



THE HONG KONG
POLYTECHNIC UNIVERSITY

香港理工大學

Pao Yue-kong Library

包玉剛圖書館

Copyright Undertaking

This thesis is protected by copyright, with all rights reserved.

By reading and using the thesis, the reader understands and agrees to the following terms:

1. The reader will abide by the rules and legal ordinances governing copyright regarding the use of the thesis.
2. The reader will use the thesis for the purpose of research or private study only and not for distribution or further reproduction or any other purpose.
3. The reader agrees to indemnify and hold the University harmless from and against any loss, damage, cost, liability or expenses arising from copyright infringement or unauthorized usage.

IMPORTANT

If you have reasons to believe that any materials in this thesis are deemed not suitable to be distributed in this form, or a copyright owner having difficulty with the material being included in our database, please contact lbsys@polyu.edu.hk providing details. The Library will look into your claim and consider taking remedial action upon receipt of the written requests.

**METAPHOR USE BY TRAUMA VICTIMS:
A CASE STUDY OF THE 2019-2020 HONG KONG
SOCIAL UNREST**

QIU HAN

PhD

The Hong Kong Polytechnic University

2023

The Hong Kong Polytechnic University

Department of English and Communication

Metaphor Use by Trauma Victims: a Case Study of the 2019-2020 Hong Kong Social Unrest

QIU Han

A thesis submitted in partial fulfilment of the requirements

for the degree of Doctor of Philosophy

August 2022

CERTIFICATE OF ORIGINALITY

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it reproduces no material previously published or written, nor material that has been accepted for the award of any other degree or diploma, except where due acknowledgement has been made in the text.

_____ (Signed)

Qiu Han (Name of student)

Abstract

Traumatic events such as natural disasters, bereavement, war, and social unrest often bring about intensely and complex subjective experiences, including emotional afflictions, cognitive disturbances, and physiological discomfort (American Psychiatric Association, 2013). Since it is difficult to address such experiences using purely literal expressions, trauma victims often resort to metaphorical language to bridge the gap between what they have truly experienced and what they are able to express with words. This thesis presents a case study of metaphor use by 46 trauma victims of the 2019-2020 Hong Kong Social unrest to explore the contextual characteristics of trauma metaphors and the interactions between metaphor use and the speakers' psychopathological experiences.

While previous research on trauma metaphors provided rich and detailed accounts of substantive features of metaphors reflected by vehicle terms and target topics, only scant attention has been paid to the interactions between substantive and non-substantive aspects of metaphors such as conventionality, emotional valence, and speakers' perspectives-taking in metaphORIZATION, which capture the speakers' preferred ways of organizing and presenting metaphorical ideas (Kövecses, 2010). Through a mixed-method analysis that combines categorical data analysis and qualitative discourse analysis, Study 1 of this thesis (presented in Chapter 3) investigates the quantitative, systematic metaphor usage patterns indexed by the three abovementioned non-substantive variables. The findings show that the instantiations of CONVENTIONALITY and EMOTIONAL VALENCE differed remarkably across trauma victims' descriptions of eight therapeutically interesting target topics and their metaphorical meaning-making from different psychological PERSPECTIVES. The findings reveal the possibility for non-substantive aspects of metaphors to be instantiated in quantitatively systematic and context-sensitive ways, underlining

the potential for such aspects to capture general tendencies of metaphor use that are characteristic of a given trauma population and specific metaphor topics.

Despite the fact that trauma is primarily psychological and psychopathological in nature, and that the subjective experiences could vary substantially across individuals and varieties, trauma victims' metaphor use has rarely been examined for systematic, empirical relationships with clinically defined, psychometrically measured psychopathological experiences. Study 2 and Study 3 (presented in Chapters 4 and 5) address this research gap by incorporating psychometric data and relevant clinical observations into metaphor analysis. Contextualizing metaphor analysis into the scenario of trauma evaluation, Study 2 examines how trauma victims' metaphor usage patterns vary with their overall degrees of trauma and severities of the five ASD symptoms measured by the Stanford Acute Stress Reaction Questionnaire (SASRQ; Cardeña et al., 2000). Results of correlation analyses show that severities of the six clinical conditions, each characterized by a distinct set of emotional, cognitive, and physiological features, were significantly correlated with several different yet sometimes overlapping metaphor variables. The significant patterns were then illustrated using genuine linguistic examples and interpreted in relation to the experiential and cognitive foundations of corresponding clinical conditions. Study 3 contextualizes metaphor analysis into a more specialized clinical scenario of Acute Stress Disorder (ASD) and symptom diagnosis and examines how trauma victims who met the diagnostic criteria of ASD as measured by the SASRQ use metaphors to describe their experience of the five major ASD symptoms. A correspondent analysis (Tay, 2016) that juxtaposes linguistic data and clinical observations about the speakers' descriptions of symptoms was accomplished jointly by the author of this thesis and a registered therapist who is experienced in trauma treatment; metaphors produced by qualified subjects were identified for their relevance to the five ASD

symptoms and analyzed in terms of their underlying image schemas. The analysis identified distinct clusters of image schemas in the metaphorization of the five symptoms and different clinical manifestations of the same symptom. The two studies foreground trauma victims' psychopathological experience of trauma and specific clinical symptoms as an important contextual factor in shaping metaphor use and thus enable a deeper understanding of the contextualized nature of real-world metaphors. The findings also provide supplementary evidence that highlights the experiential and cognitive foundation of metaphor use.

The three studies, taken together, constitute a multi-level analysis of trauma metaphors. Study 1 examines the interactions among multiple theoretically and practically interesting variables at the linguistic level; Study 2 explores the dynamic variations of trauma metaphors at the subject level; Study 3 identifies metaphor usage patterns at the disorder and symptom level. Taken together, the three studies offer a more holistic view of trauma victims' conceptualization of their complex and painful subjective experiences and the dynamic interactions between trauma metaphors and relevant contextual factors. In the practical sense, the studies provide useful references for mental health practitioners' understanding and management of trauma metaphors; their findings also highlight the possibility for metaphor analysis to be incorporated as a potentially helpful tool for clinical assessment, diagnosis, and treatment of trauma. From the methodological perspective, the multi-level analysis outlines a feasible model for analyzing metaphor use associated with specific mental health disorders. The combination of quantitative methods and the incorporation of a clinically situated perspective in metaphor analysis also hold important implications for research on trauma and mental health metaphors.

Publications Arising from the Thesis

At the time of thesis submission, modified versions of several chapters have been published as journal articles and book chapters, or under review. The publications are listed below:

Journal Article

Qiu, H., Watson, B., & Tay, D. (2022). Metaphors and Trauma: An Image Schematic Analysis of Symptom-specific Metaphors. *Lingua*, 103244.

Book Chapter

Qiu, H. and Tay, D. (2022). The Interaction Between Metaphor Use and Psychological States: a Mix-method Analysis of Trauma Talk in the Chinese Context. In D. Tay and X. Pan (Eds.), *Data Analytics in Cognitive Linguistics. Method and Case Studies*. (pp. 197-228). Berlin: Mouton de Gruyter.

Work under review

Qiu, H., Tay, D., & Watson, B. (under review). Metaphors and the Experience of Post-traumatic Symptoms: A Case Study of the 2019-2020 Hong Kong Social Unrest.

Acknowledgements

During my study, I have received massive help and support from researchers in and outside the Hong Kong Polytechnic University. I want to express my heartfelt gratitude to my chief supervisor Prof. Dennis Tay, who has provided me with an immense amount of intellectual, psychological, and logistic backup, and guided me into the world of statistical analysis. His life philosophy also greatly influenced me. He was, and will always be, my most important role model in both academia and personal life. I am thankful for my co-supervisor Prof. Kathleen Ahrens, who offered important advice on my confirmation and my PhD study. Her meticulous attitude toward research always inspired me. I am also grateful to Prof. Bernadette Watson and Dr. Margo Turnbull for their helpful suggestions on my research and spiritual support. My sincerest thanks go to Mr. Zongmo Wang, who encouraged me to study language use in mental health communication and offered many precious opportunities for collaboration. His unwavering support and professional input were the most important source of inspiration throughout the years. I would also like to thank the editors and anonymous reviewers who provided in-time feedback and constructive suggestions on some chapters of my thesis, which were submitted earlier as journal articles and book chapter.

This PhD thesis would not have been possible without the 46 participants who signed up for the study. They frankly shared with me their miseries and struggles during the social unrest, when trust between strangers became a very rare thing to come across. I am deeply grateful for their help. I would also like to thank my colleagues in the Department of English and Communication for their intellectual and psychological companionship. Special thanks are due to Jenny Chen, Joanna Chen, Molly Pan, and Zoe Zhou, who colored my little black-and-white world in Hong Kong during the social unrest and the covid era.

Lastly, I want to express my deepest gratitude to Forest Wang. My helper in interrater reliability tests, my husband, and my best friend. He filled my life with unfailing love and encouraged me to pursue my dream. I would not have come this far without him.

Table of Contents

Abstract.....	iv
Publications Arising from the Thesis.....	vii
Acknowledgements.....	viii
Table of Contents.....	x
List of Tables.....	xvi
List of Figures.....	xviii
Chapter 1 Introduction.....	1
1.1 Preliminaries: Trauma, Language, and Metaphor.....	1
1.2 Two Research Gaps.....	4
1.3 Research Background and Data.....	7
1.3.1 The Traumatic Event.....	7
1.3.2 Participants and Data.....	14
1.3.2.1 Participants.....	15
1.3.2.2 Linguistic Data.....	17
1.3.2.3 Psychometric Data.....	19
1.4 Aims of Thesis.....	20
1.5 Structure of Thesis.....	22
1.5.1 Outline of Chapters.....	22
1.5.2 Research Design and Methodology.....	25

Chapter 2 Literature Review	29
2.1 Chapter Introduction.....	29
2.2 Metaphors in Describing Trauma.....	30
2.2.1 Overview of Previous Studies	31
2.2.1.1 Metaphors in Describing Personal Traumatic Experiences	31
2.2.1.2 Metaphors and Psychopathological Experiences of Trauma	34
2.2.2 Summary of Major Research Trends and Gaps	37
2.3 Multifaceted, Presentational Properties of Metaphors	41
2.3.1 Non-substantive Variables and Presentational Features of Metaphors	42
2.3.2 Multifacetedness of Presentational Features	51
2.3.2.1 Systematic, Quantitative Interactions among Multiple Variables	51
2.3.2.2 Exploring Multifaceted, Presentational Properties via a Mixed-method Approach	54
2.4 The Interaction Between Metaphor Use and Psychopathological Experiences	58
2.4.1 Clinically Defined, Psychometrically Measured Post-traumatic Experience.....	59
2.4.2 Differential Psychopathological Experiences and Metaphor Variations.....	64
2.4.2.1 Severities of Psychopathological Disturbances and Metaphor Use.....	64
2.4.2.2 Substantive Experience of Psychopathological Symptoms and Metaphor Use....	70
2.5 Chapter Conclusion	77
Chapter 3 A Mixed-method Analysis of Multifaceted, Presentational Properties of Trauma Metaphors	80

3.1 Chapter Introduction.....	80
3.2 Data and Variables	81
3.2.1 Metaphor Identification	81
3.2.2 Metaphor Variables	87
3.2.2.1 Conventionality.....	88
3.2.2.2 Emotional Valence.....	90
3.2.2.3 Target Categories and Perspectives	90
3.2.3 Inter-rater Reliability	97
3.3 Research Methods and Questions.....	98
3.4 Results and Discussion.....	101
3.4.1 TARGET CATEGORY, CONVENTIONALITY, and EMOTIONAL VALENCE .	101
3.4.1.1 Results of Categorical Data Analysis	101
3.4.1.2 Discussion.....	109
3.4.2 PERSPECTIVE, EMOTIONAL VALENCE, and CONVENTIONALITY	117
3.4.2.1 Results of Categorical Data Analysis	119
3.4.2.2 Discussion.....	124
3.4.3 Summary of Findings	130
3.5 Chapter Conclusion	132
Chapter 4 The Interactions Between Metaphor Use and Severities of Traumatism	136
4.1 Chapter Introduction.....	136
4.2 Data and Variables	138

4.2.1 Linguistic Data	138
4.2.1.1 Metaphor Variables.....	138
4.2.1.2 Descriptive Statistics.....	143
4.2.2 Psychometric Data.....	146
4.2.2.1 Questionnaire Items and Ratings	146
4.2.2.2 Descriptive Statistics.....	148
4.3 Research Questions and Methods.....	151
4.4 Results and Discussion.....	154
4.4.1 Correlations Between Metaphor Use and Overall Degrees of Trauma	155
4.4.1.1 Results of Correlation Analysis	155
4.4.1.2 Discussion.....	156
4.4.2 Correlations Between Metaphor Use and Severities of ASD Symptoms.....	162
4.4.2.1 Results of Correlation Analysis	162
4.4.2.2 Discussion.....	164
4.4.3 Summary of Findings	174
4.5 Chapter Conclusion	176
Chapter 5 An Image Schematic Analysis of Metaphors in Describing ASD Symptoms	180
5.1. Chapter Introduction.....	180
5.2 Participants and Data.....	182
5.3 Research Questions and Methodology	186
5.4 Results and Discussion.....	190

5.4.1 Results of Correspondent Analysis	190
5.4.2 Discussion.....	193
5.4.2.1 Dissociation.....	193
5.4.2.2. Re-experiencing	198
5.4.2.3 Avoidance	203
5.4.2.4 Anxiety and Hyperarousal	205
5.4.2.5 Impairment in Functioning	209
5.4.3 Summary of Findings	210
5.5 Chapter Conclusion	213
Chapter 6 Conclusion.....	217
6.1 Chapter Introduction.....	217
6.2 Summary of Findings and Implications	217
6.2.1 The Linguistic and Clinical Aims	217
6.2.2 Methodological Implications	224
6.3 Limitations.....	228
6.4 Future Directions.....	231
6.4.1 Several Theoretical and Contextual Aspects of Trauma.....	232
6.4.1.1 Metaphors and Other Theoretical Aspects of Trauma	232
6.4.1.2 Trauma Metaphors and Other Contextual Factors	238
6.4.2 Quantitative Analyses of Mental Health Metaphors	240
6.5 Chapter Conclusion	243

References.....	243
Appendix.....	283

List of Tables

Table 1.1 Socio-demographic features of participants	15
Table 2.1 The DSM-IV Criteria for ASD diagnosis	60
Table 3.1 Examples and frequencies of conventional and novel metaphors	89
Table 3.2 Examples and frequencies of the three emotional valences	90
Table 3.3 Examples and frequencies of the eight target categories and two perspectives	95
Table 3.4 Crosstabulation for CONVENTIONALITY, TARGET CATEGORY, PERSPECTIVE and EMOTIONAL VALENCE.....	96
Table 3.5 Crosstabulation of TARGET CATEGORY and EMOTIONAL VALENCE.....	106
Table 3.6 Crosstabulation of TARGET CATEGORY and CONVENTIONALITY	107
Table 3.7 Crosstabulation of PERSPECTIVE and EMOTIONAL VALENCE across different levels of CONVENTIONALITY	122
Table 4.1 Examples and frequencies of potentially trauma-related vehicle groupings and discourse topics	144
Table 4.2 An overview of all metaphor variables and descriptive statistics	145
Table 4.3 Clinical features of the five ASD symptoms and item numbers in the SASRQ..	147
Table 4.4 Descriptive statistics and internal consistencies of full-scale and subscale ratings	149
Table 4.5 Overall SASRQ scores collected from other trauma contexts	150
Table 4.6 Correlations between overall SASRQ scores and symptom scores	152
Table 4.7 Significant correlations between metaphor use and overall SASRQ scores	155
Table 4.8 Significant correlations between metaphor use and the experience of ASD symptoms	163

Table 5.1 Number of subjects with different numbers of clinically present symptoms	183
Table 5.2 Descriptive statistics of the ASD and non-ASD datasets	184
Table 5.3 Johnson's (1987, p.126) inventory of image schemas	189
Table 5.4 Total numbers of image schemas for each ASD symptom	191
Table 5.5 Total numbers of symptom-specific metaphors by symptom and participant	192

List of Figures

Figure 1.1 A photograph of a building in Central on fire, 11 November 2019 (Source: Yuen, 2019).....	10
Figure 1.2 A photograph of campus stairs before the protest (Source: Reojumb, 2017)	12
Figure 1.3 Fires raged around the campus on Monday morning (Source: BBC News).....	13
Figure 1.4 A photograph of trash and debris left at the entrance (Source: Chor, 2019).....	13
Figure 1.5 A diagram of the thesis outline	25
Figure 1.6 Structure of the Multi-level Analysis	26
Figure 2.1 Perspectives and Kopp and Eckstein's (2004) Taxonomy of Targe Categories...	50
Figure 3.1 An Extended Version of Kopp and Eckstein's (2004) Taxonomy of Target Categories.....	92
Figure 3.2 Perspectives and the Extended Taxonomy of Target Categories	94
Figure 3.3 A screenshot of the excel spreadsheet for metaphor variable coding	97
Figure 3.4 A diagram of variable relationships under examination	99
Figure 3.5 An MCA factor plot for the interrelationships among TARGET CATEGORY, CONVENTIONALITY, and EMOTIONAL VALENCE	103
Figure 3.6 An MCA factor plot for the interrelationships among PERSPECTIVE, CONVENTIONALITY, and EMOTIONAL VALENCE	120
Figure 3.7 Statistically significant relationships identified using categorical data analysis.	130
Figure 4.1 A partial screenshot of the Excel spreadsheet for subjects' personal metaphor usage profiles.....	146
Figure 4.2 A simplified version of the Excel spreadsheet for data entered into the correlation analysis.....	153

Figure 5.1 Histograms of psychometric and linguistic data generated by ASD and non-ASD subjects	185
Figure 5.2 Distribution of symptom-specific metaphors across the five ASD participants	193
Figure 5.3 A diagram of the DISABLEMENT schema	194
Figure 5.4 A diagram of the SPLITTING schema	196
Figure 5.5 A diagram for the SUPERIMPOSITION schema.....	197
Figure 5.6 A diagram for the CONATINER schema	199
Figure 5.7 A diagram of the LINK schema (Johnson, 1987, p.118)	200
Figure 5.8 A diagram of the ATTRACTION schema (Johnson, 1987, p.47)	201
Figure 5.9 A diagram of the COMPULSION schema (Johnson, 1987, p.51).....	202
Figure 5.10 A diagram of the LACK OF CONTACT schema.....	203
Figure 5.11 A diagram of the MASS-COUNT schema (in describing the avoidance symptom)	204
Figure 5.12 A diagram of the CYCLE schema (Johnson, 1987, p.120).....	207
Figure 5.13 A diagram of the MASS-COUNT schema (in describing impairment in functioning)	209
Figure 6.1 A synthesized summary of major findings under the two research aims	219
Figure 6.2 Multi-level Analysis of metaphor use in mental health communication	226

Chapter 1 Introduction

1.1 Preliminaries: Trauma, Language, and Metaphor

The past few years have witnessed the occurrence of a long string of traumatic events, such as the Hong Kong social unrest, the Covid-19 pandemic, the 321 MU5735 air crash, and the more recent Russia-Ukraine War. Upon exposure to such traumatic events, people might experience a mixture of overwhelming emotions, including but not limited to anxiety, anger, depression, and confusion. They might also suffer from a series of cognitive and physical disturbances, such as flashbacks and nightmares about the traumatic event, difficulty in sleeping and concentrating, and physical reactions such as headaches and nausea. Usually the symptoms would disappear within days or weeks after the traumatic event (Cardeña & Carlson, 2011); however, it is also possible that the disturbances persist for months and years and develop into trauma-related mental disorders such as adjustment disorder, Acute Stress Disorder (ASD), and Post-traumatic Stress Disorder (PTSD) (American Psychiatric Association, 2013).

Trauma victims' linguistic accounts of their personal experiences and subjective feelings constitute an important source of information for clinical assessment and treatment of trauma (Carlson, 1997; O'Kearney & Perrott, 2006). Among others, a particularly interesting phenomenon is the use of metaphors, which is defined by some linguistic researchers as "the phenomenon whereby we talk and, potentially, think about something in terms of something else" (Semino, 2008, p.1). As traumatic experiences can be highly intense, complex, and sometimes difficult to be described using literal language, it is natural for trauma victims to resort to more experiential concrete to facilitate their self-expression. For example, as noted by Wilson and Lindy (2013),

trauma victims might describe their perceived sense of deprivation as “I am *empty inside*” and difficulty in engaging in meaningful interpersonal communication as “No one can *get close to me*” (p.45). Expressions such as “empty inside” and “get close to me”, which describe abstract and elusive emotional feelings in experientially concrete ways, are referred to as metaphor vehicle terms, and the emotional feelings being described are called target topics¹. People’s choices of vehicle terms and target topics, out of all possible others, could not only reveal the speakers’ painful and very often ineffable experience but also opens a valuable window on their idiosyncratic and implicit ways of perceiving and understanding their personal experiences (Cameron & Maslen, 2010).

From the perspective of post-traumatic growth (PTG; Joseph & Linley, 2006; Tedeschi & Calhoun, 1995), trauma victims’ constant re-evaluations of their self-identity, emotional states, and the surrounding world could be seen as an active attempt to resolve the perceived discontinuity in self-identity and make meaning of their traumatic experiences. Metaphorical language could be a particularly efficient tool for navigating the post-traumatic world. Through the use of metaphors, the relatively alien and fragmented sense of the self and the surrounding world could be interpreted using more concrete world knowledge and familiar life experiences. The metaphorical mapping creates a middle ground between the sudden, unexpected, and incomprehensible emotional state and readily available cognitive resources, so that the metaphorical interpretation of the self and the world could either be integrated into existing storylines and then assimilated into the previously developed life narratives, or introduced as new narrative elements that can be used to transform

¹ In this thesis, terminologies of theoretical aspects of metaphors follow that of the discourse dynamics approach proposed by Cameron and Maslen (2010); nevertheless, the term “topic” is combined with “target domain terms” proposed by Lakoff and Johnson (1980) for the Conceptual Metaphor Theory (CMT) to avoid confusion from thematically categorized topics (that are not necessarily addressed using metaphorical language), which is also an important research topic in the study of trauma narratives and mental health communication.

the existing storyline to accommodate the new changes. Such a process is very likely to reduce the amount of new information to be processed in post-traumatic reflection and facilitate the integration and re-calibration of the self in the light of the traumatic experience. Therefore, trauma victims' metaphor use is recognized as a linguistic phenomenon of clinical and therapeutic importance.

The study of trauma metaphors carries both theoretical significance for metaphor research and practical implications for clinical practices of trauma evaluation and treatment. As traumatic experiences are usually composed of complex emotional, cognitive, and physical/physiological experiences (American Psychiatric Association, 1994, 2013), all of which were identified as crucial contextual factors in structuring metaphor use (Kövecses, 2005, 2010, 2015; Lakoff & Johnson, 1980, 1999; Littlemore, 2019; McMullen, 2008; Tay, 2013), trauma victims' metaphorical accounts of their subjective experiences could provide abundant resources for investigating the dynamic interactions among such factors and their roles in shaping metaphor use and metaphor variations. Compared with other semantic aspects of self-accounts, metaphorical conceptualizations could be less subject to speakers' premeditated control and thus provide more faithful representations of their implicit emotional and thought processes (Plug et al., 2009). Therefore, the study of metaphorical accounts of therapeutically relevant topics and systematic patterns associated with clinically meaningful subjective experiences is also expected to generate useful information for clinical practitioners², evaluation and diagnosis of trauma and the

² *Clinical practitioners* who provide professional mental health treatment are referred to as *psychotherapists*, *therapists*, or *counsellors*; I will use the terms *therapist* and *clinical practitioners* interchangeably in this thesis where relevant. Individuals seeking therapeutic treatment are referred to as *clients* or *patients*. Given that the latter term could also be used to address the treatment-seeking party in non-therapeutic medical settings (i.e., in the treatment of organic diseases such as seizure and Covid-19), and that the study of mental health metaphors covers communication in both therapeutic and non-therapeutic medical settings, when reviewing previous research, I will use the term *clients* to address the treatment-seeking party in therapeutic settings, and *patients* to refer to those in hospital and other medical settings.

formulation of treatment plans. The findings would also be helpful for people with no professional background in psychology and psychotherapy to understand trauma victims' subjective experiences, open up new lines of communication, and provide better social support for trauma victims' self-exploration and recovery (Littlemore, 2019).

1.2 Two Research Gaps

Driven by the recent contextual turn in metaphor research (Low et al., 2010; Steen, 2011; Zanotto et al., 2008) and in the study of mental health metaphors in particular (McMullen, 2008; Tay, 2013, 2017), existing research on trauma metaphors has provided context-situated analyses of linguistic metaphors elicited by specific traumatic events, for example, pregnancy loss, traumatic combat experiences, natural disasters, and the Covid-19 pandemic. Given the theoretical interest in the potential for metaphors to capture nuanced subjective experiences, the studies provided rich and detailed accounts of nuanced qualities of trauma victims' metaphor use in describing their emotional, cognitive, and physical/physiological experiences.

Nevertheless, an overview of existing research points toward two major research gaps. Firstly, previous research on trauma metaphors was mostly in-depth qualitative analyses of substantive features reflected by vehicle terms and target topics; only scant attention has been paid to non-substantive aspects such as emotional valence, conventionality, and perspective-taking, especially the systematic, quantitative interactions between these aspects and substantive features of metaphors. While substantive features of metaphors could provide an immediate sense of how the experiences are conceptualized by the speakers, non-substantive features of metaphors, such as whether an abstract concept is described using conventional or novel metaphors, could capture

how a metaphorical idea is organized and delivered, i.e., the “presentational” (Kovecses, 2015, p.187) properties of metaphors. The systematic instantiations of non-substantive aspects and their interactions with substantive aspects in the presentation of specific target topics and vehicle terms could provide implicit yet important information about the speakers’ characteristic ways of thinking and feeling and their preferred ways of metaphorical meaning-making. Although qualitative analyses manifest irreplaceable advantages in revealing emergent or contextualized features of trauma metaphors and informing specific theoretical aspects of research interest (Moser, 2000; Tay, 2017), sticking to a purely qualitative perspective and overlooking quantitative patterns might cause us to lose sight of some systematic and context-sensitive dynamics underlying trauma victims’ metaphor use.

A research area that lies at the intersection of the two neglected avenues is the systematic instantiations of non-substantive aspects of metaphors in describing substantive aspects of traumatic experiences. A mixed-method analysis of such patterns could not just reveal general and implicit tendencies of metaphor use that are characteristic of the given trauma population but also shed light on contextual characteristics of specific metaphor variables. Abstracting further away from the idiosyncrasies of personal experiences, systematic, quantitative patterns indexed by non-substantive aspects of metaphors could enable a bird’s view perspective on the simultaneous instantiation of and interrelationships among multiple variables and thus provide a “multifaceted” (Moser, 2000) account of presentational properties of trauma metaphor; nuanced, qualitative interpretations of specific linguistic examples could further foreground the particularities of statistically significant patterns of metaphor use. The findings could enable a more holistic and context-situated understanding of trauma metaphors and provide valuable theoretical and practical insights into trauma victims’ metaphor use.

Secondly, existing works on trauma metaphors are noticed with a relative lack of attention toward the interactions between metaphor use and clinically defined, psychometrically validated psychopathological experiences. Although numerous studies have identified trauma victims' subjective experiences as important contextual factors in shaping metaphor use (e.g., Beck, 2016, 2017; Costa & Steen, 2014; Foley, 2015; Littlemore & Turner, 2019, 2020; Wilson & Lindy, 2013), their findings were mainly derived based on in-depth analyses of linguistic data, i.e., metaphors identified from interviews with, or narratives produced by trauma victims. Even though trauma is primarily psychological and psychopathological in nature and the experiences could vary substantially across individuals in terms of severities and varieties, trauma victims' metaphor use was rarely examined for systematic, empirical relationships with individually distinct psychopathological experiences and the subjective experience of differential symptoms.

In fact, the two research gaps are not just observed in the study of trauma metaphors but also hold for research on metaphors in describing other mental health issues. Taking the study of trauma metaphors as an exemplary context, this thesis hopes to illustrate how research into the two directions could generate further theoretical and practical implications for our understanding of trauma metaphors and mental health metaphors as a whole. In this thesis, the two research gaps will be investigated through a case study of trauma metaphors elicited from individuals who were traumatized by the 2019-2020 Hong Kong social unrest. The first research gap will be examined through a mixed method analysis of multifaceted, presentational features of trauma metaphors, and the second will be addressed by a clinically situated analysis of the interactions between trauma victims' metaphor use and their psychopathological experiences, through the incorporation of psychometric data and relevant clinical observations into metaphor analysis. Research into the first direction could contribute to a more comprehensive theoretical understanding of the

contextual characteristics of trauma metaphors and the associated metaphor variables. It could also reveal the potential for non-substantive aspects to capture systematic and context-sensitive features of metaphor use. Explorations into the second direction could provide a clearer view of the role of psychopathological experiences in shaping trauma metaphors, and shed new theoretical light on the contextualized nature of real-world metaphors. Findings derived for the two directions are also expected to provide further and deeper implications for clinical practitioners' understanding and management of trauma metaphors and set the stage for future applications of metaphor analysis in therapeutic and diagnostic contexts.

More information about the research background, including the traumatic event, participants, and the linguistic and psychometric data, will be provided in Section 1.2. The research aims will be elaborated in greater detail in Section 1.3. An outline of chapters and an overview of the research design and methodology will be presented in Section 1.4.

1.3 Research Background and Data

1.3.1 The Traumatic Event

The traumatic event that comprises the context for this thesis is the social unrest that happened in the Hong Kong Special Administrative Region (HKSAR) of China from 2019 to 2020. The social unrest was highly political in nature (Shek, 2020). It began with a series of public protests, which were launched by pro-democracy activists³ in response to a proposed extradition

³ Politics in Hong Kong is dominated by major political camps: the pro-establishment camp, also known as the blue camp, is generally supportive of the HKSAR government and the Chinese central government, and the pro-democracy camp, also known as the yellow camp, often holds non-cooperative and sometimes even confrontational attitudes toward the governments' policies.

bill to transfer fugitives to jurisdictions including Taiwan, Macao, and the Chinese Mainland; therefore, it is also known as the Anti-Extradition Law Amendment Bill Movement.

The protests began rather peacefully with the pro-democracy activists' sit-in at the HKSAR government headquarters in March 2019 and a series of mass demonstrations launched later in June, accusing the HKSAR government of undermining Hong Kong's autonomy under the "one country, two systems"⁴ constitutional principle. Starting from mid-2019, the pro-democracy activists organized more violent protests to push for the withdrawal of the extradition bill and against the perceived excessive use of force by the Hong Kong Police Force when handling the protests. Five key demands were raised, including the full withdrawal of the extradition bill, universal suffrage, inquiry into police brutality, amnesty for arrested protestors, and retraction of their classification as rioters. To allay public concerns, Carrie Lam, the Chief Executive of the HKSAR government, withdrew the extradition bill in September 2019 but refused to respond to the other four demands ("Lam Withdraws HK Extradition Bill", 2019). However, the pro-democracy activist group did not see the response as sufficient; they then launched even more massive and intense protests to push for the realization of all five demands (Inocencio, 2019).

The protests led to months of violence and destruction towards the end of 2019, which is the time when data collection for this thesis began. The protesters' primary target included the HKSAR government and its supporters, Hong Kong police, citizens in support of the "blue" camp, and mainland Chinese immigrants. The protests caused extensive vandalism and property damage across the city: from June to December 2019, 740 sets of traffic lights were vandalized, 52.8km of

⁴ "One country, two systems" describes the governance of Hong Kong and Macau, which became Special Administrative Regions of the People's Republic of China in 1997 and 1999, respectively. It indicates that while the Mainland of China adopts the socialist system with Chinese characteristics, the two special administrative regions, under the principle of "one China", could retain their own governmental systems and legal, economic and financial affairs, independent from those of the mainland.

railings along walkways and about 21,800 square meters of paving blocks on footpaths were removed (Yau, 2020), and 85 Mass Transit Railway stations and 68 Light Railway stations were damaged. Both physical and verbal assault was used to “informally settle interpersonal conflicts” (Shek, 2020, p.621). Some radical protesters resorted to weapons such as metal bars, tear gas, self-made bombs and arrows, catapults, and petrol bombs, causing injuries and deaths of the police, government supporters, and local residents who did not support the protests or hold contrary political opinions (“Tang Ping-keung: 7,019 have been Arrested since the Anti-amendment Incident”, 2020). Massive protests were also launched to occupy public places such as the Hong Kong International Airport, railway stations, the Legislative Council Building, and several local universities. To disperse the protesters and self-defense, Hong Kong police deployed anti-riot equipment like tear gas, rubber bullets, water cannon, and pepper spray. This, however, has also sparked another round of widespread accusations of the police using excessive force.

At the most violent stage of the social unrest, classes at schools and onsite work had been suspended for safety concerns, and the public was urged by the government to avoid outdoor activities (The Government of the HKSAR Press Releases, 2019). Numerous countries, including but not limited to the US, UK, Australia, and South Korea, had issued travel warnings or raised the alert level for Hong Kong in response to several consecutive weeks of protests (“Hong Kong Airport on Alert Ahead of Fresh Wave of Protests”, 2020). The social unrest had caused huge economic loss and disruptions in the social order, leading to a sharp decline in public confidence in the Hong Kong government (Keating & Reinhart, 2020).

Figure 1.1 shows a picture of a building in Central, painted with a life-threatening slogan and set on fire by the protesters on 11 November 2019.

Figure 1.1. A photograph of a building in Central on fire, 11 November 2019 (Source: Yuen, 2019)



The social unrest also left profound negative impacts on Hong Kong citizens' mental health and interpersonal relationships. Exposure to violence and physical assault caused a widespread sense of fear, frustration, and lack of certainty, leaving a significant impact on residents' psychological wellbeing; the overemphasis on political divergences (i.e., the "blue" versus "yellow" conflict) in personal life also added to the polarization of the society, confrontations between different social groups, and disintegration of family and friends (Ng, 2020). According to a longitudinal study conducted by Ni et al. (2020), mental health crisis was pervasive among Hong Kong residents during the 2019-2020 social unrest: the estimated rate of probable depression was 11.2%, corresponding to a relative increase of 70% (300,000 adults) compared with pre-unrest

data; the prevalence of post-traumatic symptoms rose from 16.6% to 31.6% during the year, and the rate of suspected PTSD related to the social unrest was 12.8% (approximately 810,000 people). The psychological impact is largely comparable to what was previously found for the experience of large-scale natural disasters, armed conflicts, or terrorist attacks (Ni et al., 2020).

A wide range of people reported acute stress symptoms, including residents of the affected areas, people who were exposed to trauma-related media reports, those working in protest-related occupations such as doctors, nurses, police, media workers, and street cleaners, and the protesters as well⁵; immediate reactions include sleep difficulties, intrusive thoughts, and dissociative experiences (Mogul, 2019). Those with established mental health problems also reported heightened flashbacks, hypervigilance, and dissociation as a result of media exposure to street violence (Ng, 2020). The violent protester-police confrontations have noticeable perceived similarities with military conflicts in frontline war zones; as the psychological impact of the latter might sometimes manifest weeks or months after the combat, mental health practitioners also warned about the possibility for the social unrest to have delayed effects (Ng, 2020).

The traumatic event that comprises the context for this thesis is a large-scale protest activity in which the campus and vicinity of a local university were illegally occupied and vandalized by pro-democracy activists. The occupation lasted 13 days, from 17 to 29 November, 2019, although radical protests and vandalism in the vicinity started much earlier (Yiu, 2021). Dangerous chemicals, petrol bombs, and other weapons were used during the illegal occupation and in the

⁵ Partly due to the electoral success of the pro-democracy camp in the 2019 District Council election at the end of November and partly the quick and coordinated response from the police, the intensity and frequency of protests gradually went down at the end of the year. The protests further died down since the outbreak of the COVID-19 pandemic in early 2020. The society was eventually restored to peace and stability after the implementation of the National Security Law later on June 30, 2020 (The Government of the HKSAR Press Releases, 2021).

protesters' confrontations with riot police (Mok, 2019). Buildings, campus facilities, and laboratories were severely damaged, causing immeasurable loss to research projects (Cheung, 2019). By the end of the occupation, over 1,300 protesters were arrested, and about 300 were sent to the hospital due to injury or physical discomfort (Leung, 2022).

The adversities understandably caused severe psychological distress to students and staff in the university and citizens in the neighborhood; it also raised serious domestic and international concerns. Pictures of the campus entrance before, during, and after the illegal occupation are shown below. Figure 1.2 shows the original appearance of the campus stairs. Figure 1.3 is a picture of the protesters blocking the stairs and setting the campus on fire using petrol bombs and other explosives, taken on the morning of November 18, 2019. Figure 1.4 shows the trash and debris left at the entrance after the protesters were urged to leave the campus.

Figure 1.2 A photograph of campus stairs before the protest (Source: Reojumb, 2017)



Figure 1.3 Fires raged around the campus on Monday morning (Source: BBC News, 2019)



Figure 1.4 Photograph of trash and debris left at the entrance (Source: Chor, 2019)



This thesis focuses specifically on metaphor use by trauma victims from the Chinese Mainland, which constituted a significant proportion of the trauma population. As the social unrest brought forth a set of social and political views that were drastically different from the mainstream Chinese mainland values, this group of people was more likely to experience intense internal conflicts and interpersonal tensions. Owing to some salient sociocultural features, such as nationality, language, accent, and political stance, they were also more likely to become the target of radical protest activities or perceive greater malevolence or danger from the broader social environment and thus develop more severe psychological distress. More details about the participants' demographic characteristics and data collection will be provided in the following section.

1.3.2 Participants and Data

Data collection for this thesis began after a large-scale protest that was commonly experienced by all recruited participants. To ensure precise measurement of ASD, the period of data collection was restricted to four weeks from the end of the traumatic event, from Dec 12 to Dec 30, 2019. Given the tense social climate and potential risks of outdoor activities, potential participants were recruited using convenience sampling, either from online social networking groups set up by the focus population or snowball sampling among their acquaintances. Demographic features of the participants will be introduced in Section 1.3.2.1. Details about the linguistic data collected via semi-structured interviews and psychometric data collected using a self-report questionnaire will be provided in Sections 1.3.2.2 and 1.3.2.3, respectively.

1.3.2.1 Participants

Participants were selected from those who signed up for the research based on the clinical definition of trauma exposure in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association, 2013), which requires the subject to have recently witnessed or experienced actual or threatened death, or serious injury. While many local residents might have experienced psychosocial stressors such as negative emotions aroused by social media and interpersonal tensions, such experiences did not involve immediate life threats or physical injuries and are thus not considered as trauma following the APA definition. After the screening interview, forty-six participants were considered qualified and invited to this study; their socio-demographic features were summarized in Table 1.1.

Socio-demographic features of the 46 participants	
Gender	33 Female and 13 Male
National origin	The Chinese Mainland
Native language	Mandarin Chinese
Age	22 to 39 (Mean=26.61, SD=4.52)
Educational background	Undergraduate or above

Table 1.1. Socio-demographic features of participants

The participants included thirty-three females and thirteen males, all of whom had either witnessed or experienced violence, physical assault, and life-threatening events within two days to four weeks from data collection. All participants were Mainland Chinese, and their native language was Mandarin Chinese. All participants were students or staff of the university or residents of the neighborhood. All had received undergraduate education or above, and their age

ranged from 22 to 39 ($M=26.61$, $SD=4.52$). Due to the intense social atmosphere, participants' political stances were not solicited; nevertheless, all agreed that their life and emotions had been greatly affected by the social unrest and identified themselves as victims of the social unrest. None of the participants had a psychology or psychotherapy background, nor did they have experience in metaphor research; therefore, their descriptions of psychopathological experiences could be regarded as adequate reflections of their personal, spontaneous reactions toward trauma exposure rather than theory-based descriptions of trauma and symptoms. It is important to note that this study is based on a relatively small sample collected using convenience sampling, which means the subjects' demographic characteristics were relatively homogeneous (refer to Chapter 6 for a synthesized summary of limitations); therefore, caution needs to be exercised when generalizing the conclusions to other research contexts.

Prior to the commencement of this study, ethical approval had been obtained from the Human Subjects Ethics Sub-Committee of the Hong Kong Polytechnic University (HSEARS20191211001). Assurances of anonymity, confidentiality, and the right to withdraw were ensured for all participants and written informed consent was obtained. Participants were also offered access to counseling support if they reported negative interview experiences and the need for professional help. Nevertheless, none of them reported negative feelings or raised the need for counseling support at the completion of the study.

Data collection started with a briefing on the major purpose and procedure of the research. After that, the participants were invited to a 20- to 30-minute semi-structured interview to talk about their subjective experience during the social unrest; the interviews were later transcribed into written text and examined for the metaphors they contained. Shortly after the interview, the participants also had their traumatic experiences measured using a psychometric questionnaire.

Due to the unstable social situation and participants' concerns for personal safety, both the semi-interviews and questionnaires were administered online. The audio interviews were conducted via Wechat, a popular social media platform among mainland Chinese, and the questionnaires were distributed via Wenjuanxing⁶ (“问卷星”), a Chinese online questionnaire platform.

1.3.2.2 Linguistic Data

Linguistic data examined in this these were collected using semi-structured interviews with qualified participants. The aim was to probe into the participants' personal traumatic experiences, especially their subjective thoughts, emotions, and feelings. The interview questions were carefully prepared in close consultation with a registered therapist of the Chinese Psychological Association (CPA) who has 20 years of experience in trauma treatment. All interviews were conducted by the author of the thesis, who has a recognized qualification in psychotherapy from the Chinese Mainland and five years' experience of conducting interviews in mental health institutes. The questions were phrased in an emotionally neutral and open-ended way. Example questions include “What were the moments that impressed you the most?”, “What were your immediate feelings”, “Could you elaborate on your emotional experiences during that time?”, and “How has your life changed since the traumatic event?”.

The interviewees were encouraged to describe their subjective experiences in as much detail as possible. Since the interview was designed to elicit trauma victims' natural use of metaphors rather than extract a metaphorical model of their traumatic experiences, the interviewees were not guided or instructed to use metaphorical expressions or talk about any specific aspects of the

⁶ <https://www.wjx.cn/> (accessed on April 15, 2022)

traumatic experience (cf. Gök & Kara, 2021; Stanley et al., 2021). Metaphorical language was carefully avoided in the interviewer's wording of prepared questions, and spontaneous clarifying questions were phrased mainly using the interviewee's expressions to avoid the interference of interviewer-generated metaphors.

All interviews were conducted in Mandarin Chinese, the native language of both the interviewer and the interviewees. The interviews were recorded with additional verbal consent from the interviewees. The total length of recordings was about 1,000 minutes (16.67 hours), and the average length per interview was 21.72 minutes. The recordings were then transcribed into written text for further analysis. The software *Xunfei Tingjian* (“讯飞听见”)⁷ was used to assist the transcription. Transcripts generated by the software were then proofread by the author of this thesis while listening to the recordings; errors were corrected manually. Since this study focuses exclusively on the interviewees' use of linguistic metaphors, intonation contours and paralinguistic cues such as laughers, cries, and sighs were not coded.

The transcripts consisted of 207,959 Chinese characters, among which 177,981 were produced by the interviewees ($M=3,869$ per interview, $SD=1,751$). The transcripts were then examined for the metaphors they contained following the discourse dynamics approach proposed by Cameron and Maslen (2010); the metaphor identification procedure will be described in detail using linguistic examples in Section 3.2.2. Metaphors thus identified were then examined in terms of several different variables that are theoretically or clinically interesting to the study of trauma metaphors. As each main body chapter (i.e., Chapters 3, 4, and 5) probes into different aspects of

⁷ <https://www.iflyrec.com/> (accessed on April 15, 2022)

metaphors, introductions to the metaphor variables, operational definitions, linguistic examples, and descriptive data will be presented in corresponding chapters.

1.3.2.3 Psychometric Data

As mentioned earlier, the collection of psychometric data focuses on the potential incidence of ASD⁸, which is defined as “an intense, unpleasant, and dysfunctional reaction beginning shortly after an overwhelming traumatic event and lasting less than a month” (Barnhill, 2020) (refer to Section 2.4.1 for a more specified clinical definition).

The Stanford Acute Stress Reaction Questionnaire (SASRQ)⁹, designed by Cardeña and colleagues (2000), was used to measure the participants’ experiences of Acute post-traumatic stress reactions, including their overall degrees of trauma and experiences of more specific clinical symptoms. To ensure that the participants’ accounts of traumatic experiences were not influenced by the description of symptoms in the questionnaire, the questionnaire was administered shortly after the interview. The questionnaire was developed based on the DSM-IV diagnostic criteria for ASD (American Psychology Association, 1994). The questionnaire is a robust and reliable measure of acute stress reactions triggered by various traumatizing events (Lötvald et al., 2022). The Chinese version of SASRQ was translated by Hou (2008). Both the original questionnaire and the Chinese translated version were reported to have good reliability and validity (Cardeña et al., 2000; Lötvald et al., 2022; Luo et al., 2021). The questionnaire also showed strong predictive power

⁸ The diagnosis of PTSD does not apply to the current research context, as it requires relevant symptoms to last for at least a month after trauma exposure (American Psychiatric Association, 2013).

⁹ A new version of the SASRQ (i.e., the SASRQ-II) that conforms to the latest DSM-V criteria (American Psychiatric Association, 2013) is now available (Palmborg et al., 2020).

for later PTSD symptomatology, depression, anxiety, and diverse psychological and medical outcomes (Lötvald et al., 2022).

The SASRQ consists of five subscales that measure the subjects' experience of the five major symptoms proposed by DSM-IV, including dissociation, re-experiencing, avoidance, and anxiety and hyperarousal, and an additional subscale on "impairment in functioning". The questionnaire includes a total of 30 items, and each is rated on a 6-point scale from 0 to 5 (0=not experienced, 5=very often experienced). Subjects' ratings could be calculated either continuously to measure the overall degrees of trauma and severities of more specific symptoms, or dichotomously to check the clinical presence of ASD and symptoms (refer to Section 4.2.2 for details about the questionnaire items and ratings). As Chapters 4 and 5 of this thesis examine the two dimensions of traumatic experiences in relation to different aspects of metaphor use, more details about the ratings and descriptive statistics will be presented later in the corresponding chapters.

1.4 Aims of Thesis

Based on the linguistic data generated from semi-structured interviews and psychometric data about the subjects' overall degrees of trauma and their experiences of the five ASD symptoms, this thesis presents a case study of metaphor use by 46 trauma victims of the 2019-2020 Hong Kong social unrest.

The primary, linguistic aim is to investigate the contextual characteristics of trauma victims' metaphor use. In accordance with the two major research gaps summarized earlier in Section 1.1, two specific theoretical aims will be addressed. The first is to explore the multifaceted, presentational features of trauma metaphors reflected by systematic, quantitative interactions

among multiple aspects of metaphors, both substantive and non-substantive included. The second is to investigate the potential interactions between trauma victims' metaphor use and clinically defined, psychometrically validated psychopathological experiences, including overall degrees of trauma, severities of specific ASD symptoms, and subjective experiences of differential symptoms. The findings are expected to lead to a more comprehensive understanding of the contextual characteristics of trauma metaphors and shed new theoretical light on the role of psychopathological experiences in shaping metaphor use.

A secondary, clinical aim of this thesis is to explore the potential clinical relevance of metaphorical language in trauma assessment, diagnosis, and treatment. As this issue was rarely investigated in clinically oriented trauma research¹⁰, findings derived from this thesis are expected to provide useful information for mental health practitioners' understanding of client-generated metaphors (Kopp, 1995) in the assessment and subsequent treatment of trauma and set the stage for future applications of metaphor analysis in therapeutic and diagnostic contexts.

In addition to the linguistic and clinical aims, this thesis also makes some specific methodological points. Firstly, I will demonstrate how our understanding of trauma and mental health metaphors could be further advanced through the integration of quantitative methods, such as categorical data analytic methods and correlation analysis, into qualitative discourse analysis. This point will be made in addressing both the two linguistic aims. The second point will be realized by pursuing the second linguistic aim: through the incorporation of psychometric data and relevant clinical observations into metaphor analysis, I will show how the adoption of a clinically

¹⁰ Quite a few studies have investigated trauma metaphors in the therapeutic context, i.e., how therapists build upon trauma metaphors generated by the client or generate new metaphors for therapeutic purpose (e.g., Grove & Panzer, 1989; Haen, 2020; Rhodes & Jakes, 2004; Stott et al., 2010; Witztum et al., 1986).

situated perspective in metaphor analysis could bring new theoretical and practical insights into the contextualized nature of mental health metaphors. The third and more overarching methodological point is to demonstrate how a multi-level analysis, constituted by metaphor-level analysis, subject-level analysis, and disorder/symptom-level analysis, could enable a more integrated view of trauma metaphors and their interactions with the speakers' psychopathological experiences; this point will be further explained in the next section based on a more detailed introduction to the main body chapters.

1.5 Structure of Thesis

This section introduces the structure of this thesis. Section 1.5.1 offers an outline of chapters, with special attention on how the main body chapters accomplish different linguistic aims through different research methods and how they address the clinical aims. A summary of the research design and methodology will be provided in Section 1.5.2.

1.5.1 Outline of Chapters

Chapter 2 sets the ground for this thesis by providing an overview of existing studies, identifying major research trends, and suggesting feasible ways to address the research gaps. I will first present a critical review of existing research on trauma metaphors and summarize two major research trends and gaps. With reference to theoretical and methodological insights gleaned from clinical research on trauma language and previous studies of mental health metaphors, I will suggest possible approaches for advancing research in the two directions, which are to be demonstrated in Chapters 3, 4, and 5 in turn.

Chapter 3 addresses the first theoretical aim, which is to explore the multifaceted, presentational properties of trauma metaphors indexed by non-presentational variables. A mixed-method analysis will be conducted to examine the contextualized instantiations of EMOTIONAL VALENCE and CONVENTIONALITY in describing eight therapeutically interesting TARGET CATEGORIES and in metaphorical meaning-making from different psychological PERSPECTIVES. Firstly, categorical data analysis will be adopted to investigate whether the selection of one metaphor variable tends to co-occur with the use of other variables; the interrelationships among the variables will also be visualized using Multiple Correspondence Analysis (MCA) plots. Statistically significant metaphor usage patterns, i.e., higher-order and bivariate associations, will then be illustrated using genuine linguistic examples, interpreted from a qualitative discourse analytic perspective, and discussed in terms of the theoretical insights they generate for metaphor research and the practical implications for the clinical understanding of trauma metaphors.

While Chapter 3 addresses typical metaphor theoretical questions without considering any clinical input, Chapters 4 and 5 set out to explore the interface of the linguistic dimension and the psychopathological dimension of trauma metaphor; the focus is shifted from the linguistic dimension of trauma metaphors to the intersection between trauma victims' metaphor use and their subjective experience of trauma as measured by the SASRQ. Similar to Chapter 3, Chapter 4 also follows a mixed-method approach that combines quantitative research methods and qualitative discourse analysis. Contextualizing the subjects' metaphors in a specific clinical situation of trauma evaluation, Chapter 4 will explore how differential degrees of trauma and severities of more specific ASD symptoms prompt the participants to present their metaphorical ideas in differential manners. Correlation analyses will be performed to identify which aspects of metaphor

use are significantly related to the subjects' SASRQ scores; the statistical analyses will then be supplemented with discourse analytic interpretations of linguistic examples and further discussed based on some tentative theoretical inferences drawn from existing research on trauma symptomatology, trauma narratives and metaphors, and mental health metaphors.

Chapter 5 addresses the second theoretical aim by further contextualizing the use of trauma metaphors into an even more specialized clinical situation of ASD and symptom diagnosis. In contrast to Chapter 4, which places more emphasis on quantitative interactions between traumatic experiences and metaphor use, Chapter 5 investigates how substantive experiences of different ASD symptoms are likely to prime specific conceptual elements into trauma victims' metaphors. To extract expressions that are sufficiently representative of the psychopathological experiences, the study presents a more focused qualitative analysis of symptom-specific metaphors produced by subjects who met the diagnostic criteria of ASD as measured by the SASRQ. An image schematic analysis is conducted in cooperation with a therapist who specializes in trauma treatment. Metaphors produced by qualified subjects are first examined for their relevance to the five ASD symptoms; those directly relevant to the symptoms are then identified for underlying image schemas. Symptom-specific image schematic patterns are derived through a correspondent analysis (Tay, 2016) that juxtaposes linguistic observations and psychological insights. Based on an in-depth qualitative analysis, I will show how the dominant image schematic patterns shed light on the experiential and cognitive nature of symptom-specific metaphors, and discuss how the findings reflect and deepen prevalent clinical understandings of corresponding symptoms and ASD.

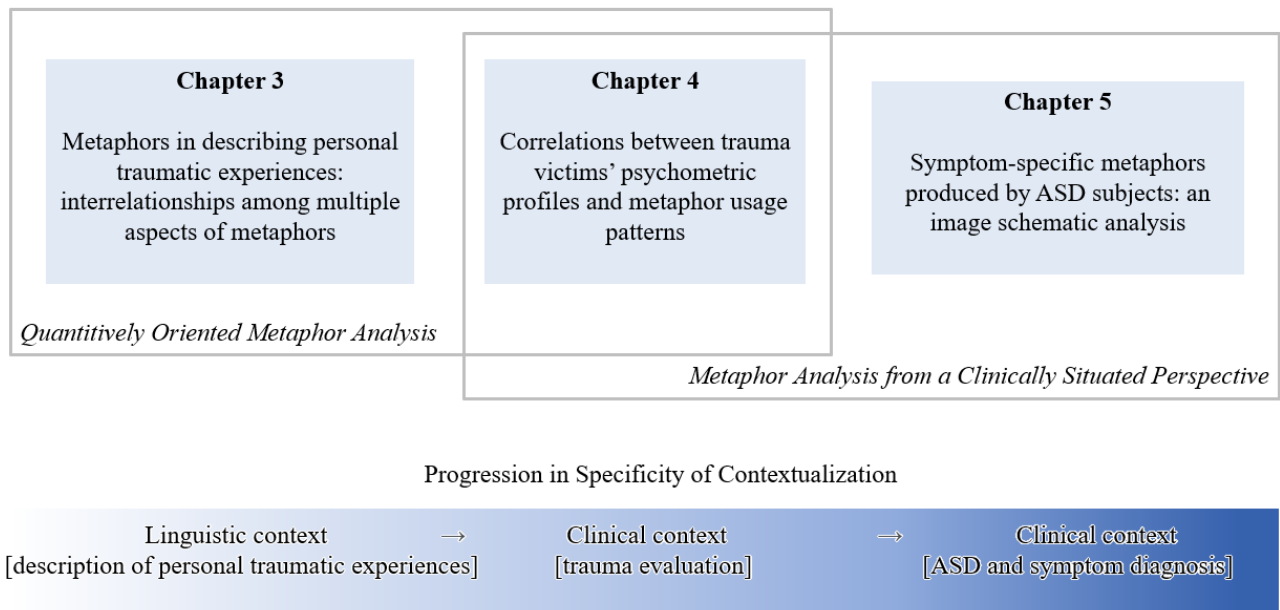
Chapter 6 concludes this thesis with a synthesized summary of the present research project and an outlook on future research directions. I will first present a synthesized summary of major

findings and implications of the three main body chapters, and a critical reflection on key limitations that are not visible at the level of individual chapters. I will also suggest some future research avenues for the study of trauma and mental health metaphors.

1.5.2 Research Design and Methodology

This section provides an overarching view of the research design and methodology. Research questions addressed by each main body chapter and the research methods will be introduced later in Sections 3.3, 4.3, and 5.3. A diagram that represents the outline of the main body chapters is presented in Figure 1.5.

Figure 1.5. A diagram of the thesis outline

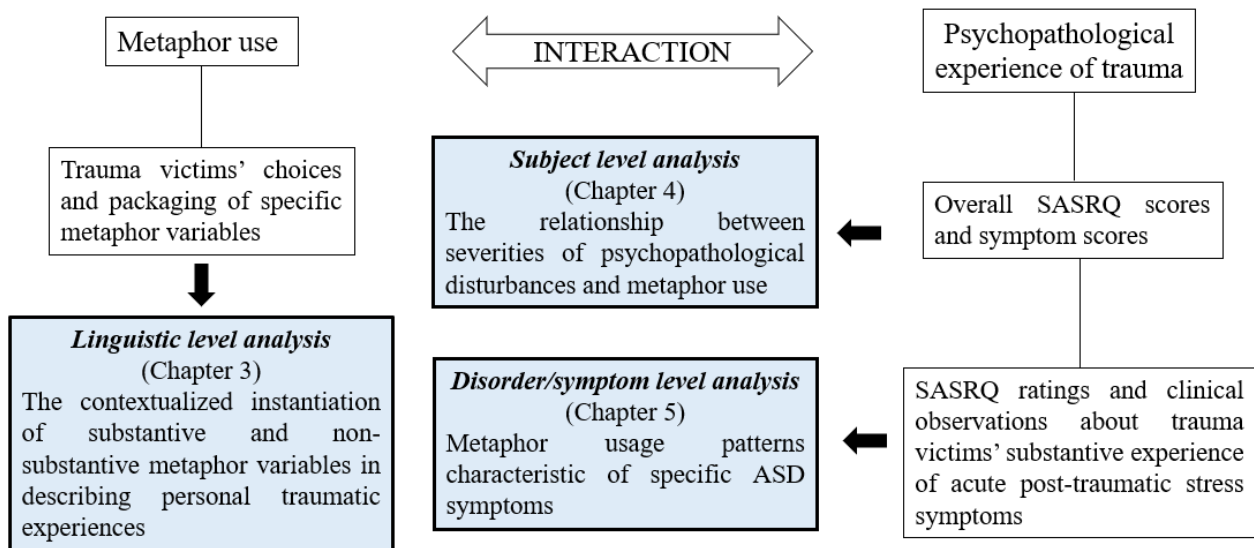


Through the combination of quantitative research methods and qualitative metaphor analysis, Chapters 3 and 4 aim to demonstrate how the combination of statistical methods and qualitative discourse analysis could lead to new theoretical and practical insights for the study of

real-world metaphors and mental health metaphors in particular. Chapters 4 and 5 showcase the methodological strengths of incorporating interdisciplinary data and research methods in advancing our theoretical and clinical understanding of trauma metaphors: Chapter 4 shows how the scope of quantitatively-oriented metaphor analysis, as exemplified in Chapter 3, could be further broadened through the incorporation of quantitative psychometric data, whereas Chapter 5 gives a sense of how traditional qualitative metaphor analysis could also benefit from the incorporation of qualitative psychometric data and clinical observations about specific types of ASD reactions.

Through the exploration of different types of linguistic and psychometric data, the three main body chapters capture three distinct yet interrelated levels of metaphor use. The components of the multi-level analysis and research questions to be answered by each analysis are summarized in Figure 1.6 below.

