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More than Words Alone: Reference to Motion in L3 Learners' Oral Narratives

Irene Ter Avest

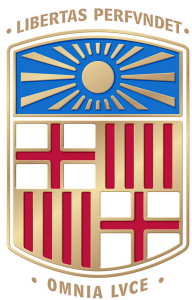
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UNIVERSITAT_{DE}
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2017

To my parents

Acknowledgements

In addition to being an important academic endeavour, pursuing a PhD is also a lesson in life. This dissertation would have been impossible without the help of so many people.

First of all, I would like to thank my supervisor Dr. Carmen Muñoz for believing in my project, and for her knowledgeable comments and support. I would also like to thank everyone who helped me recruit participants at universities and language schools, as well as among their friends and relatives: at the *Escuela Oficial de Idiomas* in Barcelona, in Madrid, in Zaragoza, in Montpellier, in Aix-en-Provence, at Concordia University in Montreal, at Université Laval in Québec City, and in Edmonton. Canadian hospitality is amazing!

Second, I would like to thank all participants, including the ones who participated in the pilot studies. Often without even knowing me, they were determined to tell me the frog story over and over again (I feel so sorry for the trilinguals!). Therefore, I am grateful to the journal of *Language Learning* for having given me the possibility to give my participants at least some reward for their efforts in the form of a *Language Learning Dissertation Grant*. I am also thankful for all those people from everyday life who, while remaining anonymous, inspired me to conduct research on language acquisition.

I would not have completed this PhD without the incredible and unconditional support of my friends and family, who kept encouraging me to continue with my project, even in cases of seemingly unsurmountable problems. Special thanks go to my friends from Café de Galiza for their never-ceasing interest in my thesis, as well as for the endless *sobremesas* and conversations on all possible topics. This thesis would not have been possible either without the warmth and support of the people from Basis' bar. Thank you Álex and Fernando for the incredible football nights and for

cheering me up during long days of data analysis and thesis writing. Thanks to Fant for always being by my side.

My love and thanks go to my parents for their unconditional support, all-embracing love, and for giving me the opportunity to follow my heart and pursue a PhD in Barcelona. Thank you for being willing to listen to my countless re-analyses of the deer scene, and for always being there when times got rough

This thesis is dedicated to you.

Table of contents

Acknowledgements	I
Abstract	X
Resumen	XII
List of Tables	XIV
List of Figures	XVIII
List of abbreviations	XX
Chapter 1: Introduction	1
1.1 Motion.....	1
1.2 L3 acquisition	2
1.3 Why this thesis?	3
1.4 Structure of the thesis	4
Chapter 2: Reference to Motion in Language	6
2.1 Cognitive Linguistics	6
2.2 Reference to motion: lexicalisation patterns.....	7
2.2.1 Motion events	8
2.2.2 The tripartite typology: semantic components expressed in the verb root	11
2.2.2.1 <i>Motion + Manner/Cause</i>	11
2.2.2.2 <i>Motion + Path</i>	14
2.2.2.3 <i>Motion + Figure</i>	16
2.2.3 The bipartite typology: the expression of Path	16
2.2.3.1 <i>Satellite-framed languages</i>	16
2.2.3.2 <i>Verb-framed languages</i>	17
2.2.4 Criticisms to Talmy's typology	18
2.2.4.1 <i>Restrictions on the expression of Manner in verb-framed languages:</i>	

<i>the boundary-crossing constraint</i>	18
2.2.4.2 <i>The definition of “satellite”</i>	20
2.2.4.3 <i>Equipollently-framed languages</i>	21
2.2.4.4 <i>Intratypological differences with respect to the expression of Manner; proposing a cline of Manner saliency</i>	23
2.2.4.5 <i>Intratypological differences with respect to the expression of Path; proposing a cline of Path saliency</i>	27
2.3 The <i>thinking-for-speaking</i> hypothesis	30
2.4 Studies on reference to motion	32
2.4.1 Reference to motion in an L1	33
2.4.2 Reference to motion in an L2	41
2.4.3 Reference to motion in early bilinguals	52
2.5 Reference to motion in the languages of the present study	53
2.6 Summary	56
Chapter 3: L3 acquisition	57
3.1 Cross-linguistic influence	57
3.2 Current models of L3 acquisition	65
3.2.1 Data-driven models	65
3.2.2 Theory-based models	68
3.2.3 Models of multilingual speech production	69
3.2.4 Perceived typological distance	71
3.2.5 Language modes	72
3.3 Research on the expression of motion in L3 acquisition	73
Chapter 4: Methodology	75
4.1 Introduction	75
4.2 Research questions and hypotheses	75
4.3 Design of the present study	77

4.3.1 Research design	77
4.3.2 Materials	80
<i>4.3.2.1 Language background questionnaire</i>	80
<i>4.3.2.2 EOI language tests</i>	80
<i>4.3.2.3 The frog story</i>	81
<i>4.3.2.4 Word list</i>	82
<i>4.3.2.5 Communication strategies' questionnaire</i>	83
<i>4.3.2.6 The pilot studies</i>	83
4.4 Participants	84
<i>4.4.1 English monolinguals</i>	85
<i>4.4.2 French monolinguals</i>	85
<i>4.4.3 Spanish monolinguals</i>	85
<i>4.4.4 L1 English bilinguals</i>	86
<i>4.4.5 L1 French bilinguals</i>	86
<i>4.4.6 L1 English trilinguals</i>	86
<i>4.4.7 L1 French trilinguals</i>	87
4.5 Research procedure	87
4.6 Data codification and analyses	91
4.6.1 Transcription of the frog-story data	91
4.6.2 Codification of the frog-story data	91
4.6.3 Some issues regarding the codification of the <i>frog-story</i> data	94
4.6.4 Questionnaire data	96
4.6.5 Analysis of the data	97
<i>4.6.5.1 Statistical analyses used</i>	97
<i>4.6.5.2 Qualitative analyses</i>	98
4.7 Some observations	99

Chapter 5: Results	100
5.1 Introduction	100
5.2 Exploratory analyses of the bi- and trilingual data	100
5.2.1 Proficiency level	101
5.2.2 Language use	102
5.2.3 Order of testing	103
5.2.4 Summary of the exploratory analyses	105
5.3 General linguistic behaviour	108
5.3.1 General linguistic behaviour in monolinguals	109
5.3.2 General linguistic behaviour in L2/L3 Spanish vs. Spanish monolinguals	113
5.3.3 General linguistic behaviour of the trilinguals in L2 French and L2 English	122
5.3.3.1 <i>General linguistic behaviour in L2 French</i>	122
5.3.3.2 <i>General linguistic behaviour in L2 English</i>	125
5.3.4 Reverse transfer visible in general linguistic behaviour in L1 English and L1 French	128
5.3.4.1 <i>Reverse transfer visible in general linguistic behaviour in L1 English</i>	128
5.3.4.2 <i>Reverse transfer visible in general linguistic behaviour in L1 French</i>	133
5.3.5 Summary of the findings for general linguistic behaviour	136
5.4 Lexical richness	140
5.4.1 Lexical richness in monolinguals	140
5.4.2 Lexical richness in L2/L3 Spanish	141
5.4.3 Lexical richness found for the trilinguals in L2 French and L2 English	144
5.4.3.1 <i>Lexical richness in L2 French</i>	144
5.4.3.2 <i>Lexical richness in L2 English</i>	145
5.4.4 Reverse transfer visible in lexical richness in L1 English and L1 French	146
5.4.4.1 <i>Reverse transfer visible in lexical richness in L1 English</i>	146
5.4.4.2 <i>Reverse transfer visible in lexical richness in L1 French</i>	147
5.4.5 Summary of the findings for lexical richness	148
5.5 The expression of Manner	149
5.5.1 Elements used for making reference to Manner	150

5.5.1.1 Elements used for making reference to Manner in monolinguals	150
5.5.1.2 Elements used for making reference to Manner in L2/L3 Spanish	154
5.5.1.3 Elements used for making reference to Manner by the trilinguals in L2 French and L2 English	157
5.5.1.3.1 Elements used for making reference to Manner in L2 French	157
5.5.1.3.2 Elements used for making reference to Manner in L2 English	159
5.5.1.4 Reverse transfer visible in the use of elements for making reference to Manner in L1 English and L1 French	161
5.5.1.4.1 Reverse transfer visible in the use of elements for making reference to Manner in L1 English	161
5.5.1.4.2 Reverse transfer visible in the use of elements for making reference to Manner in L1 French	163
5.5.2 The use of Manner verbs in combination with a boundary-crossing	167
5.5.2.1 The use of Manner verbs in combination with a boundary-crossing in monolinguals....	167
5.5.2.2 The use of Manner verbs in combination with a boundary-crossing in L2/L3 Spanish ..	170
5.5.2.3 The use of Manner verbs in combination with a boundary-crossing by the trilinguals in L2 French and L2 English	175
5.5.2.3.1 The use of Manner verbs in combination with a boundary-crossing in L2 French	175
5.5.2.3.2 The use of Manner verbs in combination with a boundary-crossing in L2 English ...	176
5.5.2.4 Reverse transfer visible in the use of Manner verbs in combination with a boundary-crossing in L1 English and L1 French	177
5.5.2.4.1 Reverse transfer visible in the use of Manner verbs in combination with a boundary-crossing in L1 English	178
5.5.2.4.2 Reverse transfer visible in the use of Manner verbs in combination with a boundary-crossing in L1 French	185
5.5.3 Summary of the findings for the expression of Manner	187
5.6 The expression of Path	190
5.6.1 The expression of Path in monolinguals	191
5.6.2 The expression of Path in L2/L3 Spanish	192
5.6.3 The expression of Path by the trilinguals in L2 French and L2 English	193

5.6.3.1 <i>The expression of Path in L2 French</i>	193
5.6.3.2 <i>The expression of Path in L2 English</i>	194
5.6.4 Reverse transfer visible in the expression of Path in L1 English and L1 French	194
5.6.4.1 <i>Reverse transfer visible in the expression of Path in L1 English</i>	195
5.6.4.2 <i>Reverse transfer visible in the expression of Path in L1 French</i>	195
5.6.5 Summary of the findings for the expression of Path	196
5.7 Event granularity	197
5.7.1 Event granularity in monolinguals	198
5.7.2 Event granularity in L2/L3 Spanish	199
5.7.3 Event granularity by the trilinguals in L2 French and L2 English	201
5.7.3.1 <i>Event granularity in L2 French</i>	201
5.7.3.2 <i>Event granularity in L2 English</i>	202
5.7.4 Reverse transfer visible in event granularity in L1 English and L1 French	204
5.7.4.1 <i>Reverse transfer visible in event granularity in L1 English</i>	204
5.7.4.2 <i>Reverse transfer visible in event granularity in L1 French</i>	205
5.7.5 Summary of the findings for event granularity	206
5.8 Background factors associated to linguistic behaviour in bi- and trilingual participants	208
5.8.1 Associations found for L1 English bilinguals	210
5.8.2 Associations found for L1 French bilinguals	211
5.8.3 Associations found for L1 English trilinguals	211
5.8.4 Associations found for L1 French trilinguals	212
5.8.5 Summary of the findings for associations between background factors and linguistic measures	214
5.9 General summary of the results	216
Chapter 6: Discussion and Conclusions	219
6.1 General discussion of the results	219
6.2 The results vs. the hypotheses	238

6.3 Conclusions	240
6.4 Limitations of the present study	241
6.5 Suggestions for further research	241
References	243
Appendices	257
Appendix I: Language background questionnaire	258
Appendix II: English language test	261
Appendix III: French language test	264
Appendix IV: Spanish language test	268
Appendix V: the frog story	270
Appendix VI: Word list	292
Appendix VII: Communication strategies questionnaire	293
Appendix VIII: Complete list of motion verbs together with their satellites produced in English by the different groups of participants	301
Appendix IX: Complete list of motion verbs produced in French by the different groups of participants	309
Appendix X: Complete list of motion verbs produced in Spanish by the Different groups of participants	317

Abstract

Cross-linguistic influence in L3 acquisition appears to be mediated by a complex interplay of factors, among which L2 status and perceived typological distance appear to be the most important ones, at least at the lexical and syntactic levels. Few studies on L3 acquisition have looked at cross-linguistic influence at more conceptual levels.

Using Talmy's typology of *verb-framed* vs. *satellite-framed* languages (Talmy, 1991, 2000a, 2000b), and Slobin's *thinking-for-speaking* hypothesis (Slobin, 1987, 1991, 1996a, 1996b, 1997, 2000, 2004, 2006) as a framework, the present study investigates the existence of cross-linguistic influence in the expression of motion in Spanish as an L3. This cross-linguistic influence will not only be examined in the direction of the L1 to the L2 and the L3, but also in the opposite direction, i.e. from the L2 or the L3 to the L1, so-called *reverse transfer* (Jarvis and Pavlenko, 2008). According to Slobin's hypothesis, native speakers become accustomed to the patterns of event construal that are specific to their L1. Such patterns are especially visible in the expression of motion events, as verb-framed and satellite-framed languages differ greatly with respect to the amount of attention speakers pay to Manner of motion. Moreover, in verb-framed languages, Manner of motion cannot be expressed by the main verb when there is motion across a spatial boundary, the so-called "boundary-crossing constraint" (Slobin and Hoiting, 1994). Therefore, acquiring a typologically different L2 or L3 entails the need for restructuring of L1 thinking for speaking patterns, or *rethinking for speaking* (Robinson and Ellis, 2008). However, differences in patterns of motion-event construal between languages may not be as accessible to awareness as differences in, for instance, lexical items and syntax. Therefore, the roles played by *L2 status* and *perceived typological distance* in cross-linguistic influence between thinking for speaking patterns in L3 acquisition remain unclear.

The main experiment of the present study consisted of an oral narration of the frog story (Mayer, 1969). Two experimental groups of additive trilinguals (L1 English – L2 French – L3 Spanish, and L1 French – L2 English – L3 Spanish), as well as two control groups of additive

bilinguals (L1 English – L2 Spanish, and L1 French – L2 Spanish), and three control groups of monolinguals (L1 English, L1 French, and L1 Spanish) told the story to a researcher in each of their languages. French and Spanish are both verb-framed languages, whereas English is a satellite-framed language. The participants' narrations were analysed for how they had made reference to motion.

The results indicated that in L3 acquisition, cross-linguistic influence in thinking for speaking patterns takes place in all directions and between all languages, being mediated by frequency of use and proficiency, and, to a lesser extent, also perceived typological distance. Nevertheless, L1 thinking for speaking patterns turned out to be very pervasive, especially with respect to the types of elements participants had used for making reference to Manner of motion. In addition, the expression of Manner of motion in L1 English bi- and trilinguals turned out to be affected by the thinking for speaking patterns from their other, verb-framed language(s). This suggests that thinking-for-speaking patterns are not entirely language-specific, and that L1 patterns can be restructured under the influence of increased use and proficiency in a typologically different language.

Keywords: third language acquisition, thinking for speaking, motion, cross-linguistic influence, reverse transfer

Resumen

El presente trabajo investiga la transferencia interlingüística en la expresión del movimiento en español L3. El marco teórico de esta investigación lo constituyen la tipología talmiana de *lenguas de marco verbal* y *lenguas de marco satélite* (Talmy, 1991, 2000, 2000b) y la hipótesis de *pensar para hablar* de Slobin (1987, 1991, 1996a, 1996b, 1997, 2000, 2004, 2006). Se investiga tanto la transferencia de la L1 a la L2 y la L3 como la transferencia inversa de la L3 y la L2 a la L1, y se presta especial atención a los factores de *L2 status* y *psicotipología*.

Durante los experimentos, dos grupos experimentales de trilingües aditivos (L1 inglés – L2 francés – L3 español y L1 francés – L2 inglés – L3 español) narraron la *historia de la rana* o *frog story* (Mayer, 1969) en cada una de sus lenguas. Tanto el español como el francés son lenguas de marco verbal, mientras que el inglés es una lengua de marco satélite. Además de los dos grupos experimentales, participaron dos grupos de control de bilingües aditivos (L1 inglés – L2 español y L1 francés y L2 español) y tres grupos de control de hablantes monolingües (L1 inglés, L1 francés, L1 español). Las narraciones de los participantes fueron analizadas con respecto a la expresión del movimiento.

Los resultados muestran que hay transferencia interlingüística en todas las direcciones y entre todas las lenguas. Factores como el nivel lingüístico y el uso resultan ser especialmente importantes, y en menor medida también lo es la psicotipología. Se observa una clara transferencia del *pensar para hablar* de las L1 de los participantes en las narraciones en L3 español. Además, la L1 de los bilingües y trilingües con L1 inglés muestra algunas características más propias del *pensar para hablar* en francés y/o español en la referencia que hacen estos participantes a la manera de movimiento. Esto sugiere que parte del *pensar para hablar* es compartida entre lenguas, y que los patrones del *pensar para hablar* de la L1 pueden ser ‘repensados’ bajo la influencia de una o más lenguas tipológicamente distintas.

Palabras clave: adquisición de terceras lenguas, pensar para hablar, movimiento, transferencia interlingüística, transferencia inversa

List of Tables

Chapter 2:

Table 2.1: Spanish ‘putting’ verbs, differing according to distinctions of *Path* (A = *Agent*, F = *Figure object*, G = *Ground object*). Taken from Talmy (1985: 71)

Table 2.2: Percentage of narrators who use a Manner verb to describe the owl’s appearance

Table 2.3: Overview of studies that have looked at the expression of motion in an L2

Chapter 3:

Table 3.1: Characterization of types of cross-linguistic influence across ten dimensions (adapted from Jarvis and Pavlenko, 2008: 20)

Chapter 4:

Table 4.1: Participant groups used in the present study

Table 4.2: Layout of the sessions

Table 4.3: Possible orders of the languages for bilingual and trilingual participants

Chapter 5:

Table 5.1: Summary of the preparatory analyses. ‘✓’ indicates that the groups do not differ significantly. ‘X’ means that they do.

Table 5.2: Summary of the preparatory analyses for language use and proficiency for both groups of trilinguals. ‘✓’ indicates that the difference is not significant. ‘X’ means that it is.

Table 5.3: Total number of motion clauses produced by the different groups of monolingual speakers

Table 5.4: Elements of motion events expressed in clauses containing Translational Motion by the different groups of monolingual speakers

Table 5.5: Number of +Manner and –Manner clauses with and without boundary-crossing produced by the different groups of monolingual speakers

Table 5.6: Total number of motion clauses produced in Spanish by the different groups of participants

Table 5.7: Elements of motion events expressed in clauses containing Translational Motion in Spanish by the different groups of participants

Table 5.8: Number of +Manner and –Manner clauses with and without boundary-crossing produced in Spanish by the different groups of participants

Table 5.9: Total number of motion clauses produced in French by L2 speakers and French monolinguals

Table 5.10: Elements of motion events expressed in clauses containing Translational Motion in French by L2 speakers and French monolinguals

- Table 5.11: Number of +Manner and –Manner clauses with and without boundary-crossing produced in French by L2 speakers and French monolinguals**
- Table 5.12: Total number of motion clauses produced in English by L2 speakers and English monolinguals**
- Table 5.13: Elements of motion events expressed in clauses containing Translational Motion in English by L2 speakers and English monolinguals**
- Table 5.14: Number of +Manner and –Manner clauses with and without boundary-crossing produced in English by L2 speakers and English monolinguals**
- Table 5.15: Total number of motion clauses produced in English by the different groups of participants with L1 English**
- Table 5.16: Elements of motion events expressed in clauses containing Translational Motion in English by the different groups of participants with L1 English**
- Table 5.17: Number of +Manner and –Manner clauses with and without boundary-crossing produced in English by the different groups of participants with L1 English**
- Table 5.18: Total number of motion clauses produced in French by the different groups of participants with L1 French**
- Table 5.19: Elements of motion events expressed in clauses containing Translational Motion in French by the different groups of participants with L1 French**
- Table 5.20: Number of +Manner and –Manner clauses with and without boundary-crossing produced in French by the different groups of participants with L1 French**
- Table 5.21: Lexical richness in monolinguals: English, French, and Spanish**
- Table 5.22: Lexical richness in L2/L3 Spanish: L1 English bi- and trilinguals, L1 French bi- and trilinguals, and Spanish monolinguals**
- Table 5.23: Lexical richness in French: L2 speakers (L1 English trilinguals) vs. French monolinguals**
- Table 5.24: Lexical richness in English: L2 speakers (L1 French trilinguals) vs. English monolinguals**
- Table 5.25: Lexical richness in L1 English: trilinguals, bilinguals, and monolinguals**
- Table 5.26: Lexical richness in L1 French: trilinguals, bilinguals, and monolinguals**
- Table 5.27: Elements used for referring to Manner without a boundary-crossing by the different groups of monolingual speakers**
- Table 5.28: Elements used for referring to Manner in combination with a boundary-crossing by the different groups of monolingual speakers**
- Table 5.29: Elements used for referring to Manner without a boundary-crossing in Spanish by the different groups of participants**
- Table 5.30: Elements used for referring to Manner in combination with a boundary-crossing in Spanish by the different groups of participants**
- Table 5.31: Elements used for referring to Manner without a boundary-crossing in French by L2 speakers and French monolinguals**
- Table 5.32: Elements used for referring to Manner in combination with a boundary-crossing in French by L2 speakers and French monolinguals**
- Table 5.33: Elements used for referring to Manner without a boundary-crossing in English by L2 speakers and English monolinguals**

- Table 5.34: Elements used for referring to Manner in combination with a boundary-crossing in English by L2 speakers and English monolinguals**
- Table 5.35: Elements used for referring to Manner without a boundary-crossing in English by the different groups of participants with L1 English**
- Table 5.36: Elements used for referring to Manner in combination with a boundary-crossing in English by the different groups of participants with L1 English**
- Table 5.37: Elements used for referring to Manner without a boundary-crossing in French by the different groups of participants with L1 French**
- Table 5.38: Elements used for referring to Manner in combination with a boundary-crossing in French by the different groups of participants with L1 French**
- Table 5.39: Manner verbs used by monolinguals in combination with a boundary-crossing in English, French, and Spanish together with their number of occurrences**
- Table 5.40: Manner verbs used in combination with a boundary-crossing by the different groups of bi- and trilinguals in L2/L3 Spanish together with their number of occurrences**
- Table 5.41: Manner verbs used in combination with a boundary-crossing in L2 French and L2 English together with their number of occurrences**
- Table 5.42: Manner verbs used in combination with a boundary-crossing in English by the L1 English bi- and trilinguals together with their number of occurrences. The monolingual data have been included as a comparison.**
- Table 5.43: Narrations of the ‘frog + jar scene’ in English: monolinguals, bilinguals, and trilinguals.**
- Table 5.44: Narrations of the ‘gopher scene’ in English: monolinguals, bilinguals, and trilinguals.**
- Table 5.45: Narrations of the ‘owl scene’ in English: monolinguals, bilinguals, and trilinguals.**
- Table 5.46: Manner verbs used in combination with a boundary-crossing in French by the L1 French bi- and trilinguals together with their number of occurrences. The monolingual data have been included as a comparison.**
- Table 5.47: Event conflation and static vs. dynamic descriptions in monolinguals.**
- Table 5.48: Event conflation and static vs. dynamic descriptions in L2/L3 Spanish compared with the data found for Spanish monolinguals.**
- Table 5.49: Event conflation and static vs. dynamic descriptions in L2 French compared with the data found for French monolinguals.**
- Table 5.50: Event conflation and static vs. dynamic descriptions in L2 English compared with the data found for English monolinguals.**
- Table 5.51: Event conflation and static vs. dynamic descriptions in L1 English: trilinguals, bilinguals, and Monolinguals**
- Table 5.52: Event conflation and static vs. dynamic descriptions in L1 French: trilinguals, bilinguals, and Monolinguals**
- Table 5.53: Event granularity in monolinguals. The deer scene in six segments.**
- Table 5.54: Event granularity in monolinguals. The deer scene in four segments.**
- Table 5.55: Event granularity in L2/L3 Spanish compared with the results found for monolinguals. The deer scene in six segments.**

Table 5.56: Event granularity in L2/L3 Spanish compared with the results found for monolinguals. The deer scene in four segments.

