* as a tool in international trade in UKPEDC and USPEDC. The metaphorical implications of BAD WEATHER scenario in three corpora seemed to suggest uncontrollability of bad trade and economic conditions.

At the level of systematic metaphor, systematic *FIGHT/WAR* in three corpora seemed to negatively frame the nature of unfair trade practices and trade disputes in some contexts but neutrally frame them in other contexts. Some linguistic metaphors suggesting systematic *GAME/SPORTS* in three corpora seemed to frame trade activities as neutral entities. Some linguistic metaphors related to specific game/sports in UKPEDC and USPEDC were creatively used to frame trade activities between economic blocs. However, their framing implications depends on the difficulty for readers to identify common ground between the specific game/sports and the topic. Some linguistic metaphors suggesting systematic *PHYSICAL DAMAGE* in three corpora seemed to negatively frame unfair trade practices. Some linguistic metaphors suggesting systematic *WEATHER* in CPEDC and UKPEDC seemed to frame trade and economic conditions differently in different contexts but seemed to frame trade and economic conditions as a neutral entity in USPEDC. Some linguistic metaphors suggesting systematic *WEATHER* in UKPEDC seemed to frame underpriced imports from China and Asia as negative entities. The framing implications of this systematic metaphor seemed to suggest uncontrollability of the underpriced imports from China and Asia.

At level of metaphoreme, metaphoreme *victim* seemed to frame trade partners' unfair trade practices targeted at China as negative entities in CPEDC.

## **Chapter 8 Conclusions**

This chapter gives a critical summary of my research. In Section 8.1, I reflect on the whole research procedures guided by my analytical model and summarize some key findings and arguments in this thesis. In Section 8.2 and Section 8.3, I critically evaluate my research contributions and implications. In Section 8.4, I make some recommendations for future research in the field of metaphor and framing in popular economic discourse. In Section 8.5, I reflect on implications and potential limitations of using learners dictionaries for the establishment of 'basic meanings' in the process of metaphor identification.

### **8.1 Research Summary**

This research has presented a step-by-step examination of scenario-based and semantics-based metaphorical framings in three self-built corpora following a bottom-up fashion. It addressed research questions that investigated and compared the way metaphor was used by journalists from China, the UK and the US to frame and evaluate in three self-built corpora on trade disputes between China, the EU and the US, which was less touched upon in relevant literature. The emphasis in this research is not so much on analytical model to metaphor and framings since it relies on pre-existing concepts and frameworks but on the revised metaphor research procedures in metaphor and framing in popular economic discourse. The revised procedures have proved effective for the analysis to examine social and ideological meanings of metaphor in popular economic discourse.

By collecting available and relevant texts on trade disputes as many as possible, I built three representative popular economic discourse corpora in Chapter Three. The three corpora with 1.3 million words in total provided me a number of metaphor candidates used with core topics related to trade disputes. In Chapter Four, I adapted existing metaphor identification procedure MIP and decided to identify metaphors in my three corpora by both starting from core topics, and starting from frequent and salient vehicle groupings with the help of Wmatrix (Rayson, 2008). The practice of both identifying metaphors used with specific topics and identifying metaphors from frequent and salient vehicle groupings in popular economic discourse was helpful for me to find more salient and meaningful metaphor patterns from my data and to better address my research question two to four. In

Chapter Five, I operationalized adapted MIP, explained the way I used Wmatrix to filter metaphor candidates from my data and explained the way I carried out inter-coding of metaphor identification and vehicle grouping. Following adapted MIP, I identified 897 lexis suggesting physical damage metaphor, 2473 lexis suggesting fight/war metaphor, 914 lexis suggesting game/sports metaphor and 249 lexis suggesting weather metaphor used with topics related to trade disputes with the help of Wmatrix. Wmatrix worked as an effective tool to facilitate metaphor identification in my data. A number of linguistic metaphors filtered with the help of Wmatrix were helpful to address my research question two to four. Results of my inter-coding process of metaphor identification and vehicle grouping were either substantial or almost perfect. The results of inter-rater reliability of metaphor identification suggested the effectiveness of adapted MIP in identifying metaphors in my data. The results of inter-rater reliability of my vehicle groupings provided basis for the claims I made in my findings in Chapter Six and Seven. In Chapter Six, I reported frequently used metaphors in my data and compared similarities and differences of three types of metaphor patterns used with *protectionism* and *free trade* in three corpora. I also built a case to discuss the way these metaphor patterns seem to frame and evaluate *protectionism* and *free trade* in three corpora. In Chapter Seven, I compared similarities and differences of three types of metaphor patterns used with topics related to trade disputes in three corpora. I also built a case to discuss the way these metaphor patterns seemed to frame and evaluate core topics related to trade disputes. Following research procedures above, I identified a good number of salient and interesting metaphor patterns used with core trade disputes in three corpora, which was the key to address my research questions.

The first research question investigated frequently used metaphors in my three corpora. The results of frequently used metaphors in three corpora corroborated previous studies' claims about ubiquitous use of metaphor in popular economic discourse. The results also corroborated previous studies' claims about metaphor patterns frequently used with economic topics about negative economic reality such as *financial crisis* and *stock market crash* in their data. Discussions on these frequently used metaphor patterns such as *ORGANISM*, *MOVEMENT*, *FIGHT/WAR* and *GAME/SPORTS* suggested that journalists appeared to favour metaphors that were grounded in our everyday physical world or that shared similar properties with the rough and relentless economic world.

Research question two compared metaphor patterns writing about *protectionism* and *free trade* and other core trade disputes topics in three corpora. The number of linguistic metaphors suggesting metaphor patterns used with *protectionism* was much larger than those used with *free trade*, which supported the claim about journalist' frequent use of metaphor when writing about negative or conflicting economic reality. The findings of research question two first suggested that annotating metaphors in large-scale specialized corpora by starting from both topics and meaningful vehicle groupings was helpful in capturing more metaphor patterns used by journalists and corroborating each approach's observations of metaphor patterns. For instance, journalists' use of linguistic metaphors co-occurring with *protectionism* in three corpora could be motivated by our embodied experience such as movement metaphor, by transferring of structural knowledge such a fight/war metaphor or by supernatural phenomenon such monster metaphor. However, if annotating metaphor in corpora by starting from salient and frequent vehicle groupings, this kind of knowledge may not be captured. Second, the findings of research question two showed that both UKPEDC and USPEDC creatively used metaphors related to specific game/sports to write about trade activities. Metaphoreme *victim* and *target* were observed in CPEDC but not in the other two corpora to write about *protectionism* and *unfair trade practice*. Third, the findings of identified metaphor patterns suggested that understanding linguistic metaphors in a network of dynamic discourse worked effectively in identifying more salient and meaningful metaphor patterns, which earned more advantages over understanding metaphor as pre-existing mapping in our mind in Conceptual Metaphor Theory. For instance, systematic *ILLNESS/HEALTH* may be linked with systematic *MEDICINE* to suggest another metaphor pattern BAD STATE OF BODY HEALTH scenario.