Figure 1.6 Structure of the multi-level analysis



Taking different metaphor variables as the units of analysis, Chapter 3 examines the contextualized instantiation of substantive and non-substantive aspects of metaphors in describing

personal traumatic experiences. As the study examines trauma victims' choices and packaging of metaphor variables without taking clinical data into consideration, it is labelled as a "linguistic level analysis". Chapters 4 and 5 investigate the potential interactions between trauma victims' metaphor use and their psychopathological experiences of trauma. Situated in the clinical scenario of trauma evaluation, Chapter 4 focuses on the relationships between each subject's personal metaphor usage patterns and psychological profiles; it could thus be regarded as a "subject level analysis". Based on the psychometric indicators entered into the correlation analysis (i.e., overall SASRQ scores that indicate the subjects' psychological conditions and the subscale scores that reflect the severities of specific symptoms), the study could be further divided into condition-based and symptom-based analyses. Situated in a more specialized clinical situation of ASD and symptom diagnosis, Chapter 5 is organized along the axis of ASD symptoms that jointly make up the psychopathological manifestations of ASD, it is thus labeled as a "disorder/symptom level analysis". The three analyses together comprise a multi-level analysis that contributes to a more holistic view of the contextual dynamics underlying trauma metaphors. The analysis also outlines a feasible model for analyzing metaphor use associated with specific mental health disorders.

We can see that the three chapters also exhibit a gradual progression in specificity regarding the contextualization of metaphor use. Chapter 3 examines trauma victims' metaphor use in describing their personal traumatic experiences, whereas Chapters 4 and 5 zoom in on more specialized clinical scenarios of trauma and symptom evaluation and ASD diagnosis, respectively. This methodological design could be seen as a response to recent calls for situating metaphor research and the study of mental health metaphors in particular into more specialized contexts (e.g., Low et al., 2010; McMullen, 2008; Steen, 2011; Tay, 2013, 2016; Zanotto et al., 2008). At a more general theoretical and methodological level, this thesis could also be seen as a response to recent

calls for cognitive linguistic research and metaphor studies to shift toward a socio-culturally situated perspective (Frank, 2008; Geeraerts et al., 2008; Tay, 2021a). Through a case study of people's spontaneous use of metaphors in response to a traumatic event, this thesis exemplifies how real-life events situated in specific sociocultural contexts, especially large-scale crisis events, could provide valuable opportunities for theoretical investigations of contextualized metaphors and generate inspirations for practical applications of metaphor research findings. The juxtaposition of linguistic and psychometric data could be conceived as an attempt to follow the "cognitive commitment" (Lakoff, 1990, p.40) proposed for cognitive linguistics as a whole, i.e., the commitment to describe and explain linguistic phenomena that is consistent with insights about the human mind and brain derived from neighboring disciplines, such as psychology, psychotherapy, neuroscience, and artificial intelligence.

Chapter 2 Literature Review

2.1 Chapter Introduction

As introduced in Chapter 1, trauma victims' use of metaphorical language provides fertile resources for exploring the contextualized characteristics of real-world metaphors. As the expressions represent trauma victims' "deep internal states rooted in the complex, cognitive-emotional processing" of difficult life experiences (Wilson & Lindy, 2013, p.3), they could also provide useful information for clinical understanding, assessment, and treatment of trauma. How trauma victims use metaphors to describe their subjective experiences, therefore, has been a topic of theoretical interest for metaphor researchers and an issue of clinical importance for clinical psychologists. This chapter provides a critical review of previous studies on trauma metaphors, summarizes the major research trends and gaps, and suggests possible approaches for advancing research in the proposed directions with reference to relevant studies in other contexts of mental health communication.

Existing research offered rich and detailed descriptions of trauma victims' metaphor use in response to various traumatic events. Quite a number of studies have examined trauma metaphors in describing their personal traumatic experiences, including emotional feelings, cognitive disturbances, and physical experiences that came along with the traumatic events; some had a narrower focus on metaphor usage patterns associated with psychopathological experiences of trauma-related disorders and symptoms. Section 2.2 presents a comprehensive review of the two strands of research and explains how they led up to the two major research gaps summarized earlier in Chapter 1, i.e., the lack of attention to multifaceted, presentational features of trauma metaphors,

and the negligence of the potential role of clinically defined psychopathological experiences in shaping metaphor use. The two research gaps, together with possible ways to address them, will then be discussed in greater detail in Sections 2.3 and 2.4, respectively.

In Section 2.3, I will elaborate on my first argument that existing research on trauma metaphors could be furthered through the study of systematic interactions among different non-substantive aspects, which could extend the scope of analysis from substantive features to the multifaceted, presentational properties of metaphor use. In Section 2.4, I will elaborate on the second major argument that psychopathological experiences of mental health disorders, such as acute post-traumatic stress reactions, could be an important yet often neglected contextual factor in shaping metaphor use. I will also suggest potential directions for research along this line. Lastly, Section 2.5 provides a summary of major arguments and solutions proposed in this chapter and some further clarifications on the research aims and expected findings.

2.2 Metaphors in Describing Trauma

Section 2.2.1 provides a comprehensive review of existing studies on trauma metaphors. The two abovementioned strands of research, i.e., the study of metaphors in describing personal traumatic experiences and the study of metaphor usage patterns associated with psychopathological experiences of trauma, will be examined in Sections 2.2.1.1 and 2.2.1.2, respectively. A synthesized summary of the research trends and research gaps will be provided in Section 2.2.2.

2.2.1 Overview of Previous Studies

2.2.1.1 Metaphors in Describing Personal Traumatic Experiences

Quite a number of studies on trauma metaphors concentrated on people's descriptions of nuanced subjective experiences of specific traumatic events. As is noticed for metaphor use in mental health communication in general (e.g., Fine et al., 1973; Kövecses, 2004; Littlemore, 2019; McMullen, 2008; Tay, 2013; Siegelman, 1990), trauma victims often resort to concrete physical experiences and tangible objects to describe emotions and thoughts induced by the traumatic event, such as the altered sense of self, perceived changes in life, and the process of coping with non-adaptive emotions. For example, in an in-depth qualitative study of CONTROL metaphors produced by 14 trauma victims of earthquakes, Tay (2014) noted that the speakers often draw upon the loss of physical control over the self and the surrounding environment and interpret the uncertainties in their life and the sense of frustration using metaphors such as “the whole ground had shifted” (p.91) and “it was that unknown in the dark” (p.93). In a cross-cultural comparative study of metaphors in describing traumatic experiences of natural disasters, Rechsteiner et al. (2019, 2020) found that both universal embodied experiences (e.g., burden, shock, and wound) and culturally distinct experiences (e.g., physical interactions with the natural environment and religious beliefs) were used as metaphor vehicle terms in conceptualizing the physical, emotional, and cognitive impacts of the traumatic event. Also taking a cross-cultural comparative perspective, Meili et al. (2019) examined metaphors in describing the process of coping with and overcoming traumatic experiences. Consistent with the findings of Rechsteiner et al. (2019, 2020), both commonly shared physical experiences (e.g., balance, changed perspective, collective cohesion, and journey) and culturally salient religious beliefs (e.g., “tests from God”) were identified as key components of trauma victims' metaphorical thinking.

Apart from converting complex and abstract concepts into concrete and familiar experiences, metaphors could also provide an alternative frame of reference that enables the speaker to talk about difficult emotions and not openly discussable thoughts and experiences without re-experiencing the emotional inflictions (Busch, 2020; Stroińska, 2014). A group of studies focused specifically on how metaphors are used to describe traumatic experiences that are taboo in the social sense and thus not directly expressible in literal language; typical examples include sexual assault, bereavement, and pregnancy loss. A topic of most research interest is trauma victims' conceptualizations of "unspeakable" emotions and thoughts. A series of studies conducted by Littlemore, Turner, and colleagues offered comprehensive and detailed analyses of metaphors in describing women's painful, taboo experiences of pregnancy loss, for example, how pregnancy loss influenced their perceptions of the self, body, and reality (Littlemore & Turner, 2020) and how the bereaved and their families understand the loss and its impact on self and time perception (Turner et al., 2020). Littlemore and Turner (2019) also provided in-depth analyses of metaphor usage patterns that are characteristic of different stages of pregnancy loss, such as receiving the diagnosis, decision-making on specific clinical issues, and the eventual funerals, rites, and rituals; embodied experiences, among other potential vehicle terms, were found to play a particularly important role in the conceptualization of bereavement, grieving, and complex thought processes associated with the painful, isolating experience.

The centrality of embodied experiences in metaphORIZING traumatic experiences was also observed in other traumatic contexts. Based on an analysis of metaphors produced by twenty bereaved family caregivers of covid-patients, Guité-Verret et al. (2021) found that the traumatic

experience of bereavement is often interpreted as experiences of being physically CUT OFF¹¹ from the world, emotions being BLOCKED or the bereaved being BLOCKED from their loved ones, and being struck by WAVES of shocks; the expressions not only provide an accurate reflection of the bereaved's emotional disturbances, but also reveal their latent psychological needs for social connection, reconstruction of coherence in self-narratives, and social recognition of their bereavement and grief. In a case study of metaphors use by a victim traumatized by sexual assault, Stroińska (2014) found that folk understanding of diseases such as CANCER could serve as a robust vehicle term for interpreting the speaker's unspeakable experiences of being violated and abused by a powerful yet vicious "invader"; the expressions were also systematically used as a conceptual alternative of sexual assault used during the victim's narration.

The abovementioned studies show that embodied experiences such as physical actions and sensory experiences constitute a key building block in conceptualizing trauma-related emotions and thoughts. Apart from providing conceptual resources for describing and inferring about abstract aspects of trauma, interestingly, physical and sensory aspects of the experiences were also found to be an important target topic of metaphors. Several studies have shown that physical aspects of taboo experiences, which are intensely painful and beyond ordinary sensations and perceptions, are often interpreted in terms of more basic and commonly shared bodily experiences. For example, Littlemore and Turner (2020, pp.51-54) found that the unusually painful physical experience of pregnancy loss and suddenly altered perceptions of the body is often interpreted in terms of embodied experiences such as "have the rug pulled out from under", "part of me is missing", and a perceived sense of "emptiness". Lindy and Wilson (2013) and Stroińska (2014)

¹¹ Following the conventions used by the discourse dynamics approach (Cameron & Maslen, 2010), emergent themes of metaphor vehicle terms and target topics in English will be represented using capital letters throughout this thesis.

also took note of cases in which victims of sexual assault use metaphors about WEAPONS, CONFRONTATIONS, and PARALYSIS to interpret their physical experiences and bodily mutilations as a result of sexual abuse. As noted by Tay (2014) and more closely examined by Tay and Jordan (2015), bodily experiences during earthquakes could serve as both target topics and vehicle terms for discussing more abstract therapeutic topics. For example, after talking about their physical experiences of LOSS PHYSICAL OF CONTROL and BEING IN THE DARK, trauma victims might further use the experiences as vehicle terms to describe their loss of control over other life situations and the sense of frustration (e.g., “we were *in the dark*, we didn’t know what the future was going to... It was *that unknown in the dark*.”).

2.2.1.2 Metaphors and Psychopathological Experiences of Trauma

Besides the study of metaphors in describing personal traumatic experiences, there is also a group of research that takes a narrower focus on trauma victims’ metaphor use associated with their subjective experiences of trauma-related disorders and symptoms. As a result of trauma exposure, psychopathological experiences of trauma-related disorders and symptoms are relatively less directly pertinent to what had happened during the traumatic event, but more a coherent and integrated set of emotional, cognitive, and physiological disturbances that are commonly experienced by all trauma victims who manifested clinically significant symptoms. As mentioned earlier in Chapter 1, typical manifestations of post-traumatic symptoms include dissociation from the reality and the normal sense of self, re-experiencing of trauma-related emotions and thoughts, anxiety, and physiological hypervigilance, etc. (American Psychiatric Association, 2013). As such experiences are highly elusive, complex, and deviate from ordinary sensations, trauma victims

often resort to metaphors to bridge the gap between their subjective experiences and what they are able to express with words.

Similar to the interpretation of personal traumatic experiences, the conceptualization of trauma-related disorders and symptoms also draws heavily on basic embodied experiences that are universally shared by human beings. In an in-depth analysis of 82 metaphors produced by 57 veterans, Foley (2015) noticed that the speakers often conceptualize their subjective experiences of PTSD symptoms using basic physical activities and sensory experiences such as “breaking down”, “suffocating”, and “hiding”. Through an analysis of metaphor use by 38 women who developed PTSD after traumatic childbirth, Beck (2016) found that the speakers’ often interpret their experiences of PTSD using physical and sensory experiences such as “falling into” a “bottomless abyss” and “a dangerous ocean”, and being surrounded by “enveloping darkness”; the role of such embodied experiences in describing PTSD symptoms was further confirmed by a parallel study on women’s metaphorical conceptualizations of the anniversary of traumatic births and long-lasting PTSD (Beck, 2017). In an in-depth qualitative analysis of trauma metaphors generated by PTSD clients from different cultural backgrounds, Wilson and Lindy (2013) also highlighted the pivotal role of universal, embodied experiences such as CONTAINER/CONTAINMENT, BALANCE, and MOVEMENT in trauma victims’ conceptualizations of PTSD.

Having noticed the potential for systematic metaphor usage patterns to reflect nuanced features of emotional and cognitive experiences, some researchers focused specifically on the interactions between trauma victims’ metaphor use and different psychological and psychopathological experiences. It was found that PTSD clients’ metaphor usage patterns could vary remarkably through the course of trauma recovery, which sees the gradual reduction of

traumatic stress and the development of positive insights. Through an in-depth analysis of interviews with seven people who had developed and recovered from PTSD, Costa and Steen (2014) discovered that the gradual shift from the trauma stage to the recovery stage could be clearly discerned from the transformation of vehicle groupings and the metaphor scenarios they build: although metaphors about trauma and the subsequent recovery process often revolve around four vehicle groupings, namely MOTION, MOVEMENT, CONTAINER, and SIGHT, expressions about the two stages fell into two distinct and contrasting scenarios: the traumatic stage was often characterized as a state of no MOTION or DOWNWARD MOVEMENT, a closed CONTAINER, and loss of SIGHT, whereas the recovery process was more frequently described as increased MOTION, UPWARD MOVEMENT, an open CONTAINER, and enhanced SIGHT. A similar transition of metaphor vehicle groupings was identified by Foley (2015): the veterans' vehicle terms in describing their psychopathological experiences of PTSD and the subsequent recovery process were characterized by a dynamic transition from the veteran being controlled/controlled by PTSD, to the veteran surviving PTSD, and eventually, to the veteran embarking on "a survivor's mission". The theme of "regaining agency and control" was also reported by Littlemore and Turner (2020) as a potential linguistic marker of recovery from traumatic pregnancy loss.

An analysis of PTSD clients' metaphor use in therapeutic contexts presented by Wilson and Lindy (2013) shows that the reduction of post-traumatic stress and the development of positive insights could also be clearly discerned from the evolution of target topics. During the process of recovery or treatment, the focus of PTSD clients' metaphors gradually shifted from (1) the interpretation of physical and physiological experiences, emotional feelings, and cognitive activities that are central to the traumatic experiences to (2) the description of problem-solving cognitive activities that help themselves break away from the overwhelming traumatic experiences,

and eventually to (3) the conceptualization of the re-established continuous sense of self and reconnection to others and the broader sociocultural context.

2.2.2 Summary of Major Research Trends and Gaps

In sum, existing research has provided rich and detailed accounts of trauma victims' metaphor use in various traumatic contexts. The two strands of research provide important theoretical insights for the study of trauma metaphors and contextualized metaphors in general. Observations about situated qualities of trauma metaphors add to our knowledge about the linguistic properties of key aspects of metaphors, such as vehicle terms, target topics, and the dynamic interactions between the two. By illustrating the dynamic interactions between metaphor use and nuanced subjective experiences, the studies also underline the highly contextualized nature of trauma metaphors. The group of research on metaphor use by PTSD clients, in particular, highlights psychopathological experiences and the recovery progress as crucial factors in shaping trauma victims' metaphor use. Explorations of the role of embodied experiences in conceptualizing personal traumatic experiences and psychopathological experiences also cast important theoretical light on the experiential nature of metaphorical language.

The studies also carry important practical implications for clinical practitioners' understanding of clients' characteristic ways of conceptualizing and metaphorizing trauma-related subjective experiences. Firstly, the analyses contribute to a deeper understanding of how trauma victims make meaning of their intensely painful, unspeakable experiences, and how they conceptualize emotionally and cognitively challenging issues and disturbing psychopathological experiences. Secondly, the strand of research on metaphor changes across different recovery stages highlights the potential for metaphor vehicle terms and target topics to reflect specific

psychopathological conditions and provide supplementary information for clinical diagnosis. The findings also reveal the possibility for metaphor variables to be integrated into therapeutic practices as prompts for facilitating positive changes and post-traumatic growth.

However, as we can see from Section 2.2.1, existing research on trauma metaphors mainly focused on how trauma victims draw on concrete experiences to metaphorize about abstract emotions, thoughts, and physical experiences; the scope of analysis was mostly restricted to substantive aspects reflected by metaphor vehicle terms, target topics, and the interactions between the two theoretical aspects. By contrast, much less attention has been paid to non-substantive aspects of metaphors, such as conventionality, emotional valence, and psychological perspectives. As mentioned earlier in Chapter 1, instead of capturing qualitative nuances of specific emotional, cognitive, and physical experiences, non-substantive aspects of metaphors abstract away from the idiosyncrasies of personal traumatic experiences and reveal the “presentational” features (Kövecses, 2015, p.187) of metaphor use. While qualitative observations about single non-substantive aspects could provide important clues about the speakers’ general tendencies in organizing and presenting their metaphorical ideas, systematic instantiations of non-substantive variables in describing substantive aspects could further offer a bird’s eye view of the complex interrelationships among multiple data units in large scale data and open a “multifaceted” (Moser, 2000) perspective on the dynamic interactions between metaphor use and different emotional, cognitive, and sociocultural factors. Although the latter perspective could contribute to a more comprehensive understanding of the contextualized characteristics of trauma metaphors and specific metaphor variables, as we can see from Section 2.2.1, it was rarely considered in previous trauma metaphor research.

In fact, the negligence of multifaceted, presentational properties indexed by non-substantive aspects is also a research gap noticed in the study of metaphors in describing mental health disorders. Previous research on mental health communication mostly examined non-substantive aspects of metaphors in the context of psychotherapy in relation to therapeutic progress (e.g., Barlow et al., 1977; Gelo & Mergenthaler, 2013; McMullen, 1985, 1989, 1996; Pollio & Barlow, 1975; Pollio et al., 1977; Tay, 2017, 2018, 2019a), but seldom paid attention to their systematic instantiations in the conceptualization of specific mental health disorders and their dynamic interactions with substantive aspects of metaphors.

In Section 2.3, I will elaborate on the theoretical and practical importance of looking beyond substantive aspects of metaphors and investigating multifaceted, presentational properties of metaphor use reflected by systematic, quantitative interactions among multiple metaphor variables. Drawing from methodological insights provided by previous research conducted in other mental health contexts, I will also discuss how the combination of categorical data analytic methods and qualitative discourse analysis into a mixed-method analysis could be used as a powerful tool for exploring multifaceted, presentational properties of trauma metaphors.

Another key research gap observed in existing research on the association between trauma metaphors and psychopathological experiences is the absence of empirical research into the interactions between metaphor use and clinically defined, psychometrically validated post-traumatic experiences. We can see from Section 2.2.1.2 that previous research mainly followed a cognitive semantic approach: most of the studies examined trauma victims' metaphorical conceptualizations of personal traumatic experiences and/or introspected psychopathological experiences based on narratives or linguistic interviews with trauma victims; how the metaphor usage patterns interact with directly quantifiable psychopathological experiences, such as their

overall degrees of trauma, severities of specific post-traumatic symptoms, and subjective experiences of differential symptoms, were not taken into consideration. In the few studies that incorporated therapeutically relevant information into account (i.e., Costa & Steen, 2014; Foley, 2015; Wilson & Lindy, 2013), only chronologically delineated, broadly defined therapeutic or recovery stages (e.g., before and after recovery) were used as the basis for categorizing and comparing metaphor usage patterns. While the experience of trauma-related disorder could vary remarkably across individuals, and the clinical manifestations also vary substantially across different symptoms of the mental disorder, the potential interactions between metaphor use and the two dimensions of psychopathological experiences have not yet been explored.

The role of psychopathological experiences in metaphor use is also an important yet often neglected research area in the study of mental health metaphors in general. Despite that differential emotional experiences and mental health issues were widely identified as an important contextual factor associated with metaphor variations (Cameron & Masen, 2010; Charteris-Black, 2012; Fainsilber & Ortony, 1987; Goatly, 1997; Kövecses, 2004, 2008, 2010; Littlemore, 2019; Tay, 2013; Yu & Tay, 2020), and that in clinical scenarios psychopathological experiences are often measured and compared using quantitative measures, metaphor use in mental health communication was seldomly examined in relation to directly quantifiable psychopathological experiences. This may be partly a consequence of metaphor research focusing mainly on linguistic and contextual features rather than psychological phenomena associated with metaphor use, and partly due to the general lack of quantitative analysis in the study of mental health metaphors (McMullen, 1985; Tay, 2017).

However, taking up a clinically situated perspective in the study of mental health metaphors could provide important theoretical implications for the study of contextualized

metaphors and generate valuable practical insights for relevant clinical practices. Taking trauma victims' subjective experiences of ASD as an exemplary context for trauma assessment and diagnosis, Section 2.4 will provide a general introduction to two basic dimensions of psychopathological experiences as measured by relevant psychometric questionnaires. With reference to empirical research on emotion-related metaphors and trauma narratives, I will elaborate on how differences along the two dimensions are likely related to different forms of metaphor variations.

2.3 Multifaceted, Presentational Properties of Metaphors

This section responds to the first research gap that existing research on trauma metaphors rarely pays attention to multifaceted, presentational properties of metaphors reflected by quantitative, systematic metaphor usage patterns. Section 2.3.1 will first elaborate on the argument that the contextualized instantiations of non-substantive variables could provide important clues about the “presentational” features (Kövecses, 2015, p.187) of specific types of metaphors, and then introduce three non-substantive variables that are key to the study of trauma metaphors, i.e., conventionality, emotional valence, and perspectives. As single non-substantive features of metaphors reveal the speakers' general tendencies in a specific aspect of meaning-making, systematic, quantitative interrelationships among multiple variables highlight how different aspects of metaphor use might be interrelated with each other, i.e., the multifacetedness (Moser, 2000) of presentational features. This aspect of metaphors and feasible ways of capturing its contextual properties will be introduced in Section 2.3.2.

2.3.1 Non-substantive Variables and Presentational Features of Metaphors

As we have seen in Section 2.2, existing research on trauma metaphors focused almost exclusively on substantive aspects, i.e., vehicle terms about physically concrete experiences, target topics of trauma-related emotions, thoughts, and physical/physiological experiences. Despite that vehicle terms and target topics stand as the two major theoretical aspects of metaphors, and that substantive features identified based on the two aspects could provide a most immediate sense of “what is being said using metaphors” (McMullen, 2008, p.407), qualitative nuances reflected by the two aspects are far from sufficient to fully address the complexities underlying real-world metaphors and trauma metaphors in particular.

A particularly interesting yet underexplored issue is the systematic instantiations of non-substantive aspects of metaphors, such as functions, frequencies, conventionality, and emotional valences and their interactions with substantive aspects of metaphors. Compared with substantive aspects like target topics and vehicle terms, non-substantive aspects of metaphors could be relatively less informative in revealing the qualitative nuances of personal traumatic experiences. Instead of capturing the speakers’ conceptual knowledge of real-world experiences, systematic instantiations of non-substantive aspects in describing substantive aspects of metaphors highlight the ways in the speakers’ personal experiences are organized and explicated in the course of metaphorical meaning-making, i.e., the “presentational” (Kövecses, 2015, p.187) properties of specific types of metaphors. Such properties, especially when examined in relation to certain substantive aspects of metaphors, could shed interesting light on general but implicit tendencies of metaphor use that are characteristic of a given population or specific topics, for example, the speakers’ habitual patterns of information processing, their implicit emotional and cognitive states,

operationalization of tacit knowledge, and understanding of complex knowledge and abstract processes (Moser, 2000).

Three non-substantive variables were found to be particularly interesting to the study of trauma narratives and metaphors, i.e., conventionality, emotional valence, and perspectives:

Conventionality

A non-substantive variable that is theoretically and clinically relevant to the study of mental health metaphors is conventionality, which refers to the extent to which a metaphor is entrenched in everyday communication of ordinary people (Kövecses, 2010). Conventional metaphors are socially established expressions that are widely shared by members of a linguistic community, whereas novel metaphors are relatively less well-established and more relevant to the speaker's idiosyncratic understanding and creative thinking. As mentioned earlier in Chapter 1, conventionality is not directly related to the substantive content of metaphors but more a reflection of the speakers' implicit cognitive styles, i.e., their preferred ways of presenting a specific metaphorical idea (Kövecses, 2015).

Speakers' inclinations toward conventional and novel metaphors¹² have long been recognized by metaphor researchers and clinical psychologists as having special emotional and therapeutic significance; nevertheless, the conclusions derived from existing theoretical and empirical works have been inconsistent. A large body of research on metaphor use in psychotherapy attributed special importance to novel metaphors, as they are believed to play a more active role in

¹² According to Steen et al., (2010), conventionality/novelty of metaphors could be identified as a binary construct using a dictionary based on their linguistic definitional properties (refer to Section 4.2.2.1 for more details). However, there are also researchers who places more emphasis on the perception properties of metaphors (i.e., how it sounds to the readers) and examine conventional and novel metaphor as different points on a scale or continuum (e.g., Littlemore et al., 2018).

representing and exploring complex and intense emotional and thought processes (see McMullen, 1985 for a review). The basic rationale is that the production of novel metaphors is very often associated with the activation, restructuring, and change of abstract schemas, whereas the use of conventional metaphors is more the reactivation of established schemas through lexical retrieval; therefore, the generation of novel metaphors could be more cognitively demanding than the use of conventional metaphors (e.g., Bowdle & Gentner, 2005; Gelo, 2008; Gelo & Mergenthaler, 2003; Gentner et al., 1988, 2001; as cited in Gelo & Mergenthaler, 2012). This argument is supported by the study conducted by Gelo and Mergenthaler (2012) on therapist and client's metaphor use in 42 therapeutic sessions, which shows that the frequency of unconventional metaphors is significantly related to emotion-laden and cognitively complex processes such as the organization and modification of underlying emotional and cognitive activities, the articulation of abstract thoughts, and therapeutic engagement. The study of emotion metaphors by Fainsilber and Ortony (1987) reveals that people experiencing intense emotional feelings are more likely to use novel than conventional metaphors to describe their subjective experiences. Turner et al. (2020) noted that the traumatic experience of pregnancy loss might trigger the use of novel metaphors in describing the altered perception of time. Some studies have also highlighted the apparent strength of novel metaphors in verbalizing personal or difficult emotional feelings, such as intimate characteristics of the self, troublesome experiences, and physical pain (e.g., Barlow et al., 1977; Gibbs & Franks, 2002; McMullen, 1985; Pollio & Barlow, 1975; Semino, 2011).

Meanwhile, there are also researchers who hold that conventional metaphors could have special therapeutic meanings or carry no less significance than novel metaphors do. For example, Moser (2000, 2007) argues that as conventional metaphors are often used in an automatic and subconscious manner, they are very likely to capture the speaker's implicit knowledge of the self

and world and unconscious psychological and thought processes. In an intensive qualitative analysis of metaphors produced by four patients in 12 therapeutic sessions, Long and Lepper (2008) found that both conventional and novel metaphors could provide vivid and revealing accounts of therapeutically meaningful concepts such as the self, others, relationships, mental states, and thought processes, and both could reflect the diagnosis, pathology, and core conflicts experienced by the patient. In a comparative study of successful and unsuccessful cases of psychotherapy, McMullen (1989) noted that some novel metaphors could actually be less therapeutically relevant than others and that conventional metaphors could also play an important role in expressing, communicating, and resolving complex mental health issues.

Despite the inconsistencies among existing research findings, it is clear that the use of conventional and novel metaphors could be highly sensitive to the local communicative context, and that systematic patterns of the two types of metaphors could reveal important information about the speakers' underlying emotional and thought processes, or construal operations, when metaphORIZING about a specific topic (Long & Lepper, 2008; McMullen, 1996). This points toward the theoretical and clinical need to include conventionality/novelty in the study of trauma victims' metaphor use, especially in exploring its associations with other theoretical variables and its interaction with trauma victims' psychological/psychopathological experiences.

Emotional Valence

Another non-substantive aspect of metaphors central to the expression of trauma is emotional valence, i.e., whether the expression conveys negative, neutral, or positive emotions. In fact, trauma victims' use of emotional language has long been an issue of interest for clinical

practitioners (O'Kearney and Perrott 2006). A large number of clinically oriented studies have identified the use of negatively valenced expressions as significant predictors of trauma and more specific clinical symptoms such as re-experiencing (e.g., Cohn et al., 2004; Halligan et al., 2003; Jaeger et al., 2014; Kleim et al., 2018; Luno et al., 2013; Todorov et al., 2018; Wardecker et al., 2017). Some studies also revealed significant correlations between more frequent use of positive emotion words and lower levels of post-traumatic stress (e.g., Frewen et al., 2011; Jaeger et al., 2014; Kleim et al., 2013, 2018; Manne et al., 2002; Wardecker et al., 2017). According to the clinical definitions of ASD and PTSD proposed in DSM-V, symptoms such as re-experiencing and anxiety and hyperarousal often manifest as a heightened awareness of negative emotions and thoughts, whereas dissociation and avoidance symptoms are more likely to be experienced as disconnection from or reluctance to delve into trauma-related emotions and thoughts (refer to Section 2.4.1 for a more detailed introduction).

Probably influenced by clinical practitioners' tendency to focus on more easily observable and quantifiable aspects of the traumatic experiences, existing research on trauma language shows more concern for trauma victims' explicit and literal accounts of emotional feelings (e.g., "sad", "fear", and "worry") than to their metaphorical expressions, which are intuitively more subjective and less likely to be abstracted into generalizable patterns, and therefore less relevant to clinical practices. To extract systematic patterns of emotional expressions, the majority of the studies used computerized text analytic tools like the Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2015), which provides quantitative measures of the speakers' emotional tones based on frequencies of literal emotion label. Nevertheless, in this strand of research, trauma victims' use of emotion-laden metaphors, especially those not including explicit emotion labels such as "my

heart is forever sealed”, are often excluded from the analysis; neither were differences in topics taken into consideration.

Nevertheless, the expression of emotion is by no means peripheral or negligible in the metaphorization of trauma. According to Fainsilber and Ortony (1987), emotion metaphors capture larger chunks of information than literal emotion labels do, which means they could provide more differentiated and substantial descriptions, or more “granular” accounts (Barrett et al., 2001), of the speakers’ subjective experiences. While quantitative patterns of literal emotion words reflect trauma victims’ inclinations to refer to different subjective feelings, those identified for emotionally valenced metaphors could provide a clearer view of the speakers’ tendencies to discuss and reflect on their feelings in detail. Several empirical studies have shown that people’s metaphor usage patterns often vary markedly across different emotional valence (e.g., positive and negative) and different target topics (e.g., depression, anger, and sadness). For example, Fainsilber and Ortony’s (1987) study of emotion-related metaphors shows that people’s choices of vehicle terms and target topics and overall frequencies of metaphor use are also likely to vary across different emotional valences and intensities of emotions. Both Kovecses (2004) and Yu and Tay (2020) found that different emotions were often metaphorized using different conceptual resources. The findings revealed the intimate relationships between emotion expression and metaphor use, highlighting the need to take closer scrutiny at the interactions between emotional valences and more specific aspects of trauma metaphors.

Perspectives

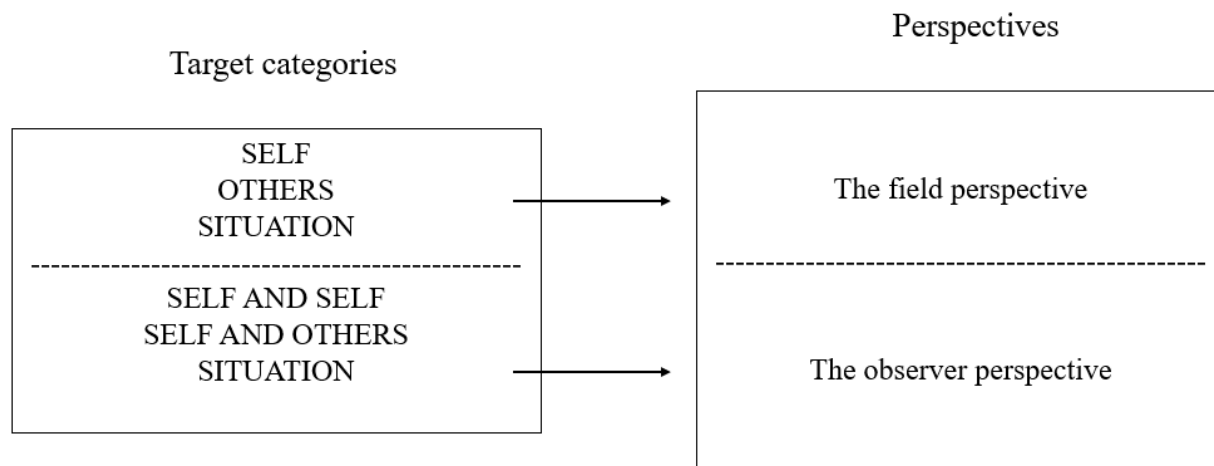
Another variable that is interesting to the study of trauma language is the field and the observer perspectives, which were defined by Nigro and Neisser (1983) as two structural constructs of personal memories representing two different viewpoints of describing or evaluating a particular event or experience. In the field perspective, the subject experiences the scene in the way it is from his/her own perspective but does not see him/herself; in contrast, in the observer perspective, the subject adopts an external standpoint and sees him/herself in relation to the situation “from the outside” (Nigro & Neisser, 1983, p.467).

Inclinations toward the two perspectives are closely associated with the experience of highly emotional events such as trauma (Berntsen et al., 2003). Quite a few studies on trauma narratives have highlighted the observer perspective as a potential marker of traumatisation. Compared with memories retrieved from the field perspective, recollections from the observer perspective are often accessed from a greater psychological distance and perceived with relatively lower degrees of emotional involvement (McIssac & Eich, 2002, 2004; Nigro & Neisser, 1983; Robinson & Swanson, 1993); therefore, the perspective is often adopted by the severely traumatized as a spontaneous strategy to keep the self dissociated from the overwhelming memories and feelings. While such a reaction could be regarded as a mechanism of self-protection, it is not always psychologically adaptive. Numerous studies have shown that relying on the observer perspective might inhibit the emotional processing of trauma memories, which would in turn lead to more severe and long-lasting PTSD symptoms (e.g., Berntsen et al., 2003; Brewin et al., 1996; Foa et al., 1989; Kenny & Bryant, 2007; Kenny et al., 2009).

Previous research on the instantiations of perspectives mainly focused on trauma victims’ narrations of concrete traumatic events (e.g., what had happened, the process and consequence of

the event), which are most likely to be described using non-metaphorical language. Although there has been no prior research on the instantiation of perspectives in metaphorical language, the distinction between the two perspectives could still be clearly observed from target topics that are commonly observed in mental health communication. As noted by Kopp (1995), linguistic metaphors about mental health issues very often revolve around six key dimensions, including three basic elemental categories, i.e., SELF, OTHERS, and SITUATIONS, and three types of relations around them, i.e., SELF AND SELF, SELF AND OTHERS, and SELF AND SITUATION. Metaphors in the former group describe one's mental image of the three major elements of their subjective world, and those in the latter group express the individual's understanding of their relationships or interactions with the three major elements (Kopp & Eckstein, 2004). The six categories of target topics (henceforth "target categories") are believed to reflect the metaphoric structure of an individual's subjective reality, or one's way of being in the social world (Kopp, 1995). We can see that the elemental and relational features of the six target categories coincide with the dichotomous division between the field and the observer perspectives: target categories experienced with the speaker "inside" themselves (i.e., SELF, OTHERS, and SITUATION) correspond to the field perspective, and those in which the self is both the subject and the object of the observation (i.e., SELF AND SELF, SELF AND OTHERS, and SELF AND SITUATION) could be regarded as subcategories of the observer perspective. While target categories reflect the substantive contents of metaphors (i.e., the topics being described by the metaphors), the field and the observer perspectives capture more structural aspects of metaphor use (i.e., the speakers' less explicit attentional biases when metaphORIZING about their subjective world). The relationship between the two perspectives and the six target categories is shown in Figure 2.1.

Figure 2.1 The field and observer perspectives and Kopp's (1995) taxonomy of target categories



Since the field and observer perspectives are closely related to trauma victims' subjective experiences and pervasively found in mental health metaphors, their contextualized instantiations in metaphorical language, especially their interactions with different emotionally valenced metaphors, become an intriguing question for both metaphor researchers and clinical psychologists.

In sum, this subsection shows that the instantiation of non-substantive variables in describing substantive metaphor aspects could be highly sensitive to people's emotional feelings and traumatic experiences, highlighting the variables as valid and useful reference points for studying presentational features of metaphors. The patterns would also not only lead to a more comprehensive perspective on the contextual characteristics of trauma metaphors, but also provide practical implications for clinical evaluations of trauma and the application of metaphor-based therapeutic protocols, such as Grove and Panzer (1989), Kopp (1995), and Sims and Whynot (1997).

2.3.2 Multifacetedness of Presentational Features

This subsection explains how the multifacetedness of presentational features is often missed by previous qualitative metaphor research, and the theoretical and practical importance of looking into the patterns (Section 2.3.2.1). Based on the methodological insights offered by previous research in other mental health contexts, I will also discuss how the mixed-method approach that combines quantitative and qualitative methods could be used as a viable approach for studying multifaceted, presentational properties of trauma metaphors (Section 2.3.2.2).

2.3.2.1 Systematic, Quantitative Interactions among Multiple Variables

Apart from the exclusive focus on vehicle terms and target topics, previous research on trauma metaphors is also noticed with a strong preference for qualitative analytic strategies over quantitative methods, which could be both the reason and the result of previous research taking a narrow focus on the two substantive aspects. Although in-depth and focused qualitative analyses of vehicle terms, target topics, and vehicle-target interactions could reveal nuanced characteristics that are specific to a given set of linguistic examples and provide valuable insights into specific questions of theoretical and practical concerns (Charteris-Black, 2012; Tay, 2013, 2017), the approach could be less effective in extracting systematic metaphor usage patterns across larger amounts of data. We can see from Section 2.2 that although some previous studies had quite large sample sizes, the analyses often revolved around linguistic and contextual features of a small number of examples and sometimes fragmented use of metaphors. While the studies capture nuanced, unexplored patterns of metaphor use and characteristics that reflect idiosyncrasies of personal traumatic experiences, they are unlikely to identify which patterns reflect general tendencies that are characteristic of the given trauma population; those with large sample sizes

might also have difficulties in extracting systematic patterns at the discourse level and comparing the effects of different patterns.

Another limitation of relying on qualitative methods is that the scope of analysis rarely went beyond the associations between two metaphor aspects to the interactions among multiple variables (Tay, 2017). We can see that previous studies mainly focused on the variations of vehicle terms or target topics in relation to another contextual factor (e.g., sociocultural backgrounds and stages of recovery/treatment) or the vehicle-target interactions. While some studies examined vehicle-target interactions against a third variable, such as recovery stages and cultural backgrounds (e.g., Foley, 2015; Rechsteiner et al., 2019, 2020; Meili et al., 2019; Wilson & Lindy, 2013), the third variable was merely taken as the basis for categorizing and comparing between different metaphor usage patterns rather than a parallel variable in search of systematic variations at the discourse level.

In fact, the multifacetedness of presentational features is recognized by recent researchers as an important contextualized property of real-world metaphors. According to Cameron and Maslen (2010), metaphor use in the real world is very likely to show systematic patterns at the discourse level or in a given period of time; the patterns are very likely subject to the simultaneous influence of multiple theoretical and contextual factors, and the factors might also engage in dynamic interactions with each other as components of a larger complex system. For example, it is possible that the aforementioned association between metaphor use and conventionality varies further across different levels of a third factor, such as emotional valences or stages of recovery; the relationship might vary in terms of either direction, which refers to whether the two aspects of metaphors are more likely to co-occur or avoid each other, or in terms of strengths, which is the possibility that the two aspects tend (or tend not) to co-occur. The complex dynamics underlying

emotion-related metaphors were also systematically documented by Kövecses (2004, 2010) and Tay (2013).

Compared with single non-substantive aspects and vehicle-target interaction, systematic, quantitative patterns indexed by multiple variables abstract even further away from idiosyncrasies of specific metaphorical expressions. As mentioned earlier, such patterns not just pinpoint the speakers' specific tendencies in presenting metaphorical ideas, but also provide valuable insights into the “multifaceted” (Moser, 2000) properties of real-world metaphors, as they open a holistic view of the systematicity and dynamic interactions among multiple theoretical and contextual aspects of metaphors. As the patterns are hardly transparent to direct therapeutic observations, we might expect the findings to contribute to a complementary perspective on the contextualized features of metaphors, and generate more novel insights for clinical practitioners' understanding and management of client-generated metaphors (Kopp, 1995).

As multifaceted, presentational properties of metaphors could only be reliably extracted based on large amounts of data and multiple data units, it might be less manageable for in-depth qualitative analysis and basic quantitative measures like comparisons of frequencies and occurrence rates. Instead, the patterns could be more efficiently and reliably extracted using categorical data analytic methods such as loglinear analyses, which provide more direct accounts of relationships between variables and their subordinated categories. More examples of multifaceted, presentational features of metaphors provided by previous mental health metaphor research will be provided in Section 2.3.2.2 after their methods are explained.

2.3.2.2 Exploring Multifaceted, Presentational Properties via a Mixed-method Approach

A particularly useful group of methods for identifying inter-relationships among multiple aspects of metaphors is categorical data analytic methods (Moser, 2000). Among other methods, log-linear analysis and chi-square tests of independence (henceforth “chi-square tests), which examine the relationships between categorical variables based on the deviations of observed frequencies from expected frequencies, were the most commonly used in the study of mental health metaphors.

Loglinear analysis explores more complex and nuanced interactions among three or more variables. An example is the study of metaphor use in psychotherapy by Tay (2017), which examined the interrelationships among five metaphor variables (i.e., speaker, function of metaphors, target topic, phase of therapy, and therapeutic dyad) in 2,893 metaphors identified from 29.5 hours of talk. Loglinear analysis revealed two significant four-way interactions among DYAD, TARGET, FUNCTION, and PHASE, and among DYAD, FUNCTION, PHASE, and SPEAKER, and a significant three-way interaction among TARGET, FUNCTION, and SPEAKER. As mentioned earlier, a three-way interaction suggests that the association between two metaphor variables tends to vary across different levels of a third variable; a four-way association means the interaction among the three variables varies further across levels of the fourth variable. While higher-order interactions among multiple variables could be difficult to interpret, following Gilbert (1993) and Elliot (1988), in the subsequent discussion, the four-way interactions were broken down as the variations of bi-variate associations across different levels of a third variable, so that the patterns could be more easily interpreted and understood. The patterns provide concrete examples of multifaceted, presentational features of metaphor use in mental health communication,

which would be difficult to identify and interpret using purely qualitative methods and descriptive statistics.

In addition to the use of loglinear analysis, Tay (2020a) illustrated how the interrelationships among multiple aspects of metaphors (i.e., SPEAKERS, FUNCTION, TARGET, and PHASE) revealed by categorical data analysis could be visualized using factor plots generated by a Multiple Correspondence Analysis (MCA) plot. MCA is a technique that detects relationships between categorical variables such as different theoretical and contextual aspects of metaphors. In MCA plots, different categories of the variables are represented as discrete points on a two-dimensional plot, and their interrelationships are visualized as positions of and distances between the points. By converting abstract statistical relationships among multiple variables into visualizable forms, the method reduces the difficulty of understanding the multifacetedness of presentational features and interpreting the complex interrelationships. It also helps to pinpoint metaphor usage patterns of special theoretical or practical concerns (Tay, 2020a) and reveal potential directions for subsequent qualitative discussion.

Another example of categorical data analysis in metaphor research is Tay (2018), which examined the multifaceted, presentational features of 512 movement metaphors identified from 20 therapeutic sessions. Loglinear analysis was used to examine the relationships between TOPIC, DIRECTION OF MOVEMENT, and SPEAKER. Although the highest three-way interaction was not retained, all three possible bivariate associations (i.e., TOPIC*DIRECTION, DIRECTION*SPEAKER, and TOPIC*SPEAKER) were statistically significant. The associations were then examined using chi-square tests, a categorical data analytic method that examines the association between two variables. Contingency tables that show the observed and expected frequencies for each variable category were generated to provide more detailed accounts of the

bivariate associations. For example, statistics of the DIRECTION*SPEAKER association show that while client-generated metaphors had a significantly higher number of SIDEWAYS metaphors than expected, therapist-generated metaphors were less likely to draw on this aspect of MOVEMENT. A similar contrast in frequencies was also identified for metaphors with uncertain directions.

Apart from examining bi-variate associations revealed by loglinear analysis, Chi-square tests could also be used to investigate associations between two pre-determined variables that are of theoretical interest. To examine the potential associations between image schematic groundings and target topics and the relationships between differential embodied experiences and the conceptualization of different emotions, Yu and Tay (2020) used chi-square tests to examine the relationships between four types of image schemas and three therapeutically interesting emotional themes (i.e., ANGER, DEPRESSION, and ANXIETY) identified from 964 metaphors. Their findings revealed a statistically significant association between different types of image schematic metaphors and the three target topics, underlining distinct metaphor usage patterns for the three emotions. For example, ANGER is significantly more likely to be described using CONTAINMENT metaphors and less likely to be represented as PATH and VERTICAL ORIENTATION, whereas DEPRESSION was significantly more likely to be interpreted in terms of FORCE and VERTICAL ORIENTATION but less likely to be described as CONTAINMENT.

Also using categorical data analytic methods, Moser (2007) took a more specific focus on metaphorical conceptualizations of SELF, which is an important psychological notion that is commonly conceptualized using basic embodied experiences and encyclopedic knowledge about the world. Configural frequency analysis, a statistical technique based on Chi-square tests, was used to examine the distribution of 22 vehicle terms identified from 1,162 metaphors across six

specific aspects of SELF, i.e., actual self, ideal self, social self, negative self, ought self, and self changes. Statistically significant associations were identified between certain vehicle terms and target topics; for example, the actual self is significantly more likely to be described using WEIGHT and BALANCE metaphors, whereas the ideal self is significantly less likely to be represented using FIGHTING metaphors. identified for 2,893 metaphors.

As we can see, categorical data analytic methods could be employed as a useful tool for extracting systematic, quantitative metaphor usage patterns and dissecting multifaceted, presentational properties of metaphors. However, this does not mean that quantitative methods could replace qualitative discourse analysis of authentic linguistic examples. Moser (2000) emphasized that quantitative metaphor analysis could only be realized to its full potential when used in combination with qualitative discourse analysis, so that statistically significant overall tendencies in large amounts of data could be interpreted and understood with reference to situational, biographical, and social functions of metaphors that are characteristic of a specific set of metaphors and the given context. This argument is echoed by Tay (2017, 2020a), who further noted that metaphor usage patterns extracted using frequency-based quantitative methods such as categorical data analytic methods and correlation analysis do not entail thematic significance, which means the methods could only be used as a complement rather than a substitute of qualitative discourse analysis. In other words, the exploration of quantitative dynamics underlying real-world metaphors should better follow a mixed-method approach that combines quantitative methods and qualitative discourse analysis.

The combination of categorical data analytic methods and qualitative analysis has obvious strengths in extending the scope of metaphor research from nuanced substantive features to systematic, quantitative patterns that reflect general tendencies and “multifaceted” properties of

metaphor use. The results of categorical data analysis could also serve as useful references for subsequent qualitative interpretations of specific linguistic examples. In the practical sense, the findings could provide valuable implications for clinical practitioners' understanding of metaphor use in the mental health context and reflections on their own clinical practices. More specifically, the interaction and association patterns could help therapists get better prepared for metaphor usage patterns that are likely to occur in diagnostic and therapeutic contexts. Findings about more specific variable categories could also provide useful supplementary information for metaphor-based therapy protocols, in which therapists invite clients to elaborate on their metaphors by asking "what do you feel" and "what does it (the emotional feeling) look like" (e.g., Grove & Panzer, 1989; Kopp, 1995; Kopp and Craw, 1998; Sims, 2003; Sims & Whynot, 1997). Nevertheless, despite the obvious advantages, this approach has rarely been applied to the study of metaphors about specific mental disorders. How the mixed-method approach could efficiently capture multifaceted, presentational features of trauma metaphors and open new prospects for future clinical practice and research will be illustrated in Chapter 3 of this thesis.

2.4 The Interaction Between Metaphor Use and Psychopathological Experiences

As noted in Section 2.2.2, the potential role of clinically defined, psychometrically validated psychopathological experiences in metaphor variations remains an intriguing but unexplored issue. Taking the assessment and diagnosis of ASD as an exemplary context, this section shows how the adoption of a clinically situated perspective in metaphor analysis, realized through the incorporation of psychometric data and relevant clinical observations, could enable a more precise understanding of the interactions between psychopathological experiences and metaphor use. This point will be further discussed in Section 2.4.1 with reference to two basic

dimensions of post-traumatic experiences as measured by psychometric screening tools of ASD, i.e., cross-individually distinct severities traumatization and subjective experiences of differential symptoms. Based on relevant findings in other related mental health contexts, Section 2.4.2 will offer a more elaborated account of how the two dimensions of psychopathological experiences are likely related to specific forms of metaphor variations, and suggest possible directions for furthering the two lines of research.

2.4.1 Clinically Defined, Psychometrically Measured Post-traumatic Experience

In clinical scenarios, psychopathological experiences of trauma-related disorders (e.g., symptoms of PTSD and ASD) are assessed based on clearly defined diagnostic criteria such as the DSM criteria proposed by the American Psychiatric Association and the ICD criteria (International Classification of Diseases) developed by the World Health Organization. As this thesis examines trauma victims' use of metaphors shortly after trauma exposure, the potential interactions between metaphor use and post-traumatic experiences will be discussed in the background of ASD¹³, which accounts for acute post-traumatic reactions within four weeks since the traumatic event. The evaluation and diagnosis of ASD will be illustrated with reference to the diagnostic criteria proposed by DSM-IV¹⁴ (American Psychiatric Association, 1994), which formed the basis for the development of many existing ASD screening tools, including the SASRQ used by this thesis

¹³ There is in fact extensive overlap between the diagnostic criteria proposed for ASD and PTSD; the most prominent differences are the clinical manifestations of specific symptoms and duration of symptom presence required for diagnosis (refer to Cahill & Pontoski, 2005 for a comparison of ASD and PTSD symptomatology and diagnoses based on DSM-IV, and Perry, 2021 for a comparison based on DSM-V)

¹⁴ The diagnostic criteria of ASD had been updated in the latest DSM-V published in 2013 (refer to Substance Abuse and Mental Health Services administration, 2016 for a comparison of the DSM-IV and DSM-V criteria).

(refer to Section 1.3.2.3 and Section 4.2.2.1 for more details). The DSM-IV criteria for ASD diagnosis is reproduced in Table 2.1.

<p>A. The person has been exposed to a traumatic event in which both of the following were present:</p> <ol style="list-style-type: none"> 1. The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others. 2. The person’s response involved intense fear, helplessness, or horror.
<p>B. Either while experiencing or after experiencing the distressing event, the individual has three or more of the following dissociative symptoms:</p> <ol style="list-style-type: none"> 1. a subjective sense of numbing, detachment, or absence of emotional responsiveness 2. a reduction in awareness of his or her surroundings 3. derealization 4. depersonalization 5. dissociative amnesia (i.e., inability to recall an important aspect of the trauma)
<p>C. The traumatic event is persistently re-experienced in at least one of the following ways: recurrent images, thoughts, dreams, illusions, flashback episodes, or a sense of reliving the experience; or distress on exposure to reminders of the traumatic event.</p>
<p>D. Marked avoidance of stimuli that arouse recollections of the trauma (e.g., thoughts, feelings, conversations, activities, places, people).</p>
<p>E. Marked symptoms of anxiety or increased arousal (e.g., difficulty sleeping, irritability, poor concentration, hypervigilance, exaggerated startle response, motor restlessness).</p>
<p>F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning or impairs the individual’s ability to pursue some necessary task such as obtaining necessary assistance or mobilizing personal resources by telling family members about the traumatic experience.</p>
<p>G. The disturbance lasts for a minimum of 2 days and a maximum of 4 weeks and occurs within 4 weeks of the traumatic event.</p>
<p>H. The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition, is not better accounted for by brief psychotic disorder, and is not merely an exacerbation of a preexisting Axis I or Axis II disorder.</p>

Table 2.1. The DSM-IV criteria for ASD diagnosis (American Psychiatric Association, 1994)

Eight specific criteria are included. Criterion A provides a clinical definition of experiences that are of traumatic nature. Criteria B to F describe the manifestations of the five specific symptom clusters that form the basis for diagnosing ASD, including dissociation, re-experiencing, avoidance, anxiety and hyperarousal, and impairment in functioning. Criterion G specifies the duration of symptom persistence required for obtaining the diagnosis of ASD. Criterion H lists some exceptional conditions that call for special consideration in diagnosis. To receive a diagnosis of ASD, the subject needs to fulfill Criteria A, G, and H and endorse at least three symptoms included in Criterion B and at least one symptom for each of the remaining clusters specified by Criterion C to F (American Psychiatric Association, 1994).

Due to differences in the nature and duration of traumatic events, the subjects' coping ability, social support, and a number of other risk factors (Brewin et al., 2000; Ozer et al., 2008; Shalev, 1996), some people might develop higher degrees of trauma and experience more severe physiological, emotional, and cognitive disturbances, whereas some might be less traumatized and less disturbed by the traumatic event. Among people who have been exposed to a traumatic event, about 7 to 28% meet the diagnostic criteria of ASD; about half of those with ASD would subsequently develop PTSD (Bryant et al., 2015). Influenced by a number of objective and subjective risk factors, trauma victims may not develop the same cluster of symptoms, nor are they likely to experience the symptoms in precisely the same severities (Amir et al., 1996). For example, among all other symptoms, some people might be more influenced by the intrusive re-experiencing of their traumatic feelings, some would develop more severe avoidant behaviors and feel more reluctant to talk and think about the traumatic event, and some would feel particularly disturbed by functional impairments and experience greater difficulties in maintaining pre-trauma life

routines and interpersonal relationships. It is also possible that trauma victims experience many different combinations of symptoms (Galatzer-Levy & Bryant, 2015).

Several psychometric tools have been developed for the clinical diagnosis of ASD, including clinician-rated scales such as the Acute Stress Disorder Interview (ASDI; Bryant et al., 1998), and self-report questionnaires such as the Acute Stress Disorder Scale (ASDS; Bryant et al., 2000), Trauma Symptom Inventory (TSI; Briere, 1995), and the SASRQ (Cardeña et al., 2000) introduced earlier in Section 1.3.2. The psychometric tools could provide accurate and reliable measures of the subjects' psychopathological experiences, including the subject's overall degree of trauma, severities of the five post-traumatic symptoms, and experience of specific symptoms. Overall degrees of trauma and severities of symptoms provide a general overview of the subject's psychopathological experiences and the risk of developing ASD and later incidence of PTSD. The two aspects are usually measured using Likert scales and represented using continuous scores, with higher scores indicating greater severities of traumatization and increasing risks of developing ASD. Experience of a specific symptom is determined based on the numbers and severities of more specific clinical manifestations reported by the subject. The symptomatological experiences could be further evaluated in terms of clinical presence, which refers to whether the subject's experience of the given symptom meets the clinical diagnostic threshold. The determination of clinical presence forms the primary basis for ASD diagnosis¹⁵: to receive a diagnosis of ASD, the subject needs to meet the criteria for clinical presence for all five symptoms (refer to Section 4.2.2.1 for a more detailed introduction to ASD diagnosis using the SASRQ).

¹⁵ Some psychometric questionnaires (e.g., the Mississippi Scale for PTSD developed by Keane et al., 1988) and follow-up clinical research also provide clinical cutoff points for the diagnosis of trauma-related disorder and symptoms; however, it is also noticed that the recommended cutoffs might vary across different types of trauma, gender, and ethnicity (Orsillo, 2001).

In other words, psychometric questionnaires developed based on the DSM-IV criteria of ASD evaluate trauma victims' psychopathological experiences along two major dimensions, i) the subject's severities of psychopathological disturbances, including overall degrees of trauma and severities of specific post-traumatic symptoms, and ii) the subject's substantive experiences of different symptoms. As we can see from Criterion B to F listed in Table 2.1, each of the five symptoms is characterized by an integrated and coherent cluster of emotional, cognitive, and physiological features; the five symptoms together make up a larger set of characteristic features that distinguish ASD from other mental health disorders. In other words, trauma victims who experienced different severities of psychopathological disturbances could be regarded as showing quantitative differences in the same type of corresponding experiences, and those suffering from different or different combinations of symptoms could be seen as having qualitative differences in relevant subjective experiences.

Since the speakers' emotions, thoughts, and physiological experiences have been widely acknowledged as crucial contextual factors influencing metaphor use and leading to metaphor variations (e.g., Cameron & Maslen, 2010; Johnson, 1987; Kövecses, 2004, 2008, 2010, 2015; Lakoff, 1987; Lakoff & Johnson, 1980, 1999; Littlemore, 2019; Semino, 2010; Tay, 2013), it is possible that psychopathological experiences of mental health disorders, which are in essence constituted by clinically meaningful emotional feelings, thought disturbances, and physiological experiences, might also engage in dynamic interactions with metaphor use in mental health communication. However, compared with subjective experiences that are prominent in folk understandings of trauma and those that are particularly perceptually salient (e.g., anger, fear, difficulty in concentration, and hyper-alertness), severities of clinically defined psychopathological disturbances and substantive experiences of differential symptoms are much

less transparent to self-introspection and direct therapeutic observations, therefore the two dimensions were often neglected in previous research on trauma metaphors. The negligence of directly quantifiable psychopathological experiences is widely noticed in the study of mental health metaphors in general.

2.4.2 Differential Psychopathological Experiences and Metaphor Variations

Although no previous studies by far have probed directly into the role of the two dimensions of psychopathological experiences in shaping metaphor use, quite a few studies conducted in other mental health contexts have provided preliminary evidence that the two dimensions might be key contextual factors in explaining two specific forms of metaphor variations: people who experienced contrasting intensities of a given psychopathological condition tend to show different inclinations toward certain types of metaphors, and different clinical manifestations of a given mental health disorder are often metaphorized using different conceptual resources. Based on relevant research on mental health metaphors and trauma narratives, a more detailed discussion of the potential interactions between severities of psychopathological disturbances and metaphor use will be provided in Section 2.4.2.1, and the possibility for different clinical symptoms of a given mental health disorder to be distinguished from metaphorical language will be discussed in Section 2.4.2.2.