Table 5.57: Event granularity in L2 French compared with the results found for French monolinguals. The deer scene in six segments.

Table 5.58: Event granularity in L2 French compared with the results found for French monolinguals. The deer scene in four segments.

Table 5.59: Event granularity in L2 English compared with the results found for English monolinguals. The deer scene in six segments.

Table 5.60: Event granularity in L2 English compared with the results found for English monolinguals. The deer scene in four segments.

Table 5.61: Event granularity in L1 English: trilinguals, bilinguals, and monolinguals. The deer scene in six segments.

Table 5.62: Event granularity in L1 English: trilinguals, bilinguals, and monolinguals. The deer scene in four segments.

Table 5.63: Event granularity in L1 French: trilinguals, bilinguals, and monolinguals. The deer scene in six segments.

Table 5.64: Event granularity in L1 French: trilinguals, bilinguals, and monolinguals. The deer scene in four segments.

Table 5.65: significant associations found for the L1 English bilinguals

Table 5.66: significant associations found for the L1 French bilinguals

Table 5.67: Significant associations found between L1 and L2 background factors for the L1 English trilinguals

Table 5.68: Significant associations found between L3 background factors and linguistic behaviour, as well as between background factors for the L1 English trilinguals

Table 5.69: Significant associations found between L1 and L2 background factors for the L1 French trilinguals

Table 5.70: Significant associations found between L3 background factors and linguistic behaviour, as well as

Table 5.71: Overview of the findings for the groups of bilingual and trilingual participants in L2/L3 Spanish with respect to the findings for Spanish monolinguals between background factors for the L1 French trilinguals

List of Figures

Chapter 3:

Figure 3.1: de Bot's Multilingual Processing Model (de Bot, 2004).

Chapter 5:

Figure 5.1: Proficiency level in the L2: L1 English trilinguals vs. L1 French trilinguals

Figure 5.2: Proficiency level in L2 English and L3 Spanish: L1 French trilinguals

Figure 5.3: % of L1 use during the past month: L1 English participants vs. L1 French participants

Figure 5.4: % of L1 use during the past year: L1 English participants vs. L1 French participants

Figure 5.5: % of L1 use during the past year: L1 English bilinguals vs. L1 French bilinguals

Figure 5.6: % of L1 use during the past month: L1 English trilinguals vs. L1 French bilinguals

Figure 5.7: % of L1 use during the past year: L1 English trilinguals vs. L1 French bilinguals

Figure 5.8: % of L2 use during the past month: L1 English trilinguals vs. L1 French trilinguals

Figure 5.9: % of L2 use during the past year: L1 English trilinguals vs. L1 French trilinguals

Figure 5.10: % of use of the L1 vs. the L3 during the past month: L1 French trilinguals

Figure 5.11: Percentage of +Manner clauses: English, French, and Spanish monolinguals

Figure 5.12: Percentage of +Ground clauses: English, French, and Spanish monolinguals

Figure 5.13: Percentage of +Ground clauses: Spanish monolinguals vs. L1 English bi- and trilinguals

Figure 5.14: Percentage of +Manner clauses; Spanish monolinguals vs. L1 French bi- and trilinguals

Figure 5.15: Percentage of clauses containing a boundary-crossing; Spanish monolinguals vs. L1 French bi- and trilinguals

Figure 5.16: Percentage of +Ground clauses; Spanish monolinguals vs. L1 French bi- and trilinguals

Figure 5.17: Percentage of +Ground clauses: L1 English bilinguals vs. L1 French bilinguals

Figure 5.18: Percentage of +Ground clauses; L1 English trilinguals vs. L1 French trilinguals

Figure 5.19: % of +Manner clauses containing a boundary-crossing: French monolinguals vs. French L2 speakers

Figure 5.20: % of +Manner clauses: English monolinguals vs. English L2 speakers

Figure 5.21: % of +Manner clauses in L1 English: monolinguals, bilinguals, and trilinguals

Figure 5.22: % of +Manner clauses without a boundary-crossing in L1 English: monolinguals, bilinguals, and trilinguals

Figure 5.23: % of clauses containing a boundary-crossing in L1 English: monolinguals, bilinguals, and trilinguals

Figure 5.24: % of +Ground clauses in L1 English: monolinguals, bilinguals, and trilinguals

Figure 5.25: % of +Manner clauses in L1 French: monolinguals, bilinguals, and trilinguals

Figure 5.26: Percentage of Manner expressed within the verb in clauses without a boundary-crossing: English, French, and Spanish monolinguals

Figure 5.27: Percentage of Manner expressed outside the verb in clauses without a boundary-crossing: English, French, and Spanish monolinguals

Figure 5.28: Percentage of Manner expressed within the verb in clauses without a boundary-crossing; Spanish

monolinguals vs. L1 English bi- and trilinguals.

Figure 5.29: % of Manner expressed within the verb in clauses without a boundary-crossing: French monolinguals vs. French L2 speakers

Figure 5.30: % of Manner expressed outside the verb in clauses without a boundary-crossing: French monolinguals vs. French L2 speakers

Figure 5.31: % of Manner expressed within the verb in clauses without a boundary-crossing: English monolinguals vs. English L2 speakers

Figure 5.32: % of Manner expressed within the verb in clauses without a boundary-crossing in L1 English: monolinguals, bilinguals, and trilinguals

Figure 5.33: % of Manner being expressed within the verb in clauses without a boundary-crossing in L1 French; monolinguals, bilinguals, and trilinguals

Figure 5.34: % of Manner being expressed outside the verb in clauses without a boundary-crossing in L1 French; monolinguals, bilinguals, and trilinguals

List of Abbreviations

AUX:	auxiliary
BC:	boundary-crossing
GER:	gerund
INF:	infinitive
L1:	first language
L2:	second language
L3:	third language
MAN:	Manner
PFV:	perfective aspect
PST:	past
REFL:	reflexive
UG:	Universal Grammar
1PL:	first person plural
3SG:	third person singular
3PL:	third person plural

Chapter 1: Introduction

1.1 Motion

Motion is a basic aspect of our everyday lives. We do not only move ourselves; we are surrounded by other people, animals, and objects that move. Moreover, we frequently make reference to such movements in language. This reference occurs in both spoken and written language production.

Despite the fact that motion is a universal human experience, languages differ considerably with respect to how they encode events that involve movement, or *motion events*. Within the framework of Cognitive Linguistics, the work by Leonard Talmy (1985, 1991, 2000a, 2000b) on Cognitive Semantics has been of crucial importance to the understanding of these differences. In particular his bipartite typology, which classifies languages into *verb-framed languages* and *satellite-framed languages* based on which surface elements characteristically express the *core schema* of a motion event, has given rise to a considerable number of studies on the expression of motion in a wide variety of languages.

On the basis of the results of a large study on the acquisition of discourse organization in English, German, Hebrew, Turkish, and Spanish, which involved the expression of motion (the results are presented in Berman and Slobin, 1994), Dan Isaac Slobin presented his *thinking-for-speaking* hypothesis (Slobin, 1987, 1991, 1996a, 1996b, 1997, 2000, 2004, 2006). This hypothesis states that: “[...] the native language directs one’s attention, while speaking, to particular ways of filtering and packaging information” (Berman and Slobin, 1994: 612). Through use of the native language (L1), these particular ways of filtering and packaging information become entrenched, leading to language-specific rhetorical styles and ways of *thinking-for-speaking*. In other words, the means available for the expression of motion events in a particular language seem to draw the attention of speakers of this language more towards certain aspects of motion than others.

The *thinking-for-speaking* hypothesis also has implications for the acquisition of any subsequent languages after the L1 has been acquired. According to Slobin (1996b), *thinking-for-*

speaking patterns are extremely resistant to being restructured, because “[...] the ways one learns a language as a child constrain one’s sensitivity to what Sapir called “the possible contents of experience as experienced in linguistic terms”” (p. 89). Furthermore, the grammaticized categories that appear to be the most susceptible to influence from the native language are the ones that “[...] cannot be experienced directly in our perceptual, sensorimotor, and practical dealings with the world” (p. 91). This certainly holds for motion events, because the ways in which languages verbalize these events are not imposed by the characteristics of the events themselves. Robinson and Ellis (2008) would call the restructuring of thinking-for-speaking patterns from the L1 *rethinking-for-speaking*.

In the meantime, research on *rethinking-for-speaking* has shown that, at least in some cases, second language (L2) learners shown convergence between the thinking for speaking patterns of the L1 and the L2 (e.g. Brown and Gullberg, 2008; Hohenstein et al., 2006), which suggests that thinking for speaking patterns may not be so resistant to change after all. This, in turn, raises the question of what will happen to thinking for speaking patterns when an L2 learner starts learning a third language (L3) after having attained a considerable proficiency in the L2, and thus becomes an L3 learner. Will this learner be able to take advantage of the thinking for speaking patterns of the L2 if these are more similar to those of the L3? Or will learners always start out with the thinking for speaking patterns of their L1, even if these are less similar to the ones of the L3 than the patterns of the L2?

1.2 L3 acquisition

Until quite recently, research on L2 acquisition did not usually take into account whether learners had knowledge of any languages other than their L1 and L2. However, especially since the late 1990s, a growing body of research has been providing evidence for the hypothesis that learning an L3 is not the same as learning an additional L2. Indeed, cross-linguistic influence visible in the L3

may have the L1, the L2, or both the L1 and the L2 as its source(s), depending on the nature of the features investigated, as well as on the particular language constellations. Nevertheless, more research is needed to determine the relative importance of factors such as (perceived) typological distance, proficiency, context of acquisition, recency of use, as well as L2 status (see Aronin and Hufeisen, 2009; Falk and Bardel, 2010, and DeAngelis, 2007, among others, for a discussion of all these factors). Furthermore, research is needed on cross-linguistic influence from the L2 and/or the L3 into the L1, or *reverse transfer* (Jarvis and Pavlenko, 2008) in the context of L3 acquisition, since little is known about the characteristics of this phenomenon in the context of acquiring more than one non-native language, as opposed to L2 acquisition (see Jarvis and Pavlenko, 2008, and Muñoz Carrasco, 2015 for results on reverse transfer in the context of L2 acquisition).

1.3 Why this thesis?

This thesis aims to make a contribution to both the understanding of thinking for speaking patterns and cross-linguistic influence at a more conceptual level when more than one non-native language is involved. Whereas factors such as typological distance may be quite visible at the lexical level, it remains the question whether lexicalisation patterns for motion events are equally accessible to human awareness. Therefore, cross-linguistic influence found in thinking for speaking patterns in L3 acquisition might differ from cross-linguistic influence found at levels that are more ‘accessible’. This thesis attempts to shed more light on this issue by comparing the behaviour regarding the expression of motion of two groups of additive¹ trilinguals whose L2 is either more similar to or more different from their L3 than their L1. The first group consists of additional trilinguals with L1 English, L2 French, and L3 Spanish (n = 6), and the second of additional trilinguals with L1 French, L2 English, and L3 Spanish (n = 27). In order to pinpoint the differences between L2 acquisition and

¹ ‘Additive’ is commonly used with bilinguals to indicate that the L1 and the L2 have not been acquired simultaneously. In the present study, its use will be extended to trilinguals, meaning that the L2 has been learned after the L1, and the L3 some years after the onset of learning of the L2.

L3 acquisition, two control groups of additional bilinguals have been included in the study. The first group consists of additional bilinguals with L1 English, and L2 Spanish (n = 6), whereas the second consists of additional bilinguals with L1 French, and L2 Spanish (n = 6). Finally, in order to be able to pinpoint the differences between L2 and L3 learners of Spanish and Spanish monolinguals, as well as to identify any reverse transfer, three control groups of monolinguals have been included as well. These consist of Spanish monolinguals (n = 13), English monolinguals (n = 6), and French monolinguals (n = 7). More detailed information about these 71 participants will be provided in the methodology section of the present thesis. The data were gathered by means of the frog story (Mayer, 1969) to maximize the possibilities for comparison with previous research on the expression of motion in L2 acquisition (cf. Berman and Slobin, 1994; Strömquist and Verhoeven, 2004).

1.4 Structure of the thesis

The outline of the present thesis will be as follows: in Chapter 2, the language typologies proposed by Talmy (1985, 1991, 2000a, 2000b, 2009), as well as previous studies on the expression of motion in an L1 or an L2 will be reviewed. This review will include some of the criticisms on Talmy's typologies. In Chapter 3, the history of the research on cross-linguistic influence or 'transfer' in L2 acquisition will be briefly reviewed. Furthermore, the models that have been proposed to account for the findings of studies on L3 acquisition will be discussed, thereby highlighting the differences between L2 acquisition and L3 acquisition. At the end of the chapter, the studies on the expression of motion in L3 acquisition will be reviewed as well. In Chapter 4, the research hypotheses, the characteristics of the participants, the methodology employed to collect the data, as well as the types of analyses used to analyse the data will be explained in detail. In Chapter 5, the results of the analyses carried out on the data will be presented. This will be done separately for each type of analysis. In Chapter 6, then, the results will be summarized and discussed, after which they will be compared to the research hypotheses presented in Chapter 4. The limitations of the present study will

be discussed as well in this chapter, and they will be linked to suggestions for further research on the topic of motion expression in an L3.

Chapter 2: Reference to Motion in Language

2.1 Cognitive Linguistics

According to Cuenca and Hilferty (1999), as well as to Ibarretxe-Antuñano and Valenzuela (2012), the framework of Cognitive Linguistics finds its origin in the year 1987, in the work published by the linguists Lakoff and Langacker. Nevertheless, already in the late 1970s and even earlier, there were linguists that published work that today would be assigned to the Cognitive Linguistics framework. An example is Fillmore's *Frame Semantics* (e.g. 1968). Over the past two decades, an increasing number of studies have been published within the framework of Cognitive Linguistics.

Cognitive Linguistics is not seen as a paradigm, because it embraces a number of slightly different theories. Nonetheless, one of its fundamental assumptions is that language is a part of general human cognition. Although cognitive linguists do not reject the idea that some language (learning) capacities may be innate, language is not seen as a separate module or “organ”, as postulated by Generativism. Moreover, human cognition is directly linked to bodily experiences, and the ways in which we conceptualize the world are based on how our senses perceive this world, on our body movements, and on our physical and social experiences (Cuenca and Hilferty, 1999: 15). Therefore, human cognition is not seen as a separate entity that functions in a logical way, and that manipulates abstract symbols that are directly related to the world. Neither can human cognition be described by using truth-values. Instead, it is seen as an ecological structure that is fully embedded in human experience.

With respect to human language, Cognitive Linguistics postulates the following (Cuenca and Hilferty, 1999: 19):

- *The study of language cannot be separated from its cognitive and communicative function.*

Therefore, it should be based on language use.

- *Categories do not have fixed boundaries, and consist of prototypical and less prototypical members.*
- *Language is inherently symbolic in nature.* Therefore, its primary function is to signify. Grammar cannot be separated from semantics, because it too is symbolic and has meaning.
- *The function of grammar is to structure and symbolise semantic content on the basis of a phonological form.* Therefore, meaning is a fundamental concept in grammar analysis, instead of a derived one.
- *Language is seen as dynamic.* Its different levels (e.g. semantics, grammar, the lexicon, and pragmatics) are not seen as separate. Some strict dichotomies that have been used in the past are therefore questionable (e.g. the one between *competence* and actual language production). Moreover, grammar is an entity that is in continuous evolution, being modified by language use.

Some of the main areas of research within the framework of Cognitive Linguistics are: Conceptual Metaphor Theory, Cognitive Grammar, Construction Grammar, Frame Semantics, and Conceptual Integration Theory.

2.2 Reference to motion: lexicalisation patterns

Within the framework of Cognitive Linguistics, an area of research that has received considerable attention is the expression of motion. This area is mainly studied from the perspective of Cognitive and Conceptual Semantics, using the language typology proposed by Talmy (1985, 1991, 2000a, 2000b, 2009) as a theoretical framework². This language typology, which will be explained in detail in this chapter, divides languages into two or three groups based on how they tend to express the main components of a motion event, so-called lexicalisation patterns. Nevertheless, there have also

² In fact, Talmy's definition of a motion event is a more abstract elaboration of Fillmore's system of cases (e.g. 1968, 1977). We refer the reader who wishes to elaborate on this topic to the original publications.

been criticisms to Talmy's typology. These will be discussed in section 2.3.2. At the end of this chapter, the studies that have investigated the expression of motion in an L1 and/or L2 will be reviewed.

2.2.1 Motion events

Talmy (1985, 1991, 2000a, 2000b) identifies four internal components of motion events:

- *Path*³: "(with a capital P) is the course followed or the site occupied by the Figure object with respect to the Ground object" (1985: 61)
- *Figure*: "[...] a moving or conceptually movable entity whose path, site, or orientation is conceived as a variable, the particular value of which is the relevant issue" (2000a: 312).
- *Motion*: "[...] (with a capital M) refers to the presence *per se* in the event of motion or location" (1985: 61)
- *Ground*: "[...] a reference entity, one that has a stationary setting relative to the reference frame, with respect to which the Figure's path, site or orientation is characterized (2000a: 312).

In addition to these four internal components of motion events, Talmy (1985, 1991, 2000a, 2000b) identifies two external components or co-events:

- *Manner*: the manner in which the motion takes place.
- *Cause*: what causes the motion to occur.

Talmy (1985: 61) illustrates these internal and external components by means of the following sentences:

³ Both *Path* and *Figure* are terms that are taken from Gestalt psychology, although they have been given a different semantic interpretation.

(1) *The pencil rolled off the table.*

(2) *The pencil blew off the table.*

In both sentences, *the pencil* is the Figure and the table the Ground, whereas the verb expresses motion. In sentence (1), however, the verb *rolled* also expresses Manner, i.e. the way in which the pencil moved off the table. In sentence (2), on the contrary, the verb *blew* expresses the Cause of the pencil moving off the table, namely the wind or a person blowing on it.