Research question three to four examined the way identified metaphor patterns seemed to frame *protectionism*, *free trade* and other core trade dispute topics in three corpora. First, findings of metaphorical framings of metaphor scenario used with discussed topics suggested regularities in the types of scenarios that seemed to negatively frame a topic. Scenarios such as BAD STATE OF BODY HEALTH and BAD WEATHER with shared knowledge of threats and uncontrollability appeared to always negatively frame a topics if linguistic metaphors suggesting them also followed narrative sequence. For instance, BAD STATE OF BODY HEALTH scenario and BAD WEATHER scenario in three corpora seemed to frame *protectionism* as a negative entity. Second, findings of metaphorical framings of metaphor scenario suggested the

importance of easily identified common ground between the metaphor scenario and the topics for target readers to achieve a better framing effect. Third, findings of metaphorical framings of metaphor scenario also suggested that within the same metaphor scenario trade partners' role in relation to core trade disputes topics or the nature of unfair trade practices could indicate different framing implications. For instance, the framing implications of WAR scenario seemed to suggest determination to fight against *protectionism* in CPEDC but suggest trade partners' contradictory stances towards *protectionism* in UKPEDC and USPEDC. Fourth, findings of metaphorical framings of metaphor scenario also suggested that UKPEDC and USPEDC seemed to show cultural preferences for using metaphor scenarios associated with more competitive behaviours in general game/sports and certain specific game/sports which were less salient in Chinese cultures to frame economic reality. Findings of metaphorical framings of systematic metaphors suggested that using a number of metaphors that always suggest negative semantic prosody seemed to negatively frame topics related to trade disputes. Findings of metaphorical framings of metaphoreme suggested the direct role of metaphoreme in framing a topic. For instance, metaphoreme *victim* was used in CPEDC to frame *protectionism* and *unfair trade practice* targeted at China as negative things.

To sum up, linguistic metaphors suggesting metaphor patterns at different levels seemed to coherently complement each other to show similar evaluative slant towards topics related to trade disputes but indicate slight differences in the framing implications they suggested. The results indicated that linguistic metaphors suggesting three types of metaphor patterns in CPEDC seemed to always suggest negative stance towards protectionism and other unfair trade practices. UKPEDC seemed to always use linguistic metaphors suggesting the same metaphor scenario and systematic metaphor to express more negative stance towards the same topics than USPEDC.

More salient and interesting metaphor patterns and their framing implications observed in my key findings above supported the validity of my research procedures and my analytical model.

## **8.2 Research Contributions**

In this section, I describe two major contributions of this research in terms of theoretical contributions and methodological contributions.

### **8.2.1 Theoretical Contributions**

My theoretical contribution is to test existing theoretical frameworks and concepts in metaphor and frames, using a new dataset from a very specific register. Building on existing studies which suggested integrated approach to study metaphorical framing in discourse (Bogetić, 2019; Cameron et al. 2010; Dekavalla and Montagut, 2018), this research summarized an analytical model of metaphorical framing in discourse. This model is similar to Cameron et al.'s (2010) practice of finding systematicity in metaphor use although they do not explicitly propose the idea of integrating discourse dynamics approach to metaphor and framing theory. Following this direction of integrated approach to metaphorical framing in discourse, I increased the likelihood of effectively identifying more salient and interesting metaphor patterns emerging from discourse and capturing more salient and interesting frames suggested by the patterns. Within the analytical model, linguistic metaphors may exist by its own to suggest metaphoreme, may extend to a systematic metaphor or a metaphor scenario. Systematic metaphor and metaphor scenario suggested by these linguistic metaphors may also integrate with other systematic metaphor to suggest another bigger metaphor scenario. That is, the model aims at capturing all the intermediate framing of linguistic metaphors in the network of dynamic discourse and the final metaphor patterns I formulated as salient clues to suggest framing implications. Based on linguistic evidence from my three corpora, this research uncovered cross-culturally similar and different ideological standpoints expressed by a cluster of frames suggested by metaphor patterns at different levels to economic issues.

To sum up, my research contributes to testing the effectiveness of applying existing theoretical frameworks and concepts to cross cultural studies, examining how metaphor expresses ideological standpoints to economic issues. The findings of this research also contribute to adding empirical insights into the pool of knowledge of the nature and framing function of metaphor in discourse, which may contribute to updating previous application and integration of existing theoretical frameworks and concepts to metaphorical framings in discourse.

### **8.2.2 Methodological Contributions**

This research makes major methodological contributions to corpus construction, inter-rater reliability of metaphor identification and vehicle grouping, and metaphor research procedures.

My first methodological contribution is to test existing approaches to corpus construction in corpus linguistics by building three corpora of a very specific register. When building my three specialized corpora on trade disputes, I relied upon pre-existing concepts and methodology in corpus linguistics such as sampling frame, situational and linguistic criteria (Biber, 1993), core query terms and additional query terms (Gabrielatos, 2007), and recall ratio and precision ratio (Chowdhury, 2004). After deciding my sampling frame of corpus construction, this research compiled three specialized corpora in a cyclical process by starting from building pilot corpora based on situational criteria such as core topics (e.g. Sino-EU trade disputes), genre (economic journalism) and English varieties (China, UK and US) (Biber, 1993). It then decided linguistic criteria for formal corpus construction based on keyness analysis with AmE06, BE06 and BNC2014 business as reference corpora. The results of keyness analysis in three pilot corpora suggested additional query terms to be used in corpus construction. If using only core query terms such as *Sino-EU trade disputes* to collect texts from my sampling frame, the size of three corpora in the research was estimated to be 0.33 million words. By also introducing additional query terms such as *protectionism* to collect texts, this research built three corpora with a 1.3 million words in total. Thus, this research contributes to testing the effectiveness of existing approaches to construct representative specialized corpora that achieve an acceptable level of both recall ratio and precision ratio.