2.4.2.1 Severities of Psychopathological Disturbances and Metaphor Use

As mentioned earlier in Section 2.4.1, people who developed different mental health disorders or different symptoms of a given disorder could be regarded as having categorically

different psychopathological experiences. According to Kövecses (2015), different subjective experiences such as emotions, ways of thinking, and physical sensations are very likely to prompt the speakers to organize and present their metaphorical ideas in particular ways, or highlight or downplay different aspects of their personal experiences. As different mental disorders and symptoms are characterized by distinct sets of emotional feelings, thinking patterns, and physiological reactions, it is possible that the differences would drive the speakers to focus on different aspects of their personal feelings and experiences, which would then lead to distinct metaphor usage patterns. Correspondingly, different severities of the same disorder or more specific symptoms, which correspond to quantitative differences in the same cluster of emotional, cognitive, and physiological experiences, are very likely to assign varying degrees of salience to the related aspects of personal experiences.

The dynamic interactions between the types and severities of subjective experiences and metaphor use could be clearly distinguished from several empirical studies on mental health metaphors. For example, Gök and Kara (2021) investigated how the experience of different types of health-related stressors and different levels of stress during the Covid-19 pandemic affected people's selection of target and vehicle terms in conceptualizing their subjective experiences. It was found that people diagnosed with Covid-19 and those who had chronic illness, who have presumably different health concerns, tend to allocate different amounts of attention toward the same target topics: while the former group produced approximately the same numbers of metaphors in describing ANXIETY/CONCERN and RISKS, the latter group appeared more inclined to metaphorize about their ANXIETY/CONCERNS than to describe RISKS. People with different levels of stress also showed contrasting tendencies in selecting vehicle terms: those living with risky groups and thus experiencing a relatively high level of stress showed stronger

preferences for RESTLESSNESS metaphors than expressions about BEING RESTRICTED, whereas those not living with risky groups and thus experiencing relatively lower levels of stress showed exactly the opposite pattern.

Fainsilber and Ortony (1987) compared the frequencies of metaphors associated with high and low intensities of emotions. It was found that intense emotional experiences often lead to more frequent use of FEELING-related metaphors as compared with milder experiences of the same emotions, but the difference does not hold for metaphors about emotion-related ACTIONS. This suggests that different intensities of emotional experiences are very likely to be reflected in the speakers' tendencies to metaphorize about emotional feelings. Similar observations were made by Demjén et al. (2019), who compared metaphors use by schizophrenic patients with different levels of distress in describing their voice-hearing experiences. A frequency-based comparison of POWER related metaphors showed that although both patients with high and low levels of distress described their relationship with voice-hearing as power confrontation, those who reported higher levels of distress were more likely to describe the voices as agentive aggressors and themselves in disempowered positions, whereas those who report lower levels of distress were more inclined to conceptualize themselves as empowered agents.

Indirect evidence could also be found from previous research on trauma victims' metaphorization of their personal traumatic experiences. Several studies on the variations of trauma metaphors across different treatment or recovery stages, summarized earlier in Section 2.2.1.2, have provided supporting evidence that the gradual reduction of traumatic stress is often reflected by variations in cognitive preferences in metaphorical meaning-making. For example, the reduction of PTSD symptoms tends to be accompanied by evident shifts of experiential focuses on CONTROL, MOTION, CONTAINMENT, and SIGHT (e.g., Costa & Steen, 2014; Foley,

2015; Littlemore & Turner, 2019, 2020; Meili et al., 2019), and changes in salience of topics or tendencies to elaborate on specific aspects of personal experiences such as physiological experiences, ways of coping, and perceived agency in the self (e.g., Foley, 2015; Littlemore & Turner, 2020; Wilson & Lindy, 2013).

The findings summarized above reveal the possibility for qualitatively different psychopathological experiences to be reflected in differential inclinations toward metaphor use, highlighting the potential for metaphorical language to be used as potential reference points for clinical assessment of mental health disorders and relevant symptoms. However, existing studies were largely qualitative in nature and only took broadly defined psychopathological states as reference points. The potential variations of metaphor usage patterns across finer distinctions in clinically defined, psychometrically measured psychopathological disturbances have not yet been investigated.

A rare study that incorporated psychometric data into metaphor analysis, conducted by Moser (2007) on metaphorical representations of SELF, highlights the possibility for metaphors to exhibit continuous, quantitative variations across different psychometric outcomes. The study is a correlation analysis of 63 subjects' conceptualizations of SELF and their ratings on the big five dimensions of personality traits (i.e., agreeableness, openness, extraversion, neuroticism, and conscientiousness), which reflect their degrees of reliance on specific ways of thinking and reasoning. It was found that the subjects' scores on the five personality traits are often correlated with distinct preferences for specific vehicle terms and target topics. For example, positive and significant correlations were found between scores on the agreeableness subscale and metaphors about SCIENCE, TECHNOLOGY, and ACTUAL SELF, between scores on the openness to experience subscale and metaphors about CONTAINER and PATH and descriptions of ACTUAL SELF,

SELF CHANGE, and SOCIAL SELF metaphors, and between extraversion scores and metaphors about PLAY AND SPORTS and descriptions of OUGHT SELF and SOCIAL SELF. In other words, people who got higher scores on the three personality traits were more likely to present their metaphorical ideas using the correlated vehicle terms and target topics than those who had relatively lower scores. The findings point toward the possibility for metaphor usage patterns to serve as reference points for identifying and distinguishing between people who have different personality traits.

Quantitative variations of linguistic patterns across different severities of traumatization were also reported by previous trauma narrative research, many of which used correlation analysis as the method for pinpointing systematic variations. Based on a synthesized review of trauma narratives research, O’Kearney and Perrott (2006) found that people of higher degrees of traumatization often show heightened attention toward sensory and perceptual impression, negative emotions, emotional and thought processes, self-identity and self-referential perspectives, and temporal disruption in the description of personal traumatic experiences. There were also a number of studies that highlighted potential correlations between severities of specific symptoms, such as dissociation, re-experiencing, and avoidance, and trauma victims’ preferences for specific linguistic constructs, including but not limited to disorganization, threat, death, negative emotions, and self-references (e.g., Berntsen et al., 2003; Ehlers et al., 2004, 2012; Foa et al., 1995; Harvey & Bryant, 1999; Luno et al., 2013). This body of research provided clear evidence that language use by trauma victims with differential overall degrees of trauma and severities of psychological disturbances tend to show distinct preferences for specific types of linguistic constructs. However, although many of the linguistic constructs were highly abstract and elusive in nature and thus very likely to have appeared in trauma narratives as metaphorical expressions, the studies did not draw

a clear distinction between their metaphorical and non-metaphorical instantiations; a large body of them, restricted by the use of computerized text analytic tools such as LIWC (Pennebaker et al., 2015), focused exclusively on literal emotion words such as “*sad*”, “*worry*” and “*despair*”. The associations between severities of psychopathological disturbances and trauma victims’ metaphorical meaning-making were often neglected.

The negligence of metaphorical expressions in trauma narrative research is probably influenced by clinical practitioners’ customary focuses in trauma assessment. Following the guidance of diagnostic manuals such as DSM-V and ICD-10 (World Health Organization, 1993), clinical practitioners’ attention is mainly devoted to universally shared, reliably observable aspects of traumatic experiences (Galatzer-Levy & Bryant, 2013), such as the triggering event, presence of specific symptoms, and duration of symptom presence. These aspects, expectedly, are very often represented by literal language. By comparison, trauma victims’ metaphorical accounts of their psychopathological experiences are often regarded as ornamental, vague, and idiosyncratic; the expressions could also be less tractable for word-based text analytic tools (Tay, 2020c). As a result, metaphorical language was rarely considered as a relevant factor in research and practice of trauma assessment. However, as we have seen, trauma metaphors often show systematic patterns at the discourse level; the patterns could interact dynamically with clinically and therapeutically interesting phenomena and provide valuable clues to the speakers’ implicit emotional, cognitive, and physiological states. While previous studies suggest metaphorical language to be a crucial linguistic construct that is closely associated with the speakers’ emotional disturbances, their potential to capture different types and severities of psychopathological experiences awaits further exploration.

Chapter 4 of this thesis presents an exploratory study in this direction. Drawing from the methodological insights drawn from Moser (2007) and the abovementioned strand of research on trauma narratives, a mixed-method analysis that combines correlation analysis and qualitative discourse analysis will be conducted to explore how trauma victims' overall degrees of trauma and severities of specific clinical symptoms are related to their metaphor usage patterns.

2.4.2.2 Substantive Experience of Psychopathological Symptoms and Metaphor Use

A wide range of theoretical and empirical works on real-world metaphors have shown that different emotions, thoughts, and physiological experiences could prime different conceptual elements into people's metaphor use and thus lead to particular types of metaphors in describing particular experiences (e.g., Cameron & Maslen, 2010; Kövecses, 2010, 2015; Littlemore, 2019; Semino, 2010; Tay, 2013). This also applies to the metaphorization of subjective experiences of emotions and mental health disorders. Based on a comprehensive review of previous research on emotion metaphors, Kövecses (2004) found that the conceptualizations of different emotional experiences, such as ANGER, LOVE, SADNESS, and FEAR, were often characterized by the same set of vehicle terms, including but not limited to CONTAINER, NATURAL AND PHYSICAL FORCE, BURDEN, and ILLNESS; nevertheless, expressions identified for different emotions might show nuanced differences in scopes of vehicle terms and ranges of more specific aspects of emotions such as intensity of emotions and sense of control (Kövecses, 2004, 2010). Some metaphors were found to be exclusive to one or few types of emotions. For example, HEAT/FIRE metaphors were only noticed in the description of ANGER, LOVE, and LUST but not in HAPPINESS, SADNESS, PRIDE, and SURPRISE; PHYSICAL DAMAGE metaphors were only identified in the interpretation of PRIDE and SHAME but not in others; metaphors about

TRESPASSING and PHYSICAL ANNOYANCE were specific and limited to ANGER; expressions about BEING OFF THE GROUND, AN ANIMAL THAT LIVES WELL, and PLEASURABLE PHYSICAL SENSATION were found exclusively for HAPPINESS (Kövecses, 2004).

Yu and Tay's (2020) mixed-method analysis of image schematic metaphors in describing DEPRESSION, ANGER, and ANXIETY, which was mentioned earlier in Section 2.3.2, provides further quantitative evidence that different emotional experiences are very often conceptualized using different sets of image schemas: while some image schemas (e.g., CONTAINMENT, FORCE, PATH, and VERTICAL ORIENTATION) were commonly noticed for all three types of emotions, their likelihood of occurrence showed remarkable differences. A more focused study on ANGER metaphors by Lakoff and Kövecses (1987) shows that different developmental stages of ANGER, for example, the occurrence of the offending event, perception of anger, attempt to control anger, release of anger, and restoration of equilibrium, are often described using different types of embodied experiences and in particular, different aspects of FORCE RELATIONS.

Different clinical manifestations and developmental stages of the same psychiatric or mental health disorders, which are similarly characterized by differential emotional, cognitive, and physiological experiences, are also likely to be metaphorized using distinct sets of conceptual elements. By comparing metaphors produced by patients with different types of seizure, Plug et al. (2009) found that those diagnosed with epileptic seizure were more likely to metaphorize seizure as an AGENT/FORCE or EVENT/SITUATION, whereas patients in the non-epileptic group were more inclined to conceptualize their subjective experience as being in a SPACE or PLACE. Through an image schematic analysis of metaphors in describing Obsessive-compulsive Disorder (OCD), Knapton (2016) found that the conceptualization of threat tends to vary across

different subtypes of OCD: clients who were more concerned with the self and identity preferred to describe threat as trapped inside the CONTAINER of the self, those were particularly attentive to the negative outcomes of an activity tended to conceptualize threat as dynamic, unpredictable and constantly moving along the trajectory of SOURCE-PATH-GOAL, and those who were concerned about the effects of objects were more inclined to perceive threat as an entity external to the self and highlighted the interaction between the self as a CONTAINER and the perceived MOVEMENT of threat. In addition, the clients' metaphorical conceptualizations of THREAT as dynamic or static also tended to vary as different OCD episodes (e.g., trigger, distressing thought, response) unfold, and that perceived MOVEMENT of threat was identified as the most relevant to the psychopathological experience of fear and distress. The study of trauma metaphors summarized in Section 2.2.1 also provides evidence that perceptually different psychopathological experiences of the same mental health disorder, such as different types of emotional and cognitive disturbances, and different recovery or treatment stages, tend to be conceptualized using contrasting patterns of metaphors (Beck, 2016, 2017; Foley, 2015; Littlemore & Turner, 2019, 2020; Wilson & Lindy, 2013).

Compared with metaphors about specific types of emotions (e.g., anger and happiness) and psychopathological disorders (e.g., depression and anxiety), much less attention has been paid to the conceptualizations of different symptoms of the same type of psychopathological disorders. Nevertheless, previous findings about trauma victims' metaphorical accounts of their psychopathological experiences provide some interesting though fragmented evidence that different post-traumatic symptoms might be interpreted in terms of different types of embodied experiences.

As I have shown in Section 2.4.1.1, psychopathological experiences of ASD could be categorized in terms of five specific symptoms, each of which is characterized by a coherent yet distinct cluster of emotional, cognitive, and physiological experiences. A case study of PTSD clients' metaphor use presented by Wilson & Lindy (2013, p.95) suggests that dissociative symptoms are often interpreted in terms of physical experiences of SPLITTING (e.g., "I am *split apart*" and "I am *diffused and unglued*"). Similar expressions such as "my thoughts *split*" and "I don't feel present sometimes, thoughts are *not here*" were also reported by Gušić et al. (2018, pp.546-547) in a symptomatological study of war-traumatized refugees' experiences of PTSD. Different from dissociative symptoms, trauma victims' experience of hypervigilance is more often described as EXPLOSION. For example, "I was about to explode" (Wilson & Lindy, 2013, p.69) and "being set off" (Foley, 2015, p.141). The patterns revealed interesting convergences in underlying conceptualizations of psychopathological symptoms, which provide preliminary evidence that different clinical symptoms of a given mental disorder might be conceptualized using distinct types of embodied experiences and therefore identified based on metaphorical expressions. However, due to the general lack of attention to psychometric data and relevant clinical observations in the study of trauma and mental health metaphors, the conceptualization of specific clinical symptoms has never been investigated in empirical research in systematic ways.

Compared with the study of metaphors in describing more general types of emotions and mental health disorders, narrowing the focus down to symptom-specific metaphors would require some extra clinical and methodological considerations. Firstly, as different symptoms of the same mental disorder are often strongly correlated with each other (Borsboom & Cramer, 2013), it is possible that those who meet the diagnostic criteria of the symptoms would experience and conceptualize the symptoms in a way that is qualitatively different from those below the diagnostic

threshold; therefore, the study of symptom-specific metaphors need to pay special attention to the subjects' clinical conditions.

Secondly, compared with the study of metaphors about specific mental health disorders, research on symptom-specific metaphors is faced with a more marked conflict between a relatively small sample size and a potentially large number of analytic categories. As I will specify later in Section 5.2, not all metaphors produced by the clients in mental health communication are directly relevant to their psychopathological experiences. Since the study of symptom-specific metaphors places stringent criteria on the subjects' psychopathological experience and the clinical relevance of their metaphors, the number of metaphors eligible for the analysis would be relatively small. Different from purely bottom-up metaphor analysis, which focuses on an emerging set of semantic themes that best summarize the data, the analysis of symptom-specific metaphors needs to be simultaneously informed by the emerging semantic themes and a pre-established set of clinical categories, which means the number of metaphors under each clinical category and/or semantic category could be even smaller. While bottom-up identification of metaphor vehicle terms might yield proliferative categories at different levels of abstraction (Tay, 2021b), it would be more convenient to code the data based on a pre-determined coding scheme that has a limited and fixed number of categories.

Thirdly, as an important purpose of symptom-specific metaphor analysis is to identify patterns that could be possibly generalized beyond the given dataset to other research contexts, a pre-determined and fixed coding scheme would also be more favorable than bottom-up identification, which might yield contextually bound categories that are not necessarily transferrable to other mental health contexts.

To resolve the above issues, we need to narrow the scope of subjects down to subjects who meet the diagnostic criteria of the mental health disorder and categorize their symptom-specific metaphors based on a fixed and widely applicable coding scheme. A possible solution is to code symptom-specific metaphors based on established lists of image schemas (Lakoff, 1987; Johnson, 1987), which classify infinite types of embodied experiences using a fixed number of categories and extract potentially generalizable patterns of metaphorical expressions.

According to Lakoff (1987) and Johnson (1987), image schemas are meaningful cognitive structures that arise from discrete, universally shared embodied experiences. The structures serve as important building blocks in abstract knowledge, thinking, and reasoning. For example, the CONTAINER schema is motivated by physical activities of getting in and out from architectures or clearly delineated spaces such as cabinets, and clothes, and the experience of using physical parts like the stomach and mouth as containers of food, water, and air, whereas the CONTACT schema is triggered by the kinesthetic experience of being physically in touch with a person or a specific object. Metaphors structured by such image schemas are widely observed in the representation of abstract knowledge, emotions, and thoughts, of which trauma victims' accounts of subjective experiences is an example. As noted by Wilson and Lindy (2013, p.45), the metaphor "I am empty inside" foregrounds the CONTAINER-like properties of HEART and its potential to be filled or emptied, whereas "No one can get close to me" instantiates the CONTACT schema, which arises from the experience of physical interactions between different people or tactile experiences of the surface of an object.

Numerous cognitive linguists have proposed inventories of image schemas with fixed numbers of categories, for example, Clausner and Croft (1999), Hampe (2005), Lakoff (1987),

Lakoff and Turner (1989), and Johnson (1987)¹⁶. Metaphor analysis based on established inventories of image schemas shows obvious strengths in extracting potentially generalizable and clinically applicable patterns. While metaphor analysis based on emergent themes of vehicle terms or therapeutically interesting vehicle groupings could reveal important information about embodied knowledge, cultural knowledge, and individual-specific experiences (e.g., Cameron & Maslen, 2010; Kövecses, 2005, 2010, 2015; Lakoff, 1987; Lakoff & Johnson, 1980, 1999; Johnson, 1987), the identification of image schemas shows more concern for how universal embodied experience structures human thinking and reasoning. For example, Pritzker (2007) and Yu (2005) noted that Mandarin Chinese speakers often conceptualize HEART as the container of both emotions and thoughts, whereas western cultures are more likely to draw a functional distinction between heart and brain/head, taking the former as the container of feeling and the latter as the center of thoughts. However, if we reduce the metaphors to the image schematic level, we can find both to be instances of the CONTAINER schema. At this level, potential cultural and individual differences are downplayed, but universal and relatively invariant aspects of human experiences are highlighted. Therefore, metaphor analysis at the image schematic level is deemed more suitable for exploratory research that aims to identify generalizable metaphor usage patterns rather than highlight the idiosyncrasies of personal and subjective experiences. Compared with conceptual metaphors, theoretically stipulated image schemas could also be more tractable in the study of mental health communication (Tay, 2021b) and more practically manageable for clinical practitioners. Therefore, established inventories of image schemas could be adopted as reliable and

¹⁶ As noted by Hampe (2005), the list of image schemas has never been a closed set. As listed in the main text, numerous cognitive linguists, with different theoretical and practical considerations, have made subsequent additions to the inventories proposed by Lakoff (1987) and Johnson (1987), and not all kept close to the original spirit (refer to Hampe, 2005 for a more comprehensive review).

stable reference points for categorizing and analyzing clinically interesting metaphor usage patterns.

In sum, previous findings about metaphors in describing different clinical manifestations of mental health disorders show that substantive experiences of specific psychopathological symptoms are very likely to prime different conceptual elements into the speakers' metaphorical conceptualization of their subjective experiences of the mental health disorder. Considering the potential operational and methodological difficulties faced by the study of symptom-specific metaphors, it is proposed that established inventories of image schemas be employed as coding schemes for the identification of underlying conceptual patterns. How trauma victims who meet the diagnostic criteria of ASD draw upon such experiences to describe their experience of specific ASD symptoms will be investigated in Chapter 5 of this thesis.

2.5 Chapter Conclusion

Based on a comprehensive review of existing research on trauma metaphors, in this chapter I identified two major research gaps to be addressed in this thesis. Firstly, previous research focused almost exclusively on the substantive content of trauma metaphors, but rarely paid attention to systematic, quantitative metaphor usage patterns indexed by non-substantive metaphor variables, which reflect multifaceted, presentational properties that abstract away from idiosyncrasies of personal traumatic experiences. To further elaborate and address this research gap, I provided a detailed introduction to the presentational properties and multifacetedness of metaphor use, and outlined several non-substantive variables that are key to the study of trauma metaphors. With reference to methodological insights gleaned from previous research, I also

suggested how systematic, contextualized instantiations of such properties could be captured using a mixed-method approach through the combination of categorical data analytic methods and context-situated qualitative analysis.

Secondly, although psychopathological experiences are widely recognized as an important contextual factor in shaping metaphorical conceptualizations and metaphor presentation, their interactions with trauma victims' metaphor use were rarely examined in a systematic and empirical way. The incorporation of psychometric data and relevant clinical observations was proposed as a feasible approach to address this research gap. Taking the assessment and diagnosis of ASD as an example, I provided a general introduction to the two basic dimensions of psychopathological experiences as measured by psychometric tools, i.e., severities of psychopathological disturbances and substantive experiences of differential clinical symptoms. Based on previous research on mental health metaphors and trauma narratives, I suggested that the interactions between psychopathological experiences and metaphor use could be further explored through i) a correlation analysis of severities of psychopathological disturbances and the speakers' inclinations or attention toward specific aspects of metaphors, and ii) an image schematic analysis of metaphors that are directly relevant to specific psychopathological symptoms.

Before moving on to the next chapter, it is necessary to clarify some potential misunderstandings about the aim and findings of this thesis. Firstly, this thesis does not intend to pinpoint the particularities of trauma metaphors as compared with non-metaphorical accounts of trauma or metaphors in describing other emotional disturbances or mental health disorders; neither the sampling of participants nor the selection of variables allows us to draw such conclusions (refer to Section 6.3 for a more detailed reflection on limitations).

Secondly, the studies of trauma- and symptom-related metaphor usage patterns in Chapters 4 and 5 do not identify causal relationships between metaphor use and the experience of trauma, nor do they not attempt to propose metaphor analysis as a replacement or alternative to existing psychometric measures of trauma and symptoms. Rather, to reiterate from Section 1.4, the primary linguistic aims are to probe into the contextual characteristics, especially the quantitative dynamics underlying trauma metaphors, and exploit the contextual interactions between psychological/psychopathological experiences and the use of metaphors; the clinical aim is to explore the clinical relevance of metaphorical language, identify potentially trauma-related metaphor usage patterns that could be used to assist the pre-diagnostic screening, clinical evaluations, and subsequent therapeutic treatment, and set the stage for future diagnostic applications.

It is also important to note that the linguistic examples selected for discourse analysis are not necessarily representative of typical clinical manifestations of trauma. Instead, the major purpose is to provide clinical practitioners with a more immediate sense of how the metaphor usage patterns are played out in the local communicative context. Although metaphor analysis inevitably revolves around the associations between abstract target topics and concrete, tangible vehicle terms in the experiential world, the interpretations of metaphorical mappings should not be awarded any special “truth status” in clinical practices; instead, they should be evaluated in terms of their “usefulness” (Spong, 2010, p.72) in revealing speakers’ implicit ways of thinking and enhancing our understanding of metaphor use in clinical situations of trauma description and the broader context of mental health communication.

Chapter 3 A Mixed-method Analysis of Multifaceted, Presentational Properties of Trauma Metaphors

3.1 Chapter Introduction

In the attempt to document qualitative, contextual nuances of trauma metaphors, previous studies mainly focused on substantive features of metaphors reflected by vehicle terms and target topics. Previous research on mental health metaphors and trauma narratives has highlighted the theoretical and clinical importance of multifaceted, presentational properties of metaphor use indexed by non-substantive features of metaphors (refer to Sections 2.3). While the properties could provide important references for understanding trauma victims' preferred ways of conceptualizing key therapeutic issues and their implicit emotional and cognitive inclinations, how they are systematically instantiated in large volumes of data has rarely been investigated.

This chapter examines the multifaceted, presentational properties of trauma metaphors as the contextualized instantiations of non-substantive variables and their dynamic interactions with substantive variables in the 46 interviews with trauma victims. A total of 1,634 metaphors identified from the dataset were coded for CONVENTIONALITY, EMOTIONAL VALENCE, TARGET CATEGORY, and PERSPECTIVE. A mixed-method analysis that combines quantitative and qualitative discourse analysis will be conducted to examine systematic interactions among these variables. Loglinear analysis with chi-square decompositions will be used to examine (1) how CONVENTIONALITY and EMOTIONAL VALENCE are instantiated in trauma victims' metaphorization of different TARGET CATEGORIES, and (2) the dynamic interactions between CONVENTIONALITY and EMOTIONAL VALENCE and trauma victims'

perspective-taking in metaphorical meaning-making. The former aspect reflects the dynamic interactions between non-substantive and substantive aspects of metaphors, and the latter captures the systematic interrelationships among three non-substantive aspects. Statistically significant metaphor usage patterns will then be interpreted using linguistic examples from a qualitative perspective.

In what follows, I will first introduce the metaphor identification procedures and variables to be examined in this chapter (Section 3.2) and outline the research questions and research methods (Section 3.3). I will then present the statistical results and discuss the major findings from a qualitative discourse analytic perspective (Section 3.4). Conclusion, limitations, and future directions will be summarized at the end of this chapter (Section 3.5).

3.2 Data and Variables

This section introduces the linguistic data and metaphor variables. The metaphor identification procedure, i.e., the discourse dynamics approach proposed by Cameron and Maslen (2010), will be illustrated using linguistic examples in Section 3.2.1. Metaphor variables to be examined in this chapter are introduced in Section 3.2.2. Interrater reliability tests for metaphor identification and statistics are presented in Section 3.2.3.

3.2.1 Metaphor Identification

A general observation about metaphor use in mental health communication is that the expressions do not occur exclusively at the level of lexical unit (Fainsilber & Ortony, 1987; Tay,

2017) but are very often associated with flows of thoughts and feelings. Therefore, word-based identification methods such as Metaphor Identification Procedure (MIP; Pragglejazz Group, 2007) and Metaphor Identification Procedure VU University Amsterdam (MIPVU; Steen et al., 2010) may not apply here.

To capture metaphors at the level of language use, the discourse dynamics approach was chosen (Cameron & Maslen, 2010). As a clearly operationalized and reliable method for identifying metaphors in mental health communication (Mathieson et al., 2016), the approach has been successfully applied in the study of metaphors in psychotherapy (Mathieson et al., 2015, 2018, 2020; Tay, 2016, 2017, 2018) and in patients' self-accounts of mental health issues (Knapton & Rundblad, 2018). Instead of identifying metaphors at the linguistic level, the discourse dynamics approach focuses on the interconnections between language and multiple contextual factors (e.g., embodied experience, emotions, and socio-cultural factors) and identifies metaphor vehicle terms and topics from lexical units to larger chunks of language like phrases and sentences (Cameron & Maslen, 2010).

The determination of metaphoricity following the discourse dynamics approach is based on contrast and transfer between the basic meaning and the contextual meaning of a word or phrase. The definitions of the basic and the contextual meanings are borrowed from Pragglejazz Group (2007, p.3): the basic meaning refers to the contemporary meaning of the word or phrase in other contexts that is "more concrete, related to bodily action, more precise, [and/or] historically older", and contextual meaning refers to "an entity, relation, or attribute in the situation evoked by the text" (Cameron & Maslen, 2010, p.106). Each word or phrase in the data needs to be checked for its basic meaning and contextual meanings, and examined against the two conditions for metaphor:

1. there is a contrast or incongruity between meaning of the word or phrase in its discourse context and another meaning; together with
2. a transfer of meaning that enables that contextual meaning to be understood in terms of basic meaning.

(Cameron & Maslen, 2010, p.105)

Stretches of language that are potentially metaphorical are referred to as “metaphor vehicle terms”, and referents of vehicle terms are called “topics” of metaphors. As will be illustrated later in example (1), the discourse dynamics approach embraces indeterminate boundaries for metaphor vehicle terms as a theoretical assumption. Since a metaphor vehicle term could stretch beyond a single lexical unit to surrounding phrases and sentences, it is suggested that researchers identify “the most clearly incongruous or contrasting word and work outwards” to determine where a vehicle term begins and ends (Cameron & Maslen, 2010, p.108). Instead of yielding clearly delineated analytical units as MIP or MIPVU, decision-makings on metaphor boundaries follow the principle of “includ(ing) all that appears relevant” (Cameron et al., 2009, p.72).

A natural consequence of accepting indeterminate boundaries is that it would be impractical to use quantitative methods to measure the interrater reliability of metaphor identification. Following Cameron et al. (2009), two strategies were adopted in this thesis to maximize the trustworthiness of coding. Firstly, a dictionary was used to assist the identification of basic meanings. The Contemporary Chinese Dictionary (《现代汉语词典》, the 7th edition) (CCD7) was chosen for this study due to three major reasons: (1) as one of the most authoritative Chinese language dictionaries, the CCD series provides a comprehensive inclusion of contemporary meanings of single characters, phrases, and idiomatic expressions in Mandarin

Chinese; (2) following the refinements made in CCD6 (Zhao, 2015), CCD7 also makes meticulous distinctions between the entries' literal and figurative meanings, which provides convenience for the identification of metaphors; (3) CCD7 was compiled to serve the needs of the general Chinese population and students at the tertiary education level in particular (Zhao, 2015) and therefore particularly suitable for examining language use by the present sample. Therefore, this dictionary is deemed a particularly suitable choice for the present study. Secondly, problematic cases with ambiguous meanings were resolved through discussion with other experienced metaphor researchers.

The process of metaphor identification is illustrated using the following examples. Metaphor vehicle terms are underlined, and details irrelevant to the point under discussion were omitted (the same hereinafter):

(1) 可能在我的二十多年人生里面，应该是没有试过在短短的时间内情绪或者是心理状态会经历那么大的起伏。

[More than 20 years have passed in my life, I have never experienced such great rises and falls in emotions within such a short period of time.]

(2) 以前觉得还可以，就是我们不谈，我们不说，我们置身事外，但是现在就发现不行，就是政治已经糊在你脸上了，就是你跑都跑不掉了。

[I thought it was ok, we could stay out of it as long as we don't talk about it. But now it doesn't work anymore. Politics has been pasted to your face now; you can't run away from it anyway.]

(3) 突然有一群人在那里喊口号的时候，我们下意识的都在那愣住了，……，全都停下来了，然后就立马转头，然后再下一秒就想着该怎么逃跑。

[Suddenly when a group of people began to shout their slogan, we became subconsciously stunned, ..., all of us stopped, turned around immediately, then in the next second started to think how should we run away from there.]

In example (1), the most clearly incongruent word is “起伏 (qǐ fú, rises and falls)”. According to the CCD7, the basic meaning of “起伏” is “changes in vertical height”. The contextual meaning is the emotional ups and downs experienced by the speaker. Given the obvious meaning transfer between sensorily perceivable height changes and abstract emotion changes, the word is identified as a metaphor vehicle term. Working outwards from “起伏”, we can find that “那么大的” (nà me dà de, such great) also contributes to the basic meaning of “起伏” by specifying the magnitude of the rises and falls, therefore it is also underlined as a part of the metaphor vehicle term.

Similarly, in example (2), both “糊在你脸上” (hú zài nǐ liǎn shàng, have something slimy pasted to your face) and “跑都跑不掉” (pǎo dōu pǎo bù diào, cannot run away) in example (1) have basic meanings that contrast with and enable the understanding of their contextual meanings: the experience of being involuntarily involved in the social unrest is interpreted as having something slimy pasted to the speaker’s face, and the inability to avoid the situation is described as herself being physically unable to run away from a place. The two phrases are thus identified as metaphor vehicle terms. However, the boundary of vehicle terms is not as clear as that in example (1): whether the aspect marker “了” at the end of example (1) should

be identified as a part of “跑都跑不掉” or an independent lexical unit could be ambiguous. Here we apply the abovementioned principle of “includ(ing) all that appears relevant” and underline it as part of the metaphor vehicle term. Example (3), by contrast, is a case where we see no meaning contrast and transfer. Although the speaker also describes a physical activity of “逃跑” (táo pǎo, run away), its contextual meaning obviously overlapped with the basic meaning, therefore it was not identified as a metaphor vehicle term.

Some commonly used expressions, such as “心里” (xīn lǐ, in my heart), “给” (gěi, give), and “东西” (dōng xi, things) could be potentially metaphorical, because their basic meanings involve physically concrete entities or actions, which are likely to contrast with and contribute to the understanding of their contextual meanings. While the expressions usually do not bear much relevance to the study of contextualized metaphors (Cameron & Maslen, 2010), they were not included in the analysis unless the metaphorical meanings were explicitly foregrounded and exploited. The following examples are illustrative:

(4) 关注那些东西会让你自己非常焦虑，非常痛苦，非常无助。

[Paying attention to those things will make your very anxious, very miserable, very helpless.]

(5) 生活中仿佛那些五彩斑斓的东西不见了。

[It's like all those colorful things in my life had disappeared from sight.]

In example (4), the interviewee uses “东西” (dōng xi, things) to describe the anxiety-arousing news on social media. While its basic meaning “concrete entities” is clearly incongruent with and contributes to the understanding of its contextual meaning (“specific social media

messages”), the metaphorical meaning is highly conventional in everyday communication. The ontological features of the entities are not deliberately emphasized by the speaker, nor is the meaning transfer directly relevant to the description of the traumatic experience; therefore, it was not included in the list of metaphors. In example (5), the colors and visualizability of the entities were exploited for their metaphorical meanings. Describing the entities as visually “五彩斑斓” (wǔ cǎi bān lán, colorful) highlights the positive nature of the feelings, and the colorful entities disappearing from sight provides a vivid image of how the interviewee’s feelings had changed after the traumatic event. On account of its direct relevance to the traumatic experience, the expression was identified as a metaphor vehicle term.

Following the above criteria, 1,634 metaphor vehicle terms were identified from the 46 interviews. The average number of vehicle terms per interview is 35.52 (SD=25.62), and the average density per thousand Chinese characters is 8.92 (SD=3.59)

3.2.2 Metaphor Variables

To provide a more comprehensive account of trauma victims’ metaphor usage patterns, the 1,634 metaphors were further identified in terms of several finer metaphor variables that hold theoretical and practical significance for the study of multifaceted, presentational properties of trauma metaphors, including conventionality, emotional valence, target categories and the perspectives they belong. The theoretical definitions and clinical relevance of the variables have been introduced earlier in Section 2.3.1. Operational definitions, linguistic examples, and descriptive statistics for each of the variables and their subcategories will be provided in the following subsections.

3.2.2.1 Conventionality

As introduced earlier, conventionality refers to whether a metaphor is entrenched in everyday use by ordinary people for everyday communicative purposes (Kövecses, 2010). Following Steen et al. (2010), conventionality of metaphors in this study is coded as a binary construct. According to Steen et al. (2010, p.34), conventionality could be determined using a dictionary based on linguistic definitional properties: if the contextual meaning of the metaphor vehicle is included as one of the standard senses of the word, then it is identified as a conventional metaphor, if not, then it is labeled as a novel metaphor. Apart from using conventional metaphors in their original forms, speakers in mental health contexts might also elaborate or extend conventional metaphors into phrases, sentences, and longer stretches of language (Cirillo & Crider, 1995; Ferrara, 1993; Gelo & Mergenthaler, 2012); similar cases were also noticed in the present dataset (see example (5) presented in the previous section). As such expressions introduce new and creative conceptual elements, following Gelo and Mergenthaler (2012), they were identified as novel metaphors.

Using the CCD7, 716 novel metaphors and 918 conventional metaphors were identified from the present dataset. The two categories are illustrated by two examples discussed earlier in Section 3.2.1 (reproduced in Table 3.1).

Conventionality	Example
Conventional (918)	<p>可能在我的二十多年人生里面，应该没有试过在短短的时间内情绪或者是心理状态会经历<u>那么大的起伏</u>。 [More than 20 years have passed in my life, I have never experienced <u>such great rises and falls</u> in emotions within such a short period of time.]</p>
Novel (716)	<p>以前觉得还可以，就是我们不谈，我们不说，我们置身事外，但是现在就发现不行，就是政治已经<u>糊在你脸上了</u>，就是<u>你跑都跑不掉了</u>。 [I thought it was ok, we could stay out of it as long as we don't talk about it. But now it doesn't work anymore. Politics has been <u>pasted to your face</u> now; you <u>can't run away from it</u> anyway.]</p>

Table 3.1 Examples and frequencies of conventional and novel metaphors

For the first example, if we look up the meaning of “起伏” in the Contemporary Chinese Dictionary, we can find the contextual meaning of the word is included as one of the standard senses of the word, i.e., “比喻感情、关系等起落变化” (a metaphor for changes in emotions, relationships, etc.). Since “那么大的” does not introduce a new metaphorical meaning but only builds upon the basic meaning of “起伏”, the whole metaphor vehicle term is identified as an instance of conventional metaphor.

The second example, by contrast, shows two instances of novel metaphors. Although both metaphor vehicle terms describe bodily experiences that are familiar to all human beings (i.e., having something covered on the face and being unable to run away from a place), the basic meanings are not fixedly attached to any specific contextual meaning; instead, the sensory and physical qualities are exploited by the speaker in a creative way to provide an idiosyncratic interpretation of the traumatic event.

3.2.2.2 Emotional Valence

Emotional valence refers to the emotional tones conveyed by a specific metaphorical expression. For the present study, metaphors that indicate a pessimistic, passive, or disapproving attitude are labeled as “negative”, those expressing an optimistic, active, or approving attitude are identified as “positive”, and those without an apparent emotional orientation are rated as “neutral”. 826, 711, and 97 metaphors were identified for the three sub-categories, respectively. Examples and frequencies of the three sub-categories are shown in Table 3.2.

Valence	Example
Negative (826)	我自己甚至都可能会意识到我是不是就像（进入）一个黑洞一样，被负面情绪吸进去了。 [Even I myself realized, if I was, <u>just like (in) a black hole, if I was absorbed by negative emotions.</u>]
Neutral (711)	这个事情，我感觉啊，就是个小小插曲。 [This event, I feel, is <u>just like a small episode.</u>]
Positive (97)	突然间就会觉得好像感受到了希望之火慢慢燃烧起来。 [Suddenly I would feel that <u>the fire of hope was starting to burn.</u>]

Table 3.2 Examples and frequencies of the three emotional valences

3.2.2.3 Target Categories and Perspectives

Existing research on trauma metaphors often revolves around substantive aspects, i.e., target topics and vehicle terms, and the emergent themes are usually classified in a bottom-up manner based on their thematic salience. However, purely linguistically oriented categorizations may not always satisfy the purpose of clinically situated metaphor analysis, as the latter is more concerned with potentially therapeutically relevant patterns and the relevance of specific types of

metaphors to clinical assessment and treatment, but less with the linguistic features of emergent metaphor themes. Instead of following the traditional linguistic approach, we could categorize metaphors in health communication in a top-down manner based on established schemes of therapeutically interesting themes.

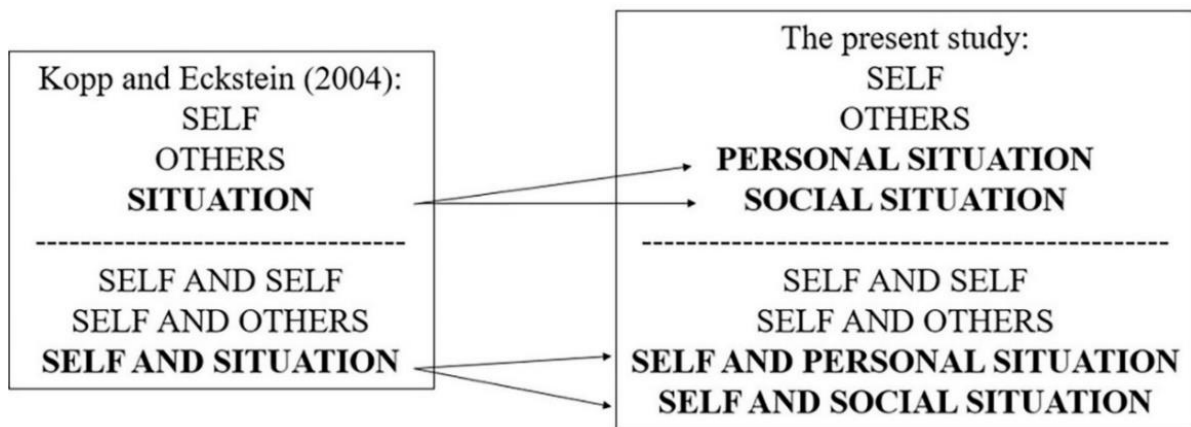
A useful top-down schemes for categorizing target topics of mental health metaphors is the taxonomy proposed by Kopp (1995) and further illustrated in Kopp and Eckstein (2004), which was introduced earlier in Section 2.3.1.2. Their taxonomy includes six categories, i.e., SELF, OTHERS, SITUATIONS, SELF AND SELF, SELF AND OTHERS, and SELF AND SITUATION. A number of empirical studies have demonstrated the taxonomy's advantages in categorizing and analyzing metaphors in the mental health context and its potential to serve as the starting points of both qualitative and quantitative analysis (e.g., Eckstein et al., 2012; Rowat et al., 2008; Tay, 2015, 2017, 2018; Tay et al., 2019).

Although the original taxonomy is largely coherent with the topics covered in the interview data, the very nature of the current traumatic event raises the need for a finer distinction between personal life situation and the larger social situation. As mentioned earlier, during the social unrest local residents' daily routines were greatly disrupted by mass vandalism; some were also faced with unexpected economic losses from property damage or experienced severe psychological distress due to concerns for personal safety (Ng, 2020). The use of verbal abuse and physical violence to "informally settle interpersonal conflicts" was not uncommon (Shek, 2020, p.621). The invasion of protest activities into personal life, conceivably, would lead to a sense of division and even opposition between people's personal life and the broader social and political environment, which is not necessarily shared by other mental health contexts. The perceived incongruence between personal life and social situation was also reflected in figurative language produced by

participants of the present study. For example, when talking about crime events caused by the protests, an interviewee mentioned that “你就会想这些东西离你最好远一点 (you would think these things should better stay far away from you)”, which reflects a clear delineation between the surrounding social situation and the speaker’s personal life. Similar conceptualizations could also be identified from example (5) provided earlier in Section 3.2.1, in which the speaker’s leisure time before the social unrest is conceptualized as having many “colorful things” (“五彩斑斓的东西”) and a result of the social unrest is described as the colorful things “disappear from sight (不见了)”.

To better capture the complexities of the current research context, “situation” in the original taxonomy was divided into “personal situation” and “social situation”, and “self and situation” was split into “self and personal situation” and “self and social situation” accordingly. The extended version of Kopp’s (1995) taxonomy of target categories is shown in Figure 3.1 below.

Figure 3.1 The extended version of Kopp’s (1995) taxonomy of target categories



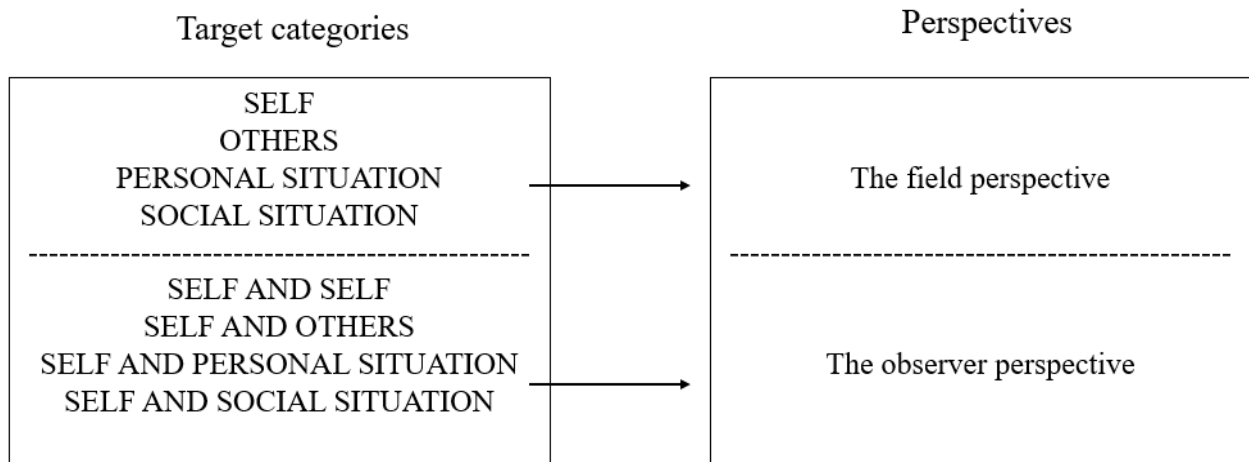
As Kopp (1995) and Kopp and Eckstein (2004) did not provide explicit criteria for making distinctions among the self-related categories, especially SELF and SELF AND SELF, Lakoff’s

(1992) framework of “multiple selves” was incorporated to guide the identification process. According to Lakoff (1992, p.9), people’s cognitive activities are often metaphorically conceptualized in terms of the interaction between two different facets of the person, i.e., the “subject” as the center of consciousness, will, and judgment, and the “self”, including the person’s beliefs, emotions, feelings, etc. The self is constantly under the inspection of the subject; it could be perceived as consistent with, separated from, or even incompatible with the subject. An example for the subject being totally conscious and consistent the self is “I’m very happy to see you”. In contrast, “I keep telling myself to leave” and “I wasn’t myself yesterday” depict situations where the subject does not have control over all aspects of the self or when the subject is partly unconscious (Lakoff, 1992). For the present study, metaphor vehicle terms in which the speaker’s subject is conscious, compatible with the self, or has normal control over the self were labeled as SELF, those in which the two are incompatible, or either is unconscious or uncontrollable, were labeled as SELF AND SELF. Those depicting the self’s interactions with others, personal life, and social situation were labeled accordingly.

As introduced earlier in Section 2.3.1.2, the field and the observer perspectives (Nigro & Neisser, 1983) are two vantage points adopted by the speaker in narration. In the field perspective, the speaker experiences the surrounding world and his/her emotions and thoughts in a self-immersed way, without noticing the existence of the self, whereas in the observer perspective, the self becomes detached yet closely related to the scene and an object under inspection. The distinction between the two perspectives coincides with the elemental and relational features of target categories proposed by Kopp (1995) and Kopp and Eckstein (2004), which means the former could be seen as a less substantive abstraction of the latter (refer to Figure 2.1).

In the present study, the field and the observer perspectives are categorized based on coding results of target categories with reference to the relationship between the self and the topic under discussion. Target categories that are described with speakers “inside” themselves (i.e., SELF, OTHERS, PERSONAL SITUATION, and SOCIAL SITUATION) were categorized as the field perspective, and those in which the speaker was both the observer and the subject of the observation (i.e., SELF AND SELF, SELF AND OTHERS, SELF AND PERSONAL SITUATION, and SELF AND SOCIAL SITUATION) were labeled as the observer perspective (see Figure 3.2). Examples and frequencies of the eight target categories under the two perspectives are shown in Table 3.3.

Figure 3.2 Perspectives and the extended taxonomy of target categories



Target category	Perspective	Example
SELF (341)	The field perspective (987)	就是我觉得可能就是一种比较无奈或者说 <u>无力</u> 的感觉。[What I felt is probably helplessness, or say, <u>lack of strength</u> .]
OTHERS (255)		学校毕竟是个挺净土的一个地方， <u>之前愤怒也是因为你怎么把手伸到学校这块地方来了</u> 。[The university is, after all, like a pure land. The reason why I felt angry is <u>they laid their hands on this place</u> .]
PERSONAL SITUATION (181)		生活中仿佛那些 <u>五彩斑斓的东西不见了</u> 。[It's just like <u>all those colorful things in my life had disappeared from sight</u> .]
SOCIAL SITUATION (210)		那会儿(大学名)已经就成 <u>战场</u> 了，然后失控状态。[At that time (university name) has already become <u>a battlefield</u> , and has lost control.]
SELF AND SELF (175)	The observer perspective (647)	<u>我仿佛身体里面有两个小人，然后一个小人喊着说：“你要冷静的看一看这边啊，你看一看这些民主社会”之类的，另外一边就在说：“你是在这读一年书而已，可是这一年已经被损失了这么多”</u> 。[It feels like there are two little guys in my body, and one is <u>shouting</u> : “you should be calm and see what happened here, you should see the democratic society” and the like. <u>Then the one on the other side says</u> : “you are just doing a master here for only one year, just in the one year you have lost so much”.]
SELF AND OTHERS (90)		我也不冒犯你，但我就 <u>远离</u> 你们就好。[I don't want to offend you, but I will just <u>stay away from</u> you.]
SELF AND PERSONAL SITUATION (104)		我应该是一个很理性的人，但是你还是控制不住那个状态，控制不住自己会去被这种关照啊什么的， <u>被它温暖到</u> 就这种样子。[I think I am a rational person, but still can't control that state of mind, can't control when you feel other people's kindness and care, when <u>it brings you warmth</u> , or something like that.]
SELF AND SOCIAL SITUATION (278)		以前觉得还可以，就是我们不谈，我们不说，我们置身事外，但是现在就发现不行，就是政治已经 <u>糊在你脸上了</u> ，就是 <u>你跑都跑不掉了</u> 。[I thought it was ok, we could stay out of it as long as we don't talk about it. But now it doesn't work anymore. Politics has been <u>pasted to your face now; you can't run away from it anyway</u> .]

Table 3.3 Examples and frequencies of the eight target categories and two perspectives

A crosstabulation for CONVENTIONALITY, EMOTIONAL VALENCE, TARGET CATEGORY, and PERSPECTIVE is presented in Table 3.4.

Perspective	Conventionality	Target category	Valence			Total
			Negative	Neutral	Positive	
Field	Conventional	Self	143	75	23	241
		Others	71	56	7	134
		Personal situation	64	45	4	113
		Social situation	62	66	5	133
	Novel	Self	61	31	8	100
		Others	62	52	7	121
		Personal situation	43	22	3	68
		Social situation	38	34	5	77
Observer	Conventional	Self and self	26	60	7	93
		Self and others	15	25	2	42
		Self and personal situation	19	32	7	58
		Self and social situation	47	55	2	104
	Novel	Self and self	35	43	4	82
		Self and others	27	15	6	48
		Self and personal situation	14	25	7	46
		Self and social situation	99	75	0	174
Total			826	711	97	1634

Table 3.4 A crosstabulation for CONVENTIONALITY, TARGET CATEGORY, PERSPECTIVE and EMOTIONAL VALENCE

Following Cameron and Maslen (2010), all metaphors variables were coded in an Excel spreadsheet, with each metaphor vehicle term produced by each speaker listed in a single row and each metaphor variable in a separate column. A screenshot of the excel spreadsheet, which shows a randomly selected set of metaphors, is presented in Figure 3.3.

Figure 3.3 A screenshot of the excel spreadsheet for metaphor variable coding

	A	B	C	D	E	F	G	H
1	Speaker	No	Metaphorical expression	Vehicle term	Conventionality	Emotional valence	Target category	Perspective
22		1 01-20	怕他们的矛盾转移到.....因为政府不回应, 然后他们就暴力升级, 最后有可能害怕转移到内地人身上。	升级	conventional	negative	others	field
42		2 02-07	当时情况严重的时候就, 这种以后在学校里面学习, 比如说恢复了以后, 不会成为他们以后的隐形的一个焦点。	焦点	novel	negative	self	field
179		5 05-32	就像在讨论其他的社会问题一样, 就讨论一下为什么, 到底是怎么发生的啊, 整个它的背后的历史, 历史的原因, 整个社会环境呀,	背后	novel	neutral	social situation	field
184		5 05-37	就是试图抛掉我所处的环境, 把这个事情放到更大的格局上来看, 从历史的, 是吧, 全球哪些地方, 然后以及对于香港来说, 它又在一个怎么样的环境。	抛掉	conventional	neutral	self and social situat	observer
264		6 06-74	陷进去一般都是先从一个点, 一般我都是来自于看信息这种看新闻什么的。	陷进去	novel	negative	self and self	observer
335		7 07-56	堵住的就是, 你的心情很压抑嘛, 就是觉得堵住的是这个事情没办法按照你想要的的方式去进行下去。	堵住	novel	negative	self	field
1073		26 26-29	这个导火索, 其实是由于科大, 香港科大的学生不是在跟警察对峙中, 不是去世了,	导火索	conventional	negative	social situation	field
1084		26 26-40	因为实在是.....这学期基本上就被打乱了。	被打乱	novel	negative	personal situation	field
1569		43 43-23	但是我觉得那个东西是可以去努力的, 就是你靠自己的行动去慢慢的缓解的那种压力, 但是现在这种非常的无力。	压力	conventional	neutral	personal situation	field

3.2.3 Inter-rater Reliability

Metaphor vehicle terms in the interviews were identified by the author of this thesis; following Cameron and Maslen's (2010) suggestions for maximizing interrater reliability in metaphor identification using the discourse dynamics approach; ambiguous cases were settled through discussion with other metaphor researchers. As the judgment of target categories, emotional valences, and vehicle groupings involves making categorical decisions on fixed analytical units, the reliability of coding could be more systematically checked using quantitative interrater reliability measures. According to Bolognesi et al. (2017), a linguistic coding scheme has a greater degree of replicability if the coding provided by a trained rater is comparable to that

accomplished by a novice rater who has a different academic background and no prior experience in metaphor identification. Therefore, a novice rater of non-linguistic background was invited and trained for reliability checks. After reading through the interviews, the novice rater was debriefed on the operational definitions of the variables and their subcategories using linguistic examples. The two raters then worked independently on 15% of the data, which were randomly selected from the whole dataset using the RAND function of Excel.

Krippendorff's alpha (Krippendorff, 1970) was used to measure the agreement between the two raters' judgments. Compared with other reliability measures that are commonly used in content analysis, such as Cohen's kappa and Fleiss'K, Krippendorff's alpha has greater flexibility in that it could be applied on all measurement scales (i.e., nominal, ordinal, interval, and ratio) and codings provided by multiple raters; it could also handle codings with missing values (Zapf et al., 2016). The alpha values for the coding of EMOTIONAL VALENCE, TARGET CATEGORY, were 0.741 and 0.865, respectively. Both values were greater than the smallest acceptable reliability (i.e., $\alpha=0.667$) suggested by Krippendorff (2004) for qualitative content analysis. Because the determination of conventionality relied on dictionary meanings and perspectives were based on the coding of target categories, no additional checks were needed for the two variables.

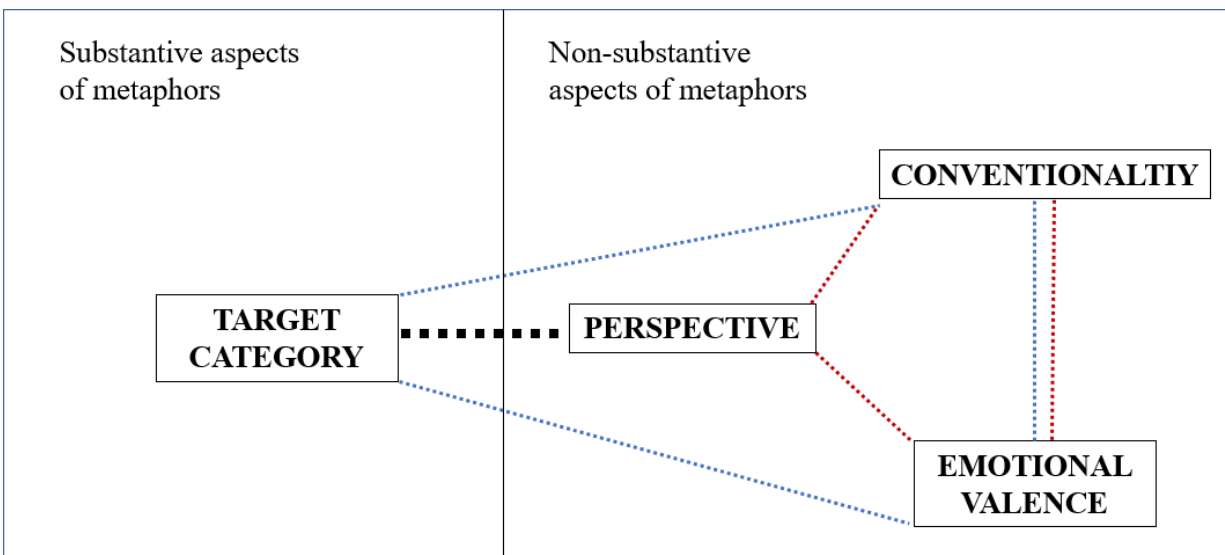
3.3 Research methods and questions

This chapter probes into the multifaceted, presentational features of trauma metaphors by examining the systematic interactions among multiple aspects of metaphor. The research questions are as follows:

- (1) How do therapeutically relevant **TARGET CATEGORIES** interact with the two non-substantive aspects of trauma metaphors, i.e., **CONVENTIONALITY** and **EMOTIONAL VALENCE**? (See Section 3.4.1)
- (2) How do metaphors generated from different psychological **PERSPECTIVES** interact with **CONVENTIONALITY** and **EMOTIONAL VALENCE**? (See Section 3.4.2)

A diagram of variable relationships under examination is shown in Figure 3.4 below.

Figure 3.4 A diagram of variable relationships under examination



Categorical data analytic methods (refer to Agresti, 2002 for a comprehensive introduction) were chosen to extract systematic, quantitative interactions between multiple metaphor variables. As introduced earlier in Section 2.3.2, categorical data analytic methods take each variable identified for each metaphor as the unit of analysis and examine the relationships between multiple variables as the likelihood of each variable co-occurring with one or more variables of the same metaphorical expression. The relationship is considered statistically significant if the observed frequency of co-occurrence deviates far from its expected frequency, either in the positive or negative direction. Cases where frequencies of two variables tend to vary with each other are

referred to as bi-variate associations, and those in which the frequencies of three or more variables tend to vary together are called higher-order interactions.

For the present study, separate log-linear analyses were performed to investigate potential higher-order interactions and bi-variate associations among 1) TARGET CATEGORY, CONVENTIONALITY, and EMOTIONAL VALENCE, and 2) PERSPECTIVE, CONVENTIONALITY, and EMOTIONAL VALENCE. Two strategies were adopted to assist the interpretation of the statistical results. Firstly, the interrelationships among different variable categories were visualized using factor plots generated using Multiple Correspondence Analysis (MCA), which is a statistical technique that detects the relationships between multiple variable categories¹⁷, such as different theoretical and contextual aspects of metaphors. Different categories of the variables are represented as discrete points on a two-dimensional plot, and their interrelationships are visualized as positions of and distances between the points. Following Tay (2017), chi-square decompositions were then used to further probe into the bi-variate associations. Contingency tables that show the distribution of metaphors across all variable categories were generated. Chi-square statistics were used to assist the interpretation of relationships: adjusted residuals were calculated to examine the magnitude of differences between the observed and the expected frequencies, and Cramer's V coefficients were used to measure the strengths of associations.

After the statistical results are derived, positive and significant relationships among the variable categories were illustrated using genuine linguistic examples and interpreted from a discourse analytic perspective so that the statistical patterns could be understood with reference to

¹⁷ Both MCA and loglinear analysis are methods for computing associations. In this thesis, MCA plot is only used for visualization purpose.

situated features of metaphor use in the current traumatic context. Their theoretical implications for metaphor research and practical insights for clinical practices of trauma treatment will also be discussed.