Although the internal and external components of motion events are universal, Talmy (2000a, 2000b), as well as Cifuentes-Honrubia (1999) for Spanish, distinguish between four different types of motion events, depending on certain characteristics of the event:

- *Translational Motion*: involves the notion of *directionality* (Cifuentes Honrubia, 1999), which means that the Figure changes location in space during the motion event (Talmy, 2000b). When talking about a Translational-Motion event, the speaker can include reference to both Manner and Path, or only to Path, as can be illustrated by the following examples adapted from Cadierno and Ruiz (2006: 194): *go to the beach* and *run to the beach* can both refer to the same motion event. However, in the first sentence, only the Path (direction) of the movement ‘to the beach’ is mentioned, whereas in the second sentence, Manner is mentioned as well by using the verb *run*, which expresses Manner of motion.
- *Non-translational Motion*: Talmy calls this type of motion “self-contained Motion”. It involves motion during which the Figure “[...] keeps its same basic, or “average” location.” (Talmy, 2000b: 35). Non-translational Motion can include motion patterns like oscillation, rotation, dilation (expansion or contraction), wiggle, local wander, or rest, as can be seen from the following examples (Talmy, 2000b: 36): *The ball bounced up and down on the same floor tile / The log rolled over and over in the water.*

- *Change of Position*: involves Motion during which the Figure changes location in space, but the difference with Translational Motion is that a Change of Position does not imply a specific Path of Motion, thereby lacking the feature of *directionality* (Cifuentes Honrubia, 1999). Only the endpoint of the movement is mentioned. A Change of Position can also refer to a change in bodily posture, while the body keeps its same average location. Examples of motion events containing a Change of Position are: *put the book on the table* (Cadierno and Ruiz, 2006: 194) and verbs denoting changes in bodily posture, such as *lay down*.
- *Fictive Motion*: a reference to motion that is purely metaphorical, as in “That mountain range goes from Canada to Mexico” (Talmy 2000a: 104). Talmy (2000a: 105 - 116) distinguishes between several distinct categories of Fictive Motion: Orientation Paths (*I/The arrow pointed toward/away from/into/past the town, or I quickly looked down into the well*), Radiation Paths (*The light is shining (from the sun) into the cave/onto the back wall of the cave*), Shadow Paths (*The three threw its shadow down into/across the valley*), and Sensory Paths (*We can be seen by the enemy from where they’re positioned, or I can hear/smell him all the way from where I’m standing*).

Within the categories of *Translational Motion*, *Non-translational Motion*, and *Change of Position*, a further distinction can be made between *voluntary motion* and *caused motion* (Talmy, 2000a, 2000b):

Voluntary motion: the Figure itself causes its movement.

Caused motion: the movement of the Figure is caused by some external Agent.

The internal and external components of motion events, as well as the different types of motion events described above appear to be universal. Nevertheless, there are important differences between languages with respect to which components are expressed by which surface elements. The

tripartite and bipartite language typologies proposed by Talmy (1985, 1991, 2000a, 2000b, 2009) divide languages into three or two groups, respectively, based on which components are expressed by the verb root (tripartite typology), and whether Path is expressed by the verb root or a verbal satellite (bipartite typology). For establishing both typologies, Talmy looked at “the most characteristic expression of Motion” (1985: 62), using the following definition of “characteristic”:

1. It is *colloquial* in style, rather than literary, stilted, etc.
2. It is *frequent* in occurrence in speech, rather than only occasional.
3. It is *pervasive*, rather than limited, that is, a wide range of semantic notions are expressed in this type.

In the next sections, both typologies proposed by Talmy will be explained in detail.

2.2.2 The tripartite typology: semantic components expressed in the verb root

In his tripartite typology (1985) Talmy identifies three possible constellations of components of motion events being expressed by the verb root:

2.2.2.1. Motion + Manner/Cause. In languages of this type, the verb root expresses both the fact of Motion and the co-event of Manner or Cause. This pattern is probably found in all Indo-European languages, except languages from the Romance family, and Chinese. A characteristic of languages of this type is that they possess a large number of verbs expressing motion in various Manners or by various causes, as can be seen from the following English examples (pp. 62-63):

(3) The rock *slid/rolled/bounced* down the hill.

(4) I *blew/flicked* the ant off my plate.

In languages that tend to express Motion +Manner/Cause in the verb root, the obligatory component of Path is expressed by a verbal satellite. In the two sentences above, these are *down* and *off*, respectively. Talmy defines these satellites as follows:

“Present in many if not all languages, satellites are certain immediate constituents of a verb root other than inflections, auxiliaries, or nominal arguments. They relate to the verb root as periphery (or modifiers) to a head. A verb root together with its satellites forms a constituent in its own right, the ‘verb complex’, also not generally recognized. It is this constituent as a whole that relates to such other constituents as an inflectional affix-set, an auxiliary, or a direct object noun phrase. In some cases, elements that are encountered acting as satellites to a verb root otherwise belong to particular recognizable grammatical categories; therefore, it seems better to consider the satellite role not as a grammatical category in its own right but as a new kind of grammatical relation. [...] It [= the satellite] can take the form of either a free word or an affix [...]: *The record started **over***; *The engine **misfired***. As many as four such satellites can appear together in a verb complex: *Come **right back down out** from up in there!* (said, for example, by a parent to a child in a treehouse). [...] The term ‘satellite’ has been introduced in order to capture the commonality between such particles and comparable forms in other languages. Within Indo-European, such forms include the ‘separable’ and ‘inseparable’ prefixes of German and the verb prefixes of Latin and Russian [...]”. [Talmy, 1985: 102].

In English, most satellites express Path, and the language has as rather rich lexicon of such satellites.

Talmy (1985: 104) provides the following examples:

<i>I ran in</i>	<i>It flew up</i>	<i>He ran along</i>
<i>I ran out</i>	<i>It flew down</i>	<i>He ran around</i>
<i>I got on</i>	<i>I went above</i>	<i>He ran past/by</i>
<i>I got off</i>	<i>I went below</i>	<i>He ran away</i>
<i>She came over</i>	<i>He ran through</i>	<i>He ran back</i>
<i>It toppled over</i>	<i>He ran across</i>	<i>She came forth</i>
		<i>They rolled apart</i>

*They slammed **together***

In addition to these examples, English also has a number of Path satellites that are more difficult to recognize as such. According to Talmy (1985: 104) these include:

'loose' – The bone pulled loose (from its socket)

'free' – The coin melted free (from the ice)

'clear' – She swam clear (of the oncoming ship)

'stuck' – the twig froze stuck to the window

'fast' – The glaze baked fast (to the clay)

'un-' – The bolt must have unscrewed (from the plate)

'over-' – The eaves of the roof overhung the garden

'under-' Gold leaf underlay the enamel

'full' – The tub quickly poured full (of hot water)

Satellites can be distinguished from prepositions, which often have the same phonetic shape in English and other Indo-European languages, by using the following criteria (pp. 105-106):

1. The satellite is bound to the verb as a prefix while the preposition accompanies the noun and governs its case.
2. Only a preposition will disappear when the Ground nominal is omitted: a satellite remains.
3. There are forms that only act as preposition (e.g. *from, at, toward*), and forms that only act as satellites (e.g. *together, apart, forth*). If a preposition and a satellite share the same phonetic shape, there is often a difference in meaning between the two (e.g. *I went **to** the store vs. I came **to***).

4. A satellite receives heavier stress than a preposition: *I followed him **in*** vs. *I went **tō** him*.

Nevertheless, in English, there are some exceptions to these criteria. An example is the form *past*, which always receives the heavy stress of a satellite, but appears without a preposition when the Ground nominal is mentioned explicitly (p. 106):

(5) *I saw him on the corner but) I just drove **past***

(6) *I drove **past** him*

In addition to the satellites expressing Path described above, English also has a number of satellites that conflate Path and Ground, such as *home* and *shut* (p. 107):

(7) *She drove **home** (to her cottage in the suburbs)*

(8) *The gate swung **shut** (across the entryway)*

2.2.2.2 Motion + Path

Languages of this type tend to express both the fact of Motion and Path in the verb root, whereas Manner and Cause are expressed independently, usually by an adverbial expression or a gerund. However, the use of an adverbial expression or a gerund can be stylistically awkward in these languages, and therefore “[...] information about Manner or Cause is often either established in surrounding discourse or omitted altogether” (Talmy, 1985: 69). This lexicalisation pattern is found in Romance, Semitic, and Polynesian languages. Talmy (1985: 70) provides some examples from Spanish, which is a prototypical example of this lexicalisation type:

(9) *La botella salió de la cueva (flotando)*

the bottle moved-out from the cave (floating)

‘The bottle floated out of the cave’

(10) *Saqué el corcho de la botella retorciendolo [sic]*

I moved out the cork from the bottle twisting it

(or:

Retorcí el corcho y lo saqué de la botella)

I twisted the cork and it I moved out from the bottle

‘I twisted the cork out of the bottle’

Talmy illustrates this type of system further by providing examples of verbs that refer to “[...] the placement or removal of a Figure object – the ‘putting’ verbs [...]”, which comprise a subsystem in Spanish. The use of a particular ‘putting’ verb in Spanish depends on the type of Path that has to be expressed, showing the pervasiveness of the expression of Path in the verb root:

Table 2.1: Spanish ‘putting’ verbs, differing according to distinctions of Path (A = Agent, F = Figure object, G = Ground object)

A poner F en G	A put F onto G
A meter F a G	A put F into G
A subir F a G	A put F up (on) to G
A juntar F1 & F2	A put F1 & F2 together
A quitar F de G	A take F off G
A sacar F de G	A take F out of G
A bajar F de G	A take F down from G
A separar F1 & F2	A take F1 & F2 apart

Taken from Talmy (1985: 71)

2.2.2.3 *Motion + Figure*

Languages that display the third lexicalisation type tend to express both the fact of Motion and the type of Figure in the verb root. Examples are most Northern Hokan languages (e.g. Atsugewi, which is spoken in Northern California) and Navajo. English also has a few verb roots of this type, such as *rain* and *spit* (Talmy, 1985: 73):

(11) *It rained in through the bedroom window [non-agentive]*

(12) *I spat into the cuspidor [agentive]*

2.2.3 The bipartite typology: the expression of Path

In a second typology (1985, 1991, 2000b) Talmy classifies languages on the basis of how they express the *core schema* of a motion event. This *core schema* is the association function of the Figural entity with the Ground entity (Talmy 2000b: 221): the Path of Motion. Languages can be divided into two groups based on which surface elements characteristically express the core schema of a motion event: satellite-framed languages and verb-framed languages. Most studies on the expression of motion have used this bipartite typology as a framework.

2.2.3.1 *Satellite-framed languages*

In satellite-framed languages, the characteristic lexicalisation pattern is that of expressing the fact of Motion and a co-event (usually Manner or Cause) in the verb root, whereas Path is expressed by a verbal satellite. Talmy (2000b: 222) now defines the term *satellite* as follows:

“the satellite to the verb – or simply, the satellite [...] is the grammatical category of any constituent other than a nominal or prepositional-phrase complement that is in a sister relation to the verb root”

English is a good example of this type, as has been explained in section 2.2.2.1 above. Other satellite-framed languages include (Slobin, 2004; Ibarretxe-Antuñano, 2009):

- Germanic languages: German, Danish, Dutch, English, Icelandic, Swedish, Yiddish
- Slavic languages: Czech, Polish, Russian, Serbo-Croatian, Ukrainian
- Mandarin Chinese
- Australian languages: Warlpiri

2.2.3.2 Verb-framed languages

In verb-framed languages, the characteristic lexicalisation pattern is that of expressing the fact of Motion and the Path of motion in the verb root, whereas co-events are expressed by a satellite or an adjunct. A good example of this type is Spanish. In this language, co-events are usually expressed by adverbial expressions or gerundive forms. Other verb-framed languages include (Slobin, 2004; Ibarretxe-Antuñano, 2009):

- Romance languages: Catalan, French, Galician, Italian, Portuguese, Spanish
- Basque
- Japanese, Korean
- Semitic languages: Arabic, Hebrew
- Turkish
- Sign languages: American Sign Language, Sign Language of The Netherlands

2.2.4 Criticisms to Talmy's typology

Over the years, Talmy's typology has received a number of criticisms. In the next sections, some of the most important ones will be reviewed briefly.

2.2.4.1 *Restrictions on the expression of Manner in verb-framed languages: the boundary-crossing constraint*

Although Talmy (1985) claimed that, in Spanish, Manner of motion cannot be expressed by the main verb in combination with a Path complement, this is not entirely true. Especially in colloquial Spanish, there appear to be examples of Manner verbs being used in combination with a Path predicate. Aske (1989) was the first researcher to notice this, providing examples like (p.3):

(13) *Juan bailó en círculos hasta/hacia la puerta*

“John danced in circles (= around) towards / (all the way) to the door”

(14) *La botella flotó hacia la cueva*

“The bottle floated towards the cave”

(15) *La botella flotó por el canal*

“The bottle floated along/about the canal”

Aske argues that the use of a Manner verb is not ungrammatical in these sentences, because the predicates are not *telic*, i.e. they do not refer to the Figure's endpoint, although this can be implied in some cases as in the example of John dancing all the way to the door. This is caused by the fact that Spanish Locative/ Path prepositions receive a default locative interpretation when they are used with a Manner verb, whereas they can be used as directionals in combination with a Path verb.

Nevertheless, a Path interpretation is possible sometimes when the Ground entity is not expressed lexically, but left to be inferred from the context, as is illustrated by the following examples (Aske, 1989: 5):

- (16) a. *Nadaron (a)dentro (de la cueva)*
“They swam inside (the cave)” (locative)
- b. ? *Nadaron adentro (*de la cueva)*
“They swam in(to the cave)”(directional)

Slobin and Hoiting (1994) elaborated further on this hypothesis by stating that it is not so much *telicity* that determines whether a Manner verb can be used or not, but rather the presence or absence of a spatial boundary that is crossed during the motion event. If a spatial boundary is crossed, the expression of Manner in the main verb becomes restricted, not only in Spanish, but also in other verb-framed languages, like for example Japanese. Kita (1999; in Slobin, 2004) argued that this is due to the fact that in verb-framed languages, changes of state are expressed by using a verb, and that crossing a spatial boundary is a change of state (e.g. going from being outside the house to being inside). In addition, Manner verbs generally denote activities, and it is precisely the conceptualization of these activities as being extended in time/space that is blocked in verb-framed languages when there is a boundary-crossing; to indicate the change of state of crossing the spatial boundary, a non-activity verb has to be used. This also explains why a small group of Manner verbs denoting “[...] high-energy motor patterns that are more like punctual acts than activities, such as equivalents of ‘throw oneself’ and ‘plunge’” (Slobin, 2004: 226) can be used in combination with a boundary-crossing in verb-framed languages. Slobin and Hoiting (1994) called this restriction on the use of Manner verbs in verb-framed languages the “boundary-crossing constraint”. This boundary-crossing constraint appears to be a characteristic of verb-framed languages.

2.2.4.2 The definition of “satellite”

Another aspect of Talmy’s typology that has received a number of criticisms is his definition of *satellite*. At least in English, there appear to be some cases in which the distinction between satellite and preposition remains far from clear. Beavers, Levin, and Tham (2010) provide a number of examples that seem to question the validity of the criteria proposed by Talmy (1985: 105-106), and which have been described in section 2.2.2.1. Especially the criterion that a satellite remains when the Ground entity is omitted seems to be questionable. The first counterexample is that some of the satellites that Talmy presents cannot be classified as sisters to the verb root, at least not to the exclusion of Ground (p.337). This can be proven by applying the *it*-clefting constituency test (p.338). In the following examples (p.338), this test shows that *out of the house* is a constituent that excludes the verb:

- (17) a. *It was out of the house that I went, not into the house.*
b. **It was out that I went of the house, not in.*

This test shows that the entire PP *out of the house* is a sister to the verb, and not only the satellite *out*.

A second counterexample is that, even when the Ground is omitted, one can be understood from the context. Therefore, it is semantically unmotivated to make a distinction between obligatory and optional Ground elements (p.338). Consider the following examples (Nikitina 2008, in: Beavers, Levin, and Tham, 2010):

- (18) a. *John ran in (the house)*
b. *John ran to the store*

According to Talmy's criteria, the first sentence contains a satellite + an omitted Ground element, whereas the second contains a preposition + a Ground element. However, both indicate the goal of motion and often they are apparently alternate expressions of the same semantic content. Therefore, Beavers, Levin, and Tham (2010: 338) make the suggestion "[...] that PP not be excluded from the notion of satellite, thereby recognizing a wider range of path encoding options than under a strict interpretation of Talmy's typology."

Croft et. al (2010, in: Muñoz Carrasco, 2015: 17) came to similar conclusions regarding Talmy's definition of *satellite*, and decided to analyse "[...] anything that is not a verb root but encodes an event component [...]" as a satellite."

2.2.4.3 Equipollently-framed languages

As lexicalisation patterns were being investigated in a wider range of languages from different linguistic families, researchers became aware of the fact that there were some languages that did not fit neatly into the binary typology proposed by Talmy with respect to the expression of Path and Manner. The first researchers to point this out were Zlatev and Yangklang (2004) and Slobin (2004) for Thai and Mandarin Chinese. The languages involved are languages in which "Path and Manner are expressed by equivalent grammatical forms" (Slobin, 2004: 249). These forms can be a Manner verb + a Path verb (e.g. Mandarin Chinese, Thai), a Manner + Path bipartite verb (e.g. Hokan), or a Manner preverb + Path preverb + verb (Jaminjungan languages). The following example from Mandarin Chinese is a description of a scene from the frog story (Mayer, 1969) in which an owl appears from a hole in a tree. The speaker uses two verbs to describe the owl's exit (Slobin, 2004: 224):

(19) Fēi chū yī zhī māotóuyīng

'fly exit one owl'

In sentences like this one, the main verb (if any) cannot be determined straightforwardly. Slobin (2004: 249) provides the following list of languages that do not seem to obey to either a satellite-framed or a verb-framed pattern. He proposes that these languages be called “equipollently-framed languages”:

Serial-verb languages (Manner and Path are expressed by separate verbs)

- Niger-Congo
- Hmong-Mien
- Sino-Tibetan
- Tai-Kadai
- Mon-Khmer
- Austronesian

Bipartite-verb languages (Manner and Path are expressed by equivalent parts of the verb)

- Algonquian
- Athabaskan
- Hokan
- Klamath-Takelman

Languages in which Manner and Path are expressed by preverbs

- Jaminjungan languages

In a response to these criticisms, Talmy (2009) provides a number of criteria that can be applied to determine the main verb in some equipollently-framed languages. He also argues that the term

“equipollently-framed” should only be applied when “[...] a constituent expressing Path and a constituent expressing the co-event together serve most or all main verb-like function in the sentence [...]” (p. 401). Moreover, the phenomenon of equipollent framing is probably much rarer than claimed by previous research.

2.2.4.4 Intratypological differences with respect to the expression of Manner; proposing a cline of Manner saliency

In both language typologies, Talmy (1985, 1991, 2000b) claims that less reference to Manner is made in languages that express Path in the main verb, or verb-framed languages, than in languages that express Path outside the verb, or satellite-framed languages. This may lead to the assumption that, within each typological group, languages show similar behaviours regarding the amount of reference that is made to Manner. Slobin (2004) argues, however, that Talmy’s typology is based on lexicalisation patterns alone, while there are other ways in which languages can pay attention to Manner. Research has indeed shown that the division between satellite-framed languages and verb-framed languages is far from clear-cut when non-lexical means to express Manner are taken into account. Some verb-framed languages pay relatively much attention to Manner, albeit not in the form of Manner verbs. Slobin (2004) identifies the following means that can be used to refer to Manner, and that were not included in the typologies proposed by Talmy:

- *Ideophones*. Basque, Turkish, and Japanese, for instance, have a large set of ideophones that can be used to convey Manner of motion (see also: Ibarretxe-Antuñano, 2004). Examples are *plisti-plasti* ‘waddle’ in Basque, and *taka-taka* ‘walk with small and short steps, creep, crawl’ in Japanese (p. 233).
- *Positionals*. These are “verbal roots which convey Position of animate or inanimate things (in stasis, or concurrent with, or as-a-result-of-motion)” (Brown, 2004, in: Slobin, 2004: 233), as

in the following example from Tzeltal: *jipot jawal ta lum* ‘He [boy] has been thrown lying-face-upwards- to the ground.’

- *Adverbials or other descriptions.* An example is the adverb ‘silently’ in the Turkish example *Bir ağaç kütüğüne sessizce yaklaştı* ‘(He) silently approached a tree trunk.’ (p.232). Some languages also use descriptions of inner states or the characteristics of the terrain on which the motion event takes place.
- *Gestures.* Speakers can make use of gestures to convey additional Manner information while talking. Speakers of the verb-framed languages Spanish, Turkish and Japanese make frequent gestures that depict only Path or Manner or that combine the two. These gestures occur with both Path and Manner verbs. In satellite-framed languages, Path verbs are almost never combined with Manner gestures. This seems to indicate that speakers of satellite-framed languages conceive of Manner as an inherent component of directed motion, whereas speakers of verb-framed languages conceive of Manner as a separate element (a sort of activity) that can “augment” directed motion (p.235, see Slobin, 2000) In addition, in Basque, gestures were also frequently combined with ideophones (Ibarretxe-Antuñano, 2004).

Verb-framed languages thus have a range of alternative options speakers can use to refer to Manner when there is no Manner verb available to convey a specific type of Manner of motion, or when such a verb cannot be used due to lexical constraints. Nevertheless, not all languages make use of these alternative options to similar extents. In other words, Manner appears to be a semantic component of motion events that is more “salient” in some languages than in others (Slobin, 2006). Moreover, even within one and the same language, speakers of some dialects may pay more attention to Manner than speakers of other dialects: Hijazo Gascón (2011) found that speakers of the Aragonese dialect of Spanish expressed slightly more Manner than speakers of Standard Peninsular Spanish. In his 2006 book chapter, Slobin mentions some of the factors that

may determine the amount of attention that is given to Manner by speakers of a particular language (p. 10). The following factors are relevant to English, French, and Spanish:

- expression by a finite rather than nonfinite verb form: Because every main clause has a finite verb, no greater syntactic effort is required to produce a satellite-framed construction such as ‘go out’ versus ‘fly out’, whereas a variety of verb-framed options require access to lower-frequency nonfinite forms such as gerunds, participles, and converbs with meanings equivalent to ‘exit flying’. Motion event descriptions in satellite- and equipollently-framed languages do not require nonfinite verbs in order to include information about manner.
- expression by a single morpheme rather than a phrase or clause: It is presumably less demanding to access a single lexical item, such as ‘tiptoe’, than expressions such as ‘on the tips of the toes’, ‘moving quietly and carefully’, etc. Again, satellite- and equipollently-framed languages seem to provide more monomorphemic manner expressions than verb-framed languages.