Second, this research contributes to building three specialized corpora that are representative of language use in ESP domains. The findings based on the three corpora are helpful to provide an account of metaphor use of particular ESP domains. Third, this research contributes to methodological improvements in measuring the reliability of inter-coding process of hand-coded data between two coders in metaphor study. In the research, I clearly explained the measures to be chosen to test inter-coding reliability of metaphor identification and vehicle grouping. I also explicitly explained the procedures to follow to carry out 2 co-raters' inter-coding and the solution to prevalence problem.

Fourth, this research contributes to providing effective and benchmarked research procedures for metaphor analysis from a corpus-linguistic approach in popular economic discourse or related registers by aligning current knowledge about metaphor theory with knowledge about metaphor identification and analysis in a coherent discourse system. This



research revised existing research procedures for metaphor studies from a corpus-linguistic approach to make them more systematic and more replicable for step-by-step examination of scenario-based and semantics-based metaphorical frames in a very specific register. Within the procedures, I understand that the validity of metaphor analysis is closely linked with the validity of each procedure during the whole research process. Through the process, different decisions on each procedure before metaphor analysis such as deciding theoretical framework, corpus design and construction, and deciding metaphor identification approach may lead to totally different findings. Bad design of previous procedure has domino effects on the following procedures. Guided my research questions and analytical model, I clearly justified the rationale of my decision-making in each procedure and the way I operationalized each decision-making, which suggested rigour and replicability of the procedures. The revised metaphor research procedures can also provide a clear benchmark for other metaphor scholars to evaluate their findings against my work.

### **8.3 Research Implications**

The key findings in this research appear to support the claims about metaphor's framing function in popular economic discourse, as discussed in Section 2.4. However, the findings of most previous metaphor studies in popular economic discourse were based on conceptual metaphor theory. This research suggests the importance of studying metaphor as a framing device following a bottom-up fashion to capture more salient and interesting metaphor patterns emerging from discourse. In this section, I explain the implications of my research for metaphor researchers and its pedagogical implications for ESP teaching and learning.

#### **8.3.1 Implications for metaphor researchers**

As mentioned in Section 8.1, my key findings, to some extents, suggested the effectiveness of my analytical model and revised metaphor research procedures. In this section, I hope to suggest some theoretical and methodological implications for metaphor researchers focusing on popular economic discourse. In this research, I suggest to understand metaphor as a tool to frame and evaluate in popular economic discourse and metaphor theories as the role to guide us to better use the tool. When investigating the way metaphor seems to frame and evaluate an economic topic following different theoretical frameworks, different metaphorical frames may be captured (Semino et al., 2018). The differences between metaphor theories

are not barriers that separate us into different schools but can be utilized to capture more salient and meaningful information in discourse. Researchers may integrate different metaphor theories or borrow ideas from other theories as long as the revised model are helpful for them to address their research purposes in a more robust way.

Many procedures involving in metaphor research procedures are interpretative in nature, for instance, vehicle grouping and metaphor analysis. Researchers may take standardization into consideration when designing and implementing their research procedures and explicitly explain procedures that are less straightforward. In this way, there may be a clearer benchmark for later researchers to evaluate their findings against previous works and evaluate whether their findings fit in current knowledge of this field, which may further advance metaphor theory and practice.

### **8.3.2 Implications for ESP Teaching and Learning**

As mentioned in Chapter One, the field of ESP recognises the importance of pedagogical role of metaphor in specific genres, for example, in articles by Charteris-Black (2000), Charteris-Black and Ennis (2001), and Ho and Cheng (2016) in the journal *English for Specific Purposes (ESP)*. The findings of this research also suggest the potentially pedagogical value of integrating metaphor as part of ESP teaching for learners with business English or economics background (Charteris-Black, 2000; Ho and Cheng 2016; Skorzynska, 2010; White, 2003). In this section, I present three pedagogical implications for the approach to teach lexis in ESP classroom and the approach to design or select metaphorical teaching materials for ESP learners with business English or economics background.

First, when teaching lexis for ESP learners, it is potentially valuable to motivate ESP learners' awareness of metaphor in ESP classroom instruction (Charteris-Black, 2000; Charteris-Black and Ennis, 2001; Charteris-Black and Musolff, 2003; White, 2003). Teachers can guide ESP learners to find shared semantic or narrative links between different linguistic metaphors in the business English related teaching materials. This practice may facilitate their learning of these lexis in a coherent way since linguistic metaphors talking about similar economic topics are not isolated units but seem to be connected nodes that are embedded in the network of dynamic discourse. Teachers can also guide ESP learners to pick up on implied social and ideological meanings of linguistic metaphors used to talk about economic issues by finding common grounds between the lexis and the topic. The common grounds may be motivated by our embodied experience,

transferring of structural knowledge or other logical relationships, as suggested by my findings. This practice of informing ESP learners the framing function of metaphor to express ideological standpoints to economic issues may assist in their understanding of central concepts in the particular ESP domains.

Second, the findings of this research can serve as authentic examples that are representative of language use in ESP domains. These examples, which serve as illustrations of the kind of frequent metaphor patterns emerging from dynamic discourse to talk about economic issues and suggest the way metaphor works as a framing device in particular ESP domains, can be used as metaphorical teaching materials.

Third, the findings of this research suggest teachers to follow a corpus-linguistic approach to select metaphorical teaching materials for ESP learners, or use corpus evidence to complement existing ESP teaching materials since corpus linguistics is proved to be particularly effective in providing empirical data on metaphor use in particular ESP domains (Charteris-Black 2000; Charteris-Black and Musolff, 2003; Skorczynska, 2010). For instance, following a corpus-linguistic approach to metaphor use, this research has built a case to identify evaluative slant of linguistic metaphors suggesting systematic metaphor and metaphoreme in my corpora by observing collocation behaviours of the linguistic metaphors in a larger corpus-BNC (1994). This kind of “resonance of intertextuality” (Hunston, 2007, p.266) seems to suggest the potential value of using collocation behaviours as corpus evidence in larger corpus to help ESP learners understand the evaluative nature of the concepts in particular ESP domains.