For the present study, loglinear analyses and chi-square tests were performed using Jamovi 2.0.0.0; the contingency tables (including adjusted residuals) and the MCA plots were generated using IBM SPSS Statistics 22.0.

3.4 Results and Discussion

This section presents the results and major findings derived from the categorical data analysis and qualitative analysis. The multifaceted presentational properties of trauma metaphors reflected by the interactions among TARGET CATEGORY, CONVENTIONALITY, and EMOTIONAL VALENCE will be discussed in Section 3.4.1, and those distinguished from the interrelationships among PERSPECTIVE, CONVENTIONALITY, and EMOTIONAL VALENCE will be examined in Section 3.4.2. Each of the sections will first present the results of statistical analysis and then discuss the significant patterns in greater detail.

3.4.1 TARGET CATEGORY, CONVENTIONALITY, and EMOTIONAL VALENCE

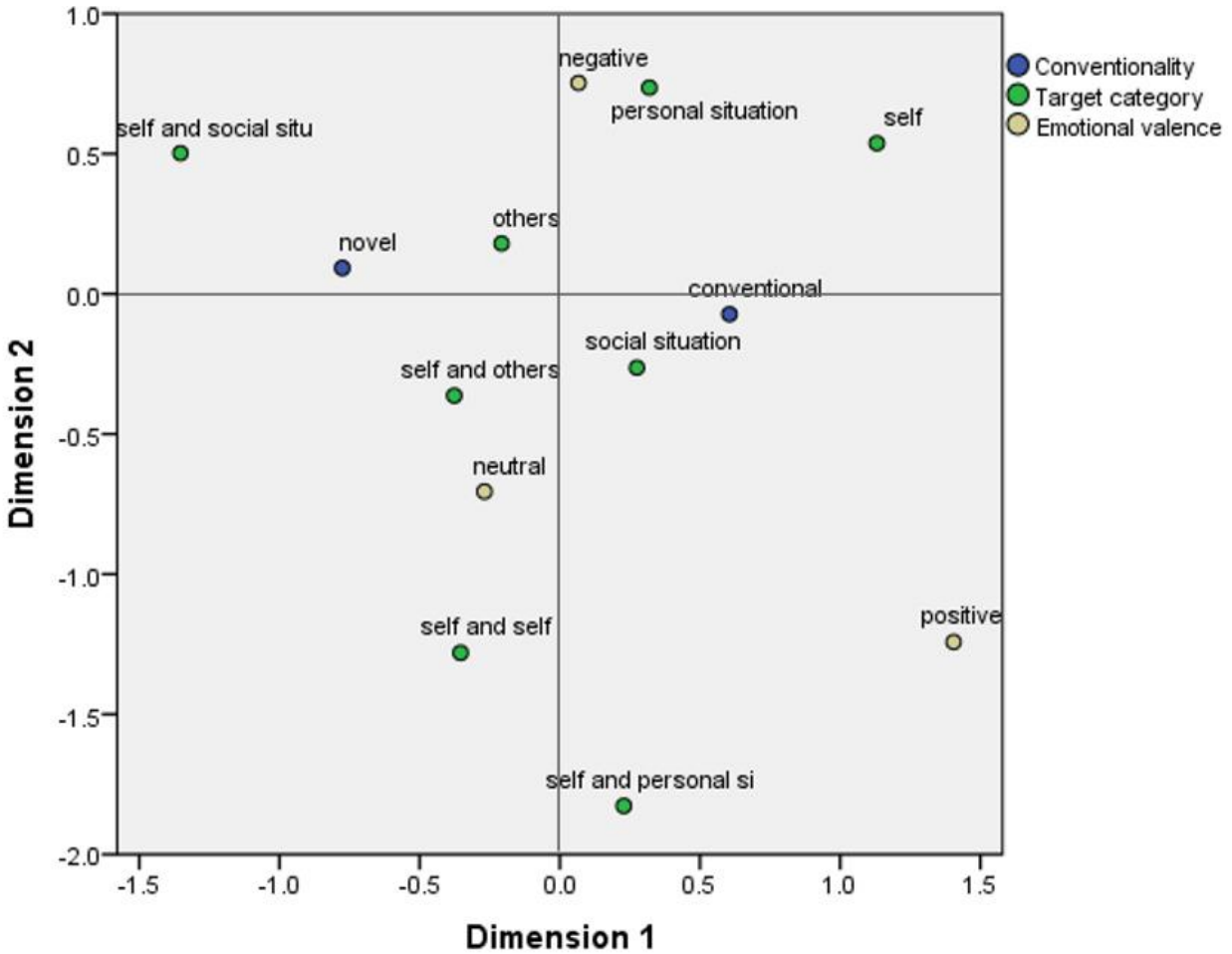
3.4.1.1 Results of Categorical Data Analysis

A log-linear analysis was performed to examine the multifaceted, presentational properties of trauma metaphors reflected by the interactions among TARGET CATEGORY, CONVENTIONALITY, and EMOTIONAL VALENCE.

The final model included only two significant bi-variate associations, i.e., TARGET CATEGORY*CONVENTIONALITY and TARGET CATEGORY*EMOTIONAL VALENCE; the highest three-way interaction was not retained ($p=.338$). This suggests that different target categories tend to show distinct preferences for conventional and novel metaphors, that the target categories differ remarkably in the emotional valences they carry, and that neither of the associations varies further across different levels of the third variable. The relationship between CONVENTIONALITY and EMOTIONAL VALENCE was not statistically significant, $\chi^2(2)=2.903$, $p=.234$, Cramer's $V=.042$, which means that the frequencies of conventional and novel metaphors did not vary substantially across negative, neutral, and positive metaphors.

A two-dimensional MCA factor plot was generated to visualize the interrelationships among TARGET CATEGORY, CONVENTIONALITY, and EMOTIONAL VALENCE (see Figure 3.5). Following Greenacre and Blasius (2006), the directions of associations between variable categories could be interpreted based on the location of one category in relation to another; positively correlated categories are clustered at the same side of the origin, and negatively correlated ones are distributed on opposite sides. The strengths of associations are reflected by the distance of the category from the origin, with stronger ones denoted by further distance and vice versa.

Figure 3.5 An MCA factor plot for the interrelationships among TARGET CATEGORY, CONVENTIONALITY, and EMOTIONAL VALENCE



The two dimensions captured a substantial proportion of variance: dimension one accounted for 41.68% of the total variance, and dimension two explained an additional 39.21%, making a total of 80.89%. The eight target categories are scattered at different sides of the origin along dimension 1, that conventional and novel metaphors are distributed at different sides along dimension 2, and that the three emotional valences are disseminated at different parts of the plot, far away and approximately equidistant from the origin. This suggests that these variable categories show distinct characteristics in their interactions with other categories. A closer

examination of the category locations and distances suggests that SELF, SELF AND SOCIAL SITUATION, and positive metaphors are the furthest away along dimension 1, SELF AND SELF, PERSONAL SITUATION, SELF AND PERSONAL SITUATION, and negative metaphors are the furthest along dimension 2, which means these variable categories have particularly strong associations with each other. Those distributed on the same side of the origin are positively associated with each other (e.g., SELF and negative metaphors, and SOCIAL SITUATION and conventional metaphors), while those on different sides of the origin are negatively associated (e.g., SOCIAL SITUATION and novel metaphors, SELF AND SELF and positive metaphors).

Chi-square decomposition was then used to identify the relationships among more specific variable categories. The requirement for minimal sample size in chi-square tests (Tabachnick & Fidell, 2007) was met, with all cells having an expected frequency larger than one and more than 80% having a value larger than five. Chi-square statistics reveal a significant and moderate association between TARGET CATEGORY and EMOTIONAL VALENCE $\chi^2(14)= 84.79$, $p<.001$, Cramer's $V=.161$. The TARGET CATEGORY * CONVENTIONALITY association is also significant and moderate, and the strength is stronger than that between TARGET CATEGORY and EMOTIONAL VALENCE $\chi^2(7)=81.46$, $p<.001$, Cramer's $V=.223$. Cross-tabulations of the eight target categories across the three valences and the two conventionality levels are shown in Tables 3.5 and 3.6, respectively.

In this study, the deviation of the observed frequency from expectation was examined using statistics of adjusted residuals. An adjusted residual with a positive value suggests the category's observed frequency is higher than its expected frequency, and one with a negative value means the observed frequency is significantly lower than its expected frequency. Adjusted residuals with absolute values greater than 2.0 but smaller than 2.6 suggest that the deviations are statistically

significant at the level of .05, and those with absolute values greater than 2.6 means the frequency deviations are significant at the level of .01. For the present study, variable categories that occurred significantly more and less frequently than by chance were colored in blue and yellow, respectively; frequency deviations significant at .05 and .01 levels were marked in light and dark colors, respectively.

It is important to note that the expected frequency of a variable category is calculated based on the frequencies of other categories based on the column and row subtotals (refer to Gilbert, 1993 for a more detailed explanation of the calculation principles); therefore, even a category with a relatively high observed frequency could occur at a less frequent rate than expected, and conversely, a category that has a particularly low observed frequency could occur more frequently than by chance. In other words, the value of adjusted residuals should be interpreted as how (un)common the association is in the statistical sense, rather than its prevalence in the dataset.

			Valence			Total
			Negative	Neutral	Positive	
Target category	Self	Count	204	106	31	341
		Expected Count	172.4	148.4	20.2	341.0
		Adjusted Residual	3.9	-5.2	2.8	
	Others	Count	133	108	14	255
		Expected Count	128.9	111.0	15.1	255.0
		Adjusted Residual	.6	-.4	-.3	
	Personal situation	Count	107	67	7	181
		Expected Count	91.5	78.8	10.7	181.0
		Adjusted Residual	2.4	-1.9	-1.2	
	Social situation	Count	100	100	10	210
		Expected Count	106.2	91.4	12.5	210.0
		Adjusted Residual	-.9	1.3	-.8	
	Self and self	Count	61	103	11	175
		Expected Count	88.5	76.1	10.4	175.0
		Adjusted Residual	-4.4	4.3	.2	
	Self and others	Count	42	40	8	90
		Expected Count	45.5	39.2	5.3	90.0
		Adjusted Residual	-.8	.2	1.2	
Self and personal situation	Count	33	57	14	104	
	Expected Count	52.6	45.3	6.2	104.0	
	Adjusted Residual	-4.0	2.4	3.4		
Self and social situation	Count	146	130	2	278	
	Expected Count	140.5	121.0	16.5	278.0	
	Adjusted Residual	.7	1.2	-4.0		
Total		Count	826	711	97	1634
		Expected Count	826.0	711.0	97.0	1634.0

Table 3.5. Crosstabulation of TARGET CATEGORY and EMOTIONAL VALENCE

			Conventionality		Total
			Conventional	Novel	
Target category	Self	Count	241	100	341
		Expected Count	191.6	149.4	341.0
		Adjusted Residual	6.1	-6.1	
	Others	Count	134	121	255
		Expected Count	143.3	111.7	255.0
		Adjusted Residual	-1.3	1.3	
	Personal situation	Count	113	68	181
		Expected Count	101.7	79.3	181.0
		Adjusted Residual	1.8	-1.8	
	Social situation	Count	133	77	210
		Expected Count	118.0	92.0	210.0
		Adjusted Residual	2.2	-2.2	
	Self and self	Count	93	82	175
		Expected Count	98.3	76.7	175.0
		Adjusted Residual	-.9	.9	
	Self and others	Count	42	48	90
		Expected Count	50.6	39.4	90.0
		Adjusted Residual	-1.9	1.9	
	Self and personal situation	Count	58	46	104
		Expected Count	58.4	45.6	104.0
		Adjusted Residual	-.1	.1	
Self and social situation	Count	104	174	278	
	Expected Count	156.2	121.8	278.0	
	Adjusted Residual	-6.9	6.9		
Total	Count	918	716	1634	
	Expected Count	918.0	716.0	1634.0	

Table 3.6 Crosstabulation of TARGET CATEGORY and CONVENTIONALITY

From Table 3.5 we can see that the eight target categories showed remarkably different emotional focuses, which are reflected by different magnitudes of deviations between observed

and expected frequencies. SELF was found with significantly higher numbers of negative metaphors and positive metaphors and fewer neutral metaphors as compared with the expected frequencies (all $p < .01$); PERSONAL SITUATION was also found with significantly more negative metaphors ($p < .05$); SELF AND SELF was described by significantly fewer negative metaphors ($p < .01$) and more neutral metaphors than expected ($p < .01$); SELF AND PERSONAL SITUATION was significantly less likely to be described using negative metaphors ($p < .01$) and more likely to be interpreted in the neutral and positive valence than by chance alone ($p < .05$ and $p < .01$, respectively); SELF AND SOCIAL SITUATION was significantly less likely to be interpreted in the positive light than by chance alone ($p < .01$). The associations of other target-valence pairs were not statistically significant, which means the observed frequencies of valenced metaphors did not deviate much from their expected frequencies.

Table 3.6 shows that significantly more conventional and fewer novel metaphors were found in the discussion of SELF ($p < .01$) and SOCIAL SITUATION ($p < .05$), and more novel and thus fewer conventional metaphors were observed for SELF AND SOCIAL SITUATION ($p < .01$). While other target categories (e.g., OTHERS, PERSONAL SITUATION, and SELF AND SELF) also showed noticeable differences in the distribution of conventional and novel metaphors, the relationships were not statistically significant (all adjusted residuals between ± 2), which means the observed frequencies of the two types of metaphors in describing other categories did not differ remarkably from their expected frequencies determined by chance.

In Section 3.4.1.2, the bi-variate associations between TARGET CATEGORY and EMOTIONAL VALENCE and that between TARGET CATEGORY and CONVENTIONALITY will be discussed in turn.

3.4.1.2 Discussion

The TARGET CATEGORY*EMOTIONAL VALENCE Association

Although traumatic experience is most often characterized by a mixture of overwhelmingly negative emotions (Badour et al. 2015), the target categories were not indiscriminately metaphorized in the negative valence. Quite the contrary, the significant association between TARGET CATEGORY and EMOTIONAL VALENCE suggests that trauma victims tended to metaphorize different topics using contrasting emotional tones.

Since the experience of negative emotions is one of the most typical reactions to a traumatic event (American Psychiatric Association, 2013), it is unsurprising that trauma victims' descriptions of personal thoughts and feelings (i.e., SELF) contained significantly more negative metaphors than by chance alone. Example (6) below is an instance of negatively valenced SELF metaphors:

(6) [SELF * negative metaphor] 就是我觉得可能就是一种比较无奈或者说无力的感觉。

[What I felt is probably frustration, or say, lack of strength.]

This example describes the speaker's sense of helplessness and frustration during the peak of the traumatic event, which is a typical acute stress reaction commonly reported by people exposed to various types of traumatic events (American Psychiatric Association, 2013). The abstract and elusive emotional feelings are interpreted as the lack of physical strength (“无力, wú lì”), which is an undesirable condition that is inherently associated with unpleasant feelings and the loss of physical control.

Alongside the preference for negative metaphors, the participants also generated significantly more positive metaphors than expected in describing their emotions and thoughts. A close examination of the interview data suggests that a large proportion of positive metaphors were used to describe the emotional support they received from their family and friends after the traumatic event; some subjects also used positive metaphors to express the unwavering hope they have for Hong Kong and their own future, and the positive insights they gained from their traumatic experiences. Example (7) is illustrative of the former case:

(7) [SELF * positive metaphor] 突然间就会觉得好像感受到了希望之火慢慢燃烧起来。

[Suddenly I would feel that the fire of hope was gradually starting to burn.]

This example describes the speaker's perception of positive emotions that had not appeared for long due to the negative psychological impact of the traumatic event. Kindness and support received from a close friend are conceptualized as a tangible and experientially concrete phenomenon, i.e., "the fire of hope (希望之火, xī wàng zhī huǒ)", and the gradual intensification of positive emotions is further interpreted as the fire "gradually starting to burn (慢慢燃烧起来, màn màn rán shāo qǐ lái)".

Apart from the heightened use of negative and positive metaphors, the use of neutral metaphors was significantly less frequent than expected in the metaphorization of SELF, which means trauma victims' metaphorical conceptualization of the SELF is often characterized by polarized emotions. In contrast to the patterns found for SELF metaphors, SELF AND SELF, which describes the speaker's experience of conflicting emotions and emotions, was found with significantly more neutral metaphors and fewer negative metaphors than expected. Example (8) is a typical instance in which the speaker's self-reflection process is presented in the neutral valence:

(8) [SELF AND SELF * neutral metaphor] 通过那段经历来学会一些辩证思考，然后重新去反省自己过往的那些认知，然后把自己从当时的环境脱离开来，作为一个旁观者去分析。

[Through my experience of the event, I learned to think in a dialectical way. I learned to reflect upon my cognition in the past, get myself detached from that environment, and analyze all these thoughts as an onlooker.]

In this example, two metaphor vehicles are used to express the speaker's reflections on her emotional and cognitive activities in coping with the traumatic feelings: the attempts to engage in dialectical thinking without being influenced by negative emotions and personal opinions are described as the speaker getting herself physically dissociated (“脱离开来, tuō lí kāi lái”) from the traumatic event and becoming an onlooker (“旁观者, páng guān zhě”) who is standing beside the traumatized self and observing the social situation in an emotionally detached way.

Another remarkable contrast in emotional inclinations is found between PERSONAL SITUATION and SELF AND PERSONAL SITUATION. While the former received significantly more negative metaphors than by chance alone, the latter was characterized by a surge of neutral and positive metaphors and a dearth of negative metaphors. The contrast between the two target categories is illustrated by example (5) presented earlier (reproduced below) and example (9):

(5) [PERSONAL SITUATION * negative metaphor] 生活中仿佛那些五彩斑斓的东西不见了。

[It's just like all those colorful things in my life had disappeared from sight.]

(9) [SELF AND PERSONAL SITUATION * positive metaphor] 我应该是一个很理性的人，但是你还是控制不住那个状态，控制不住自己会去被这种关照啊什么的，被它温暖到就这种样子。

[I think I am a rational person, but still can't control that state of mind, can't control when you feel other people's kindness and care, when you feel warmth from it, or something like that.]

Example (5) describes the speaker's altered perceptions of the surrounding environment before and after the traumatic event. Interpersonal and leisure activities that could bring about positive emotional experiences before the traumatic event are reified as concrete entities that have visually distinct colors (“五彩斑斓的东西”), and the sudden loss of positive emotions, due to the growing sense of fear and distrust among people and the disruption of social order, is interpreted as the colorful entities disappearing from sight (“不见了, bù jiàn le”).

Example (9) is a positively valenced SELF AND PERSONAL SITUATION metaphor that occurred shortly after the “fire of hope” metaphor presented earlier as example (7). Building upon the POSITIVE EMOTION IS HEAT metaphor, friendly gestures from the speakers' colleagues are conceptualized as a tangible entity or creature that is giving off pleasant heat, and the subjective feelings of being touched by kindness and care is interpreted as the sensory perception of physical warmth (“被它温暖到, bèi tā wēn nuǎn dào”).

The eight target categories also differ substantially in the proportions of different emotional valences. We can see that some target categories carried more negative emotions than others (e.g., SELF and PERSONAL SITUATION), whereas some were more likely to be described in a neutral or positive tone for self-regulatory or self-persuasive purposes (e.g., SELF AND SELF and SELF

AND PERSONAL SITUATION). It is also possible that some target categories are interpreted using mixed and even conflicting emotions. For example, SELF is significantly and positively associated with both negative and positive emotions. More interestingly, contrary to the commonsense expectation that experiences that are central to the traumatic event might be loaded with intense negative emotions, target categories that are directly relevant to the social situation were found with rather conservative emotional inclinations: SELF AND SOCIAL SITUATION, as a central theme of the traumatic event, was not so sensitive to the negative valence as expected, but the emotional focus was encoded implicitly in the proportional lack of positive metaphors. SOCIAL SITUATION, i.e., the counterpart of SELF AND SOCIAL SITUATION in the field perspective, was not explicitly marked by any specific valence but had a relatively balanced blend of all three valences.

The diversified emotional focuses identified for the eight target categories suggest that different aspects of the traumatic event tend to be experienced and metaphorized in emotionally distinct ways. The findings shed valuable light on trauma victims' general tendencies in the use of emotionally valenced metaphors, which could provide valuable information for mental health practitioners' understanding of corresponding aspects of traumatic experiences.

The findings also hold implications for research on the relationship between emotional expression and psychological wellbeing. Although there has been extensive research on how the expression of specific emotions is associated with good or poor psychological states or therapeutic outcomes (e.g., Batten et al., 2002; Cohn et al., 2004; Jaeger et al., 2014), the findings have been inconsistent (Wardecker et al., 2017). As noted by Wardecker et al. (2017), a possible reason for such inconsistencies is that the linguistic constructs under examination might differ in the types or topics of expression they contain. Findings yielded by this analysis provide supporting evidence

for this argument. Although the findings are not sufficient to draw conclusions regarding the psychological or cognitive basis of the divergences, the significant association between target categories and the three valences still highlights topics as an important factor interacting with emotional expression, underlining the need for future research on topic-valence associations to zoom in on more nuanced classifications of topics.

The TARGET CATEGORY*CONVENTIONALITY Association

The TARGET CATEGORY*CONVENTIONALITY association being significant at the .01 level suggests that the eight target categories of trauma metaphors differed significantly in their preferences of conventional and novel metaphors. While some target categories were more frequently described using established metaphors shared by the whole community (e.g., SELF and SOCIAL SITUATION), some were more likely to elicit speakers' creative and idiosyncratic understandings and trigger the use of novel metaphors (e.g., SELF AND PERSONAL SITUATION and SELF AND SOCIAL SITUATION).

Examples (1) and (10) presented earlier in Section 3.2 (reproduced below) are two conventional metaphors found for SELF and SOCIAL SITUATION, which were significantly more likely to be interpreted using conventional metaphors and less likely to be described using novel metaphors.

(1) [SELF * conventional metaphor] 可能在我的二十多年人生里面，应该是没有试过在短短的时间内情绪或者是心理状态会经历那么大的起伏。

[More than 20 years have passed in my life, I have never experienced such great rises and falls in emotions within such a short period of time.]

(10) [SOCIAL SITUATION * conventional metaphor] 这个事情，我感觉啊，就是个小小插曲。

[This event, I feel, is just like a small episode.]

In example (1), the speaker's psychological states during the traumatic event were describes as “rises and falls (起伏, qǐ fú)” of tangible objects. As mentioned earlier in Section 3.2.2.1, the metaphor is included in the OCD7 as a highly conventionalized metaphor for describing changes in emotions and relationships. In example (10), the occurrence of the traumatic event is conceptualized as “a small episode (小小插曲, xiǎo xiǎo chā qǔ)” in a longer story or play, which is a commonly used metaphor for describing unexpected but insignificant events situated in a longer period of time or a larger social backdrop.

In contrast, SELF AND SOCIAL SITUATION, which expresses the speakers' personal understandings of the social situation from the observer perspective, was significantly more likely than expected to be interpreted using novel metaphors and less likely to be described using conventional metaphors. In example (2), which was discussed earlier in Section 3.2.1, a participant uses two novel metaphors in a row to express how she was involuntarily connected to and affected by the social unrest:

(2) [SELF AND SOCIAL SITUATION * novel metaphor] 以前觉得还可以，就是我们
不谈，我们不说，我们置身事外，但是现在就发现不行，就是政治已经糊在你脸上
了，就是你跑都跑不掉了。

[I thought it was ok: we could stay out of it as long as we don't talk about it. But now it doesn't work anymore. Politics has been pasted to your face now; you can't run away from it anyway.]

In this sentence, the speakers' university being occupied and vandalized by the protesters is interpreted as the sensory experience of having something "pasted" to the speaker's face ("糊在你脸上, hú zài nǐ liǎn shàng), and the speaker being unable to stay clear from the political activities is metaphorized as the physical inability to run away from a place ("跑都跑不掉, pǎo dōu pǎo bù diào"). Different from the "起伏" and "插曲" metaphors, which are commonly shared by native speakers of Mandarin Chinese, the two vehicle terms in example (2) expressed the speakers' idiosyncratic understanding of herself in relation to the social situation and are thus less likely to be shared by other speakers who had undergone the same traumatic event.

The difference in metaphor choices at the target category level might be explained by the salience of the topics in everyday life. As naturally occurring thoughts and feelings, interpersonal interactions, and social situations are essential elements of daily life and common topics in public communication and media, it would be easier for the speakers to borrow from pre-established expressions to talk about these topics using conventional metaphors than to create metaphors of their own. By contrast, issues such as emotional and cognitive conflicts, perceived changes in personal life, and evaluations of the broader social context are more often perceived and understood in personally meaningful and creative ways and therefore much less likely to be commonly experienced by the whole linguistic community in the same manner. This pattern is the most evident in the description of SELF AND SOCIAL SITUATION, which is probably the most unfamiliar topic for participants of this study. As the participants mostly grew up in a relatively

stable and peaceful social environment, it is unlikely that their linguistic community has many entrenched expressions about how one's life quality, psychological states, and future development could be compromised by unexpected, large-scale social events. The lack of established expressions and the expressive need to elaborate on newly emerged, idiosyncratic thoughts and feelings would then prompt more active use of novel metaphors.

As mentioned earlier in Section 3.2.2, the use of novel metaphors in psychotherapy has often been related to the expression and regulation of non-adaptive emotions (e.g., Borbely, 1998; Gelo & Mergenthaler, 2012), which is a reason why the expressions are often given more priority in therapeutic interpretation than conventional metaphors. However, the differentiated patterns observed for the eight target categories reveal that trauma victims' choices over conventional and novel metaphors are more topic-driven than emotion-oriented, as the association between CONVENTIONALITY and EMOTIONAL VALENCE was not statistically significant. Findings of this study support the argument that conventional metaphors might also play an important role in describing topics that are key to the speakers' psychological issues (Long & Lepper, 2008; McMullen, 1989; Moser, 2000, 2007), and that therapists should refrain from making prior assumptions about the therapeutic value of a given type of metaphors (McMullen 1985, 1989; Rasmussen & Angus, 1996) but instead, look for therapeutically relevant elements based on the contextual characteristics of specific expressions (McMullen, 2008; Tay, 2013).

3.4.2 PERSPECTIVE, EMOTIONAL VALENCE, and CONVENTIONALITY

As indicated earlier in Section 3.2.3, the eight TARGET CATEGORIES, which reflect different substantive contents of trauma metaphors, could be further abstracted to a non-

substantive level into the field and the observer PERSPECTIVE based on the relationship between the SELF and the topic under discussion. An overview of the statistical results presented earlier in Section 3.4.1 suggests that the ways in which TARGET CATEGORIES are associated with EMOTIONAL VALENCE and CONVENTIONALITY might differ according to the perspectives they belong: from Table 3.5 we can see that the four target categories in the field perspective (i.e., SELF, OTHERS, PERSONAL SITUATION, and SOCIAL SITUATION) were generally more closely associated with the negative and the positive valence, whereas their counterparts from the observer perspective (i.e., SELF AND SELF, SELF AND OTHERS, SELF AND PERSONAL SITUATION, and SELF AND SOCIAL SITUATION) appeared to be more closely related to the neutral valence; from Table 3.6 we can see that target categories from the field perspective were generally more likely to be presented using conventional metaphors, and those belonging to the observer perspective seemed to be more with novel metaphors. The contrast between the two groups of target categories could also be easily discerned from the MCA plot presented in Figure 3.5.

Although the categorical data analysis performed in Section 3.4.1 enables an intuitive view of how metaphors generated from the two PERSPECTIVES might be related to EMOTIONAL VALENCE and CONVENTIONALITY, they do not indicate statistical significance and strengths of the relationships; it is also difficult to identify potential three-way interaction based on patterns distinguished from two bi-variate associations. To obtain a more accurate understanding of the presentational features of trauma metaphors at the non-substantive level of perspectives, a separate loglinear analysis was performed to investigate the interrelationships among PERSPECTIVE, EMOTIONAL VALENCE, and CONVENTIONALITY. Next, the results of the categorical data analysis and interpretations of significant patterns will be presented in turn.

3.4.2.1 Results of Categorical Data Analysis

The presentational features of trauma metaphors indexed by PERSPECTIVES turned out to be more complex than those identified at the TARGET CATEGORY level. The eventual best model comprised of a three-way interaction and two bi-variate associations, which are listed as follows:

PERSPECTIVE*CONVENTIONALITY*EMOTIONAL VALENCE, $\chi^2(2)=6.52, p=.038$

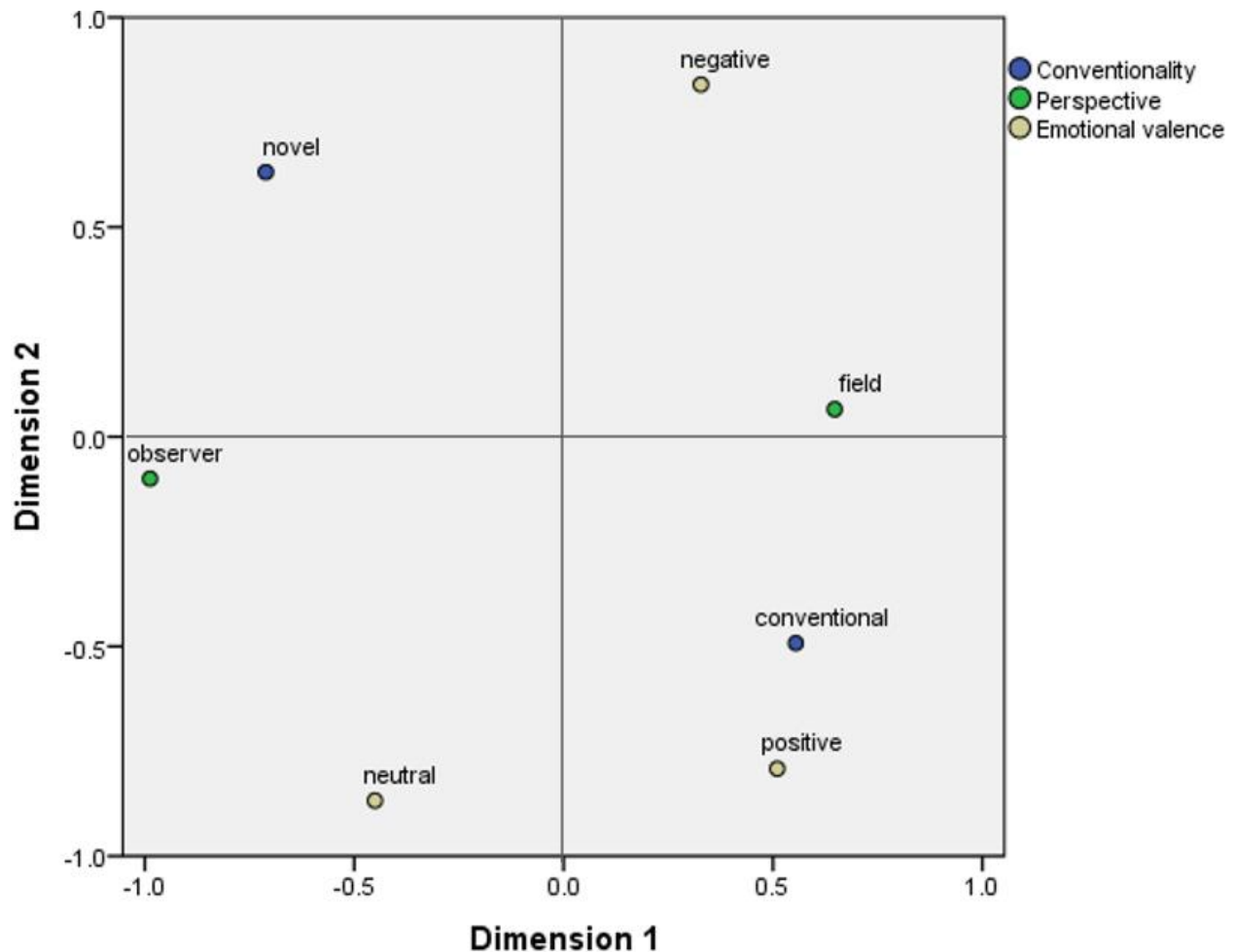
PERSPECTIVE*CONVENTIONALITY, $\chi^2(2)=30.62, p<.001$

PERSPECTIVE*EMOTIONAL VALENCE, $\chi^2(2)=45.32, p<.001$

The three-way interaction suggests that metaphors generated from the field and the observer perspectives tended to have different proportions of the negative, neutral, and positive valences, and this tendency varied further across conventional and novel metaphors. Similar to the first log-linear model, the bi-variate association between EMOTIONAL VALENCE and CONVENTIONALITY was not statistically significant $\chi^2(2)=0.223, p=.859$. The three-way interaction being significant and the last bi-variate association being non-significant means the relationship between PERSPECTIVE and EMOTIONAL VALENCE differed remarkably across conventional and novel metaphors.

An MCA plot that visualizes the interrelationships among the three variables is shown in Figure 3.6. Dimension 1 explained 39.72% of the total variance, and dimension 2 captured an additional 34.63%; the two dimensions together accounted for 74.35% of the total variance in the data.

Figure 3.6 An MCA factor plot for the interrelationships among PERSPECTIVE, CONVENTIONALITY, and EMOTIONAL VALENCE



We can see that the variable categories are disseminated in different parts of the plot and far away from the origin, which implies close and dynamic associations among the three variables. Closer scrutiny of the plot reveals two key insights: 1) the observer perspective, novel metaphors, and the neutral valence are clustered on the left side of the origin along dimension 1, which means the three variable categories are positively associated with each other and negatively associated with those on the right side; 2) the field perspective is located on the right side of the origin, together with conventional metaphors, the negative valence, and the positive valence, which means

the four categories are positively associated with each other and negatively associated with those on the left side of the plot.

Following Elliot (1988), a contingency table of frequencies that distinguishes between focus and contingency variables was used to assist the interpretation of three-way interactions. Focus variables refer to variables of major analytical interest, and contingency variables are those that “elaborate the interaction pattern in which the focus variables are involved” (Elliot, 1988, pp.123-124). For this log-linear model, PERSPECTIVE and EMOTIONAL VALENCE were chosen as focus variables, as they reflect differential qualitative (yet not substantive) aspects of metaphorical meaning-making; CONVENTIONALITY was set as the contingency variable, as it captures two alternative ways of presenting a given metaphorical idea and thus represents an even more abstract level of metaphor use.

A cross-tabulation of PERSPECTIVE and EMOTIONAL VALENCE across two different levels of CONVENTIONALITY is presented in Table 3.7. Relevant chi-square statistics were also included.

Conventionality	Perspective		Emotional Valence			Total	Statistics
			Negative	Neutral	Positive		
Conventional	Field	Count	340	242	39	621	$\chi^2(2, N=918)$ =30.467, $p=.000$, Cramer's V=0.182
		Expected Count	302.4	280.1	38.6	621.0	
		Adjusted Residual	5.3	-5.4	0.1		
	Observer	Count	107	172	18	297	
		Expected Count	144.6	133.9	18.4	297.0	
		Adjusted Residual	-5.3	5.4	-0.1		
Novel	Field	Count	204	139	23	366	$\chi^2(2, N=716)$ =3.979, $p=.137$, Cramer's V=0.075
		Expected Count	193.7	151.8	20.4	366.0	
		Adjusted Residual	1.5	-1.9	0.8		
	Observer	Count	175	158	17	350	
		Expected Count	185.3	145.2	19.6	350.0	
		Adjusted Residual	-1.5	1.9	-0.8		
Total	Field	Count	544	381	62	987	/
		Expected Count	498.9	429.5	58.6	987.0	
		Adjusted Residual	4.6	-4.9	0.7		
	Observer	Count	282	330	35	647	
		Expected Count	327.1	281.5	38.4	647.0	
		Adjusted Residual	-4.6	4.9	-0.7		
	Total	Count	826	711	97	1634	
		Expected Count	826.0	711.0	97.0	1634.0	

Table 3.7. Crosstabulation of PERSPECTIVE and EMOTIONAL VALENCE across different levels of CONVENTIONALITY

The frequency distribution of metaphors from the two PERSPECTIVES across the three EMOTIONAL VALENCES is presented at the bottom of the table. We can see that metaphors generated from the field perspective, which depict the traumatic experience from a self-immersed, first-person perspective, were more likely to be presented in the negative valence; this category, at the same time, appeared less frequently than expected in neutral metaphors. By contrast, metaphors

generated from the observer perspective, which describe the traumatic experience in relation to the speakers' state of being from an external perspective, were more closely associated with the neutral valence and less so with the negative valence. The absolute values of all four adjusted residuals were larger than 2.6, which means all associations are statistically significant at the .01 level. The adjusted residuals of positive metaphors for both perspectives were within ± 2.0 , which means their observed frequencies did not deviate much from their expected frequencies. The patterns are generally consistent with the observations made from the first statistical model and the patterns identified from the MCA plot (refer to Figure 3.6).

The cross-tabulation of PERSPECTIVE and EMOTIONAL VALENCE across conventional and novel metaphors is shown at the top of Table 3.7. We can see that the general patterns identified above held for both conventional and novel metaphors. However, the associations were only statistically significant among conventional metaphors ($p=.000$, all adjusted residuals had absolute values larger than 2.6); when it comes to novel metaphors, the relationships became non-significant ($p=.137$, all adjusted residuals within ± 2.0), although the ones involving neutral metaphors approached significance (adjusted residuals= ± 1.9). The effect size of the association was moderate within conventional metaphors (Cramer's $V=0.182$) but dropped to weak when instantiated in novel metaphors (Cramer's $V=0.075$). The relationships between the two perspectives and the positive valence were not statistically significant for both conventional and novel metaphors (all adjusted residuals within ± 2.0). In other words, metaphors generated from the field and the observer perspectives had distinct emotional focuses, which are characterized by contrasting distributions of the negative and the neutral valences; nevertheless, the distribution of the two valences applied to both conventional and novel metaphors but was much more imbalanced in the former and relatively less disproportionated in the latter.

Next, the bi-variate association between PERSPECTIVE and EMOTIONAL VALENCE and its instantiation in conventional and novel metaphors will be discussed in greater detail with examples.

3.4.2.2 Discussion

As summarized in the preceding section, metaphors generated from the field perspective were generally more likely to be presented in the negative valence, whereas those produced from the observer perspective were more likely to be phrased in a neutral tone. The contrast is generally consistent with the findings reported by previous studies on autobiographical memories of specific events (e.g., Robinson & Swanson, 1993; McIssac & Eich, 2004; Kross et al., 2005; Mooren et al., 2018). Target categories under the field perspective were significantly more likely to be portrayed in a negative light, which is probably a consequence of the speaker staying immersed in negative emotions (Wallace-Hadrill & Kamboj, 2016) and concentrating on subjective and emotional aspects of their experience (Nigro & Neisser, 1983). By contrast, the observer perspective was found with significantly more neutral metaphors and fewer negative metaphors than expected. According to previous psychological research findings, the observer perspective enables trauma victims to think and talk about the painful and overwhelming emotional experiences with greater psychological distance and lower degrees of self-involvement (Kenny & Bryant, 2007; Kross et al., 2005; Metcalfe & Mischel, 1999; Williams & Moulds, 2007), which is probably the reason why it was more likely to be associated with lower levels of negative emotions (Wallace-Hadrill & Kamboj, 2016).

The contrast in emotional focuses between the two perspectives was identified for both conventional and novel metaphors. However, the perspective-emotion associations were only significant in conventional metaphors but not in novel metaphors; in other words, the chances for the three emotional valences to be expressed using novel metaphors are roughly similar, but that negative and neutral valences had significantly higher chances to be represented using conventional metaphors. This might be influenced by the differentiated degree of deliberateness or consciousness involved in the use of conventional and novel metaphors. Compared with conventional metaphors, novel metaphors are more likely to be used in a deliberate and conscious manner (Steen, 2008, 2011; Tay, 2016). In other words, when producing novel metaphors, the speakers would pay greater attention to the content of the metaphorical idea (Bowdle & Gentner, 2005; Gentner et al., 1988, 2001), which might cause them to become less attentive to other aspects of meaning-making, such as emotion expression. By comparison, the use of conventional metaphors is more automatic and unconscious (Steen, 2008, 2011), which means the speakers' metaphorical meaning-making could be less interfered by extra cognitive efforts and thus better reflect the emotions (Moser, 2007) prioritized by corresponding perspectives.

Examples (1) and (5) discussed earlier in Section 3.4.1.1 (reproduced below) illustrate trauma victims' expression of negative emotions from the field perspective in conventional and novel metaphors, respectively:

(1) [the field perspective*negative metaphor*conventional metaphor] 可能在我的二十多年人生里面，应该是没有试过在短短的时间内情绪或者是心理状态会经历那么大的起伏。

[More than 20 years have passed in my life, I have never experienced such great rises and falls in emotions within such a short period of time.]

(5) [the field perspective*negative metaphor*novel metaphor] 生活中仿佛那些五彩斑斓的东西不见了。

[It's just like all those colorful things in my life had disappeared from sight.]

As mentioned earlier, the conceptualization of drastic emotional changes as “rises and falls” in example (1) is a conventional metaphor commonly used in Mandarin Chinese. The speakers’ emotional feelings are accessed directly from “within” the self and metaphorized in the way they were originally experienced by the speaker. By contrast, the metaphor scenario of colorful things disappearing from sight depicted example (5) illustrates how trauma-related emotions accessed from the first-person perspective are explicated using novel metaphors. While example (1) describes emotional changes in a way that is commonly shared by Mandarin Chinese speakers, example (5) provides a better sense of the speakers’ idiosyncratic way of experiencing and conceptualizing trauma-related emotions.

The expression of neutral emotions from the observer perspective using conventional and novel metaphors is illustrated by the example (8), which were discussed earlier in Section 3.4.1.2 (reproduced below):

(8) [the observer perspective*neutral metaphor] 通过那段经历来学会一些辩证思考，然后重新去反省自己过往的那些认知，然后把自己从当时的环境脱离开来，作为一个旁观者去分析。

[Through my experience of the event, I learned to think in a dialectical way. I learned to reflect upon my cognition in the past, get myself detached from that environment, and analyze all these thoughts as an onlooker.]

In this example, the speakers' emotions and thought activities are not described in the way they occurred in the speaker's mind but evaluated from an externally situated perspective, with the self dissociated from the traumatic scene. The first vehicle term (“脱离, tuō lí”) is a conventional metaphor that interprets psychological dissociation in terms of physical disconnection, and the second vehicle term (“旁观者, páng guān zhě”) is a novel metaphor that depicts the speaker as an “onlooker” who is watching the self and the traumatic event from the outside. The two vehicle terms also reflect how trauma victims might deliberately take up the observer perspective as a strategy to distance the self from overwhelming and debilitating emotions, which further corroborates the previously identified association between the perspective and neutral emotions.

In sum, the categorical data analysis conducted on PERSPECTIVE, EMOTIONAL VALENCE, and CONVENTIONALITY shows that trauma metaphors generated from the field and the observer perspective were often presented with distinct emotional focuses, and that the strengths of association varied further according to conventional and novel metaphors. The three-way interaction provides a systematic, formal view of the multifacetedness of presentational features distinguished from non-substantive aspects of metaphors, contributing to a deeper understanding of contextualized nature of non-substantive aspects of metaphors and their dynamic interactions with each other. The qualitative analyses also provide a situated account of how variables that are not directly reflective of substantive contents of metaphors could reflect patterns of metaphor presentation that are unique to a given trauma population and the implicit emotions and thinking patterns associated with specific types of metaphors. Furthermore, the findings also

contribute to the theoretical investigation of the field and the observer perspectives. While previous research on language use from the field and the observer perspectives mainly concentrated on the speakers' recollection of autobiographical memories, which could be more likely to be narrated in literal rather than metaphorical language, the present study adds to empirical evidence about the contextualized instantiations of the two perspectives in metaphorical language.

The findings bear important implications for the study of trauma narratives and the development and application of metaphor-based therapeutic protocols (e.g., Grove & Panzer, 1989; Kopp & Craw, 1998; Kopp, 1995; Sims, 2003; Sims & Whynot, 1997; Witztum et al., 1988), which strive to provoke therapeutic insights through stimulating and exploiting client-generated metaphors. As we have seen in Section 3.4.1, the same target topic accessed from the field and the observer perspectives are often described using different types of metaphors (refer to Table 3.5 for the contrast in emotional valence and Table 3.6 for the contrast in conventionality). This points toward the possibility for instructed perspective shift (Wallace-Hadrill & Kamboj, 2016) to be used as a therapeutic tool to promote the client's exploration of implicit elements in metaphorical conceptualizations, the generation of contrasting or alternative metaphors, and the extension of existing metaphors indicating non-adaptive thoughts, all of which were widely recognized as effective ways for facilitating positive insights in therapy (e.g., Cirillo & Crider, 1995; Kopp & Craw, 1998; Kopp, 1995; Sims & Whynot, 1997; Sims, 2003; Wagener, 2017) and in trauma treatment in particular (e.g., Stott et al., 2010; Wilson & Lindy, 2013; Witztum et al., 1986, 1988).

The variation of the PERSPECTIVE*EMOTIONAL VALENCE association across conventional and novel metaphors suggests that the two types of metaphors often exhibit distinct discourse dynamics in emotional expression. The differential magnitudes of frequency deviations provide further empirical support for the argument that conventional metaphors might sometimes

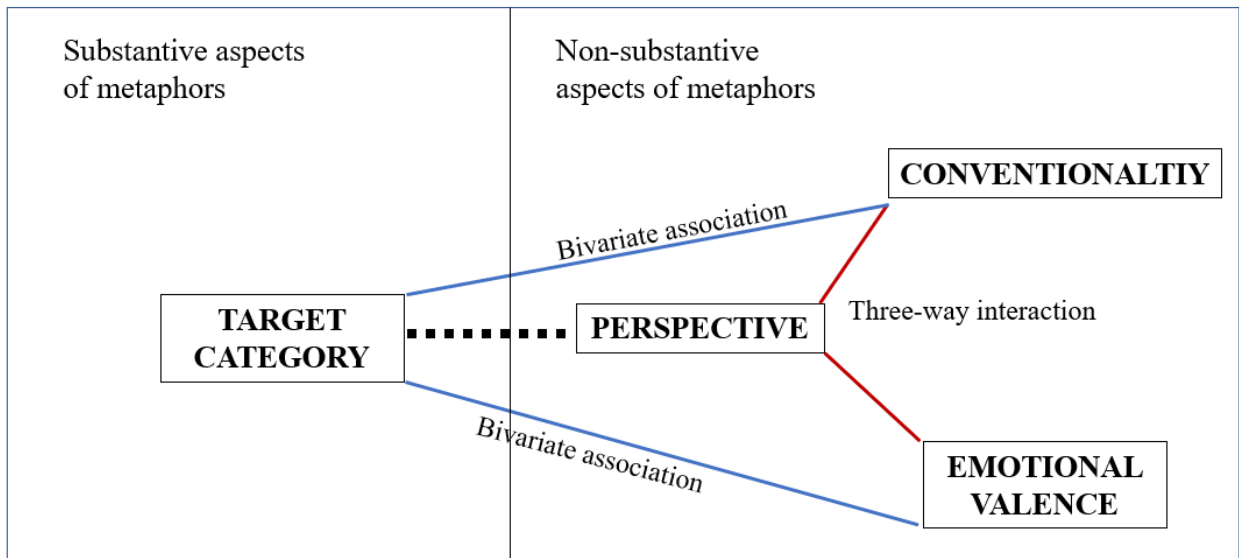
be more reflective of automatic and subconscious emotions as compared with novel metaphors (Moser, 2007) and reveal therapeutically relevant information that is not necessarily encoded in novel metaphors. The finding also provides counterevidence to the prevailing argument that novel metaphors are more frequently used in expressing intense emotions (refer to Section 2.3.1 for a review).

However, the fact that novel metaphors and those generated from the observer perspective were less closely associated with the negative valence does not mean that the two types of metaphors are more psychologically adaptive or more therapeutically desirable than conventional metaphors and those from the field perspective. Quite the contrary, lower levels of emotionality reflected by language use and preference for the observer perspective are not always signs of adaptive post-traumatic reactions or therapeutically desirable psychological states. As mentioned earlier in Section 3.2.2, quite a few empirical studies conducted in different mental health contexts have identified positive correlations between the observer perspective and higher levels of psychological distress and avoidance (e.g., Berntsen et al., 2003; McIssac & Eich, 2002, 2004; Nigro & Neisser, 1983; Robinson & Swanson, 1993). While the categorical data analyses presented in this study only reveal emotional valences that are likely associated with the two perspectives, the relationships between the two perspectives and psychopathological experiences of trauma will be examined later in Chapter 4 through a correlation analysis that juxtaposes the participants' personal metaphor usage patterns with their psychometric profiles.

3.4.3 Summary of Findings

In sum, this chapter investigated the presentational, multifaceted properties of trauma metaphors reflected by the interactions among multiple aspects of metaphors, both substantive and non-substantive included. The properties were examined as the contextualized instantiations of EMOTIONAL VALENCE and CONVENTIONALITY in trauma victims' metaphorization of eight therapeutically interesting TARGET CATEGORIES and their metaphorical meaning-making from two different psychological PERSPECTIVES. A mixed-method analysis combining categorical data analysis and qualitative discourse analysis was conducted. Statistically significant relationships identified using categorical data analytic methods are summarized in Figure 3.7.

Figure 3.7 Statistically significant relationships identified using categorical data analysis



Trauma victims' metaphors about the eight TARGET CATEGORIES were characterized by distinct emotional focuses and different degrees of CONVENTIONALITY. In particular, the eight TARGET CATEGORIES showed interesting interactions with different EMOTIONAL VALENCES: SELF was more frequently presented in the negative and positive valences than in

an emotionally neutral way, PERSONAL SITUATION was more likely to be described using negative metaphors, SELF AND SELF was more frequently described in the neutral valence and less likely presented in the negative light; SELF AND PERSONAL SITUATION had proportionately more neutral and positive valences and less negative metaphors, SOCIAL SITUATION was found with an apparent shortage of positive metaphors, and other categories had relatively balanced mixtures of all three valences. Metaphors about the eight target categories also differed in terms of CONVENTIONALITY: both SELF and SOCIAL SITUATION were more likely to be metaphORIZED using conventional metaphors and less likely presented using novel metaphors, SELF AND SOCIAL SITUATION was more closely associated with novel metaphors and less so with conventional metaphors, and other categories had approximate proportions of the two types of metaphors.

The field and the observer PERSPECTIVES, which abstract the eight target categories to an even less substantive level, also exhibited robust associations with EMOTIONAL VALENCES, and the relationship between the two variables varied further across different levels of CONVENTIONALITY. More specially, metaphors generated from the field perspective were generally more closely related to the negative valence and less so with the neutral valence, whereas the observer perspective showed the opposite patterns; the differential emotional focuses identified for the two PERSPECTIVES were more salient among conventional metaphors than among novel metaphors.

The patterns identified using categorical data analytic methods add to our existing knowledge about trauma victims' preferred ways of conceptualizing and articulating complex and elusive subjective experiences. The findings also contribute to a deeper understanding of the contextualized characteristics of non-substantive metaphor variables such as

CONVENTIONALITY, EMOTIONAL VALENCE, and PERSPECTIVE in describing certain aspects of traumatic experiences. The fact that non-substantive aspects of metaphors often interact dynamically with substantive aspects in quantitatively systematic and context-sensitive ways underlines the potential for their interrelationships to capture presentational features of metaphors and general tendencies of metaphorical meaning-making by a given trauma population and specific metaphor topics. The fact that different aspects of metaphors, as the external manifestations of different emotional and thought processes, might engage in higher-order interaction with each other further provides an immediate sense of the multifaceted properties of metaphors (Moser, 2000). The findings also provide empirical evidence for a recent trend of metaphor studies (e.g., Cameron & Maslen, 2010; Geeraerts et al., 2008; Kovecses, 2005, 2010, 2015, 2020; Littlemore, 2019; Tay, 2013), which highlights the dynamic interactions between real-world metaphors and the simultaneous influence of multiple contextual factors.

3.5 Chapter Conclusion

Existing research on mental health metaphors has highlighted the vast potential for metaphorical language to capture both personally and clinically meaningful aspects of trauma victims' personal experiences (Costa & Steen, 2014; Foley, 2015; Littlemore & Turner, 2020; Tay, 2014; Wilson & Lindy, 2013;). While the studies focused primarily on the substantive content of metaphors, the present study extends the scope of trauma metaphor research to the multifaceted, presentational properties, i.e., trauma victims' characteristic ways of organizing and presenting metaphorical ideas as reflected by systematic, quantitative interactions of multiple variables. The findings show that trauma victims' metaphorical meaning-making is often organized and presented in quantitatively systematic ways and that such systematicity not only in the expression of discrete

metaphorical ideas but also holds at the level of perspective-taking, which is much less semantically substantive.

This study also holds important practical implications for mental health practitioners' understanding and management of trauma metaphors. The study provides empirical evidence that furthers and challenges prevalent understandings of the therapeutic relevance of specific aspects of metaphors, offering important insights for the application of metaphor-based therapeutic protocols and trauma treatment. The findings could not just offer mental health practitioners a preview of specific types of metaphors that are more (or less) likely to occur in therapeutic contexts, but also provide useful references for the application of specific therapeutic techniques, such as the earlier mentioned instructed perspective shift (Wallace-Hadrill & Kamboj, 2016) and the elaboration of metaphors with sensory images (Kopp & Craw, 1998). The patterns would serve as particularly useful references for understanding clients' narratives in metaphor-based therapy (e.g., Grove & Panzer, 1989; Kopp & Craw, 1998; Kopp, 1995; Sims, 2003; Sims & Whynot, 1997; Witztum et al., 1988) and the preparation of emotion-focused therapeutic plans.

From the methodological perspective, this study demonstrates how the application of a mixed-method approach could reveal patterns that are not necessarily transparent to qualitative observations and thus open new perspectives for the study of contextualized metaphors. The application of categorical data analyses in extracting systematic and context-sensitive metaphor usage patterns demonstrates the strengths of quantitative methods in exploiting the multifacetedness of presentational features reflected by multiple aspects of metaphors in large-scale data. The use of MCA factor plots as visualization tools shows how complex and abstract statistical relationships among multiple variable categories could be converted to visually distinguishable forms, and how the patterns could be taken as entry points for the subsequent

qualitative analysis (refer to Tay & Pan, 2022 for a more elaborated account). The use of discourse analysis demonstrates the irreplaceable advantage of qualitative methods in revealing the contextual characteristics of metaphor use and substantiating statistically significant patterns with situational features.

However, the present study is limited in terms of two key aspects¹⁸. Firstly, as the aim of this thesis aims to identify potentially clinically and therapeutically relevant metaphor usage patterns rather than to document metaphor themes that reflect the speakers' idiosyncratic personal traumatic experiences, vehicle terms and target topics in the present dataset were coded in a top-down manner using pre-established categories of therapeutic and clinical significance; in the absence of a systematic top-down coding scheme, vehicle terms were not included in this analysis. To obtain a more holistic view of contextually motivated metaphor usage patterns, future research could adopt bottom-up coding procedures and replicate the methods demonstrated in this study to explore quantitative patterns of contextually motivated vehicle groupings and discourse topics (refer to Arhens & Jiang, 2020 for a dictionary- and corpus-based method of source domain verification).

Secondly, this study is a quantitatively oriented mixed-method analysis. In other words, quantitative analysis was performed prior to qualitative analyses to examine the interrelationships among a pre-determined set of variables; the statistically significant patterns were then used as the starting points for closer qualitative analysis (see Creswell, 2014 for an introduction of different configurations of qualitative and quantitative methods in mixed-method research). As indicated by Tay (2017), patterns identified using frequency-based quantitative methods only reveal

¹⁸ A more synthesized reflection on limitations of the sampling method and research design will be provided later in Chapter 6 based on an overview of the three chapters.

quantitative relationships among or between the variables under examination but do not entail thematic significance; we can see from the contingency tables that the statistically significant patterns do not necessarily occur at a frequent basis. Instead of following a quantitatively oriented approach, future research could start with qualitative discourse analysis, identify thematically salient or interesting patterns, and then use quantitative methods as a subsequent step to probe into metaphor usage patterns that are implicitly related to the discourse analytic insights (c.f. McMullen, 1989; Tay, 2019).

Chapter 4 The Interactions Between Metaphor Use and Severities of Traumatization

4.1 Chapter introduction

In Chapter 3, we examined the multifaceted, presentational properties of trauma metaphors. While the study provided detailed accounts of how trauma victims organize and present their metaphorical ideas in quantitatively systematic ways, the focus was limited to contextual dynamics instantiated in linguistic forms. In Chapters 4 and 5, we will shift our focus from linguistic characteristics of trauma metaphors to the interface between trauma victims' metaphor use and their psychopathological experiences. As mentioned earlier in Section 2.2, previous trauma metaphor research has identified various different types of emotional, cognitive, and embodied experiences as important contextual factors in shaping metaphor use. However, the findings were mostly derived based on cognitive semantic analyses of linguistic expressions; trauma victims' metaphor use was rarely examined for systematic, empirical relationships with clinically defined, psychometrically measured psychopathological experiences. In Chapters 4 and 5, the subjects' metaphor use will be contextualized into specific clinical situations of trauma evaluation and diagnosis and examined for their relevance to two basic dimensions of psychopathological experiences as measured by the SASRQ (introduced earlier in Section 2.4.1), i.e., individually distinct, quantitatively different severities of psychopathological disturbances and substantive experiences of different ASD symptoms.

This chapter focuses specifically on the potential interactions between trauma victims'

personal metaphor usage patterns and their psychometrically measured severities of acute stress reactions. As introduced earlier in Chapters 1 and 2, people who had undergone a traumatic event might experience a mixture of emotional states such as depression, anxiety, confusion, and anger, and more specific clinical symptoms such as dissociation, re-experiencing, and avoidance. Due to a number of objective and subjective risk factors, trauma victims may not develop the same degrees of trauma, nor would they experience all symptoms in precisely the same severities (Amir et al., 1996). Since trauma is characterized by a coherent yet related set of emotional, cognitive, and embodied experiences, and each of its subordinate symptoms stands as a distinct cluster of non-adaptive behaviors, emotions, or thoughts (American Psychiatric Association, 2013), it is very likely that people who had different overall degrees of trauma would experience corresponding emotions, thoughts, and sensations in differential ways.

Previous research on mental health metaphors has revealed the possibility for contrasting intensities of emotional experiences and psychopathological disturbances to be distinguished from the speakers' inclinations toward specific aspects of metaphors (e.g., Costa & Steen, 2014; Demjén et al., 2019; Fainsilber & Ortony, 1987; Gök & Kara, 2021; Wilson & Lindy, 2013). Nevertheless, the findings were mostly derived based on comparisons of metaphor usage patterns associated with binarily defined and very often temporally categorized psychopathological conditions such as different therapeutic or recovery stages. Metaphor use in mental health communication has never been investigated in relation to directly quantifiable, individually distinct severities of psychopathological disturbances. Through the juxtaposition of linguistic and psychometric data, this chapter investigates whether and how trauma victims' personal metaphor usage patterns tend to vary with their overall degrees of trauma and severities of five specific ASD symptoms as measured by the SASRQ.

