Scope Interaction between Universal Quantifiers and Sentential Negation in Non-native English: the Roles of UG and L1 Grammar in L2 Acquisition

ZHANG Jun

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Principal Supervisor: Dr. HUANG Yue Yuan

Hong Kong Baptist University

April 2013
Abstract

This dissertation is an investigation of the influence of native language (L1) grammar and innate linguistic knowledge (i.e., Universal Grammar(UG)) on the non-native (L2) English language acquisition by examining how these two sources of knowledge help L2 learners interpret scope interactions in sentences containing sentential negation (NEG) and a universal quantifier (all, every and each) (UQ) in the subject position (namely, subject-all/every/each sentences) in L2 English by adult native speakers of Chinese and German.

By adopting the analytical framework proposed by Schwartz & Sprouse (2000), this study examines the effect of L1 grammar and UG in two acquisition tasks: (i) the acquisition of the non-isomorphic interpretation for subject-all/every sentences, such as all the farmers/every farmer didn’t feed the horse; and (ii) the acquisition of the lack of the non-isomorphic interpretation for subject-each sentences, such as each farmer didn’t feed the horse. On the one hand, these two acquisition tasks can help us investigate the role of UG because they represent poverty-of-stimulus (POS) problems to Chinese-speaking and German-speaking learners of English as an L2 (Chinese ESL and German ESL learners), respectively. On the other hand, they can help discover the effect of L1 transfer since Chinese and German are typologically distinct in these two linguistic phenomena.

The current study adopts the feature-driven Target Landing Site (TLS) model within the Minimalist Program to analyze the NEG-UQ interaction in English, Chinese, and German. According to the TLS model, the grammar for scope phenomena is the result of the semantic quantificational features of the scope items and the universal requirement that scope quantificational features of the scope items must be checked.

The written version of the Truth Value Judgment Task (TVJT) is adopted to investigate the acquisition of the NEG-UQ interaction in English by Chinese ESL and German ESL learners. The findings of our study confirm the involvement of L1 grammar and UG in L2 acquisition of scope interacton and support Schwartz & Sprouse’s (1994; 1996) Full Transfer/Full Access model of L2 acquisition. Thus, on the basis of these findings, both the L1 and UG are sources of knowledge in the L2 acquisition of phenomena at this syntax-semantics interpretive interface. The current study also explores how these two sources of knowledge are involved in L2 learners’ scope knowledge. Based on the TLS model for scope interaction, our study argues that, in order to derive correct scope interpretations, language learners should both acquire the semantic quantificational features of scope items based on L1 transfer and L2 input and have access to the UG in the form of a universal requirement of feature-checking.

In addition, the current study provides significant contributions to both linguistic analysis and acquisitional research of scope interaction. First, our study contributes to the understanding of scope items by generalizing the semantic quantificational features of sentential negation and universal quantifiers in English, Chinese, and German. It also applies the feature-driven TLS model to analyse the NEG-UQ
interaction in these three languages to capture the cross-linguistic scope variations. Second, the current study contributes to our knowledge of how the POS problems in language acquisition are overcome by providing empirical data to support an acquisition model in which the POS problems can be overcome based on the indirect positive evidence in the language input.
# Table of Contents

Declaration ............................................................................................................................................ i

Abstract............................................................................................................................................... ii

Acknowledgements ............................................................................................................................. iv

List of Tables ....................................................................................................................................... ix

List of Figures ...................................................................................................................................... xi

## Chapter 1 Introduction......................................................................................................................... 1

## Chapter 2 Scope Interaction between Universal Quantifiers and Sentential Negation: Theories and Implications for L2 Acquisition

2.0 Introduction.................................................................................................................................... 15

2.1 UQ-NEG scope interaction in English, Chinese and German ....................................... 15

2.2 Summarizing POS problems and interlanguage comparisons ........................................... 19

2.3 Syntactic analyses of scope interaction ............................................................................... 25

2.3.1 All the quantifiers are equal: Quantifier Raising (May 1977, 1985; Aoun & Li 1993) ......................................................... 25

2.3.2 All the quantifiers are not equal: the feature-driven Target Landing Site model (Beghelli 1995, 1997; Beghelli & Stowell 1997) ..... 33