#### **8.4 Directions for Future Research**

This research has achieved its research objective so far. However, there are still many valuable points for future research. I suggest four potential directions for future research as follows.

First, it is important and urgent to build more large-scale specialized or general corpora with metaphor annotated. Automatic metaphor identification has made continuous progress in the field of NLP. However, it still cannot satisfy the needs of metaphor studies from a corpus-linguistic approach since existing NLP approaches cannot automatically identify conventional linguistic metaphors in discourse. During the process of my research,

metaphor identification occupied me a huge amount of time. If automatic metaphor identification can make big improvement and serve metaphor researchers, metaphor studies may have more important discoveries. However, the biggest obstacle to substantial progress of automatic metaphor identification is lack of high quality training datasets. Currently, a popular training dataset used by NLP scholars is VUAmsterdam Corpus. In the near future, I also plan to annotate metaphors in my specialized corpora.

Second, researchers may work to provide standards for each metaphor research procedure so as to increase the rigor of metaphor studies and also facilitate communications between scholars within or outside metaphor studies. For instance, researchers may set the standard for the F1 score which is the weighted average of precision and recall when collecting texts in a corpus. Researchers may set the standard for vehicle grouping manual. Some procedures that are difficult to standardize should be made explicit. Making the whole research procedures standardized and explicit also provides benchmarks for metaphor researchers to communicate.

Third, in my research I use BNC (1994) as a reference corpus to corroborate the evaluative slant of linguistic metaphors suggesting systematic metaphors. I usually generate a random sample of 200 citations from BNC (1994) to check an evaluative slant of lexis in metaphorical sense among the 200 citations. In future work, researchers can compare whether the results of evaluative slant of lexis in metaphorical sense among a random sample of 200 citations from BNC (1994) will be similar to or different from those from COCA. They may compare the evaluative slant of lexis in metaphorical sense among 10 groups of random sample of 200 citations to decide when the evaluative slant of lexis in metaphorical sense tend to be fixed, which provides standards for deciding the evaluative slant of lexis in metaphorical sense.

Fourth, further research could extend metaphor analysis by examining similarities and differences in the way metaphor expresses ideological standpoints to the topic of trade disputes in different varieties of economic discourse: popular economic discourse e.g. economic newspapers and scientific economic discourse e.g. research articles. Further future work could also explore cross-linguistic similarities and differences in metaphor use and framing between Mandarin Chinese and English economic newspapers on topics related to trade disputes.

## 8.5 Research Reflections

The problems of treating metaphor in dictionaries have been documented by Deignan (2015b). Deignan (2015b) writes that decisions on inclusion of a separate sense for metaphor in dictionaries are less straightforward for a lexicographer. She writes that *mountain* in the example “there’s another mountain to climb now” from Cameron’s (2007, p.207) data to talk about reconciliation topics is an uncontentious metaphor for metaphor scholars. She adds that lexicographers, however, need to inform concordance data from corpus such as BNC to decide whether *mountain* in the metaphorical sense is sufficiently central and typical to be given a separate sense in dictionaries. Whether a metaphor is given a separate sense in a dictionary partly depends on the purpose of the dictionary assumed by the lexicographer (Deignan, 2015b). Thus, using different types of dictionaries such as learner’s dictionaries and native speaker’s dictionaries to inform metaphor identification may give different pictures about the centrality and typicality of the lexis in metaphorical sense (Dorst and Reijniere, 2015).

It is not uncontentious for metaphor scholars (Deignan, 2015a, Dorst and Reijniere, 2015, MacArthur, 2015) to decide on whether using learner’s dictionaries or native speaker’s dictionaries, or both to inform metaphor identification following either MIP (Pragglejaz Group, 2007) or MIPVU (Steen et al., 2010). Learner’s dictionaries are used in metaphor identification due to their advantages in attempting to give central, typical and contemporary uses of a word (Deignan, 2015a). Pragglejaz Group (2007) summarize the reasons of using a learner’s dictionary MEDAL in metaphor identification as follows: 1) MEDAL is a corpus-based dictionary which is informed by large-scale corpus and attempts to give description of contemporary English; 2) MEDAL takes awareness of metaphoricity into consideration (Dorst and Reijniere, 2015). That is, it is more likely for learner’s dictionaries to give separate senses for conventional metaphors (MacArthur, 2015).

However, using learner’s dictionaries in metaphor identification is not unproblematic. MacArthur (2015) questions the value of learner’s dictionaries in establishing ‘basic meaning’ in the process of metaphor identification, as she criticizes that MEDAL only provides “metaphorically-expressed, pedagogically-oriented definitions, aimed at non-native speakers of English” (p.134). Metaphor researchers should critically use learner’s dictionaries to decide ‘basic meaning’ in the process of metaphor identification. Learner’s dictionaries do not give etymological information about the meaning development of a word. If I also used Oxford English

Dictionary (OED) which gave clear etymological information about the meaning development of a word, for establishment for 'basic meaning' of a word, a small number of existing results of metaphor identification and vehicle grouping would change. For instance, in this research I only used MEDAL and LDOCE to establish basic meaning of *fragile* in the example *fragile regime of global free trade*. When making decisions on two candidates for basic meanings of *fragile*, I chose 'poor health' sense which is concrete and human-oriented rather than the concrete and non-human 'broken objects' sense, as discussed in Section 5.1.3. However, if I also referred to etymology of *fragile* in OED, I would find that its 'broken objects' sense was used earlier than the 'poor health' sense. That is, 'poor health' sense of *fragile* developed from its 'broken objects' sense. Thus, 'broken objects' sense was established as the basic meaning of *fragile*. In some cases, learner's dictionaries conflated meanings from different semantic fields in one sense of a word. If I only used MEDAL and LDOCE, 'war' sense and 'disease' sense that were conflated in one sense of *outbreak* were two candidates for its basic meaning. However, if I also used OED, etymology of *outbreak* would indicate that its 'disease' sense developed from its 'war' sense so 'disease' sense was conventional metaphor and 'war' sense was established as the basic meaning of *outbreak*. Although the outcome of establishment for 'basic meaning' in the process of metaphor identification may be different in some cases due to using different types of dictionaries, Dorst and Reijnierse (2015) write that metaphors identified with the help of learner's dictionaries and native speaker's dictionaries are the same in some cases. Both learner's dictionary and native-speaker dictionaries have their own advantage and disadvantages in establishing basic meaning of a word. It is important for metaphor researchers to critically use learner's dictionary to establish 'basic meaning' in the process of metaphor identification.