In this chapter, I will first provide an overview of the metaphor variables and psychometric data (Section 4.2), introduce research methods, and summarize the research questions (Section 4.3). I will then present the results of statistical analyses, illustrate the patterns using genuine linguistic examples from a qualitative discourse analytic perspective, and then provide tentative, theoretical interpretations for statistically significant patterns based on findings of previous metaphor and trauma research (Section 4.4). Implications, limitations, and future directions will be summarized at the end of the chapter (Section 4.5).

4.2 Data and Variables

4.2.1 Linguistic Data

This section introduces the linguistic data to be examined in this chapter. An introduction to the metaphor variables will be provided in Section 4.2.1.1; linguistic examples and descriptive statistics for each of the variables will be presented in Section 4.2.1.2.

4.2.1.1 Metaphor Variables

Different from Chapter 3, which explored interrelationships among multiple metaphor variables based on categorical coding results, this chapter focuses on subject-level associations between trauma victims' use of specific metaphor variables and their psychopathological experiences of trauma and relevant symptoms. Two sets of metaphor variables will be examined in this chapter. The first set was extracted based on the three aspects of metaphors examined in Chapter 3, including conventional and novel metaphors, negative, neutral, and positive metaphors, and the eight target categories. As the field and observer perspectives could be inferred directly

based on coding results of target categories (refer to Section 2.3.1), in the present study, they will not be included in the statistical analysis together; the purpose is to reduce data redundancy, i.e., cases where the values of some data items could be partly or completely deduced from the values of other data items (OECD Glossary of Statistical Terms. 2008). Rather, the two perspectives will only be used as reference points in the subsequent discussion where relevant target categories are involved.

The second set of metaphor variables includes several vehicle groupings and discourse topics that are potentially relevant to psychopathological experiences of trauma and thematically salient in the present dataset (referred to hereinafter as “potentially trauma-related vehicle groupings and target topics”). The vehicle groupings include SENSORY INFORMATION, PHYSICAL ACTIVITY, WAR AND THREAT, and SPACE AND SPATIAL RELATIONS, and the discourse topics include EMOTIONS AND EMOTIONAL PROCESSES, SELF-REFERENCES, and THINKING AND UNDERSTANDING. An introductory overview of the additional variables, linguistic examples, and descriptive statistics are given below:

Vehicle groupings

SENSORY INFORMATION: The experience of a traumatic event can be highly intense and very often beyond ordinary life experiences; sometimes trauma-related disorders such as PTSD could also trigger sensory experiences that are not usually elicited by everyday life events and situations. A large body of research has provided linguistic evidence that trauma victims often interpret their subjective feelings and psychopathological experiences in terms of more basic sensory impressions and physical sensations, for example, impairment or loss of SIGHT, the experience of NUMBNESS and SUFFOCATION, and the perception of PHYSICAL PAIN (e.g.,

Beck, 2016; Berntsen et al., 2003; Costa & Steen, 2014; Gušić et al., 2018; Nijenhuis et al., 2010; Rechsteiner et al., 2019, 2020; Wilson & Lindy, 2013).

WAR AND THREAT: Because traumatic events are often physically confrontational, anxiety-provoking, and even life-threatening, trauma victims tend to show increased attention to corresponding aspects of their experiences (Ehlers et al., 2012; Foa et al., 1995). One of the manifestations is that they often conceptualize their perceptions and reactions toward the traumatic stimulus or their post-traumatic reactions using vehicle terms about WAR AND THREAT; typical examples are expressions about “*fight*”, “*dying*”, “*defeat*”, and “*on guard*”. This vehicle grouping has been identified in both descriptions of traumatic combat experiences (Foley, 2015; Witztum et al., 1986) and non-combat-related experiences such as pregnancy loss, rape, and the Covid-19 pandemic (Beck, 2016; Ehlers et al., 1998; Gök and Kara, 2021; Wilson & Lindy, 2013).

SPACE AND SPATIAL RELATIONS: Since traumatic experiences could be highly personal and exclusive and the psychological impact could last for quite a long time, trauma victims often conceptualize the unique subjective reality created by the traumatic event as BOUNDED or OPEN SPACES (Beck, 2016, 2017; Costa & Steen, 2014; Guité-Verret et al., 2021; Littlemore & Turner, 2020; Turner et al., 2020; Wilson & Lindy, 2013). As the event usually brings about unexpected and unprecedented changes to trauma victims’ psychological worlds, the speakers might also use SPATIAL RELATIONS in the physical environment to help express the perceived changes in the surrounding environment, the disruption of life order, and an alienated sense of time (Costa & Steen, 2014; Littlemore & Turner, 2020; Tay, 2014; Wilson & Lindy, 2013); the most commonly used vehicle terms are horizontal and vertical orientations like FORWARD/BACKWARD and UP/DOWN, and expressions indicating locations such as “*besides*” and “*all over the place*”.

PHYSICAL ACTIVITY: As I have shown earlier in Section 2.2, universally shared physical activities such as **MOVEMENT**, **EXERTION OF FORCE**, and **CONTROL OF BODY** also constitute a robust source of trauma metaphors. Such vehicle terms play a particularly active role in the description of trauma-related emotional and thought processes, the experience of specific post-traumatic symptoms, and trauma victims' efforts to cope with their post-traumatic feelings (Costa & Steen, 2014; Foley, 2015; Gušić et al., 2018; Littlemore & Turner, 2019, 2020; Meili et al., 2019; Tay, 2014; Wilson & Lindy, 2013).

Discourse topics

EMOTIONS AND EMOTIONAL PROCESSES: One of the typical manifestations of PTSD is increased sensitivity of or attention toward trauma-related emotions such as depression, anxiety, anger, and shame; sometimes trauma victims might also experience greater difficulties in disengaging themselves from negative feelings (Berntsen et al., 2003; Ehlers & Clark, 2000; Ehlers et al., 2012; Foa et al., 1995; Halligan et al., 2003; O'Kearney & Perrott, 2006). According to Fainsilber and Ortony (1987), the experience of intense emotions such as trauma, compared with that of milder feelings, is very likely to create a more pressing need for the speakers to provide detailed and vivid descriptions of their subjective experiences, which would then lead to increased use of emotion-related metaphors, especially novel expressions.

THINKING AND UNDERSTANDING: Apart from increased attention to negative emotional feelings, people with higher degrees of trauma might also experience obsessive thinking about details of the traumatic experiences, such as the processes, consequences, and relevant people, objects, and events (Alvarez-Conrad et al., 2001; Ehlers & Clark, 2000; Ehlers et al., 2012; Foa et al., 1995; Jaeger et al., 2014; Manne et al., 2002; O'Kearney & Perrott, 2006). As the

traumatic experience could be very different from and even contradictory to trauma victims' established world knowledge and cognitive structures (Janoff-Bulman, 1989), it is normal that people find themselves overwhelmed by new information and feel confused about what had happened; they might also experience difficulties in generating coherent accounts of the traumatic events (Ehlers et al., 2012; Foa et al., 1995; Zoellner & Bittinger, 2004). In the attempt to figure out "why did it happen to me" (Ehlers et al., 2012) and to make meaning of the traumatic events and the associated changes (Tedeschi & Calhoun, 1995), trauma victims are very likely to pay more attention to abstract and subjective aspects of their experiences, such as the causes, consequences, and insights of the traumatic events, and produce more metaphorical accounts of thinking and understanding.

SELF-REFERENCES: Because traumatic experiences can lead to unexpected changes to people's basic assumptions, beliefs, and expectations of the self, it is conceivable that those with higher degrees of trauma would experience a suddenly altered sense of the self and generate more in-depth reflections on their own state of being and perceived changes in self-identities (Berntsen et al., 2003; Janoff-Bulman, 1989; Tedeschi & Calhoun, 1995). Since issues about the self, self-identity, and self-changes could be highly abstract and complex, people would naturally connect their internal knowledge about the self with external conceptual resources, and present the related thoughts and cognitive processes using metaphorical language (Fullagar & O'Brien, 2012; Lakoff, 1990; Kopp & Eckstein, 2004; Kopp, 1995; Moser, 2004, 2007). According to the thematic dimensional analysis of PTSD patients' self-representation by Wilson and Lindy (2013), coherence, autonomy, vitality, and perceived continuity of the self are among the most frequent topics of self-related metaphors.

4.2.1.2 Descriptive Statistics and Interrater Reliability

The abovementioned vehicle groupings and discourse topics were selected based on a review of linguistic and metaphor themes that are potentially relevant to trauma victims' psychopathological experiences rather than thematic dominance in linguistic accounts of personal traumatic experiences, therefore, the categories do not cover all metaphors in the present dataset, which is the reason why they were not included in the categorical data analysis conducted in Chapter 3. Among the 1,634 metaphors identified in the present dataset, 936 were found with the four potentially trauma-related vehicle groupings, and 813 were found for the three discourse topics. Krippendorff's alphas for coding trauma-related vehicle groupings and discourse topics are 0.697 and 0.721, respectively; both are greater than the smallest acceptable reliability for qualitative analysis suggested by Krippendorff (2004), i.e., $\alpha=0.667$. Linguistic example and frequency for each variable category are provided in Table 4.1.

A total of 20 variables subordinate to five metaphor aspects are included in the analysis. To capture the subjects' idiosyncratic characteristics of metaphor use, categorical coding results of the five metaphor aspects were sorted by subject and summarized in terms of their absolute frequencies in the interview. Considering that the interviews varied substantially in length and that the frequency of metaphor vehicle terms is positively correlated with the length of interviews ($r=.076$, $p<.001$), the absolute frequencies were then converted to standardized frequencies per thousand characters of transcription to control for the differences in lengths. Shapiro-Wilk tests show that apart from novel metaphors and negative metaphors ($p=.185$ and $.105$, respectively), no other metaphor variables followed normal distributions (all $ps <.05$). A summary of all variables together with descriptive statistics is shown in Table 4.2.

Category		Example
Potentially trauma-related Vehicle Groupings (936)	Sensory information (331)	有点烦躁，有点焦躁，也有点像是有点 <u>透不过气的感觉</u> 。 [I felt a bit agitated, a bit irritated, or <u>difficult to breathe</u> .]
	War and threat (112)	但是作为 <u>第一线</u> 、在 <u>主战场</u> 来说，我觉得主要令我感觉很不爽、很愤怒的点，可能还是对个人的影响。 [Being <u>at the frontline, at the main battlefield</u> , what annoys me the most is how the event had affected my own life.]
	Space relations (140)	但是我觉得我情绪 <u>起起伏伏</u> 的，可能自己偷偷有担心过，会不会影响我实际的健康这种。 [But I feel that my emotions are always <u>getting up and down</u> , sometimes I feel worried, if this will affect my real physical health.]
	Physical activity (353)	一开始有情绪波动的时候，我很快就 <u>调整</u> 过来，但是后面就是一种 <u>挥之不去</u> 的感觉。 [At the beginning, when I felt some emotional fluctuations, I could <u>adjust myself</u> very quickly, but it then becomes very difficult to <u>wave it off</u> .]
Clinically Interesting Discourse Topics (813)	Emotional feelings and processes (517)	我自己甚至都可能会意识到我是不是 <u>就像（进入）一个黑洞一样，被负面情绪吸进去了</u> 。 [Even I myself realized, if I was, <u>just like (in) a black hole, absorbed by negative emotions</u> .]
	Thinking and Understanding (215)	就是试图 <u>抛掉</u> 我所处的环境，把这个事情放到更大的格局上来看。 [I was trying to <u>separate myself from the environment I am now in, and look at this event in a bigger backdrop</u> .]
	Self-references (81)	会觉得自己是无辜的，自己是 <u>受了无妄之灾</u> 的。 [Because I think I am innocent, I am <u>a victim of an unexpected disaster</u> .]

Table 4.1 Examples and frequencies of potentially trauma-related vehicle groupings and discourse topics

Metaphor variables		Mean of density (per thousand Chinese characters)	Shapiro- Wilk test (<i>p</i> -vale)
Conventionality	Novel	3.82 (SD=2.09)	0.185
	Conventional	5.10 (SD=2.41)	<.001
Emotional valence	Negative	4.47 (SD=1.98)	.105
	Neutral	3.89 (SD=2.33)	<.001
	Positive	0.56 (SD=0.64)	<.001
Target categories	SELF	1.93 (SD=1.31)	.001
	OTHERS	1.31 (SD=1.64)	<.001
	PERSONAL SITUATION	1.02 (SD=1.02)	<.001
	SOCIAL SITUATION	1.06 (SD=0.98)	<.001
	SELF AND SELF	0.98 (SD=1.25)	<.001
	SELF AND OTHERS	0.44 (SD=0.67)	<.001
	SELF AND PERSONAL SITUATION	0.61 (SD=0.53)	.003
	SELF AND SOCIAL SITUATION	1.56 (SD=1.24)	<.001
Trauma-related vehicle groupings	SENSORY INFORMATION	1.93 (SD=1.14)	.038
	PHYSICAL ACTIVITY	2.02 (SD=1.28)	.005
	WAR AND THREAT	0.48 (SD=0.63)	<.001
	SPACE AND SPATIAL RELATIONS	0.76 (SD=0.65)	<.001
Trauma-related discourse topics	EMOTIONAL FEELINGS	3.10 (SD=1.89)	<.001
	SELF-REFERENCES	0.46 (SD=0.73)	<.001
	THINKING AND UNDERSTANDING	1.49 (SD=1.28)	<.001

Table 4.2 An overview of all metaphor variables and descriptive statistics

Different from the long excel spreadsheet used for Chapter 4 (refer to Figure 3.3), linguistic data to be examined in this chapter was organized in a shorter form, such that each subject's personal metaphor usage profile (summarized based on the use of all 20 variables of the five metaphor aspects in single interviews) is represented using a series of data points. A partial screenshot of the excel spreadsheet is shown in Figure 4.1. The subjects were numbered from 1 to

46. Each row shows the metaphor usage profiles of a specific subject, and each column shows the standardized frequency of a given metaphor variable.

Figure 4.1 A partial screenshot of the excel spreadsheet for subjects’ personal metaphor usage profiles

	A	N	O	T	U	V	W	X	Y	Z	AA	AB	AC	AD
	No	Novel metaphor	Conventional metaphor	Negative metaphor	Neutral metaphor	Positive metaphor	SELF	OTHERS	PERSONAL SITUATION	SOCIAL SITUATION	SELF AND SELF	SELF AND OTHERS	SELF AND PERSONAL SITUATION	SELF AND SOCIAL SITUATION
1														
2	1	5.43	4.83	3.02	4.52	2.71	2.11	1.21	0.90	1.81	1.51	1.21	0.00	1.51
3	2	3.72	5.08	7.11	1.69	0.00	0.68	1.52	0.00	2.37	0.17	1.02	0.51	2.54
4	3	4.43	1.58	3.16	2.53	0.32	0.47	0.47	0.63	0.79	0.63	0.00	0.00	3.00
5	4	0.84	8.37	3.77	5.02	0.42	1.67	3.35	2.09	0.00	0.00	0.00	0.84	1.26
6	5	6.10	6.10	6.98	3.78	1.45	2.62	0.58	1.45	2.62	1.16	0.00	0.58	3.20
7	6	6.32	10.92	7.66	8.24	1.34	5.75	0.96	0.77	0.57	4.60	0.38	1.15	3.07
8	7	6.01	4.37	6.97	3.14	0.27	3.01	0.00	2.05	0.41	1.37	0.27	0.55	2.73
9	8	0.87	5.78	2.02	3.76	0.87	1.73	0.29	0.29	0.00	0.29	2.60	1.16	0.29
10	9	6.94	5.95	10.17	2.73	0.00	2.23	0.99	0.74	1.98	0.50	1.98	0.25	4.22
11	10	1.55	3.87	4.26	1.16	0.00	1.94	0.39	0.39	0.77	0.39	0.00	1.55	0.00
12	11	2.58	5.16	4.79	2.95	0.00	1.84	1.11	0.00	0.74	0.74	0.74	0.37	2.21
13	12	4.28	6.12	4.90	5.51	0.00	2.45	3.67	0.00	0.61	0.61	0.00	0.61	2.45
14	13	7.08	7.60	6.82	6.55	1.31	1.05	5.50	2.88	0.52	0.26	0.52	1.83	2.10
15	14	6.01	4.60	6.01	3.18	1.41	1.06	3.53	0.00	1.06	1.77	0.00	0.00	3.18
16	15	6.74	2.59	3.63	4.66	1.04	0.52	1.04	0.52	1.55	3.11	0.52	0.52	1.55
17	16	4.14	5.69	6.73	3.10	0.00	2.07	0.52	5.17	0.00	0.00	0.00	1.03	1.03
18	17	3.91	5.87	7.18	2.61	0.00	4.24	0.00	0.65	0.65	1.30	0.98	0.65	1.30
19	18	9.33	10.18	5.94	11.87	1.70	1.98	8.06	0.42	4.52	2.26	0.57	0.28	1.41
20	19	1.72	2.70	1.72	2.21	0.49	0.49	3.20	0.25	0.00	0.00	0.00	0.00	0.49

4.2.2 Psychometric Data

4.2.2.1 Questionnaire Items and Ratings

As introduced earlier, the participants’ traumatic experiences were evaluated using the SASRQ (Cardeña et al., 2000), which is a 30-item self-report developed following the diagnostic criteria of ASD proposed in DSM-V (American Psychiatric Association, 1994). The questionnaire includes five specific subscales, i.e., dissociation, re-experiencing, avoidance, anxiety and hyperarousal, and impairment in functioning. Each of the symptoms evaluates the subject’s experience of a specific ASD symptom listed in DSM-IV; their clinical manifestations were

introduced earlier in Section 2.4.1 and summarized in Table 4.3 below together with the corresponding questionnaire item numbers in the SASRQ.

Symptom	Clinical manifestations	SASRQ item numbers
Dissociation	Alteration in perception and awareness of self, others, and the surrounding environment	5 diagnostic criteria, 10 items: Numbing: 20, 28; Reduction in awareness of surroundings: 4, 24; Derealization: 3, 18; Depersonalization: 10, 13; Dissociative amnesia: 16, 25.
Re-experiencing	Recurrence of trauma-related memories, thoughts, feelings, dreams, etc.	1 diagnostic criterion, 6 items: 6,7, 15, 19, 23, 29
Avoidance	The tendency to avoid traumatic-related stimuli, such as places, people, thoughts, and feelings	1 diagnostic criterion, 6 items: 5, 11, 14, 17, 22, 30
Anxiety and hyperarousal	Increased anxiety, sensitivity, and physiological arousal (e.g., difficulty in sleeping, poor concentration, hypervigilance)	1 diagnostic criterion, 6 items: 1, 2, 8, 12, 21, 27
Impairment in functioning	Difficulty in engaging in social or interpersonal interactions, or in performing everyday actions	1 diagnostic criterion, 2 items: 9, 26

Table 4.3 Clinical features of the five ASD symptoms and item numbers in the SASRQ

As mentioned earlier, each questionnaire item is rated on a 6-point scale from 0 to 5 (0=not experienced, 5=very often experienced), and the whole questionnaire could be rated either continuously or dichotomously (Cardena et al., 2000; refer to Orsillo, 2001 for a more detailed introduction). We could add up the item scores to calculate the total and symptom scores to account for the severity of ASD and/or specific ASD symptoms. As the sum of all 30 items under all five

symptom clusters, the total SASRQ score reflects the subject's overall degree of traumatization; the higher the total score, the more traumatized the subject is. The symptom score is the sum of all item scores that measure the same symptom; getting a high score on a specific symptom suggests that the participant is particularly disturbed by that symptom. The total SASRQ scores or symptom scores could provide the clinical practitioner with an immediate sense of the subject's severity of acute stress reactions and the urgency of clinical intervention as compared with other trauma victims.

Alternatively, the ratings could also be converted to dichotomous data to account for the clinical presence of specific ASD symptoms: ratings between 0 and 2 are recoded as 0 (non-presence), and ratings above 3 are recoded as 1 (presence). The clinical diagnosis of ASD relies more on the dichotomous coding of symptom presence. To receive a diagnosis of ASD, the subject must fulfill the diagnostic criteria for all five symptoms. In other words, the subject needs to meet at least three diagnostic criteria proposed for dissociation plus at least one symptom in each of the remaining subscales.

In this chapter, the participants' metaphor use was examined in relation to their continuous ratings on the full scale and the five subscales; in other words, each subject's psychological profile is summarized using six quantitatively measured psychometric variables; the descriptive statistics will be provided in the following subsection. The relationships between trauma metaphors and clinical presence of symptoms will be explored later in Chapter 5.

4.2.2.2 Descriptive Statistics

Descriptive statistics of the overall SASRQ scores and the five symptom scores are summarized in Table 4.4.

Variable	Number of items	Descriptive Statistics		Internal Consistency (Cronbach's α)	Shapiro-Wilk test (p -value)
		Mean/total score	Standard deviation		
Overall degrees of trauma	30	39.09/150	23.75	.946	.148
Dissociation	10	9.91/50	7.07	.837	.054
Re-experiencing	6	5.98/30	4.57	.773	.012
Avoidance	6	9.70/30	7.38	.886	.020
Anxiety and hyperarousal	6	10.37/30	5.78	.826	.638
Impairment in functioning	2	3.13/10	2.37	.635	.001

Table 4.4 Descriptive statistics and internal consistencies of full-scale and subscale ratings

The 46 subjects' overall SASRQ scores had an average of 39.09 out of a possible total of 150 points ($SD=23.75$). Their dissociation scores, added up by ten items scores with a possible total of 50 points, had an average of 9.91 ($SD=7.07$). Ratings on re-experiencing, avoidance, and anxiety and hyperarousal, each measured by six items with a possible total of 30 points, averaged 5.98 ($SD=4.57$), 9.70 ($SD=7.38$), and 10.37 ($SD=5.78$), respectively. The mean score of impairment in functioning scores was 3.13 ($SD=2.37$) out of a total of 10 points.

Ratings on both the full scale and the five subscales showed satisfactory reliability: Cronbach's α of the full scale indicated excellent internal consistency, and statistics of the five subscales showed acceptable to good internal consistency (Cronbach, 1951). Cronbach's α for impairment in functioning scores was relatively lower than those calculated for other symptoms, which is probably because the symptom was measured by only two items, and smaller numbers of items are often associated with lower reliability; this issue has been similarly identified in SASRQ

statistics collected from other traumatic contexts (e.g., Kweon et al., 2013; Pedersen & Zachariae, 2010). Shapiro-Wilk tests show the subjects' overall SASRQ scores, dissociation scores ($p=.148$, $.054$, and $.638$, respectively), and anxiety and hyperarousal scores were normally distributed, whereas the ratings for re-experiencing, avoidance, and impairment in functioning were not (all p -values were less than $.05$).

Although the mean SASRQ score derived from the present traumatic context ($M=39.09$) is not intuitively high, the standard deviation ($SD=23.75$) is quite large, which means there is substantial variation among subjects. As different traumatic events vary substantially in their traumatic, demographic, and sociocultural backgrounds, it might not be clinically meaningful to make quantitative comparisons across their psychometric scores. Nevertheless, a rough overview of statistics from different traumatic events could still provide us with an intuitive understanding of the current research context. Table 4.5 summarizes SASRQ statistics reported by previous studies on different traumatic events.

Traumatic event	Overall SASRQ scores	Citation
The 1994 USair 427 airplane crash	$M=26.37$, $SD=25.52$	Cardeña et al. (1997)
The 2008 Wenchuan Earthquake	$M=33$, $SD=26$	Tao et al. (2008)
Traumatic fracture	$M=31.97$, $SD=24.86$	Zhang et al. (2016)
The 2013 Boston Marathon bombings	$M=43.41$, $SE = 0.40$	Holman et al. (2014)
Premature birth	$M=45.1$, $SD=33.4$	Jubenville et al. (2012)
Psychological impact of covid-19 on nurses in Wuhan	$M=33.15$, $SD=25.55$	Liao et al. (2021)

Table 4.5 Overall SASRQ scores collected from other trauma contexts

We can see that the mean SASRQ score for the current sample is slightly higher than what was reported for the 1995 USair 427 airplane crash (Cardeña et al., 1997), the 2008 Wenchuan Earthquake (Tao et al., 2008), traumatic fracture (Zhang et al., 2016), and the psychological impact of Covid-19 on nurses in Wuhan (Liao et al., 2021). The current mean score is relatively lower than the mean score reported for the 2013 Boston Marathon bombings (Holman et al., 2014) and the experience of premature birth (Jubinville et al., 2012). The statistics suggest that the overall degrees of traumatization induced by the Hong Kong social unrest do not differ substantially from the impact of other traumatic events.

4.3 Research Questions and Methods

Research questions to be addressed in this chapter are as follows:

- (1) Are trauma victims' metaphor use correlated with their overall degrees of trauma? (See Section 4.4.1)
- (2) Are trauma victims' metaphor use correlated with the severities of the five ASD symptoms? (See Section 4.4.2)

Correlation analysis was chosen to examine the relationships between the selected metaphor variables and the subjects' psychometric scores (i.e., overall SASRQ scores and the five symptom scores). Nevertheless, it would be pertinent to note that psychometric ratings on the full scale and the subscale scores are usually positively and significantly correlated with each other, as the latter are by design the subcomponent of the former. In the present dataset, the 46 subjects' overall SASRQ scores and their ratings on the five subscales showed strong but not perfect correlations (all r -values are larger than .70; statistics are summarized in Table 4.6). That is to say, entering

both sets of statistics into the analysis can cause some data redundancy. In other words, if we correlate both the full scale and the subscale statistics with another set of variables, it would be reasonable to expect some overlap in the results they elicit.

Psychometric Variables	Overall SASRQ scores
Dissociation scores	$r=0.89$ $p<.001$
Re-experiencing scores	$r=0.92$ $p<.001$
Avoidance scores	$r=0.88$ $p<.001$
Anxiety and hyperarousal scores	$r=0.86$ $p<.001$
Impairment in functioning scores	$r=0.77$ $p<.001$

Table 4.6 Correlations between overall SASRQ scores and symptom scores

In spite of that, studying metaphor usage patterns associated with different psychometric indicators would certainly provide valuable theoretical and practical implications. As the full scale and subscales of the SASRQ were established to measure different dimensions of ASD experiences, each of which is characterized by distinct physiological, emotional, and cognitive features (refer to Sections 2.4.1 and 4.2.2.1 for more details);. Therefore, examining metaphor usage patterns that are associated with distinct psychopathological constructs would enable a more precise understanding of the role of different subjective experiences in metaphor variations, which would open a unique perspective on the experiential and cognitive dynamics underlying trauma victims' metaphor use. From the clinical perspective, the study of metaphor usage patterns associated with different diagnostically meaningful psychopathological experiences would also

shed new light on clinical practitioners’ understanding of patient-generated metaphors and provide more specified supplementary information for the evaluation and treatment of trauma. Considering the aims of this study, both the subject’s overall SASRQ scores and their ratings on the five subscales will be entered into correlation analyses to explore their relationships with the subjects’ global use of the selected metaphor variables. A simplified version of the excel spreadsheet used for correlation analyses is shown in Figure 4.2.

Figure 4.2 A simplified version of the excel spreadsheet used for correlation analyses

	A	B	C	D	E	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	No																
2	1																
3	2																
4	3																
5	4																
6	5																
7	6																
8	7																
9	8																
10	9																
11	10																
12	11																
13	12																
14	13																
15	14																
16	15																
17	16																
18	17																
19	18																
20	19																
21	20																

Results of Shapiro-Wilk tests reported in the preceding section suggest that not all variables followed normal distribution. Nevertheless, according to the Central Limit Theorem (CLT), sampling distribution in a sample of 30 or above tends to be normal regardless of the actual distribution of data; in such a case, parametric tests tend to have higher statistical power than their non-parametric alternatives, which make no assumptions about data distribution. As the present sample size ($N=46$) is larger than 30, the parametric measure of correlation, i.e., Pearson’s r is

chosen. Following previous research on trauma language and mental health metaphors, the threshold for statistical significance is set to $p \leq .05$.

Before we proceed with the results and discussion part, it is important to note that correlation analyses only detect the strengths and directions of relationships between two variables but are insufficient to infer causality, i.e., whether the variation of one variable results in changes in another variable. In other words, significant patterns identified by this study could only reveal how trauma victims with certain types and severities of psychopathological disturbances tend to use metaphors in specific ways, but do not imply that specific ways of metaphorization lead to higher or lower degrees of trauma or vice versa.

4.4 Results and Discussion

This section reports the statistical results of the correlation analyses and provides tentative, theoretical interpretations for significant patterns from a qualitative discourse analytic perspective. How trauma victims' metaphor usage patterns are correlated with their overall degrees of trauma and severities of more specific clinical symptoms will be discussed in Sections 4.4.1 and 4.4.2, respectively. In each of the sections, I will first provide an overview of the statistical results and illustrate the significant metaphor usage patterns using genuine linguistic examples. I will then adopt a speculative tone and provide tentative interpretations based on theoretical speculations derived from existing literature on trauma symptomatology and metaphor use. A summary of major findings will be provided at the end of this section.

4.4.1 Correlations Between Metaphor Use and Overall Degrees of Trauma

4.4.1.1 Results of Correlation Analysis

Significant correlations between trauma victims' metaphor use and their overall degrees of trauma are summarized in Table 4.7 (refer to the appendix for the full correlation matrix).

Metaphor variables	Posttraumatic variable: Overall degrees of trauma
Negative metaphors	$r=.318^*$ $p=.031$
SELF AND SELF	$r=.339^*$ $p=.021$
Self-references	$r=.311^*$ $p=.036$

Table 4.7 Significant correlations between metaphor use and overall SASRQ scores

Three metaphor variables were positively and significantly correlated with the subjects' overall SASRQ scores, including negative metaphors ($r=.318, p=.031$), SELF AND SELF ($r=.339, p=.021$), and self-reference ($r=.311, p=.036$). All r -values are greater than .30 and less than .50, indicating moderate correlations between the three metaphor variables and overall degrees of trauma. This suggests that compared with the less traumatized, people with higher degrees of trauma produced more metaphors in the negative valence; meanwhile, they also generated more metaphors in describing the incongruence between/within their emotional feelings and rational thinking and when reflecting on the perceived changes in their self-identity.

4.4.1.2 Discussion

Previous studies on general trauma language have shown that people with higher overall degrees of trauma tend to produce more negatively valenced expressions than those traumatized to a lesser extent (e.g., Cohn et al., 2004; Halligan et al., 2003; Jaeger et al.; 2014; Kleim et al., 2018; Luno et al., 2013; Todorov et al., 2018; Wardecker et al., 2017). However, as noted earlier in Section 3.2.2, studies in this direction did not draw a clear distinction between literal and metaphorical emotion language; some focused solely on literal emotion words such as “sad” and “despair”. In contrast to this body of research, the present study highlights the increase of negative metaphors as a valid indicator of high degrees of traumatization. Compared with discrete units of emotion words, metaphorical accounts of emotions capture larger chunks of information and reveal more differentiated and substantial details about the speaker’s emotional feelings (Fainsilber & Ortony, 1987). The fact that people with higher overall degrees of trauma were more inclined to use negative metaphors than the less traumatized suggests that the former trauma population was more likely to produce more “granular” (Barrett et al., 2001) accounts of their subjective experiences than the latter. The use of negative metaphors by highly traumatized subjects is illustrated by example (11):

(11) 在那种（心理）状态下，我自己甚至都可能会意识到我是不是就像（进入）一个黑洞一样，被负面情绪吸进去了。

[Under that (psychological) condition, even I myself realized, if I was, just like (in) a black hole, absorbed by negative emotions.]

This metaphor was produced by an interviewee who scored 84 on the SASRQ (i.e., about 1.9 standard deviations above the sample mean of 39.09). The irresistible and overwhelming nature of traumatic feelings is described using a more tangible object and concrete physical experiences: the

negative emotions are compared to a “black hole (黑洞, hēi dòng)” that sucks in everything in the vicinity with an enormous attracting force, and the speaker being overwhelmed by negative emotions is conceptualized as the speaker being physically absorbed by the “black hole”. The metaphor provides a detailed and vivid picture of the speaker’s personal emotional experience, highlighting his idiosyncratic way of conceptualizing the elusive feelings.

The apparent negative emotional bias observed in high scorers’ metaphor use is unsurprising, because traumatization is characterized by the experience of various negative emotions like anger, shame, and fear, non-adaptive negative thoughts such as guilt and self-blame, and negative expectations of self and world (American Psychiatric Association, 2013). As the degree of trauma goes higher, people become more likely to engage in rumination (Ehlers & Clark, 2000; Michael et al., 2007; Szabo et al., 2017), which is characterized by “repetitive and recurrent, self-focused negative thinking about past negative experiences and/or negative mood” (Michael et al., 2007, p.307). Among others, negative interpretations of the self and the traumatic event have been identified as particularly strong predictors of persistent PTSD (Bryant & Guthrie, 2007; Dunmore et al., 1999; Ehlers & Clark, 2000). As we can see from example (11), metaphorical language serves as a vivid and compact means for trauma victims to transform their abstract emotions and personal thought processes into more concrete and expressible forms and to share their unique perspectives and reflections on their traumatic experiences.

Some previous studies on general trauma language showed that the preference for negative emotion words is sometimes accompanied by the decrease of positive emotion words such as “*happy*”, “*good*”, and “*well*” (e.g., Frewen et al., 2011; Wardecker et al., 2017) and that compared with higher degrees of trauma, lower levels of post-traumatic stress are often associated with more frequent use of positive words (e.g., Jaeger et al.; 2014; Kleim et al., 2018; Wardecker et al., 2017).

However, this tendency was not observed in metaphor use extracted from the present dataset; neither the correlation between negative metaphors and positive metaphors ($r=.105$, $p=.487$) nor the relationship between overall SASRQ scores and positive metaphors ($r=.235$, $p=.116$) were statistically significant.

Apart from the apparent negative bias, high scorers on the SASRQ were also more inclined to use SELF AND SELF and self-referential metaphors than the low scorers, which suggests the preference for the observer perspective and increased self-focused tendency in metaphorical meaning-making could be used as an explicit marker of traumatization. Different from other metaphor variables, in these two types of metaphors, the self is not just the subject who is experiencing and metaphorizing about the traumatic event, but also becomes the object that is being observed and metaphorized by the self: while SELF AND SELF metaphors concentrate on the incongruence between different facets of emotions and thoughts, self-referential metaphors focus more on the identity and characteristics of the self as an integral whole. Examples of the two types of metaphors produced by severely traumatized subjects are given below:

(12) 我仿佛身体里面有两个小人，然后一个小人喊着说：“你要冷静的看一看这边啊，你看一看这些民主社会”之类的，另外一边就在说：“你是在这读一年书而已，可是这一年已经被损失了这么多”。

[It feels like there are two little guys in my body, and one is shouting: “you should be calm and see what is happening here, you should see the democratic society” and the like. Then the one says on the other side: “you are just doing a master here for only one year, just in the one year you have lost so much”.]

(13) 当时就会有一些很焦虑的心理状态，第二个就是暴躁，……，因为会觉得自己是无辜的，自己是受了无妄之灾的。

[At that time, I often feel a lot of anxieties in my mind, and the second feeling is angry, ..., because I would think that I am innocent, I am a victim of an unexpected disaster.]

Example (12) is a SELF AND SELF metaphor produced by one of the most traumatized subjects, who got 101 on the full scale. The score is 2.61 standard deviations above the sample mean. A metaphor scenario involving “two little guys (两个小人, liǎng gè xiǎo rén)” was constructed to describe the confrontations between rational thinking and emotional feelings. The self, usually perceived as an integral whole under non-traumatic conditions, is now split into two little guys who hold diametrically opposing opinions about the speaker’s experience in Hong Kong; one represents the interviewee’s rational thinking as a mature social being, and the other expresses her concerns over her life and studies as an emotional being. The metaphor describes how the subject strives to resolve the discrepancies between the current traumatic status and the ideal way of life, which is also a typical way for trauma victims to respond to and make meaning of the traumatic event. It is also an instance of metaphors generated from the observer perspective; instead of explaining her immediate feelings and confusion during the social unrest, the speaker adopts an external, detached vantage point in describing how she felt as both the experiencer of the process and a witness who is watching herself from the outside.

Example (13) is a self-referential metaphor generated by an interviewee who also scored high above average on the SASRQ. Different from example (12), which focuses on the process of internal conflict and highlights the opposition between the rational subject and the emotional self, this metaphor describes how the self, as an integral whole, experienced unexpected changes in identity. Here the sudden changes brought about by the traumatic event are conceptualized as an

integral part of the self; based on the conceptualization of the traumatic event as a totally unexpected natural disaster (“无妄之灾, wú wàng zhī zāi”), the speaker under the influence of the traumatic event is perceived as taking on an additional metaphorical identity, i.e., an innocent victim of a suddenly happened disaster.

The preference for increased self-focused tendency observed in highly traumatized subject's metaphor use is consistent with previous trauma narrative research, which identified self-related expressions as a significant predictor of post-traumatic symptoms and disorders (e.g., Frewen et al., 2011; Gušić et al., 2018; Kaplow et al., 2018; Kleim et al., 2018; Todorov et al., 2018). According to Janoff-Bulman (1989), the traumatic event is totally unexpected and often contradictory to trauma victims' established knowledge of the self and the world (Janoff-Bulman, 1989), therefore, it is very likely that the experience would lead to significant alterations in trauma victims' perceptions and understanding of the self, including but not limited to altered physical sensations, distorted evaluations of the self, and disturbances in self-identity (Cox et al., 2014; Foa et al., 1995; Janoff-Bulman, 1989; Lanius et al., 2020; Schore, 2003). The tendency for the severely traumatized to pay extra attention to trauma-induced thoughts, feelings, and identity changes is also agrees with the findings reported by Berntsen et al. (2003) based on survey data: compared with people traumatized to a lesser extent, those with higher degrees of trauma tended to perceive tighter and very often negative connections between the self and the traumatic experience and view the trauma as a central part of their self-identity.

As knowledge about the inner self and experiences of self-changes can be highly abstract and complex, it is natural for trauma victims to borrow linguistic resources from more concrete world knowledge and familiar life experiences to facilitate their self-reflection and self-expression (Moser, 2004, 2007). While numerous studies on trauma metaphors have highlighted self-related

metaphors as an important linguistic and cognitive device in exploring post-traumatic experiences and attendant identity changes (e.g., Beck, 2016, 2017; Foley, 2015; Littlemore and Turner, 2020), findings of the present study further pinpoint the potential clinical importance of self-related metaphors in the evaluation of overall degrees of trauma.

The significant correlation between SELF AND SELF and overall degrees of trauma suggests that metaphorical meaning-making from the observer perspective might also be a potential indicator of traumatization. As mentioned earlier in Chapter 3, trauma memories accessed from the observer perspective are often experienced as less emotional and anxiety-provoking (McIssac & Eich, 2004), therefore, it is often adopted by people who experienced particularly severe post-traumatic stress as a spontaneous strategy to mitigate their negative emotions (Berntsen et al., 2003; Kenny et al., 2009; McIssac & Eich, 2002, 2004; Nigro & Neisser, 1983; Robinson & Swanson, 1993); this is probably a reason why the preference for metaphors in this perspective was positively correlated with degrees of traumatization. Another possible reason is that the dissociation from intense emotional feelings may well impede adequate or effective processing of traumatic memories and therefore contribute to the persistence of post-traumatic symptoms (Berntsen et al., 2003; Brewin et al., 1996; Foa et al., 1989; Kenny et al., 2009). The correlation was only statistically significant for SELF AND SELF metaphors but not for other target categories from the same perspective, which means the relationship could be particularly strong in self-focused metaphors but not so much in other types of expressions.

In sum, this section investigates how trauma victims' overall degrees of trauma could be discerned from their use of specific metaphor variables. Results of the correlation analysis suggest that people of varying degrees of trauma manifested different inclinations toward metaphor use: as the degree of traumatization goes higher, trauma victims' use of negative metaphors, SELF

AND SELF metaphors, and self-referential metaphors also increases, and vice versa for people of lower degrees of trauma. In other words, the negative emotional bias and self-focused tendency in metaphor use were highlighted as linguistic indicators of higher degrees of trauma; metaphors generated from the observer perspective might also be related to severities of traumatization, although the correlation was not statistically significant for all relevant target categories.

Findings of this section point toward the possibility of nuanced psychological reality being reflected in metaphor use, underlining the potential clinical relevance of metaphorical language in trauma evaluation. At a more general level, the findings also point toward the possibility that people's psychopathological experiences, as clusters of related and coherent physiological, emotional, and cognitive experiences, could be distinguished from systematic metaphor usage patterns. This argument will be further investigated in Chapter 5, in which the subjects' traumatic experiences will be broken down into more specific ASD symptoms and examined in terms of their correlations with systematic metaphor usage patterns.

4.4.2 Correlations Between Metaphor Use and Severities of ASD Symptoms

4.4.2.1 Results of Correlation Analysis

Significant correlations between trauma victims' metaphor use and severities of the five ASD symptoms are summarized in Table 4.8 (non-significant results are marked as *n.s.*; refer to the appendix for the full correlation matrix).

Variables	Posttraumatic variables				
	Dissociation	Re-experiencing	Avoidance	Anxiety and hyperarousal	Impairment in functioning
Negative metaphors	<i>n.s</i>	$r=.292,$ $p=.049$	<i>n.s</i>	<i>n.s</i>	$r=0.462,$ $p=.001$
OTHERS	<i>n.s</i>	<i>n.s</i>	<i>n.s</i>	$r=-.319$ $p=.030$	<i>n.s</i>
SELF AND SELF	<i>n.s</i>	$r=.385,$ $p=.008$	<i>n.s</i>	$r=.319$ $p=.031$	<i>n.s</i>
SELF AND SOCIAL SITUATION	<i>n.s</i>	$r=.308,$ $p=.037$	<i>n.s</i>	<i>n.s</i>	<i>n.s</i>
Emotional feelings and processes	<i>n.s</i>	$r=.300,$ $p=.043$	<i>n.s</i>	<i>n.s</i>	<i>n.s</i>
Self-references	<i>n.s</i>	<i>n.s</i>	<i>n.s</i>	$r=.325,$ $p=.028$	<i>n.s</i>

Table 4.8. Significant correlations between metaphor use and the experience of ASD symptoms

Results show that trauma victims' use of the selected metaphor variables was significantly correlated with their ratings on three ASD symptoms, including re-experiencing, anxiety and hyperarousal, and impairment in functioning. Just like overall degrees of trauma, the severities of the three symptoms were not significantly correlated with the total frequency of metaphors but could be more clearly distinguished from more specific aspects of metaphor use. Ratings on the re-experiencing subscale were positively and significantly correlated with two emotion-related variables, i.e., negative metaphors ($r=.292, p=.049$) and emotional feelings and processes ($r=.300, p=.043$); the scores were also positively and significantly correlated with SELF AND SELF ($r=.385, p=.008$) and SELF AND SOCIAL SITUATION ($r=.308, p=.037$). Anxiety and hyperarousal scores were significantly and positively correlated with two self-focused variables, i.e., SELF AND SELF ($r=.319, p=.031$) and self-references ($r=.325, p=.028$), but negatively

correlated with OTHERS ($r=-.319$, $p=.030$). The severity of impairment in functioning was significantly related to negative metaphors ($r=0.462$, $p=.001$). Significant r -values range from .29 to .50, indicating moderate correlations between the psychometric variables and relevant metaphor variables. In contrast, dissociation and avoidance were not significantly correlated with any of the metaphor variables (all $ps>.05$).

Given the strong correlations between the overall SASRQ scores and the symptom scores (refer to Table 4.6), it is not surprising that significant indicators of high overall degrees of trauma, i.e., negative metaphors, SELF AND SELF, and self-references (refer to Section 4.4.1), were also more or less correlated with the three ASD symptoms. We can see that all three symptoms were significantly correlated with at least one of the three variables. Nevertheless, apart from the overlapping results, we could still observe some nuanced metaphor usage patterns that are specific to the symptoms. The significant variables identified for each symptom, taken together, also reveal general tendencies that are noticeably different from those identified for overall degrees of trauma. In the next subsection, metaphor usage patterns that are specific to the three symptoms will be discussed in turn.

4.4.2.2 Discussion

Re-experiencing

The re-experiencing symptom is characterized by the recurrence of intrusive memories, emotions, and thoughts about the traumatic event. Results of the correlation analysis show that as the severity of re-experiencing goes higher, trauma victims become more inclined to metaphorsize about the emotional dimension, especially negative aspects, of their traumatic experiences. Compared with those who were less disturbed by intrusive re-experiencing, people who were more

affected by the symptom were also more likely to use metaphors to describe the perceived incongruence within the self and the interactions between the self and the broader social situation.

The tendency for high scorers on the re-experiencing subscale to pay extra attention to their emotional experiences is illustrated by example (14), which was identified as both a negative metaphor and a metaphor about EMOTIONAL FEELINGS AND PROCESSES:

(14) 那个时候我的心情也是处于一种撕扯吧。一方面，我要像老师说的那样理性地看待世界，然后并且用我自己所学的知识来理解当下社会发生的一切。但是另一方面，我站在一个无辜卷入的被害、受害者的角度，我还是没有办法去理性地去认识他们（施暴者），然后还是会很感情用事地觉得他们到底在干什么？

[At that time, my emotions were tearing me apart. On the one hand, I need to look at the world in a rational way, just like what my supervisor said, and use what I have learned to understand all that was happening in this society. But on the other hand, I am standing in the position of an innocent victim, who was involuntarily drawn into this event, I still can't understand them (the radical protesters) in a rational way. I was very emotional and kept asking myself what on earth are they doing?]

This example was generated by an interviewee who got 16 out of 30 points on the re-experiencing subscale (i.e., 2.19 standard deviations above the mean score of 5.98). Two metaphor vehicle terms were used to describe the speaker's negative emotional feelings during the peak of the social unrest. In the first metaphor vehicle term, the confrontation between two different emotional and thought processes was conceptualized as the speaker being physically torn (“撕扯, sī chě”) into two different parts: one part stands for the speaker's rational thinking, which enables her to get rid of all personal feelings and make sense of the social unrest in a detached and objective way, and the other part represents the emotional aspect of the self, which is totally disconnected

from the rational side of the self. The latter aspect is further elaborated by the second metaphor vehicle, which describes the self as an unlucky “victim” who was “involuntarily drawn into this event”.

The tendency for people with severe re-experiencing symptoms to focus on emotions and express negative feelings is compatible with psychological research findings that identified negative emotional response as a key component of intrusive re-experiencing, next to trauma-related sensory impressions and other substantive details of the traumatic event (e.g., Brewin et al., 1996; Ehlers & Clark, 2000; Ehlers et al., 2004; Halligan et al., 2003; Hellowell & Brewin, 2004; Jaeger et al., 2014; Kleim et al., 2013). According to the definition of intrusive re-experiencing proposed by the DMS-V (American Psychiatric Association, 2013), when faced with internal or external trauma-related cues, people tend to experience intense or prolonged psychological distress as if the traumatic event is happening again. The positive and significant correlation between re-experiencing scores and emotion-related metaphors also provides empirical support for Fainsilber and Ortony’s (1987) finding that descriptions of intense emotional experiences contain more emotion-related metaphors than accounts of milder emotions: as intense emotions are presumably more vivid and remarkable as compared to milder experiences, the associated experiences might generate a more pressing need for the speakers to provide detailed descriptions of their emotional states, which would then lead to increased use of metaphorical expressions.

Compared with subjects who had less severe intrusive re-experiencing, those who were more disturbed by this symptom also generated more metaphors about SELF AND SELF and SELF AND SOCIAL SITUATION, which are two central issues that lie at the heart of the subjects’ traumatic experiences. As introduced earlier in Section 4.2, SELF AND SELF, as the alternative

of SELF from the observer perspective, captures the inconsistency between different emotions, thoughts, and the subjects' pre- and post-trauma sense of self, which is a crucial cognitive challenge faced by all trauma victims when processing their personal experiences (Janoff-Bulman, 1989). The increased use of SELF AND SELF metaphors reflects particularly salient issue in the current research context: as the confrontations of different political and sociocultural views in the social unrest create an imminent psychological need for the trauma victims to reflect on the perceived incongruence between their emotional feelings and rational thinking and to make sense of the sudden alterations in their personal and social identities. Since the reflections could be highly emotion-laden and distressing, those who felt more disturbed by the traumatic event would be more inclined to access the thoughts and feelings from the observer perspective in an emotionally dissociated way. Metaphors about this target category and traumatization have been illustrated earlier in Section 4.4.1.2 using example (12). As the speaker also scored high above average on the re-experiencing subscale, the example is also representative in the current context.

Topics about the current social situation also hold particular importance in the subjects' conceptualization of their traumatic experience as they provide direct accounts of the traumatic context. While SOCIAL SITUATION depicts trauma victims' perception and understanding of the societal status from a self-immersed perspective, SELF AND SOCIAL SITUATION places greater emphasis on the speaker's perception of their own state of being in relation to the broader social situation, describing how their everyday life and future development are influenced by the social situation from an external, self-detached standing point. As this perspective enables the speaker to scrutinize their traumatic experiences from a greater psychological distance and thus reduces the risk of being overwhelmed again, it is more likely to be chosen by trauma victims who experienced unbearable, intense emotions in the social unrest.

The use of SELF AND SOCIAL SITUATION metaphors by high scorers on the re-experiencing subscale is illustrated by example (15):

(15) 对于未来你可能计划得很好，然后你有一些你的打算，但是在这个时代的洪流面前，你就直接被碾过去了，一点办法都没有。

[Maybe you have done a lot of preparations for your future, and you might have formed some of your own plans, but when faced with this flood torrent of history, you just get crushed over, and there's nothing you can do.]

This example was produced by an interviewee who got 12 points on the re-experiencing subscale. The score was 1.31 standard deviations above the mean score. The interviewee was a fresh graduate who planned to find a job and settle down in Hong Kong. However, the unfriendly social atmosphere created by the social unrest, especially the protesters' destruction of the interviewee's laboratory in the university and the interpersonal conflicts arising from differing political views, made her realize that Hong Kong may not be a good place for mainland Chinese to stay. In this expression, the social unrest is interpreted as an event of great historical significance. A vivid metaphor scenario is constructed to express her idiosyncratic understanding of how ordinary people in Hong Kong could be involuntarily affected by such rapid social changes: the social unrest and the associated changes in Hong Kong society are interpreted as a gigantic and irresistible "flood torrent" (洪流, hóng liú) that could lead to permanent and irreversible changes to the surrounding environment, and the unexpected changes caused by the social unrest on the speaker's study and future development is conceptualized as herself being physically "crushed over (碾过去, niǎn guò qù)" by the "torrent" and straying away from the original position.

The positive and significant correlations identified for SELF AND SELF and SELF AND SOCIAL SITUATION metaphor are consistent with the observation that trauma victims under the

influence of re-experiencing are more likely to concentrate on central aspects of trauma that had the largest emotional impact (Christianson, 1992; Ehlers et al., 2002). While previous research focused almost exclusively on autobiographical details that are directly pertinent to the intrusive memories, for example, trauma victims' sensory impressions of trauma-related images, sounds, smells, physical experiences, and substantive details such as the onset, process, and development of the traumatic event (e.g., Ehlers et al., 2002, 2004; Hellowell & Brewin, 2004; Kleim et al., 2013), findings of the present study reveal how abstract and subjective issues that are central to the traumatic event might also hold special personal importance for people under the influence of intrusive re-experiencing. Both target categories are subordinates of the observer perspective, which suggests that metaphorical meaning-making from the observer perspective might also be a predictor for severities of the re-experiencing symptom, and that the associations are particularly strong in metaphors about issues that are central to the traumatic experience.

While accounts of autobiographical memories reflect the trauma victims' experiences in the concrete and physical traumatic world, metaphorical reflections on relatively abstract traumatic issues, as illustrated by example (15), capture the speakers' idiosyncratic understandings of the traumatic event and the personal meanings they make out of the experiences. Although metaphorical thinking about abstract aspects of the traumatic event is not necessarily intrinsic components of their intrusive memories but more likely immediate emotional and cognitive responses to certain autobiographical memories, the expressions could still reveal potentially clinically and therapeutically meaningful information about the speaker's psychopathological experience.

Anxiety and Hyperarousal

As introduced earlier, the anxiety and hyperarousal subscale measures the subjects' increased anxiety, sensitivity, and physiological arousal as a result of trauma exposure; typical clinical manifestations include difficulty in sleeping and concentrating, hypervigilance, exaggerated startle response, irritable behaviours, and anger outbursts (American Psychiatric Association, 2013). Results of the correlation analysis show that the severities of anxiety and hyperarousal were often associated with their inclination to use self-related metaphors: compared with people who were less disturbed by anxiety and hyperarousal, those who were more troubled by the symptom were more inclined to use SELF AND SELF to describe the incongruence in thoughts and feelings; they also generated more self-referential metaphors to account for perceived changes in their self-identities. These two metaphor variables were also identified as significant predictors of higher overall degrees of trauma in Section 4.4.1. The use of self-related metaphors has been illustrated using examples (12) and (13) in Section 4.4.1, therefore the discussion will not be repeated here.

Meanwhile, the symptom-oriented analysis also revealed an interesting pattern that is intuitively complementary to the self-focused tendency but not statistically significant at the level of overall degrees of trauma: as the anxiety and hyperarousal score goes higher, the density of OTHERS metaphors decreases. This suggests that trauma victims who got higher scores on the anxiety and hyperarousal subscale were more reluctant to metaphorize about other people's behaviors, feelings, and thoughts as compared to low scorers on this subscale. A close examination of OTHERS metaphors in the data shows that the target topics are most likely to be people in the subjects' close interpersonal circle (i.e., their family, friends, and colleagues) or parties that are similarly involved in the social unrest, such as the protesters, Hong Kong residents in general, and news media. The two cases are illustrated by examples (16) and (17), respectively:

(16) 我身边同事有黄有蓝，……，的确他们自己这么说自己，我就引用一下。但是我心中没有蓝黄之说，就是没有颜色之分。因为每个人都是七色，都是彩虹，在我心里没有什么颜色之分。

[Some of my colleagues are yellow and some are blue, ..., they indeed refer to themselves in this way, I'm just citing their words. But in my mind, the distinction between blue and yellow does not exist, I mean there's no difference of color at all. Because everyone has seven different colors, everyone is a rainbow, so in my mind there's no difference of colors.]

(17) 学校毕竟是个挺净土的一个地方，之前愤怒也是因为你怎么把手伸到学校这块地方来了。

[The university is, after all, a place like a pure land. The reason why I felt angry at that time is that how can you lay your hands on the place of university.]

Example (16) was produced by a subject who got only 3 points on the anxiety and hyperarousal subscale; the score was 1.28 standard deviations below the sample mean of 10.37. As introduced earlier in Section 1.3.1, the two major political camps in Hong Kong are symbolized using different colors: the pro-establishment camp is conventionally symbolized by “blue (蓝, lán)”, and the pro-democracy camp is represented as “yellow (黄, huáng)”. Because the social unrest led the local residents to pay more attention to other people’s political stances, the whole society, including family and friends, gets divided into hostile and even confrontational groups based on the two colors. In this example, the speaker expresses her disagreement with the blue-versus-yellow division (“蓝黄之说, lán huáng zhī shuō) through an extension of the POLITICAL STANCE IS COLOR metaphor: instead of reducing a person to his/her political stance using a binary definition

of blue and yellow, the speaker describes the complexity of human nature as the person having “seven different colors (七色, qī sè)” and being a “rainbow (彩虹, cǎi hóng)” that cannot be described by a single color.

Example (17) was produced by a subject who did not report any psychopathological signs of anxiety and hyperarousal as measured by the SASRQ. A metaphor that describes the radical protesters’ acts was combined with a PERSONAL SITUATION metaphor to express the subject’s disapproval of the protesters’ vandalism of her university campus. The university, which was supposed to stay clear from political activities, is compared to a sacred “pure land (净土, jìng tǔ)”, and the protesters violently imposing their political opinions on university staff and students is conceptualized as a physical act of “laying their hands ” on a precious and object.

As indicated earlier in Section 4.4.1, the preference for self-related metaphors observed among the severely traumatized is very likely a reflection of the suddenly altered sense of self and identity disturbances brought about by the traumatic experience. The pattern is consistent with previous psychological research that identified self-focused tendency as an explicit manifestation of various anxiety-related mental disorders (e.g., BrockMeyer et al., 2015; Mor & Winquist, 2002; Woody & Rodriguez, 2000). People who are particularly disturbed by anxiety and hyperarousal also had attenuated attention to external information such as other people’s behaviors, thoughts, and emotions, which could be regarded as a natural consequence of maintaining a self-focused perspective (Boehme et al., 2015; Todorov et al., 2018). As more cognitive resources are allocated to the processing of self-related thoughts and feelings, relatively less attention would be attributed to issues that are “external”, or less relevant, to the self.

When examined in the specific context of the social unrest, the subjects’ inclination to concentrate on the self and shift their attention away from other people might also be a sign of

increased social anxiety, which is defined by the APA Dictionary of Psychology (2015) as “fear of social situations in which embarrassment may occur or ... being negatively evaluated by others” and “apprehensiveness about one’s social status, role, and behavior”. As mentioned earlier in Chapter 1, in the social unrest, mainland Chinese were exposed to particularly high risks of physical and verbal abuse from radical protesters, which would cause them to feel particularly anxious about their interpersonal relationships with local residents and fearful of being attacked or humiliated in other social situations. A wide range of psychological studies has shown that the experience of social anxiety is closely related to increased attention on the self and diminished attention on external socially threatening cues (e.g., Boheme et al., 2015; Clark & Wells 1995; Ingram, 1990; Rapee & Heimberg, 1997; Spur & Stopa, 2002), which provides a possible explanation why participants who got higher anxiety and hyperarousal scores produced more self-focused and less other-targeted metaphors as compared to those with lower anxiety levels.

Impairment in Functioning

Impairment in functioning measures the extent to which the subject’s physical, cognitive, and social functioning is affected by the traumatic event. People who got higher scores on the impairment in functioning subscale were found with a significantly stronger tendency to use negative metaphors. As the use of negative metaphors by severely traumatized people has been illustrated and thoroughly discussed in Section 4.4.1.2 (see example 11), no more examples will be provided here. In fact, most examples provided in this chapter are negatively valenced.

According to Jellestad et al. (2021), the experience of post-traumatic functional impairment could result in difficulties in accomplishing a wide range of real-world tasks, including but not limited to daily self-care, domestic life, interpersonal interactions, and general life tasks and

demands. Ni et al. (2020) discovered that trauma victims of the 2019-2020 Hong Kong social unrest also perceived difficulties in following previous life routines, concentrating on work and studies, and maintaining previous interpersonal interactions with friends and family. It is therefore reasonable that people who were more disturbed by this symptom perceive more frustration and a stronger sense of control loss in dealing with such functioning difficulties, which would then drive them to generate more negative metaphors to express their thoughts and feelings.

4.4.3 Summary of Findings

In sum, the correlation analysis conducted at the symptom level suggests that systematic metaphor usage patterns could not only reflect the severity of a given mental condition but also reveal more specific differences in the experience of psychopathological symptoms. We can see that trauma victims with differentiated experiences of ASD symptoms showed distinct preferences toward several different metaphor variables, such as SELF AND SELF, self-references, and negative metaphors; as the severities of trauma and symptoms vary, the attention or preferences for the metaphor variables also vary. The significant metaphor usage patterns are logically and meaningfully consistent with the clinical manifestations of corresponding symptoms, which demonstrates the potential for metaphor variables to reflect more nuanced psychopathological experiences that have distinct physiological, emotional, and cognitive characteristics.