2.4 Explaining NEG-UQ scope interaction in the TLS model .............................................. 53

2.4.1 English UQ-NEG scope interaction in the TLS model .................................................. 53

2.4.2 German UQ-NEG scope interaction in the TLS model .............................................. 64

2.4.3 Chinese UQ-NEG scope interaction in the TLS model .............................................. 80

2.5 Implications for L2 acquisition ............................................................................................... 96

2.6 Summary ..................................................................................................................................... 105

## Chapter 3 Previous Studies on Acquisition of Scope Interactions

3.0 Introduction................................................................................................................................. 107

3.1 UQ-NEG scope interpretation in L1 acquisition .............................................................. 110
3.1.1 Musolino (1998) and Musolino et al. (2000)............................. 110
3.1.2 Musolino & Lidz (2006)............................................................. 114
3.1.3 Zhou & Crain (2009) ................................................................. 116
3.2 Scope interpretation in L2 acquisition ................................................... 119
3.2.1 Lee, Yip & Wang (1999)............................................................ 119
3.2.2 Marsden (2004; 2008)................................................................ 121
3.2.3 Li (2008) .................................................................................... 125
3.2.4 Özçelik (2009) ........................................................................... 127
3.2.5 Chung (2009) ............................................................................. 130
3.3 Summary .......................................................................................... 133

Chapter 4 Our Study: Methodology
4.0 Introduction.......................................................................................... 135
4.1 Experimental hypotheses ....................................................................... 135
4.2 Experimental design .............................................................................. 138
  4.2.1 Test participants ......................................................................... 138
  4.2.2 Experimental task ...................................................................... 143
  4.2.3 Test materials ............................................................................. 144
  4.2.4 Procedure ................................................................................... 152
  4.2.5 Data analysis .............................................................................. 154
4.3 Summary .......................................................................................... 155

Chapter 5 Our Study: Results and Discussion
5.0 Introduction.......................................................................................... 156
5.1 General information of the interpretation data ...................................... 156
5.2 Interpretation of UQ-NEG sentences by native participants ............... 159
  5.2.1 Scope judgments on subject-each/every/all sentences by native
       English controls ............................................................................. 159
  5.2.2 Scope judgments on subject-ge (‘each’)/mei (‘every’)/suoyou (‘all’)
       sentences by native Chinese controls............................................. 161
  5.2.3 Scope judgments on subject-jeder (‘every/each’)/alle(‘all’)
       sentences by native German controls............................................ 162
5.3 Interpretation of UQ-NEG sentences by L2 participants............... 164
5.3.1 Interpretation of subject-\textit{each} sentences in L2 English .......... 164
5.3.2 Interpretation of subject-\textit{every} sentences in L2 English .......... 170
5.3.3 Interpretation of subject-\textit{all} sentences in L2 English ............. 176
5.4 Discussion on the experimental results ........................................... 182
5.4.1 Acquisition of the interpretations of subject-\textit{each/every/all} sentences by Chinese and German ESL learners .................. 184
5.4.2 The effect of L1 grammar ......................................................... 186
5.4.3 The effect of UG ...................................................................... 188
5.4.4 Summary of the effects of L1 grammar and UG ....................... 192
5.5 Summary .................................................................................. 194

Chapter 6 General Discussion and Implications
6.0 Introduction .................................................................................. 195
6.1 Implications of the L2 data .......................................................... 195
  6.1.1 How are the POS problems overcome? .................................... 195
  6.1.2 How do L1 grammar and UG help L2 learners interpret scope interaction? .............................................................. 203
  6.1.3 Implications of the L2 data on syntactic scope theories ......... 207
6.2 Implications of the native control data .......................................... 209
  6.2.1 Implications of the native frequency data ............................. 209
  6.2.2 Implications of the native interpretation data ....................... 211
6.3 Summary .................................................................................. 212

Chapter 7 Conclusions .................................................................. 215

Bibliography .................................................................................... 218
Appendix I. The Cloze Test for L2 English learners ....................... 229
Appendix II. Experimental Materials ............................................. 234
Curriculum Vitae ............................................................................. 273