

**Metaphors and Gestures in Music Teaching:  
An Examination of Junior High Schools in Taiwan**

**Ya-Chin Chuang**

**PhD**

**University of York**

**Educational Studies**

**June 2010**

# Abstract

In cognitive metaphor theory, metaphor is a conceptual and experiential process that structures our world. This study, taking an applied linguistic' view on CMT, examines how metaphor is manifested in speech and via gestures by music teachers in classrooms where Mandarin Chinese is the main language employed. Thirteen music sessions by, and interviews with, six teachers in six junior high schools in Taiwan constitute the data. The three-stage analysis focuses on the nature of verbal and gestural metaphors, the relations between verbal and gestural metaphors, their functions, and the educational implications. The study represents an original and exploratory empirical contribution to the field, and the results further support CMT by providing empirical data on how native speakers of Chinese express metaphor via the two modalities. It also contributes to metaphor identification procedures for identifying metaphorically-used words in Chinese, and coding metaphoric gestures.

Chapter 1 concerns the motivation for the study, its aims and significance, and the initial research questions. Chapter 2 provides a background context for the study by reviewing the existing research in the field of verbal and gestural metaphor use in (music) classrooms, and by giving an introduction to the current education system in Taiwan. After this, chapters 3 and 4 describe a preliminary and a pilot study designed to explore the ground and examine the feasibility of the intended research design. These are followed by the research design and methodology for the main study in chapter 5. Chapter 6 covers the methods of transcribing, identifying verbal metaphors, and coding metaphoric gestures, used in the main study. The results and discussion of the data analysis of the main study are dealt with in chapter 7. Finally, conclusions, implications, limitations, and suggestions are presented in chapter 8.

“A mind enclosed in language is in prison.”

--Simone Weil (1909-1943)

# Contents

Title	1
Abstract	2
Contents	4
List of Tables and Figures	17
Abbreviations and Conventions	19
Acknowledgements	20
Author's Declaration	22

## **Chapter One INTRODUCTION**

<b>1.1 Rationale</b>	<b>23</b>
<b>1.2 Aims and Significance of the Study</b>	<b>26</b>
<b>1.3 Research Questions</b>	<b>27</b>
<b>1.4 Methodology</b>	<b>27</b>
<b>1.5 Overview of the Study</b>	<b>28</b>
<b>1.6 Synopsis of the Thesis</b>	<b>28</b>

## **Chapter Two LITERATURE AND CONTEXTUAL BACKGROUND**

<b>2.1 Metaphor</b>	<b>31</b>
2.1.1 The Conceptual Metaphor View of Metaphor	35
<i>Metaphor Reflects and Structures Thinking</i>	37

<i>Metaphor Is Systematic Cross-Domain Mapping</i>	38
<i>Metaphorical Language Is One Possible Surface Manifestation of Underlying Metaphor</i>	42
2.1.2 An Applied Linguistic View of Conceptual Metaphor Theory	43
2.1.3 Systematic Metaphors	47
<b>2.2 Gesture</b>	<b>48</b>
2.2.1 Studies on Gesture and Speech	48
2.2.2 Gesture and Its Components	50
<b>2.3 Metaphor and Gesture in Use</b>	<b>53</b>
2.3.1 Metaphor, Gesture, and Thought	53
2.3.2 Verbal Metaphors in Music Teaching	54
2.3.3 Gestures in Teaching and Learning	59
2.3.4 Summary	62
<b>2.4 Music Education at Junior High School Level in Taiwan</b>	<b>63</b>
2.4.1 The Education System in Taiwan	63
<i>The Nine Year Compulsory Education System</i>	63
<i>General Music Classes and Music-Talented Classes</i>	65
<i>Urban and Rural Discrepancies</i>	67
2.4.2 Music Education at Junior High School Level	67
<i>Teaching Aims</i>	67
<i>Teachers and Teacher-Centred Classrooms</i>	68
<b>2.5 Conclusion</b>	<b>69</b>
Footnotes to Chapter Two	72

## **Chapter Three A PRELIMINARY STUDY**

<b>3.1</b>	<b>About the Preliminary Study</b>	<b>73</b>
<b>3.2</b>	<b>Sample and Text Selection</b>	<b>74</b>
<b>3.3</b>	<b>Metaphor Identification</b>	<b>78</b>
	3.3.1 Identification Procedure	78
	3.3.2 Identification Problems and Policy	79
	<i>Words</i>	81
	<i>Lexical Units</i>	81
	<i>Basic Sense of the Lexical Unit</i>	81
	<i>Technical Terms</i>	84
	<i>Translated Terms</i>	84
	<i>Expressions in Other Languages</i>	84
<b>3.4</b>	<b>Method</b>	<b>85</b>
	3.4.1 Phase One	85
	3.4.2 Phase Two	86
<b>3.5</b>	<b>Results</b>	<b>87</b>
	3.5.1 Phase One	87
	<i>Metaphor Density</i>	88
	<i>Systematic Metaphors</i>	89
	<i>Functions of Metaphor</i>	94
	3.5.2 Phase Two	96
	<i>Music Metaphors</i>	96
	<i>Music Metaphor Density</i>	96
	<i>Distribution of Music Metaphors</i>	97
<b>3.6</b>	<b>Implications for the Main Study</b>	<b>101</b>

## Chapter Four A PILOT STUDY: CLASSROOM OBSERVATION

<b>4.1</b>	<b>About the Pilot Study</b>	<b>103</b>
<b>4.2</b>	<b>Before the Observation</b>	<b>104</b>
4.2.1	Sample Selection	104
4.2.2	Observation Schedule and Interviews	105
<b>4.3</b>	<b>During the Observation</b>	<b>107</b>
<b>4.4</b>	<b>Gesture Coding</b>	<b>110</b>
4.4.1	Data Selection	111
4.4.2	Transcribing the Data	111
4.4.3	Coding Problems and Policy	112
	<i>Identifying Gestures</i>	114
	<i>Metaphorics</i>	114
	<i>Deictics Versus Metaphorics</i>	115
	<i>Iconics Versus Metaphorics</i>	115
4.4.4	Method	116
4.4.5	Results	116
	<i>Deictics</i>	117
	<i>Iconics</i>	120
	<i>Metaphorics</i>	123
<b>4.5</b>	<b>Discussion and Conclusion</b>	<b>126</b>
4.5.1	Classroom Observation	126
	<i>Lesson Structure and Activities Involved</i>	126
	<i>Gesture Use and Classroom Atmosphere</i>	127
	<i>Interviews</i>	130

4.5.2 Metaphoric Gestures	130
<i>Functions of Metaphoric Gestures</i>	130
<i>Relations of Metaphoric Gestures and Speech</i>	132
<b>4.6 Implications for the Main Study</b>	<b>134</b>
4.6.1 Classroom Observation	134
<i>Researcher's Role as a Non-Participant</i>	134
<i>Observation Schedule</i>	135
<i>Interview Questions</i>	136
4.6.2 Gesture Coding	137
Footnote to Chapter Four	138

## **Chapter Five    MAIN STUDY: RESEARCH DESIGN AND METHODOLOGY**

<b>5.1 About the Main Study</b>	<b>139</b>
<b>5.2 Research Questions and the Purpose of the Research</b>	<b>140</b>
<b>5.3 Qualitative Research Paradigms and Research Approaches</b>	<b>143</b>
5.3.1 Ethnography	144
5.3.2 Discourse Analysis	147
5.3.3 Grounded Theory	149
<b>5.4 The Use of Triangulation</b>	<b>150</b>
<b>5.5 Trustworthiness of the Study</b>	<b>151</b>
<b>5.6 The Ethical Issues in the Study</b>	<b>153</b>
5.6.1 The Amount of Information Revealed About the Research	154
5.6.2 Timing of the Participants' Signatures	156
5.6.3 Confidentiality and Anonymity	157

<b>5.7</b>	<b>Research Procedures</b>	<b>158</b>
5.7.1	The Three Phases of the Study	158
5.7.2	The Importance of Pilot Studies	159
<b>5.8</b>	<b>Research Participants</b>	<b>161</b>
5.8.1	The Schools	161
5.8.2	The Teachers	164
5.8.3	The Sessions	166
5.8.4	Relationship Between the Researcher and the Teachers	169
<b>5.9</b>	<b>The Use of Semi-Structured Interviews</b>	<b>169</b>
5.9.1	Reasons for Using Semi-Structured Interviews	170
5.9.2	The Design and Use of Interviews in the Main Study	171
<b>5.10</b>	<b>The Use of Structured Classroom Observation</b>	<b>175</b>
5.10.1	Reasons for Using Structured Classroom Observation	175
5.10.2	The Design and Use of Classroom Observations in the Main Study	177
<b>5.11</b>	<b>Limitations of the Methods</b>	<b>178</b>
<b>5.12</b>	<b>Summary</b>	<b>180</b>
	Footnote to Chapter Five	182

## **Chapter Six    MAIN STUDY: METHODS OF DATA ANALYSIS**

<b>6.1</b>	<b>General Methods of Data Analysis</b>	<b>183</b>
<b>6.2</b>	<b>Data Transcription</b>	<b>185</b>
6.2.1	Transcription of Speech	185
6.2.2	Transcription of Gestures	186

<b>6.3</b>	<b>Identifying and Coding Metaphors: Reviews of the Literature</b>	<b>188</b>
6.3.1	Metaphor Identification Methods	188
	<i>Identifying Metaphorically-Used Words</i>	189
	<i>Identifying Linguistic Metaphors Through Vehicle Terms</i>	191
	<i>Metaphor Focus and Metaphor Idea Identification</i>	193
	<i>From Linguistic Metaphors to Systematic Metaphors</i>	195
6.3.2	Gesture Classification Systems and Metaphoric Gestures	195
	<i>McNeill's Classification System</i>	196
	<i>Müller's Classification System</i>	199
	<i>Metaphoric Gestures</i>	201
6.3.3	Metaphoricity and Classroom Discourse	202
6.3.4	Discussion	203
<b>6.4</b>	<b>Identifying Metaphorically-Used Words in Mandarin Chinese</b>	<b>205</b>
6.4.1	Deciding Word Segments	206
	<i>Reduplication</i>	209
	<i>Numbers</i>	210
	<i>'A-not-A' Question Words</i>	211
	<i>Proper Names</i>	211
	<i>Word Segmentation Ambiguity</i>	211
	<i>Terms and Expressions in Other Languages</i>	212
	<i>Idioms and Proverbs</i>	212
	<i>Compound Verbs</i>	213
	<i>Compound Adjectives</i>	214
6.4.2	Identifying Metaphorically-Used Words	214
	<i>Similes</i>	217

<i>Extended Realisations of Metaphor and Implicit Metaphors</i>	220
<i>Multiword Expressions</i>	221
<i>Conventionalised Metaphors</i>	221
<i>Analogy, Metonymy, and Other Figurative Forms</i>	222
6.4.3 Grouping to Find Systematic Metaphors	223
<b>6.5 Identifying Metaphoric Gestures in Classroom Discourse</b>	<b>224</b>
6.5.1 Gesture Units	224
6.5.2 Identifying the Most Salient Feature of a Gesture	225
6.5.3 Metaphoric Gestures	226
6.5.4 Cross-Domain Comparisons of Metaphoric Gestures	229
<b>6.6 Reliability of Transcription and Metaphor Identification</b>	<b>233</b>
<b>6.7 Using ELAN to Annotate Verbal and Gestural Metaphor Use</b>	<b>234</b>
6.7.1 Introduction and Features of ELAN	235
6.7.2 Reasons for Applying ELAN	236
6.7.3 Verbal and Gestural Metaphor Annotation	237
6.7.4 Advantages and Limitations	239
6.7.5 Conclusions	242
<b>6.8 Summary</b>	<b>243</b>
Footnotes to Chapter Six	245

## **Chapter Seven    MAIN STUDY: RESULTS AND DISCUSSION**

<b>7.1 Background to the Music Sessions</b>	<b>247</b>
<b>7.2 Use of Metaphors in Speech</b>	<b>253</b>
7.2.1 Overall Results	253

7.2.2	Density of Verbal Metaphors	255
7.2.3	Word Class of Verbal Metaphors	258
7.2.4	Distribution of Verbal Metaphors	263
	<i>Verbal Metaphors in Agenda Management Sequences</i>	264
	<i>Verbal Metaphors in Explanation Sequences</i>	266
	<i>Verbal Metaphors in Checking Understanding Sequences</i>	270
	<i>Verbal Metaphors in Control Sequences</i>	271
	<i>Verbal Metaphors in Feedback Sequences</i>	273
7.2.5	Implicit Metaphors and Multiword Expressions	275
<b>7.3</b>	<b>Use of Gestures and Metaphoric Gestures</b>	<b>277</b>
7.3.1	Overall Results	277
7.3.2	Number of Metaphoric Gestures	280
7.3.3	Extensive Use of Metaphoric Gestures	283
7.3.4	Differences in Frequency Across Teachers and Sessions	283
7.3.5	Multifaceted Metaphoric Gestures	284
7.3.6	Flexibility in the Presentation of Metaphoric Gestures	284
<b>7.4</b>	<b>Recurrent Verbal Metaphors</b>	<b>285</b>
7.4.1	MUSIC IS AN ENTITY	286
7.4.2	MUSIC IS A CONTAINER	288
7.4.3	PITCH IS HEIGHT IN SPACE	290
7.4.4	PLAYING MUSIC IS WALKING ON A ROAD	292
7.4.5	LECTURE DELIVERY IS A MOVING PROCESS	294
7.4.6	PAYING ATTENTION TO X IS SEEING IT	296
7.4.7	TIME PASSING IS AN ENTITY MOVING HORIZONTALLY	297
7.4.8	TIME PASSING IS AN ENTITY MOVING VERTICALLY	

DOWN	300
7.4.9 Discussion	303
<i>Motion Metaphors of Music and Time</i>	303
<i>Linkage Between Metaphor, Gesture, Music, and Bodily Experiences</i>	305
<i>Mixed Verbal Metaphors Connecting Music and Bodily Experiences</i>	306
<i>Limitations of and Bias in Methods of Analysis</i>	307
<b>7.5 Relations Between Metaphoric Gestures and the Accompanying Speech</b>	<b>308</b>
7.5.1 Time of Occurrence	308
<i>Metaphoric Gestures Accompanying the Verbal Referent</i>	309
<i>Metaphoric Gestures Preceding the Verbal Referent</i>	309
<i>Verbal Referents Preceding the Metaphoric Gestures</i>	310
<i>Metaphoric Gestures With No Accompanying Verbal Referent</i>	310
7.5.2 Metaphor Manifestation by Speech and Gesture	311
<i>The Same Metaphor Expressed in Speech and Gesture</i>	312
<i>A Metaphor Expressed in Gestures but Not in the Co-Occurring Speech</i>	313
<i>Different Metaphors Expressed in Speech and Gesture</i>	315
<i>Metaphor Expressed by Gestures but Never Appearing in Linguistic Form in Mandarin Chinese</i>	315
7.5.3 Discussion	316
<b>7.6 Functions of Metaphoric Gestures and the Accompanying Speech</b>	<b>317</b>
7.6.1 Visualising Abstract Music	317

7.6.2 Making Contrasts	318
7.6.3 Organising the Lecture	320
7.6.4 Giving Additional Information	321
7.6.5 Metaphoric Gestures Completing an Incomplete Verbal Utterance	323
7.6.6 Giving Feedback	324
7.6.7 Discussion	325
<b>7.7 Educational Aspects of Verbal and Gestural Metaphors</b>	<b>326</b>
7.7.1 Segment 1: <i>Da</i> and <i>Xiao</i>	327
7.7.2 Educational Aspects of Segment 1	328
7.7.3 Segment 2: Major and Minor Keys	328
7.7.4 Educational Aspects of Segment 2	330
7.7.5 Segment 3: Bizet's Five Notes	332
7.7.6 Educational Aspects of Segment 3	333
7.7.7 Segment 4: Syllabic Gregorian Chant	335
7.7.8 Educational Aspects of Segment 4	337
7.7.9 Discussion	338
<i>Metaphoric Gestures as a Teaching Tool in Music Education</i>	338
<i>Students' Interpretation of the Metaphors Used by Their Teachers</i>	339
<b>7.8 Summary</b>	<b>340</b>
Footnotes to Chapter Seven	343

## **Chapter Eight CONCLUSIONS AND IMPLICATIONS**

<b>8.1 Overview and General Aims of the Study</b>	<b>345</b>
<b>8.2 Research Design</b>	<b>347</b>
<b>8.3 Key Overall Findings and Discussions</b>	<b>349</b>

8.3.1 Verbal and Gestural Metaphors Were Extensively Used in Music Teaching	349
8.3.2 Systematic Patterns Existed in the Metaphors	350
8.3.3 Metaphors Were Not Treated as a Teaching Tool by All the Teachers	351
8.3.4 Use of Metaphors Did Not Always Lead to Successful Communication and Teaching	352
8.3.5 Gestures and Speech Were Two Parts of a Broader Communication System	353
8.3.6 Gestures Were Used Inherently by Music Teachers in Music Teaching	354
<b>8.4 Significance and Contributions of the Study</b>	<b>355</b>
<b>8.5 Implications and Applications of the Study</b>	<b>356</b>
8.5.1 Research Applications	356
8.5.2 Implications for Educational Practice	356
<b>8.6 Limitations of the Study</b>	<b>357</b>
<b>8.7 Suggestions for Future Research</b>	<b>360</b>
<b>8.8 Conclusion</b>	<b>364</b>
Footnote to Chapter Eight	367
<b>Appendix A: Chinese Version of Eileen Chang's Example</b>	<b>368</b>
<b>Appendix B: Details of the Interviews for Pilot and Main Studies</b>	<b>369</b>
<b>Appendix C: Observation Schedule Used in the Pilot Study</b>	<b>370</b>
<b>Appendix D: Questions for Post-Observation Interviews in the Pilot Study</b>	<b>371</b>
<b>Appendix E: Observation Schedule Used in the Main Study</b>	<b>372</b>

<b>Appendix F:</b> Questions for Post-Observation Interviews in the Main Study	<b>373</b>
<b>Appendix G:</b> Permission Letter in Chinese	<b>374</b>
<b>Appendix H:</b> English Version of the Permission Letter	<b>375</b>
<b>Appendix I:</b> Research Consent Form in Chinese	<b>377</b>
<b>Appendix J:</b> English Version of the Research Consent Form	<b>378</b>
<b>Appendix K:</b> Example of the Transcription of Speech	<b>380</b>
<b>Appendix L:</b> Example of the Transcription of Gestures	<b>381</b>
<b>Appendix M:</b> Word Segmentation by CKIP Chinese Word Segmentation System	<b>382</b>
<b>Appendix N:</b> Comparison of Word Segmentation by CKIP Chinese Word Segmentation System and the Finished Results	<b>383</b>
<b>Appendix O:</b> Screenshot of Verbal and Gestural Metaphor Annotation by ELAN: Major and Minor Keys	<b>384</b>
<b>Appendix P:</b> Main Study: Participant Organisation, Materials, Musical Instruments, and Languages Used in the Sessions	<b>385</b>
<b>Appendix Q:</b> Screenshot of Verbal and Gestural Metaphor Annotation by ELAN: Bizet's Five Notes	<b>386</b>
<b>Appendix R:</b> Screenshot of Verbal and Gestural Metaphor Annotation by ELAN: Syllabic Gregorian Chant	<b>387</b>
<b>References</b>	<b>388</b>

## List of Tables and Figures

### Tables

Table 3.1	Background Data of the Recordings for the Preliminary Study	76
Table 3.2	Background Data of the Schools for the Preliminary Study	78
Table 4.1	Relations Between Utterance and Co-Occurring Metaphoric Gestures	133
Table 5.1	The Three Phases of Data Collection of the Study	159
Table 5.2	Main Study: Details of the Schools	162
Table 5.3	Main Study: Details of the Teachers Observed and Their Sessions	165
Table 5.4	Main Study: Parts of Each Session Excluded from the Data	167
Table 7.1	Main Study: Teaching Topics of the Sessions	248
Table 7.2	Main Study: Character Counts of Transcripts, Numbers of Intonation Units and Verbal Metaphors, and Density of Verbal Metaphors in the Sessions	256
Table 7.3	Main Study: Number of Verbal Metaphors by Word Class in Each Session	258
Table 7.4	Main Study: Examples of Verbal Metaphors by Word Class	260
Table 7.5	Main Study: Number of Metaphoric Gestures, and Number of Metaphoric Gestures Accompanying Verbal Metaphors in Each Session	281

## Figures

Figure 2.1	The School System in Taiwan	66
Figure 3.1	Preliminary Study: Class Timeline	77
Figure 4.1	Pilot Study: Music Classroom Setting	108
Figure 4.2	Pilot Study: Relative Time Spent on Activities Across Wang's Three Sessions	127
Figure 4.3	Pilot Study: Gesture Frequency and Classroom Atmosphere	129
Figure 5.1	Main Study: Valid Observation Times	168
Figure 7.1	Main Study: Percentage of Word Class of Verbal Metaphors Across the Sessions	260
Figure 7.2	Main Study: Number of Metaphoric Gestures in Each Session	282

## Abbreviations and Conventions

---

*Abbreviations/*

*Conventions*

*Definition*

---

3SG	third person singular pronoun
BA	the <i>ba</i> marker in the <i>ba</i> construction
C	classifier
CKIP	Chinese Knowledge and Information Processing group of Academia Sinica in Taiwan
CMT	cognitive (or conceptual) metaphor theory
CSC	complex stative construction
DE	the <i>De</i> marker (of possession or functioning as a linking word)
ELAN	EUDICO (European Distributed Corpora Project) Linguistic Annotator
IU	intonation unit
MIP	Metaphor Identification Procedure developed by the Pragglejaz Group (2007)
MIV	a method introduced by Cameron (2003) to identify linguistic metaphors through Vehicle terms
MOE	Ministry of Education
O	onomatopoeia
PRT	particle
PRV	perfective ( <i>-le</i> )
Q	question marker

---

## Acknowledgements

I have benefited from the support and advice of the following persons who made contributions to a variety of materials for inclusion in this thesis.

First and foremost I would like to acknowledge Graham Low, Carole Torgerson, and Nicholas McGuinn for their patience, encouragement, and continuous support—both practically and emotionally. I would especially like to thank Graham Low, a supportive mentor, an amazing editor, and an estimable and devoted supervisor, for his thoughtful questions and valuable guidance that have broadened my vision, and helped me grow as an applied linguist.

I am also indebted to Fiona MacArthur, Alan Cienki, and the anonymous editors and reviewers, for responding to some of the earlier drafts of some of the chapters. Appreciation is also given to Julius Hassemer for sharing his research study and sympathy in coding gestures. Additionally, I wish to thank the participants of the RaAM conference in 2007 and RaAM workshop in 2008 for ideas on researching verbal and gestural metaphors. They have been a stimulus to my thinking and guided me through the journey of this research.

I would like to acknowledge them for the contributions to the ideas and drafts of this thesis, and for consistency and accuracy of argument. All errors or inadequacies are, of course, my own responsibility.

Thanks also go to the music teachers who participated and/or contributed to the study: Hsin-Hua Yang, Nai-Hsuan Shih, Ching-Chiao Huang, Yi-Huei Chen, Chia-Ching Hsieh, Pei-Fen Tsai, Yi-Ching Chen, Wei-Li Zhao, Chao-Hsuan Yang, and others who prefer to be anonymous. This study would have been impossible

without them. Appreciation is also due to the students and schools for giving permission for the classroom observations, and to the two coders who so graciously made their effort and gave their time to this study.

I am also indebted to the friends who have helped and encouraged me in the many and varied ways during the process of conducting this research. I am grateful to Kuan-Hua Chen, Chia-Chen Tsai, Shih-Ya Huang, Kuan-Ping Chang, Pei-Yi Lin, and Fon Ninkhate, who have constantly given both practical and emotional support. Special appreciation is extended to Ta-Cheng Chang, who has patiently listened to the numerous ups and downs I experienced during the study, shared various aspects of the research life, and assisted in the technical issues and locating sources of crucial information for this thesis.

Last but not least, I wish to thank my mother for her endless love and support, and my younger brother for always playing the role of an elder one. I would like to dedicate this thesis to them, and to my late father in loving memory.

## **Author's Declaration**

I confirm that this thesis is original and based on my own work. Parts of the thesis, in shorter versions and with different titles, have been presented or accepted for publication since I started the study: An early version of chapter 3 was given at the *Second Lancaster University Postgraduate Conference in Linguistics and Language Teaching* at Lancaster, United Kingdom in July 2007. Chapter 4 was first given at the *International Conference on Researching and Applying Metaphor* at the University of Extremadura, Cáceres, Spain in May 2008; it, together with chapters 2, 3, and section 6.3 in chapter 6, developed into a chapter which has been accepted for publication in *Metaphor in use: Context, culture and communication* edited by F. MacArthur, J.-L. Oncins-Martinez, A. Piquer-Piriz, and M. Sanchez-Garcia, to be published by John Benjamins.

# Chapter 1

---

## INTRODUCTION

---

I still remember vividly that when I was around 13, I asked one of my classmates, “How does Mozart’s music differ from Chopin’s?” She looked into my eyes for a moment, and then told me, “Mozart’s is a bit of *tiantiande* (i.e., ‘sweet’)!” This classmate had had professional musical training since the age of four, and obviously the way she described Mozart’s music was pretty natural and made sense to her; however, to me it just sounded odd. I could not understand what ‘sweet music’ meant. How can music be sweet since we literally cannot see or taste it?

As far as I can recall, this was the first time I recognised the existence of the use of metaphor in an attempt to describe the abstract idea of music. I believe it was not because metaphors did not exist in my previous contact with music, but because it was the first time I became frustrated when trying to understand one of them.

### 1.1 Rationale

Clearly music is indeed abstract and sufficiently elusive that we are often forced to describe it using metaphors, attempting to describe the abstract qualities by making use of more concrete and familiar experiences. The more I learn from teachers and work with other students and performers—either trying to construct musical meaning or performing expressively—the more I am convinced that metaphors, and other figurative language, are needed to mediate between ourselves and music.

As a result, I have become interested in learning more about this ‘intermediary’ or ‘bridge’ which enables us to talk about, to construct the meaning of, and to share with others our feelings and emotions towards, the abstract system. What is the figurative language that is often used when talking about music? What are the metaphors used in specific contexts—such as music classrooms—and how are they used and how do they function? This curiosity encouraged me to start the current research.

A review of the literature reveals that to date linguists’ studies relating to metaphors in use in Mandarin Chinese have mostly focused on either the systematic mapping and analysis of metaphor schemata (e.g., Ahrens, Lai & Huang, 2001; Su, 2000; Tsao, Tsai, & Liou, 2001; Yu, 2003), or on developing a model to demonstrate that conceptual metaphor analysis can be restricted and eventually automated through psycholinguistic experiments (e.g., Chung, Ahrens & Huang, 2003; Gong, Ahrens, & Huang, 2008). Studies on metaphors in Chinese discourse are rare, and most of them seem related to political topics (Lu & Ahrens, 2008; Teng & Sun, 2001).

Conceptual metaphor theory (Lakoff & Johnson, 1980) and studies of gestures (McNeill, 1992) suggest that metaphor is a symbolic or cognitive process which reflects how people think, and speech and gesture can both be the manifestation of metaphor in oral discourse in Indo-European languages (see also Cienki, 1998; Cienki & Müller, 2008). Researchers applying the theory, however, have paid little attention to different types of discourse in different languages (Koller, 2003; Rodríguez, 2001; Teng & Sun, 2001), including classroom situations where Mandarin Chinese is the main language used. The question then arises of whether metaphors—both verbal and gestural ones—are used in music teaching. If so, how

are they related to teachers' thinking?

Given the absence of discourse-related studies, there are many aspects of music and its performance that would benefit from research. I decided to choose training, and specifically music education at school, because (a) teaching, or lecturing, has been suggested as being multimodal by nature (Kress, Jewitt, Ogborn, & Tsatsarelis, 2001; Lemke, 2000; Stein, 2008); (b) both the modalities of speech and gesture were found in music classrooms (Haviland, 2007); (c) empirical studies (Sakadolskis, 2003; Schippers, 2006) have suggested that verbal metaphors are found in music classrooms; and (d) both metaphors and gestures can reflect how people think (Cienki & Müller, 2008), and the investigation of educational discourse can be a window for exploring thinking and learning (Vygotsky, 1962; Cameron, 2003).

Studies (e.g., Davidson, 1989; O'Brien, 1992; Woody, 2006) have indicated that metaphors do play crucial roles in music classrooms. For example, (verbal) metaphors are argued as being a necessity for discussing music in music education (Davidson, 1989; Tait & Haack, 1984). Woody (2002) suggested that many of the metaphor examples cited "were not limited to being either a description of mood or a description of motion, but included elements of both" (p.221). These studies treated metaphors as a category of figurative language used by the teachers, but focused on the verbal metaphors only, and seldom gave explicit definitions of what metaphors were or how they were identified.

Gestures and speech were both found to be used by expert musicians as two strongly related expressive modalities in a master class (Haviland, 2007). In fact, gestures frequently co-occur with speech in classrooms (e.g., Goldin-Meadow, Kim, & Singer, 1999; McCafferty & Stam, 2008). However, at the time of writing, I can find almost no studies on metaphor manifested by gestures (i.e., metaphoric gestures)

in music teaching, whether in Chinese contexts or not, although they have been studied repeatedly in other non-educational contexts (e.g., Cienki, 1998; Cienki & Müller, 2008; McNeill, 1992). That is to say metaphors and gestures, at a general level, have to date been treated separately by most research conducted on academic discourse, including music. To understand how metaphors are used verbally and gesturally *together* by music teachers in music classrooms, an empirical study is needed.

## **1.2 Aims and Significance of the Study**

The present study is designed to bridge the gap in the literature about the use of verbal and gestural metaphors to talk about music in Chinese discourse, by researching how metaphors are used by music teachers in music classrooms where Mandarin Chinese is the main language employed, at junior high school level in Taiwan. Since various functions of metaphors and gestures have been noted in classrooms with various subjects or disciplines and levels of students (e.g., Cameron, 2003; Kress, Jewitt, Ogborn, & Tsatsarelis, 2001; Littlemore, 2001; McCafferty & Stam, 2008), the study may lead to a better understanding of what and how metaphors are used, both verbally and gesturally together, in music classrooms, and how they may assist in music teaching. From the teachers' perspective, they will be provided with an opportunity to reflect on what they do or did verbally and gesturally—either consciously or unconsciously—at various points during their teaching, and by doing so, to acquire a clearer perspective on the choice of their use of metaphors in classrooms. A secondary, but important, aim of the current study is to contribute to metaphor identification procedures for identifying metaphorically-used words in Mandarin Chinese, and coding metaphoric gestures. The results of the study

are expected to be beneficial to music educators, and to serve as a reference for researchers who are interested in metaphor in use.

### **1.3 Research Questions**

In view of the above research purpose, I developed the following questions as the basis of the study:

- RQ1 Do music teachers use metaphor—verbally or gesturally—to teach music in Taiwanese junior high school classrooms, where Mandarin Chinese is the main language of instruction?
- RQ2 If so, what is the nature of the verbal metaphors involved, and what is the nature of the gestural metaphors involved?
- RQ3 How can both types of metaphor be identified and coded?
- RQ4 What are the relations (e.g., sequential, conceptual, and functional) between the verbal and gestural metaphors?
- RQ5 What are the educational implications of the findings?

### **1.4 Methodology**

Since the current study acted as a preliminary one of acquiring a better understanding of how verbal and gestural metaphors are used in Taiwanese junior high schools, it was considered that the data should not be restricted to any single teacher or school. A set of case studies (i.e., multiple teachers from multiple schools in various parts of Taiwan) was therefore included. In addition, the research required an in-depth, rather than a broadly-based, investigation of the classroom behaviour, and qualitative research paradigms, which focus on a person-, context-, and time-bound phenomenon in natural settings (Croker, 2009), were therefore

considered to be more appropriate than quantitative ones. However, since (a) there was little previous research available on verbal and gestural metaphor use in music classrooms, as mentioned earlier—hence there was no agreed method(s) for studying it—and (b) there was a multiplicity of disciplines involved (namely, music education, applied linguistics, and cognitive linguistics), it was felt that it would be necessary for the current study to borrow relevant techniques and/or concepts from different methodologies.

### **1.5 Overview of the Study**

Three phases were involved in the study: a preliminary study, a pilot study, and the main study. The preliminary and pilot studies were used to explore the ground and examine the feasibility of the intended research design, helping to develop the research questions and research methods for the main study. Main study data were collected by both classroom observation and interviews with six teachers from six junior high schools in Taiwan which were mixed as regards age, location, and size. Thirteen sessions, totalling 636 minutes, were observed and video-recorded for the main study, and both music-talented classes and general music classes were included. The recurrent verbal metaphors were analysed and grouped, and the relations between metaphoric gestures and the accompanying speech were explored. Finally, the educational implications of these multimodal metaphors were examined.

### **1.6 Synopsis of the Thesis**

This thesis comprises eight chapters. The present chapter concerns the motivation for the study, its aims and significance, and the initial research questions. A brief overview is also provided. The remainder of the thesis is organised in the following way:

Chapter 2 provides a background context for the study by reviewing the existing research in the field of verbal and gestural metaphor use in (music) classrooms, and by giving an introduction to the current education system in Taiwan, with particular attention to music education at junior high school level. The chapter highlights the fact that there is a lack of empirical studies looking into how metaphors are manifested in speech and by gestures *together* in music classrooms.

Chapter 3 describes the preliminary study designed to explore if verbal metaphors are used by music teachers in classrooms in Taiwan. The results on metaphor distribution and metaphor density helped develop the research questions, and estimate the amount of data to be collected for the main study. It also helped me develop an identification policy for analysing verbal metaphors in the main study.

Based on chapter 3, chapter 4 presents a further pilot study concerning how verbal and gestural metaphors are used in music classrooms at junior high school level in Taiwan. This pilot study was conducted to examine the feasibility of the classroom observation schedule and questions for the semi-structured interviews designed for the main study. In addition, it helped develop a coding policy for analysing gestural metaphors in the main study.

Chapter 5 illustrates the research design and methodology for the collection of data on teachers' verbal and gestural use for the main study. Research approaches, namely ethnography, discourse analysis, and grounded theory used in the main study are outlined and justified.

Chapter 6 deals with the methods of transcribing, identifying verbal metaphors, and coding metaphoric gestures. A review of the literature on the related issues makes it clear that there are as yet no agreed methods to identify metaphorically-used words in Mandarin Chinese, or to code metaphoric gestures. An

explicit discussion on which methods were used and how they were applied in the main study is provided. The chapter also contains a discussion on how reliability of transcription was addressed and metaphor identification achieved.

Chapter 7 covers the results and discussion of the three-stage data analysis of the main study, namely the nature of verbal metaphors and metaphoric gestures used in music classrooms at Stage 1, the relations between metaphoric gestures and the accompanying speech at Stage 2, and the functions and educational aspects of verbal metaphors and metaphoric gestures as a whole at Stage 3.

Chapter 8 summarises the main findings of the study, discusses its contributions, implications, applications, and limitations, and suggests some areas for further work.

As mentioned earlier, this study tries to shed light on how metaphors are used verbally and gesturally together in classroom situations where Mandarin Chinese is the main language used, and it is hoped that through a further understanding of how Chinese metaphors are used empirically, the underlying universal and/or cultural differences of metaphors in use can be eventually investigated, and a direction for further research in the field can also be provided.

## Chapter 2

---

### LITERATURE AND CONTEXTUAL BACKGROUND

---

This chapter is divided into three main sections, covering the three dimensions of the study, namely metaphor, gesture, and how they work together in music classrooms. Section 2.1 begins with a discussion about theories of metaphor, focusing on conceptual metaphor theory and a view on it from applied linguistics. The second section discusses previous studies on gesture and speech, what gesture is and its components. In section 2.3, key issues about studying metaphor and gestures in use, such as the relations between metaphor, gesture, and thought, and the roles which linguistic and gestural metaphors play in teaching, are raised. After this, an introduction to music education at junior high school level in Taiwan is given in section 2.4.

#### 2.1 Metaphor

One might hear native speakers say the following sentences in Mandarin Chinese: *Ta bie le yi duzi qi*<sup>1</sup> ('She held back a belly of gas'), *Ta qihuhu de* ('He's puffing and blowing with gas'), and *Ta na wo chuqi* ('He took his gas out on me'). These sentences seem to all talk about *qi* ('gas'<sup>2</sup>), but actually the word is metaphorically<sup>3</sup> used. What *gas* refers to is the emotion of anger. Therefore the above sentences are in fact describing people who are 'filled with' anger and are furious, and someone who 'vented' his anger on someone else. In these sentences, anger is talked about in terms of gas.

Another more musical example is extracted from prose written by a Chinese writer, Eileen Chang (also known as Zhang, Ai-Ling), about how she felt about music (Chang, 1991, pp. 213-214) (my translation; for the character version, see Appendix A):

*Raner jiaoxiangyue, yinwei bianqilai tai fuza, zuoqzhe bixu jingguo jianku de xunlian, yihou wangwang jiu chenni yu xunlian zhi zhong, buneng ziba. Suoyi jiaoxiangyue chang you zhe ge maobing: gelu de chengfen guoduo. Weisheme ge yizhenzi jiu yao lai zheme yi tao? Yuedui turan jinzhang qilai, maitou yaoya, jinru juezhan zuihou jieduan, yiguzuoqi, zai gu san gu, lizhi yao ba quan chang tingzhong saoshu suqing chanchu xiaomie, er guanzhong zhishi momo dikang zhe, doushi shangdengren, you gaoji de yinyue xiuyang, zai wushu de yinyuehui li zuo guo de; genju yiwang de jingyan, tamen zhidao zhe yinyue shi hui wan de.*

‘However, a symphony is very complicated to compose. The composers have to go through tough training, and they usually cannot help but indulge themselves on the training. As a result, they focus far too much on musical form when they write symphonies. Why does tension have to come every once in a while? The orchestra suddenly becomes nervous, and the musicians hide their heads and bite their teeth. At last they come to the final combat, lifting their spirits with the first drum roll [like ancient warriors in a battle], and again and again with the second and the third drum rolls, aiming to sweep away and eliminate the audience, who does nothing but fight back silently. The audiences are from the upper social classes, with high levels of musical professionalism. They have sat in numerous concerts, and their previous experiences tell them that the concert is going to end in any case.’

*Wo shi zhongguoren, xihuan xuanhua chaonao, zhongguo de luogu shi  
buwenqingyou, pitoupinao daxialai de, zai chao xie wo ye nenggou renshou,  
danshi jiaoxiangyue de gongshi shi manman lai de, xuyao bushao de shijian ba  
dalaba gangqin xiaolaba fanyalin yiyi anpai buzhi, sixia li maifu qilai,  
ciqibiyiing, zheyang you jihua de yinmou wo haipa.*

‘I am Chinese. I like clamour and noise. The Chinese gongs and drums always hit me straight on the head without reasons, and I can endure the loudness. However, a symphony takes the offensive slowly. It takes a lot of time to deploy the tuba, the piano, the trumpet, and the violin. The ambush is set from all sides. The sound starts from here and the echoes come from there. Such a well-planned conspiracy terrifies me.’

In the above paragraphs, Chang explained why she disliked symphonies, and there seems to be some thematic similarity among the metaphorically-used words or phrases. That is, the particular type of music is compared by Chang to a battle in which the musicians of a symphony orchestra are troops and the audience in a concert is the enemy whom the troops try to eliminate. The musical instruments are carefully deployed weapons and the development of the musical sentences is a well-planned conspiracy. The metaphorically-used words or phrases such as *jue zhan* (‘final combat’), *chanchu* and *xiaomie* (‘to eliminate’), *dikang* (‘to fight back’), *gongshi* (‘the offensive’), *buzhi* (‘to deploy’), *maifu* (‘ambush’), and *yinmou* (‘conspiracy’) jointly create a scene of battle involving two hostile sides in which one (the symphony orchestra) is more on the offensive than the other (the audience). In other words, the metaphorically-used words or phrases do not stand alone individually, but are tied systematically, and imply metaphoric correspondences between symphonies and battles.

As shown from the above examples, these comparisons of ‘gas’ to ‘anger’ and ‘symphonies’ to ‘battles’ involve more than just one single expression. The *qi* metaphor is a more conventional example while Chang’s is a more novel one; however, they both show a certain similarity. The concept of using gas to describe anger appears repeatedly in everyday discourse, and is shared by native speakers of Mandarin Chinese, rather than used by one single individual only. In Chang’s example, through the metaphorical words or phrases, ‘symphony’ is referred to in terms of ‘battle’. This conceptual linkage appears repeatedly in Chang’s paragraphs and (presumably) is shared by her readers and her. These examples will be used at various points in the chapter.

The word *metaphor* has been used to refer to a linguistic phenomenon since at least Aristotle but has been used differently in much contemporary metaphor research. That is, instead of being a linguistic decoration, metaphor has referred to links between groups of ideas, or cross-domain mappings, in the conceptual system. It is held not to be based in the realm of language, but rather the realm of thought. For the past two decades, evidence of this conceptual hypothesis has been drawn from verbal sources such as language and other visual sources such as gestures.

However, the revolutionary and widespread idea of the conceptual metaphor does not mean that the linguistic form of the metaphorical expressions is irrelevant to metaphor study or is no longer paid any attention by researchers. The ‘applied linguistic’ view argues that there is important variation at the linguistic and discourse level that is not captured by the conceptual approach. This view insists on the essentiality of metaphorical expressions, indicating that metaphorical expressions are at the heart of finding and justifying conceptual metaphor; they are the starting point of metaphor identification, whatever theoretical approach is

adopted (Steen, 2007). The conceptual metaphor theory and an applied linguistic view on it are discussed accordingly below.

### **2.1.1 The Conceptual Metaphor View of Metaphor**

Generally speaking, metaphor research has developed from two distinctive points of view: the linguistic and the cognitive view. In the linguistic view, metaphor is considered to be a rhetorical device, a decoration of language, which means that first, it is parasitic on language; second, the message conveyed is not seriously affected by whether a metaphorical phrase is added or not; and third, more attention is put on novel metaphor than conventional metaphor, making metaphor an ‘extraordinary’ phenomenon rather than an ‘ordinary’ one (Deignan, 2005). To sum up, according to the linguistic view, metaphor is like grace notes embellishing music.

The linguistic view of metaphor does not explain why the above groups of metaphorical examples in Mandarin Chinese (or similar systematic uses of metaphor in other languages) (a) appear repeatedly, and (b) are systematically related, which are two of the main issues concerned in cognitive metaphor theory, or conceptual metaphor theory, (CMT), outlined in 1980 by Lakoff and Johnson in the seminal book, *Metaphors We Live By*.

In the cognitive view, metaphor is considered as a mental structure and believed to play an important role in organising human thought. Experientialists (Gibbs, 1998; Lakoff & Johnson, 1980; Sweetser, 1992) claim that non-physical phenomena are grounded in physical experience and each single person’s understanding of the world is shaped by how s/he interacts with the physical world. This embodiment is reflected at a societal level in metaphor and other figurative phenomena. In other words, metaphor is not merely a linguistic phenomenon, but more fundamentally, a conceptual and experiential process that structures people’s

idea of the world (Gibbs, 1998; Lakoff & Johnson, 1980), and this body-determined conceptualisation is acquired and developed from infancy (Lakoff & Johnson, 1999).

To be more specific, in CMT, metaphor is an unconscious way of making connections between one domain of experiences (Source) and another domain (Target). Take Chang's paragraphs for example: concepts related to 'symphonies' (i.e. the Target domain) are talked about in terms of concepts related to 'battles' (i.e. the Source domain). Between the two conceptual domains of symphonies and battles, there is a series of correspondences. For example, *musicians* correspond to *troops*, *musical instruments* correspond to *weapons*, and *the audience* corresponds to *the enemy*.

The theory distinguishes conceptual metaphor from the traditional linguistic view of metaphor by clarifying two terms: *metaphor* and *metaphorical expressions*. In CMT, 'metaphor', usually used as an uncountable noun, is considered to be a process of cross-domain mapping (i.e., making correspondences between two disparate groups of different thematic knowledge), while a linguistic expression such as a word, phrase, or sentence is termed a 'metaphorical expression' (Lakoff, 1993). The words describing anger and symphonies given at the beginning are all metaphorical expressions. The relationship between metaphor and metaphorical expressions is said to be that metaphorical expressions *derive from* conceptual structures, or metaphorical expressions *realise* (conceptual) metaphor. The two conceptual metaphors underlying the above metaphorical expressions are thus ANGER IS THE HOT GAS IN A CONTAINER and PLAYING OR LISTENING TO A SYMPHONY IS FIGHTING A BATTLE. Both underlying metaphors are presented in canonical 'A IS B' form using capitals.

The three key claims of CMT are that: (a) metaphor reflects and structures thinking, (b) metaphor is systematic cross-domain mapping, and (c) metaphorical language is one possible surface manifestation of underlying metaphor (Johnson, 1987; Lakoff, 1987, 1993; Lakoff & Turner, 1989; Turner, 1987; Yu, 1998). I shall consider each in turn.

### *Metaphor Reflects and Structures Thinking*

Lakoff and Johnson (1980) claimed that the existence of human beings was central to several abstract ideas, such as love, anger, birth and death. Such central ideas (e.g., anger) are used to help understand other less familiar concepts (e.g., ‘depression is anger without enthusiasm’). Other than this, these familiar human concepts can also be abstract and require to be understood in more concrete terms. As shown in the Mandarin Chinese sentences cited, the emotion of anger discussed at the beginning of this chapter is connected to gas (in the body). The above two levels of example indicate that in order to explain the abstract ideas, or make it possible to deal with them, the abstract ideas were connected to what was more familiar, or less abstract, to human experiences, via metaphor. It is largely—if not completely—through these linkages built on metaphor that people conceptualise the abstract, and relate themselves to the world (ibid.).

That metaphor is a mechanism underlying how we conceptualise the world explains why the above metaphorical examples in Mandarin Chinese are not only systematically organised but also extensively used. The emotion of anger is conceptualised in terms of ‘gas’, such that ‘anger’ is stored in a container, which is the belly in the first sentence, *ta bie le yi duzi qi* (‘She held back a belly of gas’). It expands with changes in the internal pressure of the container, depending on the

degree of puffing and blowing as in the second sentence, *ta qihuhu de* ('He's puffing and blowing with gas'), and finally it exits through some outlet, as in the third expression, *ta na wo chuqi* ('He took his gas out on me') (see also Yu, 1998).

CMT, furthermore, proposes that the emotion of anger is described in terms of gas because the users actually think in this way (Lakoff & Johnson, 1980). However, how far conceptual metaphor is connected to the users' and receivers' actual thinking during metaphor processing is still an issue under debate. Gibbs (1992a, 1992b, 1994) stated that the interpretation of metaphorical expressions depends fundamentally on a recognition process of the underlying conceptual metaphor. Glucksberg and McGlone (2001), on the other hand, noted that the issue should be separated from the evidence that there exists an underlying conceptual structure because the conceptual metaphor does not actually operate as actively and constructively in metaphor comprehension as Gibbs claimed. Bowdle and Gentner (1999) partially made the connection between the two, indicating that metaphorical expressions are processed differently depending on novelty or innovativeness of the metaphor.

Conceptual metaphor therefore provides a perspective to explain why some metaphorical expressions, especially the conventional ones, appear repeatedly and connect systematically. It serves as a possible window to see not only what but also why people think or talk in a specific way. However, the question whether the users or receivers process thought using conceptual metaphor and actively constructing correspondences during a discourse is answered differently by different researchers.

#### *Metaphor Is Systematic Cross-Domain Mapping*

The mapping of metaphor involves, for CMT, two *domains* or topic areas: Source and Target domains. In the gas metaphor in Mandarin Chinese, the emotion of anger

is described as a substance stored in a container (a bodily organ) which may explode if the pressure becomes high enough. Anger, the Target, is conceptualised as gas, the Source. In the second example, where playing and listening to a symphony, for Chang, is like fighting in a battle, the musicians with the musical instruments are an armed force while the audience is the other, an unarmed one. In this example, playing and listening to a symphony is the Target conceptualised as having a battle, the Source. The Target domain is the domain relating to the focus of metaphor, while the Source domain is the domain that provides the metaphor.

The mapping is systematic, and both structure and knowledge within one domain are mapped to the other, as shown from the metaphorical expressions of the two sets of conceptual metaphor. For example, gas is an invisible state with no definite shape. So is anger. In addition, gas stored in a container expands with the increase in pressure and explodes (e.g., ‘She held back a belly of gas’ and ‘He’s puffing and blowing with gas’). Similarly, anger is hidden in human bodies and accumulates from minor irritation to intense rage and finally is physically expressed by various facial expressions, bodily movements, and even aggressive behaviours (e.g., ‘He took his gas out on me’).

The mapping is unidirectional. In the PLAYING OR LISTENING TO A SYMPHONY IS FIGHTING A BATTLE metaphor, only playing a symphony is talked about in terms of fighting a battle but not vice versa. Specifically speaking, the direction of the mapping is usually from a more concrete Source domain (battle) onto a more abstract Target domain (symphony). The application of known attributes of more concrete and ‘graspable’ domains to less concrete domains, make it possible to apprehend the less concrete domains and in this view, metaphor exists to promote comprehension of certain concepts (Valenzuela & Soriano, 2005, p. 4).

The idea of unidirectional mapping in CMT contradicts Black's (1993) interaction theory, a theory in which metaphor is also believed to organise human thought. In interaction theory, the elements of the two linked domains of a metaphor interact dynamically and sometimes create similarities rather than simply presenting pre-existing ones. What Black meant was that "parallel changes in the secondary subject" (i.e. the Source domain) were "reciprocally induced" during the interaction, and a "shift" of meanings thus occurred in both the speaker's and hearer's minds (ibid., p. 28). By connecting the two disparate domains of knowledge, metaphor actually provided another perspective for both speakers and hearers to perceive the world, a perspective which did not exist (because the domains were not connected) before the existence of the metaphor. In other words, it was metaphor that created and then retained the connections (ibid.). However, the view of the dynamic interaction between the two domains is criticised by Gibbs (1994): "Metaphors are not bidirectional in the way their domains interact" (p. 239); rather, the two domains play different roles, especially in recall of metaphor, comprehensibility of metaphor, and people's perceptions of metaphor (ibid.).

Only part of the structure or knowledge of the Source domain is mapped onto the Target. For example, anger is not conceived of in terms of the physical characteristic of having no definite shape, or of being in more or less random motion, like gas. Specifically speaking, what is mapped is constrained by the structure of the Target domain, because the inherent structure of the Target domain overrides and cannot be violated—the two main concepts of the *invariance principle* in CMT (Lakoff, 1993). The invariance principle hypothesises that during the mapping, the structure of the Source domain is preserved in a way consistent with the inherent structure of the Target domain. It explains, for example, that although both the

scenes of battle and symphony involve two opposing forces (armed and unarmed troops versus musicians and the audience), the idea of one group seeking to defeat the other, which usually happens in the domain of fighting a battle, does not map to the domain of playing a symphony. That is, the audience whom the musicians aim to eliminate, is in fact not armed, and is in fact passive. Thus the structure of the Target domain dominates, as in normal circumstances there is no way for the audience to show enthusiasm by fighting back in a concert hall.

The partial mapping highlights some aspects, while others are hidden (Lakoff & Johnson, 1980, p. 10-14). This feature of metaphor is “unavoidable” (Deignan, 2005, p. 24) because if one domain of a metaphor had an identical counterpart domain, the result would not be metaphor but identity (A would literally be B) (Low, 1988). Although one of the benefits of metaphor is to assist understanding as mentioned earlier, this characteristic of ‘distortion’ may cause misunderstanding on the part of the listener or reader.

The idea that a metaphor may lead to misunderstanding explains why it has been claimed that, educationally, metaphor can better aid learning if multiple metaphors, rather than one single metaphor, of the concept the teacher aims to teach are used (Ortony, 1975; Spiro, Feltovich, Coulson, & Anderson, 1989), or at least one domain of the metaphor used must be known or familiar to the students (Cameron, 2003; Petrie & Oshlag, 1993). It also explains why metaphorical expressions cluster at key points in a discourse as empirical studies have shown (e.g., Cameron & Low, 2004; Corts, 1999; Corts & Pollio, 1999). One of the reasons for such a phenomenon is for clarity (Low, 2008) in that the clusters “typically occurred in and around a tricky or lengthy explanation” (Cameron & Low, 2004, p. 367).

The mapping is therefore first, unidirectional from the Source to the Target

domain; second, systematic, which refers to a set of correspondences between the domains; and third, partial (i.e., not all knowledge or structure of the Source domain is mapped onto the Target); instead, what is mapped is restricted by the structure of the Target domain, according to the invariance principle. The systematic but partial mapping may cause misunderstandings as discussed, but the fact that there are two thematic groups of knowledge involved in a mapping (or correspondence or comparison) is actually what is needed for metaphor identification, which will be discussed in section 6.3.

*Metaphorical Language Is One Possible Surface Manifestation of Underlying Metaphor*

Metaphor links groups of ideas and through these links the conceptualisation is achieved. At the point when the present research was conducted, the most directly observable conceptualisation serving as evidence for CMT still came from linguistic metaphors (Deignan, 2005).

However, metaphorical language should not be the only surface manifestation of metaphor, if metaphor functions at the level of thinking rather than being a rhetorical device as CMT claims. In fact, one of the criticisms the theory has attracted relates to *where* the supporting evidence of the theory is collected. Researchers like Croft (1998) and Gibbs (2007) have noted that linguistic data alone are an insufficient source of evidence for mental constructs, and there is a logical problem in drawing evidence from linguistic data in order to support a theory in which most of the evidence is actually drawn from the same source. CMT has thus been accused of “the problem of the circularity of reasoning” by Valenzuela and Soriano (2005, p. 5). A number of recent studies have begun to address this problem

by providing evidence from different sources. They have shown, for example, how people think—not only talk—of time in terms of space (Boroditsky & Ramscar, 2002). They have shown the equal amount of time spent on processing literal and metonymic sentences (Frisson & Pickering, 1999), multimodal metaphors including language, pictures and non-verbal sound (Forceville, 2006), and how metaphor is realised by language and gesture simultaneously (Cienki, 1998; Sweetser, 1998).

Another criticism levelled at CMT relates to how conceptual metaphor is identified and the nature of the evidence offered. Usually the identification procedure starts with gathering metaphoric expressions in the same Topic domain, classifying them according to their lexical semantic similarity, and then grouping them by assuming that each group is motivated by a single conceptual metaphor corresponding to the similarities among the metaphoric expressions within the same group (Deignan, 2005). The problem is that these examples are not systematically and exhaustively collected from empirical language use; instead, they are, as Steen (1999a, p. 57) put it, “selected for their persuasive power”. Moreover, it is ironic that while conceptual metaphor researchers claim that metaphorical expressions actually derive from conceptual metaphors (Lakoff, 1993), they neglect the process of how exactly they get from metaphoric expressions to conceptual metaphor (Steen, 1999b). This is one of the issues that have particularly concerned applied linguistics researchers.

### **2.1.2 An Applied Linguistic View of Conceptual Metaphor Theory**

CMT provides an explanation for the systematic and extensive use of metaphors, but it does not explain why the metaphorical expressions in language are grammatically and/or lexically restricted, or why they are so unevenly and inconsistently distributed (Cameron & Deignan, 2006; Deignan, 2005). In the Mandarin Chinese

example metaphor, PLAYING OR LISTENING TO A SYMPHONY IS FIGHTING A BATTLE, why is it always the instrument of *gu* rather than other wind instruments such as *suona*, or wood instruments such as *muyu* that symbolise the other ‘weapons’ used by the musicians in a symphony orchestra? Or to take another example, why is *qi* conventionally used only to talk about anger and very rarely about other emotions, such as excitement?

In the late Nineties, a group of applied linguistics scholars (e.g., Cameron, 1999, 2003; Deignan 2005; Ritchie, 2003, 2004; Semino, Heywood, & Short, 2004) highlighted the importance of looking into linguistic metaphors in naturally occurring language. Rather than discarding the concept of conceptual metaphor, these researchers aimed at connecting “the conceptual with the linguistic, in theory and in empirical work” (Cameron & Deignan, 2006, p. 672). They insisted not only on the importance of the form of language, but also how language is used in context in order to understand the metaphor involved. Cameron (1999) pointed out that “the fact that metaphor is more than language does not mean that language form is irrelevant to the study of metaphor” (p. 12), and continued her arguments that metaphor must be examined in its actual context, along with other contextual factors:

What I’m arguing for [. . .] is the centrality of the contextual nature of language in use; the human and discourse context of language use is inherent in the joint construction of discourse goals and in the use of metaphor to achieve those goals. Processing metaphorical language takes place in context and draws on the discourse expectations of participants. It follows that the theoretical frameworks used to operationalise metaphor must do so too. (Cameron, 1999, p. 25)

From the applied linguistic viewpoint, there is a problem with the CMT approach of intuitively generating linguistic examples to serve as evidence of conceptual metaphors. The drawbacks include oversimplifying the relation between linguistic metaphors and conceptual metaphor (Deignan, 2005), and important details such as how linguistic metaphors are influenced by genre, position and function in the discourse may be neglected because the actual words used are not paid much attention (Cameron, 2003; Cameron & Low, 2004; Deignan, 2005).<sup>4</sup>

Compared with CMT, the applied linguistics researchers hold a different view of metaphor and metaphorical expressions—the latter being labelled as *linguistic metaphors* (Cameron, 1999; Steen, 1994). They claim that metaphor is the result of a dynamic and two-way interaction between language and thought; it is not the case that metaphorical expressions simply realise metaphor, such that the relationship between the metaphor and the metaphorical expression is unidirectional (Cameron & Deignan, 2006).

A linguistic metaphor is defined as a word, phrase, or sentence with the potential to be interpreted to refer to something else other than its literal meaning, where the two meanings are distinct but at the same time linked to make coherent sense in the discourse context (Cameron, 2006). This corresponds to the idea of cross-domain mappings involved in a conceptual metaphor claimed by CMT. A linguistic metaphor distinguishes itself from a conceptual one by being lexical and textual, rather than a neurological or experiential phenomenon (ibid.). An identified linguistic metaphor may or may not be metaphorically processed and interpreted by the users and receivers.

A linguistic metaphor seems to refer in many cases to the same thing as what Lakoff (1993) called a ‘metaphorical expression’, but the underlying concepts of

these two terms are not completely identical. For linguistic metaphors, the applied researchers emphasise the relations between linguistic metaphors and the context where they are located, because the metaphoricity, or the potentiality to be identified as metaphorical or not, can vary with the dynamics involved in a discourse, depending on the lexical items chosen. CMT, on the other hand, takes a more decontextualised approach.

The *Vehicle*, a term coined by I. A. Richards (1936) for components of linguistic metaphors, is the focus of the linguistic metaphor which contrasts with the content of the on-going text or talk, the *Topic*. Topics, however, are not always explicit and they may or may not be actually present as a lexical item. For example, in the sentence *ta bie le yi duzi qi* ('She held back a belly of gas'), the Topic, the emotion of anger, is inexplicit. The nature of the contrast between Vehicle and Topic is regarded as the central feature for identifying linguistic metaphors (Cameron, 1999, 2006). (Issues of how to identify linguistic metaphors through Vehicle terms will be discussed in section 6.3.1).

The terms, Vehicle and Topic, of a linguistic metaphor are not always the precise equivalents of Source and Target of a conceptual metaphor. The former pair of labels refers to surface forms, while the latter refers to underlying concepts. Due to this, the result of the metaphoric structure may differ. To exemplify the differences, Cameron (1999, p. 14) used the sentence fragment, 'this paper thinks', taken from Low (1999):

THIS PAPER IS A PERSON

(CONCEPTUAL) TARGET	paper
(CONCEPTUAL) SOURCE	a person

This paper thinks

(SURFACE) TOPIC                      this paper

(SURFACE) VEHICLE                    thinks

Whether the determiner ('a', 'this') should be included or not depends on the unit of analysis used in metaphor identification methods, which is discussed in section 6.3.1.

### **2.1.3 Systematic Metaphors**

Systematic metaphors are groups of linguistic metaphors which are semantically connected. They allow researchers to investigate the development of linguistic metaphors and the relationship between them in a discourse. A systematic metaphor, emerging from words used in a specific discourse, therefore differs from a conceptual metaphor, which works from the underlying level to explain the systematicity of linguistic metaphors. The realms to which systematic and conceptual metaphors belong are also different. Systematic metaphors are “aggregated samples of actual use of language”, while conceptual metaphors are “mappings across domains and are held to belong in the realm of the conceptual” (MetNet Group, 2006). To sum up, a systematic metaphor is more user-based, discourse-based, and emerges upwards, while a conceptual metaphor is more socio-cultural and acts downwards (Cameron, 2006).

The procedure for grouping linguistic metaphors into systematic ones can be found in section 6.3.1.

## 2.2 Gesture

A review of the literature on gesture, another dimension of the current study, is discussed next.

### 2.2.1 Studies on Gesture and Speech

Kendon (2007) provides a brief review of modern gesture studies, arguing that the earliest discussion about gesture in the Western tradition can be traced back to the late Roman era around the first century CE. However, gesture did not become an object of scholarly investigation until the last half of the sixteenth century (ibid.). In recent years, gesture studies have experienced a resurgence of interest following the development of audio-visual recording technologies and in the light of new understandings about human communication in the fields of linguistics, psycholinguistics, and cognitive linguistics (ibid.).

One thing that needs to be pointed out is that an overview of the history shows that relationships between language and gesture have changed. In the eighteenth and nineteenth centuries, gestures were considered as “an autonomous linguistic system” (ibid., p.16) and seldom did the researchers of the time concern themselves with the relationship between speech and gesture; however, since the late twentieth century, researchers have started to look into how gesture and speech are used *together* (e.g., Efron, 1972) and it has been claimed that speech and gestures are two aspects of a single process of utterance (Kendon, 1980; McNeill, 1985, 1992).

McNeill (1992) in his book, *Hand and Mind*, argued that gesture and language emerge from a common origin. His hypothesis was based on at least three blocks of evidence. First, there are similarities in the use of gestures among different cultures. Second, the acquisition of gesture and language starts as early as the age of two, and the two modalities then develop together. Third, gesture and speech co-occur in use.

He further argued in another book years later that language and gesture were inseparable, and that it would be counterproductive to treat one of them in isolation from the other (McNeill, 2005).

Results from the empirical studies seem to support McNeil's argument of the inseparability of language and gesture. Iverson and Goldin-Meadow (1998) found that congenitally blind people gestured and the gestures they produced resembled those of sighted people, even when they spoke to a blind listener. The authors then suggested that gestures accompanying speech "may reflect, or even facilitate, the thinking that underlie[s] speaking" (ibid., p.228). In addition, a pair of sighted speakers who could not see each other gestured when they talked to each other (Rimé, 1982). It seems that people do not need any visual model to learn how to gesture (unless, as pointed out by Iverson & Goldin-Meadow, there are cultural and linguistic influences on gesturing "that are transmitted at deeper levels than the eye") and do not gesture for the sole purpose of conveying information to the listener (Iverson & Goldin-Meadow, 1998, p.228). The evidence therefore suggests that gesture is integral to the speaking process itself (ibid.; McNeill, 1992, 2005).

McNeill's viewpoint suggests that language and gesture together form an integrated communicative system and each mode may provide complementary information during a discourse. On the other hand, as discussed in the previous section, CMT claims that metaphor is a set of conceptual mappings between two domains and it underlies, governs, and is realised by metaphorical expressions (Lakoff & Johnson, 1980). If metaphor, according to CMT and the applied linguists as discussed earlier, is a cognitive behaviour which reflects how people think, then speech should not be the only manifestation of metaphor in oral discourse. Gesture may hence provide another window to investigate conceptual metaphor.

### 2.2.2 Gesture and Its Components

Sometimes *gesture* is used to refer to various body movements, from self moving (e.g., adjustment of posture) or contact between two body parts (e.g., patting one's hair), to contact between body parts and other objects (e.g., manipulating an object) (Kendon, 1997). At other times the term is restricted to movements of the hands and arms, including *gesticulations* accompanying speech, *emblems* (e.g., the 'thumbs up' gesture), and *sign language* (Kendon 1988). Kendon placed these three along a spectrum:

gesticulations – emblems – sign language

In the above scheme, gestures are classified on a continuum ranging from spontaneous, idiosyncratic movements accompanying speech (i.e., gesticulations), to highly socially regulated and structured gestural languages such as American Sign Language. In the middle are artificial but conventionalised signs he calls 'emblems', such as the American 'OK' sign made by placing the thumb and index finger in contact. Emblems share the same meaning among users within the same cultural group or discourse community. Between the two extremes of the spectrum, two key changes occur. First, movements become more and more independent of speech. Second, movements show more and more the properties of a language (Roth, 2001).

Among these gestures, gesticulation, the non-conventional hand and arm movement which lacks language-like properties and is naturally made by speakers while speaking, is the one which has been looked into in most studies aiming to explore how gestures are used together with speech to reveal thought (e.g., Iverson & Goldin-Meadow, 1998; Rimé, 1982). Due to its characteristics of lacking the properties of a language and being highly dependent on the accompanying speech, it is almost impossible to classify gesticulation based on hand-movement data only.

Linguistic information, for example, plays an important role, too. This is referred to as the multimodal nature of gestures by Eisenstein and Davis (2004), namely that gesture classification relies on both hand movement (visual) and the accompanying linguistic context (auditory), including prosodic, lexical, or semantic features of the speech.

. Studies looking into gesticulations used in classrooms suggest that these spontaneous hand movements can reveal important educational implications. Gesticulations “can play a crucial, although typically unacknowledged, role in teaching and learning”, as indicated by Goldin-Meadow (2004, p. 314), through examining gesture-speech match and mismatch. In addition, because these gestures intertwine with speech, it is claimed they can convey teachers’ and students’ thoughts in the process of teaching and learning (ibid.). This topic will be revisited and further discussed in sections 2.3.1 and 2.3.3.

A gesture, being a kinetic movement, usually starts from a *preparation* phase, in which the gesturing limb (or limbs) move(s) away from its (or their) rest position to a different and particular position. This is followed by the kinetic peak of effort in the gesture, which is referred to as the *stroke* (Kendon, 1980; McNeill, 1992). The stroke is an obligatory phase because it is the meaningful part of a gesture (McNeill, 1992), in which the shape and movement patterns are performed with greatest clarity (Kendon, 2004). At the beginning or at the end of the stroke phase, the articulator may be sustained in the position and produce a *pre-stroke*, or *post-stroke, hold* (Kita, 1993). The latter, along with the stroke, usually makes up a semantically complete *phrase* of speech. The post-stroke hold phase is followed by the return of the hand to a rest position, and this is called the *retraction* or *recovery* (McNeill, 1992; Kendon, 2004). This entire *excursion* of the articulator of the gestural action, from the

moment of moving away from a position of rest until it finally returns back to relaxation, is known as a *gesture unit* (Kendon, 2004).

A gesture unit contains one or more than one gesture phases. What a gesture phrase consists of by definition differs according to different researchers, though it is agreed that a stroke is obligatory—that is, each gesture phrase always contains one and only one stroke. The other phases, such as the retraction or recovery phase, are not always defined as part of a gesture phrase, because they are often omitted when one gesture passes directly into a succeeding gesture (see Kendon, 2004; McNeill, 1992).

These claims show that gestures are not merely random movements of hands. They can be either semantically or pragmatically (or both) connected to the accompanying speech to reveal thought, and there exists a basic structural pattern in each of them. They may be combined with each other and form gesture phrases, or may stand alone as independent units, as long as each contains the obligatory stroke. From a figurative point of view, recent studies on gesture, in the sense of gesticulations, may provide supplementary, rather than independent, evidence of how conceptual metaphor works. In addition, a method issue is raised here: investigating metaphor in the form of gestures is different from exploring verbal metaphor. Unlike language, which may be written, or oral and aural, gesture is spatial, kinetic, and visual in nature. Each gesture consists of forms and motion, and different focuses of different coders will lead to different interpretations. Where and how to draw the line between different aspects of a gesture is complicated, but essential for each researcher to tackle in gesture coding. More discussion on the methods of coding metaphoric gestures is covered in sections 6.3.2 and 6.5.

## 2.3 Metaphor and Gesture in Use

### 2.3.1 Metaphor, Gesture, and Thought

Most research to date has treated metaphor and gestures separately. Corts (1999) and Corts & Pollio (1999), however, are two of the rare studies looking into the use of metaphors and gestures in academic discourse. They analysed the relationships between the spontaneous figurative language and gestures in American college lectures. Questions they asked included when and why metaphors and gestures occurred in bursts, what were the characteristics of these bursts, and what were the functions which metaphors and gestures served in the lectures. Their conclusions that (a) metaphor and gesture related to bursts, and (b) gestures played an active part in communication rather than simply paraphrased or decorated it, which were further confirmed later by Corts (2006), seem to imply a dynamic view of metaphor and gesture: metaphors and gestures functioned—respectively and collaboratively—to structure the lectures and to emphasise the novel and significant teaching content.

Müller (2007) explicitly provided a dynamic view of metaphor, gesture, and thought, arguing that language, shaped by cognitive processes and by interactive constraints, is “an integration of speech and gesture at the level of the system and of use, and a dynamic product of modality-specific forms of thought” (p.110). With this dynamic view and applying Lakoff and Johnson’s conceptual metaphor theory, Cienki and Müller (2008) redefined the concept of a ‘metaphoric gesture’ and identified four relationships between metaphoric gestures and speech. The data came from a range of examples from conversations about honesty and personal relationships, to story re-telling, and discussions about novels in English, German, and Spanish. The four relationships were: (a) the same metaphor expressed in speech and in gesture, (b) a metaphor expressed in gesture, but not in the co-occurring

speech, (c) different metaphors expressed in speech and gesture, and (d) a metaphor expressed in gesture but not used conventionally in the language. These findings accord with the results of the previous study by Cienki (1998), although the definitions of metaphoric gesture in these two studies are not exactly identical.

The above examinations of how metaphoric gesture relates to speech support Lakoff and Johnson's (1980) claim that metaphor is a cognitive representation which reflects how we think. As shown from Cienki and Müller's examples taken from the three different languages (English, German, and Spanish), it is clear that language and gesture do not always share the same conceptual metaphors and there are occasions when the metaphor in gesture does not exist in speech—either the metaphor used in speech is different, or the metaphor used by gesture never appears in linguistic form. Similar results were also found in the pilot study of this present project for Mandarin Chinese and more details will be discussed in chapter 4. McCafferty (2008) further claimed that gestures could play a more crucial role than speech in meaning making in oral discourse after examining the verbal and gestural metaphors of an adult Japanese second language speaker of English. The above studies thus indicate that, besides being manifested by language, metaphor can be separately manifested by gestures. Metaphor, like gesture, hence is not a question of language only, but of thought.