Another interesting observation is that metaphor usage patterns associated with specific symptoms differed remarkably from those associated with the experience of trauma as a general psychological condition (refer to Section 4.4.1). Recall that trauma victims' overall SASRQ scores were significantly related to the use of negative metaphors, SELF AND SELF metaphors, and self-referential metaphors. In addition to the three variables, the symptom-oriented analysis highlighted

a different set of metaphor variables that are only significantly correlated with re-experiencing, anxiety and hyperarousal, and impairment in functioning, including SELF AND SOCIAL SITUATION, EMOTIONAL FEELINGS AND PROCESSES, and OTHERS. While the analysis presented in Section 4.4.1 revealed a general negative bias and self-focused tendency in severely traumatized people's metaphor use, findings at the symptom level pinpointed more specific aspects of metaphORIZATION as relevant to their psychopathological experiences. The contrast is in fact not surprising, as the full scale was designed to provide a holistic indicator of the subjects' degree of traumatization, and the subscales were supposed to reflect different and more specific dimensions of their acute stress reactions. It further demonstrated the capacity for systematic patterns of metaphors to capture more nuanced differences in the speakers' physiological, emotional, and cognitive experiences.

A closer examination of significant results suggests that the number of significant correlations differed across the five ASD symptoms, which means the symptoms differed in their susceptibility to being detected from systematic metaphor usage patterns. Re-experiencing and anxiety and hyperarousal, each significantly correlated with three variables, showed the most robust correlations with metaphorical language; impairment in functioning scores were significantly correlated with only one metaphor variable; ratings on the dissociation and the re-experiencing subscales were not significantly related to any metaphor variables. Such differences might be related to the inherent psychopathological characteristics of the symptoms. Re-experiencing, anxiety and hyperarousal, and impairment in functioning are direct reflections of the subjects' heightened subjective experiences, including emotional feelings, thoughts, bodily sensations, responses to trauma-related cues, and reflections on details about the traumatic event and its impact on the self. As the severities of symptoms increases, the subjective experiences

become more intense and vivid, which will then create more pressing needs for the subjects to provide more elaborated, metaphorical accounts of their feelings (Fainsilber & Ortony, 1987). By contrast, the experience of dissociation and avoidance are characterized by reduced awareness or lowered interest in the traumatic experience and trauma-related emotions and thoughts, which means the symptoms could be less experientially salient or attention-grabbing than those in the former group; the experience would cause the speakers to feel detached from intense feelings and vivid memories. As milder emotional experiences could be less likely than intense feelings to trigger increased use of metaphors (Fainsilber & Ortony, 1987), it is not surprising that experiences of the latter two symptoms are less easily identified from quantitative aspects of metaphor use.

4.5 Chapter Conclusion

Unlike previous studies and Chapter 3, which focused solely on linguistic metaphors about the traumatic event, the present study explores the interface between trauma victims' metaphor use and their psychometrically measured severities of psychopathological disturbances. Results of correlation analyses show that trauma victims' overall degrees of trauma are positively and significantly correlated with their use of negative metaphors and self-related metaphors; different severities of specific clinical symptoms could be clearly discerned from the speakers' inclinations toward negative metaphors and self-related metaphors, and their tendency to metaphorize about other people, the self-society relationship, and their emotional and thought processes.

Findings of this study are consistent with the general theoretical view that metaphor use is intimately connected with the speaker's physical, emotional, and cognitive experiences (Cameron & Maslen, 2010; Charteris-Black, 2012; Kövecses, 2004, 2010, 2020; Lakoff & Johnson, 1980, 1999; Semino, 2010; Semino et al., 2018; Tay, 2013), and that certain ways of metaphorization

might be shared by speakers who have similar subjective experiences (Charteris-Black, 2012; Cameron & Maslen, 2010). While previous studies mainly focused on the associations between metaphor use and different types of emotions, thoughts, and physical sensations, this study further shows that systematic metaphor usage patterns could also reflect cross-individual differences in certain psychopathological experiences. Breaking acute stress reactions down to more specific clinical symptoms further enables a more thorough and detailed account of the subjects' emotional, cognitive, and physiological states, highlighting nuanced differences across different clinical symptoms.

In the practical sense, this study underlines the potential for metaphor analysis to provide informative guides for the understanding and management of mental health communication. The findings hold obvious implications for the understanding, assessment, and treatment of trauma. As mentioned earlier in Section 2.4.1, trauma victims' personal metaphor usage patterns were rarely formally considered as an important factor in the evaluation of trauma and other mental disorders; this study nevertheless revealed their intimate relationships with directly quantifiable psychological states, underlining their relevance to clinical diagnosis of trauma-related disorders and evaluations of relevant psychological risks. Although findings generated from metaphor analyses alone may not be directly used to serve diagnostic purposes, they could still be incorporated as a convenient and informative tool in in-take interviews and subsequent therapy, or provide supporting information for the development of new interview protocols and diagnostic tools. At a more general level, the study highlights the need for clinical practitioners to develop a keener awareness toward clients' and patients' use of figurative language, especially the potential relationships between systematic metaphor usage patterns and certain types of psychopathological disturbances. The findings and examples presented in this study could be incorporated into

therapist training and education regarding trauma victims' use and management of metaphors (e.g., Mathieson et al., 2018).

At the methodological level, this study demonstrates the value of combining linguistic observations and psychometric data in exploring clinically relevant metaphor usage patterns. In particular, it demonstrates how the incorporation of quantitative psychometric data and the use of statistical methods could broaden the scope of traditional metaphor analysis: compared with traditional linguistic analysis of introspective reports on psychological states, the juxtaposition of linguistic data and psychometric data enables us to develop an evidence-based account of the relationship between subject-level metaphor use and specific psychopathological experiences; the use of statistical methods helps to identify systematic metaphor usage patterns that may not be easily captured using qualitative methods alone (Tay, 2017); when interpreting the patterns, an in-depth qualitative analysis of authentic linguistic examples further provides a more precise understanding of the patterns' situational, biographical, and social characteristics (Moser, 2000).

Nevertheless, the present study has some limitations that need to be considered. Firstly, the results of correlation analyses had only moderate small to effect sizes (all r -values are lower than .50), therefore, the conclusions are only tentative and need to be validated in other research contexts. Secondly, due to the unexpected nature of the social unrest, baseline data on the subjects' metaphor use was not available, which means the exact amount of changes induced by the traumatic event could not be ascertained. The immediate impact of trauma exposure on metaphor use and diachronic changes of metaphors across different stages of trauma remains to be explored by future studies. Thirdly, as mentioned earlier in Section 4.3, correlational analyses only examine the degree to which two variables tend to vary together but do not reveal causal relationships, therefore, the interpretations provided in this study are only speculative. To obtain a more accurate

understanding of the reported correlations, psycholinguistic and neurolinguistic experiments that focus specifically on metaphor use are needed. Lastly, as indicated by Tay (2017), findings yielded by frequency-based quantitative methods do not entail thematic significance; in other words, the significant patterns revealed by the correlation analyses only indicate different trauma populations' inclinations to use specific types of metaphors or focus on certain aspects of their traumatic experiences but do not reflect how the speakers perceive and conceptualize their psychopathological experiences in different ways. To obtain a more comprehensive view of the interaction between trauma victims' psychopathological experiences and their metaphor use, a qualitative analysis of disorder-relevant and symptom-specific metaphors is required; the latter research avenue will be further investigated in Chapter 5.

Chapter 5 An Image Schematic Analysis of Metaphors in Describing ASD Symptoms

5.1. Chapter Introduction

By contextualizing metaphor use into the clinical scenario of trauma evaluation, Chapter 4 examined the relationship between trauma victims' metaphor use and their individually distinct, quantitatively different severities of psychopathological disturbances. While the findings established the relevance of metaphorical language in the evaluation of overall degrees of trauma and the severities of acute stress symptoms, the potential interactions between substantive experience of differential symptoms and metaphor use still remains unexplored. In this chapter, we will further zoom in on a more specialized clinical context and probe into metaphors that are directly pertinent to the experience of the five acute stress symptoms.

As mentioned earlier in Chapters 2.4.1, the diagnosis of ASD relies to a large extent on qualitative evaluations of symptoms, and diagnostic interviews based on symptom descriptions provided by clinical guidelines such as DSM-V and information solicited by psychometric questionnaires like the SASRQ (Cardeña et al., 2000) focus mainly on concrete and substantive aspects of the symptomatological experience (e.g., whether a specific physical or psychological reaction occurred, how many symptoms were clinically present, and how long have the symptoms lasted). Trauma victims' metaphorical accounts, although recognized as useful entry points for therapeutic treatment (Haen, 2020; Wilson & Lindy, 2013; Witztum et al., 1986), are often neglected or considered less clinically relevant at the diagnostic stage. Although previous studies have revealed the pervasiveness of metaphors in describing trauma and the potential for

metaphorical conceptualizations to capture the speakers' core traumatic experiences (e.g., Beck, 2016; Costa & Steen, 2014; Foley, 2015; Littlemore & Turner, 2020; Rechsteiner et al., 2019, 2020; Tay, 2014), most of them were cognitive semantic analyses of how people think and talk about their traumatic experiences, and the analyses were often restricted to the categorization of vehicle terms and target topics based on semantically meaningful patterns. While previous studies have provided preliminary evidence that different clinical symptoms of trauma are very likely to be conceptualized using distinct types of embodied experiences (e.g., Foley, 2015; Gušić et al. 2018; Wilson & Lindy, 2013), how different symptomatological experiences are actually metaphorized by trauma victims has never been investigated based on empirical data in systematic ways.

This chapter aims to explore metaphorical conceptualizations that are characteristic of specific acute stress symptoms. To ensure that the metaphors entered into the analysis are sufficiently representative of the symptoms in the clinical sense, the scope of analysis is restricted to symptom-specific metaphors produced by the five subjects who met the diagnostic criteria of ASD (i.e., those who reported clinical presence of all five acute stress symptoms) as measured by the SASRQ. As mentioned earlier in Section 2.2, embodied experiences are widely identified as a key component of trauma victims' subjective experiences and a crucial body of vehicle terms recruited for metaphorical conceptualizations of their psychopathological experiences of trauma (e.g., Beck, 2016; Foley, 2015; Gušić et al., 2018; Littlemore & Turner, 2020; Tay, 2014; Wilson & Lindy, 2013); therefore, the analytic focus will be placed on how ASD subjects draw on universally shared embodied experiences to describe their psychopathological experiences of specific acute stress symptoms. Since clinically situated studies of metaphors are very likely to be faced with the dual challenges posed by limited sample sizes and relatively large and bottom-up

codings of vehicle terms could result in potentially proliferative numbers of analytical categories (as both linguistic and clinical variables are to be included), in the present study, the inventory of image schemas proposed by Johnson (1987) was used as the coding scheme for identifying embodied experiences, as it classifies infinite types of embodied experiences using a fixed number of categories and extracts potentially generalizable patterns (refer to Section 2.4.2.2 for a more detailed discussion of the methodological considerations). All metaphors produced by the five ASD subjects are examined for their relevance to the five acute stress symptoms as measured by the SASRQ (Cardeña et al., 2000); metaphors that are directly relevant to the five symptoms are then coded in terms of image schemas and entered into correspondent analysis, which juxtaposes linguistic data and clinical observations of speakers' descriptions of specific symptoms (Tay, 2016). More details about the ASD dataset will be provided in Section 5.2, and the coding scheme and analytic procedures are explained in Section 5.3. Major image schematic patterns identified for each ASD symptom will be illustrated in Section 5.4.1 and discussed in Section 5.4.2. Implications, limitations, and future directions will be discussed in Section 5.5.

5.2 Participants and Data

In this study, the scope of analysis is narrowed down to subjects who meet the diagnostic criteria of ASD (i.e., those who met the diagnostic criteria of all five acute stress symptoms). As mentioned earlier, to receive a diagnosis of ASD, the subject must fulfill the diagnostic criteria for all five symptoms. In other words, the subject should meet at least three diagnostic criteria proposed for dissociation plus at least one symptom in each of the remaining subscales. To identify subjects who meet the diagnostic criteria of ASD, all subjects' ratings on the 30 questionnaire items were converted from continuous scores to dichotomous outcomes following the scoring

method of the SASRQ (Cardena et al., 2000); ratings between 0 and 2 were re-coded as 0 (non-presence), and ratings between 3 and 5 were re-coded as 1 (presence). The numbers of subjects who experienced different numbers of clinically present symptoms are summarized in Table 5.1.

Number of clinically present symptoms	Number of subjects
5	5
4	5
3	10
2	9
1	10
0	7
Total	46

Table 5.1 Number of subjects with different numbers of clinically present symptoms

Among the 46 subjects, seven did not meet the diagnostic criteria of any acute stress symptoms. Thirty-four subjects endorsed at least one symptom but did not meet the diagnostic criteria of ASD, among which ten had only one symptom, nine had two different symptoms, ten reported three symptoms, and five experienced four symptoms. Another five subjects met the diagnostic criteria of ASD, reporting clinical presence of all five symptoms; they were thus selected for the study of symptom-specific metaphors. The incidence rate of ASD in the present dataset was 10.87%, which is within the range of ASD incidence rate after trauma exposure (7 to 28%) reported in a review by Bryant et al. (2015).

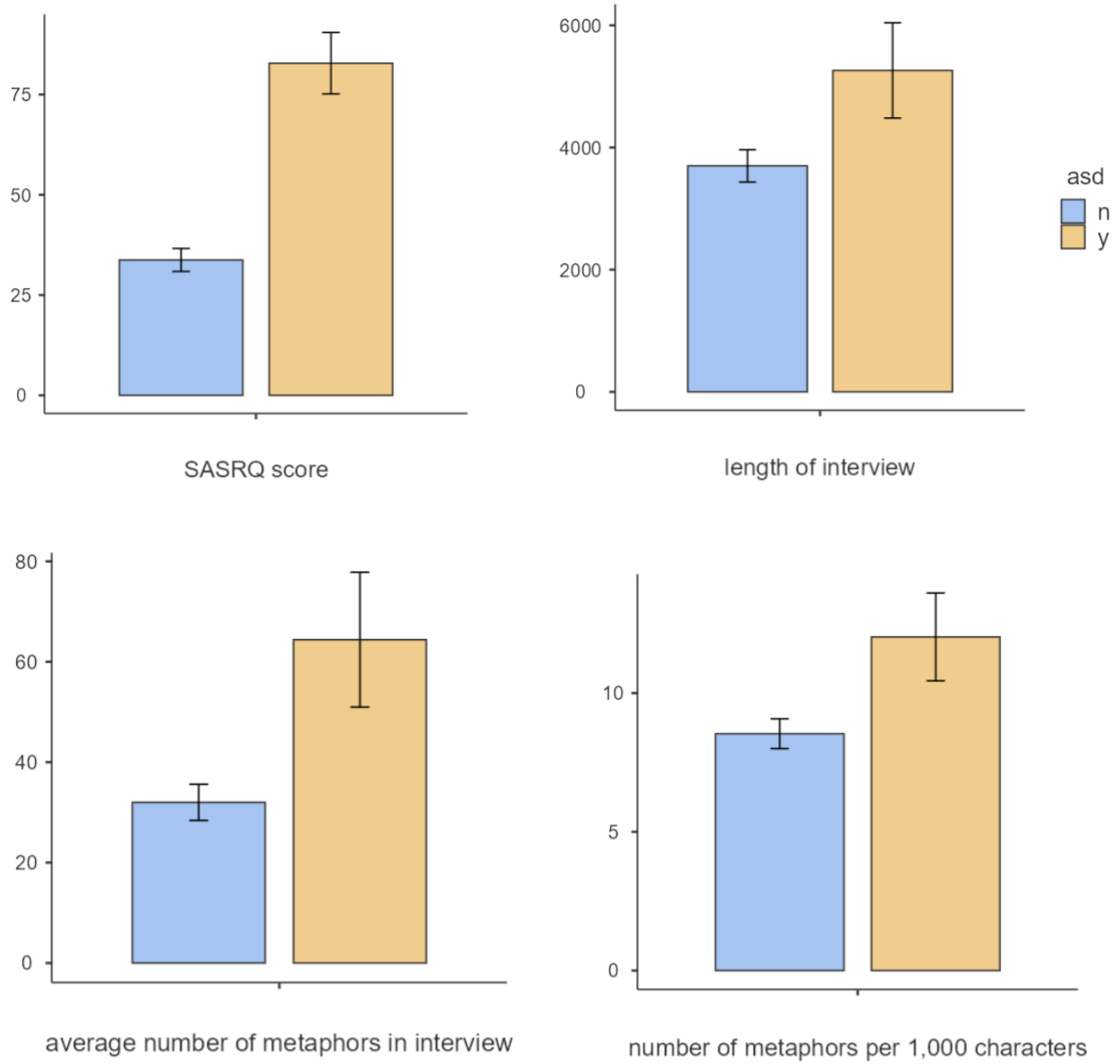
Descriptive statistics of the ASD and non-ASD subjects, including their demographic information, psychometric profiles, and linguistic data, are summarized in Table 5.2. Histograms of ASD and non-ASD subjects' overall SASRQ scores, lengths of interviews, number of metaphors in interview, and density of metaphors per thousand characters are shown in Figure 5.1.

	ASD participants	Non-ASD participants
Gender	4 females and 1 male	29 females and 5 males
Age	M=26.40, SD=2.51	M=26.60, SD=4.52
Overall SASRQ scores	M=82.80, SD=17.12	M=33.76, SD=18.36
Total lengths of interviews (Chinese Characters)	26,307	151,674
Average lengths of interviews (Chinese Characters)	M=5,261.40, SD=1,742.89	M=3,699.37, SD=1,695.92
Total number of metaphors	322	1,312
Average number of metaphors per interview	M=64.40, SD=30.03	M=32.00, SD=23.04
Average number metaphors per thousand characters	M=12.02, SD=3.54	M=8.54, SD=3.45

Table 5.2 Descriptive statistics of the ASD and non-ASD datasets

The five ASD subjects include four females and one male. Their average age (M=26.40, SD=2.51) was comparable to the sample mean (M=26.60, SD=4.52). Their average SASRQ score was 82.80 (SD=17.12), which was substantially higher than that of non-ASD participants (M=33.76, SD=18.36). The five ASD interviews consisted of 26,307 Chinese characters and a total of 332 metaphor vehicle terms. The average length of ASD interviews was 5,261.40 Chinese characters (SD=1,742.89), which was greater than that of non-ASD interviews (M=3,699.37, SD=1,694.92). The average number of metaphor vehicle terms in the five ASD interviews was 64.40 (SD=30.05), which was also remarkably higher than that generated by the non-ASD interviewees (M=32.00, SD=23.04). The density of metaphors per thousand characters was also noticeably higher in the five ASD interviews (M=12.02, SD=3.54) than that in the non-ASD interviews (M=8.54, SD=3.45).

Figure 5.1 Histograms of psychometric and linguistic data generated by ASD and non-ASD subjects



5.3 Research Questions and Methodology

This study aims to explore the qualitative features of ASD subjects' symptom-specific metaphors through the theoretical lens of image schemas. The research questions are indicated as follows:

(1a) How do ASD subjects describe their psychopathological experience of the five acute stress symptoms using image schematic metaphors, and (1b) how do the image schematic patterns identified for each ASD symptom differ from each other?

Because the identification is supposed to provide informed choices about image schemas while remaining sensitive to relevant acute stress symptoms, a cross-disciplinary collaboration that integrates linguistic observations and clinical psychological insights is required. The coding was jointly accomplished by two coders, including the author of this thesis, who received postgraduate education in cognitive linguistics and a nationally recognized qualification in psychotherapy from the Chinese mainland, and a registered therapist of the Chinese Psychological Association (CPA), who has 20 years of experience in trauma treatment and crisis intervention. Before the coding, the two coders had in-depth discussions about the definition of metaphors and image schemas and the identification procedures using linguistic examples from previous research works (e.g., Johnson, 1987; Cameron & Maslen, 2010). The two coders also went over the diagnostic criteria for all five acute stress symptoms assessed by the SASRQ and the clinical definitions proposed by DSM-IV (American Psychiatric Association, 1994).

All 322 metaphor vehicle terms generated by the five ASD subjects were then examined regarding their relevance to the five acute stress symptoms and their underlying image schematic groundings. The identification of symptom-specific metaphors was accomplished in three steps:

Step 1 To narrow the scope of analysis down to potentially symptom-related metaphors, metaphor vehicles that were not directly relevant to acute stress reactions were identified and deleted from the list. The following example, discussed earlier in Chapter 3, provides a vivid account of the speaker's perception of the traumatic event; however, it is not directly relevant to any specific acute stress reactions and therefore deleted from the list.

在我二十多年的人生里面，应该是没有试过在短短的时间内情绪或者是心理状态会经历那么大的起伏。

[More than 20 years have passed in my life, I have never experienced such great rises and falls in emotions within such a short period of time.]

Step 2 The remaining metaphor vehicle terms were then examined for their relevance to the five acute stress symptoms measured by the SASRQ, including dissociation, re-experiencing, avoidance, anxiety and hyperarousal, and impairment in functioning (refer to Sections 2.4.1 and 4.2.2.1 for a more detailed account of their clinical features and corresponding item numbers in the questionnaire). While some emotional feelings were directly triggered by the traumatic experience, they did not necessarily show psychopathological features of the five symptoms; descriptions of such feelings were further deleted from the list. Take the following example:

愤怒是有一些，但更多的是无力，因为我不知道朝谁愤怒去。

[I do feel angry, but not as much as strengthless, because I don't know to whom to express the anger.]

The metaphor vehicle term in this sentence is “无力” (wú lì, strengthless), and the target topic is the speaker’s loss of control over current life situations and her own emotions. As the vehicle term highlights a subjective sense of detachment from usual ways of emotional regulation, it was identified as a metaphorical description of the dissociation symptom based on the diagnostic criteria specified in DSM-IV (American Psychiatric Association, 1994). This step narrowed the scope of analysis down to 64 metaphor vehicle terms that were directly relevant to the five symptoms.

Step 3 The 64 symptom-related metaphors were examined for their underlying image schematic structures. While several cognitive semanticists have proposed different inventories of image schemas that have diverse and overlapping categories (e.g., Lakoff, 1987; Johnson, 1987; Lakoff & Turner, 1989; Clausner & Croft, 1999; Hampe, 2005), Johnson’s (1987) inventory, which includes 27 image schemas, was chosen as the coding scheme for the present study as it strikes a balance between having a manageable number of categories and the ability to account for the data. The inventory (Johnson, 1987, p.126) is reproduced in Table 5.3.

To maximize the advantage of juxtaposing linguistic and therapeutic perspectives while avoiding “motivated looking” (Sarangi & Candlin, 2001) from different disciplines, for each of the three steps, the coders first worked independently and then met to discuss problematic cases until all inconsistencies were resolved. It is possible that a metaphor instantiates a “compound” of several simpler image schemas (Kimmel, 2005, p.287) or be identified with different image schematic groundings. As the study of symptom-specific metaphors focuses not only on the linguistic features of the expressions but also on therapeutically relevant factors such as the speaker’s immediate emotions, thoughts, and communicative intentions, for the present study, the image schema that best captured the speaker’s local expressive needs was selected.

CONTAINER	BALANCE	COMPULSION
BLOCKAGE	COUNTERFORCE	RESTRAINT REMOVAL
ENABLEMENT	ATTRACTION	MASS-COUNT
PATH	LINK	CENTRAL-PERIPHERY
CYCLE	NEAR-FAR	SCALE
PART-WHOLE	MERGING	SPLITTING
FULL-EMPTY	MATCHING	SUPERIMPOSITION
ITERATION	CONTACT	PROCESS
SURFACE	OBJECT	COLLECTION

Table 5.3 Johnson's (1987, p.126) inventory of image schemas

Take the “无力” metaphor as an example. While the lack of physical strength could also be interpreted as a result of external BLOCKAGE or the lack of COMPULSION to move, in the present context, the speaker's emphasis is on the loss of previous ability to manipulate her emotions, which is more an internal state perceived within the self than a stimulated reaction to a specific external force or movement along a direction. Considering the speaker's communicative intention, this metaphor is identified as an instance of the DISABLEMENT schema (i.e., the opposite of ENABLEMENT).

When the coding was completed, correspondent analysis was used to interpret the relationships between symptom-specific metaphors and the underlying image schemas. Observations derived from the psychotherapeutic perspective (step 1 and step 2) were juxtaposed with findings of linguistic discourse analysis (step 3), so that we could have a clearer view of whether and how metaphors about different acute stress symptoms form recognizable patterns at

the image schematic level, and how the patterns are related to the symptoms' psychopathological features. The results of the correspondent analysis will be presented in the next section; findings for each of the symptoms will be discussed in turn.

5.4 Results and Discussion

5.4.1 Results of Correspondent Analysis

A total of twelve image schemas were identified among the 64 symptom-specific metaphors. We can see that neither the frequency of metaphors nor the number of image schemas was equally distributed across the five acute stress symptoms. Those that received greater numbers of metaphors were also found with more diversified image schematic groundings: anxiety and hyperarousal was described by twenty-two metaphors that fell into four different image schemas, re-experiencing was represented by eighteen metaphors that collapsed into six image schemas, and dissociation, described by seventeen metaphors, was identified with three image schemas. Avoidance and impairment in functioning, described by five metaphors in two image schemas and two metaphors in one image schema, respectively, seemed to have less attraction for metaphorical language.

The frequencies of metaphors and image schemas identified for each ASD symptom are summarized in Table 5.4.

Symptom	Image schemas (<i>N</i>)	Total number of metaphors	Total number of image schemas
Dissociation	DISABLEMENT (9) SPLITTING (5) SUPERIMPOSITION (3)	17	3
Re-experiencing	CONTAINER (8) COMPULSION (4) LINK (2) ATTRACTION (2) DISABLEMENT (1) SUPERIMPOSITION (1)	18	6
Avoidance	LACK OF CONTACT (4) MASS-COUNT (1)	5	2
Anxiety and hyperarousal	COMPULSION (15) CYCLE (5) SCALE (1) OBJECT (1)	22	4
Impairment in functioning	MASS-COUNT (2)	2	1
Total number of symptom-related metaphors		64	12

Table 5.4 Total numbers of image schemas for each ASD symptom

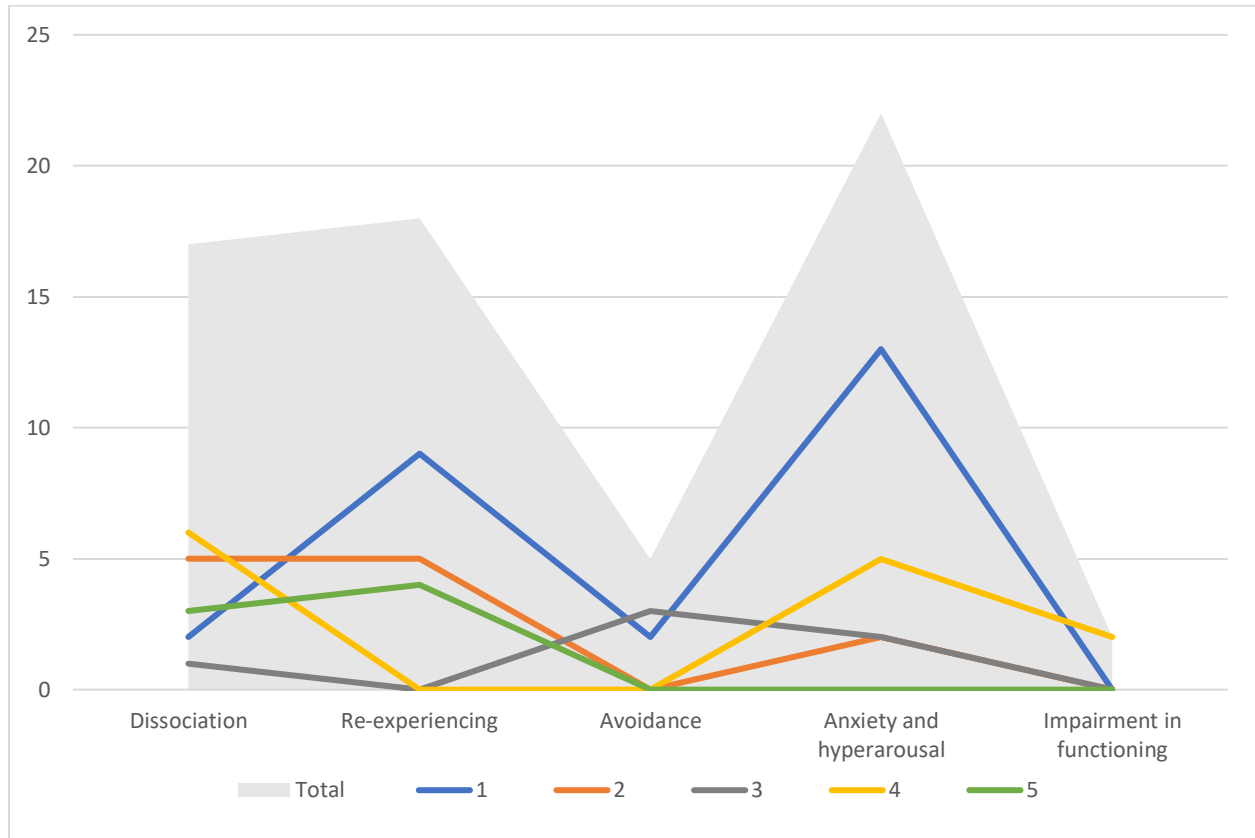
Although all participants reached the diagnostic criteria for all five symptoms, the clinical presence of symptoms was not always transformed into metaphorical language. Instead of tapping indiscriminately into all clinically present symptoms, the participants' symptom-specific metaphors clustered around two to four symptoms, and both the varieties of symptoms and the numbers of metaphors for each symptom showed considerable individual differences. For example, participant 1's metaphors covered all symptoms except for impairment in functioning, and the majority were devoted to the description of anxiety and hyperarousal and re-experiencing (thirteen

and nine metaphors, respectively). By contrast, participant 5 only produced three metaphors about dissociation and four about re-experiencing and left the other three symptoms unmentioned. All five participants produced a certain number of metaphors about dissociation, two to four metaphors about avoidance, re-experiencing, and anxiety and hyperarousal, but only one (i.e., participant 4) metaphorized about impairment in functioning. The total numbers of symptom-specific metaphors by symptom and participant are shown in Table 5.5 and Figure 5.2.

	Dissociation	Re-experiencing	Avoidance	Anxiety and hyperarousal	Impairment in functioning	Total
1	2	9	2	13	0	26
2	5	5	0	2	0	12
3	1	0	3	2	0	6
4	6	0	0	5	2	13
5	3	4	0	0	0	7
Total	17	18	5	22	2	64

Table 5.5 Total numbers of symptom-specific metaphors by symptom and participant

Figure 5.2. Distribution of symptom-specific metaphors across the five ASD participants



In what follows, major image schematic patterns identified for each ASD symptom will be illustrated using linguistic examples and figures. The image schematic patterns will then be discussed from a qualitative discourse analytic perspective.

5.4.2 Discussion

5.4.2.1 Dissociation

Dissociation is defined as “disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior (American Psychiatric Association, 2013, p.291)”. People suffering from dissociation

might experience a disconnection between the mind and the body, detachment from the self and emotions, or a feeling that people and the surrounding environment are unreal. In the present dataset, seventeen metaphors were found for this symptom, and the image schemas formed three major categories, including DISABLEMENT, SPLITTING, and SUPERIMPOSITION.

While the ENABLEMENT schema is characterized by “a felt sense of power to perform some action”, DISABLEMENT highlights the “lack of power” (Johnson, 1987, p.47) to manipulate or move an object. In the context of trauma, the DISABLEMENT schema captures the subject’s perceived deviation from or loss of the common sense of self. This image schema was instantiated by nine metaphor vehicle terms, and the most frequently used metaphor vehicle was “无力 (wú lì, strengthless)”. A diagram of the DISABLEMENT schema is shown in Figure 5.3.

Figure 5.3. A diagram of the DISABLEMENT schema



This schema is illustrated by example (18) below:

(18) 之前的压力是单纯的来自于学习上的压力，但是我觉得那个东西是可以去努力的，就是你靠自己的行动去慢慢地缓解的那种压力，但是现在这种情况就非常地无力，…就是我们控制不了的。

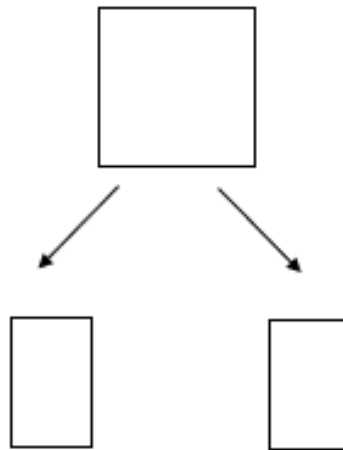
[All the pressure I had before came from my schoolwork, but I think that is something that you can change, it’s a pressure that you can resolve, although very slowly, through your own

actions, but the situation we are facing now makes me feel very strengthless, ... because there is nothing we can control.]

The two metaphor vehicle terms in this example, structured by ENABLEMENT and DISABLEMENT respectively, highlight the contrast between the non-traumatic and the traumatic way of coping. The first metaphor vehicle, which is not traumatic in nature, describes the healthy and adaptive way of reacting to schoolwork pressure as a force-exerting process of “行动 (xíng dòng, physical action)”. This active physical state contrasts sharply with the traumatic condition described by the second metaphor: the lack of control over negative emotions is interpreted as the loss of physical strength and the inability to make any substantive changes. A similar way of conceptualization could also be observed from the “无力 (wú lì)” metaphor discussed earlier in Section 4.3.

SPLITTING and SUPERIMPOSITION, instantiated by five and three metaphor vehicles respectively, are structurally alike in that both involve the manipulation of two entities. This is consistent with the sense of disconnection and discontinuity emphasized by the APA definition of dissociation. However, more nuanced differences emerge when we look into the composition of the schemas. The SPLITTING schema depicts the process of separating one single object into two different parts (diagram shown in Figure 5.4).

Figure 5.4. A diagram of the SPLITTING schema



The schema is illustrated by example (12), which was discussed earlier in Chapter 4 as an instance of SELF AND SELF metaphors:

(12) 我仿佛身体里面有两个小人，然后一个小人喊着说：“你要冷静地看一看这边啊，你看一看这些民主社会”之类的，另外一边就在说：“你就是在读一年书而已，可是这一年已经被损失了这么多”。

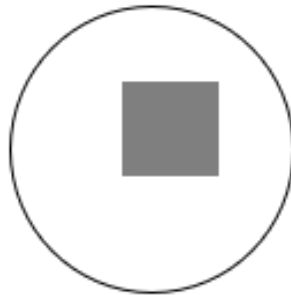
[It feels like there are two little guys in my body, and one is shouting: “you should be calm and see what happened here, you should see the democratic society” and the like. Then the one says on the other side: “you are just doing a master here for only one year, just in the one year you have lost so much”.]

The self, usually perceived as an integral whole under non-traumatic conditions, is now split into “two little guys (两个小人, liǎng gè xiǎo rén)”, and the two different interpretations of her experience in Hong Kong are interpreted as two diametrically opposing views held by the two little guys. While the former represents the speaker’s rational thinking from an emotionally

detached perspective, the latter stands for the speaker as an emotional and social being and expresses concerns over her study and life in Hong Kong. The confrontation between rational thinking and emotional feelings signifies a sense of identity clash or the loss of the normal sense of self that is typically observed for dissociative symptoms (Coons, 1988).

Although the SPLITTING schema is more focused on the contrast and even the opposition between two different entities, what are involved in the relationship are still identified as the sub-components of the same subject. By contrast, the SUPERIMPOSITION schema (represented in Figure 5.5) accounts for two entities that are perceived as separate and distinct from each other at the very beginning.

Figure 5.5. A diagram for the SUPERIMPOSITION schema



Example (19) below is illustrative:

(19) 我就算试图去理解他们，也没有办法接受发生在我身上的这种……就是我成了一个他们社会冲突的无辜(受害)者，这一点让我没有办法释怀。

[Even if I try to understand them, I still can't accept what happened onto my body,.... it's just like that I became an innocent victim of their social conflict, this is what I can't get rid of.]

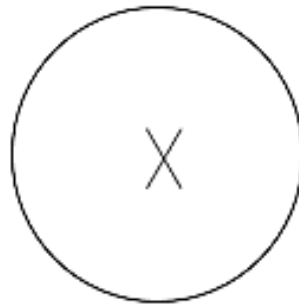
This example contains two metaphor vehicle terms that describe how an unfamiliar identity created by the traumatic event is placed onto the speaker's original self. The first metaphor conceptualizes the sudden and unexpected change in the speaker's self-identity as something that happened right onto her body. The perceived change is then interpreted as the speaker taking on a new identity, becoming "an innocent victim" (无辜者, wú gū zhě) of the social conflict. The two metaphors in this example reflect the speaker's confusion over the altered sense of self, or the failure to assimilate the traumatic experience into "existing meaning schemes" (Janet, 1898, as cited in van der Kolk & Ducey, 1989, p.270), which is also a typical manifestation of dissociative symptoms.

5.4.2.2. Re-experiencing

The re-experiencing symptom is characterized by the re-occurrence of trauma-related memories and feelings. Eighteen metaphors were directly relevant to this symptom, with CONTAINER, LINK, and FORCE-related schemas like COMPULSION and ATTRACTION being the majority.

Eight metaphor vehicle terms were structured by the CONTAINER schema. A close reading of the data shows that both the self and trauma-related emotions could be conceptualized as the CONTAINER, or described as the CONTENTS that are being contained or blocked inside the CONTAINER. This pattern is quite similar to the containment model of depression proposed by Charteris-Black (2012), in which the self is either experienced as being CONTAINED within the state of depression or perceived as a CONTAINER that contains the negative feelings. A diagram of the CONTAINER schema is shown in Figure 5.6.

Figure 5.6. A diagram for the CONTAINER schema



The conceptualizations of the self and traumatic feelings as the CONTAINER are illustrated by examples (20) and (11), respectively:

(20) 你可能看到很多人的那些不好的行为觉得特别不爽，但是你又没有办法去讲，心里就一直憋着气。

[You might feel very angry when you see those people doing those bad things, but there's no way you can express your thoughts, so you are always feeling short-breathed with some gas suppressed in my heart.]

(11) 在这种（心理）状态下，我自己甚至都可能会意识到我是不是就像（进入）一个黑洞一样，被负面情绪吸进去了。

[Under this (psychological) condition, even I myself realized that, if I was just like (in) a black hole, if I was absorbed by negative emotions.]

Example (20) focuses specifically on the persistent nature of the re-experiencing symptom. Anger is described using a conventional metaphor of “气 (qì, gas)”, and the endurance of anger is conceptualized as gas being suppressed in the container of heart. Example (11), which was

discussed earlier in Chapter 5 as an instance of negative metaphor, emphasized the overwhelmingness of the re-experiencing symptom. Different from example (20), in example (11), the negative emotions become the container and the self is conceptualized as something being blocked in the container: trauma-induced negative feelings are compared to a *black hole* (“黑洞, hēi dòng,)” that can absorb everything in the vicinity, and the self being overwhelmed by the negative feelings is described as the self being involuntarily “absorbed” into the black hole.

The lingering nature of the re-experiencing symptom was also depicted by two metaphor vehicle terms using the LINK schema, which structures trauma as something that is enduringly linked to the self (refer to Figure 5.7 below, cited from Johnson, 1987, p.118).

Figure 5.7. A diagram of the LINK schema



Note. From “*The body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*” (p. 118), by M. Johnson, 1987, Chicago: University of Chicago Press.

Metaphors structured by the LINK schema are illustrated by example (21):

(21) 你没有办法完全去割掉这个东西, 好像一旦出现了, 你就永远会记住。

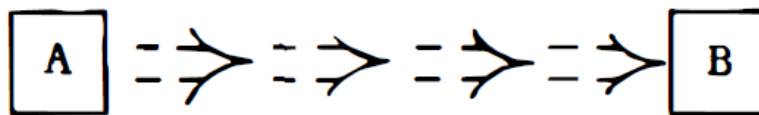
[You can never cut this thing off from you, just like once it appears, you will remember it forever.]

This example describes the speaker’s emotional feelings on seeing the protesters setting fire to public transportations and insulting people who hold different political views. The persistence

of such memories is described as something that was so tightly connected to the self that it even became an intrinsic part of the self, and the difficulty of getting rid of the traumatic experience is described as the speaker's inability to “cut it off (割掉, gē diào)” from the self.

FORCE-related schemas such as ATTRACTION and COMPULSION also contributed to the conceptualization of the re-experiencing symptom. The two schemas were instantiated by two and four vehicle terms, respectively. Unlike CONTAINER and LINK, FORCE-related schemas concentrate more on the involuntary and uncontrollable nature of the symptom (Brewin, 2015). The traumatic event and attendant feelings are compared to an irresistible external force that caused the speaker to move in a certain direction or act in a specific way. The “吸进去 (xī jìn qu, attraction)” metaphor in example (11), which occurred right after the “black hole” metaphor, provides a good example of the ATTRACTION schema (represented by Figure 5.8, cited from Johnson, 1987, p.47). The self being troubled by the negative emotions is interpreted as the self being physically “attracted” by an irresistible force.

Figure 5.8. A diagram of the ATTRACTION schema

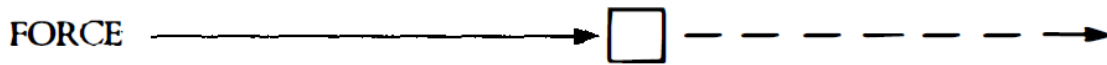


Note. From “*The body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*” (p. 47), by M. Johnson, 1987, Chicago: University of Chicago Press.

The enduring nature of the re-experiencing symptom is also represented by the COMPULSION schema (represented by Figure 5.9, cited from Johnson, 1987, p.51), which

involves a force vector, an entity affected by the force, and a potential trajectory along which the entity will move (Johnson, 1987).

Figure 5.9 A diagram of the COMPULSION schema



Note. From “*The body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*” (p. 51), by M. Johnson, 1987, Chicago: University of Chicago Press.

Based on this metaphorical structure, trauma-related stimuli are often described as a constant external force acting upon the self. Example (22) is illustrative:

(22) 在你被各种信息流不断冲刷的这个过程中，你肯定还是情绪会越来越激烈的。

[When you are constantly washed out by the flows of information, your emotions would definitely be more and more intense.]

Here the speaker is reflecting on the upsetting thoughts she had in the course of the social unrest. Media reports, information disseminated via social media, and opinions expressed by the speaker’s colleagues and friends are described as rapid “water flows (信息流, xìn xī liú)”, and the gradual change of emotional reactions, which comes along with exposure to trauma-related cues, is conceptualized as the speaker being constantly “washed out” (冲刷, chōng shuā) by the flows of information.

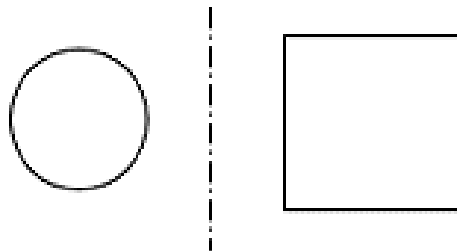
In addition, there were also two metaphor vehicle terms that described the symptom as perceived **DISABLEMENT** of the human body and the **SUPERIMPOSITION** of the political

protests onto the speaker's personal life. Although the two image schemas were also observed in the description of dissociation, the speakers' emphases are obviously different: while the descriptions of dissociative symptoms showed more attention to the sense of loss and incongruence within the self, the accounts of re-experiencing focused more on the uncontrollable and enduring nature of acute stress reactions.

5.4.2.3 Avoidance

Avoidance is a coping strategy adopted by trauma victims to protect themselves from re-experiencing the traumatic feelings. The symptom was only described by five metaphor vehicle terms, among which four instantiated the LACK OF CONTACT schema (a diagram is shown in Figure 5.10). While in Mandarin Chinese, knowing and learning about something is conventionally metaphorized as the subject having physical contact (“接触, jiē chù”) with the surrounding environment. In the ASD subjects' description of the avoidance symptom, this conventional conceptual element is often extended and elaborated in more idiosyncratic ways; the speaker deliberately staying away from trauma-related people, events, places, and feelings is interpreted as the self being isolated from and having no physical contact with the external world.

Figure 5.10. A diagram of the LACK OF CONTACT schema



The following example is illustrative:

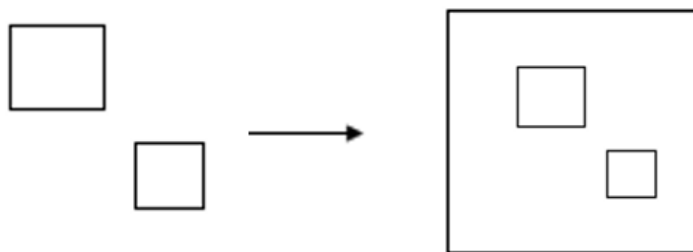
(23) 你会发现(暴乱)每天都在升级, 或者每个星期是也在升级的时候, 我就采取一个龟缩战术, 我就把我的社交软件除了微信以外都删掉了。

[You would find that the scale (of the social unrest) gets larger every day, or gets larger every week, then I took a strategy, huddling up like a turtle, and I deleted all my social networking software except for WeChat.]

Here the speaker is reflecting on the strategies he adopted to cope with the non-adaptive emotional feelings during the peak of the social unrest. Based on the conceptualization of knowing as having physical contact, the avoidance of all possible trauma-related information by deleting most social networking software is described as a physical act of “huddling up like a turtle (龟缩, guī suō)” and staying clear from the surrounding environment.

A less common but also potentially therapeutically meaningful schema found for avoidance-related metaphors is MASS-COUNT. The schema describes the process of dispersed individuals becoming an integral part of a “single homogeneous mass” (Johnson, 1987, p.104). The schema is represented by Figure 5.11 and illustrated by example (24).

Figure 5.11 A diagram of the MASS-COUNT schema (in describing the avoidance symptom)



(24) 如果我出门去买东西，还有说是去办事情，就很会去考虑我在这个社会里边怎么样能更好的融入进去，或者怎么样去隐藏自己。

[If I go out to buy something or do something, I would think very carefully how to merge myself, or to hide myself in the society.]

As Hong Kong and the Chinese mainland differ markedly in terms of languages, social systems, and values, it is natural that incoming non-local students perceive themselves as somewhat detached and even incompatible with the local community. In this example, the perception of the self as a distinct and separate entity is compared against the conceptualization of Hong Kong society as “a single homogeneous mass” (Johnson, 1987, p. 26). The speakers’ strategic avoidance of trauma-related activities and people and concealment of her Chinese mainland identity are conceptualized as an act of “merging (融入, róng rù)” and “hiding (隐藏, yǐn cáng)” herself into the background of the local society. Compared with the expressions of the LACK OF CONTACT schema, which emphasize the isolation of self from all possible trauma-related stimuli, the MASS-COUNT schema, as a precautionary measure to mitigate potential risks, seems to indicate a relatively more active and adaptive mode of self-protection.

5.4.2.4 Anxiety and Hyperarousal

Trauma victims suffering from the anxiety and hyperarousal symptom might become excessively sensitive and sometimes overly responsive to stimuli that are either relevant or not relevant to the traumatic event. In the present dataset, twenty-two metaphor vehicle terms that fell under four different image schemas were identified as directly relevant to this symptom.

The COMPULSION schema (see Figure 5.9 presented in Section 5.4.2.2), instantiated by fifteen metaphor vehicle terms, was the most common. Similar to the COMPULSION schema that described the re-experiencing symptom (see example 22), the speakers' traumatic feelings are conceptualized as a powerful object that can cause other objects to move or to fall off to the ground, and the self in anxiety and hyperarousal is conceptualized as a passive recipient of an external force. Example (25) is illustrative.

(25) 我们都有一点害怕，尤其是在路上看到戴口罩的人，我当时心里面就会“咯噔”一下。

[All of us felt a little bit afraid, especially when I saw people wearing a mask on the street, my heart would quaver and make a noise of “gedeng”.]

During the social unrest, the act of wearing face masks is regarded as a way to show support to the protesters and therefore an important trauma-related stimulus to people from mainland Chinese. When seeing people wearing a mask, the speaker's heart becomes an object that is suddenly pushed off and makes a noise of “gedeng (咯噔, gē dēng)”. While example (22) highlights the enduring nature of the symptom and involves no movement of the self, example (25) reflects a different type of COMPULSION, outlining a force relation characterized by the abruptness of the force and the induced movement of the object. Such a configuration of agent-patient relationship is shared by most metaphors describing the anxiety and hyperarousal symptom. Nevertheless, there are also exceptional cases in which the self is conceptualized as both the agent that exerts the force and the recipient who is influenced by the force. Take the following example:

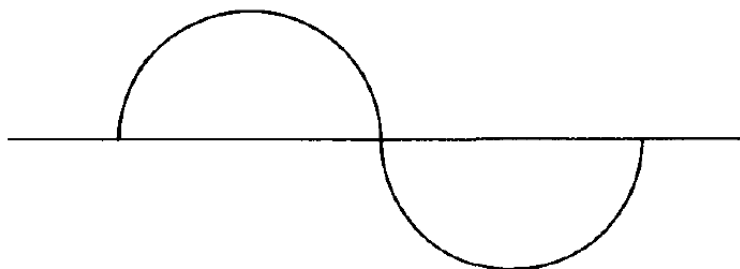
(26) 然后就会觉得自己本来来香港就已经花了很多钱，现在要花更多的钱，却不能达到预期的学习效果，然后在心理上也会给自己增添很多负担，就会给自己很多压力。

[Then I would think that studying in Hong Kong has already cost me a lot of money, now I have to spend even more money, but can't learn what I expected to learn, this will just give me a lot more psychological burdens and put a lot more pressure on me.]

Because of the violence targeted at mainland Chinese, many students had to leave Hong Kong for a safer environment and take online courses. Worrying about extra expenditure caused by cross-border traveling and accommodation and the difficulty in concentrating on online learning, the speaker interprets her anxiety in terms of putting physical forces like “负担 (fù dān, burden)” and “压力 (yā lì), *pressure*” on herself. Different from example (25), which foregrounds the sudden movement of the object, example (26) places more emphasis on the endurance of anxious feelings.

In addition, there are also five metaphors that described anxiety and hyperarousal as a repetitive phenomenon using a specific type of the CYCLE schema referred to as CYCLIC CLIMAX (represented by Figure 5.12, cited from Johnson, 1987, p.120).

Figure 5.12 A diagram of the CYCLE schema



Note. From “*The body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*” (p. 120), by M. Johnson, 1987, Chicago: University of Chicago Press.

Example (27), which occurred right after the “short-breathed (憋气, biē qì)” metaphor in example (20), exemplified two contrastive types of this schema, i.e., the constant movement of an object between high and low spatial locations and the alteration of two different physiological states:

(27) 因为（心情）总是起起伏伏的，就是一会憋气一会不憋气这个样子。

[Because it (my mood) is always going up and down, feeling short-breathed at this moment but not short-breathed better at the next.]

Compared with example (20), which elaborates on the enduring nature of the re-experiencing symptom, the two instances of CYCLE are more focused on the iterative nature of anxiety and hyperarousal symptoms. The speaker first describes her emotional feelings during the traumatic event as an animate being in the constant repetition of an up and down cycle. She then gives a further elaboration of this feeling through an adaption of the “short-breathed” metaphor, comparing the alternation between hyperarousal and the relaxed state of mind in terms of herself repeating the “short-breathed” and “not short-breathed” cycle. Although the two metaphors in this example used different embodied experiences as the vehicle terms, both highlighted the iterative nature of anxiety and hyperarousal symptoms.

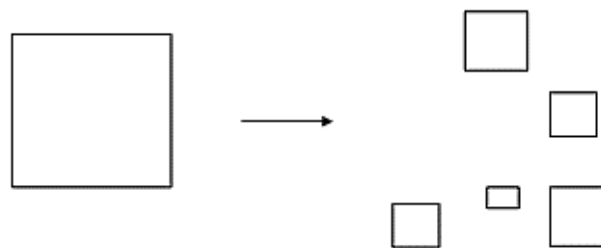
In addition to the abovementioned patterns, there were also two metaphors that draw on less commonly reported features of the symptom: one interprets the intensification of anxiety as

the enlargement of space along the SCALE of size, and another describes the symptom as an OBJECT with perceivable weight.

5.4.2.5 Impairment in Functioning

The terminology “impairment in functioning” is metaphorical in itself in that the reduction in emotional, cognitive, and social functioning is compared to the mutilation of the human body or a concrete entity. Despite the metaphoricity implied by the symptom name, only two metaphor vehicles produced by the same interviewee were directly relevant to this symptom. The underlying structure is generally consistent with the inferential logic implied by the symptom name, interpreting the inability to maintain normal daily activities as a concrete entity being destructed by an external force. Similar to example (10) identified for the avoidance symptom, the two metaphors about impairment in functioning also reflect the MASS-COUNT schema. Nevertheless, instead of focusing on the aggregation of parts into a whole, the metaphors foreground the process of a massive complex breaking down to several different clusters, which is just the reverse of the MASS-COUNT schema identified in the description of the avoidance symptom (refer to Figure 5.11 presented in Section 5.4.2.3). A diagram of the schema identified for the impairment in functioning symptom is shown in Figure 5.13 and illustrated by example (28).

Figure 5.13. A diagram of the MASS-COUNT schema (in describing impairment in functioning)



(28) 而且原来来这里读书的那种心情已经完全被破坏掉了，…，就是不知道自己到底学这些有什么意义。

[The mood I used to have for studying here has been completely destroyed, ..., I have no idea why I'm still learning about all these things.]

In this metaphor, the speaker's positive expectations for studying in Hong Kong are conceptualized as a tangible object, the speaker's traumatic experience is interpreted as a gigantic external power that causes the object to lose its original structure. The speaker's inability to get self-motivated is interpreted as the emotions being “destroyed (破坏, pò huài)” by the force exerted by the traumatic event.

5.4.3 Summary of Findings

While trauma evaluation and diagnosis based on clinical guidelines such as DSM-V mainly focuses on objective and factual information such as the typical features, duration, and development of a specific symptom, findings of this study highlight the possibility for symptomatological experiences to be captured in metaphorical language and distinguished at the image schematic level. Looking beyond the boundaries of acute stress symptoms, we can find that metaphors structured by COMPULSION (19 instances), DISABLEMENT (10 instances), and CONTAINER (8 instances) constituted over half of ASD subjects' symptom-specific metaphors. This suggests that the experience of the traumatic event and associated emotional feelings as external forces and the self as a passive recipient of force, the perception of the self as an agent of reduced or no mobility, and the experience of traumatic feelings or the self in trauma as a

CONTAINER played a particularly dominant role in ASD subjects' conceptualization of clinically identified acute stress reactions. Image schemas such as SPLITTING, LACK OF CONTACT, and MASS-COUNT occurred on a less frequent basis. However, it's important to note that relatively low occurrence rates do not necessarily imply less clinical significance, especially when the observations were made based on such a small sample size. Despite their low occurrence rates, such image schemas still point toward diagnostically meaningful information about ASD subjects' symptomatological experiences.

Taken together, the patterns identified in the image schemas also reflect the highly diversified clinical manifestations of acute stress reactions and the subjective nature of ASD subjects' psychopathological experiences. While most of these embodied experiences have been widely recognized by previous research as key building blocks in the conceptualization of trauma-related emotions such as anger, sadness, depression, and anxiety (Charteris-Black, 2012; Kövecses, 2004, 2008; Yu & Tay, 2020) and different types of traumatic experiences (Foley, 2015; Littlemore & Turner, 2020; Rechsteiner et al., 2019, 2020; Wilson & Lindy, 2013), findings derived from the correspondent analysis further confirm their clinical significance in trauma assessment and their relevance to more specific acute stress symptoms. The findings provide empirical evidence for the importance of emotional feelings, cognitive disturbances, and physiological experiences in the conceptualization of complex and abstract psychopathological experiences, which further highlights the experiential and cognitive basis of symptom-specific metaphors and image schematic metaphors (Kövecses, 2004, 2010; Lakoff, 1987; Lakoff & Johnson, 1980, 1999; Johnson, 1987).

Although the diversified vehicle terms selected for the same symptoms reflected the subjects' idiosyncratic ways of perceiving and understanding their traumatic experiences, we could still

identify clear and clinically meaningful patterns at the image schematic level. The findings suggest that ASD subjects' substantive experiences of differential clinical symptoms could be an important factor in explaining the contextualized variations of trauma metaphors. We can see that different symptoms were characterized by distinct configurations of image schemas that capture different aspects of the given symptom. In rare cases where the image schemas overlap (e.g., the COMPULSION schema illustrated by examples (8) and (11) and MASS-COUNT reflected by examples (10) and (14)), the speakers' focuses were noticeably different. This contrasts starkly with previous research on metaphors in describing different types of emotions and mental health disorders (e.g., Kövecses, 2004; Yu & Tay, 2020), which identified both considerable degrees of overlap and marked differences in underlying conceptualizations (refer to Section 2.4.2.2 for a more detailed review). This suggests that the variations of metaphors across different symptoms of a given mental health disorder might be more pronounced than those observed across different emotions or mental health disorders; nevertheless, this finding needs to be further validated with empirical evidence collected from larger sample sizes and other mental health contexts.

Another interesting observation is that neither the frequency of metaphors nor the number of image schemas was equally distributed across the five acute stress symptoms (refer to Table 5.4); the frequency and category distribution of symptom-specific metaphors were also not balanced across the five ASD subjects (refer to Table 5.5). Dissociation, re-experiencing, and anxiety and hyperarousal attracted more metaphors than other symptoms did, and the metaphors were structured by several different image schemas that foregrounded different facets of the symptom. By contrast, avoidance and impairment in functioning were less likely to be represented by metaphors, and the numbers of image schemas were relatively lower. Such differences might be related to the experiential features of the symptoms and their differentiated potential to be

verbalized using metaphorical language. However, it is also possible that specific characteristics of the current traumatic event, the subjects' subjective experience of the symptoms, or their demographic features caused some symptoms to be more perceptually salient than others and therefore get greater chances of being represented in metaphorical language. As the present study is an exploratory analysis, more definite conclusions could be derived based on larger sample sizes and validating the current findings using different research methods. Future research could conduct more rigorous comparisons on a larger traumatic population and subjects with differential traumatic experiences (e.g., ASD and non-ASD subjects, and those who developed different symptoms) to more deeply explore the dynamics underlying the use of symptom-specific metaphors.