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## List of Abbreviations

### A

AmE06 American English 2006 Corpus

ANC American National Corpus

### B

BE06 British English 2006 Corpus

BNC (1994) British National Corpus (1994)

### C

CPEDC Chinese Popular Economic Discourse Corpus

COCA Corpus of Contemporary American English

### D

DP Deviation of Proportions

### E

ESP English for Specific Purposes

### L

LDOCE Longman Dictionary of Contemporary English

LOB Lancaster-Oslo/Bergen Corpus

### M

MEDAL Macmillan English Dictionary for Advanced Learners

MES Market Economy Status

MIP Metaphor Identification Procedure

MIPVU Metaphor Identification Procedure VU University Amsterdam

MWEs Multi-word Expressions

### O

OED Oxford English Dictionary

**P**

POS Part of Speech

**S**

SOEDHP the Shorter Oxford English Dictionary on Historical Principles

**T**

TTR Type-token Ratio

**U**

UKPEDC UK Popular Economic Discourse Corpus

USPEDC US Popular Economic Discourse Corpus

USAS UCREL Semantic Analysis System

**W**

WIDLII When In Doubt, Leave It In

**Appendix**  
**Supplementary Materials of Chapter Three**

**A**

**A.1 Questionnaire: Reading Preferences for English Newspapers on Economic/Business Issues**

Dear respondents,

Thank you for taking time out of your busy schedule to participate in this survey on reading preferences for English-language Newspapers on economic/business issues. Your thoughts and opinions are purely for academic purposes, which will provide guidance for my PhD project on corpus studies on popular economic discourse. It should take about 1 minute of your time. Your responses will be confidential and not be identified by individual.

**I. Personal Information**

1. What is your gender?

A. Male

B. Female

2. What is the highest level of education you have completed? If currently enrolled, highest degree received.

A. Below bachelor's degree

B. Bachelor's degree

C. Master's degree

D. Professional degree

E. Doctorate degree

3. What sectors do you work in?

A. Accounting/Finance

B. Advertising/Marketing

C. Business/ Strategies

- D. Consulting
- E. Management
- F. Sales
- G. Apprentice/Intern
- H. Insurance
- I. Others\_\_\_\_\_ (please specify)

4. Which country/area do you work in? \_\_\_\_\_

## **II. English-language Newspaper Preference**

5. Do you read English Newspapers? (If yes, continue to answer the following questions; If no, stop here and thank you for your participation).

- A. Yes
- B. No

6. Which sources do you prefer when you read English newspapers?

- A. Printed newspapers
- B. Online newspapers

7. How often do you read newspapers?

- A. Daily
- B. Weekly
- C. Fortnightly
- D. Monthly
- E. Occasionally
- F. Others\_\_\_\_\_ (please specify)

8. Which newspapers do you prefer when you want to know more about certain economic/business issues (e.g. international trade disputes,

unemployment, trading of stocks & shares; financial crisis; economic bubble).  
(Allow more than one answer to this question).

- A. China Daily
- B. Guardian
- C. Daily Telegraph
- D. Financial Times
- E. Global Times
- F. Times
- G. People's Daily
- H. New York Times
- I. Wall Street Journal
- J. USA Today
- K. Washington Post
- L. Others\_\_\_\_\_ (please specify)

9. What kind of barriers do you face while reading English newspaper?  
(Allow more than one answer to this question).

- A. Price
- B. Availability
- C. Culture differences
- D. Language (e.g. vocabulary; use of metaphor; use of metonymy)
- E. Others\_\_\_\_ (please specify)

10. Do you think the information conveyed in English newspapers you prefer plays an important role in influencing your decision-making (e.g. stock investment, reducing deposit, job-hopping)?

- A. Yes
- B. No

Thank you very much !

## A.2 Number for Each Trade Disputes Field in Each File Name

<b>Number</b>	<b>Trade Disputes Fields</b>
01	General
02	MES
03	Shoes
04	Solar_Panel
05	Tele
06	Steel
07	Currency
08	High-tech
09	Intellectual_Property
10	Raw_Material
11	Bike
12	Ceramic_Products
13	Coal
14	Modem
15	Paper
16	Poultry
17	Textile
18	Toluidine
19	Wheel
20	Wine
21	Potato_Starch
22	Tires
23	Auto
24	Bricks
25	Garlic
26	Wind_Tower
27	Aluminium

**To be Continued A. 2 Number for Each Trade Disputes Field  
in Each File Name**

<b>Number</b>	<b>Trade Disputes Fields</b>
28	Iron_Pipe
29	Aircraft
30	Farm
31	Climate
32	Film
33	GM_food
34	Tech
35	Candle
36	Cheese
37	DVD
38	Furniture
39	Rare_Earths
40	IT
41	Rare_Earth
42	Chicken
43	Electric_blankets
44	Phosphonate
45	Refrigeration
46	Chips
47	Drug
48	Gambling
49	Trousers
50	Cosmetics
51	Food
52	Plastic_Bags
53	Soybean

### **A.3 Information of Originally Produced or Reproduced from Other Sources**

<b>Number</b>	<b>Sources of News</b>
00	Originally Produced
01	AFP
02	Agencies
03	Associated Press
04	BJ Review
05	Bloomberg
06	CCTV
07	China Daily
08	China Value
09	CNTV
10	CRI
11	Global Times
12	People's Daily
13	Reuters
14	The Observer
15	Xinhua
16	Agencies & Global Times
17	Guardian & Agencies
18	Reuters & AFP
19	Reuters & Global Times
20	Reuters & China Daily
21	The New York Times & Agencies



## Appendix Supplementary Materials of Chapter Four

B

### B.1 Procedure of MIP

The MIP is as follows:

1. Read the entire text–discourse to establish a general understanding of the meaning.
2. Determine the lexical units in the text–discourse
3. (a) For each lexical unit in the text, establish its meaning in context, that is, how it applies to an entity, relation, or attribute in the situation evoked by the text (contextual meaning). Take into account what comes before and after the lexical unit.  
(b) For each lexical unit, determine if it has a more basic contemporary meaning in other contexts than the one in the given context. For our purposes, basic meanings tend to be
  - More concrete [what they evoke is easier to imagine, see, hear, feel, smell, and taste];
  - Related to bodily action;
  - More precise (as opposed to vague);
  - Historically older;Basic meanings are not necessarily the most frequent meanings of the lexical unit.
- (c) If the lexical unit has a more basic current–contemporary meaning in other contexts than the given context, decide whether the contextual meaning contrasts with the basic meaning but can be understood in comparison with it.
4. If yes, mark the lexical unit as metaphorical.