### **2.3.2 Verbal Metaphors in Music Teaching**

Studies on metaphor use in classroom discourse have been conducted with various subjects or disciplines and levels of students (e.g., Barten, 1998; Cameron, 2002; Littlemore, 2001). Numerous educational functions of verbal metaphors have been found. For example, metaphors externalise thinking (Roth, 2001), facilitate learning (Ortony, 1975), label new concepts (Clark, 1981, 1982; Dirven, 1985), and create

and evoke the affective images for students to match with the skills of instrument playing taught through modelling (Davidson, 1989). Furthermore, some researchers have even claimed that acquisition of new knowledge is not possible without the use of metaphor (Ortony, 1975, 1993).

Denicolo (1985) used classroom observation, interviews, and repertory grids to examine whether, how, and why chemistry teachers used figurative language verbally in their teaching as an explanatory tool. Figurative language—which denoted that “one thing is explained by highlighting its resemblance to something else in some way” (p. 3), including metaphor, simile, analogy, personification, and theoretical or hypothetical models—was found to be used by the five teachers in colleges and secondary schools, although the frequency of use varied across the different teachers. Denicolo concluded that possible factors affecting the frequency and mode of the teachers’ use of figurative language included the teachers’ particular concerns in teaching, teaching style, and personal facility and inclination in language.

In music teaching, language is considered by some researchers (e.g., Tait & Haack, 1984) to be essential because it allows teachers and students to conceptualise, to think about, and to analyse the music. Studies conducted in both English and non-English speaking countries found music teaching relying predominately on verbal instruction (e.g., Rostvall & West, 2003; Tait, 1992). Hair (2000-2001), nevertheless, found that children’s ability to describe music developed after their abilities to perceive and give non-verbal responses to musical elements. In addition, both children and adults had limited music vocabulary unless they had been taught it, and the two groups seemed to apply different strategies when describing music (*ibid*). Hence, as suggested by the above studies, teachers can probably not assume

that their vocabulary will be comprehended by the students in the same way as it is used by them.

Empirical studies suggest that metaphors are used in music instruction at different school levels (e.g., Burwell, 2006; Schippers, 2006; Skoog, 2004), and most of these studies focus on how metaphor is used pedagogically. Davidson (1989) suggested that the combination of modelling and metaphor “helps the student attain a multidimensional grasp of the music [. . .]. The metaphor creates an affective state within which the performer can attempt to match the model” (p. 95). He, like Tait and Haack (1984), suggested that in music education, using metaphors can be seen as a necessity for discussing music.

Burwell (2006) recorded 67 individual instrumental and vocal lessons, analysed the verbal dialogue, and compared the different approaches taken by the teachers in a music department of a UK university. One of the differences she found was that singers employed more affective language and metaphor than instrumental teachers did. This study suggests that music teachers may vary their language, including the use of metaphors, in different music courses at higher education level. Whether music teachers vary their language when facing students with different levels of music skill still remains to be explored.

O’Brien (1989, 1992) compared the effects of two types of language, analytic and figurative language, on seventh-grade students’ attitudes to, and conceptual understanding of, studied and unstudied music examples given during listening instruction. In the study, ‘analytic language’ meant “musical terms such as tone colour, rhythm, melody, harmony, and texture . . . used to identify and classify the structural components of a music composition” (O’Brien, 1989, p.1). Figurative language, on the other hand, included simile, metaphor, and analogy which verbally

described the structural and expressive aspects of music. Ninety-one students in the States were divided into two groups and a combination of analytic and figurative language was used for instruction for one group, while only analytic language was used with the other. The results showed that the instruction which involved a combination of analytic and figurative language was more effective (Wilkes's  $\lambda=.62$ ,  $df=4$ ,  $F=12.08$ ,  $p<.001$ ) in developing both positive attitudes to, and conceptual understanding of, studied and unstudied recorded music examples.

Similarly to O'Brien, Woody (2006) compared the effectiveness of three instructional approaches (aural modelling, verbal description of concrete musical properties, and verbal instruction using metaphor and imagery) to improve expressive performance at an American university. Each of the 36 undergraduate- and graduate-level pianists received three melodies. A single different instructional condition for each melody was experienced by the subjects. The results suggested that the metaphor or imagery approach could effectively produce a greater performance change when it was combined with the other two approaches which covered more specific and concrete musical representation, based on the goal of the teachers, qualities of the music, and characteristics of the students.

The above studies (O'Brien, 1989, 1992; Woody, 2006) seem to suggest that metaphor can be an effective educational tool in teaching music, but only when it is used in combination with other verbal instruction. I could find no studies, however, on the use of metaphors with other non-verbal behaviour, including gesture, in music classrooms at secondary school level.

Another researcher who is interested in metaphor use by music teachers and provides a qualitative analysis of the metaphors used in music classrooms is Sakadolskis (2003). She observed three sixth-grade general music classes in the

States and examined the figurative language used by the teacher. The data covered 19 sessions, plus face-to-face interviews with the teacher and six students individually. Conceptual metaphor theory was applied to the data analysis and five schemata emerged as relevant: containment and entity status; personification; verticality; regularity versus irregularity; and location, space, and motion.

Sakadolskis' research (*ibid.*) is one of the few research studies with a specific focus on the figurative language music teachers use from a (cognitive) linguistic perspective. Nevertheless, in her study, the term 'figurative language' was not used to refer to metaphor only. Simile, idiom, analogy, hyperbole, metonymy, oxymoron, and irony were also included. The term 'figurative language' was used on a general level and the problem is that the analysis, or at least the report, did not really distinguish one from the others, so the conclusion that figurative language is an essential tool of music teaching and learning is not necessarily too relevant to the present study.

Davidson (1989) and a colleague visited China and observed a one-on-one music lesson in a conservatoire. He recorded in detail how he, as an American, reacted to the Chinese teaching, including the use of modelling and metaphor both in speech and gesture. Davidson claimed that metaphor created atmosphere, and helped integrate technique into expressive performance. One specific gesture noticed by Davidson was when the teacher slowly extended his arm to prolong the final note of the music and by doing so, held the audience still. Rather than focusing on the metaphor use or how metaphor in speech and gesture work together, this study reads more like a report of a general observation of one music session in a different culture. However, it provides evidence that some music teachers use metaphors in classrooms at college level where Mandarin Chinese is the language of instruction.

The above studies seem to suggest that metaphor plays an important role in music teaching, regardless of the language used. It can also be an effective educational tool in teaching music, but only when it is used in combination with other verbal instruction. However, there is a shortage of empirical studies which investigate the use of metaphor in general music classrooms at junior high school level, and I could find no studies on the use of metaphors with other non-verbal behaviour, including gesture, in music classrooms at this level.

### **2.3.3 Gestures in Teaching and Learning**

Gesture studies in learning outnumber those in teaching, and most of the gesture studies in learning I have found were conducted in science (e.g., Crowder, 1996; Roth, 2000) and mathematics. Goldin-Meadow and her colleagues (Alibali & Goldin-Meadow, 1993; Church & Goldin-Meadow, 1986; Perry, Church, & Goldin-Meadow, 1988) were interested in the role mismatch involved in mathematics instruction. They observed one-to-one tutorials with five- to ten-year-old students who had not yet mastered a concept, and the results showed that students with a mismatch between gestures and speech were more likely to benefit from the teachers' instruction (i.e., more ready to learn a particular task) than those whose gestures and speech coordinated. The general conclusion from these learning studies (Alibali & Goldin-Meadow, 1993; Church & Goldin-Meadow, 1986; Perry, Church, & Goldin-Meadow, 1988) would seem to be that gestures help students in learning, and their gesture use can reveal how they learn. For example, gestures help students construct meaning when the students try to explain a scientific phenomenon, and gestures can help predict, revise, and coordinate elements in a scientific model (Crowder, 1996; Roth, 2000). In addition, the gesture-speech mismatch which students use can be an indicator of the learning stage a student is at.

Although the above mismatch studies do not extend to the context of classrooms, from both students' and teachers' perspectives, gesture and speech together seem to be able to reinforce, or more importantly suggest, a different meaning from speech used alone.

Besides focusing on students' use of gestures, there are studies looking specifically into gestures made by teachers in subjects such as science (Kress, Jewitt, Ogborn, & Tsatsarelis, 2001), mathematics (e.g., Flevares & Perry, 2001), English (e.g., Lazaraton, 2004), second language acquisition (McCafferty & Stam, 2008), and music (e.g., Haviland, 2007). Kress et al. (2001) argued that teaching is not a process depending on language only, but is “made in all modes [i.e., speech, image, gesture, action with models, and writing] separately, and at the same time . . . [is] an effect of all the modes acting jointly”, in which learners perceive all modes as a complex activity and “actively engage with” (p. 1).

Flevares and Perry (2001) looked into the non-verbal representations (i.e., pictures, objects, writing, and gestures) which first-grade math teachers use to support their verbal instruction in the States. They found in the 44 mathematics lessons, that gesture was the most often used form for all the three teachers, one African American and two European Americans. In addition, when the teachers combined these non-verbal representations, gesture was always one of them. In other words, as Goldin-Meadow (2004) suggested, gesture was the linkage between the different modalities and between the non-verbal representations and speech. These studies suggest that among the non-verbal behaviours in classrooms, gesture is the one which has the strongest relation with speech.

Lazaraton (2004) examined how a Japanese teacher of English as a second language used gestures (and other non-verbal behaviours) and speech to explain

vocabulary in her English programme classroom at an American university. In the teacher's three classes from her intermediate-level grammar course, 18 lexical terms, including gerunds, verbs, and quantifiers, were explained. Twelve of them were explained with gestures, and when different forms of verbs were introduced, explanations were primarily conveyed by gestures. Teacher's examples demonstrated the "highly complex and interrelated nature of gestures and speech" and the teacher's "competence at using these forms of communication" (ibid., p.106). In line with this, McCafferty and Stam (2008) pointed out that gestures might serve not only communicative but also cognitive functions in second language acquisition classrooms. These studies suggest that gestures and speech contribute to the educational instruction in concert and their roles intertwine with each other during instruction.

Haviland (2007) observed the gestures used in music instruction, but with a focus on the relationship between speech and gestures (as two separate modalities). He examined a string quartet master class, focusing on the interplay of various expressive modalities such as talk, song, humming, playing, mime, and gesture. The results, again, seem to show that there were strong relations between gesture and speech and other modalities, and point to the multimodal nature of this kind of expert speech. In addition, among the four techniques for choral music educators provided by Wis (1998), there were examples of "physical metaphor" (p. 40): gestures which created the musical elements or concept. These gestures, due to insufficient information about their accompanying speech, might not be categorised into metaphoric ones, depending on different researchers' definitions. However, they pointed out the inadequacy of speech as a sole modality and showed how gestures could play an effective part in music teaching.

The above gesture studies suggest that gestures are frequently co-present with speech in classrooms, and it is from this integration that knowledge is transferred and information is exchanged between teachers and students. Among the various non-verbal representations and/or behaviours used by teachers, gestures seem to be one of the most common forms seen in various educational contexts ranging over different subjects or disciplines, and the one most strongly related to speech. McNeill (1992) emphasises that spontaneous gesture can provide another window for researchers to see how a speaker is formulating an idea for expression. It seems that it does not make much sense to look into teacher's language use in classrooms without also including their use of gesture.

#### **2.3.4 Summary**

The literature reviewed above suggests that both metaphor and gesture are used by teachers. Both metaphors and gestures appear to relate to teaching and learning. Metaphor used by teachers is often closely associated with gesture, and sometimes the sense of the gesture can override the sense of the metaphor. Moreover, as recent studies suggest, both gestures and metaphors are related to our mind and thought, rather than to language only.

The adoption of a purely cognitive or conceptual approach can lead researchers to think that words (or perhaps forms generally) are of little importance. However, Cameron's (2003) warning is important: "Metaphor must be investigated in *both* language and mind, and [. . .] it is important to bring the two realms together, in theory and in analysis" (p. 2). Since these factors—metaphor, gesture, classroom discourse—are strongly related, it can be risky to look into one of them without considering another. Indeed there seems to be no reason to separate them when

conducting a research study on oral discourse in classrooms from a cognitive or conceptual perspective.

To date, only a few research studies on the role that metaphors and gestures jointly play in educational contexts have been published (e.g., Corts, 1999; Corts & Pollio, 1999), and none of them has involved music education. This study therefore aims to bridge the literature gap by answering the following questions (the research questions will be discussed in a more complex form in chapter 5):

1. Do music teachers use metaphor—verbally or gesturally—to teach music in Taiwanese junior high school classrooms, where Mandarin Chinese is the main language of instruction?
  - 1.1. How can both types of metaphor be identified and coded?
  - 1.2. If so, what is the nature of the verbal and gestural metaphors involved?
    - 1.2.1. Can the linguistic metaphors be grouped into recurrent or systematic metaphors?
    - 1.2.2. What are the functions of these metaphors?
2. What are the relations (e.g., sequential, conceptual, and functional) between the verbal and gestural metaphors?
3. What are the educational implications of the findings?

## **2.4 Music Education at Junior High School Level in Taiwan**

### **2.4.1 The Education System in Taiwan**

#### *The Nine Year Compulsory Education System*

The nine year compulsory education system (or, ‘Grade 1-9 Curriculum’) for children in Taiwan, as shown in Figure 2.1, starts from the age of six, including six years of primary school and three years of junior high school. Junior high school, the

level which this project focuses on, is the last half of the compulsory education and students at this level are normally aged between 12 and 14. After junior high school, students can attend either senior high school or senior vocational school for three years, or junior college for five years, and will experience different programmes and pedagogic approaches in the different types of school (Ministry of Education of Taiwan, 2009). Irrespective of one's choice of school, students can only gain entry to them by passing national entrance exams. The higher the score a student gets, the 'better' the school a student can enrol in. Therefore, the pressure for a ninth-grade student in junior high school from both teachers and parents can be intense.

Major subjects taught at junior high schools include Chinese literature, mathematics, English, biology (replaced by physics and chemistry in the second and third years), history, geography, civics and moral values, physical education, home economics, scout education, and music. Based on the content, the subjects are divided into seven 'Learning Areas'. Music belongs to the category of Arts and Humanities, which also includes fine art and performing arts. According to the Ministry of Education (MOE), one of the main purposes of grouping subjects into categories for compulsory education is to increase the diversity of teaching and to encourage the teaching to become closer to students' real-life experiences (Department of Elementary Education, MOE, 2010). The teaching materials for these three subjects in the category of Arts and Humanities are integrated, meaning that concepts of the teaching units in these three subjects are connected. Generally speaking, objectives of the learning area of Arts and Humanities in the Grade 1-9 Curriculum are "to help students to cultivate an interest for arts and encourage them to enthusiastically participate in related activities, thus promoting abilities such as imagination, creativity, appreciation for the arts, and other abilities" (ibid., p. 7).

*General Music Classes and Music-Talented Classes*

The two stages highlighted in Figure 2.1 by the two bolded rectangles are the levels of relevance to the present study: junior high school in both the nine-year compulsory education stream and the special education stream. Special education in this study is limited to music classes for music-talented students. These classes are designed for students who have had professional music training in some way before they take the exams, and therefore are more knowledgeable about music and more skilled at performing it than general students. Usually the music-talented students are required to be able to play two western musical instruments, one of which must be the piano.

Subjects taught in music-talented classes are also slightly different from those taught in the general classes. For example, besides Chinese literature, mathematics, English, geography, and physical education, more time is spent on music-related lessons such as music appreciation, music theory, sight singing and ear training, choir, ensemble, or theories of harmony. Because the students are more acquainted with music than general students are, it seems reasonable to hypothesise that teachers may use different vocabulary and metaphors in these classrooms.

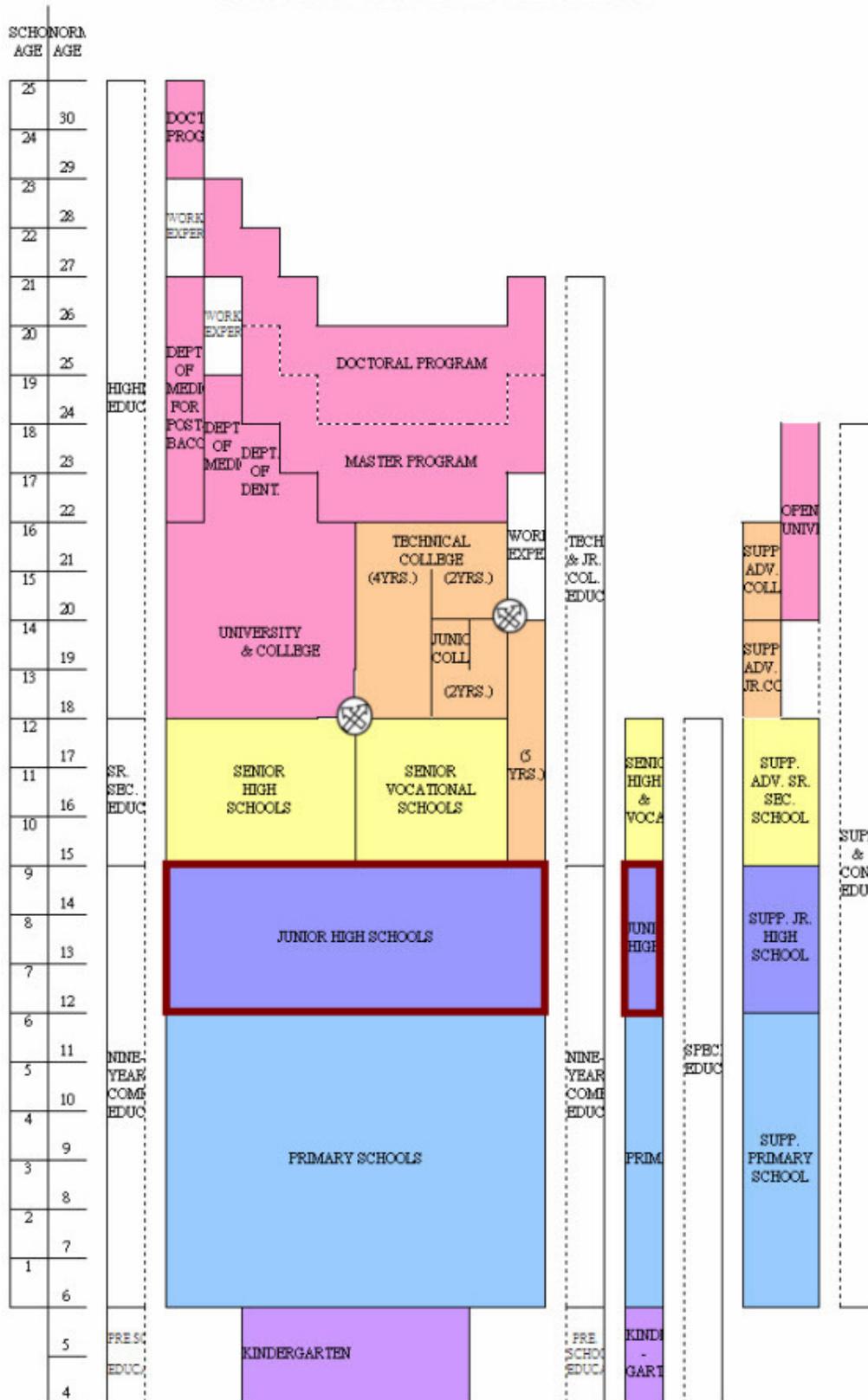


Figure 2.1. The school system in Taiwan.<sup>5</sup>

*Urban and Rural Discrepancies*

Studies (e.g., F.-C. Chang, 2009; Guo & Lo, 1995; Huang, 1990) have suggested that a gap in educational attainment exists between urban and rural areas in Taiwan. Tsai (2008) examined the academic performance of junior high school students in urban, city, rural, and remote schools in Taiwan, and found that better academic performance is achieved in urban and city schools than in rural schools. He additionally noted that both parents' educational degree and a family's monthly income impacted on Taiwanese students' academic performance at junior high school level. In line with Tsai, other studies suggested that the higher social and economic status of families (I.-C. Chen, 2004) and the increased opportunities provided by private institutions (*Buxiban*, 'cram schools') (Huang & Chen, 2008; Lin & Chen, 2006) in the urban areas also contributed to the higher academic achievement. In addition, the official statistics showed an uneven amount of disposable income per household among the 23 administrative districts of Taiwan in 2008. In general, households in the northern districts (e.g., Taipei and Hsinchu) have more disposable income than households in the southern and eastern districts (e.g., Taitung, Yunlin, and Chiayi), according to Accounting and Statistics of Executive Yuan (<http://win.dgbas.gov.tw/fies/doc/result/97/a11/49.xls>), and this can impact on the educational resources which students receive, leading ultimately to considerable differences in education attainment (L.-J. Chen, 1993).

**2.4.2 Music Education at Junior High School Level***Teaching Aims*

Generally speaking, the main learning content of music education at junior high school level in Taiwan relates to the domains of performing and appreciation, which

include (a) basic musical ability (of pitch perception, score reading, and rhythm), (b) playing musical instruments (stringed, wooden, and percussion), (c) singing, and (d) composing and appreciation (Lu, 1999; Ministry of Education, 2003) The teaching aims at this level are to equip students with abilities to (a) explore self, culture, and the world, and create or compose works through perceiving the relations between self and environment, (b) criticise what beauty is and value the arts, and (c) understand the relations between the arts and life, actively participate in multicultural art activities, and learn to respect art and apply it to everyday life (Ministry of Education, 2003). In addition, the curriculum guidelines published by the MOE (ibid.) also point out that the more abstract concepts should not be introduced until the later stage of the Grade 1-9 Curriculum, namely the junior high school level.

#### *Teachers and Teacher-Centred Classrooms*

Hsu (2003) collected and analysed 1,400 questionnaires from art (including music, fine art, and performing arts) teachers at junior high school level in Taiwan in 2001, and found that 77.4% of the art teachers were female, and 63.7% were aged below 40. Most (75.9%) of them had university or teachers' college degrees in arts education or related fields (50.7%). The same study also reveals that more than one third (36.8%) of the art teachers decided and designed their own syllabus, and greater focus was placed on appreciation and application than performing.

Although integration with diverse group or extra-curricular activities is encouraged, traditional classroom teaching (i.e., face-to-face lectures by teachers) is suggested by the MOE (2010) as the main teaching approach for music education at junior high school level in Taiwan. Each class consisted of no more than 35 students in 2007 and 2008 (ibid.).

## 2.5 Conclusion

Two distinctive points of view (linguistic and cognitive) towards metaphor have been discussed. In CMT, metaphor is an underlying conceptualisation which is realised by linguistic metaphorical expressions and other manifestations such as gestures. It is therefore claimed to reflect and structure thinking. To be more specific, metaphor is a set of mappings from a Source domain onto a Target domain, which means that the mapping is not only unidirectional but systematically involves a set of correspondences between the two domains. In addition, during the mapping, only part of the knowledge and structure of the concept in the Source domain is mapped. Therefore although metaphor can enhance comprehension by conceiving of something more abstract in terms of something more concrete, it can also produce misunderstandings by simultaneously highlighting and hiding certain aspects of what is metaphorised.

The de-contextualisation aspect of CMT is opposed by applied linguistics researchers who insist on the importance of how language is used and presented in context, though they do not totally discard the concept of conceptual metaphor. They claim that metaphor has to be investigated along with its surrounding words and the context in order to be understood, and emphasise that metaphoricity may vary in a dynamic discourse. This bidirectional interaction between metaphor and its manifestations thus contradicts the notion of a unidirectional relationship between metaphor and its manifestations in CMT. Systematic metaphors, organised examples of the language actually used in a specific discourse, are grouped on the basis of similar semantic meanings of the Vehicle and Topic of the linguistic metaphors, and allow researchers to investigate relations between the linguistic metaphors in a discourse.

Gesture, or gesticulation in Kendon's spectrum, being more dependent on language and carrying fewer properties of a language than emblems or sign languages, has been claimed to be another mode via which conceptual metaphor can be manifested. A gesture may consist of various phases and a stroke, the kinetic peak of effort in the gesture, is the meaningful part of a gesture and hence is an obligatory phase and a key for gesture identification. It has been suggested by empirical studies that gestures may provide supplementary, and even independent, evidence of how conceptual metaphor works.

Empirical studies suggest that gestures and metaphors can be effective educational tools in various fields at different school levels, and metaphor can be manifested by both gestures and linguistically metaphorical expressions. Studies conducted in a range of countries suggest that metaphor, together with other verbal instruction, is an important aspect of music education generally. This is partly due to the abstract concept of music. Metaphors used by teachers create an affective state which helps students to 'grasp' teachers' modelling when performing or interpreting music. On the other hand, gestural studies conducted in mathematics, English, and music classrooms have shown the frequent co-presentation of gestures with speech, and teachers use them either purposely as a pedagogical tool or spontaneously with other verbal and non-verbal instructions to transfer the knowledge to the students. However, most studies conducted in classrooms consider gestures and metaphors separately and seldom do they show how the modalities of speech and gestures are related, or manifest metaphor in classroom instruction.

To judge by the limited official statistics and literature, female teachers with university and equivalent degree in professional fields in fine art, performing arts, or music; lecturing as the main teaching approach; and classes consisting of 30 to 35

students can be generally expected in music classrooms at junior high school level in Taiwan. In addition, the abstraction involved in the curriculum at this level may lead to more metaphors being used than at the primary level, a phenomenon which was designed to be further explored in a preliminary study.

## Footnotes to Chapter Two

<sup>1</sup> The metaphorically-used words are underlined throughout this thesis.

<sup>2</sup> Due to the various different definitions of the lexeme, *qi* has been translated differently by researchers; for example, ‘air’ by Shyu (1989), ‘gas’ by Yu (1998), and ‘qi’ by T.-C. Chen (2004). As T.-C. Chen (2004) suggested, *qi* referred to a form of energy and essence of the body in classical Chinese, while it refers to air or gas in contemporary Chinese. In this chapter, the more modern concept of ‘gas’ is used to explain the systematic use of the linguistic metaphorical expressions of anger.

<sup>3</sup> One may argue that *qi* here is metonymy rather than metaphor; however it was beyond the scope of the present study to distinguish between them. See section 6.4.2 for further discussion.

<sup>4</sup> Recent studies (e.g., Kövecses, 2008) suggest that researchers have started to look at how metaphors vary with aspects of context within CMT.

<sup>5</sup> From the Ministry of Education of Taiwan (<http://english.education.edu.tw/ct.asp?xItem=153&CtNode=499&mp=1>). Retrieved 05 April, 2010.

## **Chapter 3**

---

### **A PRELIMINARY STUDY**

---

This chapter describes a preliminary study conducted at an early stage of the research. Section 3.1 illustrates the aims and the two phases. Section 3.2 describes the data, followed by a discussion on the procedure, problems, and policy of metaphor identification in section 3.3. Section 3.4 focuses on the methods, including how: the sessions were transcribed, the reliability of metaphor identification was achieved, and the density and distribution of metaphors were analysed. The results of the analysis for the two phases are then presented in section 3.5. Finally, the implications for the pilot and main studies are discussed in section 3.6.

#### **3.1 About the Preliminary Study**

The aims of this preliminary study are: (a) to explore whether music teachers use metaphors in classrooms and if so, what these metaphors are and where and how they are used; (b) to test out and develop metaphor identification procedures. Two music sessions at primary and junior high school levels in Taiwan provide the data.

The study had two phases. In phase one, metaphors used by the teachers in their sessions were identified by using the ‘Metaphor Identification Procedure’ (MIP) developed by the Pragglez Group (Pragglez Group, 2007). MIP provides a good guide to identifying and deciding in a consistent way whether words or terms are

metaphorically used. After this, systematic metaphors (MetNet Group, 2006; as discussed in 2.1.3) were established and functions of the metaphors were discussed. In phase two, metaphor distribution was analysed, with a focus on music metaphors which were used to talk about music (rather than other topics such as classroom management).

For ease of understanding, each utterance is presented as four lines in this chapter and throughout the thesis: Chinese characters, Hanyu Pinyin, the literal English equivalent of each Chinese element (glossing conventions are listed on the preceding Abbreviations and Conventions page), and a translation of the utterance, attempting to preserve the ‘flavour’ of the Chinese utterance if possible. Again, linguistic metaphors are underlined.

### **3.2 Sample and Text Selection**

Two music teachers who had taught music for at least three years in Taiwan were asked to record one general music session. They were informed that the research was about how music teachers teach music using the Chinese language, and were accordingly asked to record sessions that involved as much teacher talk as possible.

Both recordings were sent to my email account in digital form. The first recording from a primary school teacher involved roll call, singing, music reading, and recorder (a woodwind instrument with a vertical pipe and eight finger holes and a whistle mouthpiece) playing. Four digital files made up a total recording time of 30 minutes. The other recording from a junior high school teacher involved teaching music history and watching the film *West Side Story*, composed by Leonard Bernstein. This session was sent in one file and it lasted 50 minutes.

Various activities were involved in the two sessions. Lecturing and classroom activity (primary school only) were the two main approaches found. Mandarin

Chinese was the main language used by the two teachers, though sometimes a very little Taiwanese (*Min-nan* or *Holo*) and English were involved. All were included as valid data. Background data of the two recordings are shown in Table 3.1, and the class timelines for the two sessions in Figure 3.1.

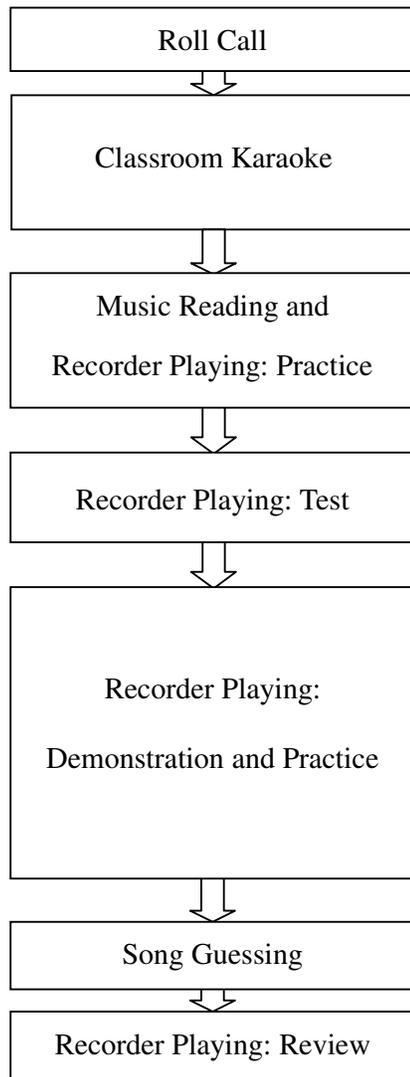
Both schools are public schools in different areas of Taiwan. Founded in 2002, the primary school is a young school located in a major urban city in the south. In 2005-2006 it had 40 classes and a total enrolment of 1,500. The junior high school, on the other hand, was founded in 1988; in 2005-2006 it had 4,268 students and 113 classes. It is situated in a middle to upper-middle class suburb of a major northern city. According to the statistics from the MOE, the average numbers of students in primary and junior high schools in Taiwan in 2005-2006 were 690 and 1,299 respectively. The sizes of both schools were larger than the average. It was hoped that by selecting big schools at both levels as a start, unexpected bias would be avoided. Details can be seen in Table 3.2.

Table 3.1

*Background Data of the Recordings for the Preliminary Study*

<i>Data Type</i>	<i>Recording 1</i>	<i>Recording 2</i>
Class Level	Primary School	Junior High School
Class Structure	<ul style="list-style-type: none"> <li>● Roll call</li> <li>● Singing</li> <li>● Music reading</li> <li>● Recorder playing</li> </ul>	<ul style="list-style-type: none"> <li>● Music history</li> <li>● Film watching</li> </ul>
Content	<ul style="list-style-type: none"> <li>● Roll call and attendance check</li> <li>● Classroom karaoke (a reward for students who perform well)</li> <li>● Music reading</li> <li>● Recorder playing: test, demonstration, practice, and review</li> <li>● Song guessing</li> </ul>	<ul style="list-style-type: none"> <li>● Music history review</li> <li>● Film introduction</li> <li>● Film watching and commentary</li> </ul>
Main Teaching Approach	<ul style="list-style-type: none"> <li>● Lecturing</li> <li>● Classroom activity</li> </ul>	<ul style="list-style-type: none"> <li>● Lecturing</li> </ul>
Language Used	<ul style="list-style-type: none"> <li>● Chinese</li> <li>● English</li> </ul>	<ul style="list-style-type: none"> <li>● Chinese</li> <li>● Taiwanese</li> <li>● English</li> </ul>
Discourse Length	30 minutes	50 minutes
Number of Transcript Characters	3,825	7,062

Recording 1



Recording 2

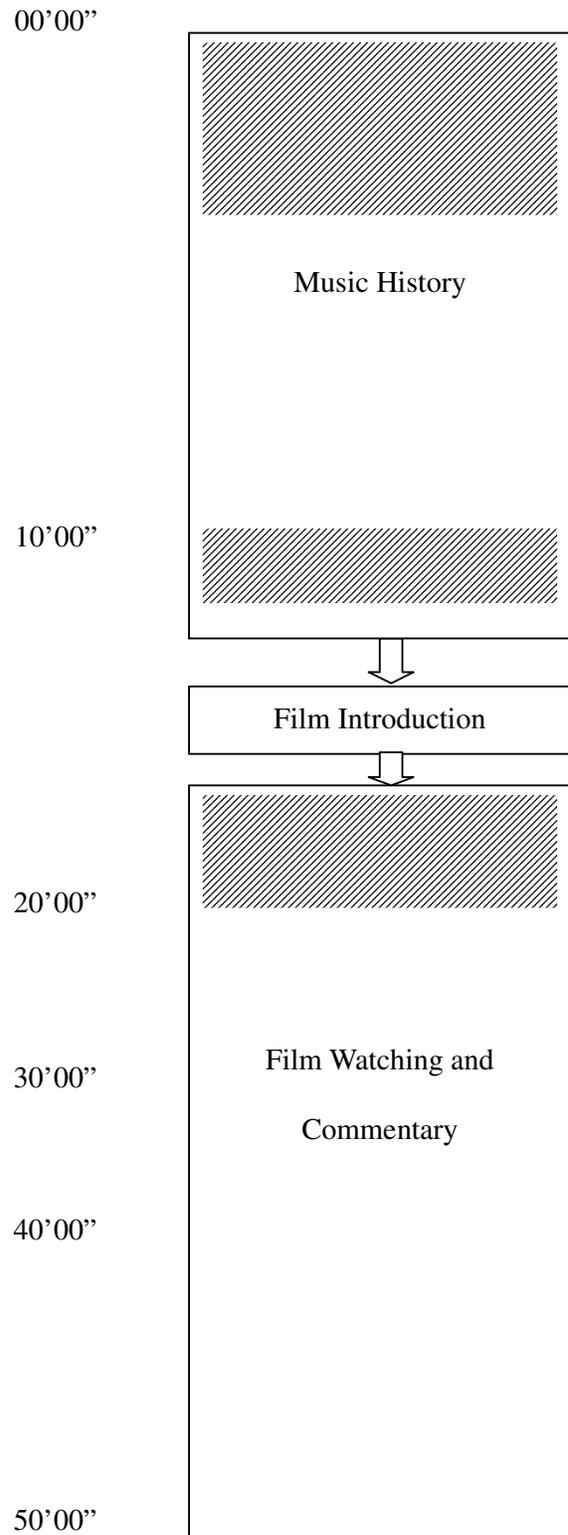


Figure 3.1. Preliminary study: Class timeline.

Table 3.2

*Background Data of the Schools for the Preliminary Study*

<i>Data Type</i>	<i>School 1</i>	<i>School 2</i>
School Level	Primary School	Junior High School
Foundation Year	2002	1988
Location	Urban city in southern Taiwan	Suburb of a major city in northern Taiwan
Number of Classes (2005-2006)	40	113
Number of Pupils (2005-2006)	1, 500	4, 268

### 3.3 Metaphor Identification

#### 3.3.1 Identification Procedure

MIP (Pragglejaz Group, 2007; see section 6.3.1 for a detailed discussion) was applied to identify metaphorically-used words or terms, in order to improve the validity and reliability of the study. It provides not only clear and analytical steps for researchers to follow when identifying metaphor, but also a consistent criterion of identification which coders can use in reliability checking exercises.

After determining the smallest identification unit to be words rather than phrases (see section 3.3.2 for other exceptions and the coding policy), metaphorically-used words in the classroom discourse in the data were identified, and then categorised into groups based on their Vehicle and Topic domains. More details are discussed in section 3.4.1.

The identification procedure was checked with inter-coder reliability measures, in which another coder carried out the procedure and the outcomes were checked against each other. The other coder was involved to increase the reliability of the study. A second coder, a native speaker of Mandarin Chinese, a student in the Department of Educational Studies at the University of York, had taken courses on metaphor and metaphor identification before being involved in the study. I gave the coder definitions of metaphor and training in the use of MIP, and asked her to apply it to all of the identification units in the extracted transcript. I did the same thing as well. Following Cameron (2003), the inter-coder reliability rate was only considered to be acceptable if it was 75 per cent or more, which meant that the coders had to come to an agreement with at least 75 per cent of the total number of metaphorically-used words or terms.

### **3.3.2 Identification Problems and Policy**

Problems arose less from the methodology, but more from our definition of words. Take *tese* ('characteristic', 'distinguishing feature') for example. It was used by the junior high school teacher when asking her students about the special features of music in the Baroque era. The morpheme *te* means 'special' and 'unusual', while the other morpheme *se* means 'colour'. *Se* was the focus of our first discussion. We asked ourselves the four questions which determine a metaphorically-used word together:

Questions	The Other Coder's Answer	My Answer
1. What does the word mean in the text?	quality	quality
2. Does the word have a basic sense?	colour	quality
3. Is the basic sense clearly different?	yes	no
4. Is that basic sense relevant to the sense here?	yes	X
Results	Metaphor	Non-Metaphor

*Tese* was treated as a lexical unit (MIP's basic unit of metaphor identification) and I did not consider each component morpheme's basic meaning. My answer to the third question was therefore 'no' and I did not include *tese* as a metaphor. The other coder, who took *se* as a unit and believed that 'colour' (basic meaning of *se*) and 'quality' (contextual meaning of *se*) were clearly different but the contextual meaning could be understood in comparison with the basic meaning, and therefore she included the term in her metaphor list.

Such discussion reflects the importance of word segmentation (i.e., the definition and identification policy of identifying the basic unit), and helps develop the identification policy on deciding word segments later for the main study, discussed in section 6.4.1.

In the present preliminary study, a policy was set up before identifying metaphor, in order to make sure that the process of identification was consistent. Problem areas and my policy on identifying metaphor were as follows.

### *Words*

A *morpheme* is the smallest meaningful unit of language, a *word* refers to the basic unit that can act independently in a sentence, and a *character* is a logogram, the unit of presentation, used in the Chinese writing system. A character was the smallest unit for metaphor identification in this preliminary study and the main study (see section 6.4.1 for further discussion). That is to say, a character was not further divided into different parts in the way that parts of a word (e.g., a frogman) may be identified in English.

### *Lexical Units*

A lexical unit is the basic unit of metaphor identification when applying MIP. In Mandarin Chinese, lexical units (i.e., word segments) can be one or more characters or words organised into groups or units; in other words, the term, *piaoliang* ('beautiful'), was treated as one unit, although it consists of two characters or morphemes, because the meaning of *piaoliang* is lost if the term is taken apart into two independent characters or morphemes, *piao* and *liang*. Further examples are *shoufa* ('technique', 'skill') and *kaitou* ('beginning'). These two-morpheme terms both contain one morpheme which refers to body parts, like *shou* for 'hand' and *tou* for 'head', each of which would be classified as metaphoric if one were to go below the level of lexical units. Further discussion on segmentation policy is given in section 6.4.1.

### *Basic Sense of the Lexical Unit*

One of the four questions in MIP involves deciding whether the word or term has a basic (e.g., concrete) sense. This can be a difficult question to answer because in

many cases one uses a certain character or word just because everyone else uses it, and as time goes by, the character or word carries more and more different meanings until no one knows, or is conscious of, the ‘basic’ meaning of the character or word. In addition, what counts as ‘basic’ is arguable, too. Take *gen* in Extract 1 (below) for instance. It is a word which is often used as a conjunction, functioning as ‘and’. Due to this, it is easy not to pick up the basic meaning of *gen*, which stands for ‘heel’ (the rear part of an object), indicating ‘following behind’ and ‘going with’.

## Extract 1

852 把 一 個 作 品 跟 舞 蹈 跟 音 樂 跟 舞 台 上 表 演 結 合

ba yi ge zuopin gen wudao gen yinyue gen wutai shang biaoan jiehe

(BA) one (C) work and dance and music and stage up performance combine

Taking and combining one work with dance and music and performance on stage . . .

853 真 的 很 不 容 易

zhende hen bu rongyi

really very not easy

it's really not easy.

Dictionaries were used to help resolve this sort of issue. The idea was to choose and consult the same dictionary whenever the coders were not sure about the basic meaning. The first more concrete meaning listed in the dictionary was always adopted and taken as the word's basic sense. The dictionary used for this study was the online *Concise Chinese Dictionary* developed by the Taiwanese MOE. It is claimed by the MOE that the target users of this dictionary are primary and high

school students, and overseas learners, and hence explanations of each character or term are simple, clear, and often colloquial. In addition, the dictionary is claimed to be corpus-based; the examples given in the dictionary are extracted from contexts in the real world (Ministry of Education of Taiwan, 2002). Since the data for this preliminary study came from classroom discourse in primary and junior high schools, and the main purpose of using a dictionary was to suggest basic meanings of Chinese words or terms, this dictionary was considered to be an appropriate choice. It was also used later, in the main study.

Taking *gen* as an example, the dictionary lists four meanings and their corresponding examples: (a) “the rear part of objects”, for example, *jiaogen* (‘foot heel’) and *xiegen* (‘shoe heel’); (b) “to follow”; (c) “and” (a conjunction); and (d) “to” (a preposition). Based on this, the first meaning is taken as the basic meaning of *gen*.

Another example was when the other coder and myself disagreed on whether the term *tese* (‘characteristic’, ‘distinguishing feature’) was metaphorically used or not, raised earlier. The other coder included the term in her metaphor list because she believed that the term had a basic meaning of colour and this was different from the contextual meaning of the term, ‘characteristics or features’. We then consulted the dictionary and found there was only one explanation given: the unique image or feature. This is irrelevant to colour and it also suggests that the term has no other extended meanings, and should be treated as a unit without splitting the two consisting morphemes. As a result, it was agreed that the term was not metaphorically used.

*Technical Terms*

Technical terms were examined on an individual basis to see if they were metaphorical, based on the context they were in, as the activeness and metaphoricity (see the discussion in section 6.3.3) can change from line to line.

*Translated Terms*

Some terms, especially technical terms, were translated from other languages. Such terms are used as conventional terms in the target language (here Mandarin Chinese), but in fact may carry some other different and relevant basic meanings in the source language. *Baluoke* ('Baroque') is an example. In music, it is used to designate the style of music composed during a period that overlaps with that of Baroque art, beginning around 1600 CE. Deriving from the Portuguese noun 'barroco', a pearl that is not round but of unpredictable and elaborate shape, the term was not applied to music in English until the 1940s (Bukofzer, 1939-40, 1948; Lang, 1942; The Oxford English Dictionary Online, 2009). However, the term has been borrowed into Mandarin Chinese where it does not carry the meaning of pearl. In this case, 'baroque' was excluded from the metaphor list.

*Expressions in Other Languages*

Although Mandarin Chinese is the official language of Taiwan and the one most often used in schools, teachers might occasionally use other languages in class. Examples of Taiwanese and English were both discovered in the data. Expressions in languages other than Mandarin Chinese were taken into consideration on a case by case basis.

### 3.4 Method

#### 3.4.1 Phase One

I first transcribed the entire two sessions from both the primary and junior high schools. The discourse in the music classrooms differed from that used in other classrooms because (a) the teachers spoke in a rhythm specifically corresponding to the music when they inserted their talk between songs and it was not easy to authentically record this rhythm of the discourse, and (b) in sections of the teaching on how to play instruments and interpret music, teachers sang the melody using the solfège syllable (do, re, mi, fa, sol, la, si or ti), which seemed to carry little meaning for metaphor identification. The first point turned out not to be a real problem at this stage but was paid particular attention to later when transcribing and locating gestures accompanying the speech: the time when the words are uttered and the gestures are made is important for how the two modes are temporally related. In addition, solfège syllables were in fact transcribed and treated like other words or characters since they were parts of the lectures. In other words, metaphor density was calculated with solfège syllables included. The combined length of the two recordings was 80 minutes, totalling 10,887 characters (including solfège syllables) transcribed. The same policy also applied in the pilot and main studies.

Three passages (see section 3.5.1) were selected for discussion with the other coder, who had received the same passages to code for metaphorically-used words. The other coder agreed with 40 of the 55 metaphors I identified. However, there were two metaphors which only the other coder identified, making 17 possible metaphors we disagreed about (i.e., 30.9% disagreement). Identification problems were resolved by discussion, and notes were made of the results. Basically the discussions worked well because (a) the other coder helped clarify the thinking

(although sometimes it seemed to confuse us at the beginning); (b) discussions helped turn abstract or vague thought into more precise expression. It was not always easy to describe language by using language, but the other coder and I were required to express our ideas clearly and understandably to each other. By doing so, the possibility of identifying metaphors solely by intuition was reduced; (c) the other coder raised some questions which I myself had not thought about (e.g., word segmentation as discussed earlier) before the discussions and they provided me with the opportunity of looking at things from different angles.

Some metaphorically-used words that appeared repeatedly in the data could be categorised into groups based on their Vehicle and Topic domains. I read through the metaphorically-used words agreed by both coders and used different colours for different Vehicle domains. Within each Vehicle domain, the linguistic metaphors were grouped by Topic domain (further discussion on grouping systematic metaphors can be seen in sections 6.3.1 and 6.4.3). The systematic metaphors produced in this preliminary study will be discussed later in 3.5.1. Finally, another copy of the transcript was used to count metaphoric density. Nominal, verbal, adjectival, and prepositional metaphors were highlighted in different colours in order to study the forms of these metaphorically-used words.

### **3.4.2 Phase Two**

In phase two of the study, particular attention was paid to music metaphors in order to extract a manageable amount of data to further analyse the distribution of the metaphors. At first, the two complete transcripts of the recordings from both teachers were reviewed again, and this time only music metaphors were selected. Music metaphors were first defined (for details, see 3.5.2), and the criteria used for

including and excluding music metaphors were set up. Those metaphors which did not correspond with the definition or criteria of music metaphors were excluded. Then music metaphor densities were calculated for both transcripts, and the one with higher density was chosen for further analysis of distribution.

In order to understand their distribution, the music metaphors were mapped onto teaching sequences after teaching sequences had been analysed independently (further discussed in section 7.2.4). Each single sentence with music metaphors and its context were picked out and they were then labelled in terms of various types of teaching sequence. By following categories of teaching sequence, the distribution of music metaphors was analysed.

## **3.5 Results**

### **3.5.1 Phase One**

In phase one, the aim was to explore whether music teachers at the two school levels used metaphors in classrooms and, if so, what these metaphors were. Three passages were extracted from the transcripts for metaphor analysis. Since the purpose of the study was to examine metaphor, and the session from the primary school teacher did not contain many metaphorically-used words, the three extracts were all taken from the session given by the junior high school teacher. Systematic metaphors were grouped and functions of the metaphors were then discussed.

One extract was a longer continuous discourse event from the start of the session, where the teacher helped the students review music history from the textbook. The second extract was near the end of the music history review, and the third was taken from where the class started to watch the film (marked by the three shaded squares in Figure 3.1). The three extracted passages comprise 605, 252, and

418 characters (again, including solfège syllables). The data have been aggregated for the purpose of the metaphor analysis.

#### *Metaphor Density*

The three extracted passages from the junior high session contained 1,275 characters in total and 33 metaphorically-used word segments were identified. Metaphor density was therefore 25 metaphors per 1,000 characters. At the time of the study, I could find no comparable density figures for Chinese; however, the number corresponds roughly to what Cameron (2003) found for her UK educational discourse, in that “spoken discourse might be expected to have a metaphor density of between 20 and 60 per 1000 words” (p. 57) at primary school level. Her unit of identification included metaphorically-used *phrases* in English rather than Chinese characters, and 20 to 60 is a very broad range. Further studies in Chinese based on larger samples are needed before any conclusions about different metaphor densities in Chinese and English discourses can be drawn.

Of the 33 metaphorically-used words or terms, 15 are nominal (including 1 conjunction) metaphors, 15 are verbal (including 1 auxiliary verb) metaphors, 2 are adjectival metaphors, and 1 is a prepositional metaphor. This result differs from that of Cameron’s research in which the most common form was metaphors involving prepositions. The most likely reason for the difference is the fact that Chinese has fewer prepositions than English and makes much less use of prepositional expressions. Similar results were also found later in the main study (see section 7.2.3 for a detailed discussion).

*Systematic Metaphors*

Each metaphor group is discussed individually next, using examples extracted from the data.

## MUSIC (PERFORMANCE) IS A CONTAINER

In the recording, when the music teacher tried to direct her students to guess which musician she was talking about, she took music as a container into which things could be placed:

## Extract 2

593 捷克的莫爾島河

jieke de moerdaohe

Czech (DE) Moldau river

The Moldau River of Czech Republic,

594 這些都在他的樂曲當中

zhexie dou zai ta de yuequ dangzhong

these all (CSC) he (DE) music within

these are all in his music.

Just before the teacher introduced the musical, *West Side Story*, the Vehicle domain, container, was used again, and this time it was the music performance (musical) which was taken as a container:

## Extract 3

842 把它放在裡面

ba ta fang zai limian

(BA) (3SG) put at inside

Put it (Jazz) inside [the musical].

Here ‘it’ referred to Jazz music based on the previous utterance and what the teacher meant was ‘put Jazz into the musical or film’, a form of music performance.

#### TO PAY ATTENTION IS TO COME FORWARD

In my data, the teacher metaphorically used the word *lai* 36 times during her 50 minute session. *Lai* means ‘to come to’ and in using this word, the teacher was asking her students to give her their attention, rather than stand up and move towards her physically. She also used *lai* to direct and move students’ thoughts when she was going to end a section of the session and start a new one:

#### Extract 4

10 來

lai

come

Come on!

11 看 課本 喔

kan keben ou

look textbook (PRT)

Look at your textbook.

12 唉唷

aiyo

alas

Alas!

13 你 剪 頭 髮 了

ni jian toufa le

you cut hair (PRT)

You've had a haircut.

14 帥 !

shuai

handsome

Good!

15 呵 呵

he he

(O)(O)

Ha ha.

16 好 來

hao lai

OK come

Well, come on . . .

17 我 們 把 重 點 複 習 一 下 喔

women ba zhongdian fuxi yixia o

we (BA) point review once (PRT)

let us review some points.

The *lai* in the first utterance in the above extract shows the teacher trying to direct her students' attention to their individual textbooks. However, just after she

finished her sentence, she noticed that one of her students had had his hair cut, and therefore instead of talking about something in the textbook, which she should have done next, she created an aside and told the student specifically about his hair cut. Then in the following utterance, she used the word *lai* again to bring the whole class back to the original track, which was to look at the textbooks and by doing this, she created a second beginning to the new section.

#### A MUSIC PATTERN IS A PERSON'S CHARACTERISTICS

*Wangu diyin* ('basso ostinato') is a musical term for a bass part that repeats continually, while the melody and possibly harmony over it change. The teacher in my recording talked about it when introducing the key features of music in the Baroque era. The term itself is a personification, as the basic meaning of *wangu*, according to the consulted dictionary, is to describe someone who is stubborn and here in the musical context, it was used to indicate a repetitive pattern of music. Personification allows us to "make sense of phenomena in the world in human terms—terms that we can understand on the basis of our own motivations, goals, actions, and characteristics" (Lakoff & Johnson, 1980, p.34).

#### APPROVAL IS BEAUTY

Another 'pair' example of personification comes from *shuai* ('handsome') and *piaoliang* ('beautiful'). As can be seen in Extract 4 above, the teacher suddenly realised that one of her students had had his hair cut and used the word *shuai* as an evaluation. This word here can be interpreted in two different ways. One is to indicate that the student looks handsome with his new hair style. *Shuai* here is then not metaphorically used, because the contextual meaning of *shuai* is exactly the

same as its basic meaning. However, the other interpretation is that the teacher used *shuai* to show her approval of the action of having the hair cut. In this case, *shuai* is used in the context of describing the action rather than the student's appearance. The contextual meaning contrasts with the basic meaning and can be understood by comparison with it: we can understand the abstract intention of action in terms of physical style of external appearance. Therefore in the second case, *shuai* is metaphorically used.

Since I am personally acquainted with the teacher, I can be almost sure that the second interpretation applies, because it is the way she commonly talks in daily life. In addition, later on, when one female student gave the right answer to her question, the teacher said *piaoliang* ('beautiful'). This time we can be even surer that the word is metaphorically used because it does not make sense for the teacher to praise her student's beauty at that moment. *Piaoliang* here means 'Good! Excellent!' The student's idea (or her action) is personified.

#### STRENGTH IS SOMETHING VALUABLE

Strength or effort can also be as valuable as time and money. In the recording, when the teacher described how difficult it was to perform a musical, compared with other types of performances like drama or ballet, she conceived of strength or effort as money:

#### Extract 5

882 比 别人 花 很 多 倍

bi bieren hua hen duo bei

compare others spend very a lot times

(The actors) use (their strength) much more often than others do.

#### PITCH MOVEMENT IN MUSIC IS VERTICALITY IN SPACE

VERTICALITY, the Vehicle domain, is where an ‘up-down’ spatial orientation is used, based on physical experience of the world. The metaphor is particularly interesting because most of the time keyboards that ‘generate’ pitch are presented to students horizontally; however the words ‘up’ and ‘down’ are always used to talk about pitch in both English and Chinese. Thus the teacher asked the following question when she explained the musical term *basso ostinato*:

#### Extract 6

103 然後 不是 上面 旋律 有 一直 變化

ranhou bushi shangmian xuanlü you yizhi bianhua

then isn't it up melody have always change

and then Melody on the top keeps changing,

104 可是 下面 低音 四 部 如何?

keshi xiamian diyin si bu ruhe?

but down bass four parts (Q)

but how are the four parts below?

#### *Functions of Metaphor*

The metaphors employed in the junior high school classroom served: (a) to transform the abstract into the concrete or something more familiar, (b) to function as transition markers in classroom discourse to draw student's attention to

something, or change the topic, (c) to evaluate or praise, and (d) to summarise. Each is discussed below.

*(a) Transform the Abstract into the Concrete or Something More Familiar*

This is the basic idea of metaphor. For example, in order to help students understand the abstract ideas of the musical pitch, the teacher herself conceptualised music as a physical space with verticality and by doing so, she asked her students to make the same assumption that music is a physical space.

*(b) Function as Transition Markers*

Attention is metaphorically conceived as an object and under such circumstances, it becomes something that can be moved around. *Lai* ('come'), discussed earlier in Extract 4, is an example of this. *Lai* is a verb meaning moving from somewhere else to the place where the speaker is. Rather than ask the students to physically come closer to her, the teacher asked them to move their attention to her. *Lai* was therefore used as a metaphor to direct students' attention. It then became a transition marker in the classroom discourse. The other example is when the teacher reviewed music history for the students; when she wanted to change the topic from the periods of Romanticism to Romantic Nationalism, the metaphor *kuaguo* ('step across') was used, as if the teacher was leading the students physically from one stage to another.

*(c) Evaluate or Praise*

*Shuai* ('handsome') and *piaoliang* ('beautiful') are normally adjectives for describing people's appearance. However, they were used in the data as adverbs to describe the way students did certain things, and/or as adjectives to praise their ideas. They were evaluations from the teacher to her students.

*(d) Summarise*

The basic meaning of *zai . . . dangzhong*, ‘in the middle of’ or ‘inside (something)’, indicates the idea of containers into which things may be placed. Music is not something we can touch or see, but, as illustrated in Extract 2, when the teacher talked about Bedřich Smetana’s music she described it as a container where the composer puts everything inside. By doing this, she summarised what she had said about this work and therefore led the topic in a new direction.

**3.5.2 Phase Two**

In phase two, the focus was on the music metaphors and their distribution in the music classrooms. Music metaphors in both transcripts from the two teachers were first identified and counted. The session with higher music metaphor density, the one given by the junior high school teacher, was then used for further analysis of distribution.

*Music Metaphors*

In this phase, music metaphors were defined as metaphorically-used words or terms which appeared in discourse referring to music or to the process of understanding music. Therefore, for instance, the sentence “*lai, kan keben*” (‘Come and look at your textbook’) was classed as a non-music metaphor because when the teacher said it, she was giving directions to the class and referring to neither music nor the process of understanding music.

*Music Metaphor Density*

The numbers of music metaphors in the two transcripts of 3,825 and 7,062

characters were 7 and 29 respectively, which make the music metaphor density in the two sessions at the two school levels 2 and 4 per 1,000 characters. Among the 36 music metaphors, there are 22 nominal (including 4 conjunctive), 11 verbal, 2 adjectival metaphors, and 1 prepositional metaphor. 7 of them are technical terms (all nominal). The result is quite similar to the result from phase one: nouns and verbs are the two most frequent categories used. The junior high school session with the higher music metaphor density was used for further analysis of distribution.

*Distribution of Music Metaphors*

Nineteen out of 29 music metaphors occurred during the music history review; the other 10 were from the film commentary.

*(a) Music Metaphors in Agenda Management*

Metaphors were used to open or close a session, or to change the topic during it. Below is an example when music metaphor was used to change the topic. The teacher began by saying that “we’ve finished talking about Baroque and Classical”. Right after this, she invited the class to join her and move to another topic (i.e., Nationalists) as the next destination.

Extract 7

529 那我們先 跨過 浪漫派 直接 到 國民樂派 的 話

na women xian kuaguo langmanpai zhijie dao guominyuepai de hua

(PRT) we first step across Romanticism direct to Nationalism (DE) (PRT)

Now let’s step across Romanticism and go to Nationalists in Music.

*(b) Music Metaphors as Explanation*

The following example is when the teacher explained the different types of background music in the film. She used the adjective ‘nervous’ to describe the tenseness of the music accompanying a group fighting. By doing this, she was in effect personifying the music:

## Extract 8

1009 你 看 當 他們 開始 扭打 的 時候

ni kan dang tamen kaishi niuda de shihou

you look when they start scuffle (DE) time

Look! When they (the actors) start to scrap,

1010 音樂 是不是 也 變得 比較 緊張?

yinyue shibushi ye biande bijiao jinzhang

music (Q) also become more nervous

isn't the music becoming more nervous?

1011 扭打 的 時候

*niuda de shihou*

scuffle (DE) time

When (they, the actors) scrap,

1012 你 看 音樂 就 變得 緊張 了

ni kan yinyue jiu biande jinzhang le

you see music (PRT) become nervous (PRT)

(hence) you can see the music become nervous.

*(c) Music Metaphors in Checking Information*

In my data, the teacher used guiding questions to check students' understanding and music metaphors were used in these questions:

## Extract 9

45 浪漫 到 現代 中間 有 夾 一 個 別 的

langman dao xiandai zhongjian you jia yi ge biede

Romantic to Modern middle have clip together one (C) other

Romantic and Modern eras clip together some era in the middle. (i.e., 'An era acts as a bridge between Romantic and Modern eras.')

46 是 什麼 ?

shi sheme

is (Q)

What is it?

*(d) Music Metaphors in Summarising*

In Extract 10, the teacher used the MUSIC IS A CONTAINER metaphor to help her summarise *The Moldau* and, in doing so, she not only concluded her comments on the work, but also moved the session to the next stage, which was asking the students who the composer of *The Moldau* was:

## Extract 10

588 他 呢

ta ne

he (PRT)

Well,

589 用 來 寫 自 己 國 家 風 景 的 優 美

yong lai xie ziji guojia fengjing de youmei

use come write self country scenery (DE) beauty

he uses (the work) to write about the beautiful scenery of his own country.

590 他 呢

ta ne

he (PRT)

Well,

591 描 寫 的 是 捷 克 的 風 景 優 美

miaoxie de shi jieke de fengjing youmei

portray (DE) is Czech (DE) scenery beauty

what he portrays is the beautiful scenery in the Czech Republic,

592 那 包 含 譬 如 說 捷 克 的 城 堡

na baohan piru shuo jieke de chengbao

(PRT) include example say Czech (DE) castle

including, say, the Czech Republic's castles;

593 捷 克 的 莫 爾 島 河

jieke de moerdaohe

Czech (DE) Moldau river

the Moldau River of the Czech Republic,

594 這 些 都 在 他 的 樂 曲 當 中

zhexie dou zai ta de yuequ dangzhong

these all (CSC) he (DE) music within

these are all in his music.

595 請 問 誰 ？

qing wen shei

please ask who

Who is this, please?

596 他 是 哪 一 位 呢 ？

ta shi na yi wei ne

(3SG) shi na one (C) ne

Who is this one?

### 3.6 Implications for the Main Study

The preliminary analysis indicated both substantive and methodological issues which needed to be considered for the future main study.

Metaphor density in different music sessions could differ very much. There were presumably reasons why the session from the primary school teacher did not involve many metaphors. The contents of the session could be one reason. The fact that about two thirds of the time was taken up with roll call (1 minute 40 seconds), recorder playing practice, a recorder playing test, and a recorder playing review either one by one or group by group (totalling 18 minutes) explained why the whole 30 minute session was full of direct and literal instructions, evaluation, and approval. The teacher's personal teaching style might be another reason. Generally speaking, the primary school teacher had a dominant position in her class, while the junior high school teacher treated and spoke to her students as her equals. All in all, for the main study, in order to collect data with a higher density of metaphors, sources

needed to be selected more carefully, especially with respect to the contents of the session. For example, sessions about music theory, music history, and music appreciation could be considered for the main study.

With respect to metaphor identification, the choice of a second coder was important. As the Pragglez Group suggests, “identifying metaphorically-used words in a large text may be something that all metaphor scholars have ready intuitions about, but justifying those intuitions, and being consistent in how they are applied to individual words in context, is far trickier than many would imagine” (2007, p.36). The more practice and experience a coder has, the more reliable metaphor identification will be. For the current preliminary study I invited a postgraduate student who took courses on metaphor before being involved in the study, and a coder with some practical experience in identifying metaphors would be considered for the main study.

Methodological conclusions could also be drawn from the methods of data collection. Only audio data were collected in this preliminary study and therefore I lost the opportunity to look at visual presentations or gestures in the classrooms. It was decided that data would be collected by video recorders and classroom observation to overcome such limitation in the pilot study to follow.

## **Chapter 4**

---

### **A PILOT STUDY: CLASSROOM OBSERVATION**

---

This chapter describes a pilot study conducted after the preliminary study and before the main study. It begins with a brief introduction in section 4.1, followed by discussions on the sample selection, observation schedule and pre- and post-observation interviews in section 4.2. Section 4.3 covers the classroom observations. Gesture coding, including the transcription, coding problems and policy, and the results of the coding are included in section 4.4. The discussion and conclusion, focusing on classroom observation and metaphoric gestures, follow in section 4.5. The chapter ends in section 4.6 with the implications for the main study.

#### **4.1 About the Pilot Study**

This pilot study was built on the previous small scale preliminary study (chapter 3). The aims were: (a) to experience real-time classroom observation; (b) to test out and improve the observation schedule and interview questions; (c) to explore whether Taiwanese music teachers used metaphoric gestures and, if so, what these metaphors were and how they were related to the accompanying speech; and (d) to test out and develop metaphoric gesture identification procedures.

The focus was limited to music sessions in junior high schools because in the preliminary study, more metaphors were found at the junior level than at the primary

level. The data of this pilot study were transcribed from three general music sessions taken by Wang (a pseudonym), a music teacher in a junior high school in Taiwan.

## **4.2 Before the Observation**

### **4.2.1 Sample Selection**

Situated in a middle to upper-middle class suburb of a major northern city, Wang's school was founded in 1988, with 4,268 students and 113 classes in 2006. It is considered to be a big school, relative to the official average of 1,299 students per junior high school in Taiwan for the school year 2005-2006 (Department of Statistics, Ministry of Education of Taiwan, 2010). The data were collected in general music classes with students aged between 12 and 14. Each class contained around 35 students, and lecturing was the only type of interaction observed. The results of the preliminary study showed that metaphor density might differ because of teaching content. Therefore the sessions observed for this pilot were limited to music theory, music history, and music appreciation.

Wang had received her MA in musicology four years previously and since then had been teaching music in the same junior high school. Being very open-minded about taking part in research and being observed, Wang was one of the very first music teachers I contacted for the preliminary study. Since then she had been helpful in answering my questions and providing me with background information about the situation of music education at junior high school level in Taiwan. After the preliminary study, I emailed her to ask her permission for me to enter her classroom and video-record a couple of sessions, and she agreed to participate.

Music lessons form part of the Arts and Humanities course category in junior high schools in Taiwan (see section 2.4.1), and therefore music, fine art, and

performing arts share one textbook. “The fine art section talks about using different colours to represent the four seasons, and the music section talks about Vivaldi. So it occurred to me that it’s a good opportunity to give a lecture on the Baroque era and introduce Vivaldi’s *The Four Seasons* to them,” (Wang, pilot interview 2). At the time when this report was written, the MOE of Taiwan did not provide one ‘standard’ version of the textbook, and schools were free to choose the version they preferred.

Teachers at Wang’s junior high school are allowed to re-arrange the order of the teaching contents and put related things together, so Wang regularly redesigned the content of her lessons. “The textbook mentions nothing about the Baroque era so I make my own PowerPoint slides to help students establish the background knowledge” (Wang, the same interview).

In some schools, music teachers have to teach performing arts, but this was not the case in Wang’s school, where there were three individual teachers for the three sub courses: music, fine art, and performing arts.

#### **4.2.2 Observation Schedule and Interviews**

After Wang agreed to participate in the study, I explained to her about the research through email. Wang was told that the study was about classroom talk and the idea was to observe a session with as much talk as possible. She therefore suggested that I should set the observation time on 22 and 23 October 2007, a week after the mid-term exam, when she would be introducing the Baroque era to her students. One day before the classroom observation, Wang and I met to discuss which classes to observe, including when I should arrive, where I should sit and how best to set up the recording facility. In addition, Wang roughly explained what kinds of classroom

activities would be involved and what she intended to teach. This meeting is classed as pilot interview 1 (for more details, see Appendix B).

A real-time observation schedule was designed, with the purpose of linking the classroom activities and metaphor use. As can be seen from the schedule (see Appendix C), both start and end times of the activities needed to be specified and, during each activity, tallies of metaphors and gestures needed to be made, so that I could get a basic sense of where clusters of metaphors and gestures most often occurred (though in the event it proved almost impossible for me to count them during classes, something which will be discussed later in 4.6.1). In addition, the observation schedule covered: organisation of the class, materials and musical instruments used, and the language used by the teacher and students. A general impression of classroom atmosphere was noted as H (high), F (fair), or L (low) to see if classroom atmosphere was related to metaphor use.

A follow-up interview (pilot interview 2) with Wang was conducted immediately after observation of the three sessions. The face-to-face semi-structured interview took place in Wang's music classroom during her break, lasting 42 minutes. Again, I was permitted to record it, and at the same time made notes while Wang was talking. A list of information (or questions) I planned to seek (or ask), translated from Chinese (the language used during the interview) is appended (Appendix D). In the interviews, information was sought about Wang's educational background and working experience, and questions covered how Wang prepared for the class and aimed to explain new concepts, how Wang thought about metaphors, and if she used them to help her teach. It should be noted that the numbers in Appendix D are for the convenience of writing up the report; the questions were asked without any specific order.

To Wang, metaphor helped the students to connect music and their daily life experiences. She gave an example of the birds, dogs, spring wind, and summer thunder in Vivaldi's *The Four Seasons*. However, she did not usually interpret music in her own way when introducing or describing it—"I only interpreted the music in the way which the composer marked on the sheet music" (Wang, pilot interview 2).

Although overall the interviews went smoothly, it was realised that some questions were too general and more questions about metaphor and gestures were needed. Details are discussed in 4.6.1.

### **4.3 During the Observation**

For the first session, I entered the music classroom with Wang around 15 minutes before the session began. Wang told me that because of the limited numbers of music classrooms, music teachers in her school had to take turns using them. It was Wang's turn to have one of the music classrooms that semester and therefore she was allowed to stay in the room, waiting for the students to arrive. The extra time proved useful from the point of view of setting up the video equipment.

The main equipment in the music classroom included a piano, an electronic piano, a blackboard with blank musical staff, an LCD projector, a DVD player, and a few classical musicians' portraits and illustrations of musical instruments on the walls. Wang had to provide her own laptop.



*Figure 4.1.* Pilot study: Music classroom setting.

Figure 4.1 illustrates the layout of the classroom where the three observed sessions took place. The two black circles on the top photo indicate where the video recorder was placed and where I sat.

Neither the teacher's nor the students' seats were moved. As a non-participant researcher, I tried to keep the classroom the way it was without me. I sat at the back of the classroom next to the video recorder, to take field notes which might be helpful during the preparation of the transcripts. Photos were also taken before and after sessions. The video recorder started to record when the students started to walk into the classroom. It was not turned off until the class was dismissed and the classroom was empty.

For most of the time the students could not see me during the classes. However, there was one time, while Wang corrected a student's fingering while playing the recorder, when another student kept turning and gesturing 'YA' (the V sign, with his index and middle fingers of his right hand raised and the remaining fingers clenched, palm facing outwards, a very popular gesture in Taiwan when being photographed) toward the video recorder. Wang noticed it. She asked the student to stand up and introduce himself to the video recorder, and encouraged him to give a solo performance for two bars, and then the session continued. This was the only interruption caused by the researcher's presence during the sessions I observed.

The lecture structure of the three sessions I observed was quite similar. This was because Wang designed and followed her own teaching syllabus for each year of the students, and also because the three sessions I observed were all in the same year (year seven). The session started with recorder playing. Wang reviewed the piece she had taught in the previous session with the whole class and then selected a few students to stand up and play individually, in order to discover how much students had learned (Wang, pilot interview 2). Then she taught one new piece, by demonstrating and playing with the whole class. After the recorder playing, part of the lesson or 'episode' (Lemke, 1990) started. Wang began by introducing the

recorder ensembles: bass, tenor, alto, soprano and sopranino recorders. Then she introduced some important eras in musical history, with a focus on the Baroque. To this end, Wang gave students some background knowledge about the characteristics of the music, musical instruments, and some famous musicians, before introducing Vivaldi and his concertos, *The Four Seasons*.