5.5 Chapter Conclusion

In contrast to Chapter 4, which investigated the dynamic interactions between quantitative metaphor usage patterns and their overall degrees of trauma and severities of symptoms, this chapter focused on the qualitative features of ASD subjects' metaphors about the five acute stress symptoms. While Chapter 4 identified significant correlations between trauma victims' psychopathological experiences and their general inclinations toward specific types of metaphors, this chapter further reveals the potential for substantive experiences of differential symptoms to be discerned from more nuanced qualitative aspects of metaphor use. Through the juxtaposition of psychometric data and relevant clinical observations, this study shows that ASD subjects' symptom-specific metaphors exhibit substantively distinct patterns at the level of image schemas, underlining psychopathological symptoms as a previously neglected but important factor explaining the variations of trauma metaphors. The findings contribute to a more comprehensive

understanding of trauma victims' use of metaphors and reveal the need for future research to consider the interactions between metaphor use and more specific clinical features of mental disorders.

The findings hold important practical implications for clinical assessment and treatment of trauma. Although the image schematic patterns may not reflect the psychopathological essence of the symptoms, patterns identified for individual symptoms and the holistic picture they form at the global level of ASD could nevertheless provide a valuable perspective on trauma victims' substantive experience of the concerning acute stress symptoms. The distinct image schematic patterns identified for the five symptoms point toward the possibility for image schematic metaphors to be used as valid referential points in identifying and exploring trauma victims' experience of acute stress symptoms. Typically used symptom-specific image schemas and linguistic examples could be incorporated as teaching or supporting materials in therapist training and education regarding trauma treatment and metaphor-based protocols (e.g., Grove & Panzer, 1989; Kopp, 1995; Kopp and Craw, 1998; Sims, 2003; Sims & Whynot, 1997); they could also form the basis for designing and translating psychometric questionnaires and interview questions, so that the descriptions could be more closely in touch with symptomatological experiences from the client's rather than the theory-informed professional perspective.

While Chapter 5 demonstrates the incorporation of quantitative psychometric data into quantitative metaphor analysis, this chapter exemplifies how the use of dichotomous psychometric data and qualitative psychological observations could broaden the scope of qualitative metaphor analysis and the study of contextual metaphors in particular. Using correspondent analysis, the study illustrates how the juxtaposition of psychometric data, psychological observations, and discourse analytic findings could yield new insights for cognitive semantic analyses of mental

health metaphors and the study of mental health communication in general. The analysis also demonstrates how established inventories of image schemas could be used as a convenient and useful framework for categorizing and analyzing trauma victims' symptom-specific metaphors.

This study is limited in a number of aspects. First, given the small sample size, this study only investigated symptom-specific metaphors produced by speakers who met the diagnostic criteria of ASD, and the analysis was limited to qualitative features. To obtain a more comprehensive view of trauma victims' symptom-specific metaphors, the findings need to be validated by future research based on larger sample sizes generated from different contexts, and extended to symptom-specific metaphors produced by those who do not meet the diagnostic threshold of ASD but report clinical presence of one or several symptoms, or those who report clinically interesting symptomatological experiences. A particularly interesting avenue would be to use statistical methods such as categorical data analysis, and correlation analyses to explore the quantitative relationships between the subjects' experience of differential symptoms and their preference for symptom-specific metaphors (cf. Plug et al., 2009; Yu & Tay, 2020).

Second, given that this study is exploratory and cross-disciplinary in nature and that the sample size is limited, the two raters' disagreements in the identification of metaphor vehicle terms, symptom-specific metaphors, and image schemas were resolved through discussion; no quantitative reliability checks were conducted; whether the current findings are replicable in other research contexts remains to be tested. Future studies could adopt more rigorous test procedures to examine the consistency of codings provided by different raters.

Thirdly, as the research aim was to identify potentially generalizable patterns, idiosyncratic traumatic experiences that are more easily detected at the level of vehicle terms were also not taken into consideration. Future studies could consider using two-tier coding (Kimmel, 2010), which

identifies both image schemas and vehicle terms for a given metaphorical expression, to derive a more comprehensive understanding of disorder-related, symptom-specific metaphors (refer to Tay, 2015 for an example of empirical research in the Chinese context).

Apart from improving the research methods and research design, future research could also extend the scope of analysis to other aspects of symptom-specific metaphors and non-metaphorical expressions. The theory of image schema has long been criticized for its negligence of sociocultural factors (e.g., Correa-Beningfield, 2005; Kimmel, 2005). While previous studies have indicated that the perception of and recovery from trauma is likely to be structured by cultural-specific constructs (Meili et al., 2019; Rechsteiner et al., 2019, 2020; Wilson & Lindy, 2013), future work could explore how such cultural sensitivity is reflected in symptom-relevant metaphors.

Lastly, although both symptom-specific expressions and image schemas could also be instantiated in non-metaphorical language, the present study focuses exclusively on their convergence in metaphorical language. Future research could also extend the present scope of analysis to compare symptom-specific expressions in metaphorical and non-metaphorical language. The findings would not just add to our knowledge about trauma and its subordinate symptoms, but also contribute to a more thorough understanding of the nature of image schemas and the relationship between metaphorical and literal language in describing inner experiences.

Chapter 6 Conclusion

6.1 Chapter Introduction

Chapters 3 to 5 of this thesis presented three individual studies on metaphor use by trauma victims of the 2019-2020 Hong Kong social unrest. This chapter concludes the thesis with a retrospective summary of how the three studies address research gaps noticed in previous studies, their contribution to existing knowledge of trauma and mental health metaphors, and how they could be complemented and further extended by upcoming research.

In Section 6.2, I will first provide a synthesized summary of the major findings under the linguistic and clinical aims outlined earlier in Section 1.3, and then elaborate on their methodological implications for research on trauma and mental health metaphors. Since the concluding section of each main body chapter (i.e., Sections 3.5, 4.5, and 5.5) has provided a focused discussion of limitations and future directions that emerged throughout the research process, Sections 6.3 and 6.4 will offer a more overarching account of the two aspects, respectively, based on a holistic view of the three studies and a critical reflection on the whole research design. Besides summarizing research directions that are directly pertinent to the present research context, Section 6.4 will also discuss how the study of trauma and mental health metaphors could be further advanced along several research avenues highlighted by previous research in relevant fields.

6.2 Summary of Findings and Implications

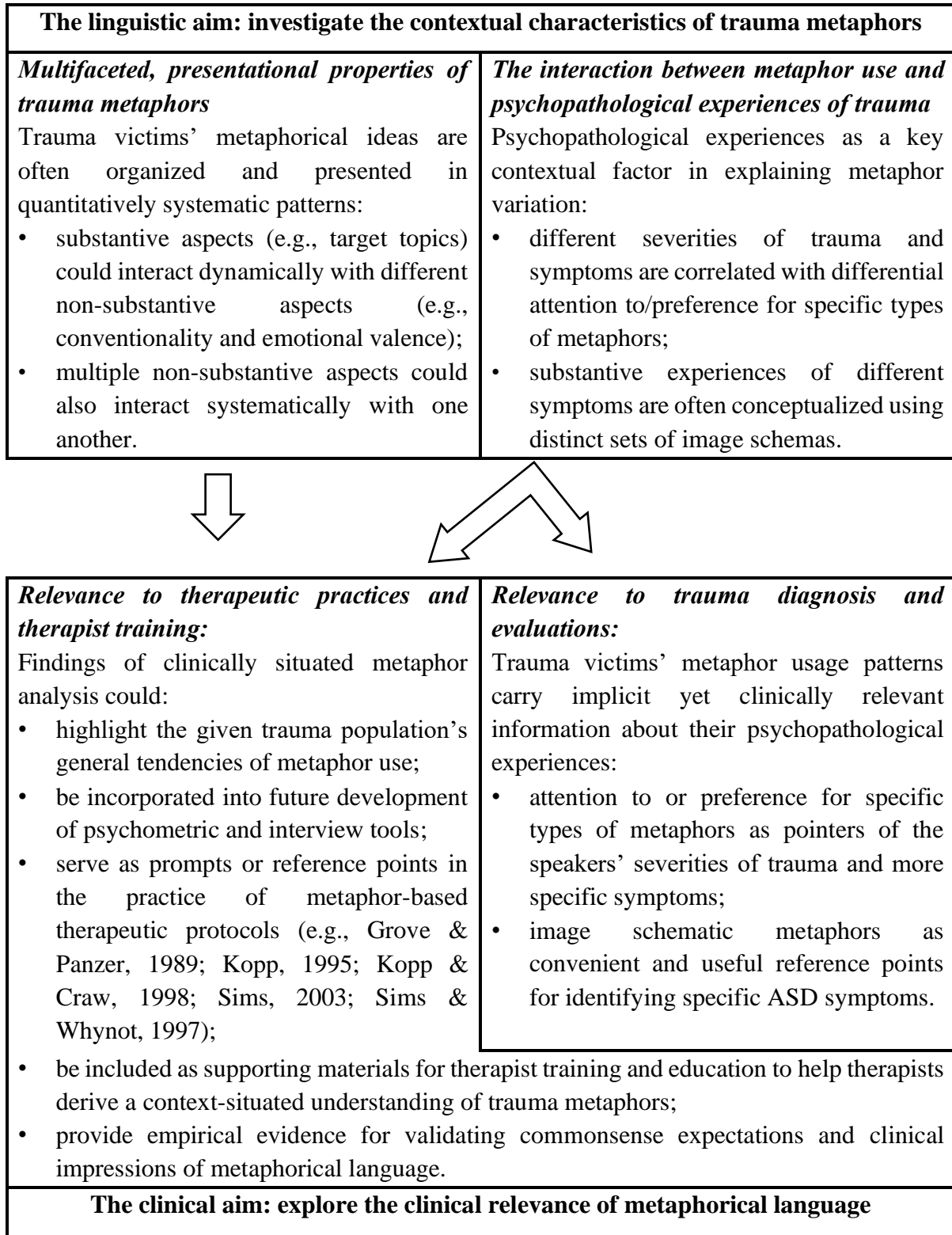
6.2.1 The Linguistic and Clinical Aims

To repeat from Section 1.3, the primary, linguistic aim of this thesis is to investigate the contextual characteristic of trauma metaphors. Two specific research avenues were chosen based

on a review of previous studies: the first is the analysis of multifaceted, presentational properties of trauma metaphors reflected by systematic, quantitative interactions among multiple metaphor variables, both substantive and non-substantive included, and the second is the exploration into the interface between metaphor use and psychopathological experiences through a case study of trauma victims' metaphor use and their experience of acute post-traumatic stress reactions. The secondary, clinical aim is to explore the clinical relevance of metaphors to trauma evaluation and diagnosis, as the role of figurative language in representing symptomatological experiences is often neglected in previous clinical research. The two research aims were addressed through three separate studies that focused on different aspects of metawphor use.

A synthesized summary of major findings under the two research aims is shown in Figure 6.1.

Figure 6.1 A synthesized summary of major findings under the two research aims



While existing research on trauma and mental health metaphors mainly focused on substantive content reflected by vehicle terms and target topics, only scant attention has been paid to the speakers' preferred ways of organizing and presenting the substantive content, i.e., the presentational, multifaceted properties indexed by non-substantive aspects and their interactions with substantive aspects. To address this research gap, Chapter 3 examined how trauma victims' metaphorical ideas about eight TARGET CATEGORIES and their perspective-taking in metaphorical meaning-making are instantiated using different levels of CONVENTIONALITY and EMOTIONAL VALENCE. The findings add to existing knowledge of contextualized metaphors by opening a valuable perspective on the dynamic interactions among multiple variables. Results of categorical data analyses shows that trauma victims' metaphorical ideas are often organized and presented in quantitatively systematic ways: substantive aspects of metaphors could interact dynamically with several different non-substantive aspects, and patterns identified for different metaphorical ideas could differ remarkably from each other; multiple non-substantive aspects could also engage in systematic interactions with each other, which means systematicity of metaphorical meaning-making is not only observed for the conceptualization of discrete ideas but also exists at a more abstract level of perspective-taking.

Examining multifaceted, presentational properties of trauma metaphors holds valuable implications for relevant therapeutic practices and therapist training. Firstly, the findings reveal general tendencies of metaphor use that are characteristic of the given trauma population, which enables therapists to have a holistic view of metaphor use in the current traumatic contexts. Secondly, the patterns and corresponding linguistic examples could be included as teaching and training materials to provide therapeutic practitioners with a context-situated understanding of trauma victims' conceptualization of personal experiences; the findings would also help therapists

get familiar with metaphor usage patterns that are likely to occur in authentic therapeutic contexts. Thirdly, metaphor usage patterns highlighted by this study, such as the emotional focuses identified for specific target categories and the contrast between the field and the observer perspectives in conventionality, could be taken as useful reference points when unpacking and extending client-generated metaphors in metaphor-based therapeutic protocols (e.g., Grove & Panzer, 1989; Kopp, 1995; Kopp & Craw, 1998; Sims, 2003; Sims & Whynot, 1997). Furthermore, the patterns might be incorporated in the development and refinement of metaphor-based interview protocols. Lastly, the findings also offer empirical evidence for validating commonsense expectations or therapeutic observations about specific types of metaphors, such as the emotion loadings of target topics that are central to the traumatic experience and the emotional expressiveness of novel and conventional metaphors.

Another focus of this thesis is the systematic, empirical relationships between metaphor use and differential psychopathological experience, which were examined in Chapters 4 and 5 in the context of ASD assessment and diagnosis. From the perspective of clinical psychology, people who have undergone a traumatic event might experience a coherent and related set of emotional, cognitive, and physiological reactions; such reactions could be further categorized into more specific clinical symptoms, i.e., dissociation, re-experiencing, avoidance, anxiety and hyperarousal, and impairment in functioning trauma, each of which stands as a distinct cluster of non-adaptive emotions, thoughts, and bodily reactions (American Psychiatric Association, 1994, 2013). Given the intimate associations between such experiences and metaphor use (Kövecses, 2004, 2010, 2015; Lakoff, 1987; Lakoff & Johnson, 1980, 1999; Johnson, 1987; Littlemore, 2019; Semino, 2010; Tay, 2013), it is possible that trauma victims with different overall degrees of trauma and different severities of symptoms show varying attention toward specific types of metaphors. Substantive

experiences of different clinical symptoms, which are characteristic of qualitatively distinct experiential and cognitive foundations, might also be conceptualized using different conceptual resources.

Chapters 4 and 5 explored the two research directions, respectively, through the incorporation of psychometric data and relevant clinical observations into metaphor analysis. By comparing trauma victims' use of specific metaphor variables against their psychometric ratings on the SASRQ, Chapter 4 drew some tentative conclusions about the variations of trauma metaphors across different severities of psychopathological disturbances. Results show that overall degrees of trauma and three of the five ASD symptoms (i.e., re-experiencing, anxiety and hyperarousal, and impairment in functioning) were significantly correlated with several different metaphor variables, for example, negative metaphors, SELF AND SELF, SELF AND SOCIAL SITUATION, and emotional feelings and processes. Chapter 5 probed into five ASD subjects' conceptualizations of specific clinical symptoms by examining the image schematic groundings of symptom-specific metaphors. It was found that metaphors about the five ASD symptoms exhibit clearly distinct patterns of image schemas; in the rare cases where overlap was observed, different aspects or features of the image schema were emphasized. The two clinically situated analyses revealed dynamic interactions between trauma victims' metaphor use and their differential psychopathological experiences, underlining the potential for metaphor use to capture nuanced features of and differences among emotional, cognitive, and physiological experiences. The findings also highlight severities of psychopathological disturbances and substantive experience of different symptoms as previously neglected but important factors in explaining trauma metaphors.

Findings derived from clinically situated metaphor analysis could enhance existing

knowledge and mitigate potential misunderstanding about the relevance of metaphors to clinical assessment and diagnosis. As mentioned earlier in Section 2.4.2, although metaphorical language has long been used as a key conceptual and communicative tool in psychotherapy (Cirillo & Crider, 1995; Fine et al., 1973; McMullen, 2008), they were rarely considered relevant to directly quantifiable psychopathological experiences and thus often neglected in clinical assessment and diagnosis of mental health disorders. Contrary to this view, the two chapters show that trauma victims' metaphorical expressions actually encode implicit yet clinically relevant information about their psychopathological experiences. Their metaphor usage patterns show remarkable differences across individuals and specific ASD symptoms: the preference for specific types of metaphors, such as negative metaphors and self-related metaphors, are closely related to the speaker's overall degree of trauma and severities of specific symptoms; the use of image schematic metaphors in describing certain types of symptomatological experiences could also be taken as convenient and useful reference points for identifying specific ASD symptoms.

Although patterns revealed by metaphor-based analysis alone are not yet sufficient to serve formal diagnostic purposes, they could still provide useful supplementary information for clinical practitioners' understanding of clients' psychopathological conditions and symptomatological experiences. In therapeutic contexts, typical patterns of disorder- and symptom- related metaphors could give clinical practitioners a more precise understanding of clients' conceptualizations of psychopathological experiences and help them develop a client-centred understanding of the client's circumstances. Trauma- and symptom-related metaphor constructs further confirmed by follow-up research could be usefully adapted as prompts for eliciting clients' metaphors in the practice of metaphor-based therapeutic protocols, for example, in the exploration of imageries and thinking patterns that are directly related to a specific symptom or mental health disorder. The

patterns could be used as quick references when therapists want to get a rough estimate of clients' psychopathological conditions and recovery progress during therapy; they might also be used as convenient references in clinical scenarios where psychometric information is not yet available, such as the initial stages of in-take interviews and crisis intervention.

Furthermore, disorder- and symptom-related patterns and linguistic examples could be included in therapist education and training (e.g., Mathieson et al., 2018) to enhance their sensitivity toward metaphors as potential linguistic markers of psychopathology. The patterns might also inform future development of psychometric and interview tools in meaningful ways, for example, in terms of the wording of questionnaire items and the design of interview questions. Lastly, outside of the therapeutic context, the findings might also help to enhance layperson's understanding of psychological trauma and enable them to provide more empathic communication and more effective social support for those in trauma.

6.2.2 Methodological Implications

Apart from addressing the linguistic and the clinical aims, this thesis also made several methodological points:

Firstly, while previous trauma metaphor research mostly provided in-depth analyses of emergent vehicle groupings or target topics extracted based on specific linguistic examples, this thesis illustrated how the combination of quantitative methods and qualitative metaphor analysis provides an edge in detecting systematic and complex patterns underlying contextualized metaphors. Chapter 3 demonstrated the application of categorical data analytic methods, including log-linear analysis, chi-square tests, and MCA, in extracting systematic, generalizable patterns across multiple aspects of metaphors and large-scale data. The analyses offered a holistic overview

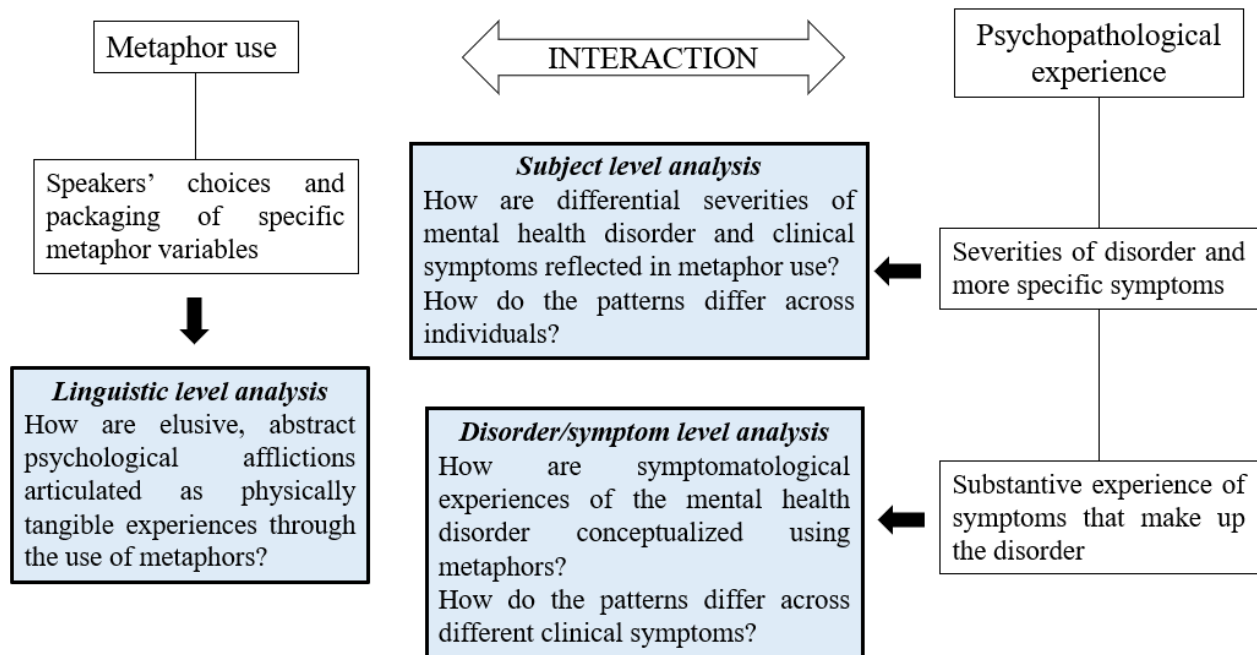
of metaphor usage patterns that are characteristic of the current sample and potentially reflect wider patterns in the whole trauma population. Chapter 4 applied correlation analysis to investigate metaphor usage patterns that are specific to certain psychopathological conditions and systematic metaphor variations at the individual level, which are two interesting issues seldom examined in previous empirical research. In both studies, qualitative discourse analysis was used to interpret the results of quantitative analyses to ensure that the statistically significant patterns were explained with reference to the local traumatic and communicative context and understood in their full complexity (Creswell, 2014; Moser, 2000; Tay, 2017).

Secondly, Chapters 4 and 5 showcased how the incorporation of psychometric data and clinical observations could shed new light on the role of differential psychopathological experiences in metaphor use and yield insights that are not visible from a purely discourse analytic perspective. At the general, theoretical level, breaking psychopathological experiences down to finer aspects could help us identify metaphor usage patterns associated with distinct and contrasting types of clinical manifestations. Such a perspective could provide fresh insights into the role of differential emotional, cognitive, and physiological experiences in shaping metaphor use and explaining metaphor variation; the findings would also give us a deeper understanding of the contextualized nature of mental health metaphors (McMullen, 2008) and the experiential and cognitive foundation of metaphor use (Lakoff, 1987; Lakoff & Johnson, 1980, 1999; Johnson, 1987). At a more specific level, psychometric scores that reflect the subjects' quantitative differences in psychopathological experiences could serve as a sound basis for making cross-individual comparisons and identifying metaphor usage patterns that are characteristic of a specific clinical condition. Qualitative aspects of psychopathological experiences could offer accurate and reliable contextual information about an individual's idiosyncratic emotional, cognitive, and

physiological experiences; the information could provide useful references for the interpretation of specific linguistic examples and reduce the subjectivity that is inherent in qualitative discourse analysis (Armstrong et al., 2011). Psychopathological features that are common to a given mental health population or certain clinical conditions could also offer important contextual cues for interpreting generally shared metaphor usage patterns.

Thirdly, the three main body chapters jointly offered a comprehensive view of systematic patterns and contextual dynamics of trauma metaphors. The three studies conjure up a feasible approach of multi-level analyses that could be applied in future mental health metaphor research. The components of the multi-level analysis and research questions to be answered by each analysis are summarized in Figure 6.2, which is adapted based on Figure 1.6 presented earlier in Section 1.5.2.

Figure 6.2 A multi-level analysis of metaphor use in mental health communication



The linguistic level analysis, exemplified by Chapter 3 of this thesis, examines the speakers' choices and packaging of specific metaphor variables without taking clinical input into

consideration. The focus is on how the speakers deploy and organize specific conceptual resources in presenting metaphorical ideas, or how elusive, abstract psychological afflictions are articulated as physically tangible experiences through the use of metaphors. The aim is to offer a general and comprehensive description of people's metaphor use in the given mental health context.

The subject level analysis and the disorder/symptom level analysis, illustrated by Chapters 4 and 5, explore how the speakers' metaphor use is informed by their psychopathological experiences of the mental health disorder, therefore, the analyses are to be performed through the incorporation of psychometric data and relevant clinical observations into metaphor analysis. The aim is to identify metaphor variables or metaphor usage patterns that are potentially related to the mental health issue under examination. The subject-level analysis probes into the relationship between quantitatively different severities of psychopathological disturbances and metaphor use, and describes how the use of metaphors tends to vary across different clinical conditions. The disorder/symptom level analysis is informed by psychometric data and clinical observations about substantive symptomatological experiences of the mental health disorder. The aim is to identify metaphors that are directly pertinent to the mental health disorder or symptoms of clinical concern, compare the differences (or similarities) across different symptoms, and outline metaphor usage patterns that are characteristic of the mental disorder under examination.

Analyses following this approach could extract findings that are both meaningful for linguistic research and readily translatable to clinical assessment and treatment of trauma. Apart from replicating the research avenues and methods of this thesis, future research using this approach could also explore other aspects of trauma metaphors using more flexible combinations of quantitative and qualitative methods (see Sections 3.4, 4.5, and 5.5). Section 6.4 also lists some potential research directions and methods beyond the current research context.

Lastly, as a case study of metaphors arising from the 2019-2020 Hong Kong social unrest, this thesis also revealed show events embedded in real-life socio-cultural situations could lend novel insights for theoretical investigations of linguistic constructs (Frank, 2008; Geeraerts et al., 2010; Tay, 2021a). It also highlighted the potential for metaphor analysis to inform empirical inquiries into mental health communication and provide potentially useful reference for relevant practices and decision-making.

6.3 Limitations

Earlier in Sections 3.5, 4.5, and 5.5, I provided focused reflections on the limitations identified for the three studies, with special attention to the selection of variables and choices of research methods. I also suggested possible ways to address the limitations in future research. In addition to those specific points, several key limitations in research design and analytic strategies also need to be considered.

First of all, due to logistical reasons, this case study was restricted to a relatively small sample size ($N=46$), and the sampling was non-randomized. Given the use of convenience sampling and snowball sampling, the participants had homogeneous demographic features (e.g., age, nationality, and education background); the proportion of females and males was also not balanced ($N=33$ and 13, respectively). The limitation in sampling makes it difficult to compare across different demographic features; the extent to which the findings could be generalized to the whole affected population and other trauma contexts also remains to be tested. Another drawback of using convenience sampling is that the findings might also be influenced by potential confirmation bias. For example, people who had concerns about receiving abuse for commenting on the social unrest were unlikely to sign up for the study. The same also applies to those who were

particularly disturbed by avoidance symptoms, who might be reluctant to talk and think about their traumatic experiences, and those who developed high levels of dissociation and impairment in functioning, as they might experience greater difficulty in recalling details about the traumatic event and engaging in interpersonal interactions. Future research could replicate the methods demonstrated by this thesis on a larger traumatic population and/or in other trauma contexts to examine the clinical relevance of trauma-related variables identified by the present study.

Secondly, statistical analyses and interpretation in this thesis followed the *p*-value paradigm¹⁹ by assessing the likelihood of observing the data given the null hypothesis (i.e., there is no statistical relationship between the observed and the measured phenomena). A fixed *p*-value of .05 was used as the threshold for rejecting the null hypothesis: a relationship having a *p*-value lower than .05 means the probability of observing such a phenomenon by chance alone is less than 5%; such relationships are identified as statistically significant and thus of greater research interest. Although this strategy is helpful for exploratory research such as this thesis to highlight theoretically interesting and potentially clinically relevant patterns and derive clear-cut conclusions, the fixed *p*-value only provides “a crude orientation regarding the probable realness of specific group differences”, therefore, only a simplistic explanation of the big picture (Dick & Tevaearai, 2015, p.815). Following the American Statistical Association statement and guidelines, in this thesis I included descriptive statistics such as Cramer’s V, adjusted residuals, and correlation coefficients as supplementary information for understanding and comparing statistically significant relationships. Future researchers could also interpret *p*-values as a continuous measure and supplement the results with more descriptive statistics (e.g., confidence intervals, maximum

¹⁹ The *p*-value paradigm is also called the frequentist statistical inferencing, as it assesses the likelihood of a phenomenon happening in a large number of repeated experiments as its frequency of occurring.

and minimum values, and data distribution) to provide a more comprehensive account of interesting but not necessarily statistically significant patterns that emerged from their data (Wasserstein et al., 2019; refer to Tay, 2022 for an example). An alternative paradigm for assessing statistical evidence is Bayesian inference, which calculates the probability of a hypothesis being true given the data (see Tay, 2019b and Tay, 2020b for exemplary applications in metaphor research).

Thirdly, Chapters 4 and 5 used psychopathological symptoms instead of more specific diagnostic criteria as psychometric variables and analytic categories. While the analyses provide convenient reference points for exploring the relationship between psychopathological experiences of trauma and metaphor use and identifying clinically relevant metaphor usage patterns, more subtle cross-individual differences in psychopathological experiences were not taken into consideration. As we have seen from Sections 2.4.1 and 4.2.2, each ASD symptom is comprised of several different diagnostic criteria or clinical manifestations, which are measured by different questionnaire items. According to Galatzer-Levy and Bryant (2013), people who meet the diagnostic criteria of trauma-related disorder might have many different combinations of symptoms and subsets of symptoms and thus have potentially different psychopathological differences. For example, according to the diagnostic criteria of PTSD specified in DSM-IV, there could be 31 possible combinations of dissociation-related symptoms, 99 possible combinations of avoidance symptoms, and 26 possible combinations of hyperarousal symptoms (Galatzer-Levy & Bryant, 2013, p.656). Such variations also hold for the experience of ASD symptoms and could be a potential factor responsible for metaphor variations. Moreover, according to Bryant et al. (2015), acute stress reactions encompass a broader array of psychological reactions than what is described in DSM diagnostic criteria, for example, prolonged grief (Ozer et al., 2003), shock, disgust, and

somatic reactions (Isserlin et al., 2008) such as fatigue, nausea, and muscle pain. While these reactions also constitute key components of trauma victims' embodied experiences, it is possible that they act as the basis or trigger of certain types of metaphors but are left undetected by symptom-based analyses. To obtain a fuller and more nuanced account of the interactions between metaphor use and these subtle aspects of psychopathological experiences, quantitative analyses based on finer psychometric categories and qualitative analyses of clinically interesting metaphor usage patterns are required.

Another key limitation, mentioned earlier in Section 3.5, lies in the use of top-down rather than bottom-up coding schemes in metaphor identification. As this approach searches for trauma-related metaphor usage patterns from clinically relevant topics highlighted by previous trauma narratives and metaphor research, it reduces the possibility of detecting spurious relationships in quantitative analyses and provides convenience for future researchers and mental health practitioners to replicate the analyses in other research and clinical contexts; however, it might not be able to fully reflect the particularistic qualities of metaphor use in this specific traumatic context. To better capture contextually motivated metaphor usage patterns and their interactions with the speakers' psychopathological experiences, future research could adopt thematic analysis (Braun & Clarke, 2006) or grounded theory (Glaser & Strauss, 1967) to identify target topics, and code metaphor vehicle terms using systematic, bottom-up coding methods such as Ahrens and Jiang (2020) and two-tier coding proposed by Kimmel (2010).

6.4 Future Directions

To further extend the linguistic and the clinical aims, the final section of this chapter offers some future directions for the study of trauma mental and health metaphors. I will first outline

some theoretical and contextual aspects of trauma that are potentially related to metaphor use, and then suggest some quantitative research methods that could help to further extend the scope of mental health metaphor research.

6.4.1 Several Theoretical and Contextual Aspects of Trauma

This section offers some future directions for future research on trauma metaphors. I will briefly discuss the potential interactions between metaphors and other theoretical aspects of trauma, including metaphor behaviors and somatic reactions, Type II trauma, indirect exposure to traumatic events, and other emotional components of trauma. I will also outline several key contextual factors that might have an impact on trauma victims' metaphor use, including socio-cultural background, political stances, demographic features, and the type of traumatic event. This is by no means an exhaustive list of trauma aspects that might be expressed or interact with metaphorical language, nor do they necessarily stand as core issues in psychology and psychotherapy research, but the purpose is to outline some potential directions for advancing the study of trauma metaphors, especially research in similar traumatic contexts.

6.4.1.1 Metaphors and Other Theoretical Aspects of Trauma

Metaphor Behaviors and Somatic Reactions of Trauma

An emerging research avenue highlighted by both trauma and metaphor research is trauma victims' metaphoric behaviors and somatic reactions. As noted by Wilson and Lindy (2013), traumatic experiences, apart from being expressed using linguistic resources, could also be reflected by trauma victims' body language, such as gestures and repetitive compulsive behaviors, somatic experiences like chest pain, hypersensitivity, and heart racing, and other symbolic

behaviors such as substance abuse, and avoidance behaviors. These non-verbal expressions arise directly from the field of traumatic experiences and intrude spontaneously into the present and foreseeable future when something in the present acted as a trigger for the past traumatic event; they might disrupt trauma victims' adaptive functioning in the present and confine the person and his/her personality to the emergency defense field of trauma (Wilson & Lindy, 2013, p.177). Through an in-depth analysis of a multimodal text created by an eight-year-old refugee, Busch (2020) showed that trauma victims might also resort to poetic and artistic means, both verbal and non-verbal, to express their intense but "bottled" feelings of fear and helplessness. In a study of metaphors in describing bereaved parents, Littlemore and Turner (2020) identified more deliberate and adaptive metaphoric behaviors; for example, a father wanted to metaphorically "share a beer" with his still-born son, which is a celebrating activity that might normally take place when his son reached adulthood; this symbolic behavior is believed to "bring a salient moment from a hoped for, but non-existent future into the present" (p. 58) and serve as a possible way to reconcile between the two incompatible realities.

Similar metaphoric behaviors were also identified in the data collected for this thesis. As mentioned earlier, during the most violent stage of the social unrest, classes at schools and onsite work were canceled or transited online for safety reasons, therefore, a large number of mainland Chinese and international students chose to leave Hong Kong for a safer place. However, despite the potential risks, inconvenience in daily life, and immense emotional distress, a participant deliberately chose to stay; in the interview, he interpreted the reasons as he was "taking up a challenge (接受挑战)" from the reality and "holding on in a battle that he did not want to lose (好像一个战争一样, 不想这么就输了)". Several participants also reported somatic experiences such as shortness of breath and palpitation (refer to example 27 discussed in Section 5.4.2.4).

While such non-verbal metaphoric expressions are obviously related to the participants' personal experiences and idiosyncratic ways of conceptualizing the traumatic event, their systematic relationships and more nuanced qualities remain an interesting research topic.

Type II Trauma, Metaphor, and Metaphor-related Phenomena

This thesis focused on trauma induced by a discrete, unanticipated, and extremely overwhelming event. Such events are also of primary concern to clinical researchers and practitioners; their psychological impact is referred to as *Type I trauma* (Terr, 1991). A contrasting type of trauma of no less interest to clinical psychologists is the experience of “long-standing or repeated ordeals” (Terr, 1991, p.11) over the lifespan, such as in the case of domestic violence and childhood abuse. Such experiences are referred to as *Type II trauma*; its typical manifestations include numbing, self-hypnosis, dissociation, rage, sadness, etc. (Terr, 1991). The experienced might also lead to higher risks of PTSD (Courtois & Ford, 2009).

According to the view of psychoanalysis (e.g., Borbely, 1998, 2008), Type II trauma might damage a person's ability to freely relate between past experiences and the present. For example, as noted by Grant and Crawley (2002), a client with a history of school teasing and bullying may transfer her childhood experiences onto her therapist's behaviors and interpret the therapist's chuckles as a signal of teasing and sarcasm. In this case, the two different temporal domains (i.e., the past and the present) are collapsed into one, so that the individual would “experience what belongs to the past falsely as of present origin” (Borbely, 2008, p.417); in other words, the present becomes something that is subordinate to, or “stands for”, the past rather than an independent domain that is constantly “informed” and updated by the past (Borbely, 2008, p.417). Therefore, from the perspective of therapeutic treatment, psychological issues associated with Type II trauma

could also be understood as a metonymic construct that needs to be restored with metaphoricity (Borbely, 2008).

Issues related to Type II trauma are often interpreted by the therapist and discussed by the dyad using metaphor-related phenomena, which is defined by Tay (2016) as the construction of similarity between two things, especially between the present and the past. Metaphor-related phenomena could be either metaphorical or non-metaphorical in the linguistic sense. Tay (2016) listed some non-metaphorical examples. The examples were selected from a series of therapeutic sessions that aimed to elucidate how the client's current interpersonal relationships were influenced by her relationship with her father in the past:

T: 我感觉你是在用对待你父亲的方法来对待我。

[I feel that you are treating me like how you treated your father.]

.....

T: 哦。你看看，你说这些哦，有时候我都分不清哪个是爸爸，哪个是你。你们真的很像诶！

[Oh. See, when you say these things, sometimes I cannot tell which is father, and which is you. You are really alike!]

The two examples draw explicit connections between the patient in the present and her father in the past. Despite the apparent mappings between the two temporal domains, or at the psychodynamic level of feelings, emotions, and attitudes, such expressions do not involve the contrast and transfer between two different meanings (Cameron & Maslen, 2010), therefore they are not metaphorical in the linguistic sense. A correspondent analysis that combines clinical and discourse analytic observations shows that such metaphor-related phenomena play an essential role in raising the client's awareness of conceptual-level mappings between entities, attributes, and

relations and guiding the client to gradually move toward the reflection of psychodynamic-level correspondences (Tay, 2016).

Previous theoretical works on psychoanalytic treatment (e.g., Zhong, 1988) described cases where interpretations of type II childhood trauma could be potentially embedded in metaphorical language. For example, to help a client with a history of childhood abuse understand his/her unconscious thoughts and feelings, the therapist could metaphorize the client in present life situations as an imaginary CHILD and interpret his/her current psychological state and needs as expressions and behaviors of the CHILD (Zhong, 1988). Compared with direct comparisons between the client's feelings in the present and those elicited by the unpleasant memories in the past, the use of metaphors is expected to promote the client's self-reflection without causing unbearable psychological discomfort and resistance to further interventions.

We can see the two types of metaphor-related phenomena serve as important conceptual tools in the interpretation of type II trauma. Nevertheless, they were mostly discussed in psychological research as a therapeutic technique regarding their potential or intended effects. Their actual instantiations and variations in authentic therapist-client communication were rarely examined; how the two types of metaphor-related phenomena are used by therapists, how they are responded to by the client, and how the response patterns vary (Mathieson et al., 2015; Tay, 2019a) as the lost metaphoricity gets restored remain to be explored by future researchers.

Metaphors in Describing Indirect Trauma Exposure

Another emerging research area is psychological disturbances caused by indirect exposure to a traumatic event, such as secondary traumatic stress (STS; Figley, 1983). STS refers to psychological distress induced by empathetic engagement with trauma victims; it is sometimes

interchangeably referred to as vicarious trauma (McCann & Pearlman, 1990). Examples of indirect trauma exposure are media exposure to traumatic events such as bereavement and healthcare emergencies caused by the Covid-19 pandemic and other disastrous events like flooding, air crash, and war, and personal communication with victims of traumatic events. Although such experiences do not meet the current diagnostic criteria for ASD and PTSD, they could trigger other mental health issues such as depression and anxiety (Pfefferbaum & North, 2020). As the wide reach of social media makes it possible for more people to suffer from traumatic feelings without being directly exposed to the traumatic events, it would be interesting to compare metaphors generated by people who had direct, embodied experiences of a trauma event and those who developed non-adaptive emotions through indirect exposure. The study would not just enhance our knowledge about indirect trauma exposure but also lead to a deeper understanding of the relationships between embodied experiences and metaphor use.

Metaphors about Other Trauma-related Emotions

Lastly, while this study explored trauma-metaphor interactions based on psychometric measures of ASD and its subordinate symptoms, it would also be worthwhile to go beyond the scope of ASD and examine trauma victims' metaphor use in relation to other trauma-related emotional or psychopathological experiences, such as depression, fear, and grief (Ozer et al., 2003; Isserlin et al., 2008). This research direction, as a complement to that chosen by this thesis, would also enable a clinically situated view of the contextual characteristics of trauma victims' metaphor use and contribute to a better knowledge of the dynamic interactions between metaphor use and emotional afflictions.

6.4.1.2 Trauma Metaphors and Other Contextual Factors

Socio-cultural Background

While this thesis focuses mainly on the relationships between trauma victims' metaphor use and their psychopathological experiences, the potential role of other contextual factors in shaping trauma metaphors remains unexplored. One of the factors that might leave an impact on trauma victims' metaphor use is the speaker's socio-cultural background. Although a number of studies have highlighted the potential for trauma victims' metaphor use to reflect their deeply entrenched socio-cultural knowledge, assumptions, values, and beliefs (e.g., Meili et al., 2019; Rechsteiner et al., 2019, 2020; Wilson & Lindy, 2013), the findings were mostly derived based on qualitative analyses of limited sample sizes rather than systematic, quantitative analyses of large-scale data. While socio-cultural attributes have been identified as an important factor influencing trauma victims' subjective experiences and interpretations of traumatic experiences (Substance Abuse and Mental Health Services Administration, 2014; Wilson & Lindy, 2013), whether the use of socio-culturally sensitive metaphors might vary further with the speakers' psychopathological experiences also remains an intriguing but unexplored question. The potential influence of sociocultural backgrounds is not just an interesting issue for the study of trauma narratives but holds particular importance for understanding trauma metaphors in socio-culturally heterogeneous contexts such as Hong Kong and Singapore.

Political Stances

Another factor that is highly relevant to the current research context is trauma victims' political stances. As mentioned earlier, the Hong Kong social unrest was highly political in nature as several different political powers were believed to be involved (Shek, 2020). A large body of

metaphor research has shown that people with different ideologies and political positions tend to have different ways of understanding and conceptualizing abstract social and political issues, and that such differences are very likely to be reflected in their preferred ways of creating and organizing metaphorical ideas (e.g., Charteris-Black, 2004, 2014; Kövecses, 2010; Littlemore, 2019; Musolff, 2004, 2016). The survey on Hong Kong residents' psychological well-being during the social unrest, conducted by Ni et al. (2020), showed that the participants' political stances might be a potential risk factor associated with mental health issues: although support or opposition to the bill extradition and participation in protests was not significantly associated with probable psychopathological distress, non-involvement in initial protests and neutrality towards the extradition bill approximately halved the risk of suspected PTSD. In other words, it is possible that trauma victims' political stances, psychopathological experiences, and conceptualizations of personal traumatic experiences might engage in dynamic interactions with each other. Research in this direction would hold obvious implications for understanding the complexities underlying trauma victims' metaphor use; the findings would also generate practical insights for providing therapeutic practices and social support after traumatic events of similar nature, such as war and armed conflicts.

Demographic Background and Type of Traumatic Event

Two other commonly mentioned contextual factors in the study of trauma narratives are participants' demographic backgrounds and the type of traumatic event. While this thesis is based on a relatively small sample collected for a single traumatic event, future research could replicate the methods illustrated in this thesis on larger sample sizes with more heterogeneous demographic backgrounds or a more diversified range of traumatic contexts. This could not only test the

generalizability of the present findings but also give a sense of whether the identified patterns are likely shared by all trauma victims as a result of trauma exposure, motivated by the current research context, or arise from the interactions between psychopathological mechanisms of trauma and the traumatic context.

6.4.2 Quantitative Analyses of Mental Health Metaphors

Putting Metaphor Analysis into the Predictive Context

This thesis presents an exploratory, descriptive study of trauma victims' metaphor use. More specifically, this thesis showed how different aspects of trauma metaphors are interconnected with each other and how trauma victim's metaphor use is likely to vary with their psychopathological experiences; the findings confirmed the theoretical possibility of metaphor use being related to psychopathological experiences of trauma and pinned down metaphor variables of potential clinical relevance. As the most important and foremost goal of mental health communication is to provide reliable diagnoses and in-time evaluations of the client's psychological and psychopathological conditions based on previous theoretical knowledge and clinical experience, another promising direction in the study of mental health metaphors is to put metaphor analysis into a predictive context and investigate whether and how certain degrees or types of psychological disturbances could be predicted based on the speaker's systematic use of trauma-related metaphor variables.

A particularly useful statistical technique in this scenario is multiple regression, which investigates the relationship between one outcome variable and multiple predictor variables and reveals how the subjects' psychometric scores could be predicted using a group of metaphor variables. Two regression methods that have been successfully applied to the study of mental

health metaphors are multiple linear regression and logistic regression. The former is used to predict the values of continuous outcome variables such as psychometric scores; more specifically, it reflects the amount of change in the outcome variable that could be explained by a unit change in the predictor variables, e.g., the frequency of specific types of metaphors (refer to Qiu & Tay, 2022a for an example). The latter is used to predict binary outcomes, such as the clinical presence of specific symptoms and disorders (Plug et al., 2009) and alternative ways of conceptualizing social crises (Tay, 2021a). This thesis, together with previous research on trauma narratives and trauma metaphors, has highlighted several variables that are potentially related to psychopathological experiences of trauma. Future research could therefore adopt regression methods to examine how these variables could be used to predict the speakers' experience of trauma and specific symptoms. The methods could also be applied in other mental health contexts where metaphors have been shown to play an essential role in reflecting psychological afflictions and changes; one of such examples is personal narratives and therapeutic discussions about depression, in which different types of metaphors have been widely identified as potential markers of psychopathology, therapeutic change, and recovery (e.g., Charteris-Black, 2012; Levitt et al., 2000; Littlemore, 2019; McMullen & Conway, 2002; Pritzker, 2007; Yu, 2005; Yu & Tay, 2020).

As an extension of the linguistic aim pursued by this thesis, examining mental health metaphors for predictive purposes could provide a more accurate, in-situ view of the dynamic interactions between metaphor use and psychopathological experiences, especially how multiple metaphor variables are simultaneously connected to the subjective experience of a mental health disorder. As a promising avenue for extending the clinical aim, research in this direction could help us sort out which aspects of metaphors could be possibly used as quick and convenient reference points in clinical diagnoses, initial interviews, and the practice of metaphor-based therapeutic

protocols (e.g., Grove & Panzer, 1989; Kopp & Eckstein, 2004; Kopp, 1995; Sims, 2003; Sims and Whynot, 1997), or incorporated as potential leading questions or prompts in future development of psychometric and interview tools.

Natural Groupings and Development of Mental Health Metaphors

Another interesting direction for advancing mental health metaphor research is to examine the natural groupings and the chronological development of metaphors in a given mental health context. Natural groupings of metaphors, which reflect how subjects with certain psychopathological conditions tend to use (different types of) metaphors in similar ways. Such patterns could be extracted using cluster analysis, which is a method that identifies discrete groups of individuals based on statistical measures of similarity; members within each identified group share a maximal similarity, and the groups themselves are maximally different from each other (refer to McMullen, 1985, Tay, 2020c, and Tay & Qiu, 2022 for examples in the study of mental health metaphors). As we have seen in Chapter 2, the development of mental health metaphors across different recovery and treatment stages has long been a topic of interest for metaphor researchers and clinical psychologists. While previous research mainly categorized metaphor use according to broadly delineated time periods, future researchers could use time series analysis to examine the development of metaphor use across more specific and larger numbers of time points and extract more implicit yet potentially clinically relevant patterns (see Tay, 2019a for a systematic introduction and examples).

The two methods are expected to lead to a deeper and more precise understanding of metaphor variations that can take place across and within individuals. The statistical patterns, especially when juxtaposed with relevant psychometric data, demographic information, and

therapeutic observations, could also help us identify the contextual factors that might be responsible for metaphor variations. Moreover, the findings could provide valuable insights for psychology researchers' understanding of mental health communication and generate useful information for clinical practitioners' reflection and refinement of their own practices.

The statistical methods summarized in this section offer a promising avenue for exploring the contextual dynamics of mental health metaphors and real-life applications of metaphor research findings. Nevertheless, it is important to reiterate from Section 2.3.2 that similar to categorical data analytic methods and correlation analysis, the methods also need to be supplemented or informed by qualitative analyses to ensure that statistically prominent metaphor usage patterns are interpreted from a context-situated perspective.

6.5 Chapter Conclusion

This chapter summarized the major findings, implications, and limitations of the thesis. I have also outlined some future directions that emerged through the course of this study. As we can see, metaphorical language plays a pivotal role in expressing and exploring mental afflictions and confusion. It is hoped that the findings could enable a clearer view of metaphor use in mental health contexts and the dynamic interactions between metaphor use and psychopathological experiences. This thesis is also expected to provide an immediate sense of how metaphor analyses, especially those grounded in real-life socio-cultural settings, could open new perspectives for understanding mental health communication and potentially inform clinical practices of mental health assessment, diagnosis, and treatment.

Findings and future directions outlined in this thesis, hopefully, could inspire more

empirical works on mental health metaphors and explorative applications of metaphor research findings in clinical contexts. Such attempts would help us complete the jigsaw puzzle of contextualized metaphors and mental health issues, piece by piece, and gradually work out new and collaborative ways to understand and cope with the complexities of human emotions and thoughts.

References

- Agresti, A. (2002). *Categorical Data Analysis (2nd edition)*. John Wiley & Sons. <http://doi.org/10.1002/0471249688>
- Ahrens, K., & Jiang, M. (2020). Source Domain Verification Using Corpus-based Tools. *Metaphor and Symbol*, 35(1), 43-55. <https://doi.org/10.1080/10926488.2020.1712783>
- Alvarez-Conrad, J., Zoellner, L. A., & Foa, E. B. (2001). Linguistic predictors of trauma pathology and physical health. *Applied Cognitive Psychology*, 15(7), S159-S170. <https://doi.org/10.1002/acp.839>
- American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders (4th edition)*. American Psychiatric Association. <https://doi.org/10.1590/s2317-17822013000200017>
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (5th edition)*. American Psychiatric Association.
- Amir, M., Kaplan, Z., & Kotler, M. (1996). Type of trauma, severity of posttraumatic stress disorder core symptoms, and associated features. *The Journal of general psychology*, 123(4), 341-51. <https://doi.org/10.1080/00221309.1996.9921286>
- Armstrong, S. L., Davis, H. S., & Paulson, E. J. (2011). The subjectivity problem: Improving triangulation approaches in metaphor analysis studies. *International Journal of Qualitative Methods*, 10(2), 151-163. <https://doi.org/10.1177/160940691101000204>
- Badour, C. L., Resnick, H. S., & Kilpatrick, D. G. (2017). Associations Between Specific Negative Emotions and DSM-5 PTSD Among a National Sample of Interpersonal Trauma Survivors.

- Journal of Interpersonal Violence*, 32(11), 1620–1641.
<https://doi.org/10.1177/0886260515589930>
- Barcelona, A. (2001). On the systematic contrastive analysis of conceptual metaphors: Case studies and proposed methodology. In M. Pütz (Ed.), *Applied Cognitive Linguistics II: Language Pedagogy* (pp. 117–146). Mouton. <https://doi.org/10.1515/9783110866254.117>
- Barlow, J. M., Pollio, H. R., & Fine, H. J. (1977). Insight and figurative language in psychotherapy. *Psychotherapy: Theory, Research & Practice*, 14(3), 212.
<https://psycnet.apa.org/doi/10.1037/h0086530>
- Barnhill, J. W., (2020, April). *MSD Manual Professional Edition: Treatment of Acute Stress Disorder*. <https://www.msmanuals.com/home/mental-health-disorders/anxiety-and-stress-related-disorders/acute-stress-disorder>
- Barrett, L. F., Gross, J., Christensen, T. C., & Benvenuto, M. (2001). Knowing what you're feeling and knowing what to do about it: Mapping the relation between emotion differentiation and emotion regulation. *Cognition and Emotion*, 15(6), 713–724.
<https://doi.org/10.1080/02699930143000239>
- Batten, S. V., Follette, V. M., Rasmussen Hall, M. L., & Palm, K. M. (2002). Physical and psychological effects of written disclosure among sexual abuse survivors. *Behavior Therapy*, 33(1), 107–122. [https://doi.org/10.1016/S0005-7894\(02\)80008-9](https://doi.org/10.1016/S0005-7894(02)80008-9)
- Beck, C. T. (2016). Posttraumatic stress disorder after birth: A metaphor analysis. *MCN: The American Journal of Maternal/Child Nursing*, 41(2), 76-83.
<https://doi.org/10.1097/nmc.0000000000000211>

- Beck, C. T. (2017). The Anniversary of Birth Trauma: A Metaphor Analysis. *The Journal of Perinatal Education*, 26(4), 219-228. <https://doi.org/10.1891/1058-1243.26.4.219>
- Beck, J. S. (1995). *Cognitive Therapy. Basics and Beyond*. Guilford Press. [https://doi.org/10.1016/0005-7916\(96\)89143-9](https://doi.org/10.1016/0005-7916(96)89143-9)
- Berntsen, D., Willert, M., & Rubin, D. C. (2003). Splintered memories or vivid landmarks? Qualities and organization of traumatic memories with and without PTSD. *Applied Cognitive Psychology*, 17(6), 675-693. <https://doi.org/10.1002/acp.894>
- Boehme, S., Miltner, W. H., & Straube, T. (2015). Neural correlates of self-focused attention in social anxiety. *Social cognitive and affective neuroscience*, 10(6), 856–862. <https://doi.org/10.1093/scan/nsu128>
- Bolognesi, M., Pilgram, R., & van den Heerik, R. (2017). Reliability in content analysis: The case of semantic feature norms classification. *Behavior Research Methods*, 49(6), 1984-2001. <https://doi.org/10.3758/s13428-016-0838-6>
- Borbely, A. F. (1998). A psychoanalytic concept of metaphor. *International Journal of Psychoanalysis*, 79(5), 923-936. <https://doi.org/10.1111/j.1745-8315.2008.00121.x>
- Borbely, A. F. (2008). Metaphor and psychoanalysis. In R. W. Gibbs (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 412–424). Cambridge University Press.
- Borsboom, D., & Cramer, A. O. (2013). Network analysis: an integrative approach to the structure of psychopathology. *Annual Review of Clinical Psychology*, 9, 91–121. <https://doi.org/10.1146/annurev-clinpsy-050212-185608>

- Bowdle, B. F., & Gentner, D. (2005). The Career of Metaphor. *Psychological Review*, 112(1), 193–216. <https://doi.org/10.1037/0033-295x.112.1.193>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Brewin, C. R. (2015). Re-experiencing traumatic events in PTSD: new avenues in research on intrusive memories and flashbacks. *European Journal of psychotraumatology*, 6(1), 27180. <https://doi.org/10.3402/ejpt.v6.27180>
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, 68(5), 748–766. <https://doi.org/10.1037//0022-006x.68.5.748>
- Brewin, C. R., Christodoulides, J., & Hutchinson, G. (1996). Intrusive thoughts and intrusive memories in a nonclinical sample. *Cognition and Emotion*, 10(1), 107–112. <https://doi.org/10.1080/026999396380411>
- Briere, J. (1995). *Trauma Symptom Inventory Professional Manual*. Psychological Assessment Resources.
- Brockmeyer, T., Zimmermann, J., Kulesa, D., Hautzinger, M., Bents, H., Friederich, H. C., Herzog, W., & Backenstrass, M. (2015). Me, myself, and I: self-referent word use as an indicator of self-focused attention in relation to depression and anxiety. *Frontiers in Psychology*, 6, 1564. <https://doi.org/10.3389/fpsyg.2015.01564>

- Bryant, R. A., & Guthrie, R. M. (2007). Maladaptive self-appraisals before trauma exposure predict posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 75*(5), 812–815. <https://doi.org/10.1037/0022-006x.75.5.812>
- Bryant, R. A., Friedman, M. J., Spiegel, D., Ursano, R., & Strain, J. (2011). A review of acute stress disorder in DSM-5. *Depression and Anxiety, 28*(9), 802–817. <https://doi.org/10.1002/da.20737>
- Bryant, R. A., Harvey, A. G., Dang, S. T., & Sackville, T. (1998). Assessing acute stress disorder: Psychometric properties of a structured clinical interview. *Psychological Assessment, 10*(3), 215–220. <https://psycnet.apa.org/doi/10.1037/1040-3590.10.3.215>
- Bryant, R. A., Moulds, M. L., & Guthrie, R. M. (2000). Acute Stress Disorder Scale: a Self-Report Measure Of Acute Stress Disorder. *Psychological Assessment, 12*(1), 61–68. <https://doi.org/10.1037/1040-3590.12.1.61>
- Busch, B. (2020). Message in a bottle: Scenic presentation of the unsayable. *Applied Linguistics, 41*(3), 408–427. <https://doi.org/10.1093/applin/amaa001>
- Cahill, S. P., & Pontoski, K. (2005). Post-traumatic stress disorder and acute stress disorder I: their nature and assessment considerations. *Psychiatry, 2*(4), 14–25.
- Cameron, L. (2007). Patterns of metaphor use in reconciliation talk. *Discourse and Society, 18*(2), 197–222. <https://doi.org/10.1177/0957926507073376>
- Cameron, L., & Maslen, R. (Eds.). (2010). *Metaphor Analysis: Research Practice in Applied Linguistics, Social Sciences and the Humanities*. Equinox. <https://doi.org/10.1016/j.system.2011.12.002>.