All these factors are in theory related to processing load or *codability* (Slobin, 2004), suggesting that speakers show a preference for those utterances that are the least ‘burdensome’ to produce, even if this disfavors the expression of certain semantic components of motion events, such as Manner. The factors also indicate that expressing Manner by using lexical means should be less burdensome in satellite-framed languages than in verb-framed languages. This is in line with the observations made by Tesnière (1959), comparing the use of Manner verbs in German and French, and Talmy (1985), comparing the amount of reference made to Manner in English and Spanish. Moreover, Slobin (2004, 2006) argues that if a semantic domain, in this case Manner, is coded regularly and frequently in a language, this heightens its speakers’ attention to the domain, making it more likely to be expressed. For English, this is corroborated by the frequent use of Manner verbs, the large lexicon of Manner verbs, as well as the number of new Manner verbs that are added to the lexicon each century to encode new manners of motion (Slobin, 2006). To illustrate the difference in *Manner saliency* between languages, Slobin (2004, 2006) investigated the use of Manner verbs in the descriptions of the so-called ‘owl scene’ from the frog story

(Mayer, 1969), in which an owl appears from a hole in a tree, in various languages. The percentages of use of Manner verbs are strikingly different, especially among satellite-framed languages⁴. The percentages have been taken from Slobin (2006: 8) and the language-types from Muñoz Carrasco (2015: 34):

Table 2.2: Percentage of narrators who use a Manner verb to describe the owl’s appearance

Language	Predominant lexicalization pattern	% of narrators using a Manner verb
Spanish	verb-framed	0
French	verb-framed	0
Turkish	verb-framed	0
Italian	verb-framed	3
Hebrew	verb-framed	3
Dutch	satellite-framed	17
German	satellite-framed	18
English	satellite-framed	32
Mandarin	satellite-framed ⁵	40
Thai	equipollently-framed	59
Tsou	equipollently-framed	83
Russian	satellite-framed	100

On the basis of these data, Slobin (2004, 2006) argues that it may be better to place languages on a continuum from *low manner salient* languages to *high manner salient* languages instead of using Talmy’s dichotomy of verb-framed and satellite-framed languages.

⁴ One should keep in mind, however, that the owl’s appearance involves a boundary-crossing. This may explain the uniform behaviour of the narrators in the verb-framed languages. In fact, the Italian and Hebrew speakers that did use a Manner verb, did not mention the boundary-crossing (Slobin, 2004).

⁵ The jury is still out on whether Mandarin Chinese is a satellite-framed or an equipollently-framed language (cf. Guo and Chen, 2009; Slobin, 2004; Talmy, 2009).

2.2.4.5 Intratypological differences with respect to the expression of Path; proposing a cline of Path saliency

Although Talmy (1985, 1991, 2000a, 2000b, 2009) focused above all on which surface elements expressed the Path component of motion events in verb-framed and satellite-framed languages, he did not elaborate much on the amount of attention speakers pay to the elaboration of the Path component of motion events. For instance, one and the same event can be narrated in various ways regarding the expression of Path, as can be seen in (20) and (21) (Slobin, 2004: 238):

(20) the frog escaped

(21) the frog crawled out of the jar and through the window into the woods

The speaker in (21) combines several sub-trajectories into the overall trajectory of the frog's escape. Moreover, these sub-trajectories are all mentioned within the same clause, leading to a dense *packaging* of Path components (Slobin, 2004). This packaging is very common in satellite-framed languages, because it is possible to combine several Path satellites with a Manner verb, as in (22). In verb-framed languages, a similar construction would be impossible due to the fact that there are three boundary-crossing events depicted here. Instead, a speaker of a verb-framed language would have to say something like (22) (p. 238):

(22) the frog exited the jar, passed through the window, and entered the woods

Here, each boundary-crossing event is presented in a separate clause, with each main verb conveying a different component of the overall trajectory.

These differences in the amount of Path components that can be packed into a single clause lead to differences in event construal (cf. Berman and Slobin, 1994) between verb-framed and

satellite-framed languages. Slobin (1996a, 1997) analysed speakers' construal of the so-called 'deer scene' from the frog story, which involves a complex trajectory or 'journey'. This trajectory can be divided into several sub-trajectories. It was found that speakers of satellite-framed languages mentioned a higher number of sub-trajectories or 'segments' than speakers of verb-framed languages, providing a higher 'event granularity' (Slobin 1996a, 1997). Furthermore, speakers of satellite-framed languages tended to provide dynamic descriptions of Path, combining several sub-trajectories into one clause, also called 'event conflation' (Berman and Slobin, 1994). This is shown in (23) taken from Slobin (1996b: 83):

(23) [The deer] threw him off over the cliff into a pond

Speakers of verb-framed languages, on the contrary, tend to provide elaborate descriptions of the scene in which a motion event takes place, leaving trajectories to be inferred, as in (24) (p.87):

(24) *El ciervo le llevó hasta un sitio, donde debajo había un río. Entonces el ciervo tira al perro y al niño al río. Y después, cayeron.*

'The deer took him until a place, where below there was a river. Then the deer threw the dog and the boy to the river. And then, they fell.'

The differences between satellite-framed and verb-framed languages regarding the expression of Path appear to be quite pervasive, and they have been confirmed for languages from different linguistic families (Slobin, 1997). Nevertheless, as was already found for the amount of attention speakers of a particular language pay to Manner, the distinction between satellite-framed languages and verb-framed languages regarding the expression of Path is not as clear-cut as would be expected on the basis of Talmy's typology (1985, 1991, 2000a, 2000b). Ibarretxe-Antuñano (2004, 2009)

found that in Basque, which is a verb-framed language, speakers tend to provide more details of Path trajectories than speakers of other verb-framed languages. They usually mention the Source and the Goal of the movement in the same clause, making reference to two Ground elements, and even do so when one of the two elements is redundant, which is usually the Goal. Ibarretxe-Antuñano (2004, 2009) calls this type of constructions ‘Complete Path constructions’. Speakers of Basque also provided more dynamic descriptions of trajectories, and mentioned more segments of the ‘deer scene’. However, when there is a complex trajectory, Basque speakers still tend to mention each sub-trajectory in a separate clause, which is a more ‘verb-framed strategy’.

Basque is not the only language that does not seem to fit ‘neatly’ into the verb-framed typology. Speakers of Turkish, and the Australian languages Arrernte, and Warlpiri also made more elaborated descriptions of the Path component than speakers of most verb-framed languages. With respect to satellite-framed languages, speakers of the Swiss dialect Muotathal provided more elaborated Path descriptions than speakers of High Standard German. Similarly, speakers of Icelandic make more reference to Ground elements than speakers of Swedish (Slobin, 2004).

On the basis of this evidence, Ibarretxe-Antuñano (2009) proposes a cline of *Path salience* along which the world’s languages can be placed according to their elaboration of the Path component. She also suggests that the following factors may play a role in *Path salient* languages:

- *linguistic devices*
- *word order*
- *degree of tolerance for verb omissions*
- *existence of dummy verbs*
- *cultural systems*
- *conceptually oral vs, conceptually written languages*

The expression of Path is thus not only influenced by the structural properties of a language, but also by its culture, and how it is used generally (spoken or written).

2.3 The *thinking-for-speaking* hypothesis

The first study to systematically investigate the acquisition of language-specific patterns of event construal by looking at children (ages 3, 4, 5, and 9) and adults was carried out by Berman and Slobin (1994). The languages under investigation were: English (satellite-framed), German (satellite-framed), Spanish (verb-framed), Turkish (verb-framed), and Hebrew (verb-framed). The data were gathered by means of the frog story (Mayer, 1969), and were used to investigate various aspects of discourse organization. As has been briefly mentioned in previous sections of the present thesis, it was discovered that the patterns of selecting those event components to be mentioned in discourse, as well as the structures that were used to present these components were highly language-specific. This led Berman and Slobin to state the following (1994: 611):

Filtering: The world does not present “events” to be encoded in language. Rather, experiences are filtered – (a) through choice of perspective and (b) through the set of options provided by the particular language – into verbalized events.

Packaging: A skillful narrative does not simply consist of a linear chain of successive events located in time and space. Rather, events must be packaged into hierarchical constructions.

These language-specific ways to filter and package the information to be conveyed in discourse result in language-specific rhetorical styles (p. 611).

Slobin (1987, 1991, 1996a, 1996b, 1997, 2000, 2004) argued on the basis of the frog story data that “[...] the native language directs one’s attention, while speaking, to particular ways of filtering and packaging information.” (Berman and Slobin, 1994: 612). This should have important implications for the ways in which speakers of a particular language produce linguistic messages. This led Slobin to present his *thinking-for-speaking* hypothesis (1987, 1991, 1996a, 1996b, 1997,

2000, 2004). This hypothesis is in fact a modified version of the Sapir-Whorf hypothesis, which postulates that one's thinking is determined by one's native language. Slobin limits himself to "[...] the mental processes that are accessed in the course of constructing linguistic messages." (Berman and Slobin, 1994: 612). Therefore, he makes no claims with respect to other mental processes. The *thinking-for-speaking* hypothesis states that:

"The expression of experience in linguistic terms constitutes "thinking for speaking" – a special form of thought that is mobilized for communication. Whatever effects grammar may or may not have outside of the act of speaking, the sort of mental activity that goes on while formulating utterances is not trivial or obvious, and deserves our attention. We encounter the contents of the mind in a special way when they are accessed for *use*. That is, the activity of thinking takes on a particular quality when it is employed in the activity for speaking. In the evanescent time frame of constructing utterances in discourse one fits one's thoughts into available linguistic frames. "Thinking for speaking" involves picking those characteristics of objects and events that (a) fit some conceptualization of the event, and (b) are readily encodable in the language. *I propose that, in acquiring a native language, the child learns particular ways of thinking for speaking.*"

(Slobin, 1991:12)

This *thinking-for-speaking* in a native language also has implications for learning a second language, especially if the rhetorical style of this second language differs from the one of the native language. Slobin (1996b) argues that *thinking-for-speaking* patterns are extremely resistant to being restructured, because "[...] the ways one learns a language as a child constrain one's sensitivity to what Sapir called "the possible contents of experience as experienced in linguistic terms" (p. 89). He also proposes that grammaticized categories that are most susceptible to influence from the native language are the ones that "[...] *cannot be experienced directly in our perceptual, sensorimotor, and practical dealings with the world*"(p. 91). This certainly holds for motion events, because the ways in which languages verbalize these events are not imposed by the characteristics of the events themselves. For instance, there is nothing about the motion event itself that imposes that certain

properties of the Figure should be included into the verb root. According to Slobin (1996b), this also holds for features like aspect, definiteness, voice, etc., because these are “[...] distinctions that can only be learned through language, and have no other use except to be expressed in language. They are not categories of thought in general, but categories of thinking for speaking” (p. 91).

Robinson and Ellis (2008) would later call this learning of the categories of thinking for speaking in a second language *learning to rethink for speaking* or *rethinking-for-speaking*. Together with the original *thinking-for-speaking* hypothesis and Talmy’s bipartite typology (1991, 2000a, 2000b) it has proven to be a fruitful framework for research on the expression of motion and its acquisition in first and second languages (henceforth L1s and L2s, respectively). In the next section, the studies on the expression of motion in both L1 acquisition and L2 acquisition will be reviewed. Due to space limitations, only the studies that are relevant to the topic of the present thesis will be summarized in the text.

2.4 Studies on reference to motion

In this section, the studies that have investigated the expression of motion in an L1 or an L2 will be reviewed in separate subsections. In addition, the last subsection will be dedicated to studies that have looked at the expression of motion in early bilinguals acquiring two typologically different languages, i.e. children who are acquiring two different patterns of thinking-for-speaking at the same time. Only studies that have looked at language production (oral and written) will be included⁶, and studies involving English, French, or Spanish, the target languages of the present study, will be highlighted.

⁶ Some studies on the expression of motion in an L1 have looked at the effects of lexicalisation patterns on the memorization of motion events, the effects of lexicalisation patterns in translation, as well as the occurrence of gestures with oral language when motion is being expressed. Nevertheless, including them here would go beyond the scope of the present thesis. Readers who wish to elaborate on these topics are referred to the work by Oh (2009), and Slobin (1996a, 1997) for studies on translation, Finkbeiner et al. (2002), Gennari, Slobin, Malt and Tecumseh Fitch (2002), and Pourcel (2009) for studies on memorization, and McNeill (2009), Brown and Gullberg (2008) for studies on gestures. Taken together, these studies suggest that the effects of lexicalisation patterns go beyond spoken language, especially when language is needed to perform the task (e.g. to memorise events).

2.4.1 Reference to motion in an L1

One of the first studies that paid attention to the expression of motion and its acquisition in various typologically different languages was conducted by Berman and Slobin (1994) together with a number of colleagues. The participant groups consisted of children aged 3, 4, 5, and 9, as well as a group of adults. Although the study was originally designed to investigate narrative development in English, German, Hebrew, Spanish, and Turkish, the results showed that the groups of adult participants showed very language-specific rhetorical styles regarding the expression of motion. The results for the expression of Manner and Path within the clause showed that these styles were in line with Talmy's distinction between verb-framed and satellite-framed languages. Moreover, the data suggested that the functional development of a linguistic form may be accelerated if this linguistic form is highly accessible in a particular language (p. 624). Nevertheless, for Spanish, it was found that, around age 5, children sometimes tried to express path details that are not normally expressed by adult speakers of this language, resulting in anomalous constructions. This suggests that not all of the children's thinking was guided by the patterns they encountered in their L1.

Another study to investigate the expression of motion by children acquiring typologically different languages, in this case English and Korean, was the one conducted by Bowerman and Choi (1991). It turned out that, already at the age of 17-20 months, children talked about motion in language-specific ways. For instance, Korean-speaking children distinguished between caused motion and voluntary motion in their use of Path particles, whereas English-speaking children generalized the Path particles they used to both categories. These findings suggest that children are influenced by the structures present in their L1 from a very early age.

Guo and Chen (2009) conducted a study with native speakers of Mandarin Chinese. Participants were children aged 3, 4, 5, 7, and 9, and adult undergraduate college students, who had to tell the frog story to a researcher. The data obtained from the adults showed that Mandarin Chinese can be situated in between satellite-framed and verb-framed languages regarding the number

of Manner- and Path-verb tokens. However, when Manner and neutral verb types are combined, there are almost twice as many of these than there are of Path-verb types, which is a characteristic of satellite-framed languages. On the other hand, the adult speakers mentioned Ground in only 55.2% of motion expressions on average. This infrequent mentioning of Ground is a characteristic of verb-framed languages, and is even below the percentage found for Spanish (63%; Slobin, 1996a), a very prototypically verb-framed language. Taken together, the data seem to indicate that Mandarin Chinese is indeed an ‘equipollently-framed’ language. The children’s data showed many similarities to the adult data regarding the relative frequencies of the different types of constructions possible in Mandarin Chinese, already at age 3. From age five, the proportions of Manner verb +(Deictic verb) and Path verb +(Deictic verb) constructions in their data are virtually identical to those found in the adult data, leaning support for the ‘language-specific’ hypothesis of L1 acquisition. Nevertheless, for reasons that remain unknown, 3- and 4-year-olds seem to pay somewhat more attention to Manner than to Path.

Hickmann, Hendriks, and Champaud (2009), in turn, presented both experimental and longitudinal data from a number of previous studies they had conducted with English-speaking and French-speaking children (Hickmann, 2003; Hickmann, 2006; Hickmann, 2007; Hickmann and Hendriks, 2005; Hickmann and Hendriks, 2006). The emphasis lay on the difference between voluntary and caused motion. Regarding voluntary motion, the experimental data showed that from 3 years of age, children produced semantically denser utterances about motion in English than in French, which means that they mentioned more aspects of the motion event. In French, children tended to mention only Path and did so in the verb root, whereas in English, children often made use of verb + satellite constructions. With age, children showed an increasing ability to combine Path with Manner within one utterance, but this combination remained less frequent in French than in English. With respect to caused motion, it was found that, when describing object displacements performed by the researcher (Hickmann, 2007; Hickmann and Hendriks, 2006), French speakers

tended to use neutral prepositions in combination with verbs that provided specific information about the way an object was being attached to another one, its spatio-functional disposition or its properties (e.g. *s'accrocher [à]* 'to hook [at/to]'. In English, on the other hand, the verbs tended to be neutral, whereas the particles and prepositions were specific (e.g. *to take off/out of*). With age, French children relied more on verbs (e.g. *mettre sur le crochet* 'to put on the hook').

In another study on caused motion (Hickmann and Hendriks, 2005) subjects had to narrate a series of animated cartoons that depicted a man displacing objects. Again, it was found that utterance density was higher in English than in French at all ages, and that with age, it increased in French but not in English. The increase in French was mostly due to children's use of subordinate clauses. Again, English speakers tended to express Manner in the main verb and Path in other devices, whereas French speakers rarely expressed the action performed by the man, and distributed less information in more varied ways (p. 214) (e.g. *Le pneu roule* 'The tire is rolling' or *Il fait rouler le ballon* 'He is making the ball roll'). Young children often made mistakes when trying to combine the cause of the motion with other types of information (e.g. *Il traverse le cheval* 'He crosses the horse' instead of *faire traverser* 'make cross' or *Il fait pousser le paquet* 'He makes push the package' instead of *pousser* 'push' or *faire avancer* 'make advance'). The longitudinal naturalistic data were collected from children below the age of 3 in both languages (although during the later acquisition phases, the children were somewhat older). Regarding the semantic content and density of the children's utterances, the information components that could be included by the children when they expressed motion events were Path, Manner, Change of posture, Cause of motion, and Manner of causing motion. Cause was the component that was most frequently expressed in the verb root, especially in one of the French children's verbs. Manner of Cause was the component that was least likely to be expressed in the verb root. Manner of motion tended to be expressed more frequently in English than in French, despite some individual differences between the French children. Path was expressed in the verb root about as frequently in English as in French, which leans support to the

hypothesis that Path is a more basic component of motion than Manner. With respect to the information components of motion events that were expressed by devices other than the verb root, it turned out that in French, these were almost uniquely locations. In English, both location and Path were frequently expressed by means of other devices. The majority of utterances produced by the French children only included one component of a motion event. In English, an utterance including two of these components was the most frequent option, followed by utterances including only one component. Utterances including three or more components were rare in both languages, although they were slightly more frequent in English. The higher utterance density in English was caused by joint uses of verbs and other devices.

In another study published in 2009, Hickman, Taranne, Bonnet looked at the expression of Manner and Path in French and English child language. There were two experiments. For both experiments, participants from five different age groups were recruited in both languages: four-, five-, six-, and seven-year-olds as well as a group of adults. Participants had to describe motion events that were shown to them by means of silent animated cartoons based on coloured drawings. These cartoons depicted up- and downward movement in the first experiment, and ‘movement across’ in the second. The results of both experiments confirmed that there are important typological differences between English and French with respect to the expression of motion. These differences between the two languages were visible at all ages and with all event types. They largely confirm that, in English, speakers produce more clauses in which they make reference to both Manner and Path than in French. However, in both languages, upward movement appeared to elicit more clauses that contained reference to both Manner and Path than downward movement. Additional evidence was gathered from the descriptions of ‘arrivals’ and ‘departures’ of the personages in the clips in both experiments. Arrivals were more frequently mentioned than departures, and the former were also more heterogeneous in content and increased with age, together with other stage-setting devices. With arrivals, responses containing reference to both Manner and Path increased with age in both

languages, but they were more frequent in English than in French. Responses containing only reference to Path occurred in both languages, but more frequently in French than in English. With departures, English speakers produced frequent responses containing reference to both Manner and Path, and the number increased with age, whereas French speakers predominantly produced responses that only contained reference to Path at all ages. Manner-responses were rare with departures and mostly occurred with arrivals both in French and in English. With both arrivals and departures English responses typically contained main Manner verbs and Path satellites (e.g. to crawl in/away, to run in/off). Most French responses contained main Path verbs and no Manner (e.g. *arriver* ‘to arrive’, *s’en aller, partir* ‘to leave’), but some specified Manner peripherally (mostly adults, e.g. *arriver/partir en courant* ‘to arrive/leave by running’).