**Sources:** Pragglejazz Group (2007, p.3)

## B.2 Procedure of MIPVU

The goal of finding metaphor in discourse can be achieved in a systematic and exhaustive fashion by adhering to the following set of guidelines.

1. Find metaphor-related words (MRWs) by examining the text on a word-by-word basis.  
⇒ For information about whether an expression counts as a word, consult Section 3.3.
2. When a word is used indirectly and that use may potentially be explained by some form of cross-domain mapping from a more basic meaning of that word, mark the word as metaphorically used (MRW: indirect).  
⇒ For information about indirect word use that is potentially explained by cross-domain mapping, consult Section 3.4.
3. When a word is used directly and its use may potentially be explained by some form of cross-domain mapping to a more basic referent or topic in the text, mark the word as direct metaphor (MRW: direct).  
⇒ For more information about direct word use that is potentially explained by cross-domain mapping, consult Section 3.5.
4. When words are used for the purpose of lexico-grammatical substitution, such as third person personal pronouns, or when ellipsis occurs where words may be seen as missing, as in some forms of co-ordination, and when a direct or indirect meaning is conveyed by those substitutions or ellipses that may potentially be explained by some form of cross-domain mapping from a more basic meaning, referent, or topic, insert a code for implicit metaphor (MRW: implicit).  
⇒ For more information about implicit meaning by substitution or ellipsis that is potentially explained by cross-domain mapping, consult Section 3.6.
5. When a word functions as a signal that a cross-domain mapping may be at play, mark it as a metaphor flag (MFlag).  
  
⇒ For more information about signals of cross-domain mappings, consult Section 3.7.
6. When a word is a new-formation coined by the author, examine the distinct words that are its independent parts according to steps 2 through 5.  
⇒ For more information about new-formations, consult Section 3.8.

**Sources:** Steen et al. (2010, pp.25-6)

### B.3 9 Randomly Generated Numbers and the Title information for the 9 Sample Texts

Result	Digital file name	Titles of News
1 2 758	0001_01_01_05_01_2016	US and EU may resort to more trade battles
	0002_01_01_01_01_2017	Globalization without discontents
Lower Limit <input type="text" value="1"/> Upper Limit <input type="text" value="1075"/> Generate <input type="text" value="3"/> numbers Allow duplication in results? <input type="radio"/> Yes <input checked="" type="radio"/> No Sort the results? <input checked="" type="radio"/> Ascend <input type="radio"/> Descend <input type="radio"/> No Type of result to generate? <input checked="" type="radio"/> Integer <input type="radio"/> Decimal <input type="button" value="Generate"/> <input type="button" value="Clear"/>	0758_02_02_02_05_2013	Wielding protectionism baton harms China-EU trade ties
	1076_04_01_05_29_2016	Airbus and Boeing could both lose battle of the skies
Lower Limit <input type="text" value="1076"/> Upper Limit <input type="text" value="2016"/> Generate <input type="text" value="3"/> numbers Allow duplication in results? <input type="radio"/> Yes <input checked="" type="radio"/> No Sort the results? <input checked="" type="radio"/> Ascend <input type="radio"/> Descend <input type="radio"/> No Type of result to generate? <input checked="" type="radio"/> Integer <input type="radio"/> Decimal <input type="button" value="Generate"/> <input type="button" value="Clear"/>	1400_04_02_02_04_2013	Brussels offers Beijing reprieve in solar panel dispute
<b>Result</b>	1934_06_02_01_01_2006	Big players must show their faith in WTO
1076 1400 1934	2035_07_01_04_23_2009	Present at the Trade Wars
Lower Limit <input type="text" value="1076"/> Upper Limit <input type="text" value="2016"/> Generate <input type="text" value="3"/> numbers Allow duplication in results? <input type="radio"/> Yes <input checked="" type="radio"/> No Sort the results? <input checked="" type="radio"/> Ascend <input type="radio"/> Descend <input type="radio"/> No Type of result to generate? <input checked="" type="radio"/> Integer <input type="radio"/> Decimal <input type="button" value="Generate"/> <input type="button" value="Clear"/>	2155_07_02_04_04_2014	U.S. Imposes Steep Tariffs on Chinese Solar Panels
Lower Limit <input type="text" value="1076"/> Upper Limit <input type="text" value="2016"/> Generate <input type="text" value="3"/> numbers Allow duplication in results? <input type="radio"/> Yes <input checked="" type="radio"/> No Sort the results? <input checked="" type="radio"/> Ascend <input type="radio"/> Descend <input type="radio"/> No Type of result to generate? <input checked="" type="radio"/> Integer <input type="radio"/> Decimal <input type="button" value="Generate"/> <input type="button" value="Clear"/>	2206_08_02_01_01_2014	Creeping Global Protectionism? Not So Fast, World Bank Says

Result			
2035			
2155			
2206			
<div style="border: 1px solid #ccc; padding: 10px;"><p>Lower Limit <input type="text" value="2017"/></p><p>Upper Limit <input type="text" value="2292"/></p><p>Generate <input type="text" value="3"/> numbers</p><p>Allow duplication in results? <input type="radio"/> Yes <input checked="" type="radio"/> No</p><p>Sort the results? <input checked="" type="radio"/> Ascend <input type="radio"/> Descend <input type="radio"/> No</p><p>Type of result to generate? <input checked="" type="radio"/> Integer <input type="radio"/> Decimal</p><p><input type="button" value="Generate"/> <input type="button" value="Clear"/></p></div>			

I used the random number generator to select 3 numbers from each corpus: Chinese Popular Economic Discourse Corpus (1-1075), UK Popular Economic Discourse Corpus (1076-2016), US Popular Economic Discourse Corpus (2017-2292).