Generally speaking, the observation schedule proved easy to mark. Keeping records based on classroom activities made it easy to recall what happened in the sessions, and there was enough time to keep records for most of the categories, except for the numbers of linguistic metaphors and gestures used. Secondly, it became clear that some categories needed to be further specified. This will be discussed later in 4.6.1.

#### **4.4 Gesture Coding**

McNeill's scheme (see sections 2.2 for a review of the literature, and 6.3.2 for a discussion, on gesture classification systems) applied in this study required asking what meanings and functions a gesture possessed. In other words, the categories (i.e., deictics, iconics, and metaphors) were not based on just one facet of a gesture. For example, iconics and metaphors were more semantically oriented, while deictics were more pragmatically oriented. Because of this, each category was not treated as discrete or mutually exclusive, but as having features that may be present in varying degrees, and possibly in combination. Thus, the ultimate goal of gesture coding was to identify the extent to which each feature was present, rather than classify the gestures (Eisenstein & Davis, 2004; McNeill, 1992). In this pilot, then, it was very important to set up a coding policy to indicate when to categorise a gesture by its meaning and when by function. More details are discussed in 4.4.3.

Two coders were involved in gesture coding in order to test out McNeill's procedure and increase the reliability of the study. The other coder, a graduate student in the Department of Educational Studies at the University of York, was a native speaker of Chinese with some knowledge of metaphor, having conducted her MA research on the topic. McNeill's three main gesture categories—deictics, iconics, and metaphors—were introduced before I asked her to categorise the gestures which Wang used. Due to limitations of time, only a part of the listening to *The Four Seasons* from Wang's first session was selected. The part was chosen for its dense distribution of gestures. It lasted for five minutes, with 35 gestures identified by me previously. More details about gesture coding are discussed in section 4.4.3.

#### **4.4.1 Data Selection**

Due to the limited time available, only one session was chosen for gesture coding. The reason for choosing the first session was that, although the structure of the three sessions was similar, the first session was more complete and covered all the activities from recorder playing, to a lecture on the Baroque era, and then music listening, with a more even allocation of time than in the other two sessions. Types of activity matter here because, if numbers of gestures differ with respect to different types of activity (and this seems to be the case from the results), involving more activities in the data can reduce the risk of any possible gesture loss.

#### **4.4.2 Transcribing the Data**

Both gestures and speech were transcribed. Speech was transcribed fully from the videotape in Chinese. The transcription of gestures comprised three steps: (a) identify the movements that were gestures (here gesticulations); (b) identify the

stroke of the each gesture; and (c) locate the boundaries of the gesture phrases in the relevant part of the phonological transcription.

#### 4.4.3 Coding Problems and Policy

The results of the gesture categorisation from the two coders were compared. Unlike deictics, which were all agreed by both coders, iconics and metaphors seemed to constitute problematic categories. One of the examples was where Wang lifted her left hand to shoulder height with her palm facing up and wiggled her middle, ring, and little fingers fast in turn when saying the word *zhuangshiyin* ('trill'; literal translation: 'decoration notes'). Although both coders agreed that Wang was holding an invisible violin and playing the trills, we nevertheless coded it differently. The other coder coded it as metaphoric, because the referent of the gesture, *zhuangshiyin*, was interpreted as a linguistic metaphor itself. I coded it as iconic because the gesture in fact was representing what was explicit in the accompanying speech and therefore had a close relation to the gesture. This helped develop one of the coding policies later—gestures accompanying metaphors in speech were not definitely considered to be metaphors (see also section 6.5.4 for the definition of metaphoric gestures applied in the main study).

Another problem related to the coders' differential focuses and interpretations of the same gesture. For example, Wang said, "The thunder came fast and went fast. Then it became quiet again," to help the students interpret Vivaldi's *Spring*. In the first sentence, she began by moving her left arm from left to right with the palm facing up and fingers curling and then moved the arm back to the left without changing the shape of the palm. For the second sentence, she turned over her left palm to face the ground with straight fingers and pressed down the palm a little bit

in the air. The different coding concerned the first gestural phase. When I coded them, I focused on the movements of the arm, which was moved from left to right, and then back to the left, which seemed to indicate 'came' and 'went' in speech. Therefore the gestures were coded as iconic (rather than metaphoric, as is clarified later in this section). On the other hand, the other coder focused on the shape of the palm, which changed from a palm with curled fingers to one with straight fingers. She interpreted the curled fingers as representing the 'fast' in speech, while the straight fingers represented the 'quiet', and so she coded them as metaphoric. What surprised us was that neither of us thought about interpreting the same gesture each other's way before having the discussion. Our agreed position was to class the gestures as iconics, because both of us agreed that it was more common to see such gestures appearing along with 'came' and 'went' than with 'fast' and 'quiet'. This helped develop another coding policy later on, the identification of the most salient feature of a gesture, discussed in section 6.5.2.

In addition, what the other coder received before coding might have affected her. She used my transcription of gestures while categorising the gestures. Although the gestures were described in a descriptive language, it was found later that some of the transcription was in fact subjective. For example, descriptions such as 'the right hand drew the shape of a flash light' or 'the left hand indicated calmness' were already interpretations and they could be misleading to the other coder.

These problems not only predicted what might happen during the coding process for the main study, but also helped develop the coding policy to be used, which is discussed below.

*Identifying Gestures*

In this study, again, ‘gesture’ specifically refers to gesticulation. Any fingering the teacher used to demonstrate how to play the recorder, or the conducting gestures often used while the class was playing the recorder, were beyond the scope of this study and excluded.<sup>1</sup> In addition, the interpretation of Wang’s gestures was made from the researcher’s perspective, and it is worth noting that this might differ from the interpretation from the speaker’s or the addressee’s perspectives (A. Cienki, personal communication, June 3, 2008).

*Metaphorics*

Metaphoric gestures were defined as gesticulations which present a more abstract referent in terms of a more concrete image and engage a cognitive process of understanding one thing in terms of something else. This definition dovetails reasonably well with Lakoff and Johnson’s conceptual metaphor theory, the theoretical framework on which this present study was built, and at the same time it does not contradict the Pragglejaz definition of metaphorically-used lexical items applied in the study (discussed in sections 3.3.2 and later in 6.4.2).

One example is when Wang said *gangqin de yinse yue lai yue xizhi* (‘the timbre of the piano becomes more and more delicate’, and accompanied the word ‘delicate’ with the gesture of a round and half-open palm facing up. Here, the gesture carries the dual structure required by a metaphoric, in which the representation of the delicacy of the timbre (a more abstract referent) by the gesture is presented as what appears to be an image of a bud waiting to open (a more concrete base). In addition, the Vehicle of the gesture (an image of a bud) is clearly different from, but relevant to, the Topic (the delicacy of the timbre).

*Deictics Versus Metaphorics*

Both McNeill's deictics and iconics were re-defined for the present study. According to McNeill, abstract pointing gestures which imply a metaphorical picture are also included in the category of deictics. For example, gestures were used in my data to point at an existing physical place, but they referred to an abstract concept of where the speaker had been before. When Wang asked, "Did we just say that decoration is popular in Baroque era?" she raised her left index finger to point to the 'idea' which she had just mentioned in the same session. Pragmatically speaking, these gestures were pointing gestures (deictics), but semantically speaking, the place the gestures pointed to was interpreted as somewhere else, based on the speech context. In other words, such gestures engaged a cognitive process of understanding something (the physical place the gesture pointed to) in terms of something else (the actual space or idea which the interlocutor had talked about previously) and therefore were classified as metaphoric.

*Iconics Versus Metaphorics*

Gestures in a context where the Vehicle of a metaphor is explicitly flagged both by the hands and by language were classified as iconic. That is, if a teacher said 'music is a container' and gestured a container, the gesture would be categorised as iconic rather than metaphoric, because the gesture may accompany metaphor, but itself represents the literal form of the word 'container'; however, if the same gesture accompanies the sentence 'we can feel the sadness in his music', it will be classified as metaphoric. An attempt was thus made to distinguish between gestural illustrations of verbal metaphors and gestures that were themselves metaphoric. This also explains why the gesture 'came' and 'went', accompanying Wang's utterance of

the journey metaphor, “the thunder came fast and went fast”, which was discussed earlier in this section, was coded as iconic rather than metaphoric.

#### **4.4.4 Method**

After transcribing the speech and gestures of the whole session, the video extract was watched by the two coders separately, focusing on just the gestures. Every gesture Wang used was categorised into one of the three types of gesture: deictic, iconic, and metaphoric. It was decided to group the gestures into just three categories rather than five (including beats and cohesives) because these three categories are more related to the focus of the study. The reasons for categorising the gestures into three (deictic, iconic, and metaphoric) rather than two (metaphorics and non-metaphorics) were (a) that these were the three most popular gesture types and that differentiating deictic from iconic gestures would help provide a better understanding of what other types of gesture the teacher used in speech along with metaphor besides metaphoric gestures, and (b) that it would also help clarify the categories and thus better define metaphoric gesture for the main study.

The 13.5% disagreement of the coding results between the two coders was compared and discussed, until each gesture was classified into one of the three categories. The gestures were then highlighted on the transcript by using three different colours, to facilitate density and distribution analysis. Finally, functions of the gestures were noted.

#### **4.4.5 Results**

The duration of Wang’s instruction in the recording was 46 minutes, totalling 8,964 characters transcribed. In the session, 89 gestures were identified; 43% were iconics,

30% metaphors, and 27% deictics. Every gesture was categorised. The distribution was such that over 75% of them fell in the sections on listening to *The Four Seasons* (42%) and the lecture on the Baroque era (35%). Only 1% of the gestures occurred in the opening and the recorder playing sections.

In this chapter, the transcription of gestures is superimposed on the written transcripts of the verbal speech as precisely as possible, by repeatedly playing the videos, with and without sound, at normal speed and in slow motion. Square brackets (‘[]’) are used to mark the verbal segment which co-occurs with the gesture. The left or opening bracket indicates the beginning of a gesture phrase while the right or closing bracket indicates the end. The stroke of the gesture is indicated by marking the words or characters in bold.

### *Deictics*

Wang used deictics to point at objects. Her eyebrows rose when she started the question “Do you see if this English word is in the textbook?” and she looked at the students. Her left index finger pointed forwards. Then when Wang said the focus of the question *zhege zi* (‘this word’), she raised her right hand and pointed at the screen behind her with her index finger. When she pronounced the word, ‘Baroque’, she turned her upper body, half facing the screen, and looked for one second at the Chinese characters for ‘Baroque’ written on the screen:

#### Extract 11

831 [你 有 看到 **課本**] 是不是 [有 寫 **這個字** 的 原文]?

[ni you kandao **keben**] shibushi [you xie **zhege zi** de yuanwen]?

[you have see **textbook**] (Q) [have write **this word** (DE) etymology]

Do you see if **this English word** is in the **textbook**?

832 Baroque

baluoke

Baroque

Baroque,

833 有沒有？

youmeiyou?

(Q)

yes or no?

However, deictics were not always used to point to something concrete. For example, when listening to the first movement of *Spring*, Wang compared the violins' trill to birds chirping in the spring. When she asked the class to pay attention to a certain part of the melody, she repeatedly put the index finger of her right hand next to her right ear and pointed to the air. Wang kept repeating this gesture whenever she tried to draw the class's attention to the music. Thus, it appeared to be the music she was pointing at, although it was not concrete, or even visible at all.

The following extract is another example of pointing to the invisible. Wang asked the class if they still remembered what instruments she had mentioned earlier in the same session. The first answer, "harpsichord", came from a student and as soon as Wang heard it, she raised her right index finger, pointing. Wang then repeated the answer and gave her response, "very good". It is arguable whether Wang's finger was pointing to the word, 'harpsichord', or the student who gave the answer, but in either case the gesture was categorised as deictic:

## Extract 12

1017 T: 我們 剛才 說 流行 的 樂器 有 哪些？

women gangcai shuo liuxing de yueqi you naxie

we just say popular (DE) instrument have (Q)

What are the popular instruments we just mentioned?

1018 S: 大鍵琴

dajianqin

harpsichord

Harpsichord.

1019 T:  大鍵琴

**dajianqin**

**harpsichord**

**Harpsichord.**

1020 T: 很 好 ！

hen hao

very good

Very good!

1021 T: 還 有 呢 ？

hai you ne

still have Q

What else?

1022 S: 弦 樂器

xian yueqi

string instrument

String instrument.

1023 T: 弦 樂 器

弦 樂 器

string instrument

String instrument.

1024 T: 非 常 好 ！

feichang hao

very good

Very nice!

### *Iconics*

Iconics were the most common type of gesture in Wang's class, and most of them appeared in the lecture on the Baroque era and *The Four Seasons* section. Gestures indicating numbers and for demonstration often fell into this category. For example, Wang held both arms bent in front of her chest, with both palms facing the ground and put her tongue out, when describing a puppy sitting lazily in front of a house in summer, while listening to *Summer*: “Because it's too hot, dogs put their tongues out, right?”

In the following example, Wang compared the difference between the flute and recorder while she was explaining why the recorder was translated as *zhidi* (‘vertical flute’). A flute, however, is held horizontally by the player, which is why it is also named *hengdi* (‘horizontal flute’) in Mandarin Chinese. When she asked the following question, she used both hands to imitate gestures of both flute and recorder players, to emphasise the different directions in which the two musical instruments were played:

## Extract 13

604 長笛 它是 [直著 吹] 還 [橫著 吹] ?

changdi ta shi [zhizhe chui] hai [hengzhe chui]

flute (3SG) is [vertical blow] or [horizontal blow]

Do you play the flute vertically or horizontally?

The referent of the gestures did not always appear at the same time that the referent was uttered in speech. For example, Wang used her right hand to point to the pillars in the classroom on her right and then left side, when she was talking about the architecture of the buildings in the school. After she had pointed to the pillar on her left side, she used both her thumb and index fingers of the right hand and moved the arm straight and vertically, up, down and back up, as illustrated in Extract 14. These gestures were iconics, representing ‘straight lines’ in speech. The gesture was used around the same time that its referent was uttered.

However, next, when she talked about the lines in Baroque buildings, she used her right palm to make a simple ‘U’ curve in the air. Here in gesture, the soft ‘U’ curve movement contrasted with the previous gesture of moving the right thumb and index finger vertically, but in speech, the adjective ‘curved’, contrasting with the adjective ‘straight’ in the first line, did not follow until line 960. The gesture preceded the word that related to it semantically. It seemed to support the hypothesis that, although gestures and speech were different visual and verbal elements, somehow they were in fact conceptually integrated in an idea unit (Cienki & Müller, 2008; McNeill, 2005):

## Extract 14

- 952 [柱子 是不是][都 是 直 線條 的]  
 [zhuzi shibushi][dou shi zhi xiantiao de]  
 pillar (Q) all are straight line (DE)  
 [The **pillars** are][in straight **lines**],
- 953 對不對  
 duibudui  
 (Q)  
 aren't they?
- 954 線條 很 簡單  
 xiantiao hen jiandan  
 line very simple  
 Very simple lines.
- 955 可是 巴洛克 時期 的 時候 [怎麼樣  
 keshi baluoke shiqi de shihou [zenmeyang  
 but Baroque era (DE) time (Q)  
 But how about in the Baroque era?
- 956 比較 繁複  
 bijiao fanfu  
 more **complicated**  
 More complicated,
- 957 對不對？]  
 duibudui]  
 (Q)

isn't it?

958 [線條 比較

[xiantiao bijiao

[line more

[Lines are,

959 欸]

ai]

well]

well,]

960 有許多的 曲折

you xuduo de **quzhe**

have many (DE) **curve**

more **curved,**

961 對不對？

duibudui

(Q)

aren't they?

### *Metaphorics*

In total, 30% of the gestures were metaphorics and it was interesting that metaphorics occurred in almost all the eight different classroom activities. The only two exceptions were the opening and ending remarks which Wang made; Wang used no gestures at all in her opening remarks.

## SPACE AS TIME

TIME PASSING IS AN ENTITY MOVING TOWARD THE SPEAKER is one of the conceptual metaphors shared by both English and Mandarin Chinese. For example, in Mandarin Chinese people say *shengdanjie kuai lai le*, which means ‘Christmas is approaching’, and *xingqitian guo le* means ‘Sunday passed’. Time is thereby conceptualised as something moving in space, and this can be seen even more clearly with gestures. Extract 15 was from the session when Wang introduced the different periods in musical history. She explained the order of the Renaissance and the Baroque. Firstly she raised her left arm, straightened out her five fingers, with the palm facing down, at approximately eyebrow height, and then moved her hand down to the height of her chest. The two points in the space indicated the two different time ranges in musical history and TIME was thus represented as SPACE by the gesture. However, it is interesting in this example that time travelled in different directions in speech and gesture; in speech, time moved toward the speaker, but in the gesture it moved from up to down. In fact, the metaphor the gesture expressed here exists exclusively in terms of gesture, not in speech. That is, one would not say in Mandarin Chinese ‘the Baroque is at the bottom of the Renaissance’ to mean the same thing (c.f., section 7.4.8 on the recurrent verbal metaphor TIME PASSING IS AN ENTITY MOVING VERTICALLY DOWN).

Extract 15

642 文藝復興 [過來 才是 巴洛克]

**wenyifuxing** [guolai cai shi **baluoke**]

**Renaissance** [come yet is **Baroque**]

The Baroque comes after the Renaissance.

## PHYSICAL SPACE IS IMPORTANCE

Another systematic metaphor suggested by the gestures is SPACE (UP) IS IMPORTANCE. This has a very close relation with the common conceptual metaphor in speech: (LARGE) SIZE IS IMPORTANCE. In Mandarin Chinese, *da* ('big') can be used as an adjective to describe something important. In Extract 16, Wang told the class that there were some important periods in musical history. When she said that "there are some important and big periods", she lifted up her left arm with her open palm facing down, then moving progressively downwards, stopped at different heights. Instead of ranking the periods from big to small by gestures, she ranked them vertically. It was another example of different metaphors being used in speech and co-speech gestures.

## Extract 16

738 音樂 歷史 上 的 分期 喔

yinyue lishi shang de fenqi o

music history up (DE) period (PRT)

About the periods in musical history,

739 有 幾個 [重要的 大的 時期]

you jige [**zhongyaode dade** shiqi]

have several [**important big** period]

some are important and big

## SEPARATED SPACES ARE DIFFERENT PARTS OF AN EXPOSITION

Metaphoric gestures which separate different parts of an exposition appeared more than once, and although in speech Wang always said "first . . . moreover . . . and

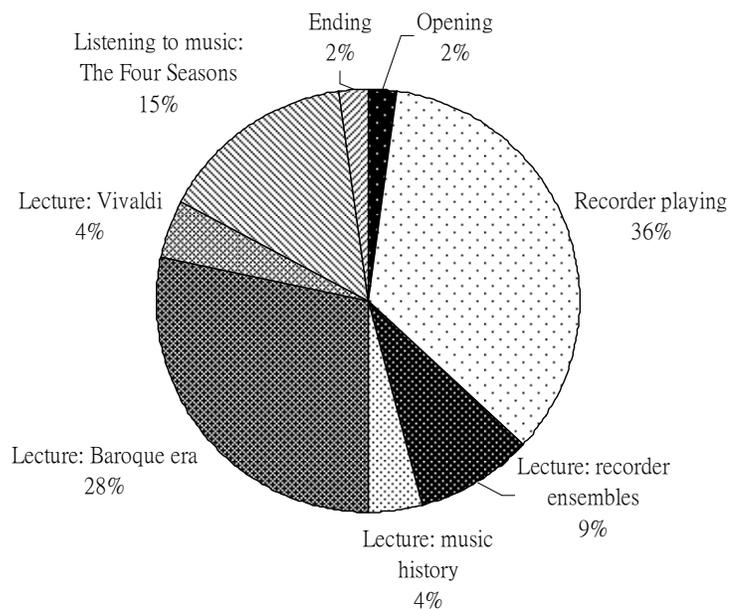
then . . .”, she did not always use the same gestures for them. Sometimes she turned over the other palm from facing the ground to facing upwards, when moving to a new concept or idea in speech. At other times, for example, when Wang reviewed the main points she had mentioned in class about Vivaldi, and asked the class to write the main points down in their own textbook, she said “first . . . moreover . . . and then . . .”, and gestured with her right index finger pointing to different fingers of her left hand, to indicate changes of topic. Such metaphoric gestures distinguish different parts of an exposition as separate (downwards and upwards, or right and left) spaces.

## **4.5 Discussion and Conclusion**

### **4.5.1 Classroom Observation**

#### *Lesson Structure and Activities Involved*

Figure 4.2 shows the relative amount of time Wang spent on different activities across the three sessions. The two main activities were recorder playing and a lecture on the Baroque era which, between them, accounted for almost 64% of the total time. Wang also spent 15% of the time listening to *The Four Seasons* with the class. The two parts where metaphors and gestures were used most often were the lecture on the Baroque and listening to music, which took more than 40% of a session.



*Figure 4.2.* Pilot study: Relative time spent on activities across Wang's three sessions.

#### *Gesture Use and Classroom Atmosphere*

For classroom atmosphere on the schedule, three levels were defined: high (H) was recorded when the class showed enthusiasm and the decibel level in classroom was high. Fair (F) was noted when only a part of the class responded to the teacher and the rest remained silent. Low (L) indicated that the class was quiet and seemed not to pay attention to the teacher, or when silence occurred after questions. It is important to note that the three levels were relative rather than absolute.

It was assumed that there would be a positive correlation between the number of gestures and classroom atmosphere. However, the three boxes in Figure 4.3 show

the places where the two factors suggest a negative correlation. It seemed that Wang's use of gestures did not necessarily make the class more enthusiastic about their learning.

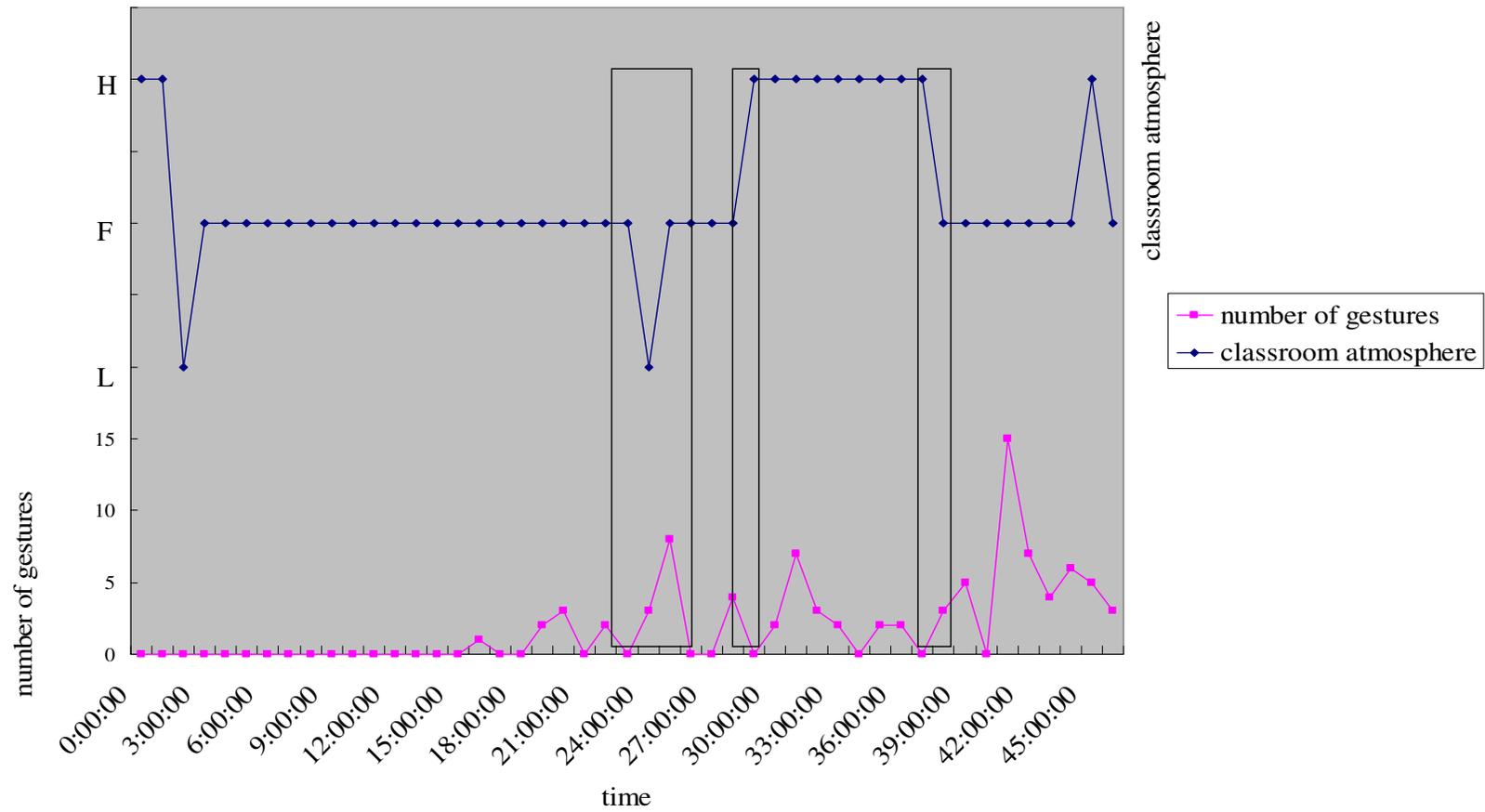


Figure 4.3. Pilot study: Gesture frequency and classroom atmosphere.

*Interviews*

Both the interviews I had with Wang before and after the class sessions were face to face and semi-structured. Most questions I had were open questions. Making the interview semi-structured allowed me to create a more natural conversational atmosphere without skipping the questions to which I wanted answers. The teacher would then be free to say whatever her feelings and/or thoughts were toward certain questions. At the same time, however, I needed to keep an eye on both time control and interview direction to make sure I got the answers to the planned questions.

Normally I did not interrupt Wang, but tried to direct her back to the topics when she began to talk about something unrelated. Generally speaking, Wang's answers were consistent because she echoed her own points of view when giving answers to different questions. For example, when asked how she prepared to explain new concepts (Question 6 in Appendix D), she indicated that music did not exist alone and a teacher had to help students build up the whole context in terms of time, place, and how people lived and thought at that particular time, in order to understand a piece of music. She emphasised that music and other artistic forms such as architecture and fine art were closely related, something which she kept mentioning when answering how she decided if the materials were suitable for the class (Question 5) and why music education was important to her (Question 2).

**4.5.2 Metaphoric Gestures***Functions of Metaphoric Gestures*

In Wang's sessions, different functions of co-speech gestures were examined and the following were the three main ones found: (a) to emphasise, (b) to visualise, and (c) to give feedback.

Firstly, gestures helped emphasise what Wang wanted to say. Usually emphasising gestures accompanied a verbal expression containing numbers, which highlighted different aspects of a topic. These gestures could be metaphoric or iconics. They were used when the teacher helped the students either to preview the main points or to review the main ideas which were going to be introduced. These gestures seemed intended not only to help point out the important main points, but also to make it easier for the class to follow the teacher's exposition. Metaphorics which pointed to the topic being talked about in speech also seemed to emphasise points and encourage listeners to pay more attention to the topic.

Secondly, gestures were used to visualise the abstract. Wang made a big horizontal 'S' shape with her left arm when telling the class that the melody they were listening to was describing the spring breeze. The metaphoric gesture suddenly made the cheerful and enjoyable line of the melody visible. Also, in Extract 14, Wang drew straight lines in the air while she was explaining the simplicity of the school's building compared with the Baroque's complicatedness. These iconics thus helped visualise the abstract idea of simplicity.

Finally, gestures were used by Wang to express (positive) feedback. As shown in Extract 12, after Wang asked the question, instead of pointing to any student to nominate a specific student to answer, she pointed after hearing the response from a student. Almost as soon as she completed the gesture, she repeated the answer from the student. It seemed that Wang's finger was activated by the voice which produced the answer, and the index finger stopped in the air and headed in the direction of where exactly the answer had come from. By doing so, the attention of the class was also drawn to the answer, followed by the positive response, 'very nice', made by Wang to the student concerned.

*Relations of Metaphoric Gestures and Speech*

Table 4.1 shows the relations between utterances and co-occurring metaphoric gestures. The results support the findings from other studies in English (Cienki, 1998, 2008; Cienki & Müller, 2008).

Table 4.1

*Relations Between Utterance and Co-Occurring Metaphoric Gestures*

	<i>Relations</i>	<i>Example</i>	<i>Notes</i>
1	The same metaphor expressed in speech and gesture	‘The timbre of the piano becomes more and more <u>delicate</u> .’	The gesture depicts a Topic domain (‘delicate’) in speech by a round and half-open palm facing up.
2	A metaphor expressed in gestures but not in the co-occurring speech	‘First . . . moreover . . . and then . . .’	The index finger of one hand points to the fingers of the other hand. The metaphoric gesture distinguishes different parts of an exposition being made by representing them as separate spaces.
3	Different metaphors expressed in speech and gesture	‘About the periods <u>in</u> musical history, some are important and <u>big</u> .’ (Extract 16)	Speech and gesture share the same Topic domain of the metaphor (importance), but the Vehicle domain is characterised differently in speech (big, i.e., size) and the gesture (high, i.e., height).
4	Metaphors expressed by gestures never appear in linguistic form in Mandarin Chinese	‘The Baroque <u>comes after</u> the Renaissance.’ (Extract 15)	What the gesture expresses here is that ‘Baroque is <u>at the bottom of</u> the Renaissance’. Such an expression is not normally used in speech to mean that the Baroque <u>comes after</u> the Renaissance.

## 4.6 Implications for the Main Study

### 4.6.1 Classroom Observation

#### *Researcher's Role as a Non-Participant*

Although my intention was to keep the classroom as it was before my entry, this seemed almost impossible to do. As soon as a student noticed that there was a stranger in the room, things became different. Some students kept turning around during the sessions to see what I was doing, while others were curious about my reaction when a joke was told. Some students also reacted to Wang's questions more actively; some tried to get Wang's attention more enthusiastically than ever, which I did not realise until Wang indicated the fact in class.

Wang, on the other hand, seemed to be more natural in front of the video-recorder. She seldom looked at the video-recorder and in the three sessions I observed for two days, no special reactions because of the presence of the video-recorder were found. Wang mentioned that she had been observed several times by the other teachers (pilot interview 2), and this fact might explain why she looked quite natural in front of it.

From the researcher's point of view, entering classrooms is a necessity for this sort of study because it allows one to get a better idea of the classroom and the context, which cannot be completely captured by watching a videotape, let alone an audio tape. However, it can be difficult to judge if the data collected are affected by the presence of a camera (Mackey & Gass, 2005; further discussed in section 5.10.1). Classroom observation, it was decided, would remain the main method of collecting data for the main study, and further discussion on problems with it and how to tackle it in the main study is given in section 5.10.

*Observation Schedule*

The observation schedule helped me to track the process of each session during and after sessions. With the schedule, it was easy to locate where I was in the session, whether I sat in the classroom or watched the recorded video at home. Overall the prepared observation schedule proved easy to mark. The categories (activity, start and end time, numbers of linguistic metaphor and gesture, participant organisation, materials, instruments, language used, and classroom atmosphere) of the observation schedule were clear, although some needed to be clarified or deleted, as discussed below.

It proved impossible to keep accurate tallies of linguistic metaphors and gestures during the three sessions, even though I forced myself to try to do it for a short period of time during one of the sessions. As a result this was not repeated for the main study.

Some categories needed to be redefined. There was a classification named 'individual' in the participant organisation section (see Appendix C) and when I designed the schedule, I was thinking about points where the teacher spent her time on just one particular student. That is, the teacher might go next to the student or ask the student to come to her, making it clear that a certain period of the teacher's time was being devoted to one single student. However, across the three sessions, this kind of individual organisation never happened. Instead, another kind of individual organisation kept appearing. Wang would talk to one particular student in front of the whole class. Although the conversation was not limited to the two (Wang and the student), it was decided to code it as 'individual' participant organisation. I decided for the main study to include both the above types of participant organisation as 'individual'.

The categories of pictures and audio tape confused me at first during the observation. The main materials Wang used in her classes were PowerPoint slides, and the slides included not only text, but pictures and sounds. It was decided that the classification 'pictures' should be extended not just to wall charts or posters, but also to pictures provided electronically. The classification 'audio tape' was modified to 'audio sound', which would include sounds provided by various pieces of equipment or instruments used by the teacher in class. In addition, the classification 'PowerPoint' was added. The categories within each section were not mutually exclusive and hence, for example, when Wang showed a picture of a Baroque castle via PowerPoint, both categories of 'picture' and 'PowerPoint' were ticked.

Finally, the category of 'classroom atmosphere' was deleted for the main study, because the focuses of the study were modified and classroom atmosphere was no longer an issue in the main study. A modified observation schedule based on the pilot study for the main study is appended (see Appendix E).

#### *Interview Questions*

After the pilot interviews, it was discovered that Questions 6 and 8 were too general for the interviewee to answer. Moreover, none of the questions was about gestures and therefore this needed to be added. Also, for Questions 4, 5, and 6, instead of asking about the general situation, questions were modified to encourage the interviewee to answer based on the sessions being observed, rather than give general statements which the interviewee thought s/he was *supposed* to do. Finally, the order of the questions was rearranged to create a better flow of conversation, although it was never fixed. A list of modified questions for the main study is appended in Appendix F.

### 4.6.2 Gesture Coding

In this pilot, the other coder was provided with a transcript containing both speech and gestures. For the main study, it was decided that the other coder would be provided with video clips and a transcription of the teachers' speech only. S/he needed to transcribe gestures starting from identifying gesture phrases so that the subjective interpretation of my description of the gestures could be avoided.

It can be very difficult to code gestures without video-recording the sessions, and even with the video, it can still take a lot of time to repeat one clip until gestures are properly transcribed. Both visual and audio information are crucial, for the former records the movement details without being interpreted into words, while the latter provides the speech context. Overall, gesture categories are defined not only by the hand motion but also by the role of gesture within the linguistic context. Therefore it is almost impossible to code gestures by kinetic movement data alone, and this is one of the reasons why video-recording and classroom observation are both necessary, and why gesture coding is highly time- and effort-consuming.

#### **Footnote to Chapter Four**

<sup>1</sup> It proved later, however, in the main study that the boundary between these types of gesture was not always clear. Further discussion can be found in sections 7.5.1 and 7.6.4.

## **Chapter 5**

---

# **MAIN STUDY: RESEARCH DESIGN AND METHODOLOGY**

---

This chapter discusses how the research focus was narrowed down, what the research questions were, and how they were going to be answered. Following a brief background introduction in section 5.1, section 5.2 lists the research questions and the purpose of the study. Aspects of three research paradigms and approaches adopted are raised and discussed in section 5.3. Sections 5.4 and 5.5 deal with triangulation and the trustworthiness of the study. The ethical issues are covered in section 5.6. Section 5.7 explains the procedure of the study, and the reasons for conducting the preliminary and pilot studies are given. In section 5.8, the research participants, their schools and the observed sessions are discussed. Sections 5.9 and 5.10 deal with the two main research methods used in the main study. Section 5.11 covers limitations of the methods, and a summary is given in section 5.12.

### **5.1 About the Main Study**

As explained in chapter 2, junior high level in Taiwan refers normally to students who are aged between 12 and 14 years. It is the last half of the compulsory education period. Music is one of the main subjects taught at this level. Together with fine art and performing arts, the subject belongs to the category of Arts and Humanities, one of the seven designated learning areas.

Two main streams are involved at junior high school level: general and special education streams, and in the present main study, the special education stream (so-called *yinyueban*, ‘music-talented class’) refers to classes consisting of students who are more knowledgeable about music and more skilled at performing it than the students in the general education stream. It seemed reasonable to hypothesise that teachers in these two streams might use different vocabulary and verbal (and perhaps gestural) metaphors. Since one of the main research aims of the present study is to investigate what metaphors are used by music teachers at junior high school level in Taiwan and how they use them, it is important to have both streams involved in order to get a more complete picture.

## **5.2 Research Questions and the Purpose of the Research**

The main research questions and the sub-questions for the main study were as follows:

- RQ1 How can the verbal and gestural metaphors used in classroom discourse where Mandarin Chinese is the main language of instruction be identified and coded?
- RQ2 What is the nature of verbal and gestural metaphor used by music teachers in Taiwanese music classrooms at junior high school level?
  - RQ2.1 What are the density, word class, and distribution of the verbal metaphors?
  - RQ2.2 What metaphoric gestures are used and how are they employed?
  - RQ2.3 Can the verbal and gestural metaphors be grouped into recurrent or systematic metaphors?

- RQ3 What are the relations between verbal and gestural metaphors used by music teachers in Taiwanese music classrooms at junior high school level?
- RQ4 What are the educational implications of the verbal and gestural metaphors used by music teachers in Taiwanese music classrooms at junior high school level?
- RQ4.1 What are the functions of the verbal and gestural metaphors as a whole?
- RQ4.2 How do the verbal and gestural metaphors assist in music teaching?

The first main question focuses on the methodological aspects of the study, that is, the identification and coding methods used to analyse verbal and gestural metaphors in classroom discourse. The second main question concerns the nature of the metaphors used in language and via gesture, including the systematic metaphors (if any) emerging from the data. The third main question deals with how the verbal and gestural metaphors are related, and the fourth main question focuses on the educational roles which these metaphors play: their functions in music classrooms, and how they are used to aid music teaching.

The review of the literature on metaphor and gesture use in music education in chapter 2 (sections 2.3.2 and 2.3.3) suggests that little research (e.g., Corts, 1999; Corts & Pollio, 1999) has looked into how metaphors and gestures are used *together* in any classroom discourse, let alone in the context of music teaching. Yet such a combination, the co-presentation of gestures with speech, seems to represent how music teachers are likely to express their thoughts and transfer information and knowledge. I would thus expect metaphor and gesture to be found in music

instruction both separately and together, and this was confirmed by transcribing and observing a small number of music sessions in the preliminary and pilot studies, as reported in chapters 3 and 4.

The observation of Wang's music sessions in the pilot study indicated that verbal and gestural metaphors were used by her, in the sessions observed, together as part of instructional sequences; however, more importantly perhaps, the metaphors used in the two modes were not always the same (see section 4.5.2 for details). This directly evokes two questions: how far are the two modes dependent on or independent of each other (RQ3), and what educational functions can these verbal and gestural metaphors serve in classrooms (RQ4)?

The aims of the main study are listed below. The first two deal with the nature of verbal and gestural metaphors in classrooms while the last two, relate more to research methods:

1. To have a better understanding of what and how verbal and gestural metaphors are used by music teachers to assist teaching.
2. To have a better understanding of how language and gestures relate to each other through metaphor use in music classrooms.
3. To develop a metaphor identification procedure for identifying metaphorically-used words in Mandarin Chinese.
4. To develop a gesture identification procedure for identifying metaphoric gestures in classroom discourse.

It is worth noting that the purpose of the main study is not to assume or provide an answer to what might be a better way to teach music, but it is the more preliminary one of finding out and acquiring a better understanding of how verbal and gestural metaphors can be used in an educational context based on the sessions

observed. This clarification brings up two factors which directly constrain or feed into the research design: (a) The research requires an in-depth rather than a broadly-based investigation of the data, and (b) as few assumptions as possible should be made before data collection.

### **5.3 Qualitative Research Paradigms and Research Approaches**

A paradigm is “a basic set of beliefs that guides action” (Opie, 2004, p. 18). It influences not only how the research questions are formed, perceived, and answered, but also how researchers position themselves during the research process. Teachers’ use of verbal and gestural metaphors in classrooms, the central enquiry of the current main study, is a phenomenon or behaviour—or a so-called *structured experience* (Christie, 2002)—constructed by the interaction between the teacher, his or her students, and the physical (e.g., the classroom settings and/or the equipment which the teachers hold in their hands) and social environments (e.g., teacher-student relationships) involved in the process of teaching. Due to this, answers to what metaphors are used and how they are used in music classrooms at junior high school level where Mandarin Chinese is the main language used, may vary with time and the contexts concerned. It was accordingly decided that this main study should take a more interpretive approach, rather than a positivist one.

As mentioned towards the end of the previous section, the present main study required an in-depth rather than a broadly-based investigation of classroom behaviour. This made the study fit more into the qualitative, rather than quantitative paradigm. Qualitative researchers seek to portray authentically and holistically an intact society or culture through generating and approaching their data from a variety of theoretical and interpretive perspectives (LeCompte, Millroy, & Preissle, 1992). In

other words, qualitative researchers tend to study things in their natural settings rather than in experimental or laboratory ones, and attempt to make sense of the phenomenon of interest through people who employ it and/or make sense of it (Denzin & Lincoln, 2005). Typically, qualitative research focuses on relatively small samples which are selected purposefully to permit in-depth inquiry into, and understanding of, the phenomenon concerned (Patton, 2002, p. 46).

The present main study was a set of case studies that borrowed relevant techniques and/or concepts from the following three methodologies and paradigms, namely (a) ethnography, (b) discourse analysis, and (c) grounded theory, which were firmed up through the previous preliminary and pilot studies, and will be discussed in turn in the following sections. Before turning to that discussion, however, it is necessary to explain why a multiple case study approach was adopted. Firstly, there were extreme difficulties in selecting a random or generalisable sample of schools and classes. At the time of writing, there was no comprehensive *officially* published statistical report on music classes in Taiwan, regarding especially the number and size of music-talented classes, the characteristics of the students, and music teachers' years of teaching experience, their physical nature (age, sex) or educational levels. Secondly, as the review of the literature in chapter 2 indicated, there was little previous research available on metaphor use in junior high classrooms either, and hence there was no agreed method(s) for studying it.

### **5.3.1 Ethnography**

The present main study took ethnography as a theoretical and philosophical orientation towards research. 'Ethnography'—*ethno-* meaning 'folk' and *graphy* meaning 'description', therefore 'a description of folk' (Werner & Schoepfle, 1987)—is a research process of "learning about people by learning from them"

(Roper & Shapira, 2000, p. ix). It is situated within a constructivist or naturalism framework (Croker, 2009; Hammersley & Atkinson, 2009).

The ethnographer thus believes that “human beings, social behaviour and social phenomena . . . are socially shaped and constructed by social actors [and] human beings” (Pole & Morrison, 2003, p. 6). Lillis (2008), echoing Geertz (1973), pointed out that adopting ethnography as methodology rather than just a method or a technique allows researchers to explore the complicated and dynamic meanings of the relevant behaviour by using multiple sources of data. In order to interpret what phenomenon or behaviour is happening and how it is happening, the data collection needs to be embedded in the ‘real world’ context within which the phenomenon or behaviour takes place (see also Hammersley, 1994). Furthermore, there is neither a detailed plan set up at the beginning for data collection; nor are the categories used for interpreting what people say and do pre-given or fixed for the ethnographer (Hammersley & Atkinson, 2009).

The above concepts behind ethnography were adopted in the present study, and metaphor use was viewed as a part of culture, being built on “the assumptions and worldview of the social group” constructing it (Patton, 2002, p. 100). In addition, direct observation is emphasised because how metaphors are used through language and via gesture by music teachers cannot make any sense to the researcher if they are taken out of the context in which they are produced. I entered the selected classrooms without making any assumptions of what verbal and gestural metaphors the music teachers were going to use or how they were going to be used—in fact, as illustrated in chapters 3 and 4, whether verbal metaphors were used by Taiwanese music teachers at junior high school level remained uncertain until after the preliminary study, before gestures were examined later in the pilot study.

However, the approach of ethnography was not applied as a whole because of its methodological constraints. The ethnographer usually engages in the studied setting for an extended period of time to collect data that are available to shed light on the focus of inquiry (Hammersley & Atkinson, 2009). However, these two research methods at the core of ethnography as methodology and generally applied by ethnographers, namely participant observation and sustained duration of observation, were not applied to the present study, due to the limitation of time and the fact I was operating as a single researcher.

Perhaps the most frequent criticism of ethnography involves subjectivity bias and ungeneralisable results (Denscombe, 2007), since the ethnographer believes that the meaning of social action depends highly on the time and social factors involved, and its findings are seen as particular interpretations of specific phenomena. The reflexive character of ethnography suggests that the researcher's interpretation of the data cannot be completely unaffected by the researcher's personal experiences and values. Hammersley and Atkinson (2009), however, argued that such a significant feature of ethnography should not be taken as a criticism, but as an indication that it is naïve to assume an entirely neutral piece of research is possible or desirable (ibid.). Pole and Morrison (2003) take a similar view. They indicated that such 'criticisms' need to be viewed as "epistemological challenges about the nature of the knowledge which ethnography yields" (p. 15). Bassey (1999) developed this idea by introducing a concept of 'fuzzy generalisation' that "carries an element of uncertainty. It reports that something has happened in one place and it may happen elsewhere. There is a possibility but no surety" (p. 52). As noted earlier, the purpose of the present main study is to find out and acquire a better understanding of how verbal and gestural metaphors can be used in Taiwanese music classrooms at junior high school level

based on the sessions observed, rather than to generalise the results to all music classrooms where Mandarin Chinese is the main language employed.

### **5.3.2 Discourse Analysis**

Discourse analysis has been broadly and diversely used in a variety of disciplines with different theoretical traditions and perspectives (Bhatia, Flowerdew, & Jones, 2008; Johnstone, 2008). The term encompasses a variety of research approaches and objectives in order to explore the complex relationships between social, linguistic, and cognitive processes, through forms of talk and/or texts. The settings—including the environment, actions, gestures, thoughts, and values—can help the people involved and analysts to determine and attach meanings to the language (Gee, Michaels, & O'Connor, 1992). In other words, discourse analysts try to answer their research questions by analysing discourse (Johnstone, 2008). Such analytical process distinguishes discourse analysis from other sorts of study of human language and communication (*ibid.*).

Classroom discourse is the intertwining of both social and academic considerations (Mehan, 1985), and discourse analysis in educational research can usually be categorised into two general groups: discourse structure as an object of study, and discourse as evidence in the study of social and cognitive processes (Gee et al., 1992). The former focuses on the form, meaning, patterns, and/or characteristic features of the discourse, while the latter tries to look into larger aspects of life through the window of classroom discourse. The two levels were combined in the present main study: it was hoped that through a systematic examination of the verbal and gestural metaphors used by the teachers, how metaphor, gesture, and thought are linked in a broader dynamic process of communication could be explored.

The multidisciplinary developments of discourse analysis have resulted in various discourse analytical approaches, including conversation analysis, corpus-based discourse analysis, genre analysis, critical discourse analysis, and multimodal discourse analysis, to name a few (Bhatia et al., 2008). Among these approaches, different semiotic modes (e.g., gestures, posture, and visual images, other than the traditional linguistic data) are especially emphasised and taken into consideration by researchers who take a multimodal discourse analytic approach. This approach evokes the researchers' attention to "more than one semiotic than just language-in-use", by highlighting the "human predisposition towards multimodal meaning making" (Idema, 2003, p. 33). These ideas corresponded well to the central concept of the current main study, in which both modes of verbal speech and gestures were considered separately and together to investigate how they might be related and contribute to music teaching.

Generally speaking, discourse analysts assign meanings to discourse units based on the details provided by the discourse being studied. Fillmore (1985) stated three general dimensions of discourse analysis: intertextual, intratextual, and extratextual. The intertextual dimension deals with relations between segments of different texts, while the intratextual dimension deals with relations between texts or text segments of the same text. Discourse analysts investigate the connection between a text and the setting where it exists, if discourse analysis is undertaken extratextually. The three dimensions were equally essential to the present main study. For example, intratextual analysis of one teacher's gestures helped better establish what these gestures depicted or meant (see section 6.5.2), intertextual analysis of the teachers' metaphors helped find if any patterns of the metaphors existed (see section 6.4.3), and to investigate the data from an extratextual perspective helped explain how

gestures might be constrained (see section 7.3.1), or why certain verbal metaphors were used (see section 7.2.4).

The process of the assignment is an interpretation rather than a discovery, meaning that the same discourse can be validly interpreted by different discourse analysts in different ways (Gill, 1996), and the interpretation may not exactly represent what the provider of the discourse intended to express. To tackle this, in the present study, strategies were used to increase the trustworthiness of the interpretation. Firstly, the music sessions were video recorded in order to preserve the original moment when the speech was made and gestures were used. It was believed that such access to the context could help the interpretation of the metaphors. In addition, a metaphor identification procedure, a gesture classification system, and identification and coding policies were used as consistent guides in order to reduce the vast room for metaphor interpretation. Finally, two coders were involved in the processes of both verbal and gestural metaphor coding so that reliability of data analysis and trustworthiness of the study could be increased. Such issues will be revisited later in section 5.5.

### **5.3.3 Grounded Theory**

The central idea of the grounded theory approach is that theories are ‘grounded’ in empirical research; that is, instead of testing theories, concepts and theories are “developed out of the data through a persistent process of comparing the ideas with existing data, and improving the emerging concepts and theories by checking them against new data collected specifically for the purpose” (Denscombe, 2007, p. 90). The aim of the process is not necessarily to generate any *theories*, but “*concepts* that help to explain the phenomenon” (ibid., p. 98, emphasis in original).

“The novelty of grounded theory lies,” Turner (1983) noted, “not in the mode of investigation associated with it, but in the manner in which the information collected is analyzed” (p. 335). In other words, it is the steps and procedures of how concepts emerge that grounded theory emphasises. Grounded theorists attempt to make these concepts explicit by examining them rigorously and defining them adequately (Turner, 1983).

The constant comparative method used in the grounded theory approach to analysing data (Cohen, Manion, & Morrison, 2007) fitted neatly with how the verbal metaphor identification policy and gestural metaphor coding policy were developed, and systematic metaphors were grouped in the present study. When applying grounded theory, the researcher “compares data with data, data with categories, and category with category” (Charmaz, 2005, p. 517). As will be discussed in section 6.4.3, when establishing systematic metaphors, similarities (semantic connections) between linguistic metaphors were firstly sought and identified before categories of systematic metaphor were tentatively set up. After that, categories were compared and modified until each of them was (hopefully) exclusive and representative. The process of comparing the categorised and uncategorised metaphors was thus progressive, involving repeated comparisons and refining category labels (Cameron, 2007; Cameron & Low, 2007). Specifically speaking, it was the inductive method of the grounded theory that the current study borrowed, and it was mainly used to develop the research methods and help to find the systematicity of the data.

#### **5.4 The Use of Triangulation**

Triangulation involves the use of multiple research techniques demanding multiple measurements to investigate one phenomenon. To Cohen, Manion, and Morrison

(2007), such an approach “attempt(s) to map out, or explain(s) more fully, the richness and complexity of human behaviour by studying it from more than one standpoint” (p. 141). Overall, no research method is without bias, and it therefore may take more than one independent data source to support the study and its conclusions (Mackey & Gass, 2005). In this way, triangulation is “the simultaneous display of multiple, refracted realities” (Denzin & Lincoln, 2005, p. 6), corresponding to what ethnographic research attempts to represent: the multiple perspectives (Polio, 1996).

Types of triangulation vary. Denzin (1978) outlined four possible ones: *data triangulation*—the use of more than one data source; *investigator triangulation*—the use of multiple researchers; *theory triangulation*—interpreting a single data set from various perspectives; and *methodological triangulation*—the use of a variety of research methods to investigate the research questions. In the present study, different teachers, students, and schools were included to avoid specific idiosyncratic use, and field notes, video recording, and interviews were all used with each teacher to collect data (data triangulation). In addition, another coder was invited during phases of both verbal and gestural metaphor analysis so that subjectivity in coding and grouping metaphors by one single researcher could be minimised as much as possible (investigator triangulation).

## **5.5 Trustworthiness of the Study**

Lincoln and Guba (1985) suggested using the term *trustworthiness* rather than *validity* and *reliability* for qualitative studies. They proposed four criteria of trustworthiness, and various activities and techniques to establish trustworthiness, including member checks, thick description, and activities which increase the

credibility of findings such as triangulation. I used these criteria as a guide to improve the trustworthiness of the present study, and I shall discuss how each of them was applied in the present main study in turn.

*Truth value* refers to how one can “establish confidence in the ‘truth’ of the findings of a particular inquiry for the subjects (respondents) with which, and the context in which, the inquiry was carried out” (ibid., p. 290). In the present study, multiple sources of the data from different teachers and schools from both general and special educational streams in different areas of Taiwan were included to ensure that the data provided a fuller picture than presented in any single and particular case.

*Applicability* is about “how one can determine the extent to which the findings of a particular inquiry have applicability in other contexts or with other subjects (respondents)” (ibid., p. 290). In the present main study, the selection of the location and size of the sample were considered to be a part of the sampling process (see section 5.8 for further discussion), and the study was reported in as detailed and clear a way as possible, including problems and decisions at each stage of the research, descriptions of the participants, the school settings that the participants were in, the relationship between the participants and myself, and the methods of data collection and analysis. It was hoped that, by being provided with relevant details, the readers would be in a position to judge how far the findings of each case study could be generalised to other teachers within similar contexts.

*Consistency* relates to how one determines “whether the findings of an inquiry would be repeated if the inquiry were replicated with the same (or similar) subjects (respondents) in the same (or a similar) context” (ibid., p. 290). Another researcher was involved in coding both the verbal and gestural metaphors in the present main study, to help establish the consistency of the metaphor and gestural identification

and classification procedures. In addition, software tools were used to help segment words and annotate verbal and gestural metaphors. Details of the results of data coding between the coders are reported in sections 6.6, 6.4.1, and 6.7.

Finally, *neutrality* refers to how one can “establish the degree to which the findings of an inquiry are determined by the subjects (respondents) and conditions of the inquiry and not by the biases, motivations, interests, or perspectives of the inquirer” (ibid., p. 290). As discussed in section 5.3.1, even though neutrality is almost impossible to achieve in any qualitative study, I still tried to minimise any distortion of the findings by minimising the effect of my presence on the teachers observed (see section 5.10 for further discussion). Member checks, as suggested by Lincoln and Guba (ibid.), were also applied, by giving transcripts of the observed sessions and interviews back to the teachers for accuracy checks (see section 6.6). In addition, it was hoped that, as discussed earlier, through inviting another coder to both transcribe and analyse the data in the present study, the subjectivity for which ethnographers are sometimes attacked could also be minimised.

However, these methods of investigation are not without problems, which will be covered in section 5.11.

## **5.6 The Ethical Issues in the Study**

Different ethical issues become relevant at different stages of a research project, and several conceptual and operational issues may be raised when putting principles into practice. Before committing themselves to a study, for example, potential participants have the right to know details of the research and make their own decisions about whether to get involved or not. However, from a researcher’s point of view, it can be difficult to draw a line between protecting the potential participants’ rights and still

keeping the behaviour or environment of interest 'intact'. Following Kubanyiova (2008), from both *macroethical* and *microethical* perspectives, an ethical framework was set up to deal with the ethical issues in the present study, mainly including the amount of information about research revealed, the timing of the participants' signatures, and issues of confidentiality and anonymity. Each of the above is discussed below.

### **5.6.1 The Amount of Information Revealed About the Research**

Informed consent is the procedure by which individuals are able to make their own decisions about whether to participate in a study or not after being informed of the nature of the research project, including the risks or discomforts which it may involve (Diener & Crandall, 1978). From a researcher's perspective, this involves a decision on how much information about content and purpose of the research to reveal, and when to obtain the participants' signatures indicating formal consent.

Different views have been expressed in the literature on the amount researchers ought to reveal about the research (Singer, 1993), whether to keep it *short* to retain participants' interest and attention (Singer & Frankel, 1982), whether to give a *general* explanation rather than a detailed one to avoid the possibility of annoying some participants (Blumberg, Fuller, & Hare, 1974), or whether to give a *detailed* introduction, in which the self-disclosure by the researcher will result in self-disclosure by the participants, leading to a higher response rate and less response distortion (Jourard & Friedman, 1970; Singer, 1978). Interestingly, the results of applying these strategies differ. Although Berscheid, Baron, Dermer, and Libman (1973) found that their participants' willingness to be involved diminished when more information was provided, Sobal (1982) concluded that there was no consistent

causality between the amount of information about survey content and either participants' response rates or the quality of response.

Nevertheless, Mackey and Gass (2005) suggest researchers can "conceal the precise nature of the study" because the aim is to elicit "responses that reflect natural behaviour rather than what participants think they should say or do" (p. 117). Similarly, de Vaus (2002) also encourages researchers not to give too much detail about the research beforehand because, instead of informing, the details can "confuse, distract and overwhelm" the participants (p. 60). Of course one can be accused of taking an economical approach and even of deception because one is not telling the whole truth. However, deception has been argued as acceptable in research as long as no harm comes to the subject (Aronson, Ellsworth, Carlsmith, & Gonzales, 1990), and "whether the amount and type of deception is justified by the significance of the study and the unavailability of alternative procedures" (Cohen et al, 2007, p.67).

The discussion above indicates that, as no clear conclusions can be drawn from previous research about how much information should be revealed to the participants in advance, a compromise needed to be made in the present study. I therefore informed the teachers of what the study was about without giving too much detail, in an attempt to avoid influencing their usage of metaphors (or gestures) in the classroom.

The purpose and content of the research were explained in a letter in Mandarin Chinese (see Appendix G and Appendix H for the English version). The letter began with a brief self introduction, and then pointed out that it was a research study about how music teachers taught music using the Chinese language and, to be slightly more specific, how Taiwanese music teachers described and explained abstract music using Mandarin Chinese.

The letter then explained why classroom observations and such a research study were needed. The number of sessions and the way in which I hoped to conduct the observations were also stated. The letter ended by giving the time I hoped the response could be received, and my email address, so that the teachers could contact me. All sentences were kept as concise as possible, and the letter was printed on one side of an A4 sheet.

### **5.6.2 Timing of the Participants' Signatures**

Another ethical issue concerned the timing of the participants' signature to indicate they understood and agreed to take part voluntarily. Singer (1978) concluded that the request for a signature had a significant effect on response rate. He pointed out that "better data are obtained if the respondent is asked to sign a consent form afterwards" (*ibid.*, p. 144).

Following Singer, a written A4 research consent sheet was given at the end of the post-observation interviews. At the initial stage of the main study, the permission letter (discussed in the previous section) was emailed and forwarded through personal networks. Research consent was then orally sought from the teachers expressing an interest. The research consent form (see Appendices I and J for consent forms in Mandarin Chinese and English), used later in the post-observation interviews, to inform the teachers of the purpose of the observation and the data protection policy, asserted that confidentiality and anonymity would be preserved and that the research would be conducted in an ethically responsible way, such that the data could only be used by me and my supervisors, for research purposes and research publications. The teachers were required to sign if they agreed.

### 5.6.3 Confidentiality and Anonymity

Maintaining confidentiality of information collected from research participants means that, except the researcher(s) and/or the participants, no one else outside the research project can link responses of the participants with individual participants. Guaranteeing anonymity for research participants means that either the identifying information about them (e.g., name, address, etc.) is not collected or that one does not link responses with participants' identities.

Traditionally, researchers are advised to protect participants' identities, and in educational research this is often done by changing names or giving the participants pseudonyms (Deyhle, Hess, & LeCompte, 1992). With the data protection act 1998 (UK, Department of Health, 2000) coming into force on 1 March 2000, arguing that confidentiality should be maintained wherever possible, the issue of confidentiality now has not only ethical but legal implications (Grinyer, 2002).

These days, however, more and more researchers (e.g., Grinyer, *ibid*; Patton, 2002) point out that there is the possibility that the research participants might actually like to keep their real names in the research report. Grinyer gave an example of a project where she asked participants if they preferred be called by their real names or by pseudonyms in any publication from the project, and about three quarters of the respondents specified that they preferred real names. One participant further explained that she would rather be called by her real name because confidentiality made her feel detached from the data she provided. Further issues concerning the complexity of dealing with confidentiality in practice are also raised in the same article, including who (the researcher, the transcriber or the research participant) makes the choices, whether real names and pseudonyms should be mixed, and more importantly, the huge amount of time and complexity involved when

dealing with these issues.

Nevertheless, these issues might not be so problematic in the present study, because its nature is quite different from that of the project Grinyer conducted. Her participants were parents of young adults with cancer and her project dealt with “a very emotional and personal issue” (ibid., p. 4); perhaps this was why some of the research participants had a strong motivation to have their experiences recognised. The emotional and personal issues involved in the present study were obviously less intense than with Grinyer’s project. The teachers involved were informed, both orally and through the research consent forms, that their confidentiality and anonymity would be preserved and the researcher would not identify them. None of them rejected this position or asked the researcher to use their real names instead in publications.<sup>1</sup>

## **5.7 Research Procedures**

The study had three phases: two smaller-scale pilot studies, labelled the ‘preliminary study’ and the ‘pilot study’ (which have been discussed in the previous two chapters), and a main study. Gestures were not focused on until the results from the pilot study made it clear that music teachers not only used verbal metaphors in junior high school in Taiwan, but also gestural ones. No data or participants from the preliminary and pilot studies were used in the main study.

### **5.7.1 The Three Phases of the Study**

The three phases of field work were conducted between the years 2006 and 2008. Table 5.1 lists the data collection time, data collection methods, and research participants of the preliminary, pilot, and main studies.

Table 5.1

*The Three Phases of Data Collection of the Study*

<i>Phases</i>	<i>Time</i>	<i>Collection Methods</i>	<i>Participants</i>
Preliminary	Dec 2006	Audio recording	1 primary school teacher
			1 junior high school teacher
Pilot	Oct 2007	Non-Participant observation	1 junior high school teacher
		Video recording	
		Interviews	
Main	March- May 2008	Non-Participant observation	3 general music class teachers
		Video recording	3 music-talented class teachers
		Interviews	(all at junior high level)

**5.7.2 The Importance of Pilot Studies**

Pilot studies play an essential role in research because they can pre-test the feasibility of certain research instruments, as being either inappropriate or too complicated (Teijlingen & Hundley, 2001), and they allow the researcher to check the length of time of an interview, and isolate ambiguous or confusing questions (Opie, 2004). They also help narrow down and redefine the focus of the study (Frankland & Bloor, 1999). The preliminary and pilot studies conducted here helped achieve all of these aims. Durations of the interviews, and the amount of data to be collected were better estimated for the main study, and several interview questions and parts of the observation schedule were either eliminated or improved. In addition, the results of the data analysis in the preliminary and pilot studies also helped to focus further data

collection from sessions consisting of certain types of teaching contents (i.e., music theory, music history, and music appreciation) for the main study.

The purposes of the preliminary and pilot studies differed slightly. The purpose of the preliminary study was ‘to test the water’ and see if music teachers in Taiwan used verbal metaphors in their teaching, and if they did, establish what teaching contents and what level (primary or junior high) of school involved more metaphors. Two general-music sessions provided the data, one by a teacher in primary school, the other by a teacher in a junior high school. Classroom activities, such as roll call and watching a film, and teaching contents, such as reading music and music history, were mixed in the two sessions. The results of the preliminary study suggested that teachers did use metaphors in music classrooms in Taiwan, but the quantities of the metaphors were not equally distributed, either within each single session or between the two teachers at the different levels. Generally speaking, the teacher in the junior high school used more metaphors than the primary school teacher, and more metaphors were used during music appreciation, music theory, and music history than in recorder playing and roll call, in which almost no metaphors were used.

The purpose of the following pilot study was to investigate whether junior high school music teachers used any metaphoric gestures in music classrooms, and if so, how these metaphoric gestures related to verbal metaphors. One of the three observed sessions taught by one music teacher constituted the data. A specially designed observation schedule and interview protocol were evaluated. It was found that improvement in both the observation schedule and several interview questions was needed (see section 4.6.1). They were modified to be more appropriate for the main study.

## **5.8 Research Participants**

The data for the main study came from six teachers at six junior high schools in different parts of Taiwan. The teachers were initially introduced through friends and acquaintances, but were selected for the study on the grounds of ease of access, what they taught, the type of class taught (general or music-talented), and school location. It was decided that lessons observed should be restricted, as mentioned earlier, to those which focused on music theory (including harmonics), music history, and/or music appreciation, based on the findings of the preliminary study. For example, when teaching learners how to play the recorder, the teacher counted the beats, explained finger positions, or hummed the melodies, and the whole 30 minute part of the session was full of direct and literal instruction, appraisal and approval (see chapter 3).

The number of teachers (i.e., six in the main study) was decided not only because, as discussed earlier in section 5.2, having a small number of participants was considered to be suitable for in-depth qualitative research, but also because, from the previous metaphor studies involving one single researcher manually transcribing and analysing, it was estimated that for the main study, 10 hours of recorded data would serve as a reasonable compromise between what was feasible for a doctoral study and what was desirable, given the research questions (see section 5.11 for a detailed discussion).

### **5.8.1 The Schools**

Teacher behaviour is known to be affected by school characteristics such as school location and school population, and by teachers' personal characteristics such as their number of years' experience of teaching (Bourke, 1986; Lockaby, Baker, & Hogg,

2001). To avoid the data collected being biased towards any particular type of school, the locations of the schools were accordingly taken into account in the present main study. In Taiwan, for example, teachers in urban schools such as Taipei City have more teaching resources and tend to face larger classes and have more problems in keeping order than those in rural schools (Yeh, 1995). These factors may well impact on the number and nature of the metaphors which teachers use. Criteria and details of the selected schools for the present study (coded as S1 to S6) are presented in Table 5.2.

Table 5.2

*Main Study: Details of the Schools*

<i>School</i>	<i>Year of Foundation</i>	<i>Part of Taiwan</i>	<i>Location Area</i>	<i>Number of Classes</i>	<i>Number of Students on Roll</i>
S1	1999	South	Urban edge	69	2,744
S2	1990	South	City centre	68	2,382
S3	1936	South	City centre	36	1,186
S4	1961	North	Urban edge	61	1,963
S5	1969	North	Suburb	74	2,669
S6	1980	North	Suburb	39	1,336

*Note.* From Department of Statistics, Ministry of Education (2005-2006).

As can be seen from Table 5.2, the six schools varied as regards age, location, and size. The age of the schools ranged from as recent as nine years to as established as 72 years (mean=35.5, SD=20.58). Moreover, they were located in different parts of Taiwan, including the suburbs, urban edge, and city centre in the north and south, and in all probability covered communities having a range of social and economic structures (see also section 2.4.1). According to the statistics from the MOE, the average number of students per junior high school in Taiwan in 2005-2006 was 1,299. So, the sample of chosen schools had rolls both bigger and smaller than the average. Overall, given that they reflected differences in terms of age, location, and size, the six schools seemed reasonably representative of the junior high schools in Taiwan.

The setting of the classroom was selected as the source for investigating the relation between metaphor and gesture because classroom talk, especially in teacher-centred classes, is usually a *semi-formal* event in which *a single speaker* gives a semi-prepared speech *for a certain period of time* (see also section 2.4.2). The condition of 'semi-formal' may allow the occurrences of both predesigned and intentional, and unplanned and spontaneous gesture use. Lecturing, in my personal experience, and as confirmed by the preliminary and pilot studies, is not always the only approach used by music teachers, but it is certainly one used very often. In both the preliminary and pilot studies, lecturing was the only approach used in the sessions observed at junior high school level and there were no group discussions or small group activities (see the discussions in chapters 3 and 4). Furthermore, in the 15 sessions collected for the main study, only one of the six teachers used any group discussions and this accounted for just 14 minutes out of the 755 minutes collected, approximately 0.3 % of the data. The condition of 'a single speaker' was accordingly selected to help me focus on the relation between language and gesture, rather than

the interactions between speakers, which are frequently involved in other types of semi-formal talk, such as group discussions. Finally, the condition of ‘for a certain period of time’ was selected because it provided the speaker with the opportunity to generate, even to develop, a reasonable amount of verbal and gestural use of metaphor. In addition, as suggested by the previous studies and discussed in section 2.3.3, teaching is multimodal, and speech and gestures are both involved. Last but not least, collecting data from a real-life context can be an advantage because, as discussed in section 2.1.2, drawing conclusions from de-contextualised data to serve as evidence of conceptual metaphor and metaphor use has been claimed, especially by applied linguists, to be a weak point of conceptual metaphor theory (Deignan, 2005; Steen, 2007).

### **5.8.2 The Teachers**

The six teachers observed were coded A to F. Three of them taught general music classes while the other three taught music-talented ones. All the teachers were female, aged between their late twenties and their mid thirties. They all had either MA or BA degrees in music-related fields, including musicology, music education, and music performance, and their teaching experience ranged from 2 to 11 years. Class sizes were between 26 and 36; the average number of students in the general music classes was 34 and in the music-talented ones, 27. Each session lasted for 45 minutes on average. In addition, there were two sessions of orchestra ensemble (E3 and F1) from two music-talented classes, making the total number of sessions observed 15, with a total length 755 minutes. Both the length of, and the student numbers in, the orchestra ensemble sessions were twice those of the other sessions. Table 5.3 lists details of each observed session.

Table 5.3

*Main Study: Details of the Teachers Observed and Their Sessions*

<i>Teacher Observed</i>	<i>Teacher's Highest Degree</i>	<i>Teaching Experience (Years)</i>	<i>Sex of the Teacher</i>	<i>Session Observed</i>	<i>Stream</i>	<i>Main Teaching Content</i>	<i>Number of the Students</i>	<i>Length of the Session (Minutes)</i>
A	MA	7	F	A1	General	Music appreciation	36	39
				A2	General	Music appreciation	36	41
				A3	General	Music appreciation	36	38
B	MA	11	F	B1	General	Music appreciation	33	43
				B2	General	Music appreciation	32	41
C	MA	8.5	F	C1	General	Music theory	34	46
				C2	General	Music theory	35	49
D	MA	2	F	D1	Talented	Music appreciation	28	44
				D2	Talented	Harmonics	28	49
				D3	Talented	Music appreciation	26	44
				D4	Talented	Harmonics	26	47
E	MA	10	F	E1	Talented	Music appreciation	28	45
				E2	Talented	Music appreciation	29	42
				E3	Talented	Orchestra ensemble	78	90
F	BA	4	F	F1	Talented	Orchestra ensemble	54	97

### 5.8.3 The Sessions

Not all 15 observed sessions constitute the data for the main study, and details are given in Table 5.4, including each session's main teaching content, the original length of each session, the eliminated parts and their length, and the remaining length of the sessions which were analysed.