A study conducted by Özçalışkan (2009) using the original frog-story data from Berman and Slobin (2004), also revealed language-specific patterns in the acquisition of motion expression in Turkish and English. Naigles et al. (1998) conducted two related studies on the expression of motion by native speakers of English and Spanish. The English speakers were all monolinguals, but the Spanish speakers were all living in Connecticut, be it in a Latino community. Nevertheless, two follow-up studies with monolingual speakers of Spanish replicated the results. Participants were presented with line-drawings of common intransitive motion events, such as a girl running out of a house, and were asked in their native language to describe what they saw in the pictures in at least one sentence. The results showed that English speakers predominantly used Manner verbs when describing the pictures, and that they had used significantly more Manner verbs than Path verbs. The results were similar for each picture. The Spanish speakers, on the other hand, did not show a clear preference for one of the verb-types, and moreover, some pictures had elicited more Manner verbs than Path verbs, whereas for other pictures the opposite was true. There were also three pictures for which participants were essentially “divided” (p. 531). Sign test showed that, overall, English speakers had used significantly more Manner verbs than Spanish speakers, whereas Spanish speakers

had used significantly more Path verbs than English speakers. It was also investigated if the prepositions *a*, *de*, and *para* were indeed diagnostics of resultative events (cf. Aske, 1989). It turned out that resultative events did indeed elicit more Path verbs than Manner verbs, but the effect was not overwhelming. Boundary-crossing events did elicit more Path verbs than Manner verbs in Spanish, although the results were still inconclusive. Interestingly, in total, the Spanish speakers had produced more verb-types than the English speakers. It was also found that the former, although they had used fewer Manner verbs than the latter, had mentioned something about the Manner of motion about 72% of the time, often by means of Manner modifiers (e.g. gerunds). The Spanish speakers had produced 31 utterances with “bare” verbs (26 % of all utterances), mostly with Manner verbs (77%). The English speakers, on the other hand, had produced very few utterances containing bare verbs (8% of all utterances), and 90 % of these utterances contained a Manner verb. The methodology of the second study was similar to that of the first one, but now participants were presented with short video clips to make the motion more dynamic. Half of the video clips showed motion that could be considered resultative, and some of the clips depicted motion across boundaries. An important difference with the first study was that the responses were written this time and that the participants were interviewed en masse. The results showed that the English speakers predominantly used Manner verbs in their descriptions, and that there were no differences between video clips. The Spanish speakers predominantly used Path verbs and again, some of the clips elicited more Path verbs, whereas others elicited more Manner verbs. Sign tests and chi-squared tests showed that the differences between the English speakers and the Spanish speakers were again significant, except for the two video clips depicting motion into a pool, with which both groups preferred to use Manner verbs. Aske’s (1989) qualification of prepositions indicating resultative motion was again tested, and the results pointed in the hypothesised direction, even slightly more so than in Study 1, but the effect was still not overwhelming. Boundary-crossing events tended to elicit Path verbs in Spanish, except for the motion into a pool. Subsequent analyses showed that *horizontal movement* elicited

significantly more Path verbs than *vertical movement* in Spanish, and that non-boundary-crossing events elicited more Path verbs than vertical boundary-crossing motion events. Both groups of speakers produced about the same amount of verb-types (the English speakers had produced more types than in the first study). The findings for Manner modifiers were similar to those of the first study. The Spanish speakers had produced 15 utterances with bare verbs (5.7%), of which 13 (87%) contained Manner verbs, and 2 (13%) contained Path verbs. The English speakers did not produce any bare verbs. It was argued that the typology of Spanish may be problematic as it seems to be mixed, with possibly important difference between *vertical movement* and *horizontal movement*. Furthermore, the context of language use seems to be important (in this case, descriptions of *static* vs. *dynamic* motion). It is suggested that the use of static pictures may lead to some ambiguity in the description of motion events (e.g. the frog story).

Some studies on the expression of motion in an L1 looked at intratypological differences in the expression of motion⁷, or at a combination of intratypological differences and typological differences. An example is the study conducted by Filipović (2007). She looked at differences in lexicalization patterns of motion events in English and Serbo-Croatian, which are both satellite-framed. The study was based on data selected from corpora and dictionaries in both languages, and focused on intratypological differences. It was found that, in Serbo-Croatian, the use of Path verbs and Manner verbs depended on whether the motion event was being depicted as imperfective or perfective, as well as on certain properties of the event itself (e.g. moment of boundary-crossing or no-boundary-crossing). The author also mentions that, in English, speakers can foreground Manner by expressing it in an adjunct and using a directional verb as the main verb, and argues that at least a branch of the typology should be understood as a cline. In a similar way, after having compared

⁷ The intratypological differences found by Slobin (2004, 2006) for Manner salience, as well as by Ibarretxe-Antuñano (2004, 2009) for Path salience have already been discussed in sections 2.2.4.4 and 2.2.4.5, respectively. Therefore, these studies have not been included a second time here.

“Complex Event Encoding” in English and Hindi, both satellite-framed languages Narasimhan (2003) argues for a construction-based approach by localising cross-linguistic variation at the phrase level instead of at the lexical level.

Berthele (2009) looked at the use of spatial language in various language varieties along the Romance-Germanic border in Switzerland. The data were elicited by means of the frog story, and informants came from all layers of society. The language varieties under investigation were: Standard High German (which is often learned as an L2 after the own German dialect), Bern Swiss German, Wallis Swiss German, Sursilvan Swiss German, Muotathal Swiss German, Standard French, Sursilvan Romansh, Vallader Ladin Romansh, and Surmiran Romansh. Regarding the use of Path verbs, it turned out that there was a significant difference between French and all other varieties, with more Path verbs being used in French. There was also a significant difference between Muotathal Swiss German and Standard High German: fewer Path verbs were used in Muotathal Swiss German, and this variety was at the lower end of the scale of Path-verb use. Regarding the use of Manner verbs, both French and Standard High German behaved as would be expected from a verb-framed language and a satellite-framed language, respectively. Muotathal Swiss German and Romansh, which are both satellite-framed, however, turned out to use a large proportion of neither Path nor Manner verbs, but there were still significant differences between the varieties, as well as between Muotathal Swiss German and Standard High German. In addition, Muotathal Swiss German and Vallader Ladin Romansh had overall rather low type-token ratio's in the finite verb slot. Correlation analyses showed that there were significant correlations between the size of the speech community and the use of Path verbs, the use of Manner verbs, and the type-token ratio. The larger this community, the higher the values for the other three variables are.

For verb-framed languages, Hijazo-Gascón (2011) conducted a contrastive study with native speakers of French, Spanish, and Italian as part of a larger study on the acquisition of the expression of motion in L2 Spanish. The participants all told the frog story. The results indicated that there were

intratypological differences with respect to the elaboration of Path: speakers of Italian had mentioned significantly more Path components than speakers of French and Spanish. There were no differences between the three languages with respect to the expression of Manner.

2.4.2 Reference to motion in an L2

In the past two decades, numerous studies have looked at the acquisition of the expression of motion in an L2⁸ in order to gain insight into whether L1 thinking-for-speaking patterns can be restructured for use in the L2.

In 2001, Kellerman (Kellerman, 2001)⁹ explored three research areas that were new in second and third language acquisition at that time. As part of the chapter, the author provides some examples from a study he conducted together with Rachel Vermeulen (1998) into the expression of events in narratives by native and non-native speakers of English. The non-native speakers were Dutch L2 learners of this language. The data were elicited by means of an episode from the frog story. The non-native speakers had to tell the story in both Dutch and English, whereas the native speakers served as a control group and only told the story in English. The non-native speakers were divided into three groups: fifteen twelve-year-olds who had had two years of instruction in English, sixteen sixteen-year-olds who had had between four and six years of instruction in English, and fifteen university students in an English department. The results showed that, even though the number of participants was small and no statistical test could therefore be carried out, the less proficient non-native speakers often used zero causation, which means that they did not explicitly link the various events. The intermediate learners often used sequential causation, (i.e. they linked the events, but causation remained linguistically implicit). The most advanced learners and the native speakers most

⁸ As in the previous subsection, only studies that have looked at oral and written data will be included here. For studies that have looked at other types of L2 data, readers are referred to Robinson, Cadierno, and Shirai (2009) for the effects of conceptual demands, Filipović (2011) for the effects of verbalization on memorization, Strömquist et al. (2009) for a study on channelling of attention, Demagny (2012) for a study on the expression of temporality with motion events, and Choi and Lantolf (2008), Kellerman and Van Hoof (2003), and Yoshioka and Kellerman (2006) for studies on gestures.

⁹ This book chapter also includes a part on co-speech gestures that occur with motion events in an L2, which will not be reviewed here.

often used lexical causation (i.e. the elements of the event become conflated within the clause, the verb expresses causation and Manner and the direction is expressed by the satellite). However, when Kellerman and Vermeulen (1998; in: Kellerman, 2001) investigated how the L2 learners told the story in their L1 Dutch, a very similar pattern was visible in the data: the younger learners often used zero causation, the intermediate ones sequential causation, and the older ones lexical causation. It was argued that more general developmental processes might be at play here, and that these interact with linguistic ones.

In Stam's (2006)¹⁰ study, the expression of motion in speech and gestures produced by native speakers of English, native speakers of Mexican Spanish, and intermediate and advanced L2 learners of English was compared. The participants were five native speakers of Mexican Spanish, five native speakers of English, five intermediate L2 learners of English, and five advanced L2 learners of English. Participants were shown the Sylvester and Tweety Bird cartoon *Canary Row*, and after viewing the cartoon they had to retell what they had seen to a researcher who had not seen the cartoon. The results showed that, with regard to speech, native Spanish speakers produced significantly more clauses in their description of motion events than native English speakers, and that the latter produced clauses with more than one Path component whereas the former did not. Both groups of L2 learners produced slightly more clauses than the native English speakers, but the difference was not significant. However, the intermediate learners did not produce any clauses that contained more than one Path component, and the advanced learners produced only a few of these clauses, the difference with native speakers being significant in both cases. Furthermore, neither group of L2 learners consistently used satellites or prepositions to indicate the Path of motion. Some of the intermediate learners used the phrasal verb *get in* or *get into* when describing Sylvester climbing up inside the drainpipe, instead of more idiomatic verb and satellite combinations like *go up*, *come up*, *climb up* or *crawl up* that were used by advanced learners and native speakers. The use

¹⁰ This study also includes a part on gestures.

of *get in(to)* here is probably caused by cross-linguistic influence from the Spanish verb that is commonly used by native speakers of Spanish when describing the event: *se mete* “he inserts himself into”. This may indicate that the intermediate L2 learners were still thinking about the English construction from an L1 perspective.

Cadierno (2004) conducted a study with Danish L2 learners of Spanish (all first-year university students) and Spanish native speakers. Participants had to write the frog story based on the pictures, and were given 45 minutes to complete this task. The L2 learners first completed the task in L2 Spanish, and about one week later in L1 Danish. The Spanish native speakers only performed the task in Spanish. With respect to the expression of motion, the results showed that, in Spanish, the Danish L2 learners had used fewer motion-verb types than the native speakers. Furthermore, some L2 learners had added extra information about the Path of movement in Spanish in the form of satellites, leading to constructions that were not present in the native-speaker data, such as (p.29): *El perro ha metido la cabeza dentro del tarro* ‘The dog has inserted his head inside the jar’, or, with a non-redundant satellite *Entonces el perro saltó afuera de la ventana* ‘Then the dog jumped out of the window’. Moreover, there were instances in which the Danish L2 learners had combined verbs of non-directional motion with Path satellites, as in (p.30): *El ciervo mueve al niño y a su perro abajo en un precipicio* ‘The deer moves the boy and his dog down in the abyss’. Cadierno calls this type of constructions ‘satellizations’. The L2 learners also produced more +Ground clauses than native Spanish speakers, both in their L2 Spanish and in their L1 Danish, but they did not produce any event conflation in Spanish, which was contrary to expectations. They did produce event conflation in their L1 Danish, however. The results for event conflation in L1 Danish and L1 Spanish (Spanish native speakers) were in line with the respective typologies of the languages. Another unexpected finding was that the Danish L2 learners did not differ significantly from Spanish native speakers regarding their use of static vs. dynamic descriptions of motion events. Whereas in L1 Danish, all participants except one had produced dynamic descriptions, in L2 Spanish they had produced static

descriptions to almost the same extent as native speakers, who had provided them in 50% of cases. Taken together, the results of this study suggest that influence from the L1 may be present in some aspects of L2 use, but not in others.

Cadierno and Ruiz (2006) conducted a study with groups of Danish and Italian L2 learners of Spanish, as well as a group of Spanish native speakers. Participants again had to write the frog story. The motion verbs encountered in the data were divided into five different types, based on the constructions they appeared in: verbs of Non-translational Motion (e.g. *mover* ‘move’), Displacement (e.g. *sacar* ‘take out’), Change of Position (e.g. *escondarse* ‘hide’), Manner of motion (e.g. *caminar* ‘walk’), and Fictive Motion (e.g. *ver* ‘see’). Three types of analyses were then carried out on the data: 1) a type/token analysis, 2) an analysis of the means to express Manner of motion by the different groups of subjects, and 3) an analysis of the expression of Path of motion. The results of the first analysis showed that there were no significant differences between the three groups of subjects regarding the use of verbs of Displacement and Manner of motion. With verbs of Change of position, a significant difference was found between the native speakers and the Italian L2 learners due to the fact that the former had used a greater variety of these verbs than the latter. With verbs of Fictive Motion, another significant difference was found between the groups of subjects: the Danish L2 learners had used a greater variety of these verbs (both *ver* ‘look’ and *mirar* ‘see’) than the other two groups, who had only used *mirar*. However, the use of *ver* by the Danish L2 learners was sometimes inaccurate. An additional Kruskal-Wallis test showed no significant differences between groups, indicating that they had made use of verbs of Fictive Motion to similar extents. With respect to the complexity of visual paths expressed in the narratives, no significant differences were found either: participants from all groups tended to express only one Ground element per motion event. The results of the second analysis showed that Manner of motion was mainly lexicalised in the main verb, and was expressed by different means on relatively few occasions by all participant groups. The latter should be kept in mind when interpreting the results of this analysis, which showed that there

were no significant differences between the three groups regarding the expression of Manner of motion in subordinate clauses and by means of lexical expressions. Regarding the expression of this information in the main verb and in descriptions of inner states, however, it was found that the Danish L2 learners had produced fewer tokens than the native speakers and the Italian L2 learners. No significant difference was found between the Italian L2 learners and the native speakers. The difference found for main verbs here may be caused by the more limited vocabulary of the Danish learners (Italian is more similar to Spanish); the difference found for inner states is an interesting one, because earlier studies had obtained similar results (e.g. Cadierno, 2004). Regarding the expression of Path and the percentage of +Ground clauses, the findings replicated the ones reported by Cadierno (2004). The results from this study again seem to indicate that in the more advanced stages of L2 acquisition, L1 thinking-for-speaking may be rather limited.

Larrañaga et al. (2011) conducted a study with L1 English L2 learners of Spanish of three different proficiency levels. After a short warming-up session in Spanish, participants had to tell a story in this language based on a set of pictures. The stories were then analysed for the expression of Path and Manner. The results showed that, even at the lowest proficiency level, learners already mastered quite a number of Path verbs. On the contrary, the expression of Manner, especially in combination with a boundary-crossing, often lead to anomalous constructions that sometimes violated the boundary-crossing constraint. This effect was still visible at the highest proficiency level (students who had spent six month abroad in Spain prior to data collection). Larrañaga et al. hypothesized that the early mastery of Path verbs might have been caused by the substantial number of Latinate Path verbs such as *enter* and *ascend* in the English lexicon. The existence of these verbs in English had already been pointed out by Cadierno and Lund (2004). The relatively slower acquisition of Manner verbs might have been due to their low frequency in Spanish, as was found by the authors in a corpus study.

Cadierno and Robinson (2009) investigated the acquisition of L2 constructions for the expression of motion, and the roles played by the typology of the learners' L1 (+/- similar to the L2) and task complexity (operationalised as +/- Here-and-Now). Participants were 20 Danish-speaking, and 20 Japanese-speaking L2 learners of English. They were presented with two picture strips and were given one minute of planning time. They had to tell what happened in one of the strips in the There-and-Then and what happened in the other strip in the Here-and-Now. The order was counterbalanced. The results suggested that the Danish learners might have benefited from positive transfer in their production of target-like expressions of motion in the L2. The effect of task complexity was found to be rather limited in this study, with only learners with an L1 that is typologically similar to the L2 producing more target-like constructions during the There-and-Then task. A higher level of L2 proficiency also predicts a more target-like use of constructions for expressing motion.

Cadierno (2010) conducted a study on the expression of motion in L2 Danish by learners with satellite-framed L1s (German and Russian), as well as learners with a verb-framed L1 (Spanish). All learners had attained a B1 level according to the Common European Framework of Reference (CEFR). Participants had to describe what they were seeing in pictures that depicted motion events that contained a boundary-crossing. In addition, they were tested on their productive and receptive vocabulary of Danish Manner verbs. The results indicated a clear influence of L1 thinking for speaking patterns in L2 Danish, with the L1 German and the L1 Russian learners showing more target-like behaviour than the L1 Spanish learners across all tasks.

Filipović (2011)¹¹ conducted a study with 30 Spanish-English balanced bilinguals, 30 Spanish monolinguals and 30 English monolinguals. Participants were presented with short video clips that contained three different manners of motion, as well as with a number of fillers that did not contain any motion-activities. Participants were either asked to verbalise and write down what they

¹¹ The original studies also contains a part on memorisation.

had seen in each video clip directly after watching it. The verbalisations produced by the three groups of participants revealed that English monolinguals had used many more Manner-verb types (24) than Spanish monolinguals (4). The bilinguals had used somewhat more Manner-verb types than Spanish monolinguals (5), but less than English monolinguals (8). There were no items that were significantly more difficult to verbalise for a particular language group. The author argued that the bilinguals might have chosen a strategy of verbalising motion that worked in both languages, which is the Spanish strategy in this case (cf. Nicol et al., 2001, as cited in: Filipović, 2011).

Hijazo Gascón (2011) carried out a study with three groups of German-speaking, French-speaking, and Italian-speaking L2 learners of Spanish, as well as a group of native Spanish controls. Participants had to tell the frog story. The results showed that the German-speaking learners had used significantly more Manner verbs and other Manner expressions in their L2 Spanish than the other learner groups and the native controls. They had also produced more elaborate descriptions of Path. Interestingly, the Path descriptions produced by the Italian-speaking learners were as elaborate as the ones produced by the German-speaking learners. French-speaking learners and Spanish native speakers both had mentioned fewer Path components.

Hendriks and Hickmann (2015) investigated how English-speaking expressed motion events involving a boundary-crossing in their L2 French. Participants were shown video clips of motion events that contained a boundary-crossing in combination with either voluntary or caused motion. It was found that none of the learner groups showed a completely target-like behavior. Nevertheless, learners, especially those with higher proficiency levels in the target language, behaved in a more target-like way with voluntary motion than with caused motion. The authors argued that this might have been due to ambiguity in the input for events involving caused motion in French. Nevertheless, the non-target-like productions of the L2 learners clearly indicated cross-linguistic influence from their L1 English.

Relatively few studies on motion expression have looked at the influence L2 thinking for speaking patterns may have on the thinking for speaking patterns of the L1, especially when the two languages are typologically different. In the following paragraphs, the studies that have covered this topic will be reviewed.

Brown and Gullberg (2008) looked at speech and gestures used to express motion by Japanese monolinguals, English monolinguals, and a group of native Japanese speakers with an intermediate proficiency in their L2 English. It was found that the Japanese L2 speakers did not only differ from English monolinguals, but also from Japanese monolinguals¹², suggesting cross-linguistic influence in both directions: from the L1 into the L2, and from the L2 into the L1.

Bylund (2009) investigated whether age of onset of L2 acquisition had an influence upon the amount of L1 attrition in the conceptual domain in L2 learners. Participants were 31 Spanish/Swedish bilinguals and 15 native Spanish controls. The Spanish/Swedish bilinguals had all been living in Sweden for at least twelve years and passed as native speakers of Swedish in everyday conversation, and were also competent in Spanish. Age of onset varied, but the age of twelve was set as a borderline between ‘early’ and ‘late’ onset of L2 acquisition. It was investigated how the bilinguals conceptualised motion events in their L1 Spanish in comparison with native controls. It is known that native speakers of Spanish tend to focus less on the endpoints of motion events than do native speakers of Swedish. Participants were shown short video clips that contained goal-oriented motion events and a number of distractor clips. Participants were asked in Spanish to verbalise what they saw in the clips as soon as they recognised the situation. With regard to the expression of endpoints, it was found that the bilinguals with early Ages of Onset verbalised the endpoint of a motion event significantly more often than both bilinguals with late Ages of Onset and native controls. They also showed a higher within-group variability than the latter two groups. No significant difference was found between the bilinguals with late Ages of Onset and the native

¹² This difference was found to be stronger in gesture than in speech.

controls. The level of goal-orientation of the action in the video clip was also found to be significant, with a higher degree of goal-orientation leading to more verbalizations of endpoints. This effect was the same for all three groups of subjects. No significant correlation was found between length of residence in Sweden and the verbalization of endpoints. It was argued that participants with early Ages of Onset are more dependent on advantageous socio-psychological circumstances such as L1 contact and use in order to fully acquire/maintain Spanish event conceptualization patterns, while L1 maintenance in subjects with late Ages of Onset is less dependent on these factors. Patterns of event conceptualization are affected by age in the same way as formal language skills.

In a recent study, Muñoz Carrasco (2015) looked at bidirectional transfer in English-speaking L2 learners of Spanish. She found that there was influence from L2 Spanish visible in the expression of Manner in clauses with a boundary-crossing in L1 English: participants had expressed less Manner in the verb, and more Manner in adjuncts than English monolinguals. Furthermore, in clauses without a boundary-crossing, they had expressed more Path in the verb. They also had produced more +Ground clauses without a boundary-crossing. This influence became more visible at higher proficiency levels in Spanish. In L2 Spanish, on the other hand, influence from L1 English was visible at all proficiency levels, even at the highest one (B2). This influence was visible in the production of clauses that contained multiple Path components, satellizations, as well as violations of the boundary-crossing constraint.