**Appendix**

**C**

**Supplementary Materials of Chapter Five**

**C.1 Randomly Generated Numbers and the Title information for the 6 Sample Texts**

Result	Digital file name	Titles of News
229 232	0229_01_02_02_04_2013	EU, China solve solar panel dispute
<p>Lower Limit <input type="text" value="1"/></p> <p>Upper Limit <input type="text" value="1076"/></p> <p>Generate <input type="text" value="2"/> numbers</p> <p>Allow duplication in results?  <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p>Sort the results?  <input checked="" type="radio"/> Ascend <input type="radio"/> Descend <input type="radio"/> No</p> <p>Type of result to generate?  <input checked="" type="radio"/> Integer <input type="radio"/> Decimal</p> <p><input type="button" value="Generate"/> <input type="button" value="Clear"/></p>	0232_01_02_02_04_2013	Sino-EU trade talks aim to defuse solar tensions
	1133_04_01_02_06_2016	Coping with a world of too much Chinese steel
	1413_04_02_02_04_2013	EU trade chief feels heat in China solar dispute
	2046_07_01_04_01_2017	How Trump Can Solve His Chinese Puzzle
	2108_07_02_04_07_2006	Talks With China End With Few Signs of Progress on Currency Issue

Result	Result
1133	2046
1413	2108
<p>Lower Limit <input type="text" value="1077"/></p> <p>Upper Limit <input type="text" value="2016"/></p> <p>Generate <input type="text" value="2"/> numbers</p> <p>Allow duplication in results? <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p>Sort the results? <input checked="" type="radio"/> Ascend <input type="radio"/> Descend <input type="radio"/> No</p> <p>Type of result to generate? <input checked="" type="radio"/> Integer <input type="radio"/> Decimal</p> <p><input type="button" value="Generate"/> <input type="button" value="Clear"/></p>	<p>Lower Limit <input type="text" value="2017"/></p> <p>Upper Limit <input type="text" value="2292"/></p> <p>Generate <input type="text" value="2"/> numbers</p> <p>Allow duplication in results? <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p>Sort the results? <input checked="" type="radio"/> Ascend <input type="radio"/> Descend <input type="radio"/> No</p> <p>Type of result to generate? <input checked="" type="radio"/> Integer <input type="radio"/> Decimal</p> <p><input type="button" value="Generate"/> <input type="button" value="Clear"/></p>



## C.2 Inter-coding Manual for Metaphor Identification

1. Read the entire text or read the entire concordance lines to have a general understanding of discourse context;

2. Using MEDAL and LDOCE equally to decide the units of multiword expressions;

Both dictionaries only tell whether a multiword expression is a phrase or phrasal verb but doesn't give details on the categories (e.g. Phrase may be an idiom or polyword; Phrasal verb may be phrasal verb and prepositional verb). Compound word and proper noun have single entry in two dictionaries.

**Tips 1:** How to decide whether PV in two dictionaries are phrasal verb or prepositional verb? The following rules may be helpful;

**In prepositional verbs:**

- The preposition and following noun can be moved to the front of the sentence, which is not possible with phrasal verb particles (e.g. *Up into the sky she looked* but not \**Up information she looked*).
- An adverb can be inserted before the preposition (e.g. *She ran quickly down the hill* but not \**She ran viciously down her best friends*).
- The preposition can be moved to the front of a wh-word (e.g. *Up which hill did he run?* but not \* *Up which bill did he run?*)

**In phrasal verbs:**

- The adverbial particle can be placed before or after the noun phrase acting as objective of the verb, which is not possible for the prepositional verbs (e.g. *She looked the information up* but not \* *She looked his face at*).
- If the noun phrase is replaced by a pronoun, the pronoun has to be placed in front of the particle (e.g. *The dentist took all my teeth out*>*The dentist took them out* but not *She went through the gate*>\* *She went it through*).

**Tips 2 :** Use <http://www.kilgarriff.co.uk/BNClists/variances> to decide whether the phrase is polyword. If lexis in the phrase are linked with underscore like in\_order, mark it as polyword;

**Tips 3:** Cambridge Business English Dictionary is helpful to decide whether a phrase is an idiom;

**Tips 4:** Decomposability/non-decomposability of multi-word expressions (MWE) are as follows:

- 1) **Idiom** tends to be decomposable; with exceptions (e.g. by and large, no semantic transparency and allowing little or no variation in form)
- 2) **Polyword** a single unit
- 3) **Phrasal verb** a single unit
- 4) **Prepositional verb** separate units
- 5) **Compound word** it depends
  - Two lexis linked with hyphen and having a single entry (e.g. *low-cost*) in any of the three dictionaries **as a single unit**;
  - Two lexis linked with hyphen and having no single entry in all the three dictionaries **as a single unit**;
  - A compound with separated words (e.g. *chain reaction*) and having/not having a single entry in any of the dictionaries as **separate units**.
- 6) **Proper Name** a single unit e.g. New York

If MWE are treated as a single unit, check its more basic meaning and contextual meaning as a single entry in dictionaries;

If MWE are treated as separate units, check each unit's more basic meaning and contextual meaning in dictionaries.

**3. Deciding contextual meaning of the lexis;**

In most cases, contextual meaning is available in three dictionaries. If not, use any of corpora as follows to help you decide the contextual meaning:

COCA <https://www.english-corpora.org/coca/>

BNC (1994) <https://www.english-corpora.org/bnc/>

Business English Corpus <http://111.200.194.212/cgp/business/>

**4. Deciding a more basic meaning;**

**5. Deciding whether there is both incongruity and comparability between the more basic meaning and contextual meaning of the lexis, if yes, mark it as a metaphor.**