As mentioned earlier, it was decided to restrict lessons observed to those which focused on music theory (including harmonics), music history, and/or music appreciation. Parts departing from these categories for a total time longer than five minutes were eliminated from the data. Thus in Teacher A's three sessions, approximately 19% of the time was spent on recorder playing, roll call and attendance check, and this was removed from the data. In addition, the two harmonics sessions by Teacher D (D2 and D4) both contained long sections (27 and 17 minutes) without any talk involved. During the 27 minutes in D2, students got their homework sheets back from the teacher and were asked to correct it based on the teacher's mark; and at the beginning of session D4, the class watched a film about Brahms' *Symphony No. 1 in C minor, Op. 68* conducted by Igor Markevitch. The two parts of the sessions were hence both excluded. The remaining 13 sessions, which constitute the data, lasted between 80 and 100 minutes each, with the result that every teacher contributed roughly equal times to the data (illustrated in Figure 5.1). The data set thus included nine music appreciation sessions (A1, A2, A3, B1, B2, D1, D3, E1, and E2), two music theory sessions (C1 and C2), and two orchestra ensemble sessions (E3 and F1), with a total length of 636 minutes and 96,634 characters transcribed.

Table 5.4

*Main Study: Parts of Each Session Excluded from the Data*

<i>Session Observed</i>	<i>Main Teaching Content</i>	<i>Length of the Session (Minutes)</i>	<i>Activities Eliminated from the Data</i>	<i>Duration of the Eliminated Activities</i>	<i>Observation Time Included in the Analyses</i>
A1	Music appreciation	39	Recorder playing	8	31
A2	Music appreciation	41	Recorder playing	8	33
A3	Music appreciation	38	Roll call	7	31
B1	Music appreciation	43	---	---	43
B2	Music appreciation	41	---	---	41
C1	Music theory	46	---	---	46
C2	Music theory	49	---	---	49
D1	Music appreciation	44	---	---	44
D2	Harmonics	49	Homework correction	49	---
D3	Music appreciation	44	---	---	44
D4	Harmonics	47	Watching a film	47	---
E1	Music appreciation	45	---	---	45
E2	Music appreciation	42	---	---	42
E3	Orchestra ensemble	90	---	---	90
F1	Orchestra ensemble	97	---	---	97

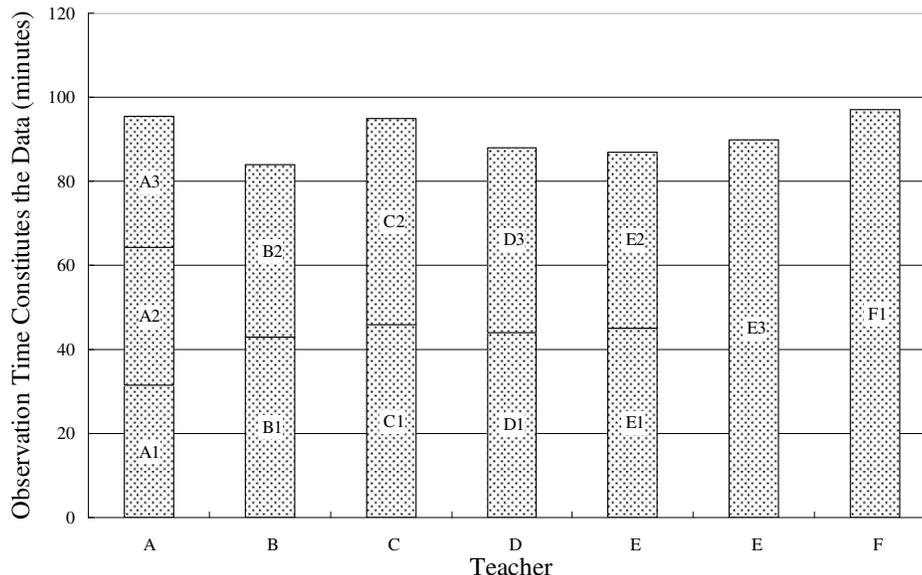


Figure 5.1. Main study: Valid observation times.

It is worth noting that in Figure 5.1, although E1, E2, and E3 were taught by the same teacher, E3 was deliberately treated as a single unit separate from E1 and E2. This was because the nature of E3 (orchestra ensemble) was very different from the nature of the other two sessions (music appreciation). Teacher E, the only participant I had teaching both the general and music-talented classes, explained as follows, when asked if the preparation for these two types of sessions was the same:

It's completely different. *Completely*. A lot of time orchestra ensemble sessions [. . .] due to the fact that orchestra ensemble involves interpretations [. . .] are not a single-directional transfer of knowledge. It [orchestra ensemble] is a performance. [. . .] I used adjectives, [. . .] simple adjectives such as happy and sad. [. . .] It is meaningless for the students to do piano only because I asked them to do [. . .] therefore perhaps you need to give them [. . .] a story or a picture. [. . .] It will be easier for them [to construct meanings for the music they played] (Interview Eb).

#### **5.8.4 Relationship Between the Researcher and the Teachers**

My role as a researcher in the study was twofold. As a Taiwanese who had been educated in Taiwan until undergraduate level, I was aware of what school life at junior high level was like. This helped to make it easier for me to ‘enter’—both physically and culturally—the site. On the other hand, the fact that I had no prior experience of being a music teacher at a junior high school allowed me to observe critically from an outsider’s point of view. My lack of teaching experience and the fact that I belonged to the same age group (28 to 35) as the observed teachers might also have made the teachers feel less stressed about being watched. For example, Teacher B started the post-observation interview by ‘interviewing’ me, asking how I ended up getting a degree in Educational Studies, since she had heard from our common friend that I had received musical training in schools. The conversation continued in a friendly and ‘chatty’ way. In addition, Teachers C and D not only asked how my data collection process was going, but voluntarily offered their help. In fact, it was through Teacher D’s introduction that I observed Teacher F’s session one week later. Generally speaking, the teachers seemed to be comfortable working with me.

#### **5.9 The Use of Semi-Structured Interviews**

Interviews are frequently considered, and this is something especially emphasised in the ethnographic tradition, to allow researchers to look into the research questions from the participants’ perspectives. As Powney and Watt (1987) point out, an interview “is a tool to find out about people” (p.13), for example, their personal knowledge, values and preferences, and attitudes and beliefs (Tuckman, 1972, as cited in Cohen et al., 2007). The teachers interviewed are given the chance to explain

the reasons for their behaviours. Overall, unlike the unidirectional classroom observations, interviews are not concerned with collecting data only, but enable both interviewers and interviewees to express, discuss, and share points (Cohen et al., 2007).

Face-to-face interviews are usually divided into three categories, namely structured interviews (or, standardised interviews), semi-structured interviews, and unstructured interviews (or, non-standardised interviews). In a structured interview, all the questions are asked in the same order using the same words. The interviewer determines what is important to talk about and as a result an interviewee has no opportunity to express what s/he would like to say, other than by answering the specific questions. The positive result is that structured interviews allow the researcher to compare different answers produced by different participants. Unstructured interviews, conversely, usually begin with an open-ended question. As the interview proceeds, the conversation develops, in both the researcher's and the participant's terms and at their own speed. Semi-structured interviews are usually guided rather than controlled by a list of questions. The procedure hence allows researchers to obtain the data s/he needs while the interviewee has the freedom and flexibility to express what is important to them.

### **5.9.1 Reasons for Using Semi-Structured Interviews**

Because of the focused nature of the information I sought, and the flexibility a semi-structured interview can provide, semi-structured interviews were selected for the main study. In addition, the use of semi-structured interviews could also provide the opportunity to produce qualitative and spontaneous data, which fitted with the grounded theory approach, the point of which was not to test previously determined concepts or theories, but to generate them.

In the main study, one of the aims of the interviews was to acquire a better understanding of the teachers and the reasons for what they did in the sessions I observed. For example, Teacher C used fruit to distinguish the different sounds produced by different musical instruments and not until the post-observation interview with her did I realise that she did not use fruit by chance, but knew that her students had loved such metaphors when she had used similar examples in the past. Under such circumstances, I was able to interpret observed data in the light of teachers' stated plans and reminiscences.

One of the key challenges which interviewers face is the possibility of "researcher bias creeping in" (Opie, 2004, p. 118). The conversation between a researcher and a participant during an interview involves complex social interaction. Meanings are repeatedly shared and (re)shaped during the process. Issues which are important to the researcher might be of no interest to the participant. Bearing this in mind, the interviews conducted in the current main study employed three techniques suggested by Mackey and Gass (2005, p. 174-5): encourage open-ended discussion, make the interviewee as relaxed and comfortable as possible, and mirror the interviewees' responses by repeating them for both reflection and further input. By trying to establish what the teachers genuinely thought or had said, the validity of the interviews would, it was hoped, be improved.

### **5.9.2 The Design and Use of Interviews in the Main Study**

In the main study, two interviews were conducted between me and each teacher—before and after classroom observations—and Mandarin Chinese was used throughout. The questions were phrased similarly in each interview, though the questions were not fixed in any specific order. Sometimes the first question asked in one interview was not raised until near the end of another.

During the pre-observation interviews (coded as Aa, Ba, to Fa, the capital letter A to F standing for the six teachers), research consent was orally sought and the discussion served as preparation for the observation. The post-observation interviews usually started with a conversation about what had just been observed, or else at times the teachers initiated the discussion. The purpose was to seek all the answers to, and related information about, the eleven questions (listed in Appendix F) in a way which was sensitive to the discourse context, so that the interviewed teachers would enjoy expressing and sharing opinions, thereby maintaining their engagement with the interview (Tanur, 1994), and at the same time being free to volunteer detailed comments they would like to make (Oppenheim, 1992).

The questions and their wording used in the main study were developed and/or modified on the basis of the following two issues which arose from the pilot study interviews (see sections 4.2.2 and 4.6.1 for further details). Firstly, information about activities which might be involved in the observed sessions was sought in the pre-observation interviews, including where teachers usually stood when teaching, in order to allow the video camera position to be adjusted if teachers walked around the classrooms a lot. Secondly, ambiguous questions which were difficult to answer were either avoided or modified. For example, a question like 'How do you prepare for explaining new concepts?' might be more specific if an example taken from the interviewee's observed sessions could be given (if there were any), or I asked the teachers if they ever used stories, personal experiences, or metaphor to help them teach.

The teachers were told in the pre-observation interviews that the study was about classroom talk and the idea was to observe a session with as much talk involved as possible. They were advised to suggest suitable sessions for the

observations. Details about the observations such as where to place the video camera, when to start and end the recording, and what activities might be involved in the sessions were also discussed. The teachers were not told anything at this point about the investigation of gesture use. These discussions usually lasted less than 10 minutes and were conducted over the telephone. Field notes were taken during the pre-observation interviews (see Appendix B).

Unlike the pre-observation interviews, the post-observation interviews (coded as Ab, Bb to Fb, the capital letter A to F again standing for the six teachers) were all conducted face-to-face, and lasted for around 27 minutes each. Depending on the availability of the teachers and when the sessions were observed, the post-observation interviews were conducted no later than one week after the observations. Teachers were informed that the main purposes of the post-observation interviews were to find out more about the sessions observed and about them, including how they prepared and delivered lessons. The locations of the post-observation interviews included teachers' offices (Ab and Eb), classrooms (Bb and Cb), a practice room (Fb), and a restaurant (Db) with little background noise. I made notes during each interview, and the discussions were either video- or audio-recorded if the teachers permitted it (see Appendix B).

Information was sought about the teachers' educational backgrounds and working experience, and questions covered how teachers had prepared for the class (especially the ones I had observed), how they had planned to explain new concepts, what they thought about metaphors and gestures, and how they used metaphors and gestures if they used them to help teach. The last question involved the conscious crafting of metaphor from the teachers' perspectives, which might be different from a researcher's interpretation of metaphor (as discussed earlier in section 4.4.3), but

could be one valuable source to help me, the researcher, to understand and interpret the educational functions metaphors and gestures might serve.

Generally speaking, the interviews helped me correct my assumptions, or they provided an opportunity for the teachers to justify their behaviours. A good example comes from the post-observation interview with Teacher D who, compared with other teachers, spent very little time, I found, describing music or sound when introducing the piece to her class. I gave the example of Teacher C's impressive food metaphor when Teacher D asked me how other teachers might describe music. Surprisingly Teacher D disliked the idea of putting music into any words because "it might be helpful for a student's imagination, but it is also possible to limit a student's imagination by telling him or her how to imagine" (interview Db). Before the interview, I thought that the students' imagination of music might be at the bottom of her teaching list, but I was wrong. It was just because the way she taught imagination (by saying nothing) was not the way I had expected. Nevertheless, Teacher D's statements did not absolutely prevent her from using verbal and gestural metaphors, which will be discussed later in chapters 7 and 8.

I checked the four transcripts of the recorded interviews afterwards, and one possible incidence of researcher bias was identified, where I had made a statement on my own which might have affected how the teacher responded to the question. This was when I talked to Teacher C, asking her what year(s) of students she usually taught. She said she preferred to meet the students when they were in the 7th grade and spend the following three years with the same class. She then explained why. "And you'll feel more familiar with the students, right?" I asked. Instead of giving my presumption and waiting for her confirmation, perhaps another wording of the same question like "Are there any other reasons why you preferred to have the same

class from the 7th to 9th grades?” would have been more appropriate. The interview data were thus felt to be sufficiently trustworthy to analyse further.

## **5.10 The Use of Structured Classroom Observation**

Classroom observation allowed me, as a non-participant observer, to sit in where the data were generated, and to collect the information which might be missed by the recording facilities, such as the classroom atmosphere and interactions between the teachers and the class.

### **5.10.1 Reasons for Using Structured Classroom Observation**

There were several advantages to collecting data through classroom observation. First, classroom observation provided reasonably direct access to what happened in real life. Second, classroom observation provided me with opportunities to experience the events within their contexts. One of the main functions of language and gestures, the two modes which the present study focuses on, is to transfer information and to communicate (see section 2.3 for details). It thus makes more sense if language and gestures are investigated along with the context where they are located, so it would seem that the best method of collecting such data for the present study is to actually go into the classrooms to observe. In addition, communication in classrooms is a dynamic process in which meanings, metaphoricity, and/or functions of a certain word or gesture might change from moment to moment (e.g., Cameron, 2003; Cameron & Deignan, 2003; Müller, 2008). To sit in and involve myself in the events helped me interpret what words and gestures occurred, and how exactly they were used at each moment. Finally, it was hoped that what the teachers paid little attention to or were unwilling to talk about might be revealed, albeit indirectly, through direct observation.

However, classroom observation can also be ‘misleading’ for various reasons, such as the observer’s selective attention, selective memory (Cohen et al., 2007), and/or preconceived ideas and prejudices (Bell, 1998). In the main study, such bias was reduced by video-recording the sessions to ‘preserve’ the actual moments when the deliveries happened, allowing more than one coder to review them repeatedly, and adding another coder to increase the reliability of the data coding. In addition, triangulation of data from video recorders, field notes, and interviews with the teachers was employed to help me interpret what was happening, and obtain a clearer, richer and more complete picture.

Another criticism of observation is that the presence of the researcher may influence and affect people’s behaviour. However, all the teachers in the present study said in the post-observation interviews that they had not felt my presence had made any difference to their teaching. In addition, one of the aims of the interactions with the teachers during the pre-observation interviews was to build connections with them, in order to help them feel more relaxed and comfortable when being observed. Teachers A, B, and C usefully volunteered the information that they were used to being observed (interviews Ab, Bb, Cb). Nevertheless, it is difficult to tell whether the observer’s presence actually introduces any influence or effect or not (Mackey & Gass, 2005), as it “depends on their [the teachers’] understanding of why the observer is there” (Cluett & Bluff, 2006, p. 178). In the present study, the participants were informed that the research was about classroom talk; that is, how music teachers describe music via language. Indeed, later in their post-observation interviews, teachers B and C said they thought I was interested in the communicative or interactive teaching method. In addition, it was discovered during the post-observation interviews that four out of the six teachers’ understanding of

'metaphor' was language in the form of 'X is like Y' (interviews Cb, Db, Eb, and Fb), that is to say, simile. The interview with Teacher A did not cover any further details of my research.

### **5.10.2 The Design and Use of Classroom Observations in the Main Study**

A real-time observation schedule (Appendix E) was designed and modified, based on the version used in the pilot study. It specified both start and end times of the activities and covered organisation of the class, materials and musical instruments used, and the language used by the teacher and students.

The video recorder used for data collection was a SONY Handycam HDR-SR5. It was placed on a tripod at the back of the classrooms, facing the teacher at the front. For most of the time, the zoom lens was fixed without being adjusted. Teacher B's classrooms were the only exception, because the students' seats were arranged in groups, and although lecturing was the only approach used, the teacher actually walked between the groups while talking. The recorder had to be removed from the tripod to keep the teacher in the visual frame.

For those teachers (B, C, D, E, and F) who used specific music classrooms, the video recorder was set up before the sessions began; it started to record when the students started to walk into the classroom, and was not turned off until the class was dismissed and the classroom was empty. Teacher A was the only one whose classrooms were not available until the session began, as a result of which the video camera could not be made ready beforehand. In the event, the teacher explained the situation and introduced me to the class while I was setting up the recording facility, and thus almost nothing from the classes was missed.

For all 13 sessions, neither the students' seats nor the original arrangement of the classroom was changed. As a non-participant observer, my aims in the classrooms were to observe and describe an existing situation, but not to influence or interfere with the teacher's uses of language or gesture. I sat at the back of the classroom next to the video recorder, to take field notes which might be helpful during the preparation of the transcripts, including a description of teaching activities, my own feelings and reactions, and the significance and interpretations of what was being observed. Teaching materials such as worksheets and handouts were collected, and photos were also taken before and/or after sessions.

Due to the fact that only one recorder was permitted by the teachers, it proved to be impossible to monitor gesture uptake or production by students at a later stage. Gesture and/or metaphor interaction between teachers and their students was accordingly not tracked.

### **5.11 Limitations of the Methods**

In the event, it proved impossible to fully implement the desired sample and data set in several ways. First, the size of the sample was a balance between the scope of the study and the amount of data that one single researcher could handle. Since the idea of the present study was to investigate what and how metaphors were used by music teachers, it might be thought that the bigger the sample size, the better. However, previous studies had suggested that there are a limited amount of data that one single researcher can realistically manually transcribe and analyse. Sakadolskis (2003), in her US study of figurative language in the construction of musical meaning, 111.45 minute tapes of 19 class sessions from three sixth-grade general music classes in one school taught by one teacher were transcribed, constituting 450 single-spaced pages.

She did not indicate how many words were contained in the transcription. Cameron (2003) conducted a study of metaphor in UK primary classroom discourse and the amount of data she collected for her study was 10 hours of usable data, with 27,000 transcribed words. She pointed out that this amount of data was “probably at the limit of what one person can transcribe and analyse manually” (p. 53). At the time of writing, no research on metaphor in educational discourse in Mandarin Chinese could be found and thus no equivalent levels can be cited for Mandarin Chinese. However, in the preliminary and pilot studies, the number of Chinese characters each music teacher produced per minute was between 136 and 195, and metaphor density was 25 metaphors per 1,000 characters. Based on this rate, it was estimated that 10.6 hours (636 minutes) of recorded data and 96,634 characters transcribed would provide sufficient information (2,416 metaphors) for further analysis.

Second, it proved impossible to control or match the teaching content of the lessons. Although, as with other subjects, there are standard textbooks for music, not all the six teachers used them, and indeed all the teachers indicated in the interviews that they arranged and designed what and how to teach on their own, rather than follow the textbooks lesson by lesson. In such circumstances, it is almost impossible to design a research study which naturally involves the same teaching content. For example, music appreciation was not the only activity the classes had in a music appreciation session (e.g., sessions A1, A3, B1 and B2). Teachers sometimes included other teaching content such as recorder playing or watching a film to prevent the children from getting bored with the teaching (interviews Ab and Bb), or to help them concentrate on the visual stimuli (interview Eb). To make up for the bias, some teachers (Teachers A and D) had to be asked for permission to observe them for more sessions than the others, because the irrelevant parts of the sessions (e.g.,

recorder playing and watching a film) had to be eliminated. This meant that (a) the data to be used could be restricted to music theory (including harmonics), music history, and music appreciation; and (b) each teacher would contribute roughly one seventh of the total observation time of the data (see Table 5.4 and Figure 5.1 for details).

A similar problem existed with both the general and music-talented classes. For example, the orchestra ensemble sessions did not exist for general music classes. They were nevertheless included in the data set to maintain the scope of the study by including sessions from both streams, namely general music classes and music-talented classes.

Third, the individual styles of teaching and gesturing could not guarantee an equal number of characters and gestures produced by each teacher in a 45-minute session, and in the present study, the quantity was taken as something to discover rather than as a method problem to solve. That is, the sampling strategy was intended to make sure each teacher's contribution to the data was roughly equal in terms of the observation time (as illustrated in Figure 5.1) rather than the amount of metaphor use.

## **5.12 Summary**

Results of the preliminary and pilot studies helped develop the research questions and the methods which were going to be used for the main study. Six teachers from six junior high schools of general and special education streams in different parts of Taiwan were observed. Thirteen sessions were video-recorded, and field notes and observation schedules were completed during the sessions. The sessions constituting the data include 11 sessions of general music classes and two of music-talented

classes, with a total length 636 minutes (10.6 hours) and 96,634 characters transcribed.

Techniques and concepts from methodologies and paradigms of ethnography, discourse analysis, and grounded theory were adopted. Multiple data sources (teachers from different schools), a variety of research methods (mainly classroom observation and interview), member checks (transcribing the observed sessions and interviews, and coding the metaphor), and thick description were all used in the study to establish trustworthiness.

### **Footnote to Chapter Five**

<sup>1</sup> An email was sent later to ask the teachers' preferences about being referred to by their real names or by pseudonyms in this thesis and further publications. Among the seven teachers who responded, three of them preferred to be indicated by their real names, two preferred pseudonyms, and two held neutral opinions. With respect to students and schools, three teachers preferred the students' and schools' confidentiality and anonymity to be maintained, two preferred real names, and two held neutral opinions. The response not only showed that it seemed most teachers were in fact open-minded about revealing their identity, but also presented a mixture of opinions and thus indicated the difficulty of dealing with these issues in a study involving a number of participants. To maintain consistency, I decided to preserve all the participants'—the teachers', the students', and the schools'—confidentiality and anonymity.

## Chapter 6

---

### MAIN STUDY: METHODS OF DATA ANALYSIS

---

The methods of data analysis used in the present main study are discussed in this chapter. General methods of data analysis are covered in section 6.1, and in section 6.2, I discuss how verbal and gestural data were transcribed. Reviews of the literature on metaphor identification methods and gesture classification systems are given in section 6.3. An explanation of how metaphors—both in speech and via gestures—were identified can be found in sections 6.4 and 6.5, including how the verbal metaphors were grouped into systematic metaphors. A reliability check was employed and this is reported in section 6.6. In addition, in section 6.7, I set out how a multimodal annotation tool was chosen and used to help annotate verbal and gestural metaphors in music classrooms where Mandarin Chinese was the main language spoken. Section 6.8 acts as a final summary.

#### 6.1 General Methods of Data Analysis

A hierarchy of data analysis was applied to the main study. At stage one, the data were overviewed with the naked eye to investigate the nature of verbal and gestural metaphors used in music classrooms, including their density and distribution, and to see if any obvious systematic patterns existed. Methods for data transcription and identification, and for grouping systematic metaphors, were the main concerns at this

stage. At stage two, relations between verbal and gestural metaphors were further examined. The educational implications of the verbal and gestural metaphors used together, and whether or how they functioned as a whole to communicate or conceptualise musical concepts in music teaching, were the focus of stage three. An annotation tool was used to help the analysis at this stage. The results of this three-stage analysis of data can be found in the next chapter.

After data had been collected, as discussed in chapter 5, I watched the videos, stored on DVD disks with content labels, several times to familiarise myself with each teacher's idiosyncrasies in verbal and gestural expressions (e.g., accent, speed, conventionalised choice of lexicon), and the use of equipment in the environment (e.g., microphones, CD players, projectors, musical instruments). The videos were transcribed with the aid of all relevant notes made prior to, during or following recording. During the transcription, methodological and analytic notes were taken regarding how and what should or can be interpreted, and these were kept in another file. The transcription of the verbal data was made straight after the recordings, before the gestural data were transcribed. Details of data transcription will be discussed in section 6.2.

The process of metaphor identification was a recursive and convergent process of analysing, refining, and revisiting the data, the so-called "family-resemblance approach" employed by Cameron (2003, p. 62; also see section 5.3.3 where the approach of grounded theory adopted in the present study was discussed). In the present study, as will be demonstrated later, during the process, a policy of metaphor identification was firstly set, and then refined after analysing more data and running an inter-rater reliability check, until an acceptable reliability rate was achieved and before the data were finally revisited. The nature of the procedure used for the

inter-rater reliability check not only helped reduce the bias or inconsistencies which may be produced by having one single researcher but also helped in refining the identification policy for further analysis (as suggested by Cameron, 2003, pp. 62-63; Pragglejaz Group, 2007; Steen, 2007, p. 88). Details of the inter-rater reliability check will be given later in section 6.6.

## 6.2 Data Transcription

### 6.2.1 Transcription of Speech

The recorded interviews and sessions were transcribed verbatim in Mandarin Chinese from the videotapes. A student's speech (if recorded) was retained in the transcription because it might be helpful in interpreting what the teachers said.

For ease of reading and understanding, the transcripts were separated into lines to make it easier for the ongoing event to be accurately reconstructed later (see also Steen, 2005), i.e., so that, when further separating these lines into word segments (the smallest unit of metaphor analysis, discussed later in section 6.4.1), each word segment would not be semantically or pragmatically unclear. As this step was considered as not part of the analysis, separation according to intonation units or idea units was adopted by following Chafe (1987, 1993, 1994) together with the criteria below (see also Du Bois, Schuetze-Coburn, Cumming, & Paolino, 1993; Tao, 1996):

1. The separation was made
  - (a) after (usually lengthened) final particles, such as *le* and *ba*.
  - (b) between pause and pitch reset (different pitch heights of declining and readjusting).
  - (c) before conjunctions such as *ranhou* ('and') and *keshi* ('but').
2. Each line might or might not be grammatically complete.

3. The information presented in each line might or might not be semantically meaningful (e.g., a vocal noise).

As a result, the length of each line (or intonation unit or idea unit) was quite flexible; it was as short as one morpheme such as *lai* ('Come on!') or an interjection *aiyo* ('Alas!') as shown in Extract 4 (chapter 3), or as long as a fully-fledged clause.

A different problem arose when transcribing stretches of talk in Taiwanese. Since Taiwanese is a language with no strong written tradition and various writing methods have been devised, the text was transcribed by borrowing similar-sounding characters from Mandarin Chinese. Some expressions were written in phonetic symbols (Bopomo or Zhuyinfuhao) if this was how they were commonly presented in writing, or no similar-sounding characters from Mandarin Chinese could be found.

Hard-to-understand utterances are given in brackets with a single question mark (?) for a partial intonation unit, and (??) for a complete intonation unit. Words in brackets represent unclear but possible morphemes or words or phrases or expressions, resulting most often from imperfect recording quality. In addition, the start of overlapping talk is indicated by left curly brackets ('{') for the first speaker's and the second speaker's turns. The transcription of the 636 minute sessions has 16,481 intonation units. To reduce error, the transcription was not translated into English until after the data analysis, when I was writing up the report of the study. A short example of the transcription of speech can be seen in Appendix K.

### 6.2.2 Transcription of Gestures

Transcribing gestures was the second phase of data transcription. Gesticulations were firstly identified before transcription, and only gesticulations were transcribed because, as suggested in sections 2.2.2 and 2.3, gesticulation was considered to be the most appropriate category of gestures to help investigate how metaphor is

manifested in language and gesture. The transcription of gestures thus included three steps: (a) to identify the movements that were gestures (viz. gesticulation), (b) to identify the stroke of each gesture, and (c) to locate the boundaries of the gesture phrases in the relevant part of the transcription. The videos were replayed several times, with and without sound, at normal speed and in slow motion. During this phase of data transcription, all gesticulations, plus any accompanying gestures by body parts other than the arms which might help interpret the gesticulations, were descriptively annotated in Mandarin Chinese, the main language used by the teachers and in inter-coder discussions.

Detailed descriptions of gestures were provided in descriptive language, in which gestures were described in terms of the hand(s) making the gestures, the shape of the hand(s), palm orientation, locations, and movements (including trajectory (such as horizontal or vertical), type (such as circle or wave), and other physical characteristics (such as size, speed, intensity, and rhythm)). Locations of gestures were described by relating them to the teachers' body or to other gestures. Direction words, such as right, left, front, and behind, were defined from the *teacher's* rather than the *researcher's* perspective.

Various schemes have been suggested and used by gesture researchers to present the speech-gesture synchrony (e.g., Kendon, 2004; McNeill, 1992; Mittelberg, 2006), in which the temporal relationship between the speech and gestures can be graphically captured, though it can become quite challenging to integrate information adequately. In the present main study, in addition to the transcription conventions applied in the pilot study (listed in section 4.4.5), descriptions of gestures and the hands used were also provided in round brackets underneath the accompanying speech: RH=right hand, LH=left hand, 2H=two-handed.

Descriptions of gestures were not translated into English until metaphorically-used words and/or metaphoric gestures had been identified, when I was writing up the report of the study. An example of the descriptive transcription of gestures and movements of other body parts in Mandarin Chinese can be seen in Appendix L. Their English translation is added to aid understanding.

Besides the above transcription of gestures, analytic notes were taken regarding how and what should or can be interpreted, based on the forms of gestures, and these were kept in another file. The process aimed to separate what was actually observed by the naked eye (hand shapes, locations, and movements) and what these physical forms might represent. By doing this, the problem of mixing descriptive and subjective language when transcribing gestures discussed in section 4.4.3, was also addressed.

The remaining phase, namely identifying metaphorically-used words and coding metaphoric gestures, is discussed in sections 6.4 and 6.5.

## **6.3 Identifying and Coding Metaphors: Reviews of the Literature**

### **6.3.1 Metaphor Identification Methods**

Little literature explicitly discusses steps in identifying metaphor and not many metaphor researchers clarify in detail their criteria for what counts as metaphor and what not in their publications. This phenomenon indicates the complicatedness and the huge room for interpretation in terms of metaphor identification. However, to increase the validity and reliability of claims about metaphoricity, an explicit and consistent coding policy for any given study is required, in order to allow judgments to be made with consistency, and for others to contest the claims or try to replicate the study.

Specifically speaking, different but interrelated questions are involved when talking about metaphor identification (Rodríguez, 2001): (a) how to identify metaphors within linguistic data, (b) how to differentiate metaphor from other figurative language, and (c) how to draw the line between conventional versus novel metaphor. Each aspect requires a consistently applied criterion to narrow down the scope of a linguistic metaphor, though at the time of writing, there is no single generally agreed criterion covering (b) and (c) (which will be further discussed in sections 6.3.3, 6.4.2, 6.5.3, and 6.5.4).

The following discussion on identification methods concerns the metaphors in linguistic expressions, including a consideration of the Metaphor Identification Procedure developed by the Pragglejaz Group (2007), the identification procedure using Vehicle terms developed by Cameron (2003), and Steen's (1999a) metaphor focus and metaphor idea identification.

#### *Identifying Metaphorically-Used Words*

Developed by the Pragglejaz Group, named after the initial letters of the first names of a group of ten metaphor scholars, the 'Metaphor Identification Procedure' (MIP) (Pragglejaz Group, 2007) provides coders with an explicit and consistent guide to identify and decide whether words used in spoken and written language are (linguistic) metaphors in various fields. The Group stated that the method was not developed to establish whether the original speakers or writers deliberately used the words metaphorically, or whether the listeners or readers interpreted them metaphorically, but to serve as a research tool for identifying the words which may be considered as potentially conveying metaphorical meaning based on how they are used in context.

Generally speaking, MIP defines metaphor by examining “whether the word has one or two basic meanings which differ markedly from the contextual sense” (Littlemore & Low, 2006, p. 11) and at the same time, whether the contextual meaning of the word can be understood with reference to the basic meaning(s).

The steps of the entire procedure are listed below (see also Praggeljaz Group, 2007). It starts from the first word and goes on to the final one of the text or discourse. Strictly speaking, the procedure isolates lexical units rather than words (thus ‘let alone Fred’ would be treated as two, not three lexical units), though the 2007 paper does not determine a procedure for deciding when words comprise a single lexical unit. Each lexical unit is examined by four questions from 3(a) to 3(d). The answers to the last two questions have to be ‘yes’ to make the word concerned metaphorical.

1. Read the entire text and obtain a general understanding.
2. Break down the sentences of the text into lexical units.
3. (a) Decide the contextual meaning for each lexical unit (i.e., its meanings evoked by the text and its surrounding words).
  - (b) Decide the basic meaning (not necessarily the most frequent meanings) for each lexical unit (i.e., meanings which are more related to, or easier to imagine by, bodily experiences; more specific; and historically older). A dictionary may be consulted.
  - (c) If the lexical unit has a basic meaning, decide if its contextual meaning (as decided in (a)) and the basic meaning (as decided in (b)) are clearly different.
  - (d) Decide if the contextual meaning (as decided in (a)) can be understood in comparison with the basic meaning (as decided in (b)).

4. If the answers to 3(c) and 3(d) are positive, the lexical unit is metaphorical.

Some recent studies (e.g., Steen, Biernacka, et al., in press) have suggested that, although MIP provides a useful starting point for metaphor researchers to tackle the complicated work of finding metaphor in natural discourse, it needs some refinements and there are criteria decisions for each researcher to make. Take some points relevant to Mandarin Chinese for example: what counts as the basic meaning of a word if the word's historically older meaning is not more concrete than a more contemporary meaning? What if one has to cross from one part of speech (e.g., verb) to another (e.g., noun) in order to establish the metaphoricity? For example, in the sentence, *Ta qihuhu de* ('He "gassed"' if literally translated, meaning 'He's puffing and blowing with gas'), the basic meaning of the metaphorically-used verb, 'gas', can only be accessed from its basic meaning as a noun.

#### *Identifying Linguistic Metaphors Through Vehicle Terms*

Another method of linguistic metaphor identification is through Vehicle terms, abbreviated to MIV, introduced by Cameron (2003) (see also MetNet Group, 2006; Cameron & Maslen, 2010). Unlike MIP, which views language as a system built up by words, this method views linguistic metaphors as results of a dynamic process of language use, in which words and phrases are adjusted for grammar and effective communication. Metaphors are then considered to be a presentation of the interaction between language, thinking, and other contextual factors during a discourse event. The aim of metaphor identification is to identify the lexical items (Vehicle terms) which are incongruous with the on-going discourse context, or, the contextual meaning, and to label potential metaphors in language at a specific point in the discourse.

There are several similarities shared by MIV and MIP. Both MIP and MIV are research tools for identifying linguistic metaphors in both written and oral texts. They provide steps and criteria so that metaphors are identified in a consistent way. In addition, both methods—even though it seems that MIV is designed to identify linguistic metaphors through Vehicle terms—identify metaphors based on basic meanings and contextual meanings, which have to be semantically or pragmatically contrasted but at the same time are connected to each other (i.e., the contextual meaning can be seen in terms of the basic meaning). In addition, when checking meanings of the words, both methods propose using a dictionary.<sup>1</sup> Finally, neither of the methods aims at establishing whether the users or receivers process the words or phrases metaphorically, suggesting that researchers who apply these methods look at the data from a third person's point of view.

MIV and MIP take different positions on language, but this does not influence the result of the analysis to a great extent. Cameron's MIV emphasises the dynamics of the text or discourse where the metaphors are; however, the contextual meaning considered in MIP is in fact a result of the interaction of the dynamic contextual factors, too, though not explicitly stated. Therefore, the outcomes of the two methods are only slightly different (MetNet Group, 2006).

However, one of the differences in the outcomes of MIP and MIV relates to the precision with which the actual edge of the Vehicle term or metaphorically-used word can be specified (see MetNet Group, 2006; Praggeljaz Group, 2007 for detailed examples). In MIP, the words are not established as metaphorically used until the sentences are divided into lexical units, while in MIV, a Vehicle term is signalled first and then the edge of it is extended from the core component. In this way, determiners and quantifiers such as 'this', which are used to specify the noun as in the example of

‘This paper thinks’, given in section 2.1.2, are included as a part of the Vehicle by MIV, but they will be separated from the noun and excluded when a researcher breaks down the sentences into lexical units by applying MIP.

*Metaphor Focus and Metaphor Idea Identification*

Steen (1999a) proposed a procedure involving five steps as a bridge linking the metaphorical expressions with conceptual metaphor. The first two steps deal with identifying metaphors in linguistic forms and the focus begins to shift to the conceptual level at the third step.

From Steen’s viewpoint, the nature of metaphor is conceptual due to the propositional nature of language structure, meaning that language might imply more than what it presents in the linguistic form. Part of a metaphor might be hidden or absent from the linguistic form, which he termed as *implicit metaphor*, and the metaphor hence can only be accessed through the unit of proposition rather than the limited linguistic surface presentation of words, phrases, clauses, or sentences. In other words, what is presented in the text may not be sufficient evidence in terms of reference and intention to identify a linguistic metaphor successfully. Therefore, Steen claimed that “metaphor identification, even linguistic metaphor identification, is fundamentally a matter of conceptual analysis” (ibid., p. 65).

The first step of Steen’s procedure involves metaphor focus identification. A *focus* (Black, 1962) is the linguistic expression which evokes images which cannot be literally connected to the referents of the immediate linguistic context, or *frame* (ibid.), where the linguistic expression is located. However, there is an exception that an implicit metaphor can exist under the condition that a focus and the frame are literally connected. Take Chang’s musical article given in chapter 2, for example: in

the metaphorical sentence *zheyang you jihua de yinmou wo haipa* ('Such a well-planned conspiracy terrifies me'), every item is literally connected but in fact the focus, *yinmou* ('conspiracy') refers to the detailed arrangements of making agreement or concord of various sounds in a classical symphony, a referent which is not linguistically presented. This is also the reason for Steen to introduce a *propositional analysis* of metaphor (metaphorical idea identification) at step two. The step emphasises the importance and necessity of identifying linguistic metaphors beyond the language level. Steen further specifically pointed out that metaphor identification is "a matter of concepts, propositions, and reference" (1999a, p. 62).

Steen emphasised the conceptual nature of metaphor identification, suggesting that although linguistic forms do play an essential part, they cannot be taken independently from the context when one analyses metaphor. How the words are pragmatically used is as important as the semantic meanings they carry. The procedure, however, serves more as a detailed explanation of how linguistic metaphors are developed into conceptual metaphors. More issues are covered concerning the 'what' than the 'how'. For example, it provides more detailed answers to questions like 'what is the metaphor focus' and 'what is the metaphorical proposition' than to the questions either of *how* to identify them or of where exactly the identification should start. Steen (2009) aimed to improve this by shifting the focus of the first step from *metaphor focus* identification to identifying *metaphor-related words*; however, as regards *how*, the solution of "finding these words which are *somehow* indirect or incongruous in context" (Steen, 2009, p. 202; my emphasis) seems not to clarify the issue greatly.

Generally speaking, the above three methods of metaphor identification are designed for English. Linkage of them remains unclear. For example, how far is

Steen's 'indirectness or incongruity' of metaphor related to MIP's 'different but relevant basic and contextual meanings', and how can the metaphorically-used words identified by MIP lead to Cameron's Vehicles? Nevertheless, studies have proved the applicability of the methods to other languages such as MIP in Dutch (Steen, Biernacka, et al., in press; Steen, Dorst, et al., in press) and in German (Vierkant, 2008), although no study attempting to apply either method to identifying metaphors in classroom discourse in Mandarin Chinese could be found at the time of writing. Identification issues related specifically to Mandarin Chinese will be discussed later in this chapter.

#### *From Linguistic Metaphors to Systematic Metaphors*

The procedure for grouping linguistic metaphors into systematic ones was developed by Cameron (2003, 2007) (see also Cameron et al., 2009; Cameron & Low, 2007; MetNet Group, 2006) and the steps are outlined below:

1. List all the linguistic metaphors by their Vehicle terms.
2. Group the Vehicle terms based on similar semantic meanings.
3. Label each group.
4. Identify the Topics within each Vehicle group.
5. Identify systematic metaphor groups by grouping Topics based on similar semantic meanings.
6. Label the groups in (TOPIC) IS (VEHICLE) form.<sup>2</sup>
7. Group the systematic metaphors if there is connection at a higher level.

#### **6.3.2 Gesture Classification Systems and Metaphoric Gestures**

In regard to gestural form, there has to date not been any agreed system of

identification steps for identifying metaphorically-used gestures. Nevertheless, there are a number of gesture classification systems (e.g., Efron, 1941; Ekman & Friesen, 1969; Freedman & Hoffman, 1967; McNeill, 1992) which all focus on gestures accompanying speech and carrying fewer properties of a language, or gesticulation, as Kendon names it. The differences derive from the purposes of the various research studies and hence, lie in the grouping strategies employed. Even so, generally speaking, these classification systems “are the same” (McNeill, 1992, p. 75) because they all derive ultimately from Efron’s (1941) classification scheme, and “are interconvertible” because they all limit gesture to gesticulation (McNeill, 1992, p. 75.).

The different data collection methods may be effective for the types of gesture collected and therefore be effective for how categories are defined in each classification. Cienki (2008) noted that McNeill’s category of metaphoric gestures mostly focuses on the conduit metaphor (Reddy, 1979), in which ideas are seen as objects in a container of words sent from the speaker to the listener through a conduit, or at least in a straight line. Cienki (2008) pointed out that asking participants to retell the plot of a movie or cartoon actually invites more concrete referential gestures than metaphoric gestures, which usually accompany talk and thought on abstract concepts. Since McNeill’s classification has been extensively applied, one might be misled into thinking that the conduit metaphor is the only basis for metaphoric gestures (ibid.).

#### *McNeill’s Classification System*

Since the book *Hand and Mind* was published in 1992, outlining categories labelled with plain and easy-to-understand names and providing a clear and detailed procedure for gesture transcription, McNeill’s classification system has subsequently

been applied in numerous studies involving spontaneous gestures (e.g., Cienki, 1998; Corts, 1999; Corts & Pollio, 1999). In this system, gestures are categorised into four groups, namely *deictics*, *iconics*, *metaphorics*, and *beats*. Deictics are pointing gestures referring to either concrete entities and locations, or abstract spaces relating to an idea or concept. Both iconics and metaphorics create images, but iconics create images related to the current semantic content of the speech, while metaphorics create images referring to abstract concepts. In other words, iconics depict some features being described in speech, while the concept which metaphorics represent usually has no physical form (McNeill, 1992). Beats are non-imagistic gestures serving pragmatic functions such as emphasising important points and/or speech repairs. In all cases, gestures are primarily categorised based on their referential values—that is, the meanings and functions, rather than their physical shapes (ibid.).<sup>3</sup>

Although McNeill (ibid.) distinguishes iconics from metaphorics by suggesting that the former create concrete images while the latter create abstract concepts, this position statement was criticised by Fricke (as cited in Cienki, 2008), who pointed out that gestures with abstract referents are not necessarily metaphorics, and some metaphorics actually have concrete referents. The following examples from Fricke, originally written in German, are extracted from Cienki (ibid.), who included a translated summary of them. The first example is a triangle shape made by two hands in a geometry lesson. This gesture creates an abstract concept (the idea of a triangle), and would be categorised as a metaphoric based on McNeill's classification. However, in Fricke's study, it was not categorised as a metaphoric because it was used to represent a mathematical construct (though one can argue this as being metonymic,<sup>4</sup> as noted by Cienki, ibid.). A second example is holding one's hands up at the height of one's head to imitate a donkey's ears, when referring to another

person as “This ass!” (in the sense of ‘donkey’). Here the gesture has the ‘concrete’ reference, ‘ears’, but should, Fricke argued, be classed as metaphoric because the gesture metaphorically serves to refer to the person as an ass.

Fricke’s example indicates that it is not enough to categorise a gesture as metaphoric by virtue of having an abstract referent—although these gestures intuitively tend to be categorised as metaphoric (Cienki, 2008). What *functions* a gesture is serving, along with the co-occurring speech, also contributes a lot when one decides whether a gesture is metaphoric or not. In other words, the aspects of the meanings and functions of a gesture *have to* be taken into consideration *together* when classifying a gesture, as mentioned before in section 2.2.2. After all, the semantic referent of a gesture is decided by not only the gesture itself, but also the speech it accompanies. Therefore, the speech and the context which a gesture accompanies and in which it is embedded also play important roles in how the gesture is categorised.

Although there would seem to be good reason for making use of both meaning and function in classifying gesture, this has recently been attacked as involving mixed criteria and leading to overlaps—or non-unique classifications (Cienki, 2005). For example, a pointing gesture (deictic) may function as providing emphasis like a beat does, or a deictic may point at an abstract space and create an abstract image (metaphoric). This overlap can be problematic but it seems unavoidable if the aim of a classification system is to cover categories of gestures in discourse as inclusively as possible, as one of the complicated aspects about labelling the gestures is that there are various dimensions involved in a single gesture, such as the form and the motion, or the semantic referent and the pragmatic function(s) (Cienki, 2008). Such issues will be revisited later.

*Müller's Classification System*

Müller (as cited in Cienki, 2005, 2008), in an attempt to resolve the problems of mixed criteria and category overlap, provided an alternative gesture classification system which classified metaphoric gestures from another perspective. This system categorises gestures into three groups—*discourse gestures*, *performative gestures*, and *referential gestures*—based purely on functions. Discourse gestures are gestures structuring discourse, such as those creating emphasis or separating different parts of an exposition by using one hand to consecutively point to the other hand's fingers. Performative gestures are gestures enacting speech acts such as dismissing an offer, or making a request. Referential gestures can depict either the concrete or the abstract.

Müller's system seems more likely to provide a consistent guide than McNeill's by being based on one single criterion. That is, by pointing out one specific aspect which always comes first when coding a gesture, the system seems to resolve the main overlaps in McNeill's system. However, it still does not guarantee the discreteness of the categories. Rather, it raises another problematic issue of gesture classification: the multifunctional nature of gestures. As Cienki found in his (2003) study, for example, the consistency between two coders when identifying the function of gestures was low because it proved difficult to decide whether the primary function of a gesture was to present an idea (performative) or emphasise an idea (discourse). Since it is possible for metaphoric gestures to serve different functions at the same time, the single criterion of function of Müller's system does not resolve the general problem of overlap.

Another difficulty with Müller's classification system is that the original book in which the system was proposed was written in German, a language I am not

familiar with. At the time of designing this study there was no detailed description in English and very few examples of the system in use. Therefore, the limited knowledge of the system is all based on scattered and secondary sources.

Although the baseline criteria are different in Müller's and McNeill's systems, they both emphasise the importance of looking at gestures as a whole, meaning that no single aspect of gestures, or how they are related to speech, semantically and pragmatically, should be left aside. That is, even though function is the sole criterion in Müller's system, it does not mean that function is the only aspect a researcher should pay attention to when applying the system (Cienki, 2005, 2008). The nature of multiple aspects, and multiple aspects within each aspect of a gesture, suggest that they all need to be looked at as a whole when gesture coding. It takes all aspects to make a more legitimate decision about categorising, and it requires the coders to find out and agree on the contextual meaning, or function of a gesture before categorising it.

Since each gesture has a range of features that may be present in varying degrees, and possibly in combination, this characteristic makes it almost impossible for the categories in any classification system to be discrete or mutually exclusive. Thus, the overlap between categories in a classification system seems to be a consequential result of the multi-dimensional nature of gestures. In addition, from a researcher's point of view, because of this multi-dimensional nature, the ultimate goal of the taxonomy of gesture is, specifically speaking, profiling (i.e., identifying the extent to which each feature is present) (Eisenstein & Davis, 2004; McNeill, 1992), though this may not be the best way to categorise gestures because the excluded features are not necessarily the same for every gesture categorised into a single group, and these omitted features may represent important characteristics of

each gesture. For this reason, how the classification system is applied is as important as which classification system to apply. It might well be necessary for researchers to set up their own sub-policies of how to code and place each gesture into one category, and to make their judgments based on these policies in a consistent way. Or, for studies where just one type is the focus of interest, as with the metaphoric gestures in the present study, identifying the particular type of gestures from the rest may be a good start.

### *Metaphoric Gestures*

McNeill (1992) stated that coding a gesture as metaphoric requires one to find a ‘dual structure’. The dual structure means the *base* and *referent* (Mandel, 1977; McNeill, 1992) and they are the two things which a metaphoric gesture depicts. The base is the concrete entity or action a gesture is imaging, while the referent is the abstract concept the gesture is presenting. One of the commonest examples of metaphors given by McNeill (1992) is the IDEAS ARE OBJECTS conceptual metaphor, a sub-metaphor within the conduit metaphor, in which the hands create “an image of a bounded, supportable object that represents an abstract concept” (p.149). In other words, the representation of the abstract concept (referent) by the gesture is presented by a more concrete image of the object (base).

Dual structure seems to be an important, if not the most important, aspect of metaphoric gestures, because the same idea is often seen in other researchers’ definitions of metaphoric gestures. For example, Cienki (1998) viewed a metaphoric gesture as a gesture characterising an abstract domain (e.g., the domains of morality and time) in terms of the concrete (e.g., spatial form, location, and movement of the hands and forearms), and several years later Cienki and Müller (2008) further

defined metaphoric gestures as “voluntary movements of the body which use a cross-domain mapping to express certain thoughts or feelings” (p. 487). To some degree, these both correspond to McNeill’s idea of dual structure, and the idea of abstractness or concreteness of the referent is no longer criterial in the latter definition.

The above definitions of metaphoric gestures are based on the same as that in which the two-domain comparisons are involved, an idea best elaborated by Lakoff and Johnson’s conceptual metaphor theory, which sees metaphor as “understanding and experiencing one kind of thing in terms of another” (Lakoff & Johnson, 1980, p. 5). Such definitions give gestures a potentially equal status to verbal speech in communication.

### **6.3.3 Metaphoricity and Classroom Discourse**

Metaphoricity refers to a linguistic or gestural metaphor’s levels of conventionality from a researcher’s point of view. Instead of being a black and white issue, most researchers agree that metaphoricity has degrees. Researchers (Deignan, 2005; Goatly, 1997) have developed different classification schemes for metaphoricity and, although the names of the categories in each scheme differ, usually ‘conventionalised’ (or, dead) refers to the weakest metaphoricity while ‘innovative’ (or, alive, active) is the strongest.

In a discourse, the degree of metaphoricity of a metaphor is not fixed, but may change based on the dynamics of the discourse. During the dynamic process, both words and gestures are chosen by the speakers. Cameron and Deignan found that the metaphoricity of a word can be perceived differently depending on who uses the word and on when, where and how the word is used (Cameron, 2003; Cameron &

Deignan, 2003). Müller (2008) also pointed out that a ‘waking’ (in her term) or, active (linguistic or gestural) metaphor in one context may be ‘sleeping’ in another.

Contextual factors influencing metaphoricity in language include, for example, prosody (Pierrehumbert & Hirschberg, 1990), and collocation, sets of words which are consistently used before or after a metaphorical expression (Cameron & Deignan, 2003; Goatly, 1997; Goddard, 2004). Metaphoricity in gestural form can be more or less salient because of factors such as the variable size of the space in which the gesture is used, the speaker’s gaze at the gesture, and use of the same metaphor by both gesture and speech (Cienki, 2008; Müller, 2008).

Müller (2008) considered the degree of metaphoricity as “a consequence of cognitive processes such as foregrounding and focusing of attention” (p. 240), which emphasises the dynamic nature of metaphors in both speech and gestures during a discourse. To be more specific, Müller (2007) argued that language, shaped by cognitive processes and by interactive constraints, is “an integration of speech and gesture at the level of the system and of use, and a dynamic product of modality-specific forms of thought” (p. 110), hence providing a dynamic view of metaphor, gesture, and thought. This dynamic and interactive nature of what composes a discourse also echoes the applied linguistic view of metaphor by emphasising the importance of taking the surrounding or accompanying words and the entire context into consideration when investigating metaphor use, but involves other forms of metaphorical expression, rather than the linguistic form only.

#### **6.3.4 Discussion**

Three methods for identifying linguistic metaphors have been discussed, namely the Pragglejaz Group’s MIP (2007), Cameron’s (2006) MIV, and Steen’s (1999a)

metaphor focus and idea identification. In all of these methods, linguistic metaphors are identified on the basis of the incongruity and connection between a word's semantic meaning and what the word refers to in the context. These methods also suggest that the linguistic form alone is not sufficient evidence for a researcher to decide if it is metaphorically used. Steen's five-step method serves to link the linguistic metaphors to conceptual ones. However, how the results of these methods relate to each other remains unclear, and none of them seems well developed, or could be applied in the current study without setting up complementary identification policies.

MIP and MIV make different assumptions about the role of metaphor. MIP treats language as a system consisting of lexical units, while MIV emphasises the dynamic nature of the discourse in which a linguistic metaphor is used. The units of analysis and the procedure for analysis are also different in the two methods. The results of identification by applying MIP and MIV are accordingly slightly different. However, MIV seems to be in a better position than MIP for later steps of analysis to group systematic metaphors. It is certainly an advantage if working with metaphor Vehicles because then the systematic metaphors can be grouped directly by categorising the semantically similar Vehicles together. However, although MIV may be considered derivable from the MIP results for this later step of metaphor analysis, MIV does not really provide a resolution of how to establish clear metaphor boundaries, that is, where the exact edges of a linguistic metaphor might lie. Indeed, this different approach to precision is one of the main differences between the two methods.

McNeill's gesture classification system, which has been applied in numerous gesticulation studies, groups gestures into four categories: deictics, iconics,

metaphorics, and beats, based on mixed criteria of meanings and functions of gestures. Müller, on the other hand, categorises gestures purely by function. Nevertheless, the multidimensional nature of a gesture makes it almost impossible for a classification system to have a simple system of mutually exclusive categories, and therefore one of the most commonly agreed aims of gesture coding is to identify the most highlighted feature of the gesture. It thus indicates that, as in metaphor coding from verbal data based on consistent criteria, it is essential to know how the classification system is applied in a consistent way, and how each aspect of the gesture is distinguished and highlighted by each researcher in order to establish validity and reliability of gesture coding.

#### **6.4 Identifying Metaphorically-Used Words in Mandarin Chinese**

The purpose of analysing verbal metaphors in this study was to further investigate: (a) what verbal metaphors were most commonly used and whether there were systematic metaphors, (b) how verbal metaphors were distributed in various types of classroom activities, and (c) what functions verbal metaphors served in music classrooms at junior high school level.

To reduce the degree of subjectivity in metaphor identification, a single identification method was applied. MIP provides coders with an explicit procedure, and it is a consistent guide to identifying and deciding whether the word (or technically the lexical unit) used in spoken language is metaphorically used. For these reasons, the steps of the entire procedure of MIP given in the paper by the Pragglejaz Group (2007; also see sections 6.3.1 and 4.4.3 for detailed discussions) were followed, and each Chinese word segment was examined using the questions to decide if the word segment concerned was metaphorical. In addition, a segmentation

system, a dictionary, and a corpus were used as supplementary sources to help decide word segments, and their basic and contextual meanings. Specific details will be given later in the chapter.

#### 6.4.1 Deciding Word Segments

After the videos had been transcribed into written data, the first issue to tackle when applying MIP was how to decide when words comprise a single lexical unit, a problem for which the Pragglejazz paper does not suggest a solution. Unlike English, Chinese is character-based rather than word-based: (a) sentences are strings of characters with no blanks or other delimiters to mark word boundaries (Chen & Ma, 2002; Ma & Chen, 2003a); and even more significantly, (b) each character stands for one phonological syllable and in most cases represents a morpheme (Huang, Chen, & Chang, 1996). Taylor and Taylor (1995) further point out that two-thirds of all Chinese words are poly-morphemic, suggesting that most written Chinese words are multi-character words. Therefore it is essential to have a detailed and, probably separate, policy in terms of word segmentation from that used in English, as the first step to identifying metaphorically-used words.

Generally speaking, a word segment (i.e., the unit of metaphor analysis) in the present study was defined as a grammatical unit consisting of a character, or a number of characters, which designated one specific referent in the discourse. In this case, *dadiao* ('major key') was considered a word segment consisting of two morphemes, *da* ('big') and *diao* ('tone'), because the meaning of the expression cannot be established if one segments it into its component parts, *da* and *diao*. *Hong hua* ('red flower'), however, was considered as two words, for meanings of *hong* ('red') and *hua* ('flower') still remain in the expression *hong hua*.<sup>5</sup> To increase the

validity and reliability of the research, an online word segmentation system was used to help identify and set up a policy for the unit of analysis.

Developed and maintained by the Chinese Knowledge and Information Processing (CKIP) group of Academia Sinica in Taiwan, the CKIP Chinese Word Segmentation System (<http://ckipsvr.iis.sinica.edu.tw/>) contains a 100,000-entry lexicon, and it provides users with an interface to input texts. Results of segmentation and part-of-speech tagging are returned after real-time processing. The aim of the System is to break down strings of characters before further Chinese natural language processing. The procedure corresponds to the MIP's idea of grouping or segmenting the written data into lexical units before applying the word-by-word examination.

In addition, the System follows the official Segmentation Standard for Chinese Information Processing (details of the segmentation principles and guidelines, and levels of segmentation can be found in Huang, et al., 1996; Huang, Chen, Chen, Wei, & Chang, 1997). For the purpose of natural language processing, the System semantically and syntactically defines a segmentation unit as “the smallest string of character(s) that has both an independent meaning and a fixed grammatical category” (Huang, et al., 1996, p.1046), with emphasis on “functional rather than phonological or morphological independence” (ibid.). The definition corresponds not only to the definition of a word segment in the present study, but also to the idea of a lexical unit suggested in MIP.

However, identifying unknown words (i.e., words which do not appear in dictionaries) can be a big (if not the biggest) challenge for any linguist, and especially for Chinese word segmentation systems, due to the fact that each of the more than 5,000 commonly used Chinese characters shows idiosyncratic syntactic

and semantic behaviour (Chen & Bai, 1997; Chen & Ma, 2002). In addition, in an examination of a 5 million word Chinese corpus (Chen & Ma, 2002), 3.51% of the words were found to be ‘unknown’. It is therefore essential for a word segmentation system to carry out segmentation with unknown words. This is claimed to be one of the strengths of the CKIP Chinese Word Segmentation System, and what makes it (thus far) unique and an improvement over other traditional Chinese word segmentation systems (Chinese Knowledge and Information Processing Group, n.d.; Ma & Chen, 2003a, 2003b). Three main types of unknown word are included in the System, namely, (a) ones generated by morphological rules, (b) ones derived from unfamiliar morphological rules or from context, such as abbreviations, and (c) ones derived by no rules such as proper names (Huang, et al., 1996).

To test the feasibility and reliability of the System, especially its performance in segmenting compounds, proper names, and other unknown words, a sample transcript of 2,600 characters was processed by me and the System independently. In the total of 1,895 word segments identified, the rate of agreement between me and the System was 89.6%.

Of the 20 unknown words identified by me, 13 were successfully identified by the System, including 3 students’ names, 7 musical terms, 1 question word (*ganma*, ‘what for’), 1 example of onomatopoeia (*dida*), and 1 translated loanword (*xiuchulai*, ‘to show’). The other 7 incorrectly identified word segments included 4 cases of unusual onomatopoeia (the sounds that the teacher produced while expressing emotions and humming the melodies, echo rhythms, or melodic patterns, symbolically represented by characters or symbols with similar sounds but often not conventional in forms). Correctness in identifying segments like these is hard to achieve by any automated computational system. However, in the observed music

sessions, onomatopoeia appeared quite often, especially in the ensemble sessions. For example, in the passage processed by the System, 20 onomatopoeia segments were identified, giving an onomatopoeia density of 3.2 characters per 100 characters. However, since such terms carried little in the way of semantic meaning, they were not very relevant to metaphor identification in the present study.

So, taking account of how the System defines word segments, its competence in tackling unknown words, its online accessibility, and its better performance compared with other similar segmentation systems (Ma & Chen, 2003b), I decided to use it for the present study.

Compound words, nevertheless, seemed to be problematic for the System in terms of word segmentation. One of the reasons was not only that almost every Chinese character represents a morpheme to collocate, but also that the pronunciation, meaning, and function of each morpheme can vary with its collocates. Inter-rater inconsistencies between the System and myself lay specifically in the categories of (a) reduplication, (b) numbers, (c) ‘a-not-a’ question words, (d) proper names, (e) word segmentation ambiguity, and (f) terms and expressions in other languages. Each of which, along with other categories or patterns and their coding policy, namely (g) idioms and proverbs, (h) compound verbs, and (i) compound adjectives, is discussed below.

### *Reduplication*

The System made mistakes in identifying repetition as reduplication. This happened when the teacher repeated a word during self-correction, or when the previous intonation unit ended in a word by which the following unit began. For example, the teacher said *bu zhidao shei bijiao gao, gao yidiandian* (‘Don’t know who is higher,

higher a little bit') when trying to identify the student with the wrong pitch when the orchestra was tuning. The System mistakenly grouped *gaogao* into one word segment. This might also result from the word segmentation ambiguity in Mandarin Chinese, an issue which will be revisited later.

### *Numbers*

Numbers were used variously in the data, whether in describing music or not. For example, numbers were used to count the rhythm, to indicate types of note (*bafenyinfu*, 'eighth note') and rest (*sifenxiuzhifu*, 'quarter rest'), or to locate the music by bars (*dier xiaojie*, 'the second bar'). For consistency of the study, musical terms containing numbers, such as *sanlianyin* ('triplet') and *shiliufenyinfu* ('sixteenth note'), were all considered as single-word segments. Ordinal numbers, numbers preceded by *di*, were also treated as one-word segments; for example, *dishiwu*, ('the fifteenth'); therefore, *dishiwu xiaojie* ('the fifteenth bar').

In addition, since the System treated numbers as single entities, it grouped the strings of them when the teacher counted the rhythm (*yi er san si yi er san si*, 'one two three four one two three four') into one segment. I treated each number here as separate word segments.

Numbers used to indicate location and time, such as in an address or date, were treated as one-word segments, along with the succeeding measure words. For example, *erlinglingjiunian* ('year 2009'), *eryue* ('February'), *erlou* ('the second floor') were all grouped into one word segments, as meanings of these expressions could not be established if they were segmented.

Terms indicating numbers over ten, when more characters or syllables are included, were also treated as single segments, such as *ershiwu* ('twenty five'),

before further deciding whether the succeeding characters or syllables should be included to form a single word segment.

#### *'A-not-A' Question Words*

These terms, along with their surface variations including AB-not-AB, A-not-AB, AB-not-A, and AB-not were all identified as one word segments; for example, *xi(huan)buxihuan* ('like it or not'), and *ke(yi)bukeyi* ('can or cannot'), unless other morphemes were inserted, giving *kai bu kai<sup>6</sup> ta de wanxiao* ('make fun of him/her or not').

#### *Proper Names*

Teachers nominated students by their (often full or nick) names in the data. The System made no mistakes when segmenting names consisting of three characters, but had problems where there were just two (perhaps due to familiarity, since most people in Taiwan are named by two- rather than one-syllable first names). In the present study, personal names, including formal and non-formal names (such as pet names), irrespective of how many characters or syllables are involved, were coded as one single lexical unit. The same policy applied to the translations (usually transliterations) of names in other languages and place names.

#### *Word Segmentation Ambiguity*

The System made three mistakes concerning this category. Cases like these have the potential to be segmented in more than one way, and it is usually only possible to judge correctness by the context of the utterances. Below is one of the examples from the data:

*kaoshi huikao*

*kaoshi hui kao*

The first segmentation (the System's solution) treated the expression as two nouns, *kaoshi* ('examination') and *huikao* ('nationally unified examination'). The second segmentation indicated a sentence, meaning the topic (suggested in previous sentences but omitted here) will appear in the examination. *Hui* is an auxiliary verb indicating future time, and *kao* is the main verb. The expression occurred in the data after the teacher pointed out one of the students' incompetence in playing, and asked him to practise more. The latter segmentation is the correct one because the meaning fitted the context. Cases like this were therefore paid particular attention when double checking the segmented transcription produced by the System.

#### *Terms and Expressions in Other Languages*

Incorrect word segmentation also occurred when the text contained symbols which were unrecognisable to the System, including English letters for speech in English and phonetic symbols for speech in Taiwanese. All were tagged as FW (foreign word) by the System and each group preceded and followed by spaces was identified as one unit. For example, 'Sarah Chang' (name of a violinist), 'Da Capo' (a musical term in Italian, meaning 'from the beginning'), and 'ㄉㄞˊ ㄩˊ ㄅㄧㄥ' (a traditional Taiwanese dessert made of ice) were identified as two word segments by the System and needed to be re-segmented into one by me, following the segmentation principles and policy of the present main study.

#### *Idioms and Proverbs*

Expressions not semantically decomposable and/or with the component words in

fixed collocation, which were listed in the dictionary as independent lexicon, were segmented into one single lexical unit. For example, the four-word idiom *mubushiding*, meaning illiterate or unlearned according to the dictionary, was segmented into one unit.

### *Compound Verbs*<sup>7</sup>

Verb-object compounds consisting of a verb and the direct recipient of the action (usually a noun), such as *changge* ('to sing' and 'songs', meaning 'to sing'), *dongren* ('to move' and 'person', meaning 'moving'), and *guahuzi* ('to shave' and 'beard', meaning 'to shave'), were segmented into single word units. These compound verbs tended to have an equivalent one-word verb when translated into English.

Another type of verb-object compound in Chinese consists of a verb and a complementary element (usually an adjective, or a verb to describe or explain the action); for example, *dadao* ('to strike' and 'to topple', meaning 'to overthrow'), *daxiaqu* ('to hit' and 'to go down' meaning 'to hit'), *huiyiqi* ('to recall' and 'to rise', meaning 'to recall'), and *jianchixiaqu* ('to persevere' and 'to continue', meaning 'to persevere'). The complement in compounds may be used to describe the result of the verb (as *dao* in *dadao*), or to describe the direction of the verb (as *xiaqu* in *daxiaqu*). Constructions of these verb-object compounds thus may consist of two, three (1+2 as *da xiaqu*, and 2+1 as *huiyi qi*), or four (usually 2+2, as *jianchi xiaqu*) morphemes or words (depending on whether they are treated as a word or phrase). Since these verb compounds carry one main action meaning only, they were segmented into one unit in the study. Exceptions were when the complementary element after the verb has its own independent lexical meaning; then the compounds were segmented into two parts; for example, *jieshi qingchu* ('to explain' and 'clear', meaning 'to make clear').

### *Compound Adjectives*

These adjectives may consist of noun and adjective (*bingliang*, ‘ice’ and ‘cool’, meaning ‘ice-cold’), numeral and adjective (*liangnan*, ‘two’ and ‘difficult’, meaning ‘caught in a dilemma’), verb and adjective (*feikuai*, ‘to fly’ and ‘fast’, meaning ‘at lightning speed’), adjective and adjective (*kuangre*, ‘crazy’ and ‘hot’, meaning ‘fanatical’), and adverb and adjective (*buman*, ‘not’ and ‘full’, meaning ‘dissatisfied’). All were treated as one-word segments in the present main study. However, the last construction of adverb and adjective may be an exception, if the adverb serves to modify and qualify the adjective; for example, *hen hao* (‘very’ and ‘good’, meaning ‘very good’). Both *hen* and *hao* had independent semantic meanings, and they were thus segmented into two words in the present study.

To sum up, transcripts of all the 13 sessions were firstly processed by the System. The returned results were presented as word segments with part-of-speech tagging. These were reviewed and corrected by hand, following the segmentation policy discussed above. After this, the transcripts grouped into word segments were ready to be examined to see if any of the words were metaphorically used. This is discussed next. An example of the results presented by the System, and how the differences between the System’s solution and mine were compared and compromised can be seen in Appendices M and N.

#### **6.4.2 Identifying Metaphorically-Used Words**

The procedures and steps of MIP were followed to identify metaphorically-used words. The coding policy applied in the preliminary study with regard to (a) words, (b) lexical units (i.e., word segments), (c) the basic sense of the lexical unit, (d) technical terms, (e) translated terms, and (f) expressions in other languages (see

section 3.3.2 for details) was again applied in the main study. The extended coding policy, based on the data of the main study concerning (g) simile, (h) extended realisations of metaphor and implicit metaphors, (i) multiword expressions, (j) conventionalised metaphors, and (k) analogy, metonymy, and other figurative forms will be discussed later in the section. In addition, the preliminary and pilot studies showed that a dictionary and an inter-rater check were necessary to increase the validity and reliability of the identification, and therefore a second coder, and the same online *Concise Chinese Dictionary* published by the Ministry of Education of Taiwan (2002) used in the preliminary study, were both used in the main study. A corpus was also used.

When dealing with real-life data, metaphors are not always based on divergence from the basic sense of a particular word (or lexical unit), where the two terms of the metaphor involved have to be inferred. (That is to say, not all metaphoric expressions are polysemy-based and indirect (see Steen 2007, Chapters 1 and 11 for a fuller discussion). Unfortunately several forms of metaphor are not covered by the MIP procedure. An example would be simile, where ‘cat’ in ‘he ran like a *cat*’ retains its basic sense of feline animal. For the present study, it was therefore essential to have a separate identification policy to help decide whether simile and other metaphoric forms, such as implicit metaphors, and direct forms such as assertions should be considered as metaphors or not. The following example was extracted from session C1, in which musical concepts of major and minor were introduced, and the teacher had been asked by the students to compare the musical concepts to foods.

Extract 17

657 T: 那大調比較像那種夏天的 ㄅㄨㄞ 冰

na dadiao bijiao xiang na zhong xiatian de cuabing

then major more like that (C) summer (DE) crushed ice

Well then, the major key is more like crushed ice in summer.

658 S: ㄉㄞㄩˇ 冰

cuabing

crushed ice

Crushed ice.

659 T: 對 就 是 很 涼

dui jiu shi hen liang

yes (PRT) is very cold

Yes. It's very cool.

660 T: 然後 透明

ranhou touming

then transparent

And it's also transparent.

661 T: 然後 比較 清爽

ranhou bijiao qingshuang

then more fresh

And it's more fresh.

The above extract illustrated how discourse containing no<sup>8</sup> indirectly used words still involved a cross-domain comparison, and the comparison extended through linguistic realisations of the (by then implicit) metaphor afterwards. In other words, the description of a musical major key as a traditional summer dessert was firstly introduced via a simile in the first line in Extract 17, and was then described

unconventionally by the directly-used adjectives of the summer dessert. Each, namely similes and extended realisations of metaphor, is discussed below.