That research into the expression of motion in an L2 remains a vital research area within Cognitive Linguistics and second language acquisition becomes clear from the supplement that *The Modern Language Journal* issued in 2015. It was titled *The Language and Thought of Motion in Second Language Speakers* (The Modern Language Journal, 2015)¹³. Furthermore, recent research on motion increasingly looks at more fine-grained distinctions languages make instead of at their

¹³ Reviewing all studies presented in this Supplement would go beyond the scope of the present thesis, however. But see Hendriks and Hickman (2015) above.

general typology. Examples of this type of research can be found, for instance, in the book *Motion Encoding in Language and Space* (Vulchanova and Van der Zee, 2013). The chapters of this book include research on verbs of aquamotion, path curvature, and spatial directions for robot navigation, among other topics. In table 2.3, an overview can be found of studies that have looked at the acquisition of motion expression in an L2, and that have been mentioned in this subsection.

Table 2.3: Overview of studies that have looked at the expression of motion in an L2

Study	Type of data/Modality	Languages	Findings
Brown and Gullberg, 2008	Oral data and co-speech gestures	L1 English L1 Japanese L1 Japanese – L2 English	Convergence of L1 and L2 thinking for speaking patterns
Bylund, 2009	Oral data (re-telling of video clips containing goal-oriented motion)	L1 Spanish Spanish – Swedish bilinguals	Participants with early AOs are more dependent on advantageous socio-psychological circumstances such as L1 contact and use in order to fully acquire/maintain Spanish event conceptualization patterns, while L1 maintenance in subjects with late AO is less dependent on these factors. Patterns of event conceptualization are affected by age in the same way as formal language skills.
Cadierno, 2004	Written data (frog story)	L1 Danish – L2 Spanish	Not all aspects of the L2 are influenced to the same degree by L1 thinking for speaking patterns
Cadierno, 2010	Oral and receptive data (picture-description, and productive and receptive vocabulary tests)	L1 Danish L1 German – L2 Danish L1 Russian – L2 Danish L1 Spanish – L2 Danish	Clear effects of L1 thinking for speaking patterns visible across all tasks

Cadierno and Robinson, 2009	Oral data (picture strips)	L1 Danish – L2 English L1 Japanese – L2 English	Target-like use of constructions for expressing motion influenced by proficiency, and probably also language typology. The effects of task-complexity are rather limited.
Cadierno and Ruiz, 2006	Written data (frog story)	L1 Danish – L2 Spanish	Influence from L1 thinking for speaking patterns may be rather limited at the more advanced stages of L2 acquisition
Filipović, 2011	Written data (re-telling of animated cartoons)	L1 English L1 Spanish English – Spanish balanced bilinguals	Bilinguals might have chosen a strategy of verbalising motion that worked in both of their languages
Hendriks and Hickmann, 2015	Oral data (re-telling of video clips that contained motion events)	L1 English L1 French L1 English – L2 French	L1 thinking for speaking patterns visible in L2 French. More target-like behavior with voluntary motion than with caused motion.
Hijazo Gascón, 2011	Oral data (frog story)	L1 Spanish L1 French – L2 Spanish L1 German – L2 Spanish L1 Italian – L2 Spanish	L1 thinking for speaking patterns visible in L2 Spanish, even when these concern intratypological differences
Kellerman, 2001	Oral data (frog story)	L1 Dutch – L2 English	General developmental patterns visible
Larrañaga et al., 2011	Oral data (narration of a story based on a set of pictures)	L1 English – L2 Spanish (three different proficiency levels)	Clear effects of L1 thinking for speaking patterns visible, even at the highest proficiency level
Muñoz Carrasco, 2015	Oral data (re-telling of <i>Mr. Bean</i> clips)	L1 English L2 Spanish L1 English – L2 Spanish	Bidirectional transfer between L1 and L2. Influence from L2 especially visible at higher proficiency levels

Stam, 2006	Oral data (retelling of the cartoon <i>Canary Row</i>)	L1 Spanish – L2 English	L1 thinking for speaking patterns still visible at an intermediate proficiency level
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2.4.3 Reference to motion in early bilinguals

A small number of studies have looked at the expression of motion in children who are acquiring two typologically different languages at the same time. However, the main focus of the study was usually narrative development. Álvarez Fernández (2001) conducted a case study with an English-Spanish bilingual child between ages 6;11 and 10;11. Every year, the child told the frog story in both languages. Regarding the expression of motion, the data showed that the development seemed to be semantic rather than grammatical. Both English and Spanish have similar possibilities to express meaning. In English, the child’s variation in terms of motion verbs was very limited, and the child might even be showing a slower rate of acquisition in this language. Furthermore, over one third of the verbs were deictic verbs, but there was some development visible with age. Overall, there seemed to be no interference between the two languages, although “... stories do not show the full implications characteristic of the rhetorical styles particular to the two languages. (p. 295)”. The description of movement seemed to be the most problematic area of development in both languages. Especially for English, it remained unclear how much input the child would need to know how to encode movement in a way appropriate to the language. In addition to this, given the large number of nouns instead of verbs the child added each year in English, one may ask if the ability to refer to movement in this language was a question of vocabulary acquisition. It was argued that the child might have adapted a ‘third style’, which was a mixture of the two languages leading to absence or low occurrence of forms that are very language-specific, a frequent use of ‘all purpose’ deictic verbs, and a lack of attention to change of location (p.314). The different lexicalisation patterns of the two languages might have made the description of movement a linguistic problem for the child, and this problem seemed to override already developed communicative and cognitive abilities.

Kaufman (2001) studied the attrition of the L1 Hebrew in Hebrew/English bilingual children living in the United States. The participants were 30 children, fifteen boys and fifteen girls. Their ages ranged from 6;2 to 13;11. Their parents were all first generation immigrants, native speakers of Hebrew. The children had to tell the frog story. When asked about their language use and preference, most children, especially the older ones, showed a clear preference of English over Hebrew. With respect to reference to actions, it became clear that the children were in the process of restructuring and reformulating their L1 verbal paradigm, and that they were synthesising it with the verbal paradigm of the L2. Hebrew is a verb-framed language (Berman and Slobin, 1994), but many of the children, especially the ones who were less-proficient in Hebrew, showed a clear preference for verb+particle constructions typical of English. This sometimes resulted in the use of redundant particles, and led to the emergence of developmentally juvenile to non-native forms. It was also found that the children tended to summarise the more cognitively demanding scenes of the story. Instead of describing the separate events, they said for instance: ‘the boy encountered many animals’ (p.335). The researcher concluded that the bilingual children’s retellings of the frog story were rhetorically and linguistically immature, and that they are incompatible with the narrator’s cognitive ability and age.

2.5 Reference to motion in the languages of the present study

As has become clear from the review of the lexicalisation patterns proposed by Talmy (1985, 1991, 2000a, 2000b), as well as from the review of the studies on the expression of motion presented in the previous sections, the languages of the present study are quite prototypical exemplars of their respective typologies. English behaves in a prototypical satellite-framed way, whereas French and Spanish show prototypical verb-framed patterns, including a boundary-crossing constraint on the use of Manner verbs.

With respect to the expression of Manner, English is a relatively *high manner salient* language, whereas French and Spanish are both *low manner salient* languages (Slobin, 2006). The Manner-verb lexicon in English is also much richer than the Manner-verb lexicons found in French and Spanish. Slobin (1997) calls relatively high-frequent verbs that depict more general manners of motion, *first-tier* verbs, and relatively low-frequent verbs that depict more specific manners of motion *second-tier* verbs. The following examples taken from Slobin (1997: 458-459) illustrate that English makes more fine-grained distinctions between various types of Manner than both Spanish and French:

Spanish:

- deslizarse* = creep, glide, slide, slip, slither
escabullirse = scurry off, scuttle away/off, slip away
saltar = bound, dive, hop, jump, leap, spring
tropezar = stumble, trip, tumble

French

- bondir* = jump, leap
courir = run, scuttle
fondre = sweep, swoop
(se) glisser = crawl, creep, slide
grimper = clamber, climb, scramble, swarm

Regarding the expression of Path, English speakers tend to provide more elaborate descriptions than both French and Spanish speakers. On the cline of *Path salience* proposed by Ibarretxe-Antuño (2009), English would be relatively *high path salient*, and French and Spanish

would both occupy intermediate positions on the scale. In relation to this, speakers of French and Spanish also tend to mention fewer segments of the deer scene than English speakers. When the deer scene is divided into four segments, French and Spanish speakers mention 2.1 segments on average against 3.0 for English speakers (Slobin, 1997). Moreover, according to Slobin (1997) only 30% of French and Spanish speakers mention three or more segments against 86% of English speakers. English speakers also frequently show event conflation, whereas French and Spanish speakers only do so occasionally. In addition, the latter produce more clauses in which no Ground elements are mentioned explicitly in the clause that contains the motion event. They are either mentioned in previous clauses or have to be inferred from context (cf. Ibarretxe-Antuñano, 2009; Slobin, 1997).

With respect to any intratypological differences that might exist between French and Spanish, previous studies did not reveal any important differences regarding the expression of Path and Manner (cf. Hijazo Gascón, 2011; Ibarretxe-Antuñano, 2004; Slobin, 1996a, 1997). Nevertheless, Kopecka (2009) showed that in French, a relatively recent shift took place from a predominantly satellite-framed pattern to a predominantly verb-framed pattern. This shift happened between Old French and Modern French, and was caused by 1) the lexical fusion of verb prefixes with verb stem (e.g. ‘old’ *a-river* ‘toward-sail along’ vs. ‘modern’ *arriver* ‘to arrive’), and the consecutive loss of autonomy simple, non-prefixed verb forms (e.g. ‘old’ *a-fluer* ‘toward-flow’ vs. ‘modern’ *affluer* ‘to flow toward’, which now shows a hybrid pattern), 2) the loss of the ability of certain motion verbs to combine with Path prefixes (p.417). This especially holds for Manner verbs. In Modern French, a verb-framed pattern is used in most cases (e.g. ‘old’ *a-couler* ‘toward-flow’ vs. ‘modern’ *s’approcher en coulant* ‘to approach flowing’ and ‘old’ *a-floter* ‘toward-float’ vs. ‘modern’ *s’approcher en flottant* ‘to approach floating’). Furthermore, Pourcel (2003) indicated that French speakers sometimes show a ‘verb-framed reverse pattern’ (p.354), expressing Manner in the main verb and Path in an adjunct, as in (25) and (26):

(25) Un homme court en traversant la rue

A man runs crossing the road

‘A man is running across the road’

(26) Un homme pédale à vélo en montant

A man pedals on his bike going up

‘A man is cycling up the road’

These sentences, however, were elicited in highly controlled lab conditions. Therefore, it remains to be seen whether the same type of construction will be elicited by the frog story.

2.6 Summary

In this chapter, the main characteristics of the Cognitive Linguistics framework as well as the language typologies proposed by Talmy (1985, 1991, 2000a, 2000b, 2009) have been reviewed. The review also included a number of criticisms to, especially, the bipartite typology, and proposals for clines of salience of Manner and Path. Slobin’s *thinking for speaking* hypothesis was then introduced as a very fruitful starting point for conducting research on the expression of motion and its acquisition in an L1 or L2. In the last sections of this chapter, the most relevant studies on motion expression have been reviewed.

In the next chapter, the research field of *L3 acquisition* or *Third Language Acquisition* (TLA) will be introduced, highlighting the differences with L2 acquisition.

Chapter 3: L3 acquisition

In this chapter, an overview will be provided of the research field of *Third Language Acquisition* (henceforth L3 acquisition). In the first section, a brief history of the research on cross-linguistic influence or ‘transfer’ will be presented in order to have a background for the current models that try to explain or predict the types of cross-linguistic influence that can be found in L3 acquisition. In fact, differences regarding cross-linguistic influence found between L2 and L3 learners who were learning the same language and had the same mother tongue were the main reason for starting to treat L2 and L3 acquisition as different phenomena. In the second section, the current models of L3 acquisition, as well as a number of more general factors that have been shown to play a role in cross-linguistic influence will be discussed. In the third session, the studies that have been carried out on the expression of motion within the field of L3 acquisition will be reviewed.

3.1 Cross-linguistic influence

The study of cross-linguistic influence in modern linguistics finds its origins in Behaviourism in the 1940s and 1950s. According to this paradigm, all human language is a form of operant behaviour, which means that it is the result of conditioning. Language is learnt¹⁴ through either reinforcement or punishment of certain linguistic behaviour by the learner’s environment. In the case of reinforcement, the linguistic behaviour in question gradually becomes more likely to occur on future occasions, whereas the opposite holds for linguistic behaviour that has been “punished”. (cf. Skinner, 1957). Reinforcement usually occurs with target-like behaviour, whereas punishment usually occurs with some aberrant form produced by the learner. With time, the learner then becomes habituated to giving a specific type of linguistic response to a specific linguistic or non-linguistic stimulus. Learning an L2 therefore entails conditioning to the linguistic patterns of the target language, while

¹⁴ Throughout the present thesis, the terms *learning* and *acquiring* will be used quite interchangeably. Nevertheless, we are aware of the distinction some researchers (e.g Krashen, 1983) make between the two.

suppressing L1 operant behaviour. Nevertheless, L1 responses sometimes remain visible in the learner's behaviour in the L2, leading to what Weinreich (1953) called 'interference'. More specifically, this author defined *interference* as "[T]hose instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language [...]" (p.1). More specifically, this interference implied:

"[...] the rearrangement of patterns that results from the introduction of foreign elements into the more highly structured domains of language, such as the bulk of the phonemic system, a large part of the morphology and syntax, and some areas of the vocabulary (kinship, color, weather, etc.). It would be an oversimplification to speak here of borrowing, or mere additions to an inventory." (p.1)

Furthermore, the author stated that "[T]he greater the difference between the systems, i.e. the more numerous the mutually exclusive forms and patterns in each, the greater is the learning problem and the potential area of interference" (p.1). And therefore: "Great or small, the differences and similarities between the languages in contact must be exhaustively stated for every domain – phonic, grammatical, and lexical- as a prerequisite to an analysis of interference" (p.2).

In another definition of L1 influence visible in the L2, Lado (1957, as cited in: Gass and Selinker, 1994: 1) stated that:

" [I]ndividuals tend to transfer the forms and meanings, and the distribution of forms and meanings of their native language and culture – both productively when attempting to speak the language and to act in the culture, and receptively when attempting to grasp and understand the language and the culture as practised by natives."

Claims such as the ones made by Weinreich and Lado gave rise to a large number of studies that tested whether the differences and similarities between the L1 and the L2 learners indeed predicted the amount of 'transfer', the so-called *Contrastive Analysis*. On the other hand, *Error Analysis*

studies examined the errors committed by L2 learners in the target-language. However, as more research was being carried out within these frameworks, it became increasingly clear that they were unable to account for the nature of the actual transfer phenomena found in learner data.

Jarvis and Pavlenko (2008: 11-12) provide a list of key findings of research on cross-linguistic influence carried out during the 1960s, 1970s, and 1980s¹⁵. These findings do not only show that there are many transfer phenomena that cannot be predicted by *Contrastive Analysis*; they also give insight into the complexity of cross-linguistic influence:

1. Errors are not the only outcome of cross-linguistic influence: there are many cases of ‘positive transfer’ in which the learners’ acquisition of the target-language is accelerated. Moreover, the similarities and differences between the *source language* of cross-linguistic influence and the *recipient language* do not always lead to errors per se, but may become visible in phenomena such as *underproduction* or *overproduction* of certain linguistic structures, or to preferences to use certain linguistic structures over others (e.g. one-part verbs instead of phrasal verbs – such as *enter* vs. *come in*; Dagut and Laufer, as cited in: Jarvis and Pavlenko, 2008: 11) where more than one preference is fully acceptable.
2. Cross-linguistic influence can effect not only the rate and ultimate success of learners’ L2 acquisition, but also the route of this acquisition: the order in which certain structures of the target-language are acquired can be affected by the learners’ L1.
3. Differences between the source and recipient languages do not necessarily lead to learning difficulties or cross-linguistic influence. Structures from the target-language that are different from L1 structures, but that are easy to perceive are often acquired faster. Moreover, similarities between the languages, such as similar words or word-order rules often lead learners to make mental associations between the languages.

¹⁵ Some studies that are particularly relevant to L3 acquisition will be reviewed in section 3.2.

4. Cross-linguistic influence does not decrease linearly with increasing competence and proficiency in the target-language. In some cases, it only shows up when the learner becomes able to perceive the similarities between the source language and the target-language. In other words, sometimes the learner has to reach a certain proficiency-threshold in the target-language before cross-linguistic influence can manifest itself.
5. Language transfer does not only occur from an L1 to an L2 (*forward transfer*), but may also occur from an L2 to an L3 (*lateral transfer*), or from an L2 to an L1 (*reverse transfer*).
6. Cross-linguistic influence interacts with other factors to determine the likelihood of transfer or *transferability* of a given structure in a given context. Some of the factors that have been found to play a role are: age, their perception of the language distance, and the degree to which learners perceive a certain structure as being language-specific. Developmental sequences and universal learning principles may also be involved.
7. Transfer effects are not only visible at the level of language forms; they also extend to the meanings and functions learners associate with those forms, and even to pragmatic functions of the language (e.g. apologising).
8. Individual differences between learners can lead to differences in the types and extent of cross-linguistic influence that these learners exhibit.

Despite that the fact that some of the key findings above clearly indicate that cross-linguistic influence may occur in more directions than from the L1 to the L2, research on cross-linguistic influence would remain centred on influence from the learner's L1 for quite some time. However, around the 1980s, some researchers had stated that notions such as *transfer* or *interference* might not be suitable labels for the phenomenon of influence between one or more languages an individual speaks, due to their associations with the behaviourist notion of *skills transfer*. In addition, the use of the term *interference* also draws the attention towards negative transfer (cf. Jarvis and Pavlenko,

2008). Before that, Selinker (1972) had already proposed the term *interlanguage* to refer to the L2 learners' representations of the target-language as a system in its own right, which shows effects of both cross-linguistic influence and general developmental patterns that are present in all learners of this target-language regardless of their L1. In 1986, Kellerman and Sharwood Smith proposed the theory-neutral term *crosslinguistic influence*. The advantage of this term is that it covers the full range of possibilities in which influence between languages can manifest itself.

From the late 1980s onwards, an increasing number of studies on cross-linguistic influence started to investigate cross-linguistic influence from the perspective of generative grammar. Studies carried out within this paradigm tried (and try) to determine to what extent Universal Grammar (UG) is available in L2 acquisition. More specifically, taking Chomsky's Government and Binding Theory (Chomsky, 1981, 1986, as cited in: White, 1994) as a starting point, these studies try to uncover whether certain parameters from UG can be reset in the L2 if the L1-setting differs from that of the L2. Moreover, it is investigated to what extent L2 learners can transfer certain UG properties from their L1 at the initial stages of acquisition. This has given rise to hypotheses that propose various combinations of the amounts of access to UG and transfer from the L1. An example is the *Full Transfer Full Access Hypothesis* proposed by White et al. (2004), which claims that, at the beginning of L2 acquisition, learners start out with the linguistic properties of their L1, while it is still possible for them to completely acquire the linguistic properties of the L2 through full access to UG. This hypothesis contrasts sharply with the *Failed Functional Features Hypothesis* (e.g. Franceschina, 2002), which postulates that learners only have access to those features of UG that are present in their L1. Although criticisms to this approach have stated that it is basically a new name for a form of *Contrastive Analysis* (cf. White, 1994), its defenders claim that UG looks at more than just the surface level of linguistic forms by studying unconscious knowledge of language by looking at mental representations in the form of parameters from UG.

In the late 1980s, the research on cross-linguistic influence received another impulse by Odlin's publication of his book *Language transfer*. This book provides a detailed overview of the studies that had been carried out on cross-linguistic influence at that time. (Jarvis and Pavlenko, 2008). Odlin himself provides the following definition of transfer (Odlin, 1989: 27): "Transfer is the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired." Since the publication of Odlin's book, research on cross-linguistic influence has yielded many new hypotheses and insights into the ways in which different types of cross-linguistic influence can manifest themselves. As was mentioned in the previous chapter, the 1990s witnessed an important increase in the amount of research on cross-linguistic influence carried out within the framework of Cognitive Linguistics. Some researchers (e.g. Cook, 1997; Grosjean, 1992) started to question the "monolingual bias" in research on L2 acquisition and cross-linguistic influence. They argued that bilinguals (and multilinguals) are "multicompetent speakers", and that there is no reason to assume that the grammars of the languages they speak are kept separate from each other in the brain. Therefore, these researchers even question the term *cross-linguistic influence*, because it entails the assumption that, although languages may influence each other, they are separate entities. Furthermore, if there is at least an overlap between languages in the brains of bilingual and multilingual speakers, this means that the grammars of these speakers can never be identical to the grammars of monolingual speakers of the languages in question. Therefore, in L2 acquisition research, it should in fact be incorrect to directly compare the behaviour of bilingual and multilingual speakers in a given target-language to the behaviour shown by monolingual speakers of this language¹⁶, and to qualify any differences as some kind of acquisition failure on behalf of the bilingual and multilingual speakers.

¹⁶ In the present study, three control groups of monolingual speakers will be included precisely to pinpoint such differences without qualifying them as 'acquisition failures'.

In the late 1990s, the interaction between three or more languages in the mental lexicon became included more systematically into research on cross-linguistic influence¹⁷ whereas the early 2000s witnessed an increase in studies that deal with L1 attrition (Jarvis and Pavlenko, 2008). This L1 attrition was studied not only from a cross-linguistic-influence perspective; more universal attrition processes (e.g. simplification) due to a less frequent use of the L1 were also examined.

In more recent years, topics such as memory, processing, and the mental lexicon have drawn the attention of numerous researchers, some of whom have made an attempt at modelling bilingualism (e.g. de Bot, 1992). Some of these models will be discussed in greater detail in the last subsections of this chapter, where their applicability to L3 acquisition will be discussed.