**This manual highlights the following 10 points:**

- 1) Comparison between a more basic meaning and contextual meaning should not cross word class;
- 2) Multi-word expressions such as compound words with separate lexis and prepositional verbs are treated as separated units;
- 3) MEDAL and LDOCE are used equally. As long as a word or MWE can be marked as a metaphor based on the meanings given in any of the two dictionaries, the word or MWE is metaphor. The more basic meaning and contextual meaning can come from any of the two dictionaries;
- 4) A more basic meaning and contextual meaning must be from senses in separate numbers in the dictionaries;
- 5) When making decisions on more than one candidate of more basic meaning, the optimized choice is to choose a human-oriented and concrete sense that is incongruous and comparable with the contextual meaning of the lexis. If there are two human-oriented and concrete basic meaning meanings available, choose any one sense that is incongruous and comparable with the contextual meaning. If there is no human-oriented and concrete sense available, choose a concrete sense that is incongruous and comparable with the contextual meaning. If there are two non-human-oriented and concrete basic meanings available, choose any one sense that is incongruous and comparable with the contextual meaning;
- 6) If there is incongruity between the more basic meaning and the contextual meaning of lexis, there must be semantic gaps between the two meanings. Separated senses in dictionaries do not necessarily mean semantic gap between two meanings. The relationship between the two senses must not be the relationship of general meaning and specific meaning (e.g. *have*, *abuse*); The incongruity between the two meanings should not due to homonymy.



- 7) Comparability between the more basic meaning and the contextual meaning of lexis is sometimes ambiguous. For ambiguous cases, please give your reasons why you mark the lexis as metaphor or non-metaphor;
- 8) Some lexis is used as metaphor in some contexts but as non-metaphor in other contexts so the more basic meaning and contextual of the same lexis should be checked every time;
- 9) This study does not include implicit metaphor and simile;
- 10) Personification is also metaphor in this study.

### **C.3 Inter-coding Manual for Vehicle Grouping**

1. Give the more basic meaning you choose for the lexis.
2. Give a label for the linguistic metaphor based on semantic field of the more basic meaning you choose. I have given you a list of candidate labels in the **Candidate Labels** column. You can choose from the list of candidate labels or you can give your own new label.

#### **Points to highlight:**

- 1) Vehicle grouping is not only paraphrasing but more like giving a superordinate word for the linguistic metaphor. Sometimes the more basic meaning in dictionaries contains a superordinate word that can be used to determine a label for the vehicle term. When the more basic meaning in dictionaries does not contain a superordinate word, you can choose an appropriate label from the list I give you or use your own label if necessary.
- 2) The label for the linguistic metaphor should be strictly consistent with the semantic field of the more basic meaning, which means it should not be overgeneralization or too narrow. For example, it is better to give *victim* in the example of *the victim of protectionism* a label of Victim rather than Crime since victim can also be a victim of crime, accidents or natural disaster etc.
- 3) When giving label for the linguistic metaphor, make sure that the more basic meaning you choose is not cross word class, e.g. the more basic meaning of *fan* as a noun cannot be the more basic meaning of *fan* as a verb
- 4) When there is more than one basic meaning available for the linguistic metaphor, make sure that there is comparability between the more basic meaning you choose and the contextual meaning. When you choose different more basic meaning for the same linguistic metaphor in different contexts, you may give different vehicle grouping for the linguistic metaphor, e.g. break a verb, force as a noun, volley as a noun;
- 5) Based on the same more basic meaning, there may be more than one property you can choose to decide the superordinate word that can be used to determine a label

for the vehicle term. For instance, *win/lose* may be categorized into Fight/war or Game/sports metaphor, *wave* may be categorized into Liquid movement or Natural Phenomenon or Weather; *killing* can be categorized into Fight/war, Crime or Disease. Once you decide which label to choose, keep consistently with your decision.

**Table C.2.1** Lists of Vehicle Grouping Candidates

<b>Vehicle grouping</b>	<b>More specific types and examples</b>
01 Area/space	e.g. <i>gap</i>
02 Attachment	e.g. <i>ties</i>
03 Building	e.g. <i>barrier, collapse, gut</i>
04 Chemical reaction/process	e.g. <i>erode</i>
05 Container	e.g. <i>open up</i>
06 Crime	e.g. <i>shackles</i>
07 Distance	e.g. <i>further</i>
08 Explosion	e.g. <i>implosion</i>
09 Fight/war	General war-related e.g. <i>weapon, gun, bullet, bomb, attack, war, battles, troops</i> etc; General fight-related e.g. <i>fighter; fisticuffs</i> etc.
10 Fire	e.g. <i>stamp out</i>
11 Food	e.g. <i>fresh</i>
12 Game/sports	e.g. <i>football</i>
13 Journey	Sometimes both Journey and Movement are acceptable labels for the same lexis, e.g. <i>go</i> . However, when the lexis involving someone moving along a path, arriving or leaving a place (e.g. <i>road, path, step out</i> ), I prefer to label it as Journey.
14 Light/darkness	e.g. <i>shadow</i>
15 Liquid/Liquid movement	e.g. <i>float</i>

**To be continued. Table C.2.1. Lists of Vehicle Grouping Candidates**

<b>Vehicle grouping</b>	<b>More specific types and examples</b>
16 Machine	e.g. <i>pressure</i>
17 Medicine	e.g. <i>cure</i>
18 Monster	e.g. <i>ghost; monster;</i>
19 Movement	e.g. <i>immobilised, bring down</i>
20 Weather/disaster	e.g. <i>wind, storm</i>
21 Organism	1) Animal 2) Plant 3) Person 4) Body part/bodily action (also body movement) 5) Health/illness 6) Physical pain
22 Physical damage	Emphasized results caused by the action; e.g. <i>damage</i>
23 Physical power	e.g. <i>power</i>
24 Physical separation	e.g. <i>divide</i>
25 Plays/Film	e.g. <i>theatre</i>
26 Poison	e.g. <i>poison</i>
27 Position	e.g. <i>low, high</i>
28 Religion	e.g. <i>preaching</i>
29 Seeing	e.g. <i>perspectives</i>
30 Shape	e.g. <i>form, spiral</i>
31 Size	e.g. <i>expansion</i>
32 Sound/noise	e.g. <i>drumbeat</i>
33 Texture	e.g. <i>rough</i>
34 Tools	e.g. <i>tools</i>
35 Vehicle	e.g. <i>reverse</i>
36 Victim	e.g. <i>victim</i>
37 Violent action	Emphasizing the process and manner of the action; this action may not involve body parts e.g. <i>slash</i>
38 Waste	e.g. <i>dumping</i>

**Index**

(If provided.)