### *Similes*

At the beginning of the extract, the major key was compared to *cuabing*, a popular Taiwanese dessert in summer, made of shaved or finely crushed ice with flavourings. The teacher explicitly expressed the Topic and Vehicle domains (the musical concept of *dadiao* and the food *cuabing*). The sentence therefore involved a comparison, or a cross-domain mapping in Lakoff and Johnson's terminology, between the two distinct but explicitly linked concepts, which constituted a metaphor. The comparison or the cross-domain mapping is triggered by the signalling word *xiang* ('is like'); as a result, all the word segments in the sentence are literally used, and this is traditionally defined as a simile, not a metaphor.

The following is a similar example, but this time, indirect language is used when introducing a domain which is incongruous to the context.

### Extract 18

676 T: 小調 比較 像

xiaodiao bijiao xiang

minor more like

Minor key is more like . . .

677 S: 咖啡

kafei

coffee

Coffee.

- 678 S: 奶昔  
 naixi  
 milkshake  
 Milkshake.
- 679 T: 不行  
 buxing  
 no  
 No.
- 680 T: 小調像一種很很很多料在裡面的東西  
 xiaodiao xiang yi zhong hen hen hen duo liao zai limian de dongxi  
 minor like one (C) very very very many material (CSC) inside (DE)  
 thing  
 Minor key is like some thing with ma . . . ma . . . many (food) materials  
 inside.
- 681 {T: 因為 啊  
 yinwei a  
 because (PRT)  
 Because . . .
- 682 {S: 稀飯  
 xifan  
 congee  
 Congee.

The above discourse occurred after the teacher had been asked to give an appropriate example of food to help the class understand what the minor key was in

music—corn soup and roast sausage had been suggested by the students but considered as inappropriate examples by the teacher. Here, in IU 680, like the above example, the signalling word *xiang* ('is like') was used. However, instead of giving a specific type of food which could be compared to, or linked with, the minor key, the teacher only said that it was some kind of food (reference to food is given by the context as mentioned earlier, though not very explicitly presented here in this intonation unit) with a variety of materials, rather than coffee or milkshake as the students just suggested in IUs 677 and 678. Students were hence directed from coffee and milkshake to other foods or drinks or desserts.<sup>9</sup> However, again, it is debatable whether the lexical items *liao* ('material') and *limian* ('inside') were metaphorically used in the MIP sense, because of the words' vague contextual meanings.

On the other hand, from the students' perspective, they could still think of some types of food which met the teacher's expectations without interpreting any specific words in IU680 as metaphorical (i.e., it was difficult to tell whether the students who gave their examples ever linked their teacher's description to the minor key). However, after all, students still needed to grasp the two domains of food and minor key, and bridge the domains in order to understand what the teacher meant when she later in IU 688 compared *babaozhou* ('Eight Treasure Congee', i.e., 'congee with eight ingredients') instead of other types of food to the minor key. That is, to maintain the coherence of the context, and to understand what the teacher was trying to connect, the lexical units *liao* ('material') and *limian* ('inside') could not be interpreted as their basic senses, but as some musical elements which were contained in music and which contributed to its quality. The cross-domain comparison existed and had to be recognised as such.

The above example illustrates the two levels of metaphor analysis: whether any word is metaphorically used, and whether any (inferred or asserted) metaphor is actively involved in the ongoing discourse (Steen, 2007). The former deals with metaphor in language use, but the latter deals with metaphor and thought. In Cameron's (1999) terms, the former belongs to the 'theory' level while the latter belongs to 'the processing' or 'neural' level. However, one can still analyse text without focusing on processing. In fact, the former is what MIP tries to help identify, while the latter requires other regulations or policies working on it. Theoretically speaking, these levels of metaphor analysis are distinct from each other, but in practice, the dimensions can be intertwined.

To keep the consistency of the analysis, the cross-domain comparison through the realisation of simile was not considered as metaphor. In other words, similes and polysemy-based metaphors were treated separately in the present study.

#### *Extended Realisations of Metaphor and Implicit Metaphors*

Following the first line of Extract 17, several adjectives were used, including *liang* ('cool'), *touming* ('transparent'), and *qingshuang* ('fresh'). These were indirect language use of one domain following a cross-domain structure explicitly set up by the simile: the major key was more like crushed ice in summer. In other words, the linkage and cross-domain comparison between *cuabing* and the major key extended from the first line, and the linguistic realisations of the successive lines were indirectly used in one of the domains. However, in Extract 17, these adjectives were not used to describe *cuabing* only. They were used to explain how the major key of music and crushed ice were linked and compared, and therefore also suggested qualities of the major key. The adjectives inherited the metaphoricity from the simile.

A solution to whether this should be considered as metaphorically used is not offered by Pragglejaz Group's paper (2007) on MIP, and hence a separate identification policy is needed for the present study: word segments inheriting metaphoricity from the simile was categorised as metaphorically used, and so were the above three adjectives.

### *Multiword Expressions*

In her orchestra ensemble session, Teacher F said to her students that *youzaibangwolagaobiashile* ('(you)'re playing at my funeral again!'). What she meant by that was not clearly stated until she told the strings not to drag, but keep up the tempo. Such expressions, like the three adjectives in Extract 17, have implicit Topic domains due, perhaps, to ellipsis, in order not to keep repeating things in discourse, or where the teacher or user simply believes that the idea will still get across without an explicit Topic domain.

It can be difficult for MIP to identify such multiword expressions due to the facts that (a) the sentence, which—though not an idiom nor proverb—functions as a whole, is firstly broken down into lexical units before any metaphorical meanings are identified; and (b) as discussed earlier, MIP deals with the level of linguistic forms of metaphor, rather than its conceptual structures. In the present study, such multiword expressions were segmented as one single word segment and considered as metaphorically used.

### *Conventionalised Metaphors*

The label 'conventionalised metaphor' refers to an expression which developed its current meanings from a metaphorical construction, but has become lexicalised in

present day usage. To some metaphor scholars (e.g., Semino, 2008), conventionality is a matter of degree, and the extent to which these expressions are perceived as metaphorical can vary. An example in the present study was the term, *shengdi* ('the Holy Land'). The basic and religious meanings of the term are now extended to refer to any divine spot; a place of glorious views or without (usually political or environmental) pollution. According to the *Concise Chinese Dictionary*, the meaning of the word is "a respectful name used by followers of a religion to name the religion's founders' birth places, burial places, or places of realising the truth" (my translation). However, when I searched for the term as a part of a sentence by using Academia Sinica Balanced Corpus of Modern Chinese (<http://dbo.sinica.edu.tw/ftms-bin/kiwi1/mkiwi.sh?ukey=-1029586935&language=1&qtype=-1>), the first Chinese corpus with 5 million word segments and part-of-speech tagging, designed by Academia Sinica in Taiwan for analysing modern Chinese used in the area, I found that 23 of the 40 citations in spoken and written data with various genres were unrelated to religion but associated with politics, culture, and tourism. Terms like this were examined on a case by case basis using the dictionary and corpus searches to establish the degree of conventionality, and whether they were on balance metaphorically used or not.

#### *Analogy, Metonymy, and Other Figurative Forms*

It was beyond the scope of the present study to distinguish between metaphor, analogy, and other figurative forms. If a word segment, or a multiword expression, had a contextual meaning which was clearly different from and at the same time relevant to its basic meaning (i.e., the contextual meaning could be understood in comparison with the basic meaning), the word segment or multiword expression was considered as metaphorically used.

### 6.4.3 Grouping to Find Systematic Metaphors

After metaphorically-used word segments had been identified, seven steps were followed in order to examine if any systematic linguistic metaphors could be found. A slight adaptation of Cameron's (2003, 2007; Cameron, et al., 2009) procedure described in section 6.3.1 was employed. The adaptation was simply to replace 'Vehicle' in steps 1 and 2 with my unit of identification, word segment. The seven steps used in the present study are listed below.

1. List all the metaphorically-used word segments.
2. Group the metaphorically-used word segments based on similar semantic meanings.
3. Label each group of metaphorically-used word segments, such that the label is treated as the Vehicle of the metaphor.
4. Identify the Topics within each Vehicle group.
5. Identify systematic metaphor groups by grouping Topics based on similar semantic meanings.
6. Label the groups in (TOPIC) IS (VEHICLE) form.
7. Group the systematic metaphors if there is a connection at a higher level.

Microsoft Word was used. The metaphorically-used word segments were firstly placed into groups; one metaphorically-used word segment was allowed to be categorised into different groups until the TOPIC IS VEHICLE form was finalised. Each finalised group of systematic metaphors consisted of more than two examples extracted from more than one of the 13 sessions by more than one teacher. Similar to the process of metaphor identification, the process of grouping systematic metaphors was also recursive: the categories and labels of categories of systematic metaphor were established, compared, modified, and re-established, until each of the categories

was considered to be exclusive and representative (see the discussion on grounded theory in section 5.3.3).

## **6.5 Identifying Metaphoric Gestures in Classroom Discourse**

The purpose of analysing metaphoric gestures was to further investigate: (a) what functions metaphoric gestures may serve in music classrooms at junior high school level, (b) the distribution of metaphoric gestures in various types of classroom activities, and (c) the relations between the metaphoric gestures and their accompanying speech. Again, it is worth noting that in the present study, the interpretation of the teachers' use of metaphoric gestures was made from the researcher's perspective, and it is important to bear in mind that this may differ from the interpretation from the speaker's or the addressee's perspectives.

In the present main study, all gestures were coded as either metaphorically used or non-metaphorically used. Since the main purpose of the present main study was to investigate the use and functions of metaphoric gestures and their relations with the verbal metaphors, the dichotomy of metaphorics and non-metaphorics was considered to be more relevant to the research questions than other types of category.

However, just like verbal linguistic metaphors, metaphoric gestures were not always clearly and easily identified. Types of problem and how they were tackled in the present study are discussed next.

### **6.5.1 Gesture Units**

In practice, gesture units were not always performed with clear boundaries, and there were cases where a gesture phase passed into a succeeding gesture without preparation and retraction. This could result in different numbers of metaphoric

gestures being identified. To avoid such disagreement, the stroke was defined following Kendon (1980, as discussed in section 2.2.2) as the kinetic peak of effort, and was therefore usually identified when the gesture was performed with greatest clarity in terms of shapes, movements, and locations of hands. Strokes were the unit of gesture coding in the present study.

### **6.5.2 Identifying the Most Salient Feature of a Gesture**

As discussed in sections 2.2 and 6.3.2, gestures, unlike lexical units or word segments in speech, are multidimensional, meaning that each feature of a gesture can contribute to its semantic and/or pragmatic meanings. In addition, meanings of gestures, especially gesticulation, can rarely be assigned without taking the accompanying speech into consideration. In other words, when transcribing a gesture, gesture researchers have to determine what the most salient feature of a gesture is (Cienki, 2008, p. 19; Mittelberg, 2006, p. 109).

In the present study, the single most highlighted feature of each gesture was firstly determined. In most cases, it was the part performed with the greatest clarity. However, the stroke was not always one-dimensional or performed by one facet of the hand only; it might be located high in space and be wavy in its trajectory at the same time. Instead, various facets of a gesture could seem to present multiple concurrent meanings and/or perform multiple concurrent functions.

For example, Teacher C drew a circle clockwise in the air at the height of her eyebrows, with her right hand half-rounded and the palm facing up, when uttering the word *liang* ('radiating'; 'bright') to describe the major key. The meaning of the circle was clearer when compared with a smaller circle which she drew in the same direction, at a lower position, accompanying the antonym, *an* ('lack of light'; 'dark')

to describe the minor key. The meaning was further confirmed retrospectively, after all gestures made by Teacher C in the same session were examined, and patterns of gestures for major and minor keys were discovered; that is, gestures accompanying references to the major key tended to be bigger in size, and/or at a higher position, and/or involving an outward direction of movement, compared with gestures accompanying references to the minor key.

The most salient feature of a gesture was hence identified by (a) determining the stroke of the gesture, or (b) comparing the gesture with other similar gestures accompanying semantically and/or pragmatically similar word segments or expressions or sentences. Once the most salient feature of a gesture was decided, the gesture was then coded as metaphoric or non-metaphoric, based on this most significant feature. What constituted a metaphoric gesture is discussed next.

### **6.5.3 Metaphoric Gestures**

What makes a gesture metaphoric varies from researcher to researcher, if only the processes of decision making are explicit. As discussed in section 6.3.2, the term ‘metaphoric’ may refer to (a) gestures which derive from Reddy’s conduit metaphor and represent discourse topics or ideas as an object or container in the hand (McNeill 1992), (b) any gestures involving cross-domain mappings (Cienki, 1998; Cienki & Müller, 2008), or (c) gestures which may not be considered as metaphoric, but function metaphorically, such as Fricke’s example of gesturing the ears (of a donkey) to metaphorically refer to someone as stupid when uttering “This ass!” in German (as cited in Cienki, 2008; see also the discussion in section 6.3.2). Such diversity may also partly explain why, unlike MIP for linguistic metaphors, there is, at the time of writing, no similar identification procedure to help determine if a gesture is metaphorically used or not in naturally occurring oral discourse.

In the present study, metaphoric gestures were considered from the point of view of both what they referred to, and how they functioned in context. They were gesticulations which usually presented a more abstract referent in terms of a more concrete image, in which a cross-domain comparison could be hypothesised. This definition of metaphoric gestures dovetails reasonably well with the applied linguists' view on Lakoff and Johnson's (1980) conceptual metaphor theory, the theoretical framework on which this present study was built, and at the same time does not contradict the Pragglejaz definition of metaphorically-used lexical units which the study applied.

Based on the relations between gestures and their concurrent speech, at least four relations can be established:

1. If a gesture *literally* depicts a *concrete* referent, and *no* cross-domain comparison is involved between the gesture and the speech, it is not metaphoric. For example, Teacher A asked a student to help her get a purple and transparent CD case in her office, and simultaneously drew two right angles in the air with both index fingers. The gesture illustrated (partly) the shape and size of the CD case Teacher A specifically wanted, so was not metaphoric. Due to anatomical, physiological or environmental constraints, usually only certain dimensions of the referent (such as the shape and size, rather than colour or material of the CD case) are gestured (and hence the gesture here may be seen as metonymic by showing a particular part of a CD case to stand for the whole case).
2. If a gesture *literally* depicts a *concrete* referent, and a cross-domain comparison *is* involved between the gesture and the speech (in a pragmatic sense), the gesture is metaphoric. Fricke's example of the gesture of ears to

metaphorically refer to someone as stupid, as discussed earlier in this section, would be an example—despite the fact that the gesture (ears) and its linguistic referent (ass, donkey) can be argued as literally (or iconically or metonymically) rather than metaphorically linked.

3. If a gesture *literally* depicts (i.e., is used directly to refer to) an *abstract* referent, the gesture turns the non-visualisable linguistic elements into images. A process of visualisation, rather than any cross-domain comparison, is involved, and therefore a gesture like this is non-metaphoric. For example, Teacher C repeatedly drew ‘U’ in the air back and forth in front of her chest by her right hand when she uttered the word segment, *yaoyaohuanghuang* (‘to swing and sway’) when she talked about a barcarole and described the swaying motion of rowing boats. The repetitive and unsteady movement of the gesture directly depicted the accompanying referent (state) and involved no cross-domain correspondences; it hence was considered as non-metaphoric.
4. If a gesture *literally* depicts (i.e., is used directly to refer to) an *abstract* referent, and a cross-domain comparison *is* involved to build a linkage between the gesture and its coexisting speech, the gesture is metaphoric. McNeill’s (1992) example of the image of a bounded container made by the hand to represent the abstract concept of a story belongs to this category. During the process of visualisation, “a story *becomes* some kind of container” (ibid., p. 146, McNeill’s emphasis). A cross-domain linking is involved in this process of visualisation. Another example was given in session A2 when Teacher A used the adjectives *bian* (‘flat’) and *gao* (‘high’) to describe the voice of a singer. Teacher A’s left thumb and index finger

formed a long and flat ‘C’ shape, finger tips facing the right, when the word *bian* was uttered, and the hand moved to a higher position when she said *gao*. Although they *literally* depicted the two abstract linguistic referents of ‘flatness’ and ‘high’ in speech, both the gestures and linguistic referents were *metaphorically* used to describe sound quality and pitch, and were hence considered as metaphorically used.

The above points out that (a) whether a gesticulation is metaphoric or not does not completely depend on the concreteness or abstractness of its accompanying referent in speech, (b) meanings of gesticulations cannot be designated without their accompanying speech; for example, Teacher A’s flat ‘C’ shape gesture can represent various possible concrete or abstract concepts if it does not accompany the uttered linguistic referent, flatness of voice, and (c) it is essential to consider what constitutes cross-domain comparisons, or more specifically, what constitutes the domains, when coding metaphoric gestures. This is discussed in more detail below.

#### **6.5.4 Cross-Domain Comparisons of Metaphoric Gestures**

As discussed in section 2.1.1, in CMT, metaphor refers to a cross-domain mapping, which is unidirectional between two conceptual systems—or groups of ideas—in the realm of thought, and metaphor can therefore be manifested both linguistically and gesturally. MIP, which was applied in the present study to identify metaphorically-used words, assumes the involved metaphoricity to be the coexisting similarity and incongruity which connect the basic meaning and contextual meaning (the two domains) of a lexical unit (or word segment). This concept of the coexisting similarity and incongruity between two domains was further applied to identify metaphoric gestures in the present main study.

Identifying the similarity and incongruity of the basic and contextual meanings for each metaphoric gesture was not, however, always straightforward. The following is an example of a gesture involving two domains, but where the Vehicle domain could not be identified as clearly as the Topic domain. It was taken from session B2, when the teacher was telling the class how Plácido Domingo, a Spanish tenor, had changed his role and moved from singing to conducting:

## Extract 19

371 所以 他 現在 [慢慢慢慢 就]

suoyi ta xianzai [**manmanmanman** jiu]

therefore he now slow slow slow slow (PRT)

Therefore he is now [**gradually**] . . .

RH loose palm, three circles to the right

372 比較 少 在 唱歌

bijiao shao zai changge

more less (CSC) sing

. . . spending less and less time singing.

Teacher B drew three circles consecutively from left to right in front of her right chest with her right loose palm facing herself, while she uttered the reduplication, *manmanmanman* ('gradually'). There was a contrast (an incongruity) between the domain of 'speed' uttered in speech and the 'shape' created by the circular gesture, which made this gesture potentially one that was metaphorically used. However, what the gesture of three circles (or, the Vehicle domain) conveyed was unidentifiable, nor could any similarity between the two domains be found. Such

gestures—which, though beyond the scope of the study at this point, may fall into the categorisation of “metaphoric attitudinal gestures” (Gullberg, 1998, p.139)—were considered *not* to be metaphorically used in the present study. As part of the identification policy, potential metaphors without clearly identified Topic and Vehicle domains were excluded.

To sum up, the following criteria were what defined metaphoric gestures, and constituted the cross-domain comparison of a metaphoric gesture in the present study:

1. At least two domains were involved in a metaphoric gesture. In other words, a gesture could not be categorised as metaphoric if only one domain was identified, as the above gesture of *manmanmanman* illustrated.
  - (1) Labels for the domains constituting a metaphoric gesture were not (and cannot be) decided purely by examining the gestures themselves. In other words, the potential two domains were decided by either verbal referents alone, or both verbal referents and the accompanying gestures, rather than gestures alone. In this sense, gesture analysis was not just analysing gestures, but analysing the integrated relations between gestures and their concurrent speech.
  - (2) Besides the concurrent speech, meanings of a gesture, that is, the most salient feature of a gesture, could also be more confidently assigned where the gesture could be compared with other gestures of similar form and/or appearing in similar spoken contexts.
2. Metaphoric gestures could be determined referentially (i.e. semantically) and pragmatically; that is, they could be determined by virtue of representing the linguistic referent metaphorically, or functionally if they

represented aspects of the message other than the referent of a word in context.

- (1) For the semantic metaphoric gestures, the two domains were usually manifested by a more concrete gestural image to present a more abstract referent (the ‘dual structure’ in McNeill’s term). In such conditions, and since the meanings of a gesture can rarely be independent of its accompanying speech, gestures accompanying words or characters or expressions with an abstract referent were more often metaphoric than those accompanying an utterance with a concrete one (see the fourth type of relation of gesture and speech as discussed earlier in the previous section).
- (2) This did not mean that metaphoric gestures only existed when the co-occurring speech depicted an abstract referent, though. Gestures accompanying speech carrying concrete meanings were coded as metaphoric if the gestures functioned metaphorically (see the second type of relation of gesture and speech as discussed earlier in the previous section).
3. Both similarities and incongruity between the two domains were required to constitute a metaphoric gesture.

As discussed in section 6.3.3, a discourse is a dynamic process in which metaphor is itself dynamic, too, and its metaphoricity can differ at different points. Studies have shown that contextual factors help researchers to distinguish if the metaphoricity is more or less salient, something which is helpful in metaphor identification. Thus, researchers may base a decision to code a gesture as metaphoric primarily on evidence such as the linguistic hints which often come before or after a

metaphor, or the size of the gesture used.

In the present study, following Müller (2008), size and duration of gestures, teachers' gaze, movements of other body parts along with gestures, facial expressions, as well as students' responses (where recorded) were all used to help determine whether a gesture was metaphorically used or not.

## **6.6 Reliability of Transcription and Metaphor Identification**

All transcripts were reviewed again five months later, when a total of 13 speech segments were deciphered that had been completely or partially unclear the first time. One segment of '*tiao hao le mei*' in Mandarin Chinese had, for example, mistakenly been transcribed as 'clarinet' in English because of the similar pronunciation, and this was therefore corrected. Two transcripts of the observed sessions and one transcript of the interviews were then given back to the teachers for an accuracy check. No inconsistencies between the transcript and the video file were found, but in total three wrong characters were pointed out that were the result of typing errors.

To increase the reliability of coding, another coder was involved in both the metaphor identification and the gesture coding. The second coder, a native speaker of Mandarin Chinese, was a research student in the Department of Educational Studies at the University of York, and had taken courses on metaphor and metaphor identification.

Two clips of two sessions by two teachers, constituting five minutes of the data, were selected for a reliability check. DVDs of the complete sessions from which the clips were extracted were given to the other coder, along with a copy of the verbal transcript, the transcription conventions, and guidelines for metaphor analysis. Training in the use of MIP, the definition of metaphoric gestures, and how to identify

them, were all given. The second coder was asked to carry out three tasks: an accuracy check of the speech transcripts, and verbal and gestural metaphor identification. In particular, the second coder was asked to identify the gesticulations, and pinpoint the strokes herself.

With the verbal metaphors, I identified 38 metaphors, 31 of which were agreed by the other coder. However, there were another 3 which only the second coder identified, thus making 10 possible metaphors we disagreed about. The reliability rate was thus 75.6%, which could be considered as reasonably acceptable (Cameron, 2003, p. 64). All the disagreements were discussed and resolved, and notes were made of the results. Of the 10 disputed metaphors, 2 were in Taiwanese, a language of which the second coder had no knowledge, and as a result she could not identify their metaphoric use. The others included conventionalised metaphors and similes, which have been discussed in section 6.4.2.

The rate of agreement for the identification of metaphoric gestures was only 53.4% on the first inter-rater check; however, the differences mainly resulted from the teachers' unclear boundaries between gestures. Other reasons for the differences of opinion included the fuzzy line between metaphoric and some pointing gestures, with unclear similarities and incongruity between the two domains involved, and implicit metaphoric gestures where only one clear domain could be identified. These all helped develop the coding policy discussed in section 6.5. An agreement rate of 77.8% was achieved on the second round of inter-rater checking. This was considered acceptable for analysis work.

## **6.7 Using ELAN to Annotate Verbal and Gestural Metaphor Use**

The process of transcribing videos, however, is in fact a process of selection in which

parts of the data can be left out. Take gesture coding for example; a gesture can be surrounded by other important cues which might be useful in coding it, such as eye gaze and head movement, which can easily be missed out during the process of condensing the multimedia video into a text. To reduce such problems and to increase research validity, an annotation tool for multimodal data was used to further analyse the data in the present study.

This section is divided into the following parts: section 6.7.1 focuses on a brief introduction of the software tool and its features, and reasons for applying it here are addressed in section 6.7.2. Section 6.7.3 illustrates specifically how it was used in the present study; there then follow a discussion of the advantages and limitations of the application in section 6.7.4, and my conclusions in section 6.7.5.

### **6.7.1 Introduction and Features of ELAN**

ELAN, EUDICO Linguistic Annotator (where EUDICO stands for European Distributed Corpora Project), is a free-of-charge software tool (downloadable from the link: <http://www.mpi.nl/tools/elan.html>) which allows researchers to create, edit, visualise, and search annotations for audio and/or video recordings.

ELAN has been applied in different subfields in linguistics such as sign language (e.g., Efthimiou & Fotinea, 2007; Johnston & Crasborn, 2006), speech and gesture research (e.g., Sedlářová, 2008), and language teaching (e.g., Mesch & Wallin, 2008) in various languages. This shows that ELAN can be used not only as a research tool for annotation, analysis, and documentation, but also to create teaching materials for teaching reading, for example. However, at the time of writing, no study could be found attempting to apply ELAN to either the identification of multimodal metaphors in classroom discourse or analysing the language of Mandarin

Chinese. Therefore the application of the tool to the present study can be considered to fill a gap in the literature.

### **6.7.2 Reasons for Applying ELAN**

There are other similar research tools supporting annotation of multimodal data of verbal speech and gestures; for example, ATLAS.ti (official Web site: <http://www.atlasti.com/>) and SignStream (see <http://www.bu.edu/asllrp/SignStream/> for further information). Indeed, manual coding can be a possible means of data analysis as well. ELAN was chosen in the present study to both code and analyse the verbal and gestural metaphors used by teachers for the following four reasons:

1. It is free of charge, with easy access, and full supporting documentation. A comprehensive 208-page manual of the latest version of ELAN and a list of published papers on ELAN for the past five years can be downloaded from the website of LAT (<http://www.lat-mpi.eu>) with the software. The website also hosts an online and active forum for discussions.
2. Annotations can be time-linked to media streams. ELAN allows direct analysis of the video instead of restricting one to analysing the transcription (see section 6.7.3 for further discussion).
3. Annotations can be linked to other annotations. As my aim was precisely to examine multimodal metaphors in my Chinese data, the ability to connect annotations of verbal and gestural metaphors in this way was crucial. ELAN is useful in providing a platform to link annotations of metaphors used in different modalities (details can be found in section 6.7.3).
4. It supports annotations in both English and Mandarin Chinese. It is essential

for the present study that the analysis tool supports both the language which the research participants used, and the language of the final research report.

### 6.7.3 Verbal and Gestural Metaphor Annotation

This section reports how ELAN (version 3.7.2, the latest version at the time of writing) was applied to annotate a subset of data extracted from the main study. The recorded AVCHD (.m2ts) file was firstly trimmed for the report, and then converted into an MPEG (.mpg) file by Picture Motion Browser in order to be compatible with ELAN.

The segment of video file discussed below was taken from the first quarter of Teacher C's session in which she talked about music tonality by guiding the students in how to tell major from minor keys. In this 100-second segment, Teacher C began by indicating that major and minor keys were the two main concepts which she was going to cover. Then she drew the students' attention directly and specifically to the Chinese words *da* and *xiao* used in the term, *dadiao* (literally translated into 'big tone', meaning 'major key') and *xiaodiao* ('small tone', meaning 'minor key'), and asked the students if they could imagine and feel the difference between music in major and minor keys based on the metaphors conventionally used to describe them in Chinese. Teacher C played a part of a song in a major key as one of the examples towards the end of the video clip.

Appendix O illustrates how ELAN supports the coding of the concurrent verbal and gestural metaphors used by Teacher C. The parent tier of the utterances by Teacher C contained the following dependent tiers: utterances in Mandarin Chinese, utterances segmented into word segments and separated by slashes ('/'), utterances in Hanyu Pinyin, English word-by-word equivalent translation, English free translation,

and the verbal metaphor involved, as partly shown in the same Appendix. These tiers were selected for the purpose of further metaphor analysis and to aid readers' comprehension of the data. Teacher C's utterances were broken down into word segments as basic units for further metaphor identification by using MIP. In addition, I also tried to locate each word used by the teacher in her speech by aligning each word with the exact moment when it was articulated. It was thought that such word-by-word annotation could be compared with my annotation of the gesture phase of the gesture unit, to see if any particular metaphorical gestures in fact preceded or followed any verbal ones. Unfortunately the procedure of word-by-word annotation did not go as smoothly as I expected, and related issues will be discussed in section 6.7.4.

The annotation of Teacher C's gesture use began by distinguishing the gesture units and locating them. Then phases of preparation, stroke, hold, and/or retraction were further discriminated within each gesture unit. The hand used (right and/or left), the position of the hand(s), the form of the gesture, hand movement, and gestural metaphors were all annotated. Although only gesticulations were included in the present study, other gestures in a broad sense such as body movements, and contact between two body parts or between body parts and other objects (e.g., stroking the necklace in Appendix O) were also annotated to help interpret the gesticulations. For the same reason, eye gaze and head movement accompanying the gestures were also noted. In addition, the teaching tools used such as a microphone, a computer, textbooks or a projector, were also recorded, because the teacher's use of them might also affect how, when, what, and where the gestures were used. Part (due to the space limitation) of the annotations of gestures can also be seen in Appendix O.

ELAN not only displays the progression of the words and gestures Teacher C used, but also represents their synchronicity, and how metaphors were used in the two modalities, independently of, and complementarily to, each other.

Further discussion on the gestures and the accompanying speech of this extract is further discussed in sections 7.7.1 and 7.7.3.

#### **6.7.4 Advantages and Limitations**

ELAN supports multimedia data to be used as a direct source for data analysis. Videos reconstruct the events. Direct coding from video recordings rather than from their transcripts decreases the chances of losing important data. Though videos do not necessarily represent reality for reasons such as editing, camera effect or limitations of technology, coding directly from video data removes a great degree of reconstructive bias of individual researchers (Jordan & Henderson, 1995). In addition, more accurate coding can be done with ELAN by using video as a direct source for data analysis than by coding from a transcript of the video, and this opens the possibility for types of data analysis which might not be noticed or attended to when coding a transcript.

It is important to note that ELAN allows the different phases involved in each gesture unit to be presented precisely and in order, and the display of multiple annotations of the same gesture allows the various facets of each gesture (i.e., the position, movement, and form of the hand(s)) to be paid equal attention. These were the main advantages when looking into how each phase and facet of gestures were used and developed along with the speech.

In addition, ELAN generates annotation statistics such as the number of occurrences, and the frequency based on the tiers which users create, and, though not

the focus of the present study, this can help researchers establish the quantitative aspects of the data. In this way, ELAN serves as not only a qualitative research tool but also as a filter, producing basic quantitative information for researchers to analyse.

Last but not least, when creating annotations for gestures, it is important to annotate them with the sound of the speech both on and off; that is, going back and forth analysing the form of the gesture with and without the sound (Cienki, 2009; Müller & Mittelberg, 2009). ELAN helped me achieve this, by allowing the video to mute, and the annotations of the speech to be hidden. These made me, as annotator, pay more attention to various facets of gestures such as their form, position, and direction of movement than when the sound of the video was on, and hence annotations could be made with a great deal of precision.

Nevertheless, there are limitations to the annotation tool. For example, annotating gestures may require close-up pictures, and ELAN allows users to change the size of the video viewer; by detaching it from the main window and maximising it, users are able to get more details. In the event, the bigger Teacher C's video frame was, the better its visibility became, and I could create and edit annotations under the bigger video viewer without problems. However, having to work with a full screen display of the video was not a friendly experience: if a full display was required, separate media player software such as Windows Media Player was needed in order to play the video properly because the control panels and other viewers in ELAN did not detach from the main window along with the video. The benefits of providing close-up pictures were hence sacrificed.

Furthermore, when doing the microcoding such as for the gesture phases and word-by-word annotation of the talk, ELAN was useful in allowing the playback rate

to be decreased to 1% of the original rate and allowing the timeline of the annotations to be displayed by zooming in up to 1,000%. Theoretically, functions like these are helpful in letting one discover the overlap between metaphor use in speech and via gesture. However, when trying to implement these and playing the video in slow motion, it was found that the vertical red line (the *crosshair*, which indicates where the viewers are specifically at in the video(s), and as the video(s) play(s), the red line moves along to the right) did not always indicate precisely where the time point of the video was, and therefore the annotation of a gesture phase might not align perfectly with the moment at which the gesture occurred and ended. In the present study, I tried to overcome the time alignment problem by making repeated casual, naked eye observations.

ELAN offered two further functions which could be helpful in the microanalysis of the synchronicity of speech and gesture, namely the waveform viewer and the Audio Recognizer. To enable these functions, an additional WAV file of the video is needed. I tried to use these to construct and position the word-by-word annotation of Teacher C's speech. Unfortunately the waveform did not accurately represent the teacher's articulation. Traces might also result from the bad quality of the recording, since not all voices or sounds or noises other than the teacher's talking were completely excluded from the video. Converting the video from its original format to MPEG for ELAN and later converting again from MPEG to WAV might also further reduce the quality. In addition, Audio Recognizer was a brand new feature of the version of ELAN which I used, and at the time of writing, it worked mainly to distinguish what was silent from what was not, and was unable to recognise specific audio frequencies or the voices of different speakers. It was therefore not used in the present study.

Another problem lay in the language conversion in ELAN. Though the tool supports Mandarin Chinese, often the conversion between it and the English keying-in system made ELAN freeze and the cursor could no longer be moved around the screen. Every time this happened I had no choice but to close everything down and restart the programme.

A final limitation was the recording environment and facilities used in order to collect the data. In the session observed, only one video recorder was allowed at the back of the classroom. With more video recorders focusing on different angles and zoom ins and outs, the integration of the different views of the same event displayable in ELAN would have made the recording of the sequence of events more detailed and complete. For example, during the retraction phase of Gesture Unit 2 (as illustrated in Appendix O), the teacher rested her right hand on her thigh, with the result that part of the gesture was hidden behind the students' heads. Another recording camera placed in the front of the classroom might have helped capture the entirety of the gesture.

### **6.7.5 Conclusions**

Generally speaking, ELAN is a compact, powerful, and user-friendly tool which provides adequate support for micro-analysing multimodal (esp. spoken and gestural) metaphor use in Mandarin Chinese. It does not, however, necessarily make the process of data analysis more time efficient—the annotating of the 100 second video clip took four complete days, excluding the time spent on trimming and converting the video file. Nevertheless, ELAN not only provided a platform where multimedia files served as a direct source of coding but also helped demonstrate how verbal and gestural metaphors were used together by visualising the synchronicity of speech and

gestures. Due to its flexibility of annotation, and its multimedia, multi-platform, and multi-language compatibility, it was decided that ELAN would be used in the main study, to help annotate and interpret the relations between verbal and gestural metaphors, and investigate how they worked together in music teaching.

## 6.8 Summary

Speech was transcribed and presented with no more than one main semantic and/or pragmatic meaning per line before further breaking lines into word segments (or lexical units), and examining each segment using MIP to identify if any was metaphorically used. The word segmentation was firstly processed by an online segmentation system and then examined and corrected by the researcher. Policies were developed for dealing with the most problematic categories of word segmentation, namely reduplication, numbers, ‘a-not-a’ question words, proper names, ambiguous word segmentation, terms and expressions in other languages, idioms and proverbs, compound verbs, and compound adjectives. A coding policy was also created to identify polysemy-based metaphorical use especially for similes and other metaphoric forms, such as extended realisations of metaphor, implicit metaphors, multiword expressions, conventionalised metaphors, analogy, and metonymy. The results were then grouped into systematic metaphors by adapting Cameron’s procedure.

Transcription of gestures was superposed on the written transcripts of the verbal speech to show speech-gesture synchrony. Strokes (i.e., the most salient feature of a gesture)—assigned either by reference to concurrent speech, or by comparing the gesture with gestures in similar contexts—were identified before being coded as either metaphorically or non-metaphorically used. Both what the gestures referred to

(along with their accompanying speech), and how they functioned in context were taken into consideration when deciding if gestures were metaphoric or not. Generally speaking, a metaphoric gesture involved a comparison between two explicit domains constituted by speech and speech and gesture, or both speech and gesture; the two different domains were related by similarities between the domains.

To increase the trustworthiness of the data analysis, the teachers, another coder, a software tool (ELAN), an online segmentation system, and other supplementary sources such as a dictionary and a corpus were all used at different stages of data analysis.

## Footnotes to Chapter Six

<sup>1</sup> Neither method, however, provides criteria on the use of dictionaries. Deignan (2005) pointed out that each dictionary is edited specifically for its target readers and suggested that using different dictionaries might provide inconsistent answers to what a more basic meaning of a certain word is. Steen, Biernacka, et al. (in press) used three dictionaries to check basic meanings of each lexical unit when applying MIP. They used dictionaries as a more standard criterion in metaphor identification than MIP suggests.

<sup>2</sup> As shown from step 6 of grouping systematic metaphors, the same lack of precision as with CMT appears when labelling the groups in TOPIC IS VEHICLE form, and this also raises the question of exactly how far systematic metaphors are different from conceptual metaphors, besides deriving from actual use of language. There is perhaps less need to find the most abstract level of wording/labelling.

<sup>3</sup> One may argue that the essence of a pointing gesture is that it possesses one of several typical physical shapes; however, McNeill neglects this.

<sup>4</sup> Briefly speaking, according to Lakoff and Johnson (1980), metonymy is distinguished from metaphor by its one-domain mapping, in which the “certain aspects of A stand for A (or part of A)” relationship differs from the typical ‘A is B’ relationship involved in a metaphor. Here Cienki meant that the gesture of a particular form of triangle could be argued to stand for the general class of such shapes (pp. 8-9).

<sup>5</sup> Note that the Hanyu Pinyin for the Chinese words in the present study employs word segments, meaning that word segments are separated by a space or blank; hence *hong hua* and *dadiao*.

<sup>6</sup> Though nothing is inserted between the ‘a-not-a’ question words (i.e. *kai bu*

*kai*), they were segmented into three words because of the one-word compound verb, *kaiwanxiao*, which is discussed later in this section.

<sup>7</sup> Examples of the compound verbs and compound adjectives are taken from Yin & Felley (1990).

<sup>8</sup> *Da* in *dadiao* might be argued as being indirectly used; however, *dadiao* was segmented as a one-word unit in the present study, and therefore the metaphoricity of the two morphemes were not considered separately.

<sup>9</sup> The unspecifiable Vehicle (and Source) implied that the minor key might be many foods rather than one. In addition, the usage of 'inside' increased the complexity of the cross-domain comparison by linking the implicit Topic of food to a container with boundaries. That is to say, one can argue that at least three layers of cross-domain comparison (MINOR IS A TYPE OF FOOD, MINOR IS A LARDER/FEAST, and FOOD IS CONTAINER) were involved here.

## **Chapter 7**

---

### **MAIN STUDY: RESULTS AND DISCUSSION**

---

In this chapter, the results and discussion of the three-stage data analysis are covered. First, analyses of the background to the music sessions are presented in section 7.1. Uses of verbal metaphors and metaphoric gestures in these sessions, the foci of analysis of Stage 1, are discussed in sections 7.2 and 7.3, followed by the grouping of recurrent verbal metaphors in section 7.4. Section 7.5 includes results and discussion of the analysis of Stage 2; the relations between metaphoric gestures and the accompanying<sup>1</sup> speech are examined. The functions and educational aspects of verbal metaphors and metaphoric gestures as a whole, the focus of analysis of Stage 3, are discussed in sections 7.6 and 7.7. A final summary is given in section 7.8.

#### **7.1 Background to the Music Sessions**

As described in section 5.8, the data for the main study came from 13 sessions by six teachers (three general music class teachers and three music-talented class teachers), and pre-observation and post-observation interviews with them. Data were collected between March and May, 2008, in six junior high schools in Taiwan which were mixed as regards age, location, and size.

The dataset obtained from the classroom observations included nine music appreciation sessions (A1, A2, A3, B1, B2, D1, D3, E1, and E2), two music theory

sessions (C1 and C2), and two orchestra ensemble sessions (E3 and F1), with a total length of 636 minutes and 96,634 characters transcribed (see section 5.8 for details). A list of the durations and locations of the interviews can be seen in Appendix B. On average, the pre-observation interviews lasted seven minutes, and the post-observation interviews, 27 minutes. All interviews were either audio or video recorded, or summarised using field notes, depending on each teacher's preference and permission.

Teaching content in the observed sessions varied, covering lectures on music and songs, musicians, certain types of music, and musical structure. Taiwanese and Western music and ideas coexisted. In the orchestra ensemble sessions (E3 and F1), sentences and sections of symphonies were repeated, for individual (student or instrument) practice, or as a whole. Details of the topics covered in each session are illustrated below in Table 7.1.

Table 7.1

*Main Study: Teaching Topics of the Sessions*

<i>Session</i>	<i>Topic</i>	<i>Sub-Topics</i>
A1	Taiwanese	<ul style="list-style-type: none"> <li>● Origins</li> <li>● Characteristics</li> <li>● Categorisation by time periods and languages or dialects</li> </ul>
	Folk Songs	<ul style="list-style-type: none"> <li>● Composer Deng Yu-Xian and his works</li> <li>● Four pieces from before and during the Japanese Colonial Period were played (lyrics were explained and background information was given)</li> </ul>

<i>Session</i>	<i>Topic</i>	<i>Sub-Topics</i>
A2	Taiwanese Folk Songs	<ul style="list-style-type: none"> <li>• Origins</li> <li>• Characteristics</li> <li>• Folk songs in different languages or dialects, including Hakka, Formosan, and Taiwanese</li> <li>• Four pieces in different languages or dialects were played (lyrics, structure, and singers of the songs were explained and introduced)</li> </ul>
A3	Taiwanese Folk Songs	<ul style="list-style-type: none"> <li>• Violin piece, <i>Fantasy Heng-Chun Melody</i>, and two Taiwanese folk songs from which the motif of the violin piece developed</li> <li>• Composer Tyzen Hsiao</li> <li>• Singer Chen Da</li> <li>• Solfège syllables of the motif sentence</li> <li>• Musical scale of the piece</li> <li>• Hengchun, a township in southern Taiwan and where the folk songs originated</li> </ul>
B1	Gregorian Chant	<ul style="list-style-type: none"> <li>• Comparison between Gregorian chant and pop songs</li> <li>• Melodic types of Gregorian chant</li> <li>• A music video of a modern version of Gregorian chant was played</li> <li>• A film clip containing chants adapted from Gregorian chant was played</li> </ul>
B2	Classical	<ul style="list-style-type: none"> <li>• <i>Kung Fu Hustle</i> and Pablo de Sarasate's</li> </ul>

<i>Session</i>	<i>Topic</i>	<i>Sub-Topics</i>
	Music in	<i>Zigeunerweisen</i>
	Movies	<ul style="list-style-type: none"> <li>● <i>Zigeunerweisen</i> performed by Sarah Chang, conducted by Plácido Domingo</li> <li>● <i>Mr. Bean's Holiday</i> and Giacomo Puccini's <i>O Mio Babbino Caro (Oh My Dear Papa)</i></li> <li>● <i>O Mio Babbino Caro</i> performed by Maria Callas</li> </ul>
C1	Musical Tonality <sup>2</sup>	<ul style="list-style-type: none"> <li>● Recorder playing</li> <li>● Tonal music<sup>3</sup></li> <li>● The major and minor keys<sup>4</sup></li> <li>● 13 extracts of pieces in both the major and minor keys were played to help the students distinguish between the keys</li> </ul>
C2	Simple and Compound Metres	<ul style="list-style-type: none"> <li>● Recorder playing</li> <li>● Beats and rhythm</li> <li>● Differences between simple and compound metres</li> <li>● Seven extracts of pieces in simple and compound metres were played to help the students distinguish between the metres</li> </ul>
D1	Franz Liszt	<ul style="list-style-type: none"> <li>● Life of Liszt</li> <li>● Musical works of Liszt</li> <li>● Four extracts from pieces by Liszt were played</li> </ul>
D3	Johannes Brahms	<ul style="list-style-type: none"> <li>● Life of Brahms</li> <li>● Brahms and Joachim Raff and Robert Schumann</li> </ul>

<i>Session</i>	<i>Topic</i>	<i>Sub-Topics</i>
		<ul style="list-style-type: none"> <li>● Brahms and Clara Schumann</li> <li>● Musical works of Brahms</li> <li>● Seven extracts from pieces by Brahms were played</li> </ul>
E1	Franz Schubert	<ul style="list-style-type: none"> <li>● The Romantic period</li> <li>● Programme music and absolute music</li> <li>● Lieder and Schubert</li> <li>● Life of Schubert</li> <li>● An extract from <i>Der Erlkönig</i> was played</li> </ul>
E2	Franz Schubert's Lieder	<ul style="list-style-type: none"> <li>● Review of <i>Die schöne Müllerin</i>: three extracts were played</li> <li>● <i>Winterreise</i> and Schubert</li> <li>● Four extracts from songs in the song cycle set of <i>Winterreise</i> were played; the notion of structure and interpretation were introduced and discussed</li> </ul>
E3	Orchestra Ensemble	<ul style="list-style-type: none"> <li>● Practising: symphonies by Johann Strauss and others</li> </ul>
F1	Orchestra Ensemble	<ul style="list-style-type: none"> <li>● Practising: <i>Carmen</i> by Georges Bizet</li> </ul>

Viewed overall, the teaching content covered three major aspects of music: (a) what music is, (b) how music is performed, and (c) the context of music. The first aspect covered elements constituting music, such as notes, melody, pitch, tonality, beats and rhythm. The composers, performers, and conductors were introduced as

background knowledge for the music concerned. In addition, the historical periods, origins, characteristics, and various styles of music were also included in the observed sessions.

All six teachers said in their interviews that to them, one of the main purposes of music education at junior high school level is to introduce the students to various types of music, and this explains why Teacher B, for example, decided to spend a complete session discussing Gregorian chant, which she admitted that she had known nothing about before giving the session one year previously—“At least they [i.e., the students] will know that there’s something called Gregorian chant,” Teacher B explained, “and they’ll be able to get some familiarity with it if some day they go abroad and happen to hear similar religious music in churches.” Like the other five teachers, Teacher B also expected the students to not only listen to, but also learn how to appreciate, different kinds of music. As Teacher A put it, listening to music should not be just about listening to the lyrics or undertaken simply because of personal affection for the singers: “I hope they [i.e., the students] can learn to know . . . well, about the *music* I [i.e., the students] listen to, what feelings it brings me, and even learn to appreciate it” (Interview Ab).

Lecturing (including listening to music) was the main teaching approach in all the observed sessions, though some time was devoted to one-to-one instruction and group discussion (C2). The one-to-one instruction occurred when the teachers evaluated a student’s behaviour (all sessions) or tried to keep a student in order (A3, D1, D3), gave questions or answered questions (all sessions), asked a student to get teaching materials (A1), or gave instruction on how to perform music (E3, F1). Groups were used by Teacher C to beat different time signatures, and work together on the worksheet she provided.

The main teaching materials used included blackboards, handouts, and CD players. DVD or VCD (B1, B2) and PowerPoint (C1, C2) were also employed. No pictures or textbooks were used in the observed classrooms, except one for recorder playing in Sessions C1 and C2, and one used in Session E1, which was only verbally referred to by the teacher for five seconds. Teachers decided what to teach on their own, either following a textbook (Teachers A, B, and E for sessions on music appreciation) or not (Teachers C, D, E for orchestra ensemble, and F) (Interviews Ab, Bb, Cb, Db, Eb, and Fb).

Pianos and recorders were the instruments most commonly used by the teachers. Recorders were used in teaching the sequence of recorder playing (C1, C2), or to demonstrate melodies mentioned in lecturing (A3). Pianos were used to accompany the students' playing of the recorders (C2), or to demonstrate melodies (D1, D3) mentioned in class. In addition, languages other than Mandarin Chinese were occasionally used by the teachers, including Taiwanese and English. Hakka was used when explaining the lyrics of the songs introduced (A1, A2), and Italian was used when referring to musical terms (B1, F1). These were all included as valid parts of the data. Details of the above are shown in Appendix P.

## **7.2 Use of Metaphors in Speech**

### **7.2.1 Overall Results**

All six music teachers used verbal metaphors in the observed sessions, and the metaphors were spontaneous, in as much as when preparing the observed lessons, the teachers said they planned the structure of the sessions instead of preparing sentence by sentence how to deliver them. With years of teaching experience, this was considered unnecessary (Interviews Ab, Bb, Cb, Db, Eb, and Fb).

The recurrent and most commonly used Vehicle domains of metaphor included containers (A1, A2, A3, B1, B2, C1, C2, D1, D3, E1, E2, E3, F1), verticality or height (A1, A2, A3, B1, B2, C1, C2, D1, D3, E1, E2, E3, F1), entities (A1, A2, A3, B1, B2, C1, C2, D1, D3, E1, E2, E3, F1), space (A1, A2, A3, B2, C1, C2, D1, D3, E1, E2, E3, F1), senses (A2, A3, B1, B2, C1, C2, D1, D3, E1, E2, E3, F1), size (A1, A3, B1, B2, C1, C2, D1, E1, E2, F1), length (A1, A2, B1, B2, C1, C2, D3, E1, E3, F1), bodies and organs (A3, B2, C1, C2, E2, E3, F1), emotions (B2, C1, C2, E2, E3, F1), and food (C1, C2). It is also worth noting that there were cases when the same Topic was described in terms of Vehicles from more than one domain by one teacher in the same session. For example, the quality of a singer's voice was described as *mohu* ('unclear' or 'blurred') and *hou* ('thick') (A2, 793, 796) (The numbers after the session numbers in parentheses indicate the intonation unit in the transcripts, a convention which will be retained throughout the chapter). Teacher C used *an* ('dark'), *ganjing* ('clean'), and *niandada* ('sticky') to describe musical keys, and used *xiancaokuai* ('grass jelly'), *ying* ('hard', as opposite to 'soft'), and *fangzheng* ('square' in shape) to refer to compound metres. The issue of the mixture will be revisited later in the chapter.

In the post-observation interviews, the teachers (Teachers A, C, D, E, and F) emphasised the importance of making lectures interesting and easy to understand, and they (Teachers A, B, C, E, and F) also pointed out how they tried to connect the abstract music with more familiar ideas for the students at junior high school level, including telling stories (Teacher E), sharing daily experiences with the students (Teacher B), creating pictures when interpreting music (Teacher E), making use of imagination and what the students might be familiar with (Teacher F), and using (verbal) metaphors (Teachers A and C). Metaphors (in speech) (i.e., talking about

one thing in terms of another) were considered, together with stories and pictures, as one of the teaching tools to evoke students' interests and increase comprehension.

The density, word class, and distribution of these verbal metaphors were analysed at Stage 1 of the data analysis. The results are presented in the following sections.

### **7.2.2 Density of Verbal Metaphors**

The density of verbal metaphors was calculated both per 100 intonation units, and per 1,000 characters. Counts represent rate of occurrence rather than numbers of metaphors; thus if a metaphoric word segment was used repetitively, it was counted each time it appeared, rather than once. Table 7.2 presents character counts of the transcripts, numbers of the intonation units, numbers of the verbal metaphors, and density of the verbal metaphors of each session. The average density of verbal metaphors in the present study was 14 per 100 intonation units, or 23 per 1,000 characters.

Table 7.2

*Main Study: Character Counts of Transcripts, Numbers of Intonation Units and Verbal Metaphors, and Density of Verbal Metaphors in the Sessions*

<i>Session</i>	<i>Transcript Character Counts</i>	<i>Number of Intonation Units</i>	<i>Number of Verbal Metaphors</i>	<i>Density of Verbal Metaphors (IU)<sup>a</sup></i>	<i>Density of Verbal Metaphors (characters)</i>
A1	6,778	984	90	9	13
A2	6,175	919	131	14	21
A3	6,089	930	118	13	19
B1	5,671	981	74	8	13
B2	6,184	907	79	9	13
C1	8,445	1,513	190	13	22
C2	8,839	1,611	188	12	21
D1	5,930	895	97	11	16
D3	5,301	736	67	9	13
E1	7,798	1,210	176	15	23
E2	6,852	1,146	150	13	22
E3	9,898	2,000	481	24	49
F1	12,674	2,657	406	15	32
Total/ Average	96,634	16,489	2,247	14	23

<sup>a</sup> Intonation Units

The above table shows that density of verbal metaphors ranged from 8 to 24 per 100 intonation units, or 13 to 49 per 1,000 characters. The sessions with the highest density were the two ensemble sessions (E3 and F1), in which a large number of the metaphorically-used morphemes, *qian* or *qianmian* ('front') and *hou* or *houmian* ('behind'), were produced when the teachers tried to locate the music—for example, C *qian san ge xiaojie* ('three bars in front of C', i.e., 'three bars before C') (F1, 1317), and *trio zhi hou dishiba xiaojie* ('the eighteenth bar behind Trio,' i.e., 'the eighteenth bar after Trio') (E3, 671). They occurred frequently after each interruption and before the students restarted their performance. In addition, phrases containing these metaphorically-used morphemes were often repeated by the teachers before all the students were ready to start performing again, resulting in a higher frequency of metaphor use. The systematic use of *qian(mian)* and *hou(mian)* will be further discussed in section 7.4.7.

Previous studies on verbal metaphor use in classroom discourse in English (e.g., Cameron, 2003; Corts & Pollio, 1999; Lazar et al., 1989) show that researchers not only employed different definitions or different scopes of metaphor (variably including idioms or other figurative devices such as hyperbole and irony), but also chose different units of analysis. In addition, various analyses of the same data also lead to different results (Cameron, 2003). Even so, a comparison with these studies suggests that a metaphor density in spoken discourse ranging broadly between 10 and 60 per 1,000 (English) words can be expected in classrooms where English is the main language used. At the time of writing, no empirical studies on metaphor density in oral classroom discourse in Mandarin Chinese could be found. Nevertheless, the results of both the preliminary study (25 per 1,000 characters, see section 3.5.1) and the main study suggest the density is similarly broad, at 10 to 50

per 1,000 (Chinese) characters.

### 7.2.3 Word Class of Verbal Metaphors

The verbal metaphors used in the 13 sessions were varied in terms of word class, and the result of categorisation is presented in Table 7.3 below. Word classes include nouns, verbs, adjectives, adverbs, classifiers, and prepositions. Nouns included time nouns and direction nouns, such as *shang* ('up') in *shang xi* ('up' and 'time', i.e., 'last time') and *zhong* ('middle', being used to mean 'in'; 'among') in *gongzuo zhong* ('work' and 'middle', i.e., 'during work'). Classifiers usually preceded nouns and followed numbers; for example, *duan* ('section', the basic sense being a concrete part of an object) in *liu duan geci* ('six sections of lyrics') was categorised as a classifier, but *duan* in *yi xiao duan* ('a small section'), a noun. Prepositions were usually followed by nouns to indicate time or place and direction, for example, *dao* ('at', 'up to', 'upon') in *dao wanshang* ('upon night') and *zhuan dao bie de yin* ('transfer up to other notes').

Table 7.3

*Main Study: Number of Verbal Metaphors by Word Class in Each Session*

<i>Session</i>	<i>Noun</i>	<i>Verb</i>	<i>Adjective</i>	<i>Adverb</i>	<i>Classifier</i>	<i>Preposition</i>
A1	27	38	7	0	18	0
A2	29	56	21	3	22	0
A3	30	46	3	1	31	0
B1	24	19	20	0	7	4
B2	27	11	20	0	9	11
C1	47	78	48	2	8	3

<i>Session</i>	<i>Noun</i>	<i>Verb</i>	<i>Adjective</i>	<i>Adverb</i>	<i>Classifier</i>	<i>Preposition</i>
C2	46	75	48	1	3	2
D1	67	9	16	2	2	0
D3	35	17	2	3	8	0
E1	73	50	28	4	15	5
E2	68	43	17	2	9	5
E3	163	254	31	7	3	8
F1	94	258	20	15	0	8
Total	730	954	281	40	135	46

As shown in Figure 7.1., the most frequently occurring word class of the verbal metaphors across the sessions were verbs (44%), followed by nouns (33%), and adjectives (13%), with adverbs (2%) and prepositions (2%) as the least frequent categories. Although the percentage of these categories in each session differed, and not every word class occurred in each session, verbs and nouns always had a (usually considerably) higher frequency than adverbs and prepositions in each session (see Table 7.3).

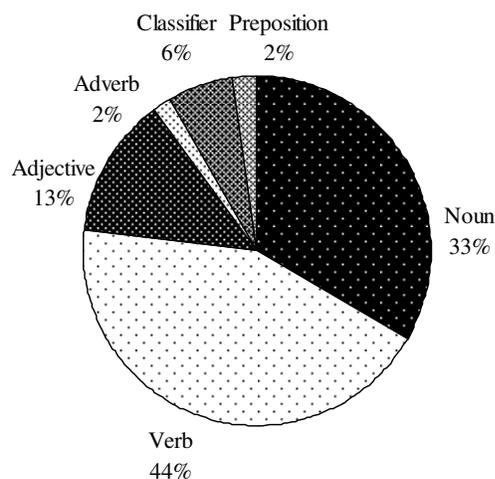


Figure 7.1. Main study: Percentage of word class of verbal metaphors across the sessions.

Examples of verbal metaphors with their word class are given in Table 7.4.

Table 7.4

*Main Study: Examples of Verbal Metaphors by Word Class*

<i>Word Class</i>	<i>Examples</i>
	<i>limian</i> ('inside'): live <u>inside</u> a village (A2, 119)
	<i>waimian</i> ('outside'): write <u>outside</u> of the blank (A1, 869)
	<i>zhongjian</i> ('middle'): add into <u>the middle</u> of (the music) (A1, 583)
Nouns	<i>shang</i> ('up'): we listened to this <u>last</u> time (E2, 216)
	<i>xiamian</i> ('bottom'): the piece <u>at the bottom</u> (i.e., 'next piece') (E2, 613)
	<i>houmian</i> ('back'): listen from <u>the back</u> (A1, 682) (i.e., 'listen from

<i>Word Class</i>	<i>Examples</i>
	the last to the first piece listed on the handouts')
	<i>weidao</i> ('smell'): <u>smell</u> of the Chinese music (A3, 243)
	<i>xiantiao</i> ('line'): pay attention to <u>the line</u> (of the music) (F1, 1783) <sup>5</sup>
	<i>chuan</i> ('to pass'): <u>pass</u> (the musical sentence ) (A1, 473)
	<i>kanyixia</i> ('to look at'): <u>look at</u> that period (D3, 98)
	<i>lai</i> ('to come'): <u>Come!</u> (to draw attention) (A1, 8)
	<i>jinru</i> ('to enter'): let's <u>enter</u> the second <u>section</u> (A3, 843)
	<i>wuran</i> ('to pollute'): it's like <u>polluting</u> their orchestra (B1, 250)
Verbs	<i>fang</i> ('to release'): now I'm going <u>to release</u> a piece (B1, 533)
	<i>tiao</i> ('to jump' or 'to leap'): let's <u>jump</u> a little bit (C1, 1176)
	<i>langfei</i> ('to waste'): you <u>wasted</u> one point of your class (C1, 1245)
	<i>zou</i> ('to walk'): we haven't <u>walked</u> through (E3, 989)
	<i>xiu</i> ('to fix'): I don't have much time for <u>fixing</u> (the music) (E3, 634)
	<i>chang</i> ('long'): (the folk song) is so <u>long</u> (A1, 757)
	<i>duan</i> ('short'): he has a <u>short</u> life (E1, 874)
	<i>da</i> ('big'): very <u>big</u> contribution to music (D1, 686)
Adjectives	<i>gao</i> ('high'): the education is not very <u>high</u> (A2, 232)
	<i>gao</i> ('high'): it uses a <u>higher</u> tone (A2, 760)
	<i>dixia</i> ('low'): because their status is very very <u>low</u> (B2, 199)
	<i>xia</i> ('down'): <u>down</u> time (i.e., 'next time') (A1, 972)

<i>Word Class</i>	<i>Examples</i>
	<i>hou</i> ('thick'), <i>xi</i> ('thin'): <u>thicker</u> or <u>thinner</u> (voice) (A2, 795)
	<i>guding</i> ('fixed'): the melody is <u>fixed</u> (A1, 479)
	<i>xiao</i> ('small'): earn <u>small</u> money (B2, 318)
	<i>an</i> ('dark'): the minor is <u>darker</u> (C1, 589)
	<i>huise</i> ('grey'): he's not that <u>grey</u> in the end (E2, 610)
	<i>piaoliang</i> ('beautifully'): particularly <u>beautifully</u> (sung) (A2, 484)
Adverbs	<i>zang</i> ('dirty'): Could you not play so <u>dirty</u> ? (C1, 179)
	<i>bai</i> ('white'): I said it <u>white-ly</u> (i.e., 'I said it directly') (E2, 1030)
	<i>beican</i> ('miserably'): if we play it <u>miserably</u> (E3, 139)
Classifiers	<i>duan</i> ('section'): how many <u>sections</u> in total? (A1, 294)
	<i>ge</i> ('object'): the ( <u>object</u> of) melody in the beginning (A3, 566)
Prepositions	<i>dao</i> ('up to'): when she's <u>up to</u> high school (B2, 495)
	<i>zai</i> ('at'): it's <u>at</u> the same do do do do (B1, 610)

When compared with previous studies, it seems that the different word classes to which the metaphors belong occur with varying frequency. This might be due to the genres of discourse involved, or to linguistic differences. For example, prepositions, which accounted for only 2% of the total in the present study, were the most often used grammatical form of verbal metaphor used by the English-speaking primary teachers in Cameron (2003). Noun metaphors, which were repeatedly found in the present study, however, accounted for only 13% of the total in her study. The Chinese direction nouns (e.g., *zhong*), which were mentioned earlier in this section and are similar to the temporal uses of English prepositions, might partly explain why (Yu, 1998; also see sections 7.4.7 and 7.4.8 for further discussion on Chinese

noun localisers used in the Topic domain of time). Semino (2008), however, in her study of English (written) discourses involving literature, politics, science, and education, found, like the present study, that nouns were the most prototypical examples. She pointed out the reason: nouns typically refer to entities with basic and contextual meanings that are easy to establish (*ibid.*). The above suggests that verbal metaphors used in different languages are rarely restricted to any one single word class, but what factors the relative frequency of the various word classes depend on might need more detailed investigation before any conclusions can be drawn.

#### **7.2.4 Distribution of Verbal Metaphors**

The verbal metaphors were distributed among various teaching sequences, including organisation, agenda management (with respect to both content and procedure), explanation (including explication and exemplification), checking understanding, summarising, control, feedback (including evaluative and strategic feedback), and information search. Categorisations are based on Cameron (2003, p. 83).

The categories are not mutually exclusive. For example, Teacher D asked the students, “Do you remember who we talked about last time when we had the music history session?” at the very beginning of Session D1, before she started her lecturing. A metaphorically-used word, *shang* (‘up’), was used in her utterance to refer to past (i.e., last) time. This question was checking students’ understanding or memory (sequence of checking understanding), and was also used to manage teaching content (sequence of agenda management).

In addition, there were cases when metaphorically-used word segments were located in a teaching sequence which was included in a bigger sequence—what Cameron (2003) called ‘embedding’. For example, Teacher E stopped her lecture on

Schubert's music when she noticed that some students were playing around and suddenly burst into laughter. She told them that "I'll ask you to get out (of the classroom) if I feel *nankan* ('ugly')" (E1, 1016) before she went back to continue her talk on Schubert. The metaphorically-used word segment, *nankan*, was used to comment on students' inappropriate behaviour (sequence of control), which was embedded in a lecture on Schubert (sequence of explication). Embedding impacts on analysis, as it can be difficult to calculate quantitatively the verbal metaphors in these interacting sequences (Cameron, *ibid.*).

#### *Verbal Metaphors in Agenda Management Sequences*

Agenda management is one of the two types of sequence (together with explanation sequences, discussed next) in which verbal metaphors were most frequently used across the observed sessions. They were found at the beginning of, at the end of, and during the sessions. As illustration, Teacher E began her lecture by saying that *women yao dao langmanyuepai* ('We're going to Romanticism') (E1, 280) and *women zhengshide jinru langmanpai* ('We're officially entering Romanticism') (E1, 298). The two utterances were separated by organising and arranging the students' seats (so that not too many of them shared one single textbook). She declared first, by using a metaphor, *dao*, that the topic of romanticism was a location along the route of the journey of lecturing (see section 7.4.5 for further discussion). Since the utterance 'We're going to Romanticism' was not followed directly by the lecturing, but by arranging the students' seats, Teacher E later repeated it using another metaphorically-used compound verb, *jinru*—this time, the verb was emphasised by an adverb, 'officially'—and talking about the topic of romanticism as a container rather than a location, allowing Teacher E and the students to enter it, rather than just stop by it.

It is worth noting that Teacher E's positions were shifting in this segment of the session. She used imperative sentences, "Give yours (your book) to the one behind you" (282), "You go and sit with Zhang Da-Ming (pseudonym)" (286), and "You go and sit on that chair" (291) when trying to arrange the students' seats, but aligned herself with the students in the two utterances when the metaphors, *dao* and *jinru*, were used. Such alignment, as found in the observed sessions, did not happen with just one teacher or in only one session. By doing this, teachers was inviting the students to explore together with her the unrevealed part of the lecture, and metaphors provided students with "access to learning opportunities" (see also Cameron, 2003, p. 129):

let's <i>kan</i> ('to <u>look at</u> ') the Japanese Colonial Period <sup>6</sup>	(A1, 605)
let's now <i>hui</i> ('to <u>return</u> ') to our Taiwanese early folk songs	(A2, 823)
(let's begin) from <i>tou</i> (' <u>head</u> ', i.e., 'the beginning')	(C1, 198)
let's <i>huiqu</i> ('to <u>go back</u> ') first	(F1, 1446)
we aren't going to have <i>chang</i> (' <u>long</u> ') rest today	(E3, 429)
(let's) <i>dao</i> here ('Let's end it here')	(B2, 901)
(we have) many pieces to <i>zou</i> ('to <u>walk</u> ', i.e., 'to practise')	
today	(E3, 84)

As also shown from the above examples, metaphors in agenda management sequences were used to describe both procedure and content of a lesson activity. Across the sessions, the procedure and content were talked about in terms of verbs such as *kan* ('to look at', i.e., 'to talk about, to pay attention to', as will be discussed in section 7.4.6) (A1, A2, A3, D1, D3), *hui* (*huiqu*, *huidao*) ('to return', i.e., 'to

revisit the topic’) (A1, A2, A3, E1, E2, F1), *tiao* (‘to jump’, i.e., ‘to skip (some topics or parts of a piece)’) (C1, C2, E3), *ting* or *zhanting* (‘to stop’ or ‘to pause’) (A3, E3), *jinru* or *jinlai* (‘to enter’ or ‘to come in’) (A3, C2, E1, E2, E3, F1), *zou* (‘to walk’) (E3, F1), and nouns such as *xia* or *xiamian* (‘down, bottom’, referring to future time) (A1, A3, B2, C1, C2, D1, D3, E1, E3, F1), *hou* or *houmian* (‘back’, also referring to future time) (A1, C1, C2, D1, D3, E1, E2, E3, F1), *qian* or *qianmian* (‘front’, referring to the past or a front or left part on sheet music) (A2, A3, B1, C1, C2, D1, E2, E3, F1), *tou* (‘head’, i.e., ‘the beginning parts’) (C1, C2, E3, F1), and *weiba* (‘tail’, i.e., ‘the ending parts’) (C2).

To sum up, verbal metaphors in agenda management sequences helped the students establish the content and procedure within and beyond the present sessions. The metaphors talked about organisation of individual episodes (“Let’s look at the Japanese Colonial Period”) and overall sessions (“We have many pieces to walk through today”) within a session. They also talked about the agenda of future sessions (“I won’t return again”) (E2, 234).

#### *Verbal Metaphors in Explanation Sequences*

Explanation is also an area where verbal metaphors were repeatedly used in the observed sessions. The data show that verbal metaphors were used to help the students at junior high school level understand music, especially by feeling, analysing, and talking about it. Verbal metaphors in explanation sequences seem further confirmation of the point made earlier in section 2.3.2, that language—as well as verbal metaphor—is essential in music teaching.

Both conventionalised and novel metaphors were used in explanation sequences. Novel ones were used to explain the quality of music: its sound, rhythm, or tonality, singers’ voices, and even music as a whole. They were used to make

comparisons such as between the major and minor keys, or between qualities of sound or voice, though as mentioned in section 7.2.1., these metaphorically-used word segments employed to talk about the same musical Topic were not necessarily from the same domain (the so-called ‘mixed metaphors’ referred to by Semino (2008, p.27)). Similar results were also found in Antovic (2009) when 60 11-year-old Serbian and Romani children were asked to compare and verbally describe pairs of musical stimuli they heard. Adjectives from two domains (e.g., ‘smaller and louder’, ‘deep and strong’) (ibid., p. 194) were used to talk about the same element of music. Nevertheless, the adjectives chosen or used by the children, or the words used by the teachers in the present study, seemed to be either closely related to speakers’ and listeners’ bodily experiences, or from domains familiar to the children or students. More discussion on this is included in section 7.4.9, and the issue of how these mixed verbal metaphors produced by teachers work together on students is a topic music educators in the future might find worthy of discussion.

In addition, the data suggest an individual use of novel metaphors, and some teachers (e.g., Teacher C) produced more data than others (e.g., Teacher E) when talking about the same Topics (e.g., tonality). This might be due to personal preference as regards pedagogical strategy. Teacher C, in her post-observation interview, pointed out how effective, evocative, and comprehensible in her experience it was to talk about music in terms of (particularly) food, and she hence purposely used various kinds of foods to describe different qualities of music—including tonality and rhythm—when possible. “I mean,” she said, “. . . it’s not such a difficult thing for me to describe things by making good use of language . . . . They [the students] like it [i.e., talking about music in terms of food]” (Interview Cb).