In order to make the enormous complexity and diversity of cross-linguistic influence more tangible, Jarvis and Pavlenko (2008: 20) identified different types of cross-linguistic influence, and grouped them across ten dimensions. The outcomes of this grouping are shown in Table 3.1. These types of cross-linguistic influence turn out to be as relevant to L3 acquisition as they are to L2 acquisition. In L3 acquisition, however, the constellations of factors that may influence cross-linguistic influence are much more complex, because apart from the fact that there are two possible source languages of cross-linguistic influence, these source languages may differ regarding factors such as the learner's use, proficiency, and perceived similarity to the L3, among others. These factors will be discussed in more detail in the next section of the present thesis.

¹⁷ This will be elaborated upon the next sections of this chapter.

Table 3.1: Characterization of types of cross-linguistic influence across ten dimensions (adapted from Jarvis and Pavlenko, 2008: 20)

<i>Area of Language Knowledge / Use</i>	<i>Intentionality</i>
phonological	intentional
orthographic	unintentional
lexical	
semantic	<i>Mode</i>
morphological	productive
syntactic	receptive
discursive	
pragmatic	<i>Channel</i>
sociolinguistic	aural
	visual
<i>Directionality</i>	
forward	<i>Form</i>
reverse	verbal
lateral	nonverbal
bi- or multi-directional	
	<i>Manifestation</i>
<i>Cognitive Level</i>	overt
linguistic	covert
conceptual	
	<i>Outcome</i>
<i>Type of Knowledge</i>	positive
implicit	negative
explicit	

3.2 Current models of L3 acquisition

In recent years, quite a few studies have tried to uncover the processes that underlie cross-linguistic influence in L3 acquisition and, especially, the factors that determine the source language(s) of this influence. On the basis of the studies that have been conducted so far, various models have been proposed that could be used to predict or explain L3 learners' behaviour. These models can be roughly divided into three major groups (Wrembel, personal communication):

- 1) Models that were created *ad hoc* to account for the outcomes of one or more studies (data-driven models). Usually, additional studies were conducted to see whether these models could be validated.
- 2) Theory-based models that depart from certain theories of cognitive processes and/or language acquisition (e.g. Universal Grammar), and that use these theories to model and explain the outcomes of studies.
- 3) Processing and production models. These models were created to explain what might be taking place in the brain of a multilingual speaker when he or she is processing linguistic input or producing linguistic output.

In the next sections, each group of models will be discussed separately. However, there are also factors that do not belong to any specific type of model. Examples are the perceived typological distance between the languages, and the degree of activation of each of them, or “language modes” (Grosjean, 2001). These factors will be briefly discussed in subsections 3.2.4 and 3.2.5.

3.2.1 Data-driven models

The first group of models that will be discussed here are models that were created to account for the findings of one or more studies that had been conducted previously (i.e. the models were not created to *predict* the outcomes of these studies). A good example is Hammarberg's *Role-Function Model*

(Hammarberg, 2001; Williams and Hammarberg, 1998). This model was created to account for the outcomes of a case study with an L3 learner of Swedish who had English as an L1, and German as an L2, although she also had knowledge of other languages. At later stages, the model was tested by analysing the data of an additional participant with L1 English, L2 German, and L3 Swedish¹⁸ (Hammarberg, 2009). It postulates that the L1 and the L2 of the L3 learner serve different functions in L3 production. The L1 serves mostly as the *instrumental language*, being used for self-repairs and managing the interaction. It is used to make comments about the situation or on the task, as well as to provide frames for questions (e.g. %*what's* 'to like'? (Hammarberg, 2001: 26))¹⁹. The L2, on the contrary, mostly serves as a *supplier language* for word formation in the L3. Influence from the L2 is also visible in the insertion of short words, which are mostly grammatical function words, such as pronouns, prepositions, connective adverbs, and conjunctions (Hammarberg, 2001). In most cases, these function words are followed by a self-repair. An example is shown in (1) (Hammarberg, 2001: 26):

- (1) den <*klei*-> / den den lite pojken
 'the <*litt*-> / the the little boy'

The role of the L2 as supplier language was found to decrease when proficiency in the L3 increased. According to Hammarberg (2001), the supplier language is the language that obtains the highest 'scores' on the factors *typology*, *proficiency*, *recency of use*, and *L2 status*.

A second model in this category is the model proposed by DeAngelis (2007). This model states that cross-linguistic influence in an L3 can have more than one source language at the same time, thereby making a distinction between one-to-one and many-to-one types of associations (p.136):

¹⁸ It should be noted that in both studies, all three languages were Germanic languages.

¹⁹ Hammarberg (2001) uses % to indicate a pause filler.

“The first defines instances of transfer from one language to another, for example from the L1 to the L2, the L2 to the L3, the L2 to the L2 and so forth. The second refers to instances of combined CLI, a type of transfer that can occur when two or more languages interact with one another and concur in influencing the target language, or whenever one language influences another, and the already influenced language in turn influences another language in the process of being acquired.”

Cross-linguistic influence in L3 acquisition is mediated by language distance, proficiency, recency of use, order of acquisition, as well as length of residence and exposure to a non-native language environment (DeAngelis, 2007).

A third model in this category is Hufeisen and Marx's *Factor Model* (Hufeisen and Marx, 2007). According to this model, L1 acquisition, L2 acquisition, and L3 acquisition have different characteristics. In L1 acquisition, only neurophysiological factors (age, and the capability to learn language) and learner external factors (e.g. learning environment and quality of the input) are involved. In L2 acquisition, however, additional factors come into play. These factors comprise cognitive factors (e.g. learning strategies), affective factors (e.g. attitude toward the target-language), as well as linguistic factors (the learner's L1). In L3 acquisition, additional foreign-language specific factors come into play, and these add to the cognitive and affective factors already mentioned for L2 acquisition. The foreign-language specific factors are related to the learner's previous experience of learning an L2. In addition, in L3 acquisition there are more linguistic factors than in L2 acquisition, due to the fact that the learner has two 'previous' languages instead of one. From L3 acquisition onwards, the only factors that change are the linguistic ones, because with every additional language, the learner has more previous languages to draw from. Therefore, Hufeisen and Marx (2007) argue that the greatest qualitative change takes place between L2 acquisition and L3 acquisition. As a consequence, L2 acquisition and L3 acquisition should be seen as separate domains.

3.2.2 Theory-based models

The models found within this category differ greatly with respect to the predictions they make about the source of cross-linguistic influence in an L3. This is caused by differences in theoretical underpinnings.

A first model in this category is Bardel and Falk's *L2 Status Model* (Bardel and Falk, 2007, 2012). According to this model, the learner's L2 is the privileged source of cross-linguistic influence in the L3. This is because both the L2 and the L3 rely mostly on declarative knowledge, whereas the L1 relies mostly on procedural knowledge. As a result, there is a greater cognitive similarity between the L3 and the L2 than between the L3 and the L1, and this frequently causes the L2 and the L3 are to be 'co-activated'.

A second model is the *Typological Primacy Model* proposed by Rothman (2010, 2011, 2015). This model, which is embedded in the generativist approach to language learning, claims that transfer is holistic at the initial stages of L3 acquisition. The source language of this holistic transfer is the language that the mental parser has identified as being typologically closest to the L3: the L1 or the L2. Once this language has been identified by the parser, transfer will take place regardless of whether it is facilitative or negative. This is motivated by "cognitive economy".

A third model than can be included within this category is Flynn et al.'s *Cumulative Enhancement Model* (Berkes and Flynn, 2012; Flynn, 2004). This model postulates that language learning is cumulative, and the L1 is not a privileged source of cross-linguistic influence. Moreover, "where appropriate, other languages known can enhance subsequent language acquisition" (2004: 5). This means that, when a feature present in the language that is being acquired is also present on one of the previously acquired languages, this may lead to facilitative transfer.

Recently, another three models of L3 acquisition have been proposed. These are: the *Linguistic Proximity Model* proposed by Westergaard et al. (2016), the *Scalpel Model* (Slabakova,

2016), and the *Natural Growth Model* (Dziubalska-Kolaczyk & Wrembel, in press). However, these models are too recent to have been tested, and will therefore not be taken into consideration here.

3.2.3 Models of multilingual speech production

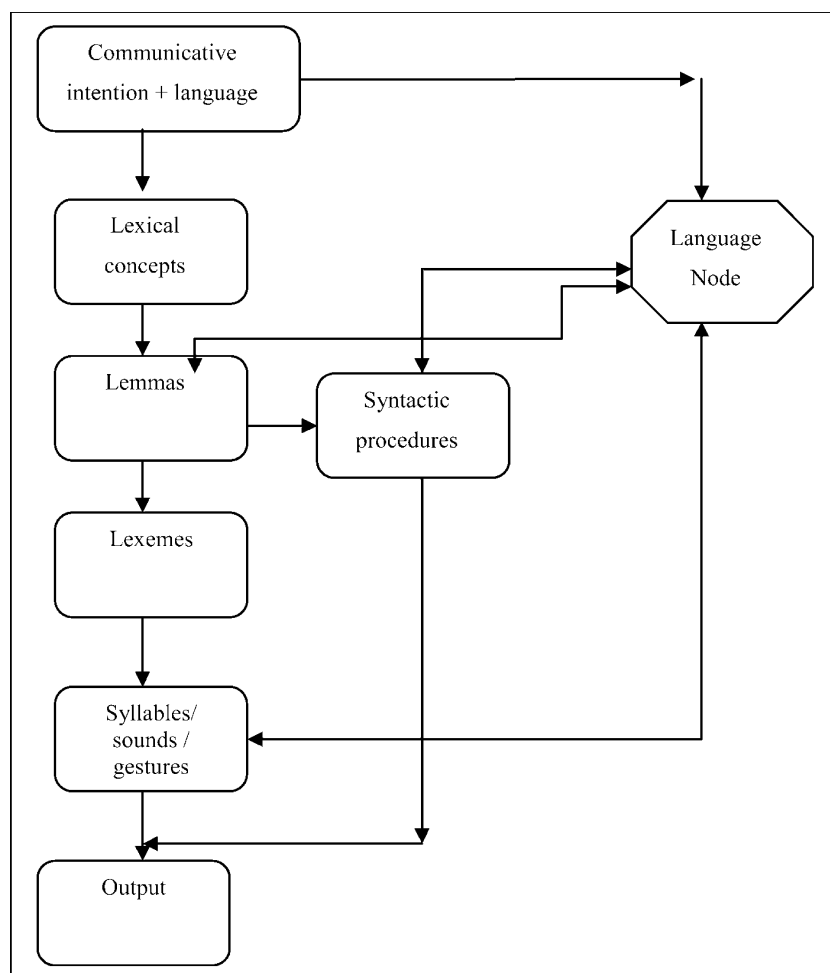
A third category of models tries to model what may be happening in bi- and multilingual brains when producing language. One of these models is the *Multilingual Processing model* (de Bot, 2004a, 2004b, 2012). This model is in fact an extension of the 1993-version of Levelt's 'Speaking'-model (Levelt, 1993). In 1992, de Bot adapted Levelt's original model (Levelt, 1989) to include bilingual language production (de Bot, 1992). In 2004, the model was extended further to accommodate production in three or more languages. An overview of the model is shown in Figure 3.1. Within the model, there are three *stores* with information (de Bot, 2004a: 28): conceptual features, syntactic procedures, and form elements (sounds, syllables, or gestures). In each of these *stores*, there are language-specific subsets. These subsets show some overlap, however, and this overlap reflects "the cognateness of the languages involved" (p. 28). Nevertheless, the subsets belonging to the intended language become more highly activated than the other subsets. The various processing components are controlled by the *language node* with respect to the language to be used. According to the Bot (2004: 28) language choice takes places at the highest level, before lexical concepts are activated:

"The intention to use a specific language originates at the conceptual / communicative intention level and is relayed to both the system generating lexical concepts and the language node. For the subsequent components the information on the language to be used now comes from two sources: through the lexical concepts and directly from the language node."

This is especially relevant for thinking for speaking patterns. None of the studies on reference to motion in an L2 discussed in Chapter 2 of the present thesis suggests that thinking for speaking patterns are entirely language-specific. Furthermore, thinking for speaking patterns are at the intersection of communicative intention (e.g. the components of the motion event that the speaker

wants to mention + the language in which this will be done), lexical concepts (e.g Manner distinctions; a boundary-crossing being conceptualised as a Change of State or not), lemmas, and syntactic procedures.

Figure 3.1: de Bot's Multilingual Processing Model (de Bot, 2004).



A second model of multilingual speech production is the one proposed by Herdina and Jessner (2002). This *Dynamic Model of Multilingualism* works with the assumptions of Dynamic Systems Theory. It sees multilingualism as a complex, dynamic system that changes over time. Furthermore, the language systems of the multilingual are interconnected, and new qualities can develop within the system. Herdina and Jessner propose that multilingual proficiency can be defined

as the sum of a learner's language systems, cross-linguistic-interaction, and the Multilingualism-factor.

3.2.4 Perceived typological distance

A first factor that does not pertain to any specific model, but that does appear to play an important role in cross-linguistic influence is *perceived typological distance* or *psychotypology*. This term was coined by Kellerman (1978, 1983), and it refers to the subjective typological distance learners perceive between their languages. This typological closeness “[...] would be capitalized on by learners as the result of a relatively immediate opportunity to identify cognate forms and structures across the two languages. [...] Conversely, if the L1 and L2 were very different, the lack of available correspondences would, in the initial stages at least, act as a bar to transfer, since the learner is unable to make the necessary cross-lingual tie-ups.”

Similarly, in 1995, in a reaction to Andersen's *Transfer to somewhere* principle (Andersen, 1983), Kellerman proposed his *Transfer to nowhere* principle (Kellerman, 1995), which can be regarded as an extension to Andersen's principle. Andersen (1983:182) proposed that:

“A grammatical form or structure will occur consistently and to a significant extent in the interlanguage as a result of transfer *if and only if* (1) natural acquisitional principles are consistent with the L1 structure *or* (2) there already exists within the L2 input the potential for (mis-) generalization from the input to produce the same form or structure.”

Furthermore:

“[I]f an L2 form conforms well to natural acquisitional processes [...] it will be acquired early [...]. If an L1 form conforms well to these natural acquisitional processes, it will be transferred to the interlanguage. If the L1 and the L2 forms are congruent and conform well to the natural acquisitional processes, the form will emerge early in interlanguage.”

According to Kellerman's (1995) *Transfer to nowhere* principle there are some features of language usually inaccessible to meta-awareness. The author states that thinking for speaking patterns may be a good example, because (p. 141):

“... when it comes to verbalizing events in a second language, learners may not look for the perspectives peculiar to that language; instead, they may seek the *linguistic* tools which will permit them to maintain their L1 perspective. Such cases represent *transfer to nowhere*, an unconscious assumption that the way we talk or write about experience is not something that is subject to between-language variation.”

Moreover, this lack of accessibility to meta-awareness should have important consequences (p. 141):

“In the absence of such awareness, the L2 does not provide loci for (mis)generalization of L1 material. There is *transfer to nowhere*, since the blueprint established for the verbal expression of experience continues to function regardless.”

The results of the studies on the expression of motion that were reviewed in the previous chapter, however, showed a convergence between L1 and L2 thinking for speaking patterns in some cases. This seems to suggest that awareness may not be strictly necessary in order for transfer to take place.

3.2.5 Language modes

Another factor that plays an important role in language production in multilinguals is the (relative) level of activation of the languages. According to Grosjean (2001) bilingual speakers have various “language modes”. A language mode is “[...] the state of activation of the bilingual's languages and language processing mechanisms at a given point in time” (p.3). Bilinguals find themselves along a continuum from a completely monolingual mode to a completely bilingual mode. In the monolingual mode, the main language chosen (the so-called “base language”) is fully activated, whereas the other

language is only very slightly activated. In the intermediate position along the continuum, the “other” language becomes a bit more activated. In the bilingual mode, the other language becomes highly activated, although it remains less activated than the base language. A higher state of activation of the other language leads to more instances of cross-linguistic influence and code-switching or mixing due to both languages being considerably active at the same time. This process can be mediated by factors such as the person being spoken or listened to, the situation (e.g. degree of formality), the form and content of the message being uttered or listened to, the function of the language act (e.g. making a request), and specific research factors (e.g. the type of stimuli, or whether the objectives are known to the participant or not) (p.5). Similarly, trilinguals can find themselves in a monolingual mode, a bilingual mode, or a trilingual mode. Just as in bilinguals, the base language will always be the language that is most highly activated. In the bilingual mode, one of the two other languages becomes highly active, whereas the remaining language only shows a low level of activation. Finally, in the trilingual mode, both other languages become highly active. Factors such as these should be taken into account when conducting studies with trilingual participants.

3.3 Research on the expression of motion in L3 acquisition

Until quite recently, it was unusual for studies on L2 acquisition to take into account whether participants had knowledge of any language(s) other than their L1 and the language that was the object of study: the L2. Some exceptions of studies that did look explicitly at the influence of an L2 on the learning of an L3 in the context of European languages are: Vildomec, (1963; cited in: Ringbom, 1987), de Vriendt (1972; cited in Ringbom, 1987), Stedje (1977; cited in: Ringbom, 1987), Singleton (1983; cited in: Ringbom, 1987), and Mägiste (1984; cited in: Ringbom, 1987). It was not until the 1990s, however, that studies started to look more systematically at various aspects of tri- and multilingualism. In 1999, the first conference on L3 acquisition of the *International Association of Multilingualism* was held at the University of Innsbruck, Austria. The first book volume dedicated

to cross-linguistic influence in L3 acquisition was published in 2001 (Cenoz, Hufeisen, and Jessner, 2001). Despite the growing number of studies on the topic, studies on cross-linguistic influence at more conceptual levels remain scarce, and this especially holds for studies that have looked at the expression of motion in an L3. To the best of our knowledge, only one study (Trévisiol, 2012) has looked at this topic. In the next paragraph, this study will be reviewed²⁰.

Trévisiol (2012) conducted a study with twenty Japanese L3 learners of French who had English as their L2, and eleven native controls had to retell part of the silent movie *Modern Times* to a researcher in French and Japanese respectively. It was investigated how references to Time and Space were made in both languages. Regarding reference to Space (Motion), the results indicated the L3 learners of French preferred expressing the direction of motion, whereas native Japanese speakers preferred expressing dynamic location (i.e. the movement of a Figure inside borders defined by the Ground). The latter also used more complex predicates than the L3 learners to express information such as direction, Manner, deixis or causation. It was found that for prepositions used in spatial expressions, the L3 learners tended to attribute a single meaning to each form, and that even at relatively high proficiency levels, they seemed to have difficulties when they had to express inclusion and contact when a Figure was moving and crossing boundaries.

From the above, it becomes clear that there is a need for studies on L3 acquisition that look beyond the lexical and syntactic levels. Moreover, such studies could be used to test the current L3-acquisition models that have been discussed in section 3.2.

²⁰ Readers who wish to elaborate on other topics within the field of L3 acquisition are referred to Leung (2009) for studies conducted within the framework of Universal Grammar, Cenoz (2003), Koike and Palmière (2011), and Safont-Jordà (2011, 2015) for studies on pragmatics, Iverson (2010) for the role of Age of Acquisition, and Hufeisen (2000) and Dewaele (2010) for language learners' evaluations of their multilingualism. The book volumes edited by Cenoz, Hufeisen, and Jessner (2001), and Aronin and Hufeisen (2009), and Cabrelli Amaro, Flynn, and Rothman (2012) also provide comprehensive overviews of research topics within the field.

Chapter 4: Methodology

4.1 Introduction

In the previous two chapters, it has been shown that there are many levels at which the languages an individual speaks may influence each other, and that this influence may not only occur in a forward direction, i.e. from the L1 to the L2, L3 or Ln, but also in the opposite direction, i.e. from any language learned later in life to the L1 (Jarvis & Pavlenko, 2008). In addition, in Chapter 3 it has been shown that L3 acquisition differs fundamentally from L2 acquisition. Furthermore, the combinations of factors that may determine the amount and type of cross-linguistic influence are more complex in L3 acquisition.

The current literature justifies a study into the acquisition of motion expression in an L3 by learners with a typologically different L1 and a typologically similar L2, or a typologically similar L1 and a typologically different L2. This will be done within the framework of Talmy's typology (1985, 1991, 2000) and Slobin's *thinking-for-speaking* hypothesis (1991, 1996, 1997).

In this chapter, the research methodology used in the present study will be presented. The research questions and hypotheses will be presented first, followed by a detailed description of the different participant groups. After that, the research materials that were used to collect the data will be described in full detail. The pilot studies that were conducted to test the validity of these research materials will also be described briefly. Finally, it will be explained how the data were transcribed, codified, and analysed. The chapter will conclude with some general remarks about the participants and the research procedures.

4.2 Research questions and hypotheses

Based on the review of the literature in the previous chapters, the following research questions were formulated with respect to the acquisition of the expression of motion in an L3:

Research Question 1: What is the role played by the L2 and the L1 in the acquisitional pattern of the expression of motion events in the L3?

- a. Is the L2 the primary source of transfer regardless of typological closeness to the L3, or does typological closeness determine cross-linguistic influence to a large extent?
- b. Is the L1 always the primary source of cross-linguistic influence in the expression of motion in the L3, regardless of typological closeness?

Research Question 2: Is there any reverse transfer visible from the L2 and/or L3 to the L1 in the expression of motion events?

- a. In which ways is the expression of motion in the L1 by bilinguals and trilinguals different from that of monolinguals?
- b. Are there any differences regarding reverse transfer between bilinguals and trilinguals with the same L1?