- Cameron, L., Maslen, R., Todd, Z., Maule, J., Stratton, P., & Stanley, N. (2009). The discourse dynamics approach to metaphor and metaphor-led discourse analysis. *Metaphor and Symbol, 24*(2), 63–89. <https://doi.org/10.1080/10926480902830821>
- Cardeña, E., & Carlson, E. (2011). Acute stress disorder revisited. *Annual Review of Clinical Psychology, 7*, 245–267. <https://doi.org/10.1146/annurev-clinpsy-032210-104502>.
- Cardeña, E., Grieger, T., Staab, J., Fullerton, C., & Ursano, R. (1997). Memory disturbances in the acute aftermath of disasters. In J. Don Read & D. Stephen Lindsay (Eds.), *Recollections of trauma* (p. 568). New York: Plenum.
- Cardeña, E., Koopman, C., Classen, C., Waelde, L. C., & Spiegel, D. (2000). Psychometric properties of the Stanford Acute Stress Reaction Questionnaire (SASRQ): A valid and reliable measure of acute stress. *Journal of Traumatic Stress, 13*(4), 719-734. <https://doi.org/10.1023/a:1007822603186>.
- Charteris-Black, J. (2004). *Corpus Approaches to Critical Metaphor Analysis*. Palgrave Macmillan. <https://doi.org/10.1057/9780230000612>
- Charteris-Black, J. (2012). Shattering the Bell Jar: Metaphor, Gender, and Depression. *Metaphor and Symbol, 27*(3), 199-216. <https://doi.org/10.1080/10926488.2012.665796>
- Cheung E. (2019, December, 2). Polytechnic University facing immeasurable loss to research projects after radicals trashed campus in battle with police, chairman says. *South China Morning Post*. <https://www.scmp.com/news/hong-kong/health-environment/article/3040165/polytechnic-university-facing-immeasurable-loss>

- Chor, L. (2019). [Photograph of Trash and Debris Left at the Entrance]. Getty Images.
<https://i.epochtimes.com/assets/uploads/2019/11/1911180221421758.jpg>
- Christianson, S.-Å. (1992). Emotional stress and eyewitness memory: A critical review. *Psychological Bulletin*, *112*(2), 284–309. <https://doi.org/10.1037/0033-2909.112.2.284>.
- Cirillo, L., & Crider, C. (1995). Distinctive therapeutic uses of metaphor. *Psychotherapy*, *32*(4), 511–519. <https://psycnet.apa.org/doi/10.1037/0033-3204.32.4.511>.
- Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social Phobia: Diagnosis, Assessment, and Treatment* (pp. 69–93). The Guilford Press.
- Clausner, T., & Croft, W. (1999). Domains and Image Schemas. *Cognitive Linguistics*, *10*(1), 1–31. <https://doi.org/10.1515/cogl.1999.001>
- Cohn, M. A., Mehl, M. R., & Pennebaker, J. W. (2004). Linguistic markers of psychological change surrounding September 11, 2001. *Psychological Science*, *15*(10), 687–693. <https://doi.org/10.1111/j.0956-7976.2004.00741.x>.
- Coons, P. M. (1988). Psychophysiologic aspects of multiple personality disorder: A review. *Dissociation: Progress in the Dissociative Disorders*, *1*(1), 47–53.
- Correa-Beningfield, M., Kristansen, G., Navarro-Ferrando, I., & Vandeloise, C. (2005). Image schemas vs. complex primitives in cross-cultural spatial cognition. In B. Hampe & J. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (pp. 343–368). Mouton de Gruyter. <https://doi.org/10.1515/9783110197532.4.343>

- Costa, A., & Steen, G. (2014). Metaphor as a window on talk about trauma and posttraumatic growth. *Scripta*, 18(34), 283-299. <https://doi.org/10.5752/P.2358-3428.2014v18n34p283>
- Cox, K. S., Resnick, H. S., & Kilpatrick, D. G. (2014). Prevalence and correlates of posttrauma distorted beliefs: evaluating DSM-5 PTSD expanded cognitive symptoms in a national sample. *Journal of traumatic stress*, 27(3), 299–306. <https://doi.org/10.1002/jts.21925>
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). Sage. <https://doi.org/10.1016/j.math.2010.09.003>.
- Cronbach, L. J. (1951). Coefficient *alpha* and the internal structure of tests. *Psychometrika*, 16, 297–334.
- Demjén, Z., Marszalek, A., Semino, E., & Varese, F. (2019). Metaphor framing and distress in lived-experience accounts of voice-hearing. *Psychosis*, 11(1), 16-27. <https://doi.org/10.1080/17522439.2018.1563626>
- Dick, F., & Tevæarai, H. (2015). Significance and Limitations of the p Value. *European Journal of Vascular and Endovascular Surgery*, 50(6), 815. <https://doi.org/10.1016/j.ejvs.2015.07.026>.
- Dunmore, E., Clark, D. M., & Ehlers, A. (1999). Cognitive factors involved in the onset and maintenance of posttraumatic stress disorder (PTSD) after physical or sexual assault. *Behaviour Research and Therapy*, 37(9), 809–829. [https://doi.org/10.1016/S0005-7967\(98\)00181-8](https://doi.org/10.1016/S0005-7967(98)00181-8)

- Eckstein, S., Straub, J., Russo, N., & Eckstein, D. (2012). Into The Woods: Introducing the Couples Metaphoric Interview Matrices. *The Family Journal*, 20(1), 70–78. <https://doi.org/10.1177/1066480711429545>
- Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, 38, 319–345. [https://doi.org/10.1016/s0005-7967\(99\)00123-0](https://doi.org/10.1016/s0005-7967(99)00123-0)
- Ehlers, A., Clark, D. M., Dunmore, E., Jaycox, L., Meadows, E., & Foa, E. B. (1998). Predicting response to exposure treatment in PTSD: the role of mental defeat and alienation. *Journal of Traumatic Stress*, 11(3), 457–471. <https://doi.org/10.1023/A:1024448511504>
- Ehlers, A., Ehring, T., & Kleim, B. (2012). Information processing in posttraumatic stress disorder. In J.G. Beck & D. M. Sloan (eds). *The Oxford Handbook of Traumatic Stress Disorders* (pp. 191-218). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780195399066.013.0014>
- Ehlers, A., Hackmann, A., & Michael, T. (2004). Intrusive re-experiencing in posttraumatic stress disorder: Phenomenology, theory, and therapy. *Memory*, 12(4), 403–415. <https://doi.org/10.1080/09658210444000025>
- Ehlers, A., Hackmann, A., Steil, R., Clohessy, S., Wenninger, K., & Winter, H. (2002). The nature of intrusive memories after trauma: The warning signal hypothesis. *Behaviour Research and Therapy*, 40, 995–1002. [https://doi.org/10.1016/s0005-7967\(01\)00077-8](https://doi.org/10.1016/s0005-7967(01)00077-8)
- Elliott, G. C. (1988). Interpreting higher order interactions in log-linear analysis. *Psychological Bulletin*, 103(1), 121–130. <https://doi.org/10.1037/0033-2909.103.1.121>

- Fainsilber, L., & Ortony, A. (1987). Metaphorical Uses of Language in the Expression of Emotions. *Metaphor and Symbolic Activity*, 2(4), 239-250. <https://doi.org/10.1155/2022/7751995>.
- Ferrara, K. W. (1994). *Therapeutic Ways with Words*. Oxford University Press.
- Figley C. R. (1983). Catastrophes: An overview of family reactions. In C.R. Figley & H.I. McCubbin (Eds.), *Stress and the family Volume II, Coping with catastrophe* (pp. 3-20). Brunner/Mazel.
- Fine, H. J., Pollio, H. R. & Simpkinson, C. H. (1973). Figurative language, metaphor and psychotherapy. *Psychotherapy: Theory, Research and Practice*, 10(1), 87-91. <https://doi.org/10.1037/h0087552>.
- Fineberg, S. K., Leavitt, J., Deutsch-Link, S., Dealy, S., Landry, C. D., Pirruccio, K., Shea, S., Trent, S., Cecci, G., & Corlett, P. R. (2016). Self-reference in psychosis and depression: a language marker of illness. *Psychological Medicine*, 46(12), 2605-2615. <https://doi.org/10.1017/s0033291716001215>.
- Fires Raged Around the Campus on Monday Morning. [Online Photograph]. (2019, November 18). *BBC News*. https://ichef.bbci.co.uk/news/976/cpsprodpb/166C2/production/_109724819_5f1caef6-38df-4c39-9f91-5120d2e40772.jpg
- Foa, E. B., Molnar, C., & Cashman, L. (1995). Change in rape narratives during exposure therapy for posttraumatic stress disorder. *Journal of Traumatic Stress*, 8(4), 675–690. <https://doi.org/10.1007/BF02102894>

- Foa, E. B., Steketee, G., & Rothbaum, B. O. (1989). Behavioral/cognitive conceptualizations of post-traumatic stress disorder. *Behavior Therapy*, 20(2), 155–176. [https://doi.org/10.1016/S0005-7894\(89\)80067-X](https://doi.org/10.1016/S0005-7894(89)80067-X)
- Foley, P. S. (2015). The metaphors they carry: Exploring how veterans use metaphor to describe experiences of PTSD. *Journal of Poetry Therapy*, 28(2), 129-146. <https://doi.org/10.1080/08893675.2015.1011375>
- Ford, J. D., & Courtois, C. A. (2009). Defining and understanding complex trauma and complex traumatic stress disorders. In C. A. Courtois & J. D. Ford (Eds.), *Treating complex traumatic stress disorders: An evidence-based guide* (pp. 13–30). The Guilford Press.
- Frank, R. M. (2008). Introduction: Sociocultural situatedness. In R. M. Frank, R. Dirven, T. Ziemke, & E. Bernárdez (Eds.), *Body, language and mind. Volume 2: Sociocultural situatedness* (pp. 1–18). Mouton de Gruyter.
- Freud, S. (1899/1953). Screen memories. In J. Strachey (Ed.), *Sigmund Freud: Collected papers*, 5, 47-69, Hogarth Press.
- Frewen, P. A., Dozois, D. J. A., Neufeld, R. W. J., Densmore, M., Stevens, T. K., & Lanius, R. A. (2011). Self-referential processing in women with PTSD: Affective and neural response. *Psychological Trauma: Theory, Research, Practice, and Policy*, 3(4), 318–328. <https://doi.org/10.1080/20008198.2017.1314164>
- Fullagar, S., & O'Brien, W. (2012). Immobility, battles, and the journey of feeling alive: Women's metaphors of self-transformation through depression and recovery. *Qualitative Health Research*, 22(8), 1063–1072. <https://doi.org/10.1177/1049732312443738>

- Galatzer-Levy, I. R., & Bryant, R. A. (2013). 636,120 Ways to Have Posttraumatic Stress Disorder. *Perspectives on Psychological Science*, 8(6), 651–662. <https://doi.org/10.1177/174569161350411>
- Geeraerts, D., Kristiansen, G., & Peirsman, Y. (2010). *Advances in cognitive sociolinguistics*. Mouton de Gruyter. <https://doi.org/10.1515/9783110226461>
- Gelo, O. C. G. (2008). *Metaphor and Emotional-Cognitive Regulation in Psychotherapy: A Single Case Study*. Ulmer Textbank.
- Gelo, O. C. G., & Mergenthaler, E. (2012). Unconventional metaphors and emotional-cognitive regulation in a metacognitive interpersonal therapy. *Psychotherapy Research*, 22(2), 159–175. <https://doi.org/10.1080/10503307.2011.629636>
- Gentner, D., Bowdle, B., Wolff, P., & Boronat, C. (2001). Metaphor is like analogy. In D. Gentner, K.J. Holyoak, & B.N. Kokinov (Eds.), *The analogical mind: Perspectives from cognitive science* (pp. 199-253). MIT Press.
- Gentner, D., Falkenhainer, B., & Skorstad, J. (1988). Viewing metaphor as analogy. In D.H. Helman (Ed.), *Analogical reasoning: Perspectives of artificial intelligence, cognitive science and philosophy* (pp. 171-177). Kluwer. https://doi.org/10.1007/978-94-015-7811-0_8
- Gibbs Jr, R. W., & Franks, H. (2002). Embodied metaphor in women’s narratives about their experiences with cancer. *Health communication*, 14(2), 139-165. https://doi.org/10.1207/s15327027hc1402_1

- Gilbert, N. (1993). *Analyzing Tabular Data: Loglinear and Logistic Models for Social Researchers*. UCL Press.
- Glaser, B. & Strauss, A. (1967). *The discovery of grounded theory: strategies for qualitative research*. Weidenfeld and Nicolson. [https://doi.org/10.1016/S0033-3182\(68\)71872-7](https://doi.org/10.1016/S0033-3182(68)71872-7)
- Goatly, A. (1997). *The Language of Metaphors*. Routledge.
- Gök, A., & Kara, A. (2022). Individuals' conceptions of COVID-19 pandemic through metaphor analysis. *Current psychology*, *41*(1), 449–458. <https://doi.org/10.1007/s12144-021-01506-z>
- Grant, J., & Crawley, J. (2002). *Transference and projection*. Open University Press.
- Greenacre, M., & Blasius, J. (2006). *Multiple correspondence analysis and related methods*. Chapman and Hall/CRC. <https://doi.org/10.1201/9781420011319>
- Grove, D.J. & Panzer, B.I., (1989). *Resolving Traumatic Memories: Metaphors and Symbols in Psychotherapy*. Irvington.
- Guité-Verret, A., Vachon, M., Ummel, D., Lessard, E., & Francoeur-Carron, C. (2021). Expressing grief through metaphors: family caregivers' experience of care and grief during the Covid-19 pandemic. *International Journal of Qualitative Studies on Health and Well-Being*, *16*(1), 1996872. <https://doi.org/10.1080/17482631.2021.1996872>
- Gušić, S., Malešević, A., Cardeña, E., Bengtsson, H., & Søndergaard, H. P. (2018). "I feel like I do not exist:" A study of dissociative experiences among war-traumatized refugee youth. *Psychological Trauma: Theory, Research, Practice, and Policy*, *10*(5), 542–550. <https://doi.org/10.1037/tra0000348>

- Haen, C. (2020). The roles of metaphor and imagination in child trauma treatment. *Journal of Infant, Child & Adolescent Psychotherapy*, 19(1), 42–55.
<https://doi.org/10.1080/15289168.2020.1717171>
- Halligan, S. L., Michael, T., Clark, D. M., & Ehlers, A. (2003). Posttraumatic stress disorder following assault: The role of cognitive processing, trauma memory and appraisals. *Journal of Consulting and Clinical Psychology*, 71(3), 419–431.
<https://doi.org/10.1037/0022-006x.71.3.419>
- Hampe, B. (2008). Image schemas in Cognitive Linguistics: Introduction. In B. Hampe (Ed.), *From Perception to Meaning: Image Schemas in Cognitive Linguistics* (pp. 1-14). De Gruyter Mouton. <https://doi.org/10.1515/9783110197532.0.1>
- Harvey, A. G., & Bryant, R. A. (1999). A qualitative investigation of the organization of traumatic memories. *British Journal of Clinical Psychology*, 38(4), 401–405.
<https://doi.org/10.1348/014466599162999>
- Hellawell, S. J., & Brewin, C. R. (2004). A comparison of flashbacks and ordinary autobiographical memories of trauma: Content and language. *Behaviour Research and Therapy*, 42(1), 1–12. [https://doi.org/10.1016/S0005-7967\(03\)00088-3](https://doi.org/10.1016/S0005-7967(03)00088-3)
- Holman, E. A., Garfin, D. R., & Silver, R. C. (2014). Media's role in broadcasting acute stress following the Boston Marathon bombings. In *Proceedings of the National Academy of Sciences*, 111(1), 93-98. <https://doi.org/10.1073/pnas.1316265110>
- Hong Kong airport on alert ahead of fresh wave of protests. (2019, August 9), *China Daily*, <https://www.chinadailyhk.com/articles/228/68/165/1565320445142.html>

- HKSAR Government condemns European Parliament's resolution. (2021, July 9). *The Government of the Hong Kong Special Administrative Region Press Releases*.
<https://www.info.gov.hk/gia/general/202107/09/P2021070900704.htm>
- Hou, C. (2009). 成人自评 [Self-assessment for adults]. In Jia F. and Hou C. (eds), *心理应激与创伤评估手册 [The Handbook of Psychological Stress and Trauma Measurement]*, (pp. 29-33). People's Medical Publishing House.
- Ingram, R. E. (1990). Self-focused attention in clinical disorders: Review and a conceptual model. *Psychological Bulletin*, *107*(2), 156–176. <https://doi.org/10.1037/0033-2909.107.2.156>
- Inocencio, R. (2019, September 4). Hong Kong leader to withdraw China extradition bill, but will it stop the protests? *CBS News*, <https://www.cbsnews.com/news/hong-kong-protest-carrie-lam-withdrawing-china-extradition-bill-too-little-too-late-today-2019-09-04/>
- Isserlin, L., Zerach, G., & Solomon, Z. (2008). Acute stress responses: A review and synthesis of ASD, ASR, and CSR. *The American Journal of Orthopsychiatry*, *78*(4), 423–429. <https://doi.org/10.1037/a0014304>
- Jaeger, J., Lindblom, K. M., Parker-Guilbert, K., & Zoellner, L. A. (2014). Trauma Narratives: It's What You Say, Not How You Say It. *Psychological Trauma: Theory, Research, Practice and Policy*, *6*(5), 473–481. <https://doi.org/10.1037/a0035239>
- Janet, P. (1898). *Névroses et idées fixes*, Vol. 1. Félix Alcan.
- Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. *Social Cognition*, *7*(2), 113-136. <https://doi.org/10.1521/soco.1989.7.2.113>

- Jellestad, L., Vital, N. A., Malamud, J., Taeymans, J., & Mueller-Pfeiffer, C. (2021). Functional impairment in Posttraumatic Stress Disorder: A systematic review and meta-analysis. *Journal of psychiatric research*, *136*, 14-22. <https://doi.org/10.1016/j.jpsychires.2021.01.039>
- Johnson, M. (1987). *The body in the mind: The bodily basis of meaning, imagination, and reason*. University of Chicago Press. [https://doi.org/10.1016/0378-2166\(90\)90039-G](https://doi.org/10.1016/0378-2166(90)90039-G)
- Joseph, S., & Linley, P. A. (2006). Growth following adversity: Theoretical perspectives and implications for clinical practice. *Clinical Psychology Review*, *26*(8), 1041-1053. <https://doi.org/10.1016/j.cpr.2005.12.006>
- Jubenville, J., Newburn-Cook, C., Hegadoren, K., & Lacaze-Masmonteil, T. (2012). Symptoms of acute stress disorder in mothers of premature infants. *Advances in Neonatal Care*, *12*(4), 246-253. <https://doi.org/10.1097/anc.0b013e31826090ac>
- Kaplow, J. B., Wardecker, B. M., Layne, C. M., Kross, E., Burnside, A., Edelstein, R. S., & Prossin, A. R. (2018). Out of the Mouths of Babes: Links Between Linguistic Structure of Loss Narratives and Psychosocial Functioning in Parentally Bereaved Children. *Journal of traumatic stress*, *31*(3), 342–351. <https://doi.org/10.1002/jts.22293>
- Keane, T. M., Caddell, J. M., & Taylor, K. L. (1988). Mississippi Scale for Combat-Related Posttraumatic Stress Disorder: Three studies in reliability and validity. *Journal of Consulting and Clinical Psychology*, *56*(1), 85–90. <https://doi.org/10.1037/0022-006X.56.1.85>

- Keating, E., & Reinhart, R. J. (2020, February 10). Hong Kongers' Confidence in Institutions Damaged in Unrest. *Gallup*. <https://news.gallup.com/poll/284189/hong-kongers-confidence-institutions-damaged-unrest.aspx>
- Kenny, L. M., & Bryant, R. A. (2007). Keeping memories at an arm's length: Vantage point of trauma memories. *Behaviour Research and Therapy*, 45(8), 1915–1920. <https://doi.org/10.1016/j.brat.2006.09.004>
- Kenny, L. M., Bryant, R. A., Silove, D., Creamer, M., O'Donnell, M., & McFarlane, A. C. (2009). Distant memories: A prospective study of vantage point of trauma memories. *Psychological science*, 20(9), 1049-1052. <https://doi.org/10.1111/j.1467-9280.2009.02393.x>
- Kimmel, M. (2005). Culture regained: Situated and compound image schemas. In B. Hampe (Ed.), *From perception to meaning: Image schemas in cognitive linguistics* (pp. 285– 312). Mouton de Gruyter. <https://doi.org/10.1515/9783110197532.4.285>
- Kimmel, M. (2010). Why we mix metaphors (and mix them well): Discourse coherence, conceptual metaphor, and beyond. *Journal of Pragmatics*, 42, 97-115. <https://doi.org/10.1016/j.pragma.2009.05.017>
- Kleim, B., Graham, B., Bryant, R. A., & Ehlers, A. (2013). Capturing intrusive re-experiencing in trauma survivors' daily lives using ecological momentary assessment. *Journal of Abnormal Psychology*, 122(4), 998–1009. <https://doi.org/10.1037/a0034957>
- Kleim, B., Horn, A. B., Kraehenmann, R., Mehl, M. R., & Ehlers, A. (2018). Early Linguistic Markers of Trauma-Specific Processing Predict Post-trauma Adjustment. *Frontiers in psychiatry*, 9, 645. <https://doi.org/10.3389/fpsy.2018.00645>

- Knapton O. (2016). Experiences of Obsessive-Compulsive Disorder: Activity, State, and Object Episodes. *Qualitative Health Research*, 26(14), 2009–2023.
<https://doi.org/10.1177/1049732315601666>
- Knapton, O. & Rundblad, G. (2018). Metaphor, discourse dynamics and register: applications to written descriptions of mental health problems. *Text & Talk*, 38(3), 389-410.
<https://doi.org/10.1515/text-2018-0005>
- Kopp, R. R. (1995). *Metaphor Therapy: Using Client-Generated Metaphors in Psychotherapy*. Brunnel/Mazel. <https://doi.org/10.4324/9780203777435>
- Kopp, R. R., & Craw, M. J. (1998). Metaphoric language, metaphoric cognition, and cognitive therapy. *Psychotherapy: theory, research, practice, training*, 35(3), 306-311.
<https://psycnet.apa.org/doi/10.1037/h0087795>
- Kopp, R. R., & Eckstein, D. (2004). Using early memory metaphors and client-generated metaphors in Adlerian therapy. *Journal of Individual Psychology*, 60(2), 163-174.
- Kövecses, Z. (2004). *Metaphor and Emotion: Language, Culture, and Body in Human Feeling* (2nd edition). Cambridge University Press.
- Kövecses, Z. (2005). *Metaphor in Culture: Universality and Variation*. Cambridge University Press. <https://doi.org/10.1016/j.pragma.2006.03.003>
- Kövecses, Z. (2010). *Metaphor: A practical introduction*. Oxford University Press.
- Kövecses, Z. (2015). *Where Metaphors Come From: Reconsidering Context in Metaphor*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780190224868.001.0001>

- Kövecses, Z. (2020). *Extended Conceptual Metaphor Theory*. Cambridge University Press.
<https://doi.org/10.1016/j.pragma.2020.07.004>
- Kövecses, Z. (2008). Metaphor and emotion. In R. W. Gibbs (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 380–396). Cambridge University Press.
- Krippendorff, K. (1970). Estimating the reliability, systematic error and random error of interval data. *Educational and Psychological Measurement*, 30(1), 61–70. <https://doi.org/10.1177/001316447003000105>
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd edition). Sage.
- Kross, E., Bruehlman-Senecal, E., Park, J., Burson, A., Dougherty, A., Shablack, H., Bremner, R., Moser, J., & Ayduk, O. (2014). Self-talk as a regulatory mechanism: how you do it matters. *Journal of personality and social psychology*, 106(2), 304–324.
<https://doi.org/10.1037/a0035173>
- Kweon, Y. S., Jung, N. Y., Wang, S. M., Rauch, S. A., Chae, J. H., Lee, H. K., ... & Lee, K. U. (2013). Psychometric properties of the Korean version of Stanford acute stress reaction questionnaire. *Journal of Korean Medical Science*, 28(11), 1672-1676.
<https://doi.org/10.3346/jkms.2013.28.11.1672>
- Lakoff, G. (1987). *Women, fire, and dangerous things: What categories reveal about the mind*. University of Chicago Press.
- Lakoff, G. (1992). Multiple Selves: *The Metaphorical Models of the Self Inherent, In Our Conceptual System* [Paper presentation]. The Conceptual Self in Context.
- Lakoff, G., & Johnson, M. (1980). *Metaphors We Live By*. University of Chicago Press.

- Lakoff, G., & Johnson, M. (1999). *Philosophy in the Flesh: The Embodied Mind and its Challenges to Western Thought*. Basic Books. [https://doi.org/10.1016/S0378-2166\(02\)00058-9](https://doi.org/10.1016/S0378-2166(02)00058-9)
- Lakoff, G., & Kövecses, Z. (1987). The cognitive model of anger inherent in American English. In D. Holland & N. Quinn (Eds.), *Cultural Models in Language and Thought* (pp. 195-221). Cambridge University Press.
- Lakoff, G., & Turner, M. (1989). *More Than Cool Reason: A Field Guide to Poetic Metaphor*. University of Chicago Press. [https://doi.org/10.1016/0898-5898\(92\)90016-P](https://doi.org/10.1016/0898-5898(92)90016-P)
- Lakoff, George (1990). The Invariance Hypothesis: is abstract reason based on image-schemas? *Cognitive Linguistics*, 1(1):39-74. <https://doi.org/10.1515/cogl.1990.1.1.39>
- Lam withdraws HK extradition bill. (2019, September 5). *China Daily*, <https://www.chinadaily.com.cn/a/201909/05/WS5d6f8e47a310cf3e35569bc1.html>
- Lanius, R. A., Terpou, B. A., & McKinnon, M. C. (2020). The sense of self in the aftermath of trauma: lessons from the default mode network in posttraumatic stress disorder. *European Journal of Psychotraumatology*, 11(1), 1807703. <https://doi.org/10.1080/20008198.2020.1807703>
- Leung, H. (2022, January 17). Hong Kong court jails 7 for up to 40 months for rioting during 2019 PolyU siege. *Hong Kong Free Press*, <https://hongkongfp.com/2022/01/17/hong-kong-court-jails-7-for-up-to-40-months-for-rioting-during-2019-polyu-siege/>

- Levitt, H., Korman, Y., & Angus, L. (2000). A metaphor analysis in treatments of depression: Metaphor as a marker of change. *Counselling Psychology Quarterly*, 13(1), 23–35. <https://doi.org/10.1080/09515070050011042>
- Liao, C., Guo, L., Zhang, C., Zhang, M., Jiang, W., Zhong, Y., Lin, Q., & Liu, Y. (2021). Emergency stress management among nurses: A lesson from the COVID-19 outbreak in China—a cross-sectional study. *Journal of clinical nursing*, 30(3-4), 433–442. <https://doi.org/10.1111/jocn.15553>
- Littlemore, J. & Turner, S. (2019). What Can Metaphor Tell Us About Experiences of Pregnancy Loss and How Are These Experiences Reflected in Midwife Practice? *Frontiers in Communication*, 4, Article 42. <http://doi.org/10.3389/fcomm.2019.00042>
- Littlemore, J. & Turner, S. (2020). Metaphors in communication about pregnancy loss. *Metaphor and the Social World*, 10(1), 45-75. <http://doi.org/10.1075/msw.18030.lit>
- Littlemore, J. (2019). *Metaphors in the mind: Sources of variation in embodied metaphor*. Cambridge University Press. <https://doi.org/10.1017/9781108241441>
- Littlemore, J., Sobrino, P. P., Houghton, D., Shi, J., & Winter, B. (2018). What makes a good metaphor? A cross-cultural study of computer-generated metaphor appreciation. *Metaphor and Symbol*, 33(2), 101-122. <https://doi.org/10.1080/10926488.2018.1434944>
- Long, P. S., & Lepper, G. (2008). Metaphor in psychoanalytic psychotherapy: A comparative study of four cases by a practitioner–researcher. *British Journal of Psychotherapy*, 24(3), 343-364. <https://doi.org/10.1111/j.1752-0118.2008.00090.x>

- Lötvall, R., Palmborg, Å., & Cardeña, E. (2022). A 20-years+ Review of the Stanford Acute Stress Reaction Questionnaire (SASRQ): Psychometric Properties and Findings. *European Journal of Trauma & Dissociation*, 6(3), 100269. <https://doi.org/10.1016/j.ejtd.2022.100269>
- Low, G., Todd, Z., Deignan, A. and Cameron, L. (eds) (2010). *Researching and Applying Metaphor in the Real World*. John Benjamins. <https://doi.org/10.1016/j.pragma.2014.04.003>
- Luno, J. A., Louwse, M., & Beck, J. G. (2013). Tell us your story: Investigating the linguistic features of trauma narrative. In *Proceedings of the annual meeting of the cognitive science society*, Vol. 35, No. 35.
- Luo, Y., He, X., Wang, S., Li, J., & Zhang, Y. (2021). Media exposure predicts acute stress and probable acute stress disorder during the early COVID-19 outbreak in China. *PeerJ*, 9: e11407. <https://doi.org/10.7717/peerj.11407>
- Manne, S. (2002). Language use and post-traumatic stress symptomatology in parents of pediatric cancer survivors. *Journal of Applied Social Psychology*, 32(3), 608–629. <https://doi.org/10.1111/j.1559-1816.2002.tb00233.x>
- Mathieson, F., Jordan, J., & Stubbe, M. (2020). Recent applications of metaphor research in cognitive behaviour therapy. *Metaphor and the Social World*, 10(2), 199-213. <https://doi.org/10.1075/msw.00003.mat>
- Mathieson, F., Jordan, J., Bennett-Levy, J., & Stubbe, M. (2018). Keeping metaphor in mind: Training therapists in metaphor-enhanced Cognitive Behaviour Therapy. *The Cognitive Behaviour Therapist*, 11, E8. <http://doi.org/10.1017/S1754470X18000077>

- Mathieson, F., Jordan, J., Carter, J. D., & Stubbe, M. (2015). The metaphoric dance: Co-construction of metaphor in cognitive behaviour therapy. *The Cognitive Behaviour Therapist*, 8, e24. <https://doi.org/10.1017/S1754470X15000628>
- Mathieson, F., Jordan, J., Carter, J. D., & Stubbe, M. (2016). Nailing down metaphors in CBT: Definition, identification and frequency. *Behavioural and Cognitive Psychotherapy*, 44(02), 236–248. <https://doi.org/10.1017/s1352465815000156>
- McCann, I. L., & Pearlman, L. A. (1990). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Traumatic Stress*, 3(1), 131–149. <https://doi.org/10.1007/BF00975140>
- McIsaac, H. K., & Eich, E. (2004). Vantage point in traumatic memory. *Psychological Science*, 15(4), 248-253. <https://doi.org/10.1111/j.0956-7976.2004.00660.x>
- McIsaac, H. K., & Eich, E. (2002). Vantage point in episodic memory. *Psychonomic Bulletin & Review*, 9(1), 146–150. <https://doi.org/10.3758/bf03196271>
- McMullen, L. and Conway, J. (2002). Conventional metaphors for depression. In S. R. Fussell (ed.) *The Verbal Communication of Emotions: Interdisciplinary Perspectives* (pp.167–181). London: Taylor and Francis. <https://doi.org/10.4324/9781410606341-15>
- McMullen, L. M. (1985). Methods for studying the use of novel figurative language in psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, 22(3), 610. <https://psycnet.apa.org/doi/10.1037/h0085547>

- McMullen, L. M. (1989). Use of figurative language in successful and unsuccessful cases of psychotherapy: Three comparisons. *Metaphor and Symbolic Activity*, 4(4), 203-225. https://doi.org/10.1207/s15327868ms0404_1
- McMullen, L. M. (1996). Studying the use of figurative language in psychotherapy: The search for researchable questions. *Metaphor and Symbolic Activity*, 11(4), 241-255. https://doi.org/10.1207/s15327868ms1104_1
- McMullen, L. M. (2008). Putting it in context: Metaphor and psychotherapy. In R. W. Gibbs (Ed.), *The Cambridge Handbook of Metaphor and Thought* (pp.397-411). Cambridge University Press. <https://doi.org/10.1017/CBO9780511816802.024>
- Meili, I., Heim, E., & Maercker, A. (2019). Culturally shared metaphors expand contemporary concepts of resilience and post-traumatic growth: contrasting an indigenous Brazilian community and a Swiss rural community. *Medical Humanities*, 45(4), 335–345. <https://doi.org/10.1136/medhum-2018-011450>
- Metcalf, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: dynamics of willpower. *Psychological review*, 106(1), 3-19. <https://doi.org/10.1037/0033-295X.106.1.3>
- Michael, T., Halligan, S. L., Clark, D. M., & Ehlers, A. (2007). Rumination in posttraumatic stress disorder. *Depression and anxiety*, 24(5), 307-317. <https://doi.org/10.1002/da.20228>
- Mogul, R. (2019, December 15). PTSD and protests: How the violence on Hong Kong's streets impacts mental health. *Hong Kong Free Press*, <https://hongkongfp.com/2019/12/15/ptsd-protests-violence-hong-kongs-streets-impacts-mental-health/>

- Mok, D. (2019, December 2). Hong Kong protests: more petrol bombs and offensive weapons found at Polytechnic University on Sunday. *South China Morning Post*, <https://www.scmp.com/news/hong-kong/politics/article/3040136/hong-kong-protests-more-petrol-bombs-and-offensive-weapons>
- Mooren, N., Krans, J., Näring, G., & van Minnen, A. (2018). Vantage perspective in analogue trauma memories: an experimental study. *Cognition and Emotion*, *33*(6), 1261-1270. <https://doi.org/10.1080/02699931.2018.1538010>
- Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: a meta-analysis. *Psychological Bulletin*, *128*(4), 638–662. <https://doi.org/10.1037/0033-2909.128.4.638>
- Moser, K. S. (2000). Metaphor analysis in psychology - method, theory, and fields of application. *Forum: Qualitative Social Research (on-line Journal)*, *1*(2), Article 21. <https://www.qualitative-research.net/index.php/fqs/article/view/1090/2387>
- Moser, K. S. (2004). The role of metaphors in acquiring and transmitting knowledge. In M. Fischer, N. Boreham & B. Nyhan (Eds.), *European perspectives on learning at work. The acquisition of work process knowledge* (pp. 148-163). Cedefop Reference Series 56.
- Moser, K. S. (2007). Metaphors as symbolic environment of the self: How self-knowledge is expressed verbally. *Current Research in Social Psychology*, *12*(12), 151–178.
- Musolff, A. (2004). *Metaphor and Political Discourse: Analogical Reasoning in Debates about Europe*. Palgrave MacMillan. <https://doi.org/10.1016/j.pragma.2005.03.008>
- Musolff, A. (2016). *Political Metaphor Analysis*. Discourse and Scenarios. Bloomsbury.

- Ni, M.Y., Yao, X.I., Leung, K.S., Yau, C., & Leung, G. (2020). Depression and post-traumatic stress during major social unrest in Hong Kong: a 10-year prospective cohort study. *The Lancet*, 395, 273-284. [https://doi.org/10.1016/s0140-6736\(19\)33160-5](https://doi.org/10.1016/s0140-6736(19)33160-5)
- Nigro, G., & Neisser, U. (1983). Point of view in personal memories. *Cognitive Psychology*, 15(4), 467-482. [https://doi.org/10.1016/0010-0285\(83\)90016-6](https://doi.org/10.1016/0010-0285(83)90016-6)
- Nijenhuis, E., van der Hart, O., & Steele, K. (2010). Trauma-related structural dissociation of the personality. *Activitas Nervosa Superior*, 52(1), 1-23.
- O’Kearney, R., & Perrott, K. (2006). Trauma narratives in posttraumatic stress disorder: A review. *Journal of Traumatic Stress*, 19(1), 81-93. <https://doi.org/10.1002/jts.20099>
- Organisation for Economic Co-operation and Development. (2008). *OECD glossary of statistical terms*. OECD.
- Orsillo, S. M. (2001). Measures for Acute Stress Disorder and Posttraumatic Stress Disorder. In M. M. Antony, S. M. Orsillo, & L. Roemer (Eds.), *Practitioner’s guide to empirically based measures of anxiety* (pp. 255–307). Kluwer Academic Publishers.
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: a meta-analysis. *Psychological Bulletin*, 129(1), 52–73. <https://doi.org/10.1037/0033-2909.129.1.52>
- Palmborg, Å., Lötvall, R., & Cardeña, E. (2020). Acute stress among healthcare workers during the COVID-19 pandemic. *European Journal of Trauma & Dissociation*, 6(3), Article 100283. <http://doi.org/10.1016/j.ejtd.2022.100283>

- Pedersen, A. F. & Zachariae, R. (2010). Cancer, acute stress disorder, and repressive coping. *Scandinavian Journal of Psychology*, 51(1), 84–91. <https://doi.org/10.1111/j.1467-9450.2009.00727.x>
- Pennebaker, J. W., Boyd, R. L., Jordan, K., & Blackburn, K. (2015). *The development and psychometric properties of LIWC2015*. University of Texas at Austin. <https://doi.org/10.15781/T29G6Z>
- Perry, V. (2021). *Acute Stress Disorder (ASD) vs. Post Traumatic Stress Disorder (PTSD)*. Remedy Psychiatry. <https://remedypsychiatry.com/acute-stress-disorder-asd-vs-post-traumatic-stress-disorder-ptsd/>
- Pfefferbaum, B., & North, C. S. (2020). Mental Health and the Covid-19 Pandemic. *The New England Journal of Medicine*, 383(6), 510–512. <https://doi.org/10.1056/NEJMp2008017>
- Plug, L., Sharrack, B. & Reuber, M. (2011). Metaphors in the description of seizure experiences: Common expressions and differential diagnosis. *Language and Cognition*, 3(2), 209-234. <https://doi.org/10.1515/LANGCOG.2011.008>
- Pollio, H. R., & Barlow, J. M. (1975). A behavioural analysis of figurative language in psychotherapy: One session in a single case-study. *Language and Speech*, 18(3), 236-254. <https://doi.org/10.1177/002383097501800306>
- Pollio, H. R., Barlow, J. M., Fine, H. J., & Pollio, M. R. (1977). *Psychology and the poetics of growth: Figurative language in psychology, psychotherapy, and education*. Lawrence Erlbaum Associates, Inc.

- Pragglejaz Group. (2007). MIP: A method for identifying metaphorically used words in discourse. *Metaphor and Symbol*, 22(1), 1-39. <https://doi.org/10.1080/10926480709336752>
- Pritzker, S. (2007). Thinking hearts, feeling brains: Metaphor, culture, and the self in Chinese narratives of depression. *Metaphor and Symbol*, 22(3), 251–274. <https://doi.org/10.1080/10926480701357679>
- Qiu, H. & Tay, D. (2022). The Interaction Between Metaphor Use and Psychological States: a Mix-method Analysis of Trauma Talk in the Chinese Context. In D. Tay and X. Pan (Eds.), *Data Analytics in Cognitive Linguistics. Method and Case Studies*. (pp. 197-228). Mouton de Gruyter. <http://doi.org/10.1515/9783110687279-008>
- Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research and Therapy*, 35(8), 741–756. [https://doi.org/10.1016/s0005-7967\(97\)00022-3](https://doi.org/10.1016/s0005-7967(97)00022-3)
- Rasmussen, B., & Angus, L. E. (1996). Metaphor in psychodynamic psychotherapy with borderline and non-borderline clients: A qualitative analysis. *Psychotherapy*, 33(4), 521-530. <https://doi.org/10.1037/0033-3204.33.4.521>
- Rechsteiner, K., Maercker, A., Heim, E., & Meili, I. (2020). Metaphors For Trauma: A Cross-Cultural Qualitative Comparison in Brazil, India, Poland, and Switzerland. *Journal of Traumatic Stress*, 33(5), 643-653. <https://doi.org/10.1002/jts.22533>
- Rechsteiner, K., Tol, V., & Maercker, A. (2019). “It should not have happened”: metaphorical expressions, idioms, and narrative descriptions related to trauma in an indigenous

- community in India. *International Journal of Qualitative Studies on Health And Well-Being*, 14(1), 1667134. <https://doi.org/10.1080/17482631.2019.1667134>
- Reojumb, L. M. (2017). PolyU Campus Cheong Wam Road Stairs [Photograph]. Creative Commons Attribution-Share Alike 4.0 International. https://upload.wikimedia.org/wikipedia/commons/d/de/HK_%E7%B4%85%E7%A3%A1_Hung_Hum_%E9%A6%99%E6%B8%AF%E7%90%86%E5%B7%A5%E5%A4%A7%E5%AD%B8_PolyU_campus_Cheong_Wan_Road_stairs_visitors_June_2017_IX1_01.jpg
- Rhodes, J. E., & Jakes, S. (2004). The contribution of metaphor and metonymy to delusions. *Psychology and Psychotherapy*, 77(Pt1), 1–17. <https://doi.org/10.1348/147608304322874227>
- Robinson, J. A., & Swanson, K. L. (1993). Field and observer modes of remembering. *Memory*, 1(3), 169-184. <https://doi.org/10.1080/09658219308258230>
- Ng., M. K. (2020 January 15). Mental Health Crisis in Hong Kong. *Psychiatric Times*, 37(1), 1, 10-11. <https://www.psychiatrictimes.com/view/mental-health-crisis-hong-kong>
- Rowat, R., De Stefano, J., & Drapeau, M. (2008). The role of patient-generated metaphors on in-session therapeutic processes. *Archives of Psychiatry and Psychotherapy*, 10(1), 21–27.
- Sarangi, S. & Candlin, C. N. (2001). Motivational relevancies: some methodological reflections on social theoretical and sociolinguistic practice. In N. Coupland, S. Sarangi and C. N. Candlin (Eds.), *Sociolinguistics and Social Theory* (pp.350-388). Routledge.
- Schore, A. N. (2003). *Affect dysregulation and disorders of the self*. WW Norton & Company.

- Semino, E. (2008). *Metaphor in Discourse*. Cambridge University Press.
- Semino, E. (2010). Descriptions of pain, metaphor, and embodied simulation. *Metaphor and Symbol*, 25(4), 205-226. <https://doi.org/10.1080/10926488.2010.510926>
- Semino, E. (2011). Metaphor, creativity, and the experience of pain across genres. In J. Swann, R. Pope & R. Carter (Eds.), *Creativity in Language, Literature: The State of Art* (pp. 83-102). Palgrave Macmillan. http://doi.org/10.1007/978-1-349-92482-0_6
- Semino, E., Demjén, Z., Hardie, A., Rayson, P. & Payne, S. (2018). *Metaphor, Cancer and the End of Life: A Corpus-based Study*. Routledge. <http://doi.org/10.4324/9781315629834>
- Shek, D. (2020). Protests in Hong Kong (2019-2020): a Perspective Based on Quality of Life and Well-Being. *Applied Research in Quality of Life*, 15(3), 619–635. <https://doi.org/10.1007/s11482-020-09825-2>
- Siegelman, E. Y. (1990). *Metaphor and meaning in psychotherapy*. Guilford Press.
- Sims, P. A. (2003). Working with metaphor. *American Journal of Psychotherapy*, 57(4), 528-536. <https://doi.org/10.1176/appi.psychotherapy.2003.57.4.528>
- Sims, P. A., & Whynot, C. A. (1997). Hearing metaphor: An approach to working with family-generated metaphor. *Family Process*, 36(4), 341-355. <http://doi.org/10.1111/j.1545-5300.1997.00341.x>
- Special Announcement by Education Bureau (2). (2019, November 13). *The Government of the Hong Kong Special Administrative Region Press Releases*. <https://www.info.gov.hk/gia/general/201911/13/P2019111300679.htm>

- Spong, S. (2010). Discourse analysis: Rich pickings for counsellors and therapists. *Counselling and Psychotherapy Research*, 10(1), 67-74. <https://doi.org/10.1080/14733140903177052>
- Spurr, J. M., & Stopa, L. (2002). Self-focused attention in social phobia and social anxiety. *Clinical Psychology Review*, 22(7), 947–975. [https://doi.org/10.1016/s0272-7358\(02\)00107-1](https://doi.org/10.1016/s0272-7358(02)00107-1)
- Stanley, B. L., Zanin, A. C., Avalos, B. L., Tracy, S. J., & Town, S. (2021). Collective Emotion During Collective Trauma: A Metaphor Analysis of the COVID-19 Pandemic. *Qualitative Health Research*, 31(10), 1890–1903. <https://doi.org/10.1177/10497323211011589>
- Steen, G. J. (2010). When is metaphor deliberate? In N.-L. Johannesson, C. Alm-Arvius, & D. C. Minugh (Eds.), *Selected papers from the Stockholm 2008 Metaphor Festival* (Stockholm Studies in English), (pp. 43-63). University of Stockholm.
- Steen, G. (2011). The contemporary theory of metaphor—now new and improved! *Review of Cognitive Linguistics*, 9(1), 26–64. <https://doi.org/10.1075/rcl.9.1.03ste>
- Steen, G., Krennmayr, T., Dorst, A. G. and Herrmann, J. B. (2010). *A Method for Linguistic Metaphor Identification: From MIP to MIPVU*. John Benjamins. <https://doi.org/10.1075/celcr.14>
- Stott, R., Mansell, W., Salkovskis, P., Lavender, A., & Cartwright-Hatton, S. (2010). *Oxford Guide to Metaphors in CBT. Building Cognitive Bridges*. Oxford University Press. <https://doi.org/10.1093/med:psych/9780199207497.001.0001>
- Stroińska, M. (2014). Metaphors we li(v)e by: Disease as a conceptual metaphor for sexual assault. In M. Stroińska, V. Cecchetto, & K. Szymanski (eds.). *The Unspeakable: Narratives of Trauma* (pp.183-198). Peter Lang.

- Substance Abuse and Mental Health Services Administration. (2014). *Trauma-Informed Care in Behavioral Health Services*. Substance Abuse and Mental Health Services Administration (US). <https://www.ncbi.nlm.nih.gov/books/NBK207201/>
- Substance Abuse and Mental Health Services Administration. (2016). *Impact of the DSM-IV to DSM-5 Changes on the National Survey on Drug Use and Health*. Substance Abuse and Mental Health Services Administration (US). <https://www.ncbi.nlm.nih.gov/books/NBK519704/table/ch3.t30/>
- Szabo, Y. Z., Warnecke, A. J., Newton, T. L., & Valentine, J. C. (2017). Rumination and posttraumatic stress symptoms in trauma-exposed adults: a systematic review and meta-analysis. *Anxiety, Stress, and Coping*, 30(4), 396–414. <https://doi.org/10.1080/10615806.2017.1313835>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). Allyn and Bacon
- Tao, J., Wen S., Wang, X., Gan, X., Li, L., Zheng, L., Shan, H., Zhang, J., & Li, L. (2008). 汶川地震安置点灾民急性应激障碍及影响因素分析 [*Experience and influencing factors of Acute Stress Disorder induced by the Wenchuan earthquake*]. *Chinese Journal of Nervous and Mental Diseases*, 34(10), 618-620. <http://doi.org/10.3969/j.issn.1002-0152.2008.10.013>
- Tay, D. & Pan, X. (Eds.). (2022). *Data Analytics in Cognitive Linguistics: Method and Case Studies*. Mouton de Gruyter. <http://doi.org/10.1515/9783110687279-001>
- Tay, D. (2013). *Metaphor in Psychotherapy: A Descriptive and Prescriptive Analysis*. John Benjamins. <http://doi.org/10.1075/milcc.1>

- Tay, D. (2014). Bodily experience as both source and target of meaning making: Implications from metaphors in psychotherapy for Posttraumatic Stress Disorder. *Cognitive Linguistic Studies*, 1(1), 84–100. <http://doi.org/10.1075/cogls.1.1.04tay>
- Tay, D. (2015). Metaphor in case study articles on Chinese university counseling service websites. *Chinese Language and Discourse*, 6(1), 28–56. <http://doi.org/10.1075/cld.6.1.02tay>
- Tay, D. (2016). Metaphor and psychological transference. *Metaphor & Symbol*, 31(1), 11–30. <http://doi.org/10.1080/10926488.2016.11116903>
- Tay, D. (2017). Quantitative metaphor usage patterns in Chinese psychotherapy talk. *Communication & Medicine*, 14(1), 51-68. <http://doi.org/10.1558/cam.27688>
- Tay, D. (2018). Metaphors of movement in psychotherapy talk. *Journal of Pragmatics*, 125, 1–12. <http://doi.org/10.1016/j.pragma.2017.12.009>
- Tay, D. (2019a). *Time series analysis of discourse: method and case studies*. Routledge. <https://doi.org/10.4324/9780429505881>
- Tay, D. (2019b). Death in a multicultural society. Metaphor, language and religion in Singapore obituaries. *Cognitive Linguistic Studies*, 6(1), 84–102. <http://doi.org/10.1075/cogls.00031.tay>
- Tay, D. (2020a). Co-constructing crisis with metaphor: A quantitative approach to metaphor use in psychotherapy talk. In M. Huang and L. Holmgren (Eds.), *The Language of Crisis: Metaphors, Frames, and Discourses*. (pp.231-255). John Benjamins. <http://doi.org/10.1075/dapsac.87.08tay>

- Tay, D. (2020b). Affective Engagement in Metaphorical versus Literal Communication Styles in Counseling. *Discourse Processes*, 57(4), 360–375. <http://doi.org/10.1080/0163853X.2019.1689086>
- Tay, D. (2020c). A computerized text and cluster analysis approach to psychotherapy talk. *Language and Psychoanalysis*, 9(1), 1–22. <http://doi.org/10.7565/LANDP.V9I1.1701>
- Tay, D. (2021a). Is the social unrest like COVID-19 or is COVID-19 like the social unrest? A case study of source-target reversibility. *Metaphor and Symbol*, 36(2), 99-115. <http://doi.org/10.1080/10926488.2021.1887708>
- Tay, D. (2021b). Image schemas. In X, Wen & J. Taylor (Eds.), *Routledge Handbook of Cognitive Linguistics*. (pp. 161-172). Routledge. <https://doi.org/10.4324/9781351034708-12>
- Tay, D. (2022). Metaphor types as strategies for teaching regression to novice learners. *Journal of Statistics and Data Science Education*, 30(1), 3-14. <http://doi.org/10.1080/26939169.2021.2024777>
- Tay, D., & Qiu, H. (2022). Modeling Linguistic (A)Synchrony: A Case Study of Therapist–Client Interaction. *Frontiers in Psychology*, 13, Article 903227. <https://doi.org/10.3389/fpsyg.2022.903227>
- Tay, D., Huang, J., & Zeng, H. (2019). Affective and discursive outcomes of symbolic interpretations in picture-based counseling: A skin conductance and discourse analytic study. *Metaphor and Symbol*, 34(2), 96–110. <http://doi.org/10.1080/10926488.2019.1611724>

- Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma & transformation: Growing in the aftermath of suffering*. Sage Publications. <https://doi.org/10.4135/9781483326931>
- Terr, L. C. (1991). Childhood traumas: An outline and overview. *The American Journal of Psychiatry*, *148*(1), 10–20. <https://doi.org/10.1176/ajp.148.1.10>
- Todorov, G. I., Mayilvahanan, K., Cain, C. K., & Cunha, C. (2018). Screening word usage in people affected by PTSD: an unbiased, cost effective, and novel screening method? *PsyArXiv*. <https://doi.org/10.31234/osf.io/y68fx>
- Turner, S., Littlemore, J., Fuller, D., Kuberska, K., & McGuinness, S. (2020). The production of time-related metaphors by people who have experienced pregnancy loss. In J. Barnden, & A. Gargett (Eds.), *Producing Figurative Expression: Theoretical, experimental and practical perspectives* (pp. 389–418). John Benjamins. <https://doi.org/10.1075/ftl.10.14tur>
- van der Kolk, B. A., & Ducey, C. P. (1989). The psychological processing of traumatic experience: Rorschach patterns in PTSD. *Journal of Traumatic Stress*, *2*, 259–274. <https://doi.org/10.1002/jts.2490020303>
- VandenBos, G. R. (Ed.). (2015). *APA dictionary of psychology* (2nd ed.). American Psychological Association. <https://doi.org/10.1037/14646-000>
- Wagener, A. E. (2017). Metaphor in Professional Counseling. *The Professional Counselor*, *7*(2), 144-154. <http://doi.org/10.15241/AEW>
- Wallace-Hadrill, S. M. A., & Kamboj, S. K. (2016). The impact of perspective change as a cognitive reappraisal strategy on affect: A systematic review. *Frontiers in Psychology*, *7*, Article 1715. <https://doi.org/10.3389/fpsyg.2016.01715>

- Wardecker, B. M., Edelstein, R. S., Quas, J. A., Cordon, I. M., & Goodman, G. S. (2017). Emotion Language in Trauma Narratives is Associated with Better Psychological Adjustment among Survivors of Childhood Sexual Abuse. *Journal of Language and Social Psychology*, 36(6), 628–653. <https://doi.org/10.1177/0261927X17706940>
- Wasserstein, R. L., Schirm, A. L., & Lazar, N. A. (2019). Moving to a world beyond “ $p < 0.05$ ”. *The American Statistician*, 73(sup1), 1-19. <https://doi.org/10.1080/00031305.2019.1583913>
- Williams, Alishia D. & Michelle L. Moulds. (2007). Cognitive avoidance of intrusive memories: Recall vantage perspective and associations with depression. *Behavior Research and Therapy*, 45(6), 1141-1153. <https://doi.org/10.1016/j.brat.2006.09.005>
- Wilson, J. P., & Lindy, J. D. (2013). *Trauma, culture, and metaphor: Pathways of transformation and integration*. Routledge. <https://doi.org/10.4324/9780203893579>
- Witztum, E, Dasberg, H & Bleich, O. (1986). Use of a metaphor in the treatment of combat-induced post-traumatic stress disorder. *American Journal of Psychotherapy*, 40(3), 457-465. <https://doi.org/10.1176/appi.psychotherapy.1986.40.3.457>
- Witztum, E., van der Hart, O., & Friedman, B. (1988). The use of metaphors in psychotherapy. *Journal of Contemporary Psychotherapy*, 18(4), 270-290. <https://doi.org/10.1007/BF00946010>
- Woody, S. R., & Rodriguez, B. F. (2000). Self-focused attention and social anxiety in social phobics and normal controls. *Cognitive Therapy and Research*, 24(4), 473-488. <https://doi.org/10.1023/A:1005583820758>

- Yau, C. (2020, January 8). HK\$65 million bill for repairs on public facilities vandalised by anti-government protesters. *South China Morning Post*.
<https://www.scmp.com/print/news/hong-kong/transport/article/3045180/hk65-million-bill-repairs-public-facilities-vandalised>
- Yiu, W. (2021, November 25). Hong Kong Polytechnic University leaders say unrest of 2019 is firmly in the past at anniversary celebration. *South China Morning Post*.
<https://www.scmp.com/news/hong-kong/education/article/3157394/hong-kong-polytechnic-university-leaders-say-unrest-2019>
- Yu, N. (2005). *The Chinese heart as the central faculty of cognition*. [Paper presentation]. The 9th International Cognitive Linguistics Conference.
- Yuen, B. (2019). [Photograph of a building in Central on fire]. United Social Press.
<https://hongkongfp.com/wp-content/uploads/2019/11/Benjamin-Yuen-central.jpg>
- Yu, Y., & Tay, D. (2020). A mixed-method analysis of image-schematic metaphors in describing anger, anxiety and depression. *Metaphor and the Social World*, 10(2), 253-272.
<http://doi.org/10.1075/msw.00006.yu>
- Zanotto, M. S., Cameron, L., & Cavalcanti, M. C. (Eds.). (2008). *Confronting metaphor in use. An applied linguistic approach*. John Benjamins. <https://doi.org/10.1075/pbns.173>
- Zapf, A., Castell, S., Morawietz, L., & Karch, A. (2016). Measuring inter-rater reliability for nominal data - which coefficients and confidence intervals are appropriate? *BMC Medical Research Methodology*, 16, Article 93. <https://doi.org/10.1186/s12874-016-0200-9>

- Zhang, W., Zheng, S., Bao, L., & Wang, C. (2016). 创伤性骨折患者急性应激障碍情况及其与焦虑、抑郁的相关性分析 [Analysis of acute stress disorder and its correlation with anxiety and depression on patients with traumatic fracture]. *Journal of International Psychiatry*, 3, 489-492, 495.
- Zhao, G. (2015). The Contemporary Chinese Dictionary. *International Journal of Lexicography*, 28(1), 107-123. <https://doi.org/10.1093/ijl/ecu030>
- Zhong, Y. (1988). 中国心理分析：认识领悟心理疗法 [Psychological Analysis in China: Cognitive Comprehend Therapy]. Liaoning People's Publishing House.
- Zoellner, L. A., & Bittenger, J. N. (2004). On the uniqueness of trauma memories in PTSD. In G. M. Rosen (Ed.), *Posttraumatic Stress Disorder: Issues and Controversies* (pp. 147–162). John Wiley & Sons Ltd. <https://doi.org/10.1002/9780470713570.ch8>
- 鄧炳強：6月反修例至今 7019 人被捕，約 4 成為學生 [Tang Ping-keung: 7,019 have been arrested since the anti-amendment incident, 40% were students]. (2020, January 16). *Line Today*, <https://today.line.me/hk/v2/article/WQZYoR>

Appendix: Correlations between trauma victims' metaphor use and the experience of trauma (the full correlation matrix)

		Overall degrees of trauma	Dissociation	Re-experiencing	Avoidance	Anxiety and hyperarousal	Impairment in functioning
Density of metaphors	Pearson Correlation	.105	.082	.189	.106	.006	.099
	Sig. (2-tailed)	.488	.588	.209	.485	.969	.513
Negative metaphors	Pearson Correlation	.318*	.250	.292*	.253	.260	.462**
	Sig. (2-tailed)	.031	.094	.049	.090	.081	.001
Neutral metaphors	Pearson Correlation	-.084	-.080	.047	-.023	-.182	-.175
	Sig. (2-tailed)	.580	.599	.758	.877	.226	.245
Positive metaphors	Pearson Correlation	-.091	-.022	-.015	-.103	-.106	-.234
	Sig. (2-tailed)	.549	.887	.921	.496	.481	.117
Novel metaphors	Pearson Correlation	.140	.157	.199	.106	.038	.132
	Sig. (2-tailed)	.353	.298	.186	.482	.804	.381
Conventional metaphors	Pearson Correlation	.035	-.014	.109	.065	-.024	.033
	Sig. (2-tailed)	.819	.928	.472	.666	.875	.829

(To be continued on the next page)

(Continued from the previous page)

		Overall degrees of trauma	Dissociation	Re-experiencing	Avoidance	Anxiety and hyperarousal	Impairment in functioning
Sensory information	Pearson Correlation	.004	-.025	.106	.035	-.100	.048
	Sig. (2-tailed)	.978	.870	.484	.819	.510	.752
War and threat	Pearson Correlation	.079	.204	.160	.004	-.085	.063
	Sig. (2-tailed)	.604	.174	.287	.978	.575	.677
Physical activity	Pearson Correlation	.040	-.019	.137	.077	-.024	.010
	Sig. (2-tailed)	.794	.899	.363	.613	.875	.950
Space and spatial relations	Pearson Correlation	.129	.106	.080	.050	.196	.186
	Sig. (2-tailed)	.393	.481	.598	.740	.192	.215
Emotional feelings and processes	Pearson Correlation	.259	.183	.300*	.197	.249	.247
	Sig. (2-tailed)	.083	.224	.043	.190	.095	.098
Self-references	Pearson Correlation	.311*	.271	.249	.247	.325*	.264
	Sig. (2-tailed)	.036	.069	.095	.098	.028	.076

(to be continued on the next page)

(Continued from the previous page)

		Overall degrees of trauma	Dissociation	Re-experiencing	Avoidance	Anxiety and hyperarousal	Impairment in functioning
Thinking and understanding	Pearson Correlation	-.031	-.088	.089	.029	-.095	-.079
	Sig. (2-tailed)	.837	.560	.557	.848	.530	.604
SELF	Pearson Correlation	.114	.061	.117	.057	.145	.205
	Sig. (2-tailed)	.450	.686	.438	.707	.336	.173
OTHERS	Pearson Correlation	-.271	-.185	-.198	-.259	-.319*	-.197
	Sig. (2-tailed)	.068	.218	.187	.082	.030	.190
PERSONAL SITUATION	Pearson Correlation	-.143	-.234	-.146	-.012	-.120	-.126
	Sig. (2-tailed)	.342	.117	.333	.939	.428	.404
SOCIAL SITUATION	Pearson Correlation	.061	.126	.084	.101	-.108	.019
	Sig. (2-tailed)	.688	.406	.577	.503	.477	.898
SELF AND SELF	Pearson Correlation	.339*	.267	.385**	.280	.319*	.212
	Sig. (2-tailed)	.021	.073	.008	.059	.031	.158

(To be continued on the next page)

(Continued from the previous page)

		Overall degrees of trauma	Dissociation	Re-experiencing	Avoidance	Anxiety and hyperarousal	Impairment in functioning
SELF AND OTHERS	Pearson Correlation	.147	.082	.056	.222	.118	.139
	Sig. (2-tailed)	.330	.589	.709	.137	.437	.356
SELF AND PERSONAL SITUATION	Pearson Correlation	-.058	-.191	.021	.027	.009	-.160
	Sig. (2-tailed)	.700	.203	.890	.858	.955	.288
SELF AND SOCIAL SITUATION	Pearson Correlation	.213	.278	.308*	.103	.081	.198
	Sig. (2-tailed)	.154	.062	.037	.498	.591	.187
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							