Two types of metaphor in explanation sequences were found: explication, where details of a topic were given, and exemplification, where the teachers verbally gave an example from (a) what had been covered previously in the same session or in other sessions, or (b) students' daily lives, including activities, objects, or general knowledge. Metaphors used in exemplification sequences showed great systematicity: they were mostly conventionalised metaphors and were used to talk about time (e.g., *shang*, 'up', i.e., temporal 'before', referring to when the examples took place) and structure (e.g., *limian*, 'inside', referring to where the examples were from):

for example, Chen Da, whom we talked  
about *shang xi* ('last time') (A1, 154) (exemplification)

I played a film for you at the beginning of  
the semester which *limian* ('inside')  
introduced Germany (A2, 78-79) (exemplification)

pay attention to the *xiantiao* ('line') (F1, 1783) (explication of  
how to perform  
music)

it's not necessarily *nianniande* ('sticky') (C1, 763) (explication of  
tonality)

- This one is also *ruanruande* ('soft') (C2, 1140) (explication of music)
- I'll *wangqian zuo* ('to walk forward') in this bar (E3, 1338) (explication of how to perform music)
- is the voice more *hou* ('thick') or more *xi* ('thin') or what? (A2, 795) (explication of music performer)
- melody of folk songs is *gudingde* ('fixed') (A1, 401) (explication of music structure)
- it's not very *e* ('disgusting') (C2, 1149) (explication of rhythm)
- Chulai* ('to come out'), Cello! (E3, 1711) (explication of dynamics)
- it was a little bit *hong* ('red') a while ago (C2, 1488) (explication of popularity of the song)

To sum up, verbal metaphors used in explanation sequences were used to help students understand concepts relating to the structure and interpretation of music. Vehicles of these metaphors, whether from the same domain or not, whether conventionalised or novel, were in all cases an extension of the interaction between human bodies and the physical environment, familiar to the students, and/or less abstract than the concept of musical elements.

*Verbal Metaphors in Checking Understanding Sequences*

Verbal metaphors were used by the teachers to check students' understanding, and they were used in both open questions and closed questions, which could be answered with either a single word or a short phrase. More verbal metaphors were found in closed questions than in open ones, due to the greater number of closed questions produced over the sessions, though verbal metaphors were used in both types of question:

In which *duan* ('sections') are we at now? (A2, 744, 746)

which note are the ornaments *zhuang* ('to ornament')? (F1, 467-468)

this one doesn't sound *nianniande* ('sticky'), right? (C1, 1019)

which one do you think is *liang* ('bright')? Which one *an* ('dark')? (C1, 581-582)

can you understand what is sung *limian* ('inside') the music? (A2, 415)

do you have *hen dou* ('a lot') (volume)? (F1, 2308-2309)

*kan* ('to look at') her voice. How does it sound? (A2, 787-788)

(open question)

what's *zui da* ('the biggest') characteristic of (E1, 305)

Romanticism? (open question)

In general, four functions of the verbal metaphors used in checking understanding in the sessions were apparent: (a) to check students' understanding of what had been covered by the same teacher (or other teachers), or students' background knowledge, (b) to help students improve their performance, (c) to create and provide students with opportunities to learn to appreciate and talk about music, and (d) to help teachers decide what and how much to cover next.

#### *Verbal Metaphors in Control Sequences*

Four out of the six teachers had to repetitively use control sequences to keep the class in order. Metaphors were especially abundant when they talked to, commented on, or 'warned' a specific student. The metaphors in control sequences were often used in a joking manner of speaking, and were often followed by other students' laughter. The metaphors provided the teachers with an alternative to giving students direct orders and offered a way of controlling the class in a less direct way.

don't you have *xin* ('heart') to have your demerit points removed? (i.e., 'don't you have any intention of having your demerit points removed?') (A3, 525)

are you *kan dianying* ('watching a film', i.e., being too relaxed (D1, 692)  
and not serious enough about the lecture)?

I'll make you not able to laugh *chulai* ('out of')(your body) if  
you keep laughing (E3, 166)

Metaphors used in these sequences were at times retained, reused, and developed later in the same session. The Vehicle, *nankan* ('ugly'), used by Teacher E is one such example. As mentioned earlier in this section, Teacher E noticed some students were making a noise when she was lecturing on Schubert's music: "You boys! I'll ask you to get out of the classroom if you start to play around" (E1, 1007). One of the boys asked Teacher E to specify which boys she was talking about, and it was then that the teacher said to him, "I'll ask you to go out if I feel *nankan* ('ugly')" (E1, 1016). At this point, the boy stopped carrying on the conversation and the lecture continued. This was the first time the Vehicle *nankan* was used in the session. However, the class seemed to go out of control again, when the same boy and others started to make fun of another student's question. The teacher tried to keep them under control by repeatedly saying, 'OK' and *xu* ('to shoo'), but it had no effect. She turned to the same boy and told him that "I've told you . . . if you keep influencing the *meiguan* ('beauty') of the *huamian* ('presentation of a picture of film'), I'll ask you to get out" (E1, 1079-1981). The other students burst into laughter, and one of them asked, "Teacher, what about the *meiguan* of the sound or voice?" (E1, 1085). Teacher E replied by saying, "Please cooperate," twice and returned to her lecturing on Schubert's lieder.

The Vehicles *meiguan* and *huamian* are related to the earlier Vehicle *nankan* and in this example, students' performance in the session was talked about by Teacher E in terms of the visual presentation of a piece of art.<sup>7</sup> The metaphor was picked up and reused by Teacher E to the same student, and it was echoed and further developed by another student who applied it to the topic of the sound or voice, since the lecture had been interrupted by the particular student's inappropriate speaking since Teacher E's lecture began. The example segment led Teacher E's lecture back to the topic. This 'echoing' of metaphor (see Low, Littlemore, & Koester, 2008, p. 446) demonstrates again the dynamic nature and the reciprocal use of metaphor in classroom discourse, as was suggested earlier in sections 2.3.1 and 6.3.3. That is, the metaphoricity of a verbal metaphor is not fixed and can develop not only out of the dynamic nature of the discourse but also out of the interaction between those who contribute to the discourse.

#### *Verbal Metaphors in Feedback Sequences*

Verbal metaphors were found to be used in two main types of feedback: evaluative and strategic. Evaluative feedback was a teacher's value judgement and assessment of students' performance or behaviour, whereas advice or suggestions on how to improve students' performance and behaviour were categorised as strategic feedback. For example, "The brass does not end it clean" (F1, 1239) was evaluative feedback (rating a particular performance), whereas "I want clean sound" (E3, 555) was strategic feedback (suggesting how to improve the quality of the sound).

Metaphors were used in strategic feedback sequences to suggest how to improve different aspects of music, including quality of sound, pitch, duration of notes, dynamics, timing, and interpretation of music:

I want *ganjing* ('clean') sound (E3, 555)

you *di* ('to low') a little bit (F1, 133)

(play it) *changyidian* ('a little bit longer') (E3, 1877)

*chulai* ('to come out,' i.e., 'to play') in the latter half of the  
second beat (F1, 2460)

(you have to) *wang qian zou* ('walk forward')! (F1, 2268)

Metaphors occurred more frequently in sequences of evaluative feedback than in those of strategic feedback. They were used by the teachers to give both positive and negative feedback, and more negative responses were produced. They were regularly surrounded by hedging words such as *youdian* ('a little bit'), *butai* ('not very'), and *hen baoqian* ('very sorry') and functioned as "mitigating threats to face" (Cameron, 2003, p. 135), or they were, more frequently, used alone or preceded by words which emphasised further how bad the performance was, for example, *tai* ('too'), and *hao* ('very'), to give direct negative feedback:

(notes of) *si si la* are *zangxixide* ('dirty') (C1, 180)

you *tiao* ('jump') wrong (E3, 784)

the *weiba* ('tail', i.e., 'ending part') is too *chang* ('long') (E1, 1094)

It's a *meili de meng* ('beautiful dream'), not *emeng*  
('nightmare') (E3, 1810)

it (i.e., the melody students performed) is certainly not very  
*youmei* ('beautiful') (F1, 2359)

you're being too *ruan* ('soft') (E3, 1557)

the final notes are very *exin* ('disgusting') (F1, 907)

### 7.2.5 Implicit Metaphors and Multiword Expressions

Implicit metaphors and multiword expressions were used to describe music (A3, E2), and to give strategic feedback (F1). Implicit metaphors could consist of word segments from as short as one word to being distributed across several intonation units. In total, there were six multiword metaphors which were all implicit metaphors (Metaphors with the same Vehicle and Topic domains used by one teacher in one session were counted as one).

An example of a single word metaphor without an explicit Topic domain was *poun* (C1, 308), a Taiwanese noun meaning kitchen waste and traditionally referring to pig's food. It was used by Teacher C and her students to describe the music they made by playing the recorder together, after Teacher C pointed out that "about one third of the class did not know what they were doing" (C1, 298). *Poun* is a mixture of known and unknown materials, and was metaphorically used to refer to the discord produced by the students. It functioned as a comment on the students' recorder playing.

Teacher A used a series of multiword expressions to describe music when she was playing the violin piece to the class in Session A3. “Suddenly a thundershower came. . . . (We have to) hurry—hurry to seek shelter from the rain,” (A3, 875-880) she said. The music accompanying her speech was a staccato passage consisting of fast moving short notes. As the music went on and changed to become smooth and calm, she said that “Thundershowers came and went quickly. . . . The rain stopped.” (A3, 888-890) The utterances here were implicit metaphors because they contextually referred to the length, rhythm, and effects of musical notes. This multiword metaphor was distributed as two main clusters across nine intonation units (A3, 875-880 and 888-890).

Similarly, Teacher F used a series of multiword expressions when talking to the students about a musical passage by Bizet, composed of five repeated notes. “I say, I’m going to hit you,” said Teacher F, “And if I don’t raise my voice when I say again that I’m going to hit you, who do you think will believe that I’m going to hit him or her?” (F1, 2228-2230) The repeated sentence of “I’m going to hit you” in Teacher F’s utterance referred to the repeated note, ‘do,’ in the music, and when saying (i.e., playing) it for the second time, the students had to raise their voices (i.e., increase the volume). The metaphorically-used expressions functioned as strategic feedback, (implicitly) telling the students how to interpret and play the repeated musical notes. This metaphor will be further discussed in section 7.7.5.

Previous studies suggest that multiword metaphors tend to occur in fixed or semi-fixed linguistic forms, such as idioms (Deignan, 2005; Semino, 2008). However, this seemed not to be the case in the present study. No fixed or semi-fixed multiword metaphorical expressions were found. All the six novel multiword metaphors were used to talk about music, including the meaning of the musical

sentences, the sound of the music, the tempo, and how a musical segment should be interpreted. They were all used along with the music played by the teachers, or in the ensemble sessions when the teachers were trying to improve the students' performance. These multiword expressions were descriptive, and they verbally connected the similarities between musical sounds and students' everyday life experiences and images. Such descriptive metaphors, as suggested by previous studies (Barten, 1992a, 1992b; Nikitina, 2004; Tait, 1992; Woody, 2002), are a requirement in music education—especially in music performance—to help students enhance their musical experience.

### **7.3 Use of Gestures and Metaphoric Gestures**

#### **7.3.1 Overall Results**

Teacher A wore a headset microphone in the three sessions, and although it allowed her to move her hands freely, she seemed used to holding it in one (usually the right) hand. Her gestures thus tended to be made with one (usually the left) hand only. Compared with the other teachers in the study, in general, Teacher A used her hands fairly often, but the meaning did not always contextually match the semantic meanings of the accompanying speech. For example, she often held up and put down the CDs, handouts, and grading sheets, and kept turning over the pages of her handout folder while talking (especially when criticising students' behaviour and trying to keep the class in order). She also beat the air either in time with her speech rhythm, during the pause before she came up with the proper words, or when the important words were uttered using a higher tone. For example, in Session A1 Teacher A described the origins of folk songs, and explained how the songs might be started by a person who came up with a melody and combined it with the trifles in

his everyday life. “He might sing that . . . well . . . his children . . . had made him angry . . . well . . . had stolen his money . . . or, well . . . possibly he had had a fight with his wife, or had been abandoned by some one else, well, or he had won the lottery . . . things like that,” giving a list of examples. Every time an example was given, Teacher A’s left hand formed a fist, or a loose palm facing down, and beat once on a keyboard on which she had rested her left hand. Generally speaking, Teacher A’s gestures were consecutive without clear shapes or phases.

Teacher B also used a microphone. In the two sessions, she held the microphone in one (usually the left) hand, and a remote control (for the CD player or projector) in the other. Her two hands were both occupied like this for most of the time in Session B2. Teacher B’s gestures were mostly semantically related to her speech, perhaps partly because she believed that too many gestures not only made for a bad presentation but also distracted the students (stated later in Interview Bb).

Like Teacher B, Teacher C held a microphone in one (usually her right) hand in the two sessions. Her gesture phases were clear cut, though fairly frequently she used her hands to touch her ears, hair, necklace, and other parts of her body. The variety of different types of verbal metaphor (Vehicle domains of brightness, emotions, and food) she used in Session C1 seemed to increase also her use of metaphoric gestures, which she employed more than in her other session (see Table 7.5 in section 7.3.2).

Teacher D did not use a microphone, but she made frequent use of the blackboard. In fact, in the two observed sessions, she wrote almost every key point in each utterance on the board. It seemed that writing on the board and pointing to what she had written helped her develop and organise her lecture (later confirmed in Interview Db). Thus, although such pointing was not counted, as it was deictic (see

sections 4.4.3 and 6.3.2), the strong impression was that gestures of pointing (to the words on the board) occurred much more often than other types of gesture in her sessions. In addition, she performed quite a lot of gestures which were beyond the scope of the present study, such as touching her face or hair, cleaning the chalk dust off herself, cleaning the blackboard, and adjusting the music stand (which she used as a platform on which to place the handouts and CDs).

In her three sessions, Teacher E held a microphone, usually in her right hand in her music appreciation sessions, and in her left hand in the orchestra ensemble session (with a baton in her right hand). Her left hand was placed behind her back and only six gestures were made in the first 12 minutes of her lecturing in Session E1. The use of gesture became increasingly more and more frequent after she referred to the textbook, using her left hand to hold the book up and reading a couple of lines. Her use of gestures was more evenly distributed in Session E2.

Both Teachers E and F held a baton in their right hands during the ensemble sessions. When they were conducting the music, two types of gesture accompanied the speech: conducting gestures and gestures semantically related to the referents in the speech. The conducting gestures involved counting beats, indicating dynamics, or cueing. They were usually used along with the performed music, and accompanied no speech. Most of the time, they were emblems to both the conductor/teacher and the orchestra/students. They alone, without language, carried more independent 'semantic' meanings than gesticulations did (see section 2.2.2), and were accordingly excluded from the data.

One thing worth noting—which might be specific to musical discourse—was that all six teachers hummed or sang 'do re mi' in their sessions, especially when teaching recorder playing and in the two orchestra ensemble sessions. They hummed

or sang when comparing different melodies (A3, B1), demonstrating the relations between melodies and lyrics (B1), locating a specific melody (C1, C2, E3, F1), directing students' music making (C1, C2, E3, F1), imitating and commenting on students' interpretation of the melody (C1, C2), or reminding the class of a specific piece (A3, C1, D3). Gestures were used along with the humming or singing; they involved movement between different positions in space to present the pitch (e.g., A3, 539; B1, 462-466), volume (e.g., F1, 2316), or moving directions (e.g., F1, 2255) of the music. Although these gestures were not particularly semantically relevant to their accompanying speech, the positions, size, and trajectory of the hands were metaphorically used to present certain aspects of music.

Furthermore, it seemed that, based on the observed sessions, systematicity existed in the metaphoric gestures; for example, GOOD IS UP (A1, B2, E2, E3, F1); MAJOR KEY IS BIG, HIGH AND OUTWARD (MINOR KEY IS SMALL, LOW AND INWARD) (C1, E2); PITCH IS HEIGHT IN SPACE (A2, A3, B1, E3, F1); BODY OR COUNTRY OR MUSIC IS A CONTAINER (A1, A2, B1, D3, E1, E2); TIME OR MUSIC PASSING IS MOVING HORIZONTALLY (left to right, right to left, forward) (A1, A2, A3, B2, C1, C2, D1, D3, E2, E3, F1); and TIME OR MUSIC PASSING IS MOVING VERTICALLY (up to down) (B1, B2, C1, D1, E1).

### **7.3.2 Number of Metaphoric Gestures**

In total, 509 metaphoric gestures were identified across the 13 sessions, and 166 of them accompanied verbal metaphors. The percentage of metaphoric gestures accompanying verbal metaphors was thus 33%. Details of the number of metaphoric gestures in each session, and of those accompanying verbal metaphors are presented below in Table 7.5.

Table 7.5

*Main Study: Number of Metaphoric Gestures, and Number of Metaphoric Gestures Accompanying Verbal Metaphors in Each Session*

<i>Session</i>	<i>Number of Metaphoric Gestures</i>	<i>Number of Metaphoric Gestures Accompanying Verbal Metaphors</i>	<i>Percentage of Metaphoric Gestures Accompanying Verbal Metaphors (%)</i>
A1	17	4	24
A2	27	14	52
A3	8	1	13
B1	43	10	23
B2	38	8	21
C1	78	31	40
C2	40	11	28
D1	9	2	22
D3	31	7	23
E1	19	3	16
E2	60	23	38
E3	59	29	49
F1	80	23	29
Total	509	166	33

All the teachers used metaphoric gestures; however it is clear from the above table that the number of metaphoric gestures used by each teacher differed from as many as 78 (C1) and 80 (F1), to as few as 8 (A3) and 9 (D1). Although the two

ensemble sessions, E3 and F1, lasted twice as long as the other sessions, the metaphoric gestures used in these sessions were not double the number used in the other sessions. Furthermore, the same teacher's use of metaphoric gestures in different sessions also differed greatly (see Figure 7.2 below):

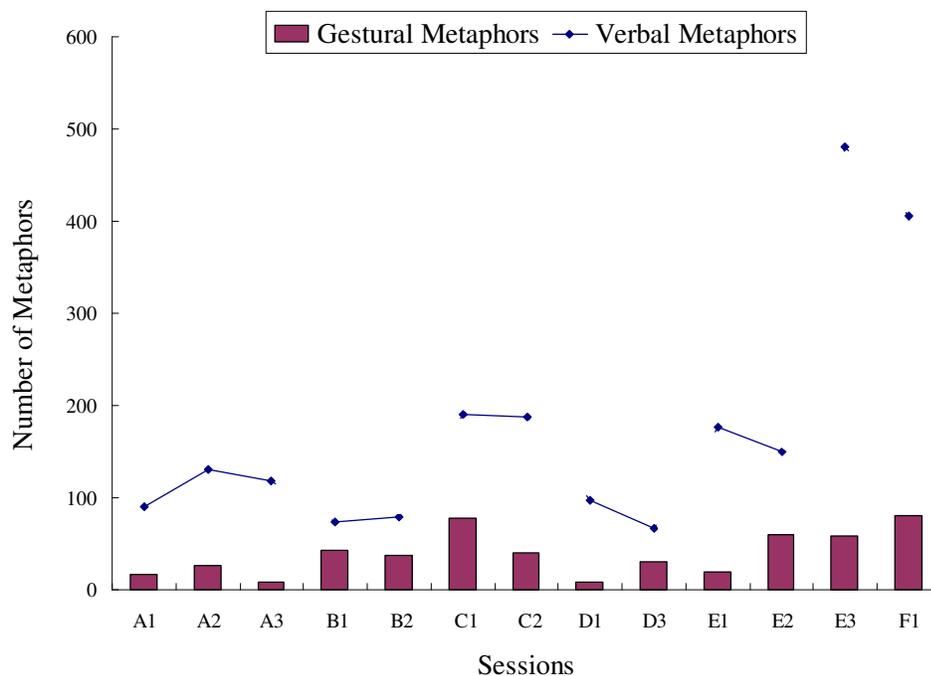


Figure 7.2. Main study: Number of metaphoric gestures in each session.

As shown in Figure 7.2, there seems no consistency in terms of the number of metaphoric gestures for each teacher, although the nature and teaching topics of different sessions by the same teacher were similar (see Table 7.1). Teacher B was the only one who produced similar numbers of metaphoric gestures in her two sessions. Furthermore, comparing the relations between the number of metaphoric gestures and the number of verbal metaphors in each session, it seems that no consistency existed there either. This suggests the independence of verbal metaphors and metaphoric gestures: the occurrence of one does not necessarily guarantee the

occurrence of the other, an issue which will be revisited when the relations between the two are further discussed in section 7.5.

### **7.3.3 Extensive Use of Metaphoric Gestures**

Holding microphones or other equipment seemed not to prevent the teachers (i.e., Teachers A, B, C, and E, as mentioned in section 7.3.1) from producing metaphoric gestures. The shapes of these gestures were nevertheless constrained. The metaphoric gestures were performed by marking a trajectory, making a change in position, or making better use of the free hand. For example, when differentiating the types of Gregorian chant in Session B1, with her left hand holding a microphone and the right hand holding a remote control for the CD player, Teacher B extended her right index finger and changed its height to match changes in the pitches she sang. A metaphoric gesture was thus used, in spite of the hands' being occupied. The high and low pitches were still visualised.

### **7.3.4 Differences in Frequency Across Teachers and Sessions**

Not only did the frequency with which gestures were used differ from teacher to teacher (as discussed in section 7.3.2), but also the frequency with which any one teacher used gesture might vary across parts of a session. For example, Teacher E, as mentioned earlier, used almost no gestures until she held up a book, and after such a 'trigger' her use of gestures continued until the end of the session. Likewise, Teacher A's use of metaphor suddenly dropped to almost zero when she realised that there was one more song for her to play and she almost ran out of time in the last four minutes towards the end of Session A1. Specific reasons for these differences in frequency and what they conveyed to the students, though beyond the scope of the present study, might be a future topic to investigate.

### 7.3.5 Multifaceted Metaphoric Gestures

In the sessions observed, there were cases where the shapes of metaphoric gestures and their trajectory presented different images. For example, when Teacher B introduced different melodic types of Gregorian chant in Session B1, she played the excerpts she had chosen, explained them, and reminded the students to pay specific attention to their differences. When explaining, she imitated and repeated the melodies, singing what they heard on the CD. She used gesture to show how the melody and the syllables of the lyrics were related when she sang “a a a a a ei-son” (B1, 763). Her left hand changed its position in space according to the pitch, and the time points of changing corresponded to the time points when the syllables of the lyrics changed. The gesture successfully presented two ideas which were not conveyed in the speech, and the students were expected to perceive both the speech and its accompanying metaphoric gesture as a whole in order to understand what Teacher B was trying to emphasise.

### 7.3.6 Flexibility in the Presentation of Metaphoric Gestures

There seemed no fixed forms for metaphoric gestures, and the variety was shown not only across teachers but also across sessions taught by one single teacher. For example, the metaphor of MUSIC OR TIME IS A MOVING OBJECT was manifested by all six teachers in the observed sessions. It was manifested using the right or the left hand, a single finger or the palm, moving either from the left to the right (Teachers A, C, E, and F), the right to the left (Teachers A, C and E; all these gestures were made with the left hand), or up to down (Teachers B and D). For example, Teacher E moved her left palm from the right to the left, accompanying her utterance, “as you walk through<sup>8</sup> the music] again like this” in Session E2 (509).

Interestingly, she uttered a similar sentence in her orchestra ensemble session, “[Let’s **walk through** (the music) once]” but the accompanying gesture here was made with her right hand (with a baton), moving from her left to her right (E3, 250). In addition, in another session, she used two other gestures which separated her body space into upper left and lower right parts, with the former representing the past (where the gesture or time started moving) and the latter, the future (where the gesture or time ended) (E1, 1033). The above examples demonstrate the flexibility of the metaphoric gestures expressing motion and movement of music or time. However, irrespective of the variety of forms, directions, and positions which the metaphoric gestures took or moved in, no gestures moving from down to up were found in the data to manifest the same concept.

#### **7.4 Recurrent Verbal Metaphors**

As discussed in sections 2.1.1 and 2.1.2, metaphor is more than a rhetorical mechanism to both CMT and applied linguists. In CMT, metaphor is considered to be fundamental and conceptual, and works in the realm of thinking. Applied linguists take a similar view, though they emphasise the dynamic and two-way interaction between language (linguistic metaphors) and thought (metaphor) in a context (e.g., Cameron & Deignan, 2006).

In my data, it was found that linguistic metaphors occurred recurrently and systematically. Following the steps of grouping (see section 6.4.3), recurrent verbal metaphors used by the six teachers across the 13 sessions were grouped into A is B formulations. It is worth noting that the grouped metaphors reflect, rather than the mapping between two domains in thinking, the systematicity between what was talked about (Topic) and what was used to do the talking (Vehicle) in the discourse.

The following systematic metaphors are not the only ones appearing in the data, and they might be grouped differently by other researchers. As an applied linguist and a researcher with an educational background, I selected the following systematic metaphors to show how certain qualities of music were usually described in the observed sessions; as a native Chinese speaker, I believed some of the metaphor groups to be linguistically and contextually specific.

The eight systematic verbal metaphors (c.f., systematic gestural metaphors grouped in section 7.3.1) presented below are: (a) MUSIC IS AN ENTITY, (b) MUSIC IS A CONTAINER, (c) PITCH IS HEIGHT IN SPACE, (d) PLAYING MUSIC IS WALKING ON A ROAD, (e) LECTURE DELIVERY IS A MOVING PROCESS, (f) PAYING ATTENTION TO X IS SEEING IT, (g) TIME PASSING IS AN ENTITY MOVING HORIZONTALLY, and (h) TIME PASSING IS AN ENTITY MOVING VERTICALLY DOWN. Each is discussed below.

#### 7.4.1 MUSIC IS AN ENTITY

The teachers talked about notes and musical sentences which constitute music in terms of entities. Teachers A, C, D, and E described music as an object which could be held, thrown and caught, and passed around.

(the song is) *chuan* ('to pass') and  
 sung one by one (A1, 148) (origins of folk  
 songs)

just like I *qu* ('to take') out some  
*duan* ('sections') (A2, 774) (structure of folk  
 songs)

You did *jiedao* ('to catch'), didn't  
you?

(C2, 326) (timing of  
playing the  
recorder)

*na zhezhong shengyin ne keyi chuan  
de bijiao yuan* ('then . . . this kind of  
voice can be passed further' )

(A2, 818-819) (voice of  
singers)

could you *gei* ('to give')<sup>9</sup> me a very  
*qingchu de* ('clear') accent?

(E3, 1586-1591) (instruction of  
the conductor)

The music as entity metaphor exists not only in Mandarin Chinese but also in other languages (e.g., English: see Sakadolskis, 2003). The entity metaphor is perhaps one of the most basic types of metaphor, making the invisible visible, and the abstract more concrete. In the same way that it allows an argument to be 'attacked', 'defended', 'won', or 'lost', the entity metaphor turns something as intangible as music into something physical and perceptible. Such a process, making it possible for the students to connect the abstract musical ideas with what is more concrete and familiar, is claimed to be important for facilitating learning (e.g., Rogoff, 1990).

What is discussed below can be considered as an extension of understanding and experiencing music in terms of an entity.

### 7.4.2 MUSIC IS A CONTAINER

Music was also described by all six teachers as a container with boundaries, which allowed listeners and music makers to go inside and outside it. It was also possible to place things in it.

let's jinru ('to enter') the second duan  
('section') (A3, 843) (listening to the  
music)

because you didn't know how long I was  
going to play the bridge therefore you jin  
bu lai ('couldn't come in') (C2, 321-323) (timing of  
playing the  
recorder with  
accompaniment)

*quanbu de ai dou fang zai ta de zuopin*  
*limian* ('all love is placed inside his  
music') (D3, 581) (Brahms and  
Clara  
Schumann)

Cello: chulai ('to come out')! (E3, 1711) (instruction from  
the conductor)

*ni hui zai na ge shubote de yinyue limian*

*ting ao sheme?* ('what will you hear

inside (of) Schubert's music?')

(E1, 1006) (Schubert and

his music)

The systematic metaphor MUSIC IS A CONTAINER not only occurs in Mandarin Chinese, but is also used by music teachers in English; for example, "what does it mean if we make harmony in music?" (Sakadolskis, 2003, p. 101). The preposition 'in' implies that music is a container with boundaries, and it contains the musical elements or allows teachers and students to enter (ibid.). Another example comes from the same music teacher, "Oops, am I going to be singing a solo if I come in here?" (ibid., p.103), talking about the timing of singing. This usage is similar to the second example above given by Teacher C in the present study, when she commented on the students' timing of playing the recorder with accompaniment. Music is thus talked about in different languages as a bounded space which music makers enter to produce sound collaboratively.

These examples given by music teachers speaking English and Mandarin Chinese suggest that music is, again, described to the students in terms of something concrete and tangible. This is further echoed by the shared idea among the teachers in my data, who believed that the concrete is easier to get across to the students at junior high school level than the abstract (Interviews Cb, Eb, Fb).

### 7.4.3 PITCH IS HEIGHT IN SPACE

Empirical studies (e.g., Antovic, 2009; Sakadolskis, 2003) have shown how pitch is described (conventionally by trained musicians, including teachers) in terms of height in space in languages such as English, Serbian, and Romani. In the present study, similar examples were found and pitch was described by teachers A, E, and F in terms of spatial verticality: *gao* ('high') and *di* ('low'). The systematicity of this group of recurrent metaphors also suggests that music is a moving entity, and it moves vertically:

the clarinet is *bijiao gao* ('higher') (F1, 162)

*ta yong de diao bijiao gao* ('it uses a higher tone') (A2, 760)

*ta chang de bijiao di* ('he sang in a lower pitch') (A3, 579)

did you keep (walking) *xiaqu* ('down') without noticing the repeat sign? (E3, 630)

*Xiaqu, zou xiaqu* ('down, walk down', i.e., 'let's keep playing') (E3, 1239-1240)

As Lakoff and Johnson (2003) argue, such verticality is commonly used because of the spatial experience of bodies standing erect: "Almost every movement we make involves a motor program that either changes our up-down orientation, maintains it, presupposes it, or takes it into account in some way" (p. 56). Such

spatial concepts “are concepts that we live by in the most fundamental way” (p. 57): for example, the metaphors of MORE IS UP and GOOD IS UP in Mandarin Chinese (Su, 2005). Studies conducted outside the field of linguistics further suggest that the relationship between pitch and height is not only linguistic but also neurological and conceptual (Casasanto, Phillips & Boroditsky, 2003; Zatorre, Mondor & Evans, 1999).

Pitch, however, is not always described as verticality. It has been represented as age; for example, the Suyá of the Amazon basin believe that “the pitch of the voice becomes deeper with age” (as discussed in Zbikowski, 2002, p.68; Zbikowski, 1998) and size (Antovic, 2009). In Antovic’s comparative study, there were cases when non-musicians aged 11 talked about pitch in terms of size, though this was not true for the musicians (at the same age, from the same culture, but having previously had musical training). Hair (2000-2001) also points out the difficulty young children have in associating the concept of pitch with height in space, and one of the reasons might be because keyboards which are presented to the children are placed horizontally rather than vertically (Campbell & Scott-Kassner, 1995).

The above examples from different studies suggest that pitch is described and defined by various social and personal factors, including culture, language, and musical training and experience (see also Ashley, 2004; Eitan & Timmers, 2010). Nevertheless, the mixture of Vehicle domains, namely height in space, size, and age, are all, as discussed earlier, based on human beings’ bodily experiences, and/or how the body interacts with the environment.

In addition, the multiple senses of *gao* and *di* used by the teachers in the present study also raised issues of (a) how the students, especially those who had received little or no musical training, interpreted *gao* and *di* when their teacher used them to

describe pitch in the classrooms, and (b) how the teachers, who had ample musical training or experience, and were familiar with the conventionalised way of describing pitch in terms of verticality, could prevent the students from misinterpreting the two terms (if necessary). Previous studies in English suggest that, from music educators' point of view, the terms 'high' and 'low' can be confusing and less incorrectness may result if they are replaced by single-sense terms (e.g., Costa-Giomi & Descombes, 1996). However, from conceptual linguists' point of view, 'high' and 'low' "should not be viewed as a developmental deficiency", but "in the context of an ever-expanding understanding of verticality" (Sakadolskis, 2003, p. 130). The young students, hence, should be expected to understand the words better as their vocabulary expands. These issues, though beyond the scope of the present study, might be worth attention and further investigation in music education.

#### **7.4.4 PLAYING MUSIC IS WALKING ON A ROAD**

The systematic metaphor **PLAYING MUSIC IS WALKING ON A ROAD** in the present study was exclusively used by Teachers E and F in the two orchestra ensemble sessions. The teacher was walking along with the students, either as a leader or side by side with them. The sheet music was the map which directed the travellers (i.e., instrument players), and the notations were traffic signs. In addition, musical tempo was the walking speed, and omitting a section was jumping or leaping steps. The underlying structure of a journey with departure point, path, and destination in this metaphor corresponded to what Saslaw (1996) states as the pervasive 'source-path-goal schema' in music theory. The goal-oriented walking also indicated the movement of music, which will be further discussed in section 7.4.9.

- (let's) quickly zou ('to walk through') once (E3, 241)
- the cello zou ('to walk') first (F1, 318)
- ni yao genzhe yuanhuaxian zou* ('you have to walk with  
the slur') (F1, 642)
- We're not zai ('at') different defang ('places') (of the  
music), are we? (E3, 251)
- Nimen zhidao wo zai nali ma?* ('Do you know where I  
am?') (E1, 613)
- Changhao ni chui dao nali qu le?* ('Where have you been,  
Trombone?') (F1, 1881)
- houmian yao tiao coda* ('jump to the coda later') (E1, 803)
- The brass: genshanglai ('to follow up')! (F1, 1986-1987)

During the ensemble sessions, in theory and when being observed, the teachers were making music *together* with the students when they told the students how to deal with certain musical sentences, and where to start and stop playing. As Teacher E stated, when asked to talk about the differences between teaching in ensemble and general music sessions: "Ensemble is performing, rather than unidirectional transfer

of knowledge” (Interview Eb). The relations between the teachers and students—as conductors and other members of an orchestra—were therefore considered, as suggested by Teacher E, as more equal in ensemble sessions than in the other general music sessions. Compared with the ensemble sessions, the pieces played in the recorder playing sections in the general music sessions were shorter in length, and most of the time, more basic instruction in techniques (such as correcting the students’ fingering and teaching how to control the breathing) was given. This contrast is reflected in the metaphors which the teachers used, and it may also partly explain why this group of metaphors was exclusively used in the orchestra ensemble sessions.

#### 7.4.5 LECTURE DELIVERY IS A MOVING PROCESS

To judge by their verbal metaphors, five (A, C, D, E, and F) of the six teachers seemed to manage the procedure of lecturing as if travelling with the students. The underlying structure of a journey with departure point, path, and destination, which was discussed in the previous section, seemed again to be applied here. Lecture delivery became a journey where the teachers and the students together continued moving (forwards or downwards). The topics were places along the trip.

*xianzai* (‘now’) it’s already the

Romantic Period

(D1, 118) (reminding the

students of the

current topic)

- let's *hui dao* ('to go back to') the  
(topic of) folk songs in early  
Taiwan (A2, 823) (returning to an  
earlier topic)
- I'm not *huilai* ('to come back') (E2, 234) (reminding the  
class that the same  
topic will not be  
covered again)
- dier yuezhang, xiaqu* ('(let's) go  
down to the second movement') (F1, 1978-1979) (change of topics)
- jiexialai kan lisite de*  
*jiaoxiangshi . . . ranhou zai xialai*  
*kan zhe shou manfeisite . . .* ('(let's)  
go down and look at Liszt's  
symphonic poems . . . then go down  
further to look at Mephisto  
Waltz . . . ') (D1, 469-479) (change of topics)
- Dao zhebian ba!* ('(Let's be) up to  
here!') (B2, 901) (indicating the end  
of the session)

In this group of metaphors, teachers seemed to align themselves once more with the students by explicitly and implicitly using ‘we’ as subjects. In the third example above, extracted from E2, when the teacher was talking about her own plan of not coming back, she seemed to assume that the students were following (or were with) her and therefore were not coming back. Students were thus, from the teachers’ perspectives, fellow travellers in the moving process.

In addition, the data show that at least two walking directions were involved in the lecture journey: horizontal (‘to go back’ and ‘coming back’) and vertical (‘going down’), which will be further discussed in sections 7.4.7, 7.4.8, and 7.4.9.

#### 7.4.6 PAYING ATTENTION TO X IS SEEING IT

*Kan* (‘to look’, ‘to see’) was widely used by all six teachers across the 13 sessions. However, the verb did not always refer to the action of turning eyes in a particular direction only (interestingly, there were cases when the object which was supposed to be ‘looked at’ was in fact invisible, such as ‘Look at recent politics—it’s awful!’ in English). The verb referred contextually to paying attention to, listening to, and/or considering.

*women kan dier duan o* (let’s look at the second section (of the piece)) (A3, 844)

*women kan rizhishiqi o* (let’s look at the Japanese Colonial Period) (A1, 605)

*lai kan . . . disan duan dengyu diyi duan . . . (come and look . . . the second section (of the song) is just like the first)* (A3, 899-901)

*jiexialai kan lisite de jiaoxiangshi* ('(let's) go down and look  
at Liszt's symphonic poems')

(D1, 469)

#### 7.4.7 TIME PASSING IS AN ENTITY MOVING HORIZONTALLY

Time was talked about in terms of a moving entity (e.g., “Stop guessing. Lantern Festival has passed!”<sup>10</sup>” said by Teacher E when she tried to stop her students from continuing giving her wrong answers). *Qian* or *qianmian* ('front') and *hou* or *houmian* ('behind'; 'back'; 'rear') were two nouns used repeatedly in the 13 sessions:

*yuekao qian yizhou* ('a week in the front of the monthly exam',  
i.e., 'a week before the monthly exam')

(E2, 64)

*si ge libai hou yao biaoyan* ('(we're) going to perform four weeks  
behind (the present)', i.e., '(we're) going to perform in four  
weeks')

(E3, 86)

In these examples, time was conceived of as a moving entity with its front parts facing the direction of its movement (Yu, 1998). *Qian(mian)* and *hou(mian)* are semantically close to 'before' and 'after' in English, which can be used to talk about both space and time. In Mandarin Chinese, these uses are conventional and might not be considered as metaphorical by native speakers (ibid.). When considering basic and contextual meanings of the two morphemes in order to decide if they were metaphorically used, I consulted the online *Concise Chinese Dictionary*; the first

meaning shown and the illustration along with the explanation of the two morphemes in this reference work suggest that the spatial sense of *qian(mian)* and *hou(mian)* is more basic than the temporal sense. In the illustration, a boy and a girl are standing on a road with their faces facing the reader or observer, and the girl's face is facing the boy's back. The character, *qian*, is written on the boy and *hou* is written on the girl. It was hence argued in the present study that, following MIP (Pragglejaz Group 2007), *qian(mian)* and *hou(mian)* were metaphorically used when being used to talk about time (see also Su, 2005; Yu, 1998).

Such a metaphor, in which the concept of time was talked about in terms of a moving entity with its front part facing the direction of its movement, was further applied when locating parts of music or sequences of the topics taught by the teachers. In these cases, music and a lecture were conceived of as the moving entity, and *qian(mian)* and *hou(mian)* were used to refer to parts or topics which occurred earlier or later in time:

*houmian buyao chui le, houmian gen qianmian yiyang*  
 ('forget about playing the rear (section); the rear (section) is  
 the same as the front (section)') (C1, 361-362)

*Diyi yuezhang houmian bushi yinggai dou hui you cadenza*  
*ma?* ('Shouldn't there be a cadenza at the back of the first  
 movement?') (D3, 257)

*wang qian kanyixia keja de zhege minyao* ('(let's) look  
 toward the front at the Hakka folk songs') (A2, 624)

The teachers also used *qian(mian)* and *hou(mian)* to locate places on a worksheet or sheet music, thereby applying the concept of three-dimensional space (the basic meaning) of *qian(mian)* and *hou(mian)* to describe the location of a two-dimensional space (the contextual meaning), in which ‘left’ and ‘right’ seemed work more precisely. One possible reason might have been the writing system orientation<sup>11</sup> applied in these worksheets and sheet music—they are, as with English words, written from left to right, rather than right to left—and the left space is therefore seen as associated with the earlier time when compared with the right space, which is seen as later in time (see also Chatterjee, 2001; Yu, 1998):

*xie zai nage menghuanhengchunxiaodiao de houmian* (‘write behind Fantasy Heng-Chhun Melody’, i.e., ‘write at the right side of Fantasy Heng-Chhun Melody (on the worksheet)’) (A3, 291)

*C qian san xiaojie* (‘three bars in front of C’ or ‘three bars at the left side of C’ (on the sheet music)) (F1, 1317)

*fanfujihao qianmian* (‘in front of the repeat sign’, i.e., ‘at the left side of, or before, the repeat sign’) (E3, 792)

*Qian(mian)* and *hou(mian)* are not the only spatial terms used to talk about time in the present study. *Zhong* (‘in’; ‘among’), discussed earlier in section 7.2.3, is another example. *Shang* (‘up’) and *xia* (‘down’), another pair of antonyms which were used in a similar way, are discussed in the next section.

#### 7.4.8 TIME PASSING IS AN ENTITY MOVING VERTICALLY DOWN

In the sessions, time was also talked about using another pair of spatial terms: *shang(mian)* ('up'; 'over') and *xia(mian)* ('down'; 'below'). In this group of recurrent metaphors, the past or an earlier time was talked about by the teachers as *shang(mian)*, and the future as a later time, *xia(mian)*:

we talked about Liszt *shang ci* ('up' and 'time', i.e., 'last time') (D3, 85)

*xia libaier* ('down' and 'Tuesday', i.e., 'next Tuesday') (E2, 73)

*xiamian na yi shou nimen yiding ting guo* ('you must have heard the piece below', that is, 'you must have heard the next piece') (E2, 613-614)

Previous studies (e.g., Lakoff & Johnson, 1980) suggest that these uses of metaphor ("spatialisation metaphors" or "orientational metaphors") (ibid., p. 14) may be based on physical and cultural experience and may be universal (Grady, 1997). In line with this, Yu (1998) argued from a Chinese speaker's perspective that the conventional and metaphorical uses of *shang* and *xia* derive from bodily experiences and the relations between bodies and the external physical world (see also Su, 2005). That is, human beings stand with heads up and feet down because of their upright posture. In addition, 'up' is, in most cases, the direction in which human beings get up and leave bed to start a day; while 'down' is the direction in which human beings move and lie when they go to bed to end the day (ibid.).

However, such universal and vertical bodily experiences do not result in a situation where time is universally and extensively referred to in terms of ‘up’ and ‘down’. That is to say, different metaphorical expressions, or Vehicles, are selected and used in different languages or cultures. For example, similar examples in English do not exist as extensively as they do in Chinese (Alverson, 1994; Traugott, 1978, as cited in Yu, 1998, p. 112):

We’ll move the meeting up a week (not paired with *down*).

Down through the ages (but not ‘up through the past’)

Reasons for the above diversity in the selection of Vehicles in the two languages might also be partly, if not completely, related to the different directions of the writing systems of the two languages (i.e., English words are rarely written vertically, whereas Chinese characters standardly are). Studies in cognitive science have provided evidence and suggested how spatial cognition might be related to writing system orientations. For example, as suggested by Boroditsky (2001), the writing directions seem to play a role in people’s use of space—that is, right-handed English speakers tend to arrange events sequentially from the left and proceed towards to the right; such a tendency is less strong among Chinese and Taiwanese speakers (Chan & Bergen, 2005). Chinese speakers, furthermore, arrange pictures depicting a living thing’s growth process based on their temporal sequence from the top to the bottom, which no English speakers do (ibid.). These might explain why the universal bodily experience of ‘up’ and ‘down’ does not result in the universal use of *shang* and *xia* to talk about temporal sequence.

As discussed in section 4.4.5, the metaphor of TIME PASSING IS AN ENTITY MOVING VERTICALLY DOWN was also used by Wang in the pilot study; however, it was expressed by her gestures rather than her linguistic forms. Wang’s

left palm moved vertically from up to down when she uttered, “The Baroque comes after the Renaissance” (Extract 15 in chapter 4). Here in the main study, the verbal data show that such metaphors were also used verbally in music sessions; however, they further illustrated the collocational restrictions of the metaphorical expressions. One would not say in Chinese “the Baroque is at the bottom of the Renaissance,” as was indicated by the gestures. How metaphor is expressed is hence restricted, an issue which has been pointed out and emphasised by applied linguists (e.g., Cameron, 2003; Cameron & Low, 2004; Deignan, 2005; also see section 2.1.2).

### 7.4.9 Discussion

This section covers the main issues arising from the recurrent groups of verbal metaphors in the main study data, namely: (a) motion metaphors of music and time, (b) linkage between metaphor, gesture, music, and bodily experiences, (c) mixed verbal metaphors connecting music and bodily experiences, and (d) limitations of and bias in methods of analysis. Each is discussed below.

#### *Motion Metaphors of Music and Time*

The group of recurrent metaphors discussed in sections 7.4.3, 7.4.4, 7.4.5, 7.4.7, and 7.4.8 suggests that the movements of music and time are talked about either in terms of the movements of music and time, or in terms of the movements of the speakers or observers. Furthermore, in these cases, the speakers or observers are always facing the future (Yu, 1998; cf. Alverson, 1994).

The movement found in the data could be categorised as follows: (a) the moving of speakers or observers, (b) speakers or observers seeing music or time moving, and (c) speakers or observers making music move. The groups, PLAYING MUSIC IS WALKING ON A ROAD and LECTURE DELIVERY IS A MOVING PROCESS, belong to the first category, in which the movements of music and time were talked about as the walking of the teachers and students or music players. When Teacher C tried to remind the students to pay special attention to the note which they had just practised, by saying, “the ‘re’ is coming” (C1, 255), music itself was moving, so this is an example of the second category. It is worth noting that only five examples in the data fell into this category, which might be due to the school level of the observed sessions. As suggested by Johnson and Larson (2003), to experience musical movement by seeing it move requires the ability to view

things from another perspective, which might be beyond what the students can handle at the junior high school level (see also Sakadolskis, 2003).

There were, however, cases belonging to the third category, where the teachers described the movement of music in terms of making the music move. For example, Teacher E told her students that she would be “going forward, and coming back at bar 166” (E3, 1344-1345). Rather than saying that she would make any physical movement forward and backward, Teacher E was informing the students and inviting them to make the music flow with her, (conventionally) by increasing the volume and/or speeding up a little bit. She used similar expressions three times, and besides moving horizontally, later in the same session she said “to go up” (E3, 1687) when the pitch of the musical sentence being played was going up, to enforce the flow of music.

Skadolskis (2003) distinguished three types of movement experienced in music classrooms where English is the main language used: (a) by speakers or observers moving, (b) by seeing objects move, and (c) by objects having speakers or observers move. Examples of her third category were not found in the present study, and one of the possible reasons might be the metaphor identification policy used in the present study, which will be discussed later in this section. Music in this category, according to Sakadolskis, is “a force (such as wind, water or large objects) causing certain effects” (p. 146).

Unlike Sakadolskis who found in her data that a number of examples fell into the category in which music makes the observers move, the current study found that the teachers tended to describe how the observers make music move. The difference might be assumed to have resulted from the fact that higher level performing skills are required to make music move, since sixth-grade general students were the

participants in Sakadolskis' study, whereas, in the present study all the examples of making music move were found in the music-talented students' sessions at junior high school level. Nevertheless, another study is needed before any conclusion can be reached about whether the difference is due to the students' level, culture, or the linguistic form of the language used.

The directions of movement of music, based on the verbal data in the present study (see discussion in sections 7.4.3, 7.4.7, and 7.4.8), resembled those of time (i.e., vertically and horizontally), though (a) the horizontal directions of music were often more explicitly expressed in gesture than in speech (a point which will be illustrated later in Extracts 23 and 24), and (b) directions seemed more freely presented by gesture than in speech (i.e., moving from right to left, and backwards to forwards, were only used in gestures) (see also the discussion in section 7.3.6).

#### *Linkage Between Metaphor, Gesture, Music and Bodily Experiences*

Music is perceived in terms of spatial verticality as early as before one's language ability fully develops. In Custodero's (2005) study of US children, infants and toddlers between 25 and 34 months had started to make gestures relating to pitch in music which they had heard. Based on this, pedagogic approaches (e.g., Dalcroze Eurhythmics) to teach musical concepts by physical movement have been developed, and in these approaches, muscular movement plays "the role of intermediary between sounds and thought" and ultimately acts as "the direct medium of our feelings" (Jaques-Dalcroze, 1921/1980, p. 8). The body is not only a (and perhaps the most direct) mechanism to show how music is experienced, but can also be used as a teaching tool to teach music.

Similarly, in cognitive science, it has been emphasised, theoretically and empirically, that new knowledge develops and builds up on the basis of bodily or

experiential knowledge (Casasanto & Boroditsky, 2008; Lakoff & Johnson, 1980, 1999), and the notion of such embodiment is expressed in various forms including language (Lakoff & Johnson, 1980; Yu, 1998) and gesture (Hostetter & Alibali, 2008; McNeill, 2005). When talking about (or more generally communicating) music, one can therefore use metaphors, like the body, as the instrument which links music and thought (e.g., Cox, 2006; Larson, 2006). As shown in the present study, they were used in speech and in gesture, were used systematically, and heavily depended on the notion of embodiment. Metaphor (in speech and by gesture) thus seemed to serve as a linkage between bodily experience and music, and bodily experience and speech, as proposed by cognitive scientists (e.g., Roth & Lawless, 2002).

*Mixed Verbal Metaphors Connecting Music and Bodily Experiences*

The use of mixed metaphors was found at several points in the present study (see sections 7.2.1 and 7.2.4). This may be due to the fact that, when mapped on to the Topic domain, only part of the structure of knowledge of the Vehicle domain (i.e., the partial mapping involved in metaphor, as discussed in section 2.1.1) is activated, and since no Vehicles can express the Topic completely (otherwise the point of using metaphor would be lost), different Vehicles—preferably from different domains—are necessary. This might be the case with the present study.

The use of mixed metaphors leads to the question of what determines which Vehicles to use. Bodily experience which is familiar to the teachers and the students, as discussed earlier, appears to be one factor. Culture can also play a role, as shown in the vertical moving directions of time and music discussed in section 7.4.8 (see also Farnell, 1996; Gibbs, 1999; Kövecses, 2002). Music educators thus need to pay attention to their selection of metaphors in music instruction. After all, the mixture

of Vehicles and how they can be mapped onto the Topics have to be relevant to the students to make the linking of metaphor valid, and to make the learning experience meaningful (see also Juntunen & Hyvönen, 2004).

*Limitations of and Bias in Methods of Analysis*

Across the 13 sessions volume was also described by the teachers in the two-morpheme terms: *dasheng* and *xiaosheng*, referring to loud and quiet in volume. If the terms were segmented into *da* ('big') and *sheng* ('voice'), or *xiao* ('small') and *sheng* ('voice'), the words *da* and *xiao* would be coded as metaphorically used. However, following the policy of segmenting compound adjectives (see section 6.4.1), the terms *dasheng* and *xiaosheng* were treated as one-word segments instead of two, and the words *da* and *xiao* were not used individually in the present study to describe volume; hence they were coded as non-metaphorical. Thus, *dasheng* and *xiaosheng* might have been identified as metaphor if a different policy of word segmentation or metaphor identification method had been applied.

Another example related to the movement of music discussed earlier is the two-morpheme word, *dongren*, used by Teacher D to describe Liszt's musical sentences (D1, 379). The term, consisting of *dong* ('to move') and *ren* ('human beings'), was not divided, but treated as one unit—following the policy of 'compound verbs' developed in section 6.4.1. *Dongren* is taken (as one unit and) as an adjective in the *Concise Chinese Dictionary*, meaning "touching", "moving", or "attractive". The basic and contextual meanings of the term were thus not very different, and hence the adjective was not coded as metaphorical. However, had it been segmented into two morphemes, the morpheme *dong* might have been coded as metaphorical by other researchers, in which case it could have been seen as an

example of Sakadolskis' third category (i.e., movement of music is expressed by having music make speakers or observers move).

So far the systematicity of verbal metaphors in the present study (and issues related to methods of analysis) has been presented and discussed. However, as Johnson (1987) suggests that verbal metaphor is a result of a much more "complex web of connections in our experience" (p. 7), how music is perceived and talked about might be presented in other forms such as gestures.

## **7.5 Relations Between Metaphoric Gestures and the Accompanying Speech**

Relations between metaphoric gestures and the accompanying speech were the focus of the second stage of the data analysis. In this section, two issues are covered: time of occurrence of metaphoric gestures and the accompanying verbal referent (section 7.5.1), and how gestures together with speech manifest metaphor (section 7.5.2).

### **7.5.1 Time of Occurrence**

In some cases the metaphoric gestures used by the teachers accompanied verbal referents, and in other cases they did not. When they did, the timing of the occurrence of the metaphoric gestures and the verbal referents was not always the same. They could precede or come after the verbal referent. Of the 509 metaphoric gestures, 462 (91%) occurred simultaneously with a (metaphorically used or not) verbal referent, 37 (7%) preceded a verbal referent, 1 (0.1%) was preceded by a verbal referent, and 9 (2%) did not accompany a verbal referent. Each situation is discussed below.

*Metaphoric Gestures Accompanying the Verbal Referent*

The stroke of these metaphoric gestures occurred at the same time as the accompanying verbal referent was uttered. For example, Teacher C used her left open palm, fingers straight up, palm facing right, moving fast up and down in the air four times when she uttered the adjective, *yìng* ('hard') (C2, 1188). The repetitive short and sharp 'cutting' gesture strokes were metaphorically used to emphasise the equal and even beats of a song with a simple metre. The intensity of the gestures could be seen as corresponding to the hardness indicated by the verbal referent. This gesture was made at the same time as the adjective was uttered.

Another example comes from Session A2, when Teacher A explained where folk songs are formed. She listed verbally *yìqún rén* ('a group of people'), *cūnzhuāng* ('village'), and *nóngcūn* ('rural district') as some examples. Her left hand formed a bowl shape, palm facing up, and beat the air when she uttered "[inside a **village**], or [inside a **rural district**]" (A2, 118-119). Teacher B, additionally, drew a circle in the air with her right hand when she uttered "**all** the world is the same" (B1, 246). Teacher A's left hand appeared to depict a village and a rural district in terms of containers, while Teacher B's circle represented the concept of completeness. These metaphoric gestures were used at the same time as the verbal referent was uttered.

*Metaphoric Gestures Preceding the Verbal Referent*

Metaphoric gestures were also used before the verbal referents were uttered. For example, Teacher B's right hand formed a bowl, facing and moving upwards, at the end of her utterance, "Their reputation in classical music is very . . . ," before she uttered the adjective *lìhài* ('wonderful, good') (B2, 404). The upward (GOOD IS UP)

metaphoric gesture preceded its verbal referent. Additionally, in her ensemble session, Teacher E used a gesture when she commented on the cello's performance and tried to improve a sentence. She first said, "but it's not . . . ," and here her right arm started moving back and forth in straight lines to the right of her body, holding a baton horizontally, before she continued finishing the verbal sentence: ". . . just sawing loudly." The gesture explicitly depicted the action of sawing, and was metaphorically used to refer to bowing the cello without feeling, which Teacher E suggested the students should avoid. The metaphoric gesture of sawing or bowing preceded the verbal referent, sawing.

#### *Verbal Referents Preceding the Metaphoric Gestures*

The example of a verbal referent preceding the metaphoric gesture was used by Teacher C in her Session C1, when explaining what musical tonality was. She began by saying that "in fact [**all** music] you hear today, [is **almost**] tonal music" (C1, 439). She drew two large circles accompanying this utterance: one accompanied 'all' and the other, 'almost'. The circles, just like Teacher B's circle when she uttered "**all** the world" which is discussed earlier, were metaphoric in that the shape they depicted appeared to represent the concept of completeness. Such metaphors were used frequently by all six teachers across ten sessions (A1, A2, B1, C1, C2, D3, E1, E2, E3, F1). In this example, 'all', the referent, preceded the second metaphoric gesture.

#### *Metaphoric Gestures With No Accompanying Verbal Referent*

In some ways this was the most interesting category. Here, metaphoric gestures completed incomplete verbal utterances, which were never verbally finished (hence the verbal referent of the gesture did not exist). For example, the closed and inward

gestures had been used by Teacher C to metaphorically depict the gloomy minor key throughout Session C1, before another instance of the same metaphoric gesture was used at the end of an utterance, “But the minor key is more . . .” (C1, 647). Teacher C continued, saying, “It’s . . .”; the utterances remained incomplete and the verbal referent of the metaphoric gesture was absent until Teacher C verbally started a new sentence. It is worth noting that the occurrence time of the gesture makes it possible to treat it as a grammatical part of the sentence, a phenomenon called ‘mixed syntax’ by Slama-Cazacu (1976), or as a nonverbal ‘holophrase’ (Greenfield & Smith, 1976) which, being integrated with its verbal context, contributes to expression and communication.

Another group of examples occurred only in the two orchestra ensemble sessions. They arose when Teachers E and F tried to interrupt the students and stop the music. Teacher E used gestures made with an open and straight (usually left) palm, facing the students, and Teacher F drew circles in the air. These gestures accompanied various referents (further discussed in section 7.6.4), and were also used between utterances and where there were no verbal referents at all.<sup>12</sup>

### **7.5.2 Metaphor Manifestation by Speech and Gesture**

In this section, four types of relation between metaphoric gestures and the accompanying speech are discussed, namely (a) the same metaphor expressed in speech and gesture, (b) a metaphor expressed in gesture but not in the co-occurring speech, (c) different metaphors expressed in speech and gesture, and (d) metaphor expressed by gestures but never appearing in linguistic form in Mandarin Chinese. The categorisation corresponds to that in Cienki (1998; 2008) and Cienki and Müller (2008).

*The Same Metaphor Expressed in Speech and Gesture*

In this category, gestures and the accompanying speech express the same metaphor. Teacher F, for example, asked one of her students to “be higher” (F1, 208) when tuning the orchestra. Her right index finger pointed up, and beat twice upwards. Here the same metaphor was manifested by the gestures and the co-occurring speech: PITCH IS HEIGHT IN SPACE (discussed earlier in section 7.4.3). This metaphor was manifested—either by speech, or by gesture, or by both speech and gesture—widely by four teachers across five observed sessions (A2, A3, B1, E3, F1).

Another example occurred when Teacher E realised that the class had not remembered what music she had played the previous week. She commented by gestures accompanying speech, saying that the music she had played the previous week had gone in one ear and out the other (E2, 186-187):

## Extract 20

186 [這個 耳朵 聽]

[zhege **erduo** ting]

this **ear** hear

[Being heard by this **ear**] . . .

RH, open palm facing and moving toward left ear

187 [這個 耳朵 飛出去] 了

[zhege erduo **feichuqu**] le

this ear **fly** out (PRV)

(and) [**flew** out of this ear].

RH, index finger, moving from right ear to right back

Before Extract 20 started, Teacher E was holding a microphone in her right hand and a CD in her left. She paused verbally for less than one second when she moved the microphone to her left hand and emptied her right hand, which could be interpreted as a preparation phase for the following gesture unit. When she uttered the first *erduo* ('ear'), her right hand, palm facing the left ear, was moving toward the ear from the front. This was followed by stretching out her right index finger and drawing a line from her right ear to her right back when the second *erduo* was uttered. The direction (moving from her front to her left ear) of her first stroke might explain why she moved her right hand to her right back (instead of horizontally away sideways) in her second stroke. The two strokes were a symmetrical pair, and so were the two verbal referents (the two 'ears') they accompanied.

In Extract 20, the music which Teacher E played for the class was described—verbally and gesturally—as an object, and the body was a container which had the object in it or out of it. The orientation and direction of the two gesture strokes depicted the object and boundaries of the body. Reddy's (1979) conduit metaphor<sup>13</sup> was manifested by both the utterance and its accompanying gestures.

*A Metaphor Expressed in Gesture but Not in the Co-Occurring Speech*

Two main types of metaphoric gesture belonged to this category: pitch gestures accompanying the teachers' humming or singing (with literal lyrics or solfège syllables: do, re, mi, fa, sol, la, si or ti), and organising gestures which separated the exposition in speech into different parts of the body. The teachers' metaphoric gestures depicting pitches of the melody they were singing (see also section 7.6.1) are one of the examples of the pitch gestures. In these cases, the metaphor was expressed in gesture but not in the co-occurring speech.

In addition, Teacher D's organising gesture when she talked about the counterpoint in Brahms' violin concerto is another example of this category. She emphasised what the students were expected to pay attention to in the excerpt which she was playing (D3, 302-303):

Extract 21

302 [小提琴 跟 管弦樂

[xiaotiqin gen **guanxianyue**

violin and **orchestra**

[The violin and the **orchestra** . . .

LH and RH, palms facing body

303 管弦樂 不斷地 對位]

guanxianyue buduande **duiwei**]

orchestra continuously **counterpoint**

[(The violin) **counterpoints** the orchestra continuously]

LH and RH, palms facing body, fingertips of two hands touching each other

No metaphor was manifested by the co-occurring speech. Teacher D's two hands were used to present the different parts of her exposition, that is, the violin and the orchestra. However, the gesture was more than iconic. The main concept of 'counterpoint', namely the independent voices and the interdependent harmony between the voices, was metaphorically extended by the iconic representation made by the two hands. A comparison between music (conflict and harmony in linear music) and an entity or a moving object (left and right hands' fingertips and their horizontal movement) was involved in the gesture. Such organising metaphoric gestures will be revisited later in section 7.6.3.

*Different Metaphors Expressed in Speech and Gesture*

Gestures and the accompanying speech at times manifested different metaphors. The following is one of the examples, extracted from Session A1 (154):

## Extract 22

154 [就 像 我們 上 次] 上 的 那 個 陳 達

[jiu xiang women shang ci] shang de nage chenda

(PRT) like we up time talk (DE) that Chen Da

It's like Chen Da whom we talked about last time.

LH, loose fist, pointing to the back

Teacher A1 verbally expressed the concept of the past with a directional noun, *shang* ('up'), and her left hand represented the same concept of time with another direction: behind. The metaphor manifested by speech (THE PAST IS UP) differed from the metaphor manifested by the gesture (THE PAST IS BEHIND).

*Metaphor Expressed by Gestures but Never Appearing in Linguistic Form in Mandarin Chinese*

The following extract was taken from an orchestra ensemble session, when Teacher E differentiated the interpretations of two sections of a piece by comparing them (E3, 650).

## Extract 23

650 [] 跟 前面 那 個 輕 鬆 的 氣 氛 不 一 樣

[] gen qianmian nage qingsong de qifen buyiyang

[] and front that relax (DE) atmosphere different

[] It's different from the relaxing atmosphere in the front (i.e., 'before').

RH, loose palm waving to the left

The metaphor TIME PASSING IS AN ENTITY MOVING HORIZONTALLY (discussed earlier in section 7.4.7) was expressed in speech. The accompanying gesture preceded the verbal referent, *qianmian* ('front'); however, the concept of the past was gesturally presented by the space on the left. What the gesture expresses here (THE PAST IS THE LEFT) is not normally used in speech.

Teacher C provided a similar example when she played a piece in Session C1. She directed the students' attention to the end part of the piece by saying that *zhongdian shi hougian* ('the main point is the rear', meaning that 'the later section of the piece is more important') (C1, 831). Her right open palm, facing and moving to the right, accompanied the noun, *hougian* ('rear'). Again, the concept of the future is not normally described as the space on the right in speech in Mandarin Chinese.

### 7.5.3 Discussion

The results discussed in sections 7.5.1 and 7.5.2 further confirmed that metaphoric gestures intertwined with speech temporally and semantically (Kendon, 1980; Mayberry & Jaques, 2000; McNeill, 1992), based on: (a) the time at which metaphoric gestures occurred was not always the same as when the verbal referent was uttered, and (b) the metaphor which was manifested by gesture might be correlated to, or separated from, the metaphor (if there was one) which was manifested in speech (see also Cienki, 1998, 2008; Sweetser, 1998; Núñez & Sweetser, 2006).

The temporal and semantic examination of metaphor in speech and by gesture also allowed the dynamic use of metaphor to be taken into consideration (Müller, 2007). In this dynamicity, the multimodal metaphor developed in time, allowing the speakers or users and listeners or viewers to construct, receive, negotiate, and achieve the communicative goal (see also the discussion in sections 2.3.1 and 6.3.3). This may explain why the metaphor used by the teachers shifted between the two modalities of gesture and speech, resulting in the congruence and incongruence between the occurrence time of, and metaphor being manifested by, the two modalities.

## **7.6 Functions of Metaphoric Gestures and the Accompanying Speech**

Metaphoric gestures and the accompanying speech were analysed as a whole at Stage 3 of the data analysis. In the 13 observed sessions, six functions were established, namely (a) visualising abstract music, (b) making contrasts, (c) organising the lecture, (d) giving additional information, (e) metaphoric gestures completing an incomplete verbal utterance, and (f) giving feedback. These functions are not mutually exclusive, and a gesture and its accompanying speech could serve more than one function in the discourse. Each function is discussed below.

### **7.6.1 Visualising Abstract Music**

Metaphoric gestures worked together with speech to help visualise the abstract. For example, Teachers A, B, C, E, and F all used metaphoric gestures to visualise the pitch. The teachers either hummed or sang with lyrics or solfège syllables (do re mi, fa, sol, la, si or ti), and their hands—right open palm (F1, 971), left open palm (C1,

494), left half open palm (A3, 539; B1, 609), right index finger (A3, 588; F1, 962), left index finger (B1, 514; F1, 1029), right thumb and index finger (B1, 919), both open palms (F1, 1047-1048) or right hand with a conductor's baton (E3, 951; F1, 663)—moved at different heights to mark low and high pitches in the air.

The above illustrates that metaphoric gestures which visualised the pitch were made with the right or left (or both) hand(s), with various shapes ranging from half open palms, open palms, single and two fingers, to a hand with a baton. As mentioned in section 7.3.6., the forms of these metaphoric gestures were not fixed: different teachers might use the same hand with a similar shape, and the same teacher might use a different hand with a different shape to present pitch in terms of verticality in space in another context.

### 7.6.2 Making Contrasts

Metaphoric gestures used to make contrasts usually occurred in pairs. Thus, Teacher C had two gestures composed of similar shapes, but at different heights and with different sizes, accompanying the verbal adjectives *liang* and *an*, which were discussed in section 6.5.2. These gestures helped emphasise the contrast between the abstract referents in speech. Similarly, Teacher E conceptualised musical tonality in terms of size in Session E2 when she explained the structure of an art song<sup>14</sup> by Schubert (525-529):

Extract 24

525 你 有 沒 有 發 現

ni youmeiyou faxian

you (Q) discover

Did you notice . . .

526 他一開始 進來 的 [是 小調]

ta yikaishi jinlai de [shi **xiaodiao**]

he beginning enter (DE) is **minor**

that it [was in a **minor** key] when coming in,

LH thumb and index finger made a circle

527 但是

danshi

but

but

528 每一 段 的 中間

mei yi duan de zhongjian

every one section (DE) middle

in the middle of every part,

529 都會有 [轉到 大調 的 地方]

dou hui you [zhuan dao **dadiao** de defang]

all (CSC) have transfer at **major** (DE) place

there were [places when it transferred to a **major** key]?

LH loose palm, facing right, moving to the right

In the above example, Teacher E's left hand formed a small circle in the front of her neck, and as the utterance continued, the hand opened and turned into an open palm facing outwards. The size of the two gestures changed from small to big, and the direction of the gestures changed from inwards to outwards. The pair of gestures

thus emphasised the contrasts made verbally by the utterance, namely between the major key and the minor key. In addition, the left palm moving from left to right in Extract 24 somehow reflected the mobility of the melody, serving as another example of the multifaceted nature of metaphoric gestures.

### 7.6.3 Organising the Lecture

Organising gestures (termed as ‘discourse gestures’ by Müller’s classification, see the discussion in section 6.3.2) were used by all six teachers. One of the examples was Teacher D’s two hands which served to separate the referents of ‘violin’ and ‘orchestra’ and metaphorically represented the main concept of counterpoint, as discussed earlier in Extract 21 in section 7.5.2. Each hand was used to represent a concept in this example. Teacher E, similarly, played some art songs from Schubert’s *Winterreise* in Session E2 when she talked about Lieder. She told the students to pay attention to the melody, and they could check if what they felt from the melody corresponded to the lyrics in German later, when she gave them the Chinese translation. At the same time, her left dorsal finger joints bumped against the finger joints of her right hand which was holding a microphone (E2, 1020-1021). Here the left and right hands were representing melody and lyrics, while the bumping indicated the concept of correspondence between them. The two hands were used to separate the different ideas referred to in the co-occurring speech.

In some cases, more forms of the gestures were involved; for example, the hand and shapes might remain the same but be placed on different parts of the body to distinguish parts of an exposition: Teacher C used her right index and middle fingers to beat the air three times in front of her chest, to the left, in the middle, and to the right, accompanying the utterance, ‘**two beats, three beats, and four beats**’ when

she explained beats and tempo (C2, 748). Alternatively, the hands might not move in any particular direction but point to different parts of the body. Teacher E's left index finger pointed to her upper left, left, and lower left sides when she said, “**Mozart** composed, **Beethoven** composed, but no one was like **him** [i.e., Schubert]” (E1, 1032). The moving direction of these gestures somehow metaphorically represented the moving directions of time (i.e., horizontally from left to right or vice versa, or vertically from up to down, but never from down to up). The above examples show how metaphoric gestures worked together with the accompanying speech to structure and organise the music instruction.

Not all such organising gestures were used for explication; they were also used as part of feedback. For example, Teacher E asked the class what they felt about the melody she played, and when the students started to give her their answers, she raised her left hand with the palm facing down, and started to bend her thumb, index, middle, and ring fingers when she repeated the students' answers and asked, “What else?” (E2, 462-468). The different fingers in these consecutive gestures not only represented parts of the collection of students' answers, but also functioned with the co-occurring speech as positive feedback, indicating her approval of the answers. Students' separate responses were thus united and organised by Teacher E's metaphoric gestures.

#### **7.6.4 Giving Additional Information**

Metaphoric gestures, together with the accompanying speech, provided additional information to the accompanying speech. The information given by metaphoric gestures could be either complementary (the information was partly conveyed by speech) or independent (the information was not conveyed by speech). Teacher B's

gesture of a horizontal line was one such example. The metaphoric gesture occurred when Teacher B and the class were discussing how Gregorian chant differed from pop songs, with which the students were familiar. When Teacher B said “It is singing in this way,” she used her right hand to draw a horizontal line in front of her from the middle of her chest to the right side of her body (B1, 133). What ‘this way’ meant in the speech was obscure; however, the accompanying metaphorical gestures here helped to clarify the sentence. Teacher B had used exactly the same gesture in the previous utterance, when she explicitly noted the rhythm of Gregorian chant as mild and flat when compared with pop songs. The repeated horizontal line accompanying ‘in this way’ could be interpreted as inheriting the meaning of ‘mild and flat’ from the previous utterance, and thus provided additional information on what ‘in this way’ really meant. Verbal and gestural metaphors as a whole provided more information than metaphors of each modality by themselves. The two successive utterances and their accompanying metaphoric gestures are shown below in Extract 25.

## Extract 25

132 好 [平淡] 喔

hao [**pingdan**] o

very [**mild**] (PRT)

How [**mild**]!

RH loose palm facing down, drawing a horizontal line to the right

133 就是 [这样子] 唱

jiu shi [**zheyangzi**] chang

(PRT) is [**like this**] sing

It is singing [**in this way**].

RH loose palm facing down, drawing a horizontal line to the right

The following examples show how metaphoric gesture provided independent rather than complementary information. In the two orchestra ensemble sessions, Teachers E and F drew circles in the air, or raised an open palm up, facing the students, when they wanted the students to stop playing the music. When the gestures were made, the teachers said nothing about stopping. Instead, they expressed sympathy for interrupting the students, saying “I’m sorry” (F1, 751), explained the reasons for the interruption by saying “Da Capo” (E3, 182), indicating that some students had forgotten to return to the very beginning (which is what Da Capo means), or said “Again!” (E3, 231) to tell them what to do after stopping. In these cases, the stopping gestures and the utterances which they accompanied worked together and represented a more complete idea than gestures or speech alone.

#### **7.6.5 Metaphoric Gestures Completing an Incomplete Verbal Utterance**

Metaphoric gestures functioned to complete an accompanying incomplete utterance, and the meaning might or might not be confirmed by speech immediately after the gestures. For example, after she paused the video, Teacher B used gestures to help her express what a violin player’s playing made her feel. She was nearly speechless and uttered three grammatically and semantically incomplete sentences, each followed by moving her right hand upwards to the top of her head (B2, 342-343). The meanings of the three vertical gestures were confirmed immediately after the third sentence when she said, “My blood pressure has increased!”

Teacher C provided another example (also discussed earlier in part (d) in section 7.5.1) in which the metaphorical gestures completed the incomplete utterance, but the meaning of the gesture was not confirmed promptly. It happened when Teacher C tried to explain verbally the differences between major and minor keys. She first described the major key as “clean and purifying”, but she then could not find a proper word for the minor key: “But the minor key is more . . . ”; at the same time she lowered her left hand from the height of her eyes, where she had finished the previous gesture accompanying “clean and purifying”, to the height of her mouth, palm facing down (C1, 647). The low and inward gesture corresponded to the other gestures which Teacher C used in the same session when describing the minor key, though what it meant was not explicitly clarified in speech at this moment. The metaphoric gesture thus completed, grammatically and (perhaps also) semantically, the incomplete verbal utterance.

#### **7.6.6 Giving Feedback**

Metaphors were used to give both positive and negative feedback. Teacher C moved her right loose palm upwards, palm facing up, when she complimented the class, saying that the way they played a certain note was improving: “That ‘re’ is getting better!” (C1, 367). In the same session, Teacher C commented on students playing the recorder together by using verbal and gestural metaphors, where the gestural metaphor preceded the verbal one. The metaphor of BAD IS DOWN was first manifested by the gestures, consisting of her left hand, which held a recorder, dropping twice from up to down. Teacher C then expressed verbally how bad the playing was by saying: “*Yi tuan po!*” (‘It’s completely broken!’) (C1, 259).

### 7.6.7 Discussion

The above illustrates how metaphoric gestures were used in the music classrooms. The two main functions they performed were communicative and pedagogical. They provided a context ('contextualising functions' as Kendon, 2000 put it; see also Kendon, 1995) for the speech, which reduced the ambiguity of the teachers' speech (e.g., Extract 25), and/or expressed information which was not given in speech at all (e.g., Teacher C's low and inward gesture for the minor keys, which she could not find a proper word to describe verbally). In addition, when the teachers metaphorically gestured the pitch, they directed the students to pay attention to certain parts of the music. Similarly, when Teacher E bent her left fingers one by one while collecting the students' answers, she was inviting the students to come up with more answers. These metaphoric gestures, termed 'performative gestures' based on Müller's classification (see the discussion in section 6.3.2) displayed the teachers' intention of inviting the students to perform a speech act; Kendon (2000) labelled this as having 'pragmatic functions'. The metaphorical gestures used by the teachers not only contributed to the propositional meaning of their lecture, but also pragmatically invited the students' action to achieve the purpose of teaching and learning.

The metaphoric gestures, as found in the data, represented the content differently from the way speech did, in the sense that the information conveyed might or might not overlap. Possible reasons for this included the fact that gestures depict content more iconically and holistically (compared with phrases uttered in time), and are freer from standardised forms and governing rules (McNeill, 1986; Kendon, 1988). Such differences allowed the gestures to operate concurrently with speech or alternate with it. In the observed sessions, the gestures were used by the

teachers as a parallel medium to speech, to help them transfer knowledge to, and communicate with, the students (see also Kress, Jewitt, Ogborn, & Tsatsarelis, 2001 for a similar observation in a science classroom). The integration of the two media forms the basis of the idea of ‘multimodal’ language (Müller, 2007): gestures could function as a part of, rather than apart from, language (Kendon, 1988; 2000; McNeill, 1992).

### **7.7 Educational Aspects of Verbal and Gestural Metaphors**

Four sample segments were selected from the data to be further coded by ELAN (see Appendices O, Q, and R for the screenshots), in order to examine the educational aspects of the verbal and gestural metaphors. The first two consecutive sample segments were extracted from Session C1 (the same example was given earlier in section 6.7.3 to illustrate the annotation by ELAN). They happened right after Teacher C introduced the concepts of major and minor keys. The gestures used were labelled as Gesture Units 1 and 2. The first segment involved no metaphors, while the second did. The reason for including the first segment is that it illustrated how the main concept of the session was introduced, and how the students’ attention was directed to the Chinese morphemes, *da* and *xiao*, used in the musical terms: *dadiao* (‘major key’) and *xiaodiao* (‘minor key’), which are further discussed in the second example segment. The third sample segment, extracted from Session F1, illustrates how Teacher F tried, both verbally and gesturally, to tell the students how to interpret and perform the repeated notes of a musical sentence. Finally, the way in which Teacher B drew the students’ attention to the relationship between music and lyrics is shown in the fourth sample segment. The educational aspects of each segment are discussed below.

### 7.7.1 Segment 1: *Da* and *Xiao*

Teacher C pointed to the two musical terms, *dadiao* ('major key') and *xiaodiao* ('minor key'), written in Chinese on the screen in the front of the class, and verbally guided the students' attention to the words *da* ('big') and *xiao* ('small') by saying *na nimen kanyixia da gen xiao* ('then you take a look at *da* and *xiao*'). It was a grammatically and semantically complete sentence, accompanied by a complete gesture unit with gesture phases of preparation, stroke, and retraction.

At the beginning of the utterance, Teacher C's gaze and the left side of her body turned to the screen with the slide. Soon she raised her right hand across her body from the right to left side, and up and over her head (the preparation phase of the gesture), and pointed with her right index finger stretching out to the screen. She paused briefly (with respect to both the posture and gesture), and when she articulated the words, *da* and *xiao*, she beat twice in the air above and beside her head with her index finger (the stroke phases). After this, Teacher C changed her hand shape, moved her hand down to her watch on her left wrist (the retraction phase), which was at neck height, and paused there. This entire excursion was coded as Gesture Unit 1.

Teacher C's right hand was not raised until she had ended the previous utterance and articulated the main verb of the present sentence, *kan* ('to look'). The gesture then achieved its highest point when Teacher C said the word, *da*, and it was at about the same height as where the character *da* appeared on the screen. The gesture was then lowered to the height where the character *xiao* was shown when Teacher C articulated the word, *xiao*.

Annotations of the verbal and gestural metaphors of this segment can be seen in Appendix O.

### 7.7.2 Educational Aspects of Segment 1

The segment was followed by a short introduction on how Chinese people name things for certain reasons. In this segment, Teacher C made two pointing gestures accompanying the two contrary adjectives, *da* and *xiao*, in her utterance. The two words constituted focal terms of the main concepts she was about to introduce to her students: major and minor keys. Teacher C directed students' attention to the two main morphemes *da* and *xiao* by moving her hand from a greater height to a lower one and pointing to the corresponding characters on the screen. At the same time, she emphasised the morphemes by making two beats in the air. Without the gestures, Teacher C's intention of emphasising the two morphemes might not have been expressed so clearly. Furthermore, to students at junior high school level who are just beginning to learn the theory of music (see also section 2.4 for further discussion), such music terminology—*dadiao* and *xiaodiao*—is particularly fundamental. Most of the general students, at this initial stage, need to learn emotional ways of describing music (Reimer, 1968), and it will be crucial for them to draw the melody and the words together when they later listen to the music, in order to acquire a deeper understanding of it.

### 7.7.3 Segment 2: Major and Minor Keys

Teacher C went on to ask her students *nimen juede na yi ge hui bijiao liang, na yi ge bijiao an* ('Which one do you think is brighter? Which one is darker?'). This was the first time in her 45-minute session that she used the morphemes *liang* and *an* to describe music in major/minor and minor/major keys. In Mandarin Chinese, *liang* is used to describe something (often physical) radiating or reflecting light (the word's basic meaning) and *an* is its antonym, meaning dark or lacking in light. Teacher C

used the words to describe vibrant versus gloomy musical tones (the morphemes' contextual meanings). The basic and contextual meanings of these two morphemes are different but related (light and vibrant for *liang*, and dark and gloomy for *an*), and therefore the word segments *liang* and *an* are considered, following MIP (Pragglejaz Group, 2007), as metaphorically used.

Teacher C's gesture (Gesture Unit 2 in Appendix O) began from the resting position of the previous gesture. She raised her right hand up to the height of her eyebrow and drew a big circle clockwise in the air with her half-rounded palm, with five fingers loosely stretching out, palm facing up, as she articulated the word *liang*. It is worth noting that Teacher C slowed down her speed of speech a little in this utterance, and her hand did not reach its maximum height until the word *liang* was uttered. The stroke phase was hence achieved without any preceding preparation phase.

Teacher C made a similar gesture without changing the form of her right hand when she articulated the second metaphorically-used word segment, *an*. However, this time the circle she drew (also clockwise) in the air was smaller than the one she had made for the previous metaphorically-used word segment. The position of the gesture was also lowered from the height of her eyebrow to that of her neck. The two gestures, involving similar shapes, but at different heights and with different sizes, were used simultaneously with the words to emphasise the distinction between the adjectives.

The images the two gestures created hence referred to the two abstract concepts of the colour and dullness of the musical tone in major and minor keys. That is, the two gestures presented a more abstract referent (quality of music in major and minor) in terms of a more concrete image (physical height and size) and engaged a

cognitive process of understanding one thing in terms of something else (definition of metaphoric gestures used in the main study and derived from Lakoff & Johnson, 1980; McNeill, 1992). The two succeeding and contrasting gestures were therefore categorised as metaphorics. They constituted the two stroke phases of Gesture Unit 2.

#### 7.7.4 Educational Aspects of Segment 2

The gestures accompanying the two adjectives consisted of movements at different heights and with different sizes. They not only illustrated a contrast between the gestures themselves, but also helped emphasise the contrast between the two adjectives uttered. In addition, the verbal metaphors Teacher C used are evidence of how metaphors label new ideas (Clark, 1981, 1982; Dirven, 1985). In this segment, Teacher C tried to replace the term *dadiao* ('major key') and *xiaodiao* ('minor key') by the adjectives, *liang* ('bright') and *an* ('dark'), which can be interpreted as an example of what Bruner and Postman (1949) called the "violation of expectancy" (p.208). By doing so, Teacher C linked the unfamiliar new ideas ('major' and 'minor') to familiar existing ones ('bright' and 'dark') for her students and provided them with a new 'tool' to think with. It was hoped that the students would develop a basic understanding of music in major or minor keys by matching the music Teacher C played with their existing understanding of the adjectives, which could (hopefully) help them develop a fuller appreciation of music:

I don't think that they'll remember . . . what the major and minor keys are (in the future), but they . . . they can . . . they can feel, well, there are still little differences (between the major and minor keys). . . . Some students . . . such as the class (you observed), they can't feel the major and minor keys. Even after

the session, they don't really have the slightest idea. . . . But as long as one or two student(s) can pick up and understand what I tried to say, and then listen to the music . . . you have to be patient and help them to feel (the difference between the major and minor keys) (Interview Cb).

The students' response, however, showed that the way Teacher C distinguished major and minor keys was not as comprehensible as it was supposed to be. The diverse answers from the class showed that the linkage created by the metaphor Teacher C used was misleading to some students. One possible reason is that, although the adjectives Teacher C used here were familiar to the students, how these adjectives were used to describe music was unfamiliar to them. As suggested by previous studies (e.g., Costa-Giomi & Descombes, 1996; also see discussion on how partial mapping of metaphors created by speakers might lead to listeners' misunderstanding in sections 2.1.1 and 7.4.9), students respond to musical elements incorrectly not necessarily because of their inability to perceive but because of their unfamiliarity with the musical terminology which they are asked to provide when making a response. Musical terms such as *dadiao* and *xiaodiao* are thus crucial and should not be excluded in music education at this level. Later in the same session, Teacher C used more adjectives, for example, *qingchun* ('pure') and *xinshichongchong* ('heavyhearted'), to describe the major and minor keys of the music she played, to help the class. The consistency of her accompanying gestures (i.e., big size and outward direction for the major key, and small size and inward direction for the minor key) further helped emphasise the contrasts made verbally between the two musical terms.

### 7.7.5 Segment 3: Bizet's Five Notes

Segment 3 occurred when Teacher F tried to explain to the students how to interpret and perform the five repeated notes in a musical sentence by Bizet. It was preceded by two metaphorically-used segments, in which a question: “Why do you have your hair cut so short?” and a sentence: “I’m going to hit you” were repeated by Teacher F. In the first preceding segment, Teacher F pointed to a specific male student and asked, “Why do you have your hair cut so short?” five times. She asked the other students what they thought about her repetition of the same question, and said that she must be very interested in the male student’s hair to keep asking. Later in the second preceding segment, Teacher F turned to a female student and said that she was going to hit her. She told the other students that in order to convince the student that she was indeed going to hit her, she needed to increase the volume each time when she repeated the sentence.

Segment 3 began when Teacher F drew the students’ attention away from having hair cut and being hit to Bizet’s repeated notes. “OK now here it is. Bizet wrote five ‘do’-s,” Teacher F said and then sang the melody which contained the notes, “da la da da da da da da la di” (all the ‘da’-s were at the same pitch, but the first, third, fifth, seventh, and ninth which were longer in length were the emphasised ones). “What does he (Bizet) want?” she asked the students. “It is the direction in which he’d like you to walk! He is repeatedly emphasising that there’s a reason for the ‘do’ to be here!”

Following MIP, zou (‘to walk’) and zouxiang (‘direction’) were categorised as metaphorically used in the context. Rather than asking the students to physically walk, Teacher F was using zou metaphorically to refer to the movement of the music (see the recurrent metaphors of PLAYING MUSIC IS WALKING ON A ROAD,

discussed in section 7.4.4). *Zouxiang* ('direction'), inheriting the metaphoricity (see sections 6.3.3 and 6.4.2) from the verb *zou*, referred to where the music was 'moving' to.

Teacher F's right hand with five fingers stretching out remained in front of her chest before Segment 3 began. It was the hold phase of the previous gesture (see Appendix Q for details). The iconic stretching fingers represented the number of the repeated 'do'-s in the musical sentence. As soon as she sang the musical sentence containing the five notes, the form of her right hand changed, with palm facing down and index finger pointing to the front, and moved more and more forward and downward every time she sang the repeated 'do' (Gesture Unit 1 in Appendix Q). The gesture unit consisted of five distinct strokes. It is worth noting that Teacher F's singing volume also increased with the repeated strokes. The hand returned to the front of her body and remained unmoved when Teacher F asked the question, "What does he (Bizet) want?", then stretched out her right index finger and raised it in front of her chest (preparation phase of Gesture Unit 2), pointing and moving forward (stroke of Gesture Unit 2) as she uttered the word, 'direction'. The two pointing gestures represented the movement and direction of movement of the music (i.e., the five notes) which Teacher F expected to hear from the students' performance, and therefore were coded as metaphoric.

### **7.7.6 Educational Aspects of Segment 3**

Teacher F used a repeated question and a repeated statement to help her verbally explain how she would like the repeated notes by Bizet to be played. These were preceded by her questions to the students: "What does it mean to repeat 'do' five times?" and "What are the five 'do'-s for?" Since there was no response, but rather a

long silence, she then began to use her implicit metaphors of having one's hair cut and hitting someone to refer to Bizet's notes. At the beginning, it seemed a little confusing to some students, especially the first male student who was stared and pointed at by Teacher F, and the other students looked around and exchanged eye contact. However these implicit metaphors seemed successfully to attract the students' attention: all the heads were raised, looking up to the teacher, and loud laughter from the students was heard during Teacher F's subsequent explanation and use of metaphors.

Teacher F's implicit verbal metaphors link Bizet's five notes to the students' daily life experience. The link encourages the students at this level to search for a reason for playing a sentence in a specific way, and it is hoped that through this kind of link, the crescendo (here in the example) can be transformed from an ordinary level skill to something at a more advanced and professional level. As Teacher E pointed out in her post-observation interview, the three key points in orchestra ensemble included dynamics, sound quality, and emotions. She emphasised the importance of telling stories or creating pictures to help the students with insufficient experience to 'grasp more easily' the emotions of the music; "otherwise they'll find it meaningless to perform dynamics." In a similar way, Teacher F also considered imagination and linguistic ability to be essential for a conductor, "so that s/he (the conductor) is able to create pictures, and compare music to the more familiar experience for the students" (Interview Fb). The teachers seemed to suggest that consciously crafting (verbal) metaphors can help the students at this level to learn to interpret music.

Teacher F's two gesture units also played a crucial clarification role. Although the meaning of the repeated notes and the differences between them were indicated

verbally by the two implicit metaphors, Teacher F did not tell the students explicitly how she expected the five notes to be performed until she gestured it when she sang the focused melody. Together with the increased volume of the teacher's singing, the gesture (Gesture Unit 1) presented the idea, indicating how the notes moved (were expected to move), before the idea was verbally uttered. Even in the following sentence, when Teacher F finally told the students to "walk in that direction," the specific 'direction' was only gestured but not spoken. The main idea of making the music move forwards could not have been expressed so clearly without Teacher F's two moving forward gestures. The verbal and gestural metaphors worked together to get Teacher F's idea communicated more fully, and they seemed to work well: the musical sentence was no longer stopped and they continued practising until the end of the session.

#### **7.7.7 Segment 4: Syllabic Gregorian Chant**

After introducing four melodic types of Gregorian chant, Teacher B played three pieces and asked the students if they could distinguish to which type the pieces belonged. Those who gave correct answers gained extra grade points. Segment 4 begins when Teacher B played the first piece; only three students gave their answers and all were wrong. Teacher B played the piece again, and this time pointed out where in the music required particular attention. "Did you notice?" she reminded them, "The notes . . . It's not keeping repeating the same note." No verbal metaphors were used in these utterances.

However, two metaphoric gesture units accompanied the speech. As shown in Appendix R, Gesture Unit 1 began before Teacher B ended her question, "Did you notice?": her right hand (holding a remote control) was raised up in front of her eyes,

and the half-open palm started drawing big curly waves to the right. The waves continued until she finished the next phrase, “its notes,” but the form of the right hand (still holding a remote control) changed as soon as she uttered the phrase; the waves were drawn, not by the half-open palm, but by the extended right index finger. The strokes (drawing waves) of Gesture Unit 1 hence occurred before the accompanying verbal referent (see section 7.5.1 for discussion on time of occurrence). After this, Teacher B moved her right hand from the right side of her body back to the centre as a preparation phase for her next gesture unit, and the loose open palm (in which the thumb and index finger were holding the remote control) drew a straight line to the right when she uttered *tong yi ge yin* (‘the same note’). The moving palm then beat the air three times, accompanying the utterance, *yizhi nian yizhi nian* (‘to repeat reading or chanting’). The preparation and stroke phases compose Gesture Unit 2.

The two gesture units were comparative, and what Gesture Unit 1 represented was not very clear until Teacher B’s next utterance and its accompanying gesture (Gesture Unit 2) were made. The height of the right hand for the two gestures represented the pitch of the notes: the high and low physical positions of Gesture Unit 1 indicated the change of pitch, while ‘the same note’ was indicated by the unchanged height of the second gesture. Pitch was hence presented by special verticality (the same metaphor also appeared verbally in the data, and is discussed in section 7.4.3). A cross-domain comparison between pitch in notes and height in space was involved, and therefore the two gestures were coded as metaphoric.

It is worth noting that pitch was not the only Topic presented by Gesture Unit 2; there was also the relationship between lyrics and melody, which Teacher B pointed out to her students verbally afterwards: each syllable was sung on a different, rather

than the same, tone. While teacher B's right palm, remaining at the same height, depicted the melody or music or pitch, movements of beating the air indicated where the lyrics or syllables were and how they were 'attached to' the music.

#### **7.7.8 Educational Aspects of Segment 4**

As mentioned earlier, the students seemed to have little idea about how to apply the teacher's introduction of different melodic types of Gregorian chant to the pieces which Teacher B played just before Segment 4 began. Teacher B hence tried to direct the students' attention to the notes of the melody by her waving gesture, followed by implicitly saying "its notes". A student quickly shouted the correct answer and earned his points before Segment 4 ended.

Segment 4 illustrates how gesture and speech work together to explain the abstract and complicated relations between music and lyrics—the two gestures made with the same hand, at the same position (in front of the eyes), moving in the same direction, but with different movements (waves and straight lines). They not only made a comparison between the changed and unchanged pitch of the music but also emphasised a particular type of relation between music and lyrics. Without the metaphoric gestures, the verbal explanation could not have been expressed so clearly; without the speech, the meaning of the delicate metaphoric gestures could not be defined and confirmed. In addition to increasing comprehension, the gestures allow listeners to visualise the music (see section 7.6.1), and visualisation improves memory. "Besides listening to it [i.e., music] using the ears, if you see it using the eyes . . ." as Teacher B herself states, "it will stay deeply engrained in your memory" (Interview Bb). Last but not least, through the depiction of the relations between music and lyrics by the two metaphoric gestures, the students are provided

with the opportunity of learning music at a more advanced level than simply listening to it.

### **7.7.9 Discussion**

Metaphoric gestures, together with speech, were a commonly used mechanism contributing to music teaching in the observed sessions. Metaphors were used to help the students understand unfamiliar concepts in music theory, and to interpret or listen to music at a more advanced level. At least four education-related conclusions could be drawn from the example segments: (a) verbal and gestural metaphors were both used in music teaching where Mandarin Chinese was the main language used at junior high school level; (b) gestures were an aspect of the music teacher's pedagogical repertoire; (c) pedagogic functions of the metaphors included emphasising important words, making contrasts, labelling new ideas, linking the unfamiliar to the familiar, visualising the abstract, and clarifying the co-occurring speech; and (d) multimodal metaphors used by teachers both benefited and confused the students.

#### *Metaphoric Gestures as a Teaching Tool in Music Education*

Previous studies (e.g., Alibali & Nathan, 2007; Church, Ayman-Nolley, & Mahootian, 2004; Goldin-Meadow, & Singer, 2003; Sime, 2008; Valenzeno, Alibali, & Klatzky, 2003) have shown that teachers' gestures can facilitate students' learning in subjects or topics such as maths, symmetry, and language. However, whether (metaphoric) gesture can be used intentionally by a teacher as a teaching tool has been a topic under debate (Viadero, 2005).

In music education, studies suggest that the use of gesture can improve students' vocal technique (Liao & Davidson, 2007). Wis (1998) also suggests that

metaphoric gestures (e.g., throwing a ball to project the voice) can be intentionally used by teachers as a teaching tool in music teaching, because metaphors provide the students with opportunities to physically and mentally shape and experience the music (ibid.). Indeed, metaphors (both verbal and gestural) in the present study, as shown in the above sample segments, were used along with the verbal lecturing to both visibly and audibly convey and communicate a more complete message than any single modality could offer. As Wis (ibid.) suggests, there can be aspects of music which cannot be fully verbally described by the teachers, and this is when and where the gestures of physical metaphor prove their value. Metaphoric gestures may thus provide another way to facilitate students' music learning.

*Students' Interpretation of the Metaphors Used by Their Teachers*

Previous studies (e.g., Goldin-Meadow, 2003; McNeill, 1992) have suggested that speakers' gestures play a crucial role (at times more crucial than speech) for hearers or viewers when used in communication. In addition, students' gestures have been studied and it has been suggested that they can act as a window revealing students' reasoning and learning stages in subjects other than music (e.g., Goldin-Meadow, 2003; Nathan & Bieda, 2006). Hsieh (2004) investigated Mandarin Chinese speakers' (from kindergarten children to university students) development of using and interpreting metaphor and metonymy in Taiwan, and found that the abilities of the junior high school group to both produce and comprehend metaphor and metonymy were highly developed. Nevertheless, since the present study showed that (a) the teachers' use of verbal metaphors and metaphoric gestures did not always coincide with, but could be incongruent with, each other (section 7.5.2), and (b) students seemed not to be able always to understand their teachers' use of metaphor

(section 7.7.4, though the relevant data is limited), how students interpret and make use of the verbal and gestural metaphors which are used by their teachers might be worth investigating further in music education.

## 7.8 Summary

### *Stage 1*

The teachers' lecturing in the observed music classrooms was multimodal—speech and gesture were both used. Metaphors used by these teachers across the sessions were also multimodal—verbal metaphors and metaphoric gestures were found.

The density of the verbal metaphors was 14 per 100 intonation units or 23 per 1,000 characters, though a broad range existed across the sessions. They were presented in different forms and positions in utterances, the former including the word classes of verbs, nouns, adjectives, adverbs, classifiers, prepositions, and multiword metaphors. Of these, verbs and nouns were the two types which were most frequently seen. In addition, these verbal metaphors were widespread in different teaching sequences such as explication, exemplification, content and procedure management, control, and evaluative and strategic feedback. Multiword metaphors and mixed metaphors were also found.

Patterns of the verbal metaphors existed, and eight groups of recurrent verbal metaphors were inferred, namely (a) MUSIC IS AN ENTITY, (b) MUSIC IS A CONTAINER, (c) PITCH IS HEIGHT IN SPACE, (d) PLAYING MUSIC IS WALKING ON A ROAD, (e) LECTURE DELIVERY IS A MOVING PROCESS, (f) PAYING ATTENTION TO X IS SEEING IT, (g) TIME PASSING IS AN ENTITY MOVING HORIZONTALLY, and (h) TIME PASSING IS AN ENTITY MOVING VERTICALLY DOWN. The patterns suggest that musical concepts were often

talked about by the teachers in terms of bodily experience, and some of them seemed to be culture specific.

Of a total of 509 metaphoric gestures identified, 33% accompanied verbal metaphors. Metaphoric gestures showed little evidence of having fixed forms and were multifaceted in nature. In addition, they also seemed to be used with a degree of systematicity—despite not being fixed in form—a lot of which corresponded to the systematicity shown by the verbal metaphors, though the presentation of metaphor by gesture was more flexible as regards form.

### *Stage 2*

At this stage, how metaphoric gestures operate with the co-occurring speech in the context of spoken discourse in music classrooms was illustrated and examined. Relations between metaphoric gestures and the accompanying speech were discussed, as regards time of occurrence and the nature of the metaphor manifested. The results showed that metaphoric gestures did not always occur at the same time as the verbal referent, and the manifested metaphor did not always correspond to the one manifested in speech. Metaphoric gestures were hence considered as a part of a broader dynamic communication system which contributed to music teaching.

### *Stage 3*

Metaphoric gestures and the accompanying speech were analysed as a whole at this stage. Six functions were found: (a) visualising abstract music, (b) making contrasts, (c) organising the lecture, (d) giving additional information, (e) metaphoric gestures completing an incomplete verbal utterance, and (f) giving feedback. These were semantically related (though not always explicitly) to the accompanying utterance,

helping listeners contextualise the meanings of the speech, and/or they functioned pragmatically, performing certain speech acts of asking or inviting the students to participate in the teaching and learning.

Four segments consisting of verbal and/or gestural metaphors used by three teachers were further analysed by ELAN to examine the educational aspects of the verbal and gestural metaphors. Verbal metaphors and metaphoric gestures seemed to be an aspect of the music teachers' pedagogical repertoire, helping students to learn to appreciate, interpret, or perform music by connecting the unfamiliar to the familiar, making contrasts and labelling new ideas, visualising the abstract, and clarifying obscure speech. They played a crucial role when teachers found difficulty in verbally describing certain aspects of music, and hence were essential to music teaching and learning.

## Footnotes to Chapter Seven

<sup>1</sup> The word is used in the thesis to refer to the co-occurrence of gesture and speech. It does not, however, imply the attachment of gesture to speech or its dependency on it, or vice versa.

<sup>2</sup> Tonality is a systematic organisation of pitch around a central tone (TonalityGuide.com: <http://www.tonalityguide.com/index.php>). It was used here by the teacher to refer to major-minor tonality in the Western system.

<sup>3</sup> Tonal music is music constituted by notes or tones based on certain hierarchical relationships.

<sup>4</sup> In the context of music tonality, major and minor are two types (or modes) of key in tonal music. The key of a work is defined in terms of the particular major or minor scale from which its principal pitches are drawn (Randel, 2003). In Western music, music based on minor scales, in comparison with major ones, tends, according to Kamien (2008, p. 46), to sound “darker”, “serious”, or “melancholy”.

<sup>5</sup> The example can be both metaphor and metonymy.

<sup>6</sup> The bilingually-presented examples were designed to combine brevity with readability.

<sup>7</sup> The fact that I sat at the back of the classroom, observing and recording the session, might also partly explain why the teacher used the Vehicle, *huamian*, though this was never explicitly stated.

<sup>8</sup> The transcription conventions listed in chapters 4 and 6 are applied again here and throughout the chapter: square brackets (‘[]’) are used to mark the verbal segment which co-occurs with the gesture. The left or opening bracket indicates the beginning of a gesture phrase while the right or closing bracket indicates the end. The stroke of the gesture is indicated by marking the words or characters in bold.

The metaphorically-used words are underlined.

<sup>9</sup> *Gei* can also be treated as product-for-process metonymy.

<sup>10</sup> Guessing lantern riddles is a popular activity at the festival.

<sup>11</sup> Traditionally, Chinese characters run top-to-bottom starting on the right. In 1995, the Taiwanese government passed a law to switch the writing orientation from vertical to horizontal (from left to right) for official documents. Nowadays, however, mixed writing directions of top-to-bottom and left-to-right styles are commonly seen in newspapers and magazines in Taiwan.

<sup>12</sup> These types of ‘stopping’ gestures were only included in the data when accompanying speech. It is also worth pointing out here that, in practice, there is not always a clear boundary between what gesticulations are and what they are not (i.e., conducting gestures). A more established meaning of these ‘stopping’ gestures seemed to exist (at least) between the teachers and their students in the observed two sessions, and since the gestures were at times used alone without accompanying any semantically related speech, but still performed the function of stopping, these ‘stopping’ gestures might be argued as being emblem-like.

<sup>13</sup> In the conduit metaphor, one of the central assumptions involved is that “language functions like a conduit, transferring thoughts bodily from one person to another” (Reddy, 1979, p. 290).

<sup>14</sup> An art song is a poem set to classical music, usually sung by a solo voice with piano accompaniment.

## **Chapter 8**

---

### **CONCLUSIONS AND IMPLICATIONS**

---

In this chapter, I begin by briefly revisiting the overview and general aims of the study in section 8.1, and the research design in section 8.2. These are followed by key overall results of the study in section 8.3. Its significance and contributions are discussed in section 8.4, and its implications and potential applications are the foci of section 8.5. Section 8.6 deals with the limitations of the study and suggestions for future research are presented in section 8.7. Finally, an overall conclusion is drawn in section 8.8.

#### **8.1 Overview and General Aims of the Study**

In cognitive metaphor theory, metaphor is a conceptual and experiential process that structures our world (Lakoff & Johnson, 1980). Applied linguistics scholars (e.g., Littlemore & Low, 2006; Semino, 2008), rather than discarding the concept of conceptual metaphor, aim at connecting “the conceptual with the linguistic, in theory and in empirical work” (Cameron & Deignan, 2006, p. 672). They insist, not only on the importance of the form of language, but also on how language is used in context in order to understand the metaphor involved, by highlighting the importance of looking into linguistic metaphors in naturally occurring language.

It has been claimed, on the other hand, that speech and gesture together form an integrated communicative system (McNeill, 1992). If metaphor, as discussed earlier, is a symbolic or cognitive process which reflects how people think, then speech

should not be the only manifestation of metaphor in oral discourse. Gesture may hence provide another window to investigate conceptual metaphor.

The current study examined the nature of verbal and gestural metaphors used by six music teachers in 13 sessions in Taiwanese junior high schools, where Mandarin Chinese was the main language used. The main research questions for the current study were:

- RQ1 How can the verbal and gestural metaphors used in classroom discourse where Mandarin Chinese is the main language of instruction be identified and coded? (sections 6.4 and 6.5)
- RQ2 What is the nature of verbal and gestural metaphor used by music teachers in Taiwanese music classrooms at junior high school level?
  - RQ2.1 What are the density, word class, and distribution of the verbal metaphors? (section 7.2)
  - RQ2.2 What metaphoric gestures are used and how are they employed? (section 7.3)
  - RQ2.3 Can the verbal and gestural metaphors be grouped into recurrent or systematic metaphors? (sections 7.4 and 7.3.1)
- RQ3 What are the relations between verbal and gestural metaphors used by music teachers in Taiwanese music classrooms at junior high school level? (section 7.5)
- RQ4 What are the educational implications of the verbal and gestural metaphors used by music teachers in Taiwanese music classrooms at junior high school level?
  - RQ4.1 What are the functions of the verbal and gestural metaphors as a whole? (section 7.6)

RQ4.2 How do the verbal and gestural metaphors assist in music teaching? (section 7.7)

It was hoped that, through the study, a better understanding could be achieved of (a) what and how verbal and gestural metaphors are used in music teaching and (b) how speech, gesture, and the underlying cognition relate to each other, and that identification procedures for identifying and coding verbal and gestural metaphors could be developed.

## **8.2 Research Design**

Aspects of a range of mixed qualitative research paradigms and methodologies, namely ethnography, discourse analysis, and grounded theory, were applied in the present study. This involved three phases: a preliminary study, pilot study, and main study. The preliminary and pilot studies were used to explore the ground and examine the feasibility of the intended research design, helping to develop the research questions and research methods for the main study. Data for the three phases of the study were collected between December 2006 and May 2008. In total, eight music teachers from eight junior high schools in Taiwan participated.

In the preliminary study, one audio-recorded session from a primary school and one audio-recorded session from a junior high school in Taiwan were analysed. Verbal metaphors alone were the focus of the preliminary study. A version of the Pragglejaz Group's (2007) Metaphor Identification Procedure (MIP), adapted for Chinese, was applied to identify the metaphorically-used word segments. It was found that metaphor density varied in the two sessions which involved different teaching content and different educational levels: more (verbal) metaphors occurred in the session at junior high school than the one at primary school level, and the

metaphors related more to music theory, music history, and music appreciation than roll call and playing the recorder. These findings helped the pilot study narrow down the school level to junior high school, and the types of music sessions to those which could potentially produce more metaphors. In addition, the results of metaphor density calculation helped estimate the amount of data to be gathered for the main study.

The purposes of the pilot study were: to explore whether any gestures, especially metaphoric ones, were used by music teachers at junior high school level; to test out the observation schedule and interview questions; to develop a metaphoric gesture identification procedure for the main study. Data were collected from interview and classroom observation by video recording and field notes. One music teacher, Wang, was interviewed, and three of her teaching sessions were observed. The applications of MIP and McNeill's (1992) classification system helped develop an identification and coding policy for analysing verbal and gestural metaphors in the main study. The observation schedule and interview questions were also tested and improved afterwards for the main study.

Data for the main study came from 13 music sessions and teacher interviews, involving six teachers in six Taiwanese junior high schools which were mixed as regards age, location, and size. Both general and special education streams were involved, and teaching content of the sessions included music appreciation, music theory, and orchestra ensemble. Small amounts of Taiwanese, English, Hakka, and Italian languages were also used in addition to Mandarin Chinese. A total of 636 minutes of video recording was transcribed.

### **8.3 Key Overall Findings and Discussions**

Six findings from the three-stage analysis are worth highlighting: (a) verbal and gestural metaphors were extensively used in music teaching, (b) systematic patterns existed in the metaphors, (c) metaphors were not treated as a teaching tool by all the teachers, (d) use of metaphors did not always lead to successful communication and teaching, (e) gestures and speech were two parts of a broader communication system, and (f) gestures were used inherently by music teachers in music teaching. Each is discussed below.

#### **8.3.1 Verbal and Gestural Metaphors Were Extensively Used in Music Teaching**

The teachers used verbal and gestural metaphors in both general music sessions and orchestra ensemble sessions, with both general students and music-talented ones. The results of both the preliminary study and the main study suggest that the density of verbal metaphor in music teaching ranged broadly across the sessions, at 10 to 50 per 1,000 (Chinese) characters. The density in spoken discourse ranged between 10 and 60 per 1,000 (English) words in classrooms where English is the main language used at primary level (Cameron, 2003).

The verbal metaphors identified were analysed in terms of word classes: verbs, nouns, adjectives, adverbs, classifiers, prepositions, and multiword metaphors. Of these, verbs and nouns were the two types which were most frequently found. In addition, the verbal metaphors were widespread in different teaching sequences such as explication, exemplification, content and procedure management, control, and evaluative and strategic feedback. Not all verbal metaphors had explicit Vehicle domains (they were implicit metaphors), and some metaphors were found in two or more words which functioned as a whole (i.e., multiword metaphors). Mixed

metaphors, metaphorically-used word segments from a mixture of domains employed to talk about the same musical Topic, were also found.

Metaphoric gestures were used—in spite of the teachers’ hands’ being occupied—and in total, 509 metaphoric gestures were identified. Similarly to verbal metaphors, the metaphoric gestures were not equally distributed among teachers and sessions. Moreover, the metaphoric gestures showed little evidence of having fixed forms and were multifaceted in nature. Metaphoric gestures and the accompanying speech used in the music sessions were found to have several functions, including visualising abstract music, making contrasts, organising the lecture, giving additional information, completing an incomplete verbal utterance, and giving feedback.

Kieffer (2007) stated that “language . . . is crucial to understanding musical expression” (p. 9), and found that “without the metaphor, the music was incapable of expressiveness and communication; audiences [or students] did not understand it” (ibid., p. 13). To be more specific, it is through (verbal) metaphors that music is interpreted, and meanings of patterns of sound are sought (ibid.; Scruton, 1983). On the other hand, Wis (1998) suggested that metaphoric gestures proved their value especially when aspects of music could not be fully described verbally. The present study echoes the above studies which pointed out and emphasised the significance of verbal metaphors and gestures in the construction of the meaning of music, and further suggests that verbal and gestural metaphors *together* play an essential role in music teaching.

### **8.3.2 Systematic Patterns Existed in the Metaphors**

Patterns in the verbal metaphors could be found in the data of both the preliminary

and main studies. The patterns suggested that musical concepts were often talked about by the teachers in terms of bodily experience, and some of them seemed to be culture specific (e.g., talking about time passing in terms of an entity moving vertically down). Like the verbal ones, metaphoric gestures seemed to be used with a degree of systematicity, much of which corresponded to the systematicity shown by the verbal metaphors, though the presentation of metaphor by gesture was more flexible as regards form.

However, there were cases where the metaphors found in the current study were not entirely consistent with those reported in previous studies. For example, the recurrent verbal metaphor TIME PASSING IS AN ENTITY MOVING VERTICALLY DOWN and the moving direction of time and music from up to down expressed gesturally seem not to appear in English data, which may be due to culture-specific factors such as the writing system (Boroditsky, 2001; Chan & Bergen, 2005).

### **8.3.3 Metaphors Were Not Treated as a Teaching Tool by All the Teachers**

Although it seemed that gestures, especially metaphoric gestures, were an aspect of the music teacher's pedagogical repertoire, not all of the teachers considered metaphors as a teaching tool. Only two teachers (Teachers A and C) in the post-observation interviews pointed out the importance of, and their preference for, using (verbal) metaphors to increase students' interest and improve their comprehension. The most extreme and opposing example came from Teacher D, who believed that the use of (verbal) metaphors, though it somehow provided the students with a channel for thinking about music, nevertheless limited students' imaginations; using metaphor was, she said, the last thing that she would resort to

(Interview Db; see also the discussion in section 5.9.2). Ironically, verbal and gestural metaphors existed in Teacher D's two observed sessions. One of the possible explanations for Teacher D's inconsistency in thinking and acting is that, although teachers might be opposed to using novel and predesigned metaphors, it is unavoidable for them to use at least conventional metaphors when talking about music in classrooms (for example, talking about pitch in terms of spatial height).

### **8.3.4 Use of Metaphors Did Not Always Lead to Successful Communication and Teaching**

Teacher D's worry, nevertheless, was understandable, and she further pointed out the fact that metaphors used by teachers may potentially lead to undesirable consequences in classrooms. Indeed, a similar problem was found in the current study and had also been pointed out for other subjects by other researchers (e.g., science: see Cameron, 2003). That is to say, the use of metaphors did not necessarily lead to successful communication and teaching. For example, as discussed in section 7.7.4, the students' responses showed that the way Teacher C distinguished major and minor keys was not as comprehensible as it was supposed to be and she accordingly used a range of adjectives from various domains to help the students later in the same session. Spiro, Feltovich, Coulson, and Anderson (1989) had an in-depth discussion on how the use of single analogy and metaphor from the biomedical domain might lead to medical students' misunderstanding of the concepts. To tackle this, however, rather than eliminating the metaphors, they proposed and demonstrated the value of using multiple and complementary analogies and metaphors instead. Such multiplicity might be useful in the context of music classrooms to avoid limiting students to thinking about music in a way—the

one way—proposed by the teachers. Further research is needed before definite conclusions can be drawn about multiple metaphors in music education.

### **8.3.5 Gestures and Speech Were Two Parts of a Broader Communication**

#### **System**

Relations between metaphoric gestures and the accompanying speech were examined, and two issues were particularly stressed: the time of occurrence of metaphoric gestures and the accompanying verbal referent, and how gestures together with speech manifested metaphor, in classroom situations where Mandarin Chinese was the main language used. The results further confirmed that metaphoric gestures intertwined with speech temporally and semantically (Kendon, 2000; Mayberry & Jaques, 2000). These conclusions were based on the fact that: (a) the time when metaphoric gestures occurred was not always the same as when the verbal referent was uttered, and (b) the metaphor which was manifested by a gesture might be correlated to, or different from, the metaphor (if there was one) which was manifested in speech. In addition, how the metaphor was used by the teachers shifting between the two modalities of gesture and speech highlighted the dynamicity of metaphor in use (Müller, 2007).

Metaphoric gestures complemented the accompanying speech by emphasising what was verbally said, or expressing additional information which was not given in speech at all. They could also pragmatically invite action by the students to get involved in the classroom discourse, thereby contributing to teaching and learning. The content represented by the metaphoric gestures and the accompanying speech might or might not overlap, but the meanings of metaphoric gestures cannot be decided, from a researcher's perspective, without taking into consideration the

accompanying speech and other use of metaphoric gestures by the same teacher in the same context.

On the basis of this evidence, it seems justifiable to argue that metaphoric gestures, together with speech, acted as two parts of the overall dynamic communication system which contributed to the music teaching.

### **8.3.6 Gestures Were Used Inherently by Music Teachers in Music Teaching**

The observed teachers did not deliver their lectures in only one modality; instead, it was revealed from the study that speech and gestures intertwined delicately when the teachers expressed themselves in music classrooms. Gestures and speech complemented each other, such that the overall meaning would have been hard to express if only one of the modalities had been used.

Reimer (1968) stated that music “is a means for understanding and exploring human feeling through expressive sounds” (p. 104). The present study enhances this point of view by providing a detailed examination of *how* such understanding and exploration of music can be expressed in classroom situations. The results suggest that (a) metaphors can play an essential role in linking inner and more abstract feelings to outer and more concrete (musical) sounds, and (b) they do it not only verbally but also gesturally.

The current study further confirms that language and gesture seem inseparable, and it is counterproductive to treat one of them in isolation from the other in music teaching. Indeed, it has been suggested that gesture is integral to the speaking process generally (Iverson & Goldin-Meadow, 1998; McNeill, 1992), that gesture does not need a receiver or observer and people do not need a model to learn how to gesture. For example, even congenitally blind people have been found to gesture and

the gestures they produce resemble those of sighted people (Iverson & Goldin-Meadow, 1998), and there are cases when pairs of sighted speakers who cannot see each other still gesture when they talk to each other (Rimé, 1982). These examples explain partly why in the observed sessions gestures and speech were so integrated.

#### **8.4 Significance and Contributions of the Study**

The current study represents an original and exploratory empirical contribution to the field by examining how metaphor is expressed both verbally and gesturally in music classrooms where Mandarin Chinese is the main language used at junior high school level. Previous studies conducted in both English and non-English speaking countries found music teaching relying predominately on verbal instruction (e.g., Davidson, 1989; Sakadolskis, 2003; Woody, 2006), and other non-verbal behaviours such as gestures (e.g., Haviland, 2007), and they seem to suggest that (verbal) metaphor and gestures play *separate* roles in music teaching, regardless of the language used. However, there is a shortage of empirical studies which investigate the use of metaphors with other non-verbal behaviour, including gesture, in general music classrooms at junior high school level. This study provides baseline data on verbal and gestural metaphors used *together* in music teaching in Mandarin Chinese at junior high school level, and thus fills a gap in the literature.

In addition, the results of the current study further support conceptual metaphor theory by providing empirical data on how native speakers of Mandarin Chinese express metaphor via two modalities—namely speech and gesture—in a dynamic process. Beyond this, the study, thirdly, makes a contribution to developing methods of identifying metaphorically-used word segments in Mandarin Chinese, and methods of coding metaphoric gestures.

## **8.5 Implications and Applications of the Study**

Implications and applications of the present study can be drawn from two perspectives: research applications, and implications for educational practice.

### **8.5.1 Research Applications**

The identification and coding methods and policy applied and developed for the present study, combined with the use of a dictionary, segmentation system and corpus, might be found applicable for future researchers for identifying and coding verbal and gestural metaphor use in similar real-world contexts in Mandarin Chinese. Metaphor identification can be highly subjective, and different language and research purposes might require different identification and coding methods. Indeed, as suggested in section 7.4.9, *how* metaphors are identified and categorised can be as important as *what* meanings and implications the systematic metaphors convey. Further research might explore and extend the present use of the methods.

### **8.5.2 Implications for Educational Practice**

Reimer (1968) pointed out the two behaviours involved in experiencing music: (a) perceiving what is expressed, and (b) reacting to what is perceived. The former can be directly learned from teaching and learning but the latter cannot (*ibid.*). Verbal and gestural metaphors, as the current study shows, can play essential roles in connecting Reimer's two behaviours and helping teachers talk about and express aspects of music in classroom situations.

Since face-to-face instruction has been, and will continue to be in the near future, a main approach to teaching music at junior high school level in Taiwan (He, 2006), the most important element in successful teaching is not textbooks or videos;

but the teacher. The teacher determines the atmosphere of the classroom, how the students learn, and how effective the teaching and learning are. All s/he says and gestures can be included in the array of teaching tools at his/her disposal. The present study has tried to draw music teachers' attention to what they have brought—either consciously or unconsciously—into their teaching and what they can do, and avoid doing, in the classrooms.

However, the teaching implications based on these preliminary findings should be treated with caution. As Petrie and Oshlag (1993) suggested, the successful use of metaphor in classrooms does not stop when teachers introduce metaphors to solve the potential problems which students may have with the concepts or materials to be learned. It continues to be relevant to correcting and iterating the process until the students are allowed to “make judgments similar to those of experts in similar specific cases” and eventually learn the new concepts and materials based on what they already know through metaphors (p. 609). What modality of metaphor contributes more to music teaching, and to what extent, clearly need further explanation.

## **8.6 Limitations of the Study**

Although the present study has yielded findings that have both practical and pedagogical implications, its design is not without limitations.

The first limitation concerns the small amount of data analysed. However, the processes of dealing with the data, especially identifying the metaphorically-used word segments, identifying gesticulations, and coding metaphoric gestures, were enormously time-intensive for a single researcher.

Since the study involved only six junior high schools and 13 sessions, validity of generalising the results to other teachers or classrooms with different

geographical or social or economic backgrounds may be limited. However, the fact that the school sample was mixed as regards age, location, size and type of session (general and music-talented students) should still allow the findings and implications of the study to be generalised to some degree, at least, to the extent that groups of teachers and students are similar to the participants.

The method of identifying metaphorically-used word segments itself is also limited. As discussed in section 7.4.9, the results of the metaphor analysis are inevitably affected by the coding policy which each researcher develops and applies, and hence different researchers may come up with different results concerning what is metaphorically used. Nevertheless, in this thesis, it is hoped that, through a detailed and explicit discussion (in chapter 6) of the identification and coding process, the reader can at least get a good idea of how each decision was made.

In addition, no consensus has yet been reached (Gibbs, in press) on the questions of what constitutes conceptual metaphor, and how MetNet Group's (2006) systematic metaphors link to conceptual metaphors. As discussed in section 2.1.2, applied linguists have criticised conceptual metaphor theory inasmuch as many of the examples given are not systematically and exhaustively collected from empirical language use. To tackle this, scholars (Cameron, et al., 2009; MetNet Group, 2006; Steen, 2009) have been working on developing a process of how conceptual metaphor can be established from linguistic metaphors (i.e., verbal metaphors) collected from real language use. In the present study, I searched for and organised the systematicity between the Vehicle and Topic domains of the verbal metaphors used by the six teachers across the 13 sessions, and organised and categorised them into groups of systematic metaphors, adapting Cameron's procedure. A step-by-step discussion can be found in section 6.4.3.

There is also a problem related to data gathering, which derives from the fact that the current study is based on interviews and classroom observations. It is difficult to say if the interviewed teachers and observed sessions suffered from the observer's and camera's presence. Including more than one method of data gathering was intended to lower the potential bias which might be caused by any single method. Future researchers might also consider sitting in the classrooms several times before the sessions are observed and recorded, to facilitate the acceptance of their presence in the classrooms. In addition, the teachers were not asked to remove anything they held in their hands during the observed sessions in the present study. It was hoped that the lecture delivery could be kept as natural as possible, but this somehow constrained the teachers' use of hands (especially their palms which were occupied when the teachers 'naturally' held objects in one hand or two hands).

Another limitation is that, due to the fact that only one recorder was permitted by the teachers, gesture and/or metaphor interaction between teachers and their students could not be systematically tracked. However, as discussed in sections 2.1.2 and 6.3.3., metaphorical meaning is something that is generated in discourse and reciprocity is important in generating meaning; also metaphor is dynamic in terms of time and interpersonal communication. Students' reactions to the metaphors, if allowed, could have been explored in more depth, in order to ascertain what the students themselves thought the metaphors meant and whether or not they understood them in the same way as they were intended by the teacher.

Furthermore, there were limitations of the discrete approach I took to data collection and analysis: language does not operate within discrete categories and metaphors cannot simply be counted. For example, as shown in Table 7.3., although the numbers indicated higher percentages of nouns and verbs than those of other

word classes in each session, they did not (and could not) explain why a considerably high percentage of a specific word class existed in a specific session (e.g., more metaphorically used adverbs were used in F1 than in the other sessions). Similarly, the numbers in Table 7.5 showed an uneven distribution of the metaphoric gestures used across the six sessions, but not the uneven distribution of Teacher E's use of gestures in her first session, which was pointed out separately in sections 7.3.1 and 7.3.4.

Finally, the processes of transcription, identifying, and coding are, unavoidably, all processes of interpretation. To tackle this, another coder was involved to increase the validity and reliability of data collection and analysis in the current study. Transcripts were also given back to the teachers for an accuracy check (see section 6.6). Nevertheless, it would have been useful for the teachers to observe the videos and comment on their own use of metaphor, such as the reasons for them describing a specific Topic metaphorically rather than literally, and the factors which helped to contribute their selections of a variety of Vehicle domains for a certain Topic.

## **8.7 Suggestions for Future Research**

While this study has its limitations, it is hoped that it can serve as a basis for further study in music education and cognitive or applied linguistics (especially) in Mandarin Chinese. Based on its findings and results, some new possibilities for future research that may profitably be addressed by future researchers are discussed below.

Several incidences of mixed metaphor were found in the data (discussed in sections 7.2.4: Verbal Metaphors in Explanation Sequences, and 7.4.9). This raises the question of what factors constrain the Vehicle domains involved, which are all

related to the same Topic domain of music. Culture and bodily experiences have been suggested as one key factor in the literature and by a small amount of relevant data in the current study. Gur (2008) looked into musical texts, and concluded that a complicated relation existed between music and other fields of human experience, going beyond bodily experiences. Similarly, Eitan and Timmers (2010) found that native Hebrew speakers used various Vehicle domains to talk orally about pitch, and it seemed that other underlying dimensions—other than culture and embodiment—also played a role (in particular, concepts involving emotion, evaluation, and social structure) (p. 421). The intertwined factors will need further investigation in order to be identified in different cultural and institutional contexts, so that the extent to which perception and thought interact and how they do can ultimately be explored (*ibid.*).

In addition, the present study investigated not just how verbal and gestural metaphors were used by music teachers, but how far the (verbal and gestural) metaphors helped (or hindered) the students—especially those without previous musical training—in understanding that abstract concepts in music might be important to know. In other words, what speakers or teachers say does not necessarily reflect what listeners or students think and/or understand. It is possible, as Brown, Leiter, and Hildum (1957) argued, that “the [music] critic may fancy that a voice can be *dry* or *white*, but the reader of his criticism has no idea what he means” (p. 347). Additionally, previous studies (e.g., Cornejo et al., 2009) suggested that gestures might play a role in (verbal) metaphor comprehension. This has been supported by empirical studies conducted in classrooms of mathematics (e.g., Singer & Goldin-Meadow, 2005), biology (e.g., Pozzer-Ardenghi & Roth, 2007), and second language learning (e.g., Church et al, 2004), and is further echoed by studies

in neuroscience in specific contexts. For example, congruent and incongruent gestures accompanying literal and metaphoric speech influenced L2 speakers' processing of verbal metaphors based on L2 speakers' ERP<sup>1</sup> results (Ibáñez et al., 2010). The present study has suggested that while (metaphoric) gestures are part of music teachers' teaching repertoires, teachers' use of verbal and gestural metaphors may not always benefit the students. Future studies could explore the nature of student misunderstandings in more depth as well as focussing on the learning opportunities created by teachers' use of novel metaphors. For example, as Teacher C pointed out in her post-observation interview, her use of food metaphors did not appear by chance, but resulted from students' positive responses towards this novel metaphor in the past (see section 5.9.1). The studies involving teachers' use of novel metaphors and students' interpretations might offer (at least) music teachers more valuable insights into the processes of music learning and teaching.

The results also suggested a broad range of metaphor density across teachers and sessions (see sections 7.2.1, 7.2.2, 7.2.3, and 7.2.4 for the verbal metaphors, and 7.3.1, 7.3.2, 7.3.3, and 7.3.4 for the gestural ones). Future studies could usefully explore the distribution of metaphor according to word class and its variation across various speakers; they could also explore differences in terms of metaphor use by different teachers teaching different topics to different students studying at different levels.

Furthermore, as discussed in the previous section, the teachers were not asked to remove anything they held in their hands during the observed sessions in the present study, and hence the teachers' use of hands was constrained. In addition, although Teacher E's use of gestures was evenly distributed in Session E2, she used only six gestures in the first 12 minutes of her lecturing in Session E1 (see section

7.3.1). What factors contributed to the uneven use of gestures for the same teacher talking about the same teaching content (i.e., music appreciation) remained unknown. Future studies could explore the impact of the classroom context on the role and functions of metaphor.

Based on an applied linguist's view of conceptual metaphor theory, the current study has paid more attention to recurrent metaphors than the non-recurrent ones. However, there were several one-off examples, such as *bu fuhe rentigongxue de paizi* ('beats providing no supportive ergonomics') (C2, 880) and *zuihou na ji ge yin hao xin o* ('the final notes are very disgusting') (F1, 907), used by the teachers when describing music and giving students comments. These non-recurrent metaphors were also worth investigating because they were not used in a conventional way which could be found in everyday conversation, and hence might cause students confusion or even misunderstanding due to their one-off occurrence and the lack of a surrounding context which might facilitate understanding (Low, Littlemore, & Koester, 2008).

Another area for future research concerns reciprocal metaphor use; that is, the interaction and development of metaphor use between teachers and students in the classrooms at junior high school level (c.f., Cameron, 2003, Low, Littlemore, & Koester, 2008). As discussed in section 7.2.4, metaphors used by Teacher E in control sequences were retained, reused, and developed later in the same session by a student. The metaphor was first introduced by Teacher E to keep the class in order, and it was echoed and developed by the student to sarcastically make fun of his classmate. Such an interpretation should be treated circumspectly due to the fact that only one video recorder was allowed in the current study, and the student's use of metaphor could only partly be captured. Nevertheless, more qualitative studies could

explore the ways in which meaning is negotiated between teachers and students who each bring their own metaphors and knowledge of the subject matter to the classroom. Issues similar to how students perceive and respond to teachers' use of metaphors are definitely worth investigating and exploring for future studies, which might (a) demonstrate whether the cross-domain mapping or comparison of teachers' metaphors is understood or misunderstood, and (b) add dimensions to the metaphor research, from metaphor recognition to aspects of metaphor interpretation (the process of metaphors' being understood) and metaphor appreciation (the process of metaphors' being appreciated emotionally), as distinguished by Gibbs (in press). That is to say, how metaphors are interpreted and/or appreciated by students in music classrooms might provide another perspective for understanding the linkage between metaphors and music teaching and learning.

## **8.8 Conclusion**

In conclusion, to judge from the observed sessions, metaphor is expressed extensively through not only speech but also gestures in music teaching at junior high school level in Taiwan. The metaphoric gestures were more flexible than the verbal metaphors in terms of forms, but systematicity was found in metaphors presented in both modalities. Gestural metaphors did not always occur at the same time as the verbal metaphors, nor did they always relate to the same metaphor. These suggest that gesture and speech are two parts of a broader communication system in music teaching. In addition, metaphoric gestures and verbal metaphors served various pedagogical functions in music classrooms, and they complemented each other to give fuller expression than any single modality could achieve.

This study has taken an exploratory step in the direction of examining how metaphor is used in speech and by gestures in music teaching at junior high school

level. It does not represent the context of Taiwan as a whole, but is of importance in pointing out (a) the complexity of how some music teachers express themselves in a mixture of audio and visual modalities in classroom situations at junior high school level, (b) how thought and multimodal expressions are linked through metaphor in music teaching, and (c) how underlying universal and cultural concepts related to what metaphor is presented. It is hoped that the study will encourage further cross-cultural investigation and exploration into such issues in the context of teaching and learning.

### **Coda**

One night around 18 months ago, Sue Perkins, the British comedian, was about to conduct a new piece which she had been assigned in a TV reality show on BBC Two. In the weekly television series, Sue competed with the other seven celebrities to learn to conduct orchestral, choral, and operatic music. At one point where Sue and her mentor conductor, Jason Lai, were informed about what to conduct (i.e., Borodin's *Polovtsian Dances*), Jason gave Sue a short description of the new piece. The two were in a practice room, standing beside each other by a grand piano. "This is not gentle music." Jason looked at Sue while she was sipping her coffee, looking down at her score. "This is Russian, rough and raw . . . and radiant." Jason's two hands, forming into two fists, kept beating—hard and fast, one after the other—the space between his chest and Sue's left shoulder. "We need to see it is . . . in your . . ." Jason's fists were now open, raised to the height of Sue's head, palms facing toward each other, and repeatedly moving from up to down along Sue's upper body. "That's easy," Sue interrupted, before Jason verbally finished his sentence. "OK," Jason moved his eyes from Sue down to his score, hands down. "My grandmother is a Latvian peasant," Sue explained.

Just as my classmate described Mozart's music as 'sweet' to me years ago, which surprised me and later stimulated my interest in conducting the current study, Jason demonstrated again that night how metaphors talked about music—the difference was that Jason used them not only verbally, but also gesturally.

Danish author and poet, Hans Christian Andersen, once said, "Where words fail, music speaks." His words can be applied to the context of music classrooms to partly explain why music teachers gesture. Gestures express what is, and what cannot be, conveyed by speech. Where words fail, gestures prove their value.

**Footnote to Chapter Eight**

<sup>1</sup> The event-related potential (ERP) is a visual neural signal that reflects coordinated neural network activity.

## Chinese Version of Eileen Chang's Example

然而交響樂，因為編起來太複雜，作曲者必須經過艱苦的訓練，以後往往就沉溺於訓練之中，不能自拔。所以交響樂常有這個毛病：格律的成份過多。為什麼隔一陣子就要來這麼一套？樂隊突然緊張起來，埋頭咬牙，進入決戰最後階段，一鼓作氣，再鼓三鼓，立志要把全場聽眾掃數肅清剷除消滅，而觀眾只是默默抵抗著，都是上等人，有高級的音樂修養，在無數的音樂會裡坐過的；根據以往的經驗，他們知道這音樂是會完的。

我是中國人，喜歡喧嘩吵鬧，中國的鑼鼓是不問情由，劈頭劈腦打下來的，再吵些我也能夠忍受，但是交響樂的攻勢是慢慢來的，需要不少的時間把大喇叭鋼琴小喇叭凡啞林一一安排佈置，四下裡埋伏起來，此起彼應，這樣有計劃的陰謀我害怕。

\*Extracted from pages 213-214, 張愛玲[Chang, E.] (1991)。談音樂 [On Music]。

流言，(pp. 211-221)。臺北市：皇冠出版。

APPENDIX B

**Details of the Interviews for Pilot and Main Studies**

<i>Interview</i>	<i>Date (2007/8)</i>	<i>Means</i>	<i>Place</i>	<i>Length (minutes)</i>	<i>Recording</i>
<b>Pilot Interviews</b>					
Interview 1	21 October	Face to Face	Wang's House	35	Video Recorded
Interview 2	23 October	Face to Face	Classroom	42	Video Recorded
<b>Main Study: Pre-Observation Interviews</b>					
Aa	03 March	Telephone	n/a	5	Notes
Ba	01 April	Telephone	n/a	17	Notes
Ca	07 April	Telephone	n/a	9	Notes
Da	07 April	Telephone	n/a	2	Notes
Ea	18 March	Telephone	n/a	5	Notes
Fa	17 April	Telephone (with Head Teacher)	n/a	6	Notes
<b>Main Study: Post-Observation Interviews</b>					
Ab	13 March	Face to Face	Office	20	Audio Recorded
Bb	03 April	Face to Face	Classroom	40	Video Recorded
Cb	14 April	Face to Face	Classroom	31	Video Recorded
Db	15 April	Face to Face	Restaurant	20	Notes
Eb	01 May	Face to Face	Office	25	Video Recorded
Fb	05 May	Face to Face	Practice Room	25	Notes

APPENDIX C

**Observation Schedule Used in the Pilot Study**

School: \_\_\_\_\_ Teacher and Contact Number: \_\_\_\_\_  
 Class: \_\_\_\_\_ Subject/Topic: \_\_\_\_\_  
 Student Number: \_\_\_\_\_ Duration: \_\_\_\_\_ mins Date: \_\_\_\_\_

Activity												
Observation												
Start time												
Linguistic metaphor												
Gesture												
Participant Organisation												
① Teacher	①	①	①	①	①	①	①	①	①	①	①	①
② Whole class	②	②	②	②	②	②	②	②	②	②	②	②
③ Individual	③	③	③	③	③	③	③	③	③	③	③	③
④ Pairs	④	④	④	④	④	④	④	④	④	④	④	④
⑤ Groups	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤
Materials												
⑥ Board	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥
⑦ Textbooks	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦
⑧ Handouts	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧
⑨ Pictures	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨
⑩ Audio tape	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩
⑪ DVD/VCD	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪
Instruments												
⑫ Piano	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫
Other												
Language Used												
⑬ Mandarin	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬
⑭ Taiwanese	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭
⑮ English	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮
Other												
End time												
Classroom atmosphere												

## APPENDIX D

### **Questions for Post-Observation Interviews in the Pilot Study**

1. Teacher's educational background and working experience
2. Why is music education important to you?
3. How do you define good music teachers? What characteristics should they have?
4. How do you prepare for your class?
5. How do you decide if the materials are suitable for the class?
6. How do you prepare for explaining new concepts?
7. What's your teaching goal for these sessions? How is it achieved?
8. How do you think about metaphors? Do you use them to help you teach?

APPENDIX E

**Observation Schedule Used in the Main Study**

School: \_\_\_\_\_ Teacher and Contact Number: \_\_\_\_\_

Class: \_\_\_\_\_ Subject/Topic: \_\_\_\_\_

Student Number: \_\_\_\_\_ Duration: \_\_\_\_\_ mins Date: \_\_\_\_\_

Activity												
Observation												
Start time												
Participant Organisation												
① Teacher	①	①	①	①	①	①	①	①	①	①	①	①
② Whole class	②	②	②	②	②	②	②	②	②	②	②	②
③ Individual	③	③	③	③	③	③	③	③	③	③	③	③
④ Pairs	④	④	④	④	④	④	④	④	④	④	④	④
⑤ Groups	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤	⑤
Materials												
⑥ Board	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥	⑥
⑦ Textbooks	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦	⑦
⑧ Handouts	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧	⑧
⑨ Pictures	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨	⑨
⑩ Audio Sound	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩	⑩
⑪ DVD/VCD	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪
⑫ PowerPoint	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫	⑫
Instruments												
⑬ Piano	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬	⑬
Other												
Language Used												
⑭ Mandarin	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭	⑭
⑮ Taiwanese	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮	⑮
⑯ English	⑯	⑯	⑯	⑯	⑯	⑯	⑯	⑯	⑯	⑯	⑯	⑯
Other												
End time												

## APPENDIX F

### **Questions for Post-Observation Interviews in the Main Study**

1. What is your educational background and working experience?
2. Why is music education important to you?
3. How do you define good music teachers? What characteristics should they have?
4. How do you generally prepare for your classes? Did you do anything different for the sessions I observed?
5. How did you decide if the materials were suitable for the class?
6. What were your teaching goals for these sessions? How were they achieved?
7. Are you satisfied with your teaching in the sessions I observed? Why or why not?
8. How did you prepare for explaining new concepts, especially the abstract ones?
9. Do you often use stories, personal experiences, or metaphor to help you teach?  
Which do you use most and least often? Why?
10. What do you think about metaphor as a teaching tool? Did you include any metaphors in your teaching plans for the session(s) I observed?
11. What do you think about gesture as a teaching tool? Did you include any gestures in your teaching plans for the session(s) I observed?

## APPENDIX G

### Permission Letter in Chinese

親愛的音樂老師：

您好。冒昧寫信給老師，目的在於徵求老師同意、允許本人進入您課堂蒐集研究資料的可能性。

我是英國約克大學 (University of York) 教育學系的研究生。在 Dr. Graham Low 以及 Dr. Carole Torgerson 的指導下，進行博士論文研究。該研究與「台灣音樂教師如何利用中文進行音樂教學」有關，欲藉由蒐集音樂課堂內的教室言談，就語言部份做分析探討，以了解教師如何透過中文語言描述、解釋抽象的音樂。

本研究之所以期待並需要老師您的參與，是因為直接深入各教室觀察並蒐集師生使用之語言，是本研究唯一且可行的方法。在此要向老師強調的是，此研究無關教學方式之評鑑；相反地，唯僅僅就語言學的角度蒐集音樂教室課堂用語。

中文方面對課堂教室用語的研究始終附之闕如。本研究結果預期將有助於就語言、認知、及教學面增進對中文音樂教室課堂用語的了解、幫助我們更有效使用語言描述音樂。研究結束後，將提供每位參與者根據蒐集資料撰寫之研究報告總結，做為日後與學生溝通或教學上之參考。因此誠摯地希望您的合作與協助。

本人期盼老師選擇您任教的兩堂課作為研究對象，班級需不同，七年級至九年級皆可。在您的同意下，我將進入課堂錄影錄音，並全程待在教室內觀察課程之進行與做筆記。觀察期間以不影響老師之授課為原則。除此，我還需要與老師您進行課前與課後之訪談。

錄影錄音所得資料僅供本研究紀錄、分析之用；且研究中任何可辨認出參與者身分之姓名、服務學校名稱等，皆將匿名處理，以確保參與者之隱私權。

課堂觀察計劃於四月份開始實施。若老師您願意參與協助此研究，或欲對此研究有更進一步的了解，歡迎於三月三十一日前，email 至 [yc529@york.ac.uk](mailto:yc529@york.ac.uk)，我很樂意與老師作進一步的說明與討論。

最後，再次謝謝老師撥冗閱讀此信。期待老師的回音！

英國約克大學教育學系博士班研究生  
莊亞菁 敬上  
中華民國九十七年二月十五日

APPENDIX H

**English Version of the Permission Letter**

15th February 2008

Dear Music Teacher,

This letter is to ask for your permission to allow me to observe some of your classes and collect data for my research study.

I am a PhD student from Department of Educational Studies, University of York, UK. Supervised by Dr. Graham Low and Dr. Carole Torgerson. I am conducting a research study about how music teachers teach music using the Chinese language. Through analysing data collected from music classrooms, it is hoped to understand how Taiwanese music teachers describe and explain abstract music using Mandarin Chinese.

The reason why your participation is encouraged is because getting into the classroom and collecting the discourse of you and your students is the only feasible research method for this study. It is also important to emphasise that **this research does NOT aim at assessing or evaluating your teaching methods**, but simply looks at music classrooms from a linguistic point of view.

There is a serious lack of research on classroom discourse in Chinese. This research will help us not only to know more about Chinese music classroom discourse from cognitive, linguistic, and pedagogic points of view, but also to learn if music could be

described in a more effective way. At the end, a summary of the research report will be provided to all participants for your reference for improving teaching and communicating with your students. Therefore I do look forward your involvement and participation in this research.

I hope you can choose two sessions for me to observe. They have to be two different groups of students in no matter which school year. I will sit in your classroom to video/audio tape the whole session, and make field notes, without influencing or interfering with the procedure of the classes. In addition, I would ask for interviews with you both before and after the sessions.

What is video/audio taped is for research records and analysis only. The participants will remain anonymous and so that there is no possible way to identify them from the data collected.

The classroom observation is planned to take place in April. If you agree to participate in this study, or you would just like to know more about it, please email me at [yc529@york.ac.uk](mailto:yc529@york.ac.uk) by 31 March 2008. I will be more than glad to provide further explanation and discussion.

Thank you for reading this letter and I am looking forward to hearing from you.

Best regards,

Ya-Chin Chuang

Educational Studies, University of York, UK

## Research Consent Form in Chinese

### 參與研究同意書

本人\_\_\_\_\_經研究者詳細說明研究目的與性質後，同意參加英國約克大學教育學研究所博士班學生莊亞菁所進行之「**台灣音樂教師如何利用中文進行音樂教學之研究**」，對本人任教之班級進行課堂觀察、並與本人進行訪談。

經由詳細說明後，本人已經充分了解以下有關本人參與此研究的各項權利與義務等重點：

1. 本研究已徵得論文指導教授，英國約克大學教育研究所 Dr. Graham Low 以及 Dr. Carole Torgerson 之同意，研究者將遵行相關之研究倫理來進行研究，故可確保本人之有關權益。
2. 本次課堂觀察旨在蒐集師生於音樂課堂內使用之語言。正式觀察時間為兩堂課，共計約九十分鐘。
3. 課前訪談旨在使研究者與本人達成初步研究共識、增進對本人授課方式之了解、確定課堂觀察班級與時間；課後訪談旨在就課堂觀察及先前訪談之重點部份進行深入討論。
4. 本人同意此課堂觀察及訪談過程可以錄影錄音，作為研究之用。
5. 研究者對本人所提供之錄影錄音資料有保密責任。使用上，只有研究者、指導教授，可在研究（含後續與研究相關之出版品）中使用；關於資料內容，研究者將在刪除足以辨識個人背景資料之內容後，始在研究報告中呈現。

參與者簽名：\_\_\_\_\_ 簽名日期：\_\_\_\_\_

研究者簽名：\_\_\_\_\_ 簽名日期：\_\_\_\_\_

## **English Version of the Research Consent Form**

### Research Consent Form

I, \_\_\_\_\_, after being informed by the researcher about the research, agree to participate in the study on “how music teachers teach music using the Chinese language”, conducted by Ya-Chin Chuang, a PhD student from the Department of Educational Studies, University of York, UK. The researcher is allowed to observe some of my classes, and hold interviews with me.

I understand that my rights and responsibilities in the study include:

1. This research has been agreed by the supervisors, Dr. Graham Low and Dr. Carole Torgerson from Department of Educational Studies, University of York, UK. The research will be conducted with relevant ethical issues addressed, and therefore my rights are protected.
2. The purpose of classroom observation is to collect the discourse of me and my students. The observation will involve two sessions, totalling around 90 minutes.
3. The purpose of interviews before the sessions is to make sure I understand the research, help the researcher understand my ways of teaching, and decide which classes and when to observe. The purpose of interviews after the sessions is to have further discussion about issues arising from the classroom observation and earlier interviews.

4. I agree to be both video and audio recorded during classroom observation and interviews, for research purposes.
5. The researcher has the responsibility for data protection. The collected data can only be used by the researcher and her supervisors, for research purposes and research publications. The data will be presented in such a way that there is no possible way for the participants to be identified.

---

Participant's Signature

---

Date

---

Researcher's Signature

---

Date

## Example of the Transcription of Speech

\*The following extract occurred when Teacher A (A1, 491-522) invited the class to make a guess about which part of Taiwan the folk song, *Diudiutongzai*, originated from. Phonetic symbols of Bopomo were used in IU 499 and 503 since no similar-sounding characters from Mandarin Chinese could be found.

- 來  
有獎徵答  
到底是台灣哪一個地方的民謠  
趕快
- 495 舉手才算  
S: {花蓮  
S: {不知道  
二十一縣市的其中之一  
ㄍㄨㄛˋ ㄏㄟˊ
- 500 S: 美國  
S: 高雄  
不對  
剛才你們唱的這首ㄍㄨㄛˋ ㄏㄟˊ  
不
- 505 剛才你們聽的這首丟丟銅仔  
那個  
S: 南投  
S: 台東  
欸
- 510 阿你們班這樣一個人猜一個  
等到二十一個縣市  
就被你們班  
被你們班猜光光了  
當然
- 515 一定有一個對的嘛  
S: 台中  
小老師  
前小老師  
欸
- 520 不對  
現任小老師  
現任小老師講對

## Example of the Transcription of Gestures

\*The following extract occurred when Teacher A (A1, 492-511) invited the class to make a guess about which part of Taiwan the folk song, *Diudiutongzai*, originated from. The teacher was moving around in the front of the classroom, facing the class. There was a lecture desk at the right (from the teacher's perspective) front side of the classroom.

有獎徵答

(往右手邊講桌走去)

(walking towards her right-hand side and the lecture desk)

[到底是台灣哪一個地方的民謠

(站定在講桌前，LH 扶著講台，手指敲講台邊緣)

(standing still in front of the lecture desk, LH on the edge of the desk, the fingers drumming on the edge)

趕快

495 舉手才算

S: {花蓮

S: {不知道

二十一縣市的其中之一

ㄍㄟㄣˇ、ㄟˇ

500 S: 美國

S: 高雄

不對]

[剛才你們唱的這首]ㄉㄟㄣˇ

(LH, 握拳掌心朝上，拇指伸出，往身體左側點一下後收回)

(LH, thumb stretching away from the fist, palm facing up, arm stretching out to the left, pausing, and returning to the edge of the desk)

不

505 剛才你們聽的這首丟丟銅仔

[那個]

(LH, 食指舉高到左肩往前伸直，指向某生)

(LH, index finger, arm stretching out at shoulder height, pointing to a student)

S: 南投

S: 台東

欸

510 阿你們班這樣[一個人猜一個]

(LH, 食指胸前由左至右快速點空氣兩下)

(LH, index finger, arm stretching out at chest height, pointing twice at the air from left to right)

等到二十一個縣市

## Word Segmentation by CKIP Chinese Word Segmentation System

Text before Being Processed by the System (space indicates the change of line)

來 再一次喔 我們從 B 的一二 第三拍開始來 Pianissimo 的地方 預備  
 剛剛進來那樣子很好 那樣子音量是對的 預備 一二 再漸強 回來 不要  
 趕 下去 一二 saxophone 你去哪裡了 搭滴 re sol 搭滴 好 可以了 可  
 以了 好 謝謝 來來 大提琴來 預備 來來來 就這裡 很久沒練了喔  
 來 試試看 來 蹦蹦 一 大提琴先走 預備 三四 Bassoon 不用 謝  
 謝 來 再一次再一次 來 拉拉 預備 一 一二三 分開 咚 咚 圓  
 滑線連過去 分開 滴搭 漸強 小聲下來 來 休止符 Re mi fa

Word Segmentation Result Retrieved from the System

來(D) 再一次(D) 喔(I) 我們(Nh) 從(P) B(FW) 的(DE) 一二(Dfb)  
 第三(Neu) 拍(VC) 開始(Ng) 來(D) Pianissimo(FW) 的(DE) 地方(Na)  
 預備(VF) 剛剛(D) 進來(VA) 那(Nep) 樣子(Na) 很(Dfa) 好(VH) 那  
 (Nep) 樣子(Na) 音量(Na) 是(SHI) 對(VH) 的(DE) 預備(VF) 一二  
 (Dfb) 再(D) 漸(D) 強(VH) 回來(VA) 不要(D) 趕(VC) 下去(Di) 一  
 二(Dfb) saxophone(FW) 你(Nh) 去(VCL) 哪裡(Ncd) 了(Di) 搭滴(VH)  
 re(FW) sol(FW) 搭滴(VH) 好(VH) 可以(VH) 了(Di) 可以(VH) 了(Di)  
 好(VH) 謝謝(VJ) 來來(Nb) 大提琴(Na) 來(D) 預備(VF) 來(VA) 來  
 來(Nb) 就(P) 這裡(Ncd) 很(Dfa) 久(VH) 沒(D) 練(VC) 了(Di) 喔  
 (T) 來(D) 試試(VF) 看來(D) 蹦蹦(VA) 蹦蹦(VA) 一(Neu) 大提琴(Na)  
 先(D) 走(VA) 預備(VF) 三四(Neu) Bassoon(FW) 不用(D) 謝謝(VJ)  
 來(D) 再一次(D) 再一次(D) 來(D) 拉拉(VC) 預備(VF) 一二三(Neu)  
 分開(VHC) 咚咚(D) 圓滑線(Na)

## Comparison of Word Segmentation by CKIP Chinese Word Segmentation System and the Finished Results

IU	Word Segmentation
285	Text: 再一次喔
	System: 再一次 喔 Finished: 再一次 喔
	Note: No modification was made.
286	Text: 我們從 B
	System: 我們 從 B Finished: 我們 從 B
	Note: No modification was made.
287	Text: 的一二
	System: *的 一二 Finished: 的 一 二
	Note: Numbers were treated as single entities by the System.
288	Text: 第三拍開始來
	System: 第三 拍 開始 來 Finished: 第三 拍 開始 來
	Note: No modification was made.
314	Text: 很久沒練了喔
	System: 很 久 沒 練 了 喔 Finished: 很 久 沒 練 了 喔
	Note: No modification was made.
315	Text: 來
	System: 來 Finished: 來
	Note: No modification was made.
316	Text: 試試看
	System: *試試 Finished: 試試看
	Note: System's mistake due to word segmentation ambiguity
317	Text: 來
	System: *看來 Finished: 來
	Note: System's mistake due to word segmentation ambiguity

APPENDIX O

**Screenshot of Verbal and Gestural Metaphor Annotation by ELAN: Major and Minor Keys**

	00:00:20.000	00:00:21.000	00:00:22.000	00:00:23.000	00:00:24.000	00:00:25.000	00:00:26.000
Segment content	inviting students to think if major or minor is "brighter" or "darker" based on their Chinese names						
T-IU	好 那你們	看一下大跟小	你們覺得	哪一個會比較亮	哪一個比較暗	哪一個比較亮	
T-Word Segm	好 那 / 你	看一下 / 大 / 跟 /	你們 / 覺	哪一個 / 會 / 比較 / 亮	哪一個 / 比較 / 暗	哪一個 / 比較 / 亮	
T-Hanyu Pinyin	ha na nim	kanyixia da gen xi	nimen ju	nayige hui bijiao liang	nayige bijiao an	nayige bijiao liang	
T-Trans_free	OK Then y	think about "big"	Which on	do you think is brighter?	Which one is darker?	Which one is brighter?	
T-Ver M				亮	暗	亮	
T-Gestures	Gesture Unit 1		Gesture Unit 2				
T-Ges_phase	preparation	stroke retra	hold	stroke	stroke	retraction	
T-R/L	R						
T-Position	on the necklace	above	on the left wrist at height of neck	height of eyebr	height	right thigh	
T-Ges mov	moving from right side	moving back to body and pausin	drawing a big	drawin	back to body and do		
T-Ges form	a sharp-pointed	pointi	five fingers stretching out, four fin	half round palm with fi	a loose fist by five h		
T-not gesticulati	stroking necklac		stroking watch on left wrist				

APPENDIX P

**Main study: Participant Organisation, Materials,  
Musical Instruments, and Languages Used in the Sessions**

Session	A1	A2	A3	B1	B2	C1	C2	D1	D3	E1	E2	E3	F1
Observation													
<b>Participant Organisation</b>													
① Teacher	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
② Whole class	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
③ Individual	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
④ Pairs													
⑤ Groups							✓						
<b>Materials</b>													
⑥ Board	✓	✓	✓	✓				✓	✓				
⑦ Textbooks						✓	✓			✓		✓ <sup>a</sup>	✓ <sup>a</sup>
⑧ Handouts	✓	✓	✓	✓		✓	✓	✓	✓				
⑨ Pictures													
⑩ Audio Sound	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		
⑪ DVD/VCD				✓	✓								
⑫ PowerPoint						✓	✓						
<b>Instruments</b>													
⑬ Piano							✓	✓	✓				
⑭ Other			✓			✓	✓						
<b>Language Used</b>													
⑮ Mandarin	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
⑯ Taiwanese	✓	✓	✓		✓	✓	✓			✓			✓
⑰ English						✓		✓	✓	✓			✓
⑱ Other	✓	✓		✓									✓

<sup>a</sup> sheet music

APPENDIX Q

**Screenshot of Verbal and Gestural Metaphor Annotation by ELAN: Bizet's Five Notes**

	00.000	00:00:01.000	00:00:02.000	00:00:03.000	00:00:04.000	00:00:05.000	00:00:06.000	00:00:07.000	00:00:08.000	00:00:09.000	00:00:10.000
Segment conten	explaining how to interpret and play the five repeated notes										
T-IU			措拉措措措措措措					他要什麼		就是要你走那個走向嘛	
T-Word Segm			措/拉/措/措/措/措/措/拉/滴					他/要/什麼		就/是/要/你/走/那/個/走	
T-Hanyu Pinyi			da la da da da da da da la di					ta yao sheme		jiu shi yao ni zou na ge zouxia	
T-Trans_free			da la da da da da da da la di					What does he want?		It is the direction which he'd li	
T-Ver M										走	走向
T-Gestures			Gesture Unit 1						Gesture Unit 2		
T-Ges_phase	hold		stroke	stroke	stroke	stroke	stroke	retraction		preparation	stroke
T-R/L	R									R	
T-Position	in front of the chest				in front of the chest, upper body started bending forward a			upper bo		in front of the chest	
T-Ges mov	remaining unmoved		drawing outward circles	moving forward and downward			returning		raising to chest	moving	
T-Ges form	five fingers stretching out		thumb and index finger stretching out, palm facing down				loosing p		thumb and index finger stretc		
T-not gesticulati											

APPENDIX R

**Screenshot of Verbal and Gestural Metaphor Annotation by ELAN: Syllabic Gregorian Chant**

	00.000	00:00:01.000	00:00:02.000	00:00:03.000	00:00:04.000	00:00:05.000
Segment conten	features of syllabic Gregorian chant					
T-IU	你有沒有發現		它的音		不是只有同一個音一直唸一直唸囉	
T-Word Segm	你 / 有 / 沒 / 有 /		它 / 的 /		不 / 是 / 只 / 有 / 同 / 一 / 個 / 音 / 一 / 直 /	
T-Hanyu Pinyi	ni youmeiyou		ta de yi		bu shi zhiyou tong yi ge yin yizhi nian y	
T-Trans_free	Did you notic		its note		It's not keeping repeating the same n	
T-Ver M						
T-Gestures	Gesture Unit 1			Geature Unit 2		
T-Ges_phase	stroke			preparation		stroke
T-R/L	R					
T-Position	in front of the eyes					
T-Ges mov	drawing big curly wave to the right			moving to t		moving to the right, palm
T-Ges form	palm facing		index finger stretching out		palm facing down	
T-not gesticulati						

## References

- Ahrens, K., Lai, T.-V., & Huang, C.-R. (2001, June). *Source domains for marriage in Mandarin Chinese*. Paper presented at the meeting of IACL-10 & NACCL-13, University of California, Irvine.
- Alibali, M., & Goldin-Meadow, S. (1993). Gesture-speech mismatch and mechanisms of learning: What the hands reveal about a child's state of mind. *Cognitive Psychology*, *25*, 468-523.
- Alibali, M. W., & Nathan, M. J. (2007). Teachers' gestures as a means of scaffolding students' understanding: Evidence from an early algebra lesson. In R. Goldman, R. Pea, B. Barron, & S. J. Derry (Eds.), *Video research in the learning sciences* (pp. 349-365). Mahwah, NJ: Erlbaum.
- Alverson, H. (1994). *Semantics and experience: Universal metaphors of time in English, Mandarin, Hindi, and Sesotho*. Baltimore, MD: Johns Hopkins University Press.
- Antovic, M. (2009). Musical metaphors in Serbian and Romani children: An empirical study. *Metaphor and Symbol*, *24*, 185-202.
- Aronson, E., Ellsworth, P. C., Carlsmith, J. M., & Gonzales, M. H. (1990). *Methods of research in social psychology* (2nd ed.). New York: McGraw-Hill.
- Ashley, R. (2004). Musical pitch space across modalities: Spatial and other mappings through language and culture. In S. D. Lipscomb, R. Ashley, R. O. Gjerdingen, & P. Webster (Eds.), *Proceedings of the 8th International Conference on Music Perception & Cognition* (pp. 64-71). Adelaide, Australia: Causal Productions.
- Barten, S. S. (1992a). The language of musical instruction. *Journal of Aesthetic Education*, *26*(2), 53-61.
- Barten, S. S. (1992b, February). *Like a single crocus in Holland: The power of*

*metaphor in music instruction*. Paper presented at the meeting of the Second International Conference on Music Perception and Cognition, Los Angeles, CA.

- Barten, S. S. (1998). Speaking of music: The use of motor-affective metaphors in music instruction. *Journal of Aesthetic Education*, 32(2), 89-97.
- Bassey, M. (1999). *Case study research in educational settings*. Buckingham, England: Open University Press.
- Bell, J. (1998). *Doing your research project: A guide for first-time researchers in education and social science* (4th ed.). Buckingham, England: Open University Press.
- Berscheid, E., Baron, R. S., Dermer, M., & Libman, M. (1973). Anticipating informed consent: An empirical approach. *American Psychologist*, 28, 913-925.
- Bhatia, V. K., Flowerdew, J., & Jones, R. H. (2008). Approaches to discourse analysis. In V. K. Bhatia, J. Flowerdew, & R. H. Jones (Eds.), *Advances in discourse studies* (pp. 1-17). London/New York: Routledge.
- Black, M. (1962). *Models and metaphors*. Ithaca, NY: Cornell University Press.
- Black, M. (1993). More about metaphor. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed.) (pp. 19-45). Cambridge/New York: Cambridge University Press.
- Blumberg, H. H., Fuller, C., & Hare, A. P. (1974). Response rates in postal surveys. *Public Opinion Quarterly*, 38, 113-23.
- Boroditsky, L. (2001). Does language shape thought? English and Mandarin speakers' conceptions of time. *Cognitive Psychology*, 43(1), 1-22.
- Boroditsky, L., & Ramscar, M. (2002). The roles of body and mind in abstract thought. *Psychological Science*, 13(2), 185-188.
- Bourke, S. (1986). How smaller is better: Some relationships between class size,

- teaching practices, and student achievement. *American Educational Research Journal*, 23(4), 558-571.
- Bowdle, B. F., & Gentner, D. (1999). Metaphor comprehension: From comparison to categorization. In M. Hahn & S. C. Stoness (Eds.), *Proceedings of the twenty-first annual conference of the cognitive science society* (pp. 90-95). New Jersey: Lawrence Erlbaum Associates.
- Brown, R. W., Leiter, R. A., & Hildum, D. C. (1957). Metaphors from music criticism. *Journal of Abnormal Psychology*, 54(3), 347-352.
- Bruner, J. S., & Postman, L. (1949). On the perception of incongruity: A paradigm. *Journal of Personality*, 18(2), 206-223.
- Bukofzer, M. F. (1939-40). Allegory in Baroque music. *Journal of the Warburg Institute*, 3(1/2), 1-21.
- Bukofzer, M. F. (1948). *Music in the Baroque era from Monteverdi to Bach*. London: J. M. Dent & Sons Ltd.
- Burwell, K. (2006). On musicians and singers. An investigation of different approaches taken by vocal and instrumental teachers in higher education. *Music Education Research*, 8(3), 331-347.
- Cameron, L. (1999). Operationalizing “metaphor” for applied linguistic research. In L. Cameron & G. Low (Eds.), *Researching and applying metaphor* (pp. 3-28). Cambridge: Cambridge University Press.
- Cameron, L. (2002). Metaphors in the learning of science: A discourse focus. *British Educational Research Journal*, 28(5), 673-688.
- Cameron, L. (2003). *Metaphor in educational discourse*. London: Continuum.
- Cameron, L. (2006). *A discourse dynamics framework for metaphor*. Retrieved April 11, 2010, from <http://creet.open.ac.uk/projects/metaphor-analysis/>

theories.cfm?paper=ddfm

- Cameron, L. (2007). Patterns of metaphor use in reconciliation talk. *Discourse and Society, 18*(2), 197-222.
- Cameron, L., & Deignan, A. (2003). Combining large and small corpora to investigate tuning devices around metaphor in spoken discourse. *Metaphor and Symbol, 18*, 149-160.
- Cameron, L., & Deignan, A. (2006). The emergence of metaphor in discourse. *Applied Linguistics, 27*(4), 671-690.
- Cameron, L., & Low, G. (2004). Figurative variation in episodes of educational talk and text. *European Journal of English Studies, 8*(3), 355-373.
- Cameron, L., & Low, G. (2007, March). *Identifying patterns of metaphor in discourse*. Paper presented at the RaAM Workshop: Issues in researching metaphor in discourse, University of Castilla-LaMancha, Ciudad Real, Spain.
- Cameron, L., & Maslen, R. (Eds.) (2010). *Metaphor analysis: Research practice in applied linguistics, social sciences and the humanities*. London: Equinox Publishing.
- 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*, 63-89.
- Campbell, P. S., & Scorr-Kassner, C. (1995). *Music in childhood: From preschool through the elementary grades*. New York: Schirmer Books.
- Casasanto, D., & Boroditsky, L. (2008). Time in the mind: Using space to think about time. *Cognition, 106*(2), 579-593.
- Casasanto, D., Phillips, W., & Boroditsky, L. (2003). Do we think about music in terms of space? Metaphoric representation of musical pitch. In R. Alterman, &

- D. Kirsh (Eds.), *Proceedings of the 25th Annual Meeting of the Cognitive Science Society* (CD-ROM). Boston, Massachusetts: Cognitive Science Society.
- Chafe, W. (1987). Cognitive constraints on information flow. In R. S. Tomlin (Ed.), *Coherence and grounding in discourse* (pp. 21-51). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Chafe, W. (1993). Integration and involvement in speaking, writing, and oral literature. In D. Tannen (Ed.), *Spoken and written language: Exploring orality and literacy* (pp. 35-53). Norwood, NJ: Ablex Publishing Corporation.
- Chafe, W. (1994). *Discourse, consciousness, and time: The flow and displacement of conscious experience in speaking and writing*. Chicago/London: The University of Chicago Press.
- Chan, T. T., & Bergen, B. (2005). Writing direction influences spatial cognition. In B. G. Bara, L. Barsalou, & M. Bucciarelli (Eds.), *Proceedings of the twenty-seventh annual conference of the Cognitive Science Society* (pp. 412-417). New Jersey: Lawrence Erlbaum Associates Inc.
- Chang, E. 張愛玲 (1991)。談音樂 [On Music]。流言，(pp. 211-221)。臺北市：皇冠出版。
- Chang, F.-C. 張芳全 (2009 年 11 月)。影響台灣城鄉國二學生的數學成就因素探討 [Exploring the gap of urban-rural student achievement impacted factors: Taiwan's Grader 8 in TIMSS 2003]。論文發表於國立新竹教育大學舉辦之「2009 年臺灣教育學術研討會」，國立新竹教育大學。
- Charmaz, K. (2005). Grounded theory in the 21st century: Applications for advancing social justice studies. In N. K. Denzin, & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed.) (pp. 507-535). Thousand

Oaks/London/New Delhi: Sage Publications.

Chatterjee, A. (2001). Language and space: Some interactions. *Trends in Cognitive Sciences*, 5(2), 55-61.

Chen, I.-C. 陳怡靖 (2004) 。臺灣地區高中多元入學與教育階層化關聯性之研究 [An exploration of the relations between Senior High Schools' Multiple Entrance Initiative and educational stratification] 。國立高雄師範大學教育學系博士論文，未出版，高雄市。

Chen, K.-J., & Bai, M.-H. (1997). Unknown word detection for Chinese by a corpus-based learning method. *International Journal of Computational Linguistics and Chinese Language Processing*, 3(1), 27-44.

Chen, K.-J., & Ma, W.-Y. (2002). Unknown word extraction for Chinese documents. *Proceedings of the 19th International Conference on Computational Linguistics*, 1, 169-175.

Chen, L.-J. 陳麗珠 (1993) 。我國中小學教育財政公平之研究 [Fiscal equity in elementary and junior high school education in Taiwan]。高雄市：復文出版社。

Chen, T.-C. (2004). *Metaphors of anger in Taiwan Min and Mandarin*. Unpublished master thesis, National Hsin-Chu Teachers College, Taiwan.

Chinese Knowledge and Information Processing Group (n.d.). *Chinese word segmentation system with unknown word identification*. Retrieved April 15, 2010, from [http://godel.iis.sinica.edu.tw/CKIP/engversion/wordsegment.](http://godel.iis.sinica.edu.tw/CKIP/engversion/wordsegment.htm)

htm

Christie, F. (2002). *Classroom discourse analysis: A functional perspective*. London/New York: Continuum.

Chung, S.-F., Ahrens, K., & Huang, C.-R. (2003). ECONOMY IS A PERSON: A Chinese-English corpora and ontological-based comparison using the

conceptual mapping model. In the *proceedings of the ROCLING XV ROC computational linguistics conference XV* (pp. 87-100). Taiwan: National Tsing Hwa University.

Church, R. B., Ayman-Nolley, S., & Mahootian, S. (2004). The role of gesture in bilingual education: Does gesture enhance learning? *International Journal of Bilingual Education and Bilingualism*, 7(4), 303-319.

Church, R. B., & Goldin-Meadow, S. (1986). The mismatch between gesture and speech as an index of transitional knowledge. *Cognition*, 23, 43-71.

Cienki, A. (1998). Metaphoric gestures and some of their relations to verbal metaphoric expressions. In J.-P. Koenig (Ed.), *Discourse and cognition: Bridging the gap* (pp. 189-204). Stanford, CA: Center for the Study of Language and Information.

Cienki, A. (2003, July). *Ontological metaphors prevail in gesture with speech*. Paper presented at the 8th International Cognitive Linguistics Conference, La Rioja, Spain.

Cienki, A. (2005). Image schemas and gesture. In B. Hampe (Ed.), *From perception to meaning: Image schemas in cognitive linguistics* (pp. 421-442). Berlin: Mouton de Gruyter.

Cienki, A. (2008). Why study metaphor and gesture? In A. Cienki & C. Müller (Eds.), *Metaphor and gesture* (pp. 5-25). Amsterdam/Philadelphia: John Benjamins Publishing Company.

Cienki, A. (2009, June). *In search of multimodal metaphors in speech and gesture*. Workshop conducted at the meeting of the Researching and Applying Metaphor (RaAM) 2009 Workshop: Metaphor, Metonymy & Multimodality, University of Amsterdam, The Netherlands.

- Cienki, A., & Müller, C. (2008). Metaphor, gesture, and thought. In R. W. Gibbs, Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 483-501). Cambridge: Cambridge University Press.
- Clark, E. V. (1981). Lexical innovations: How children learn to create new words. In W. Deutsch (Ed.), *The child's construction of language* (pp. 299-328). London: Academic Press.
- Clark, E. V. (1982). The young word maker: A case study of innovation in the child's lexicon. In E. Wanner & L. R. Gleitman (Eds.), *Language acquisition: State of the art* (pp.390-425). Cambridge: Cambridge University Press.
- Cluett, E. R., & Bluff, R. (Eds.). (2006). *Principles and practice of research in midwifery* (2nd ed.). London/New York: Churchill Livingstone.
- Cohen, L., Manion, L., & Morrison K. (Eds.) (2007). *Research methods in education* (6th ed.). London/New York: Routledge.
- Cornejo, C., Simonetti, F., Ibáñez, A., Aldunate, N., Ceric, F., López, V., et al. (2009). Gesture and metaphor comprehension: Electrophysiological evidence of cross-modal coordination by audiovisual stimulation. *Brain and Cognition*, 70, 42-52.
- Corts, D. P. (1999). *Spontaneous production of figurative language and gesture in college lectures: A comparison across disciplines*. Unpublished doctoral dissertation, The University of Tennessee, Knoxville.
- Corts, D. P. (2006). Factors characterizing bursts of figurative language and gesture in college lectures. *Discourse Studies*, 8(2), 211-233.
- Corts, D. P., & Pollio, H. R. (1999). Spontaneous production of figurative language and gestures in college lectures. *Metaphor and Symbol*, 14(2), 81-100.
- Costa-Giomi, E., & Descombes, V. (1996). Pitch labels with single and multiple

- meanings: A study with French-speaking children. *Journal of Research in Music Education*, 44(3), 204-214.
- Cox, A. (2006). Hearing, feeling, grasping gestures. In A. Gritten, & E. King (Eds.), *Music and gesture* (pp. 45-60). Aldershot, England/Burlington, VT: Ashgate Publishing.
- Croft, W. (1998). Linguistic evidence and mental representations. *Cognitive Linguistics*, 9, 151-174.
- Croker, R. A., (2009). An introduction to qualitative research. In J. Heigham, & R. A. Croker (Eds.), *Qualitative research in applied linguistics: A practical introduction* (pp. 3-24). Hampshire, England: Palgrave Macmillan.
- Crowder, E. M. (1996). Gestures at work in sense-making science talk. *The Journal of the Learning Sciences*, 5, 173-208.
- Custodero, L. A. (2005). Observable indicators of flow experience: A developmental perspective on musical engagement in young children from infancy to school age. *Music Education Research*, 7(2), 185-209.
- Davidson, L. (1989). Observing yang ch'in lesson: Learning by modeling and metaphor. *Journal of Aesthetic Education*, 23(1), 85-99.
- Deignan, A. (2005). *Metaphor and corpus linguistics*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Denicolo, P. M. (1985). *Figurative language: An investigation of its value in the teaching and learning of chemistry*. Unpublished doctoral dissertation. University of Surrey, Guildford, Surrey, United Kingdom.
- Denscombe, M. (2007). *The good research guide: For small-scale social research projects* (3rd ed.). Berkshire, England: Open University Press.
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological*

*methods* (2nd ed.). New York: McGraw-Hill.

Denzin, N. K., & Lincoln, Y. S. (Eds.) (2005). *The Sage handbook of qualitative research* (3rd ed.). Thousand Oaks/London/New Delhi: Sage Publications.

Department of Elementary Education, Ministry of Education of Taiwan (2010). *General guidelines of Grades 1-9 Curriculum for elementary and junior high school education*. Retrieved May 28, 2010, from [http://www.edu.tw/EJE/content.aspx?site\\_content\\_sn=4420](http://www.edu.tw/EJE/content.aspx?site_content_sn=4420)

Department of Health (2000, April). *Data protection act 1998: Guidance to social services*. Retrieved April 14, 2010, from [http://www.dh.gov.uk/en/Publicationsandstatistics/Legislation/Actsandbills/DH\\_4015584](http://www.dh.gov.uk/en/Publicationsandstatistics/Legislation/Actsandbills/DH_4015584)

Department of Statistics, Ministry of Education of Taiwan (2010). *Summary of education at all levels SY 2000-2010*. Retrieved May 30, 2010, from <http://english.moe.gov.tw/lp.asp?CtNode=1184&CtUnit=415&BaseDSD=7&mp=1>

de Vaus, D. (2002). *Surveys in social research* (5th ed.). London/New York: Routledge.

Deyhle, D. L., Hess, G. A., Jr., & LeCompte, M. D. (1992). Approaching ethical issues for qualitative researchers in education. In M. D. LeCompte, W. L. Millroy & J. Preissle (Eds.), *The handbook of qualitative research in education* (pp. 597-641). London: Academic Press Limited.

Diener, E., & Crandall, R. (1978). *Ethics in social and behavioral research*. Chicago/London: The University of Chicago Press.

Dirven, R. (1985). Metaphor as a basic means for extending the lexicon. In R. Paprotte & R. Dirven (Eds.), *The ubiquity of metaphor* (pp. 85-119). Amsterdam/Philadelphia: John Benjamins Publishing Company.

- Du Bois, J. W., Schuetze-Coburn, S., Cumming, S., & Paolino, D. (1993). Outline of discourse transcription. In J. A. Edwards, & M. D. Lampert (Eds.), *Talking data: Transcription and coding in discourse research* (pp. 45-89). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Efron, D. (1941). *Gesture and environment*. Morningside Heights, NY: King's Crown Press.
- Efron, D. (1972). *Gesture, race and culture*. [Re-issue of *Gesture and environment*, originally published 1941]. The Hague: Mouton and Co.
- Efthimiou, E., & Fotinea, S.-E. (2007). GSLC: Creation and annotation of a Greek sign language corpus for HCI. *Lecture Notes in Computer Science*, 4554/2007, 657-666.
- Eisenstein, J., & Davis, R. (2004). Visual and linguistic information in gesture classification. In R. Sharma, T. Darrell, M. P. Harper, G. Lazzari, & M. Turk (Eds.), *Proceedings of the sixth international conference on multimodal interfaces* (pp. 113-120). Pennsylvania, USA: State College.
- Eitan, Z., & Timmers, R. (2010). Beethoven's last piano sonata and those who follow crocodiles: Cross-domain mappings of auditory pitch in a musical context. *Cognition*, 114(3), 405-422.
- Ekman, P., & Friesen, W. V. (1969). The repertoire of nonverbal behavioral categories: Origins, usage, and coding. *Semiotica*, 1, 49-98.
- Farnell, B. (1996). Metaphors we move by. *Visual Anthropology*, 7, 311-335.
- Fillmore, C. J. (1985). Linguistics as a tool for discourse analysis. In T. A. van Dijk (Ed.), *Handbook of discourse analysis* (Vol. 1) (pp. 11-39). London: Academic Press.
- Flevaris, L. M., & Perry, M. (2001). How many do you see? The use of nonspoken

- representations in first-grade mathematics lessons. *Journal of Educational Psychology*, 93, 330-345.
- Forceville, C. (2006). Multimodal metaphor in ten Dutch TV commercials. *Public Journal of Semiotics*, 1(1), 19-51.
- Frankland, J., & Bloor, M. (1999). Some issues arising in the systematic analysis of focus group material. In R. S. Barbour, & J. Kitzinger (Eds.), *Developing focus group research: Politics, theory, and practice* (pp. 144-155). London: Sage Publications.
- Freedman, N., & Hoffman, S. P. (1967). Kinetic behavior in altered clinical states: Approach to objective analysis of motor behavior during clinical interviews. *Perceptual and Motor Skills*, 24, 527-539.
- Frisson, S., & Pickering, M. J. (1999). The processing of metonymy: Evidence from eye movements. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 25, 1366-1383.
- Gee, J. P., Michaels, S., & O'Connor, M. C. (1992). Discourse analysis. In M. D. LeCompte, W. L. Millroy, & J. Preissle (Eds.), *The handbook of qualitative research in education* (pp. 227-291). London: Academic Press Limited.
- Geertz, C. (1973). *The interpretation of cultures: Selected essays*. New York: Basic Books.
- Gibbs, R. W., Jr. (1992a). Categorization and metaphor understanding. *Psychological Review*, 99, 572-577.
- Gibbs, R. W., Jr. (1992b). What do idioms really mean? *Journal of Memory and Language*, 31, 485-506.
- Gibbs, R. W., Jr. (1994). *The poetics of mind: Figurative thought, language and understanding*. Cambridge/New York: Cambridge University Press.

- Gibbs, R. W., Jr. (1998). The fight over metaphor in thought and language. In A. N. Katz, C. Cacciari, R. W. Gibbs, Jr., & M. Turner (Eds.), *Figurative language and thought* (pp. 88-118). New York: Oxford University Press.
- Gibbs, R. W., Jr. (1999). Taking metaphor out of our heads and putting it into the cultural world. In R. W. Gibbs, Jr., & G. J. Steen (Eds.), *Metaphor in cognitive linguistics* (pp. 145-156). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Gibbs, R. W., Jr. (2007). Why cognitive linguists should care more about empirical methods. In M. Gonzalez-Marquez, I. Mittelberg, S. Coulson, & M. J. Spivey (Eds.), *Methods in cognitive linguistics* (pp. 2-18). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Gibbs, R. W., Jr. (in press). The wonderful, chaotic, creative, heroic, challenging world of researching and applying metaphor: A celebration of the past and some peeks into the future. In G. D. Low, Z. Todd, A. Deignan, & L. Cameron (Eds.), *Metaphor in the real world*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Gill, R. (1996). Discourse analysis: Practical implementation. In J. T. E. Richardson (Ed.), *Handbook of qualitative research methods for psychology and the social sciences* (pp. 141-156). Oxford, UK: BPS Blackwell.
- Glucksberg, S., & McGlone, M. S. (2001). *Understanding figurative language: From metaphors to idioms*. New York: Oxford University Press.
- Goatly, A. (1997). *The language of metaphors*. London/New York: Routledge.
- Goddard, C. (2004). The ethnopragmatics and semantics of “active metaphors”. *Journal of Pragmatics*, 36, 1211-1230.
- Goldin-Meadow, S. (2003). *Hearing gesture: How our hands help us think*.

Cambridge, MA/London: Belknap Press of Harvard University Press.

- Goldin-Meadow, S. (2004). Gesture's role in learning process. *Theory into Practice*, 43(4), 314-321.
- Goldin-Meadow, S., Kim, S., & Singer, M. (1999). What the teacher's hands tell the student's mind about math. *Journal of Educational Psychology*, 91(4), 720-730.
- Goldin-Meadow, S., & Singer, M. A. (2003). From children's hands to adults' ears: gesture's role in teaching and learning. *Developmental Psychology*, 39, 509-520.
- Gong, S.-P., Ahrens, K., & Huang, C.-R. (2008). Chinese word sketch and mapping principles: A corpus-based study of conceptual metaphors using the BUILDING source domain. *International Journal of Computer Processing of Languages*, 21(1): 13-27.
- Grady, J. (1997). *Foundations of meaning: Primary metaphors and primary scenes*. Unpublished doctoral dissertation, University of California, Berkeley.
- Greenfield, P. M., & Smith, J. H. (1976). *The structure of communication in early language development*. New York/San Francisco/London: Academic Press.
- Grinyer, A. (2002). The anonymity of research participants: Assumptions, ethics and practicalities. *Social Research UPDATE*, 36. Retrieved April 12, 2010, from <http://sru.soc.surrey.ac.uk/SRU36.html>
- Gullberg, M. (1998). *Gesture as a communication strategy in second language discourse: A study of learners of French and Swedish*. Lund, Sweden: Lund University Press.
- Guo, M.-T., & Lo, R.-Y. 郭明堂、羅瑞玉 (1995)。教育機會均等與城鄉差異問題之探討：國民小學教育資源城鄉差異之比較 [An exploration of

educational opportunities and urban-rural differentials: A comparison of educational resources of urban and rural elementary schools]。教育學刊，11，245-277。

Gur, G. (2008). Body, forces, and paths: Metaphor and embodiment in Jean-Philippe Rameau's conceptualisation of tonal space [Electronic version]. *Music Theory Online*, 14(1). Retrieved March 23, 2010, from <http://mto.societymusictheory.org/issues/mto.08.14.1/toc.14.1.html>

Hair, H. I. (2000-2001). Children's descriptions of music: Overview of research. *Bulletin of the Council for Research in Music Education*, 147, 66-71.

Hammersley, M. (1994). Introducing ethnography. In D. Graddol, J. Maybin, & B. Stierer (Eds.), *Researching language and literacy in social context: A reader* (pp. 1-17). Clevedon, England/Philadelphia: Multilingual Matters in association with the Open University.

Hammersley, M., & Atkinson, P. (2009). *Ethnography: Principles in practice* (3rd ed.). London/New York: Routledge.

Haviland, J. B. (2007). Master speakers, master gesturers: A string quartet master class. In S. D. Duncan, J. Cassell & E. Levy (Eds.), *Gesture and the dynamic dimension of language: Essays in honor of David McNeill* (pp. 147-172). Amsterdam/Philadelphia: John Benjamins Publishing Company.

He, J.-J. 何俊嘉 (2006)。探討面對面與網路混合試教對學習互動之影響 [The influence of "blending face to face and network into student teaching" on learning interaction]。國立中央大學網路學習科技研究所碩士論文，未出版，桃園縣。

Hostetter, A. B., & Alibali, M. W. (2008). Visible embodiment: Gestures as simulated action. *Psychonomic Bulletin & Review*, 15(3), 495-514.

- Hsieh, S. I.-H. (2004). *A developmental study of metaphor and metonymy in Taiwan Mandarin speakers*. Unpublished master thesis, National Taiwan Normal University.
- Hsu, H.-C. 徐秀菊 (2003)。從教師的問卷調查分析台灣中小學藝術教育的現況 [Investigation of the current Taiwan art education in the elementary and secondary schools from teachers' survey]。載於蕭炳欽 (主編), **中小學一般藝術教育師資培育學術與實務研討會論文集** (7-28 頁), 臺北市: 國立臺灣藝術教育館。
- Huang, C.-R., Chen, K.-J., & Chang, L.-L. (1996). Segmentation standard for Chinese natural language processing. In *Proceedings of the 1996 International Conference on Computational Linguistics (COLING 96)* (pp. 1045-1048). Copenhagen, Denmark.
- Huang, C.-R., Chen, K.-J., Chen, F.-Y., Wei, W.-C., & Chang, L.-L. 黃居仁、陳克健、陳鳳儀、魏文真、張麗麗 (1997)。「資訊處理用中文分詞規範」設計理念及規範內容 [A Segmentation Standard for Chinese Information Processing: Design Criteria and Content]。《**語言文字應用**》, **1**, 92-100。
- Huang, Y.-J. 黃毅志 (1990)。台灣地區教育機會之不平等性 [The inequality of educational opportunities in Taiwan]。《**思與言**》, **28**(1), 93-125。
- Huang, Y.-J., & Chen, C.-W. 黃毅志、陳俊瑋 (2008)。學科補習、成績表現與升學結果——以學測成績與上公立大學為例 [Academic cram schooling, academic performance, and opportunity of entering public universities]。《**教育研究集刊**》, **54**(1), 117-149。
- Ibáñez, A., Manes, F., Escobar, J., Trujillo, N., Andreucci, P., & Hurtado, E. (2010). Gesture influences the processing of figurative language in non-native speakers:

- ERP evidence. *Neuroscience Letters*, 471, 48-52.
- Idema, R. (2003). Multimodality, resemiotization: Extending the analysis of discourse as multi-semiotic practice. *Visual Communication*, 2(1), 29-57.
- Iverson, J. M., & Goldin-Meadow, S. (1998). Why people gesture when they speak. *Nature*, 396, 228.
- Jackson, P. (2006). The literal and metaphorical inscription of gesture in religious discourse. *Gesture*, 6(2), 215-222.
- Jaques-Dalcroze, E. (1980). *Rhythm, music and education* [Original work published 1921] (H. F. Rubinstein, Trans.). London: The Dalcroze Society Inc.
- Johnson, M. L. (1987). *The body in the mind: The bodily basis of meaning, imagination and reason*. Chicago/London: The University of Chicago Press.
- Johnson, M. L., & Larson, S. (2003). "Something in the way she moves"—Metaphors of musical motion. *Metaphor and Symbol*, 18(2), 63-84.
- Johnston, T., & Crasborn, O. (2006, June 20-22). The use of ELAN annotation software in the creation of signed language corpora. In *Proceedings of 2006 E-MELD Workshop on Digital Language Documentation: Tools and Standards: The State of the Art*. Retrieved June 23, 2009, from <http://emeld.org/workshop/2006/papers/johnston-crasborn.pdf>
- Johnstone, B. (2008). *Discourse analysis* (2nd ed.). Malden, MA, USA/Oxford, UK/Carlton, Victoria, Australia: Blackwell Publishing.
- Jordan, B., & Henderson, A. (1995). Interaction analysis: Foundations and practice. *The Journal of the Learning Sciences*, 4(1), 39-103
- Jourard, S. M., & Friedman, R. (1970). Experimenter-subject 'distance' and self-disclosure. *Journal of Personality and Social Psychology*, 15, 278-282.
- Juntunen, M.-L., & Hyvönen, L. (2004). Embodiment in musical knowing: How

- body movement facilitates learning within Dalcroze Eurhythmics. *British Journal of Music Education*, 21(2), 199-214.
- Kamien, R. (2008). *Music: An appreciation* (6th Brief ed.). New York: McGraw-Hill.
- Kendon, A. (1980). Gesticulation and speech: Two aspects of the process of utterance. In M. R. Key (Ed.), *The relationship of verbal and nonverbal communication* (pp. 207-227). The Hague: Mouton and Co.
- Kendon, A. (1988). How gestures can become like words. In F. Poyatos (Ed.), *Cross-cultural perspectives in nonverbal communication* (pp.131-141). Toronto, Canada/Lewiston, New York: Hogrefe & Huber Publishers.
- Kendon, A. (1995). Gestures as illocutionary and discourse structure markers in Southern Italian conversation. *Journal of Pragmatics*, 23, 247-279.
- Kendon, A. (1997). Gesture. *Annual Review of Anthropology*, 26, 109-128.
- Kendon, A. (2000). Language and gesture: Unity or duality? In D. McNeill (Ed.), *Language and gesture* (pp. 47-63). Cambridge: Cambridge University Press.
- Kendon, A. (2004). *Gesture: Visible action as utterance*. Cambridge: Cambridge University Press.
- Kendon, A. (2007). On the origins of modern gesture studies. In S. D. Duncan, J. Cassell, & E. Levy (Eds.), *Gesture and the dynamic dimension of language: Essays in honor of David McNeill* (pp. 13-28). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Kieffer, A. L. (2007). Music and metaphor: Legacies of representation in abstract instrumental music [Electronic version]. Retrieved March 23, 2010, from <http://hdl.handle.net/10349/252>
- Kita, S. (1993). *Language and thought interface: A study of spontaneous gestures and Japanese mimetics*. Unpublished doctoral dissertation, University of

Chicago, Chicago, Illinois.

Koller, V. (2003). *Metaphor clusters in business media discourse: A social cognition approach*. Unpublished doctoral dissertation, University of Vienna, Vienna.

Kövecses, Z. (2002). *Metaphor: A practical introduction*. Oxford: Oxford University Press.

Kövecses, Z. (2008). *Metaphor and emotion*. Paper presented at the Metaphors as Models—Interdisciplinary Dialogues, Durham University, UK. Retrieved May 4, 2010, from [http://www.dur.ac.uk/resources/mlac/research/metaphors\\_as\\_models/Kovecses2.pdf](http://www.dur.ac.uk/resources/mlac/research/metaphors_as_models/Kovecses2.pdf)

Kress, G., Jewitt, C., Ogborn, J., & Tsatsarelis, C. (2001). *Multimodal teaching and learning: The rhetorics of the science classroom*. London/New York: Continuum.

Kubanyiova, M. (2008). Rethinking research ethics in contemporary applied linguistics: The tension between macroethical and microethical perspectives in situated research. *The Modern Language Journal*, 92, 503-518.

Lakoff, G. (1987). *Women, fire, and dangerous things: What categories reveal about the mind*. Chicago/London: The University of Chicago Press.

Lakoff, G. (1993). The contemporary theory of metaphor. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed.) (pp. 202-251). Cambridge: Cambridge University Press.

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago/London: The University of Chicago Press.

Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to western thought*. New York: Basic Books.

Lakoff, G., & Johnson, M. (2003). *Metaphors we live by* (with a new afterword).

Chicago/London: The University of Chicago Press.

Lakoff, G., & Turner, M. (1989). *More than cool reason: A field guide to poetic metaphor*. Chicago/London: The University of Chicago Press.

Lang, P. H. (1942). *Music in western civilization*. London: J. M. Dent & Sons Ltd.

Larson, S. (2006). Musical gestures and musical forces: Evidence from music-theoretical misunderstandings. In A. Gritten, & E. King (Eds.), *Music and gesture* (pp. 61-74). Aldershot, England/Burlington, VT: Ashgate Publishing.

Lazar, R., Warr-Leeper, G., Nicholson, C., & Johnson, S. (1989). Elementary school teachers' use of multiple meaning expressions. *Language. Speech and Hearing Services in Schools, 20*, 420-430.

Lazaraton, A. (2004). Gesture and speech in the vocabulary explanations of one ESL teacher: A microanalytic inquiry. *Language Learning, 54*(1), 79-117.

LeCompte, M. D., Millroy, W. L., & Preissle, J. (Eds.). (1992). *The handbook of qualitative research in education*. London: Academic Press Limited.

Lemke, J. L. (1990). *Talking science: Language, learning, and values*. Norwood, NJ: Ablex Publishing Corporation.

Lemke, J. L. (2000). Introduction: Language and other semiotic systems in education. *Linguistics and Education, 10*(3), 307-334.

Liao, M.-Y., & Davidson, J. W. (2007). The use of gesture techniques in children's singing. *International Journal of Music Education, 25*(1), 82-94.

Lillis, T. (2008). Ethnography as method, methodology, and "deep theorizing": Closing the gap between text and context in academic writing research. *Written Communication, 25*(3), 353-388.

Lin, T.-S., & Chen, Y.-F. 林大森、陳憶芬 (2006)。臺灣高中生參加補習之效益

- 分析 [Cram school attendance and college entrance exam scores of senior high school students in Taiwan] , *教育研究集刊* , 52(4) , 35-70 。
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park/London/New Delhi: Sage Publications.
- Littlemore, J. (2001). The use of metaphor in university lectures and the problems that it causes for overseas students. *Teaching in Higher Education*, 6(3), 333-349.
- Littlemore, J., & Low, G. (2006). *Figurative thinking and foreign language learning*. New York: Palgrave Macmillan.
- Lockaby, J., Baker, M., & Hogg, J. A. (2001, December). *The influence of foundational and expressed values on teacher behavior*. Paper presented at the 28<sup>th</sup> Annual National Agricultural Education Research Conference, New Orleans, LA, USA.
- Low, G. (1988). On teaching metaphor. *Applied Linguistics*, 9, 125-147.
- Low, G. (1999). Validating metaphor research projects. In L. Cameron & G. Low (Eds.), *Researching and applying metaphor* (pp. 48-65). Cambridge: Cambridge University Press.
- Low, G. (2008). Metaphor and education. In R. Gibbs (Ed.), *The Cambridge handbook of metaphor and thought* (pp.212-230). Cambridge: Cambridge University Press.
- Low, G., Littlemore, J., & Koester, A. (2008). Metaphor use in three UK university lectures. *Applied Linguistics*, 29(3), 428-455.
- Lu, L., & Ahrens, K. (2008). Ideological influences on BUILDING metaphors in Taiwanese presidential speeches. *Discourse and Society*, 19(3), 383-408.
- Lu, Y.-C. 呂燕卿 (1999) 。談藝術與人文學習領域的統整性課程設計之觀念 [On

the design of the integrated curriculum for the learning area of Arts and Humanities]。教師天地，100，40-51。

- Ma, W.-Y., & Chen, K.-J. (2003a). A bottom-up merging algorithm for Chinese unknown word extraction. In *Proceedings of the second SIGHAN workshop on Chinese language processing* (Vol. 17) (pp. 31-38). NJ: Association for Computational Linguistics.
- Ma, W.-Y., & Chen, K.-J. (2003b). Introduction to CKIP Chinese word segmentation system for the first International Chinese Word Segmentation Bakeoff. In *Proceedings of the second SIGHAN workshop on Chinese language processing* (Vol. 17) (pp. 168-171). NJ: Association for Computational Linguistics.
- Mackey, A., & Gass, S. M. (2005). *Second language research: Methodology and design*. New Jersey/London: Lawrence Erlbaum Associates, Inc.
- Mandel, M. (1977). Iconic devices in American Sign Language. In L. A. Friedman (Ed.), *On the other hand: New perspectives on American Sign Language* (pp. 57-107). New York: Academic Press.
- Mayberry, R. I., & Jaques, J. (2000). Gesture production during stuttered speech: Insights into the nature of gesture-speech integration. In D. McNeill (Ed.), *Language and gesture* (pp. 199-214). Cambridge: Cambridge University Press.
- McCafferty, S. G. (2008). Material foundations for Second Language Acquisition: Gesture, metaphor, and internalization. In S. G. McCafferty, & G. Stam (Eds.), *Gesture: Second language acquisition and classroom research* (pp. 47-65). London/New York: Routledge.
- McCafferty, S. G., & Stam, G. (Eds.) (2008). *Gesture: Second language acquisition and classroom research*. London/New York: Routledge.
- McNeill, D. (1985). So you think gestures are nonverbal? *Psychological Review*, 92,

350-371.

McNeill, D. (1986). Iconic gestures of children and adults. *Semiotica*, 62, 107-128.

McNeill, D. (1992). *Hand and mind: What gestures reveal about thought*.

Chicago/London: The University of Chicago Press.

McNeill, D. (2005). *Gesture and thought*. Chicago/London: The University of Chicago Press.

Mehan, H. (1985). The structure of classroom discourse. In T. A. van Dijk (Ed.), *Handbook of discourse analysis* (Vol. 3) (pp. 119-131). London: Academic Press.

Mesch, J., & Wallin, L. (2008, June 1). *Use of sign language materials in teaching*.

Paper presented at the Third Workshop on the Representation and Processing of Sign Languages, Sixth Language Resources and Evaluation Conference (LREC), Marrakech, Morocco. Retrieved April 11, 2010, from <http://www.lrec-conf.org/proceedings/lrec2008/>

MetNet Group (2006). *Metaphor analysis project: Building metaphor groupings*.

Retrieved April 14, 2010, from <http://creet.open.ac.uk/projects/metaphor-analysis/building.cfm>

Ministry of Education of Taiwan (2002). *Concise Chinese dictionary*. Retrieved May 31, 2010, from <http://dict.concised.moe.edu.tw>

Ministry of Education of Taiwan 教育部 (2003)。九十二年國民中小學九年一貫課程綱要藝術與人文學習領域 [Curriculum guidelines to the Grade 1-9 Curriculum: Learning area of Arts and Humanities]。臺北市：教育部。

Ministry of Education of Taiwan (2009). *An educational overview*. Retrieved May 26, 2010, from <http://english.moe.gov.tw/ct.asp?xItem=4133&CtNode=2003&mp=1>

- Ministry of Education of Taiwan 教育部 (2010)。國民教育 [Compulsory education]。Retrieved April 06, 2010, from [http://www.edu.tw/SECRETARY/content.aspx?site\\_content\\_sn=21122](http://www.edu.tw/SECRETARY/content.aspx?site_content_sn=21122)
- Mittelberg, I. (2006). Metaphor and metonymy in language and gesture: Discourse evidence for multimodal models of grammar. *Dissertation Abstracts International*, 67(01), 167A. (UMI No. 3205177)
- Müller, C. (2007). A dynamic view of metaphor, gesture and thought. In S. D. Duncan, J. Cassell, & E. Levy (Eds.), *Gesture and the dynamic dimension of language: Essays in honor of David McNeill* (pp. 109-116). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Müller, C. (2008). What gestures reveal about the nature of metaphor. In A. Cienki & C. Müller (Eds.), *Metaphor and gesture* (pp. 219-245). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Müller, C., & Mittelberg, I. (2009, June). *Methods of gesture analysis (MGA): From form to meaning*. Workshop conducted at the meeting of the Researching and Applying Metaphor (RaAM) 2009 Workshop: Metaphor, Metonymy & Multimodality, University of Amsterdam, The Netherlands.
- Nathan, M. J., & Bieda, K. N. (2006). *What gesture and speech reveal about students' interpretations of Cartesian Graphs: Perceptions can bound thinking* (WCER Working Paper No. 2006-2). Madison: University of Wisconsin-Madison, Wisconsin Center for Education Research. Retrieved March 10, 2010, from [http://www.wcer.wisc.edu/Publications/workingPapers/Working\\_Paper\\_No\\_2006\\_2.pdf](http://www.wcer.wisc.edu/Publications/workingPapers/Working_Paper_No_2006_2.pdf)
- Nikitina, S. (2004). Mind ahead of the tone: Integration of technique and imagination in vocal training at Tanglewood Summer Institute. *Journal of Aesthetic*

*Education*, 38(1), 23-34.

Núñez, R. E., & Sweetser, E. (2006). With the future behind them: Convergent evidence from Aymara language and gesture in the crosslinguistic comparison of spatial construals of time. *Cognitive Science*, 30, 401-450.

O'Brien, W. (1989). *A comparison of the use of analytic language with the use of a combination of figurative and analytic language and their effects on attitude and conceptual understanding of music among seventh grade students*. Unpublished doctoral dissertation, University of Maryland.

O'Brien, W. (1992). The effects of figurative language in music listening instruction. *Contributions to Music Education*, 19, 20-31.

Opie, C. (Ed.). (2004). *Doing educational research: A guide to first-time researchers*. Thousand Oaks/London/New Delhi: Sage Publications.

Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement*. London: Pinter.

Ortony, A. (1975). Why metaphors are necessary and not just nice. *Educational Theory*, 25, 45-53.

Ortony, A. (1993). *Metaphor and thought*. (2nd ed.). Cambridge/New York: Cambridge University Press.

The Oxford English Dictionary Online (n.d.). Retrieved February 14, 2009, from <http://dictionary.oed.com/>

Patton, M. Q. (2002). *Qualitative research & evaluation methods*. (3rd ed.). Thousand Oaks/London/New Delhi: Sage Publications.

Perry, M., Church, R. B., & Goldin-Meadow, S. (1988). Transitional knowledge in the acquisition of concepts. *Cognitive Development*, 3, 359-400.

Petrie, H. G., & Oshlag, R. S. (1993). Metaphor and learning. In A. Ortony (Ed.),

*Metaphor and thought* (2nd ed.) (pp. 579-609). Cambridge: Cambridge University Press.

Pierrehumbert, J., & Hirschberg, J. (1990). The meaning of intonational contours in the interpretation of discourse. In P. R. Cohen, J. Morgan, & M. E. Pollack (Eds.), *Intentions in communication* (pp. 271-331). Boston, MA: MIT Press.

Pole, C., & Morrison, M. (2003). *Ethnography for education*. Berkshire, England: Open University Press.

Polio, C. G. (1996). Issues and problems in reporting classroom research. In J. Schachter, & S. Gass (Eds.), *Second language classroom research: Issues and opportunities* (pp. 61-79). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Powney, J., & Watts, M. (1987). *Interviewing in educational research*. London: Routledge & Kegan Paul.

Pozzer-Ardenghi, L., & Roth, W.-M. (2007). On performing concepts during science lectures. *Science Education*, 91(1), 96-114.

Pragglejaz Group (2007). MIP: A method for identifying metaphorically used words in discourse. *Metaphor and Symbol*, 22(1), 1-39.

Randel, D. M. (Ed.). (2003). *The Harvard dictionary of music* (4th ed.). Cambridge, MA: Belknap Press of Harvard University Press.

Reddy, M. (1979). The conduit metaphor: A case of frame conflict in our language about language. In A. Ortony (Ed.), *Metaphor and thought* (pp. 284-297). Cambridge: Cambridge University Press.

Reimer, B. (1968). Developing aesthetic sensitivity in the junior high school general music class. *Journal of Aesthetic Education*, 2(2), 97-107.

Richards, I. A. (1936). *The philosophy of rhetoric*. Oxford: Oxford University Press.

Rimé, B. (1982). The elimination of visible behaviour from social interactions:

- Effects on verbal nonverbal and interpersonal variables. *European Journal of Social Psychology*, 12(2), 113-129.
- Ritchie, D. (2003). Argument is war—or is it a game of chess? Multiple meanings in the analysis of implicit metaphors. *Metaphor and Symbol*, 18(2), 125-146.
- Ritchie, D. (2004). Metaphors in conversational context: Toward a connectivity theory of metaphor interpretation. *Metaphor and Symbol*, 19(4), 265-288.
- Rodríguez, M. R. C. (2001). *Cognition and shared cultural models: The role of metaphor in the discourse of architects*. Unpublished doctoral dissertation, Universitat Jaume I, Spain.
- Rogoff, B. (1990). *Apprenticeship in thinking*. Oxford: Oxford University Press.
- Roper, J. M., & Shapira, J. (2000). *Ethnography in nursing research*. London: Sage Publications, Inc.
- Rostvall, A.-L., & West, T. (2003). Analysis of interaction and learning in instrumental teaching. *Music Education Research*, 5(3), 213-226.
- Roth, W.-M. (2000). From gesture to scientific language. *Journal of Pragmatics*, 32, 1683-1714.
- Roth, W.-M. (2001). Gestures: Their role in teaching and learning. *Review of Research in Education*, 71(3), 365-392.
- Roth, W.-M., & Lawless, D. V. (2002). How does the body get into the mind? *Human Studies*, 25, 333-358.
- Sakadolskis, E. A. (2003). *The use of figurative language in the construction of musical meaning: A case study of three sixth grade general music classes*. Unpublished doctoral dissertation, University of Maryland at College Park.
- Saslaw, J. (1996). Forces, containers, and paths: The role of body-derived image schemas in the conceptualization of music. *Journal of Music Theory*, 40(2),

217-243.

- Schippers, H. (2006). 'As if a little bird is sitting on your finger...': Metaphor as a key instrument in training professional musicians. *International Journal of music Education*, 24(3), 209-217.
- Scruton, R. (1983). *The aesthetic understanding: Essays in the philosophy of art and culture*. London: Methuen & Co. Ltd.
- Sedlářová, L. (2008, October 13). Observing gestures. *Philologica.net: An Online Journal of Modern Philology*. Retrieved March 23, 2010, from <http://philologica.net/studia/20081013201500.htm>
- Semino, E. (2008). *Metaphor in discourse*. Cambridge: Cambridge University Press.
- Semino, E., Heywood, J., & Short, M. (2004). Methodological problems in the analysis of a corpus of conversations about cancer. *Journal of Pragmatics*, 36(7), 1271-1294.
- Shyu, S.-I. (1989). *An analysis of metaphors of anger and love in Mandarin Chinese*. Unpublished master thesis, University of California, Los Angeles.
- Sime, D. (2008). "Because of her gesture, it's very easy to understand"—Learners' perceptions of teachers' gestures in the foreign language class. In S. G. McCafferty, & G. Stam (Eds.), *Gesture: Second language acquisition and classroom research* (pp. 259-279). London/New York: Routledge.
- Singer, E. (1978). Informed consent: Consequences for response rate and response quality in social surveys. *American Sociological Review*, 43, 144-162.
- Singer, E. (1993). Informed consent and survey response: A summary of the empirical literature. *Journal of Official Statistics*, 9(2), 361-375.
- Singer, E., & Frankel, M. R. (1982). Informed consent procedures in telephone interviews. *American Sociological Review*, 47, 416-426.

- Singer, M. A., & Goldin-Meadow, S. (2005). Children learn when their teacher's gestures and speech differ. *Psychological Science, 16*(2), 85-89.
- Skoog, W. (2004). Use of image and metaphor in developing vocal technique in choirs. *Music Educators Journal, 90*(5), 43-48.
- Slama-Cazacu, T. (1976). Nonverbal components in message sequence: "Mixed syntax." In W. C. McCormack & S. A. Wurm (Eds.), *Language and man: Anthropological issues* (pp. 217-227). The Hague: Mouton Publishers.
- Sobal, J. (1982). Disclosing information in interview introductions: Methodological consequences of informed consent. *Sociology and Social Research, 66*, 348-361.
- Spiro, R. J., Feltovich, P. J., Coulson, R. L., & Anderson, D. K. (1989). Multiple analogies for complex concepts: Antidotes for analogy-induced misconception in advanced knowledge acquisition. In S. Vosniadou, & A. Ortony (Eds.), *Similarity and analogical reasoning* (pp. 498-531). New York: Cambridge University Press.
- Steen, G. (1994). *Understanding metaphor in literature*. London: Longman.
- Steen, G. (1999a). From linguistic to conceptual metaphor in five steps. In R. W. Gibbs, Jr. & G. J. Steen (Eds.), *Metaphor in cognitive linguistics* (pp. 57-77). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Steen, G. (1999b). Metaphor and discourse: Towards a linguistic checklist for metaphor analysis. In L. Cameron & G. Low (Eds.), *Researching and applying metaphor* (pp. 81-104). Cambridge: Cambridge University Press.
- Steen, G. (2005). Basic discourse acts: Towards a psychological theory of discourse segmentation. In F. J. Ruiz de Mendoza Ibáñez & M. S. Peña Cervel (Eds.), *Cognitive linguistics: Internal dynamics and interdisciplinary interaction* (pp.

283-312). Berlin/New York: Mouton de Gruyter.

Steen, G. (2007). *Finding metaphor in grammar and usage: A methodological analysis of theory and research*. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Steen, G. (2009). From linguistic form to conceptual structure in five steps: Analyzing metaphor in poetry. In G. Brône, & J. Vandaele (Eds.), *Cognitive poetics* (pp. 197-226). Berlin/New York: Mouton de Gruyter.

Steen, G., Biernacka, E., Dorst, A. G., Kaal, A., López-Rodríguez, I., & Pasma, T. (in press). Pragglejaz in practice: Finding metaphorically used words in natural discourse. In G. Low, L. Cameron, A. Deignan, & Z. Todd (Ed.), *Metaphor in the real world*. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Steen, G. J., Dorst, A.G., Herrmann, J. B., Kaal, A. A., Krennmayr, T., & Pasma, T. (in press). *A method for linguistic metaphor identification: From MIP to MIPVU*. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Stein, P. (2008). Multimodal instructional practices. In J. Coiro, M. Knobel, C. Lankshear, & D. Leu (Eds.), *Handbook of research on new literacies* (pp. 871-898). New York: Lawrence Erlbaum.

Su, I.-W. (2000, January). *Mapping in thought and language as evidenced in Chinese*. Paper presented at the meeting of Conference on the Creativity of Linguistics in Taiwan, Taipei, Taiwan: National Central Library.

Su, I.-W. 蘇以文 (2005)。隱喻與認知 [Metaphor and cognition]。臺北市：國立臺灣大學出版中心。

Sweetser, E. (1992). English metaphors for language: Motivations, conventions, and creativity. *Poetics Today*, 13, 705-724.

- Sweetser, E. (1998). Regular metaphoricity in gesture: Bodily-based models of speech interaction. In Actes du 16<sup>e</sup> Congrès International des Linguistes (CD ROM). Oxford: Elsevier. Retrieved June 6, 2010, from <http://linguistics.berkeley.edu/~sweetser/sweetser.cil.98.pdf>
- Tait, M. J. (1992). Teaching strategies and styles. In R. Colwell (Ed.), *Handbook of research on music teaching and learning* (pp. 525-534). New York: Schirmer Books.
- Tait, M. J., & Haack, P. (1984). *Principles and processes of music education: New perspectives*. New York: Teachers College Press, Columbia University.
- Tanur, J. M. (Ed.). (1994). *Questions about questions: Inquiries into the cognitive bases of surveys*. New York: Russell Sage Foundation.
- Tao, H. (1996). *Units in Mandarin conversation: Prosody, discourse and grammar*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Taylor, I., & Taylor, M. (1995). *Writing and literacy in Chinese, Korean and Japanese*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Teijlingen, van E. R., & Hundley, V. (2001). The importance of pilot studies. *Social Research UPDATE*, 35. Retrieved April 20, 2010, from <http://sru.soc.surrey.ac.uk/SRU35.html>
- Teng, N. Y., & Sun, S.-W. 鄧育仁、孫式文 (2001)。隱喻框架：台灣政治新聞裡的路途隱喻 [Metaphoric framing: ROAD as a metaphoric concept in political news in Taiwan]。新聞學研究，67，87-112。
- Tsai, P.-Y. 蔡本元 (2008)。城鄉差異對國中學生學業成就之影響 [Influence of urban-rural differentials on academic performance of junior high school students]。元智大學資訊社會學研究所碩士論文，未出版，桃園縣。
- Tsao, F.-F., Tsai, L.-C., & Liou, H.-Y. (2001). *Body parts and metaphors*. Taipei: The

Crane Publishing Co.

Turner, B. A. (1983). The use of grounded theory for the qualitative analysis of organizational behaviour. *Journal of Management Studies*, 20(3), 333-348.

Turner, M. (1987). *Death is the mother of beauty: Mind, metaphor, criticism*. Chicago/London: The University of Chicago Press.

Valenzeno, L., Alibali, M. W., & Klatzky, R. (2003). Teachers' gestures facilitate students' learning: A lesson in symmetry. *Contemporary Educational Psychology*, 28, 187-204.

Valenzuela, J., & Soriano, C. (2005). Cognitive metaphor and empirical methods. *Barcelona English Language and Literature Studies*, 14, Retrieved August 8, 2008, from <http://www.publicacions.ub.es/revistes/bells14/>

Viadero, D. (2005). Classroom gestures studied for effects on learning: Hand motions seen as teaching tools and clues to comprehension. *Education Week*, 25(2), 8.

Vierkant, S. (2008, September). *Metaphor in German live radio football commentary*. Paper presented at the Third International Conference of the German Cognitive Linguistics Association, Leipzig, Germany.

Vygotsky, L. (1962). *Thought and language*. Cambridge: MIT Press.

Werner, O., & Schoepfle, G. M. (1987). *Systematic fieldwork: Ethnographic analysis and data management*. Newbury Park, CA: Sage Publications, Inc.

Wis, R. M. (1998). Invite, instruct, inspire. *Teaching Music*, 5(6), 38-40.

Woody, R. H. (2002). Emotion, imagery and metaphor in the acquisition of musical performance skill. *Music Education Research*, 4(2), 213-224.

Woody, R. H. (2006). The effect of various instructional conditions on expressive music performance. *Journal of Research in Music Education*, 54(1), 21-36.

- Yeh, Y. C. (1995, March). *The innovation of teacher education in Taiwan—from the experiences of the “articled teacher scheme” in England*. Paper presented at the Accreditation of Teacher Education Seminar, Taipei.
- Yin, B., & Felley, M. (1990). *Chinese Romanization: Pronunciation and orthography*. Beijing: Sinolingua.
- Yu, N. (1998). *The contemporary theory of metaphor: A perspective from Chinese*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Yu, N. (2003). Chinese metaphors of thinking. *Cognitive Linguistics*, 14, 141-165.
- Zatorre, R. J., Mondor, T. A., & Evans, A. C. (1999). Auditory attention to space and frequency activates similar cerebral systems. *NeuroImage*, 10, 544-554.
- Zbikowski, L. M. (1998). Metaphor and music theory: Reflections from cognitive science. *Music Theory Online*, 4(1). Retrieved March 15, 2010, from [http://mto.societymusictheory.org/issues/mto.98.4.1/mto.98.4.1.zbikowski\\_frames.html](http://mto.societymusictheory.org/issues/mto.98.4.1/mto.98.4.1.zbikowski_frames.html)
- Zbikowski, L. M. (2002). *Conceptualizing music: Cognitive structure, theory, and analysis*. New York: Oxford University Press.