With respect to these two research questions, the following hypotheses were formulated, again based on the results from previous studies and the predictions made by the models discussed in the previous chapters:

Hypothesis 1: The role played by the L2

- 1a.** If the L2 plays a major role in the acquisition process of the L3, independently of other factors, this influence is expected to occur irrespective of typological similarity between the L2 and the L3. In this case, each group of trilinguals is expected to pattern with the group of bilinguals that has the trilinguals' L2 as their L1: L1 English trilinguals will pattern with L1 French bilinguals, whereas L1 French trilinguals will pattern with L1 English bilinguals regarding their behaviour in the target language.

1b. If, on the other hand, in trilinguals the L2 does not play a unique major role in the acquisition process of the L3, we expect trilinguals and bilinguals who have the same L1 to show the same patterns in the target language.

Hypothesis 2: Reverse transfer

2a. Both bilinguals and trilinguals will show a behaviour in their L1 regarding the expression of motion that is different from that of monolinguals.

2b. Bilinguals and trilinguals with the same L1 will differ from each other due to the fact that the latter have learned and speak two additional languages and the former only one. In addition, for trilinguals with an L1 that is typologically similar to the L3 and an L2 that is typologically different, the difference with bilinguals with the same L1 will be larger, due to the trilinguals' acquisition and use of the typologically different L2.

4.3 Design of the present study

4.3.1 Research design

As has been discussed above, the aim of the present study is to investigate the nature of conceptual transfer in the expression of motion in an L3 and, more specifically, the roles played by the learners' L1 and L2 in this process. It will also be investigated whether there is any conceptual transfer in the backward direction, i.e. from the L3 and L2 into the L1. Given the nature of the research questions, and the fact that it is important to tease apart the possible effects of *L2 status* and typological similarity, it was deemed appropriate to conduct a cross-sectional study involving various participant groups. These participant groups will differ from each other regarding the typological similarity of their L1 and L2 with the target language, which will be kept constant in all cases. Spanish has been chosen as the most suitable option, because of the relatively large body of research on the expression

of motion in Spanish as an L2, which will provide more opportunities to compare the results of the present study with the ones of previous studies that have looked at the same target language.

With respect to the participant groups that will be needed to test the research hypotheses, it has been decided to include two experimental groups of trilinguals. For the first group, the L1 will be typologically different from the L3 Spanish regarding the expression of motion, whereas the L2 will be typologically similar. For the second group, the L1 will be typologically similar to the L3 Spanish, whereas the L2 will be typologically different. In order to avoid any additional confound variables due to the choice of different languages for each group of trilinguals, it was decided that the L1 of the first group should be the L2 of the second group, whereas the L1 of the second group should be the L2 of the first group. English and French were chosen as the best candidates, due to the existing body of research on the expression of motion in L1 and L2 acquisition in both languages, as well as the availability of participants. This choice leads to a first experimental group of trilinguals with L1 English, L2 French, and L3 Spanish (henceforth L1 English trilinguals), and a second one with L1 French, L2 English, and L3 Spanish (henceforth L1 French trilinguals).

In order to be able to pinpoint the differences between L2 acquisition and L3 acquisition of the expression of motion in Spanish, two control groups of participants learning Spanish as an L2 will be included as well. These bilingual participants will have the same L1s as the two groups of trilinguals, but will not speak the L2 of the trilinguals. This leads to a first group of bilinguals with L1 English and L2 Spanish (henceforth L1 English bilinguals), and a second one with L1 French and L2 Spanish (henceforth L1 French bilinguals). This second group of bilinguals will be especially interesting, because not many studies have looked into the acquisition of a verb-framed language by speakers of another verb-framed language.

To enable the investigation of reverse transfer, two groups of monolinguals speaking the L1s of the groups of bilinguals and trilinguals, English and French, will be included as well. A third group of Spanish monolinguals will be included to enable a direct comparison of the bilinguals' and

trilinguals' behaviour with that of monolingual speakers of the target language. In addition, the three groups of monolinguals will allow for a comparison with previous work on the expression of motion by monolinguals of typologically different languages. An overview of the participant groups can be found in Table 4.1 below.

Table 4.1: Participant groups used in the present study.

Groups of Trilinguals (Experimental)	Groups of Bilinguals (Control)	Groups of Monolinguals (Control)
L1 English - L2 French – L3 Spanish (L1 English trilinguals)	L1 English – L2 Spanish (L1 English bilinguals)	English (English monolinguals)
L1 French - L2 English – L3 Spanish (L1 French trilinguals)	L1 French – L2 Spanish (L1 French bilinguals)	French (French monolinguals) Spanish (Spanish monolinguals)

With respect to the other characteristics of the participant groups, such as proficiency and language use, it has been decided that, in the groups of bilinguals and trilinguals, these should be kept as constant as possible. Furthermore, both groups of trilinguals should have started learning their L3 Spanish at least a few years after they have started learning their respective L2s in order to have a clear distinction between the L2 and the L3. Moreover, the proficiency level of the bilinguals and trilinguals in their L2/L3 should be at least intermediate to advanced given the nature of the research materials, which will be described in detail in the next section.

4.3.2 Materials

The research materials used in the present study consisted of the following:

- A language background questionnaire.
- A language test at the level B2 of the *Common European Framework of languages* (European Council 2001), which was part of an official test from the *Escuela Oficial de Idiomas* ‘Official Language School’ in Barcelona, Spain. This test was available in English, French, and Spanish.
- The wordless picture book *Frog, Where are You?* (Mayer, 1969), also known as the ‘frog story’.
- A word list containing some key terms needed to narrate the frog story.
- A questionnaire with questions about participants’ communication strategies and awareness of cross-linguistic influence, their language use during the past month, and the perceived typological distance between Spanish and the other language(s) they spoke.

4.3.2.1 Language background questionnaire

The language background questionnaire contained questions about the participants’ age, education, language use, age of onset and self-rated proficiency in the languages they spoke, when and with whom they used these languages, where they had learnt them, and where they had been living during their lives²¹. The complete language background questionnaire is found in Appendix I²².

4.3.2.2 EOI language tests

In order to assess the proficiency level of the bilingual and trilingual participants in their L2 and L2/L3, they were given a paper-and-pencil language test at the beginning of the sessions in which

²¹ For the monolingual participants, the background questionnaire also contained a question about tip-of-the-tongue states due to the fact that these participants did not fill out the communication strategies’ questionnaire.

²² Due to space limitations, only the trilingual English versions of the questionnaires have been included in the Appendices.

they would be interviewed in these languages. These language tests were part of official exams, which had been administered earlier at the *Escuela Oficial de Idiomas (EOI)* ‘Official Language School’ in Barcelona, Spain. The advantage of using these tests from the *EOI* was that the scoring procedure and the requirements to pass the test were the same for each language, which means that the scores can be compared directly between languages. In addition, as will be explained in more detail in section 4.5, participants had already been using their L2 or L3 to complete the test before telling the frog story, which increases the likeliness of the language being fully or at least more activated at the time of the narration (cf. Grosjean, 2001).

Due to time constraints and because the aim of administering the language test was to get an indication of the participant’s actual proficiency level, it was decided to use only part of each exam. The part that was selected was the one that was called *Uso de la Lengua* ‘Language use’. This was deemed to be the most indicative of the participants’ actual level when speaking the language, as opposed to understanding or writing it. In each language, the maximum score that the participants could obtain on the test was 20 points. The only difference between the English, French, and Spanish versions of the test was that the Spanish test was shorter than the other two, which means that participants obtained more points for each question that they had answered correctly. The complete language tests can be found in Appendices I-IV.

4.3.2.3 The frog story

In order to elicit a sufficient number of motion expressions, and to ensure that all participants would describe the same events, it was decided to use the wordless picture book *Frog, Where are You?* (Mayer, 1969), also known as the ‘frog story’. The advantage of using a wordless picture book is that it gives participants considerable freedom to tell the story the way they would like to tell it, while they are all describing the same pictures. Moreover, the frog story has been used by a large number of previous studies, not only on the expression of motion, but also on various aspects of discourse

organization, temporality and lexical coherence (e.g. Berman & Slobin, 1994, Kaufman, 2001; Strömqvist and Verhoeven, 2004). Another advantage of using a wordless picture book is that it can be used even when there is no access to computers or the Internet, as was the case in the majority of sessions with the participants. Using a wordless picture book also has some disadvantages, however. First, because the pictures are static, participants have to infer the motion events that take place, and may do so in unexpected ways. (cf. Naigles et al., 1998). Second, the frog story was originally intended for young children, which may make some participants feel awkward at the beginning (cf. Berthele, 2009) Nevertheless, given the circumstances in which the data for the present study would be gathered, the frog story was deemed to be the best choice.

The frog story itself consists of a set of 24 pictures (drawings) that tell the story of a boy and a dog, who have captured a frog. During the night, the frog escapes, and the boy and the dog go searching for it. During their search, they leave the house and go to the forest, where they run into all kinds of animals. These encounters involve a large number of motion events. At the end of the story, the boy and the dog find their frog in a forest pond, after which they take it back home with them. The complete frog story can be found in Appendix V.

4.3.2.4 Word list

To avoid any unnecessary difficulties during the narration of the frog story caused by a lack of vocabulary knowledge, it was decided to create a word list that contained the key terms needed to describe the main scenes from the story. The list contained a total of fourteen pictures of key objects and characters together with their names in the target language of the session. It was decided to use pictures instead of L1 translations to avoid any unwanted activation of L1 words and concepts. This unwanted activation of concepts is also the reason why only nouns were included in the list; the use of these nouns was expected to be similar across languages, whereas for verbs, there were likely to

be differences, especially with respect to the expression of Manner and Path and the boundary-crossing constraint. The word lists can be found in Appendices VI-VIII.

4.3.2.5 *Communication strategies' questionnaire*

To get a better insight into participants' awareness of cross-linguistic influence between the languages they spoke, as well as to assess the typological distance they perceived between English, French, and Spanish, a questionnaire with questions about the participants' communication strategies (cf. Dörnyei and Scott, 1997) and reported instances of cross-linguistic influence was designed by the researcher. However, due to the amount and richness of the data in the present study, only the last part of this questionnaire could be included in the analysis of the data. The complete questionnaire can be found in Appendix IX.

4.3.2.6 *The pilot studies*

All research materials and instructions were piloted three times to check whether the research procedure worked smoothly, and whether the research materials elicited the types of data they were meant to elicit.

During a first pilot study, which was conducted in Barcelona, six participants narrated the frog story in L1 Spanish, one in L1 French, and six in L1 English. Of the six English-speaking participants, two participants narrated the story in L2 Spanish as well, one directly before narrating the frog story in L1 English, and the other one directly afterwards. The participants consisted of undergraduate students from the University of Barcelona and language teachers. The pilot did not reveal any major problems with the use of the frog story for eliciting motion expressions.

A second pilot study was carried out at the *EOI* in Barcelona, Spain, and during a local private French class, in order to test the use of the frog story in combination with the instructions in the target language with students from the target population (i.e. bilingual and trilingual students

with an intermediate to advanced proficiency level in their L2 or L3). This time, a short word list containing some key terms for describing the scenes from the frog story was piloted as well. This word list consisted of a list of key terms in the target languages together with their translations in the L1 of the participants. A first version of the two questionnaires was piloted as well. A total of eleven bilingual and trilingual students from the *EOI* and the private French class participated in the experiments. Due to time constraints, however, the experiments could only be conducted in one of the participant's languages. The results were used to fine-tune the instructions and the questions from the questionnaires.

The pre-final versions of the materials were tested in a third pilot study, which was conducted in The Netherlands with family members, friends and acquaintances of the researcher. However, because none of the participants knew any French or Spanish, the experiments could only be conducted in English. Nevertheless, the prior pilot studies had not revealed any differences between the languages regarding problems with the research procedure or parts of the questionnaires that were unclear. The final version of the word list was piloted as well during this pilot study. A total of eight participants told the frog story in English. For two of them, English was their L1, whereas for the remaining six, it was their L2.

The final version of the communication strategies' questionnaire was piloted separately with three MA students from the University of Barcelona.

4.4 Participants

In the next sections, the characteristics of the participants will be described separately for each group of monolinguals, bilinguals, and trilinguals. With the exception of four of the French monolinguals, all participants were recruited via friends and acquaintances of the researcher, announcements posted at their universities, or by signing up on a participant list after a short talk given by the researcher at the beginning of one of their Spanish classes. The data from the four French monolinguals were

taken from the *Lyon Corpus* (Hickmann and Kern, doi:10.21415/T5X30G), which is freely available at the CHILDES website: <http://childes.talkbank.org>.

4.4.1 English monolinguals

The English monolinguals ($n = 6$; five female, one male) were students at the University of Alberta in Edmonton, Canada ($n = 4$) and two students at a hairdressing academy in Cork, Ireland. Their mean age was 21.7 ($SD = 2.50$). Some of them reported elementary knowledge of Cantonese, German, Irish, Konkani or Tamil.

4.4.2 French monolinguals

The French monolinguals ($n = 7$) were all from France. The participants interviewed by the researcher were students at the University of Aix-Marseille ($n = 1$), and the University of Montpellier ($n = 2$). The mean age of the participants interviewed by the researcher was 20.3 ($SD = .577$). They all reported having elementary knowledge of at least two other languages. These languages were: English, Portuguese, and Spanish. For the participants from the *Lyon corpus*, the mean age could not be computed, because the participant's age was not mentioned in the file. As far as could be deduced from a short background interview at the beginning of each file, they did not know any language other than French to a considerable extent.

4.4.3 Spanish monolinguals

The Spanish monolinguals ($n = 13$; eight female, five male) were students at the Autonomous University of Madrid ($n = 6$), the University of Zaragoza ($n = 3$), and friends of a fellow PhD-student ($n = 4$), who all lived in the metropolitan area of Madrid. Their mean age was 30.4 ($SD = 16.865$). Some of them reported basic knowledge of one or more other languages, namely: Chinese, English, French, German, Greek, and Italian.

4.4.4 L1 English bilinguals

The L1 English bilinguals ($n = 6$; three female, three male) were students at the University of Alberta in Edmonton, Canada ($n = 4$), and American exchange students at the University of Barcelona, Spain ($n = 2$). Their mean age was 21.2 ($SD = 1.47$), and they had started learning Spanish at a mean age of 13.6 ($SD = 4.72$). Some of them had elementary knowledge of Catalan, French, Hindi or Italian. One of them reported having learned Spanish in an immersion programme during the first years of exposure to the language. Apart from the two exchange students in Barcelona, who had been there for about two to three months at the time of the first interview with the researcher, two of the participants from Edmonton reported having stayed in a Spanish-speaking country for a period of, respectively, eight months and two years.

4.4.5 L1 French bilinguals

The L1 French bilinguals ($n = 5$; all female) were students at the University of Aix-Marseille in Aix-en-Provence, France. They were all enrolled in Spanish courses at the time the interviews were conducted. Their mean age was 18.2 ($SD = .447$), and they had started learning their L2 Spanish at a mean age of 13.0 ($SD = .707$). Some of them reported elementary knowledge of Catalan, English, Latin, Portuguese or Russian. None of them reported having studied abroad.

4.4.6 L1 English trilinguals

The L1 English trilinguals ($n = 6$; three female, three male) were all students at the University of Alberta, Edmonton, Canada. Their mean age was 21.0 ($SD = 2.28$). They reported having started learning their L2 French at a mean age of 9.0 ($SD = 5.18$), and their L3 Spanish at a mean age of 16.3 ($SD = 2.86$). Three participants reported having learned French in an immersion programme during the first years. None of the participants reported having stayed abroad in a French-speaking or Spanish-speaking country.

4.4.7 L1 French trilinguals

The L1 French trilinguals ($n = 27$; twenty female, seven male) were students at Concordia University in Montreal ($n = 9$), students at Laval University in Quebec City ($n = 6$), both in Canada, as well as students from the University of Montpellier, France ($n = 10$), one French exchange student at the University of Barcelona, and one student at the *EOI*, also in Barcelona, Spain, who was originally from France. Two of the students from Concordia University were originally from France as well. The mean age of the L1 French trilinguals was 23.6 ($SD = 2.37$), and they had started learning their L2 English at a mean age of 10.1 ($SD = 2.37$), and their L3 Spanish at a mean age of 15.2 ($SD = 4.22$). Some participants reported elementary knowledge of Créole, Dutch, German, Italian, Mandarin, Moroccan, Polish, Portuguese or Russian. Some participants reported stays abroad in an English-speaking or Spanish-speaking country, for periods ranging from two months to ten years.

4.5 Research procedure

The research procedure was virtually identical for all groups of participants. The only difference was that the monolingual participants had only one session with the researcher, the bilingual participants two, and the trilingual participants three²³. The participants would meet with the researcher²⁴ in an empty (class)room or, when there were no classrooms available, in a quiet corner of a hallway or in the university's garden. Two participants met with the researcher at the hotel where she was staying. The researcher would welcome the participant, and continue with the instructions. These instructions were always given in the language of the session. Canadian participants had to read and sign a consent form written in their L1 at the beginning of the first session, due to ethics regulations. Participants from the other countries gave their consent during an e-mail conversation with the researcher prior to the interview, or by participating in the interview. If the language of the session

²³ In the original research design, all participants would be interviewed by a native speaker of the target language of each session. However, due to practical constraints, as well as ethics regulations in Canada, this was not feasible in the end.

²⁴ The two English monolinguals from Cork were interviewed by a fellow PhD candidate. She was a native speaker of French and interviewed the participants at their hairdressing academy.

was not the participant's L1, he or she would be given the *EOI* language test. The instructions of the language test were as follows:

“This is a short language test. It consists of two²⁵ texts and a number of sentences with blanks in them. You'll have to fill in the blanks. Please circle the correct answer for each item. You'll have 30 minutes to complete the test”

The participants were then given exactly 30 minutes to complete the test. However, if they finished earlier, the researcher would proceed to introducing the next experiment.

The main experiment of the session was always the narration of the frog story. The researcher would start the two audio recorders (Sony ICD-MX20) and mention the participant's code, the number of the session (one, two, or three), and the language in which the session would take place (English, French, or Spanish). The participant was shown the booklet, and then given the instructions to tell the story, which were as follows:

“I am now going to show you the story. It's a story about a boy, a dog, and a frog. I would like you to look at all the pictures and to tell me the story, okay? And I also give you a list of things that are in the story”

After that, the participant narrated the story in the language of the session. There was no time limit.

Once the participant had finished telling the story, the audio recorders were paused, and the participant was given the language background questionnaire if the session was the first one. The researcher would check whether the participant reported knowing any languages other than English, French, or Spanish in the case of trilinguals, English/French and Spanish in the case of bilinguals, and the L1 in the case of monolinguals (the last question of the questionnaire), and if applicable, whether the self-rated proficiency in these languages was three or higher on a scale of one to seven. If this was the case, the researcher would ask participants who had rated their proficiency as being

²⁵ In the Spanish version of the test, there was only one text.

three or four to tell what a day at the University looked like in this language. Based on how fluently and correctly they were able to answer this question, the researcher would decide whether the participant would be excluded from the study or not. Participants who reported a proficiency of five or higher were excluded directly, whereas participants who had reported a one or a two were kept in. Bilingual and trilingual participants filled out the communication strategies' at the end of their last session with the researcher. Depending on the country, participants were paid six dollars or six euros at the end of each session for their participation²⁶. The layout of the sessions for each group of participants can be found in Table 4.2. For the bilingual and trilingual participants, sessions would be about one month apart to minimize the effects of participants remembering how they had told the story. In addition, the order of the languages was counterbalanced and participants were semi-randomly assigned to one of the possible orders upon signing up for the study: the first participant to sign up would be assigned to the first possible order, the second one to the second, etc. When all possible orders of the languages had been covered, the assignment would start again with the first possible order. An overview of the possible orders of the languages for bilingual and trilingual participants is found in Table 4.3.

²⁶ I am grateful to the journal *Language Learning* for supporting this research in the form of a *Language Learning Grant*.

Table 4.2: Layout of the sessions

Participant Group	Session 1	Session 2	Session 3
Monolinguals	- Frog story - Language Background Questionnaire	X	X
Bilinguals	- <i>EOI</i> test if session not in L1 - Frog story - Language Background Questionnaire	- <i>EOI</i> test if session not in L1 - Frog story - Communication Strategies' Questionnaire	X
Trilinguals	- <i>EOI</i> test if session not in L1 - Frog story - Language Background Questionnaire	- <i>EOI</i> test if session not in L1 - Frog story	- <i>EOI</i> test if session not in L1 - Frog story - Communication Strategies' Questionnaire

Table 4.3: Possible orders of the languages for bilingual and trilingual participants

L1 English bilinguals	L1 French bilinguals	L1 English trilinguals L1 French trilinguals
1. EN - SP 2. SP - EN	1. FR - SP 2. SP - FR	1. EN - FR - SP 2. EN - SP - FR 3. FR - EN - SP 4. FR - SP - EN 5. SP - EN - FR 6. SP - FR - EN

EN: English, **FR:** French, **SP:** Spanish

4.6 Data codification and analyses

In the next sections, it will be described in detail how the data from the experiments were transcribed, coded, and analysed. This will be done separately for the frog-story data and the questionnaire data. Quantitative and more qualitative analyses will be explained separately as well.

4.6.1 Transcription of the frog-story data

The frog-story recordings made with the two audio recorders were first transformed from the original *MSV*-format into a *WAV*-format. In this way, they could be opened by software such as *QuickTime* on both Windows and Macintosh platforms. All transcriptions were made according to the *CHILDES* format (MacWhinney, 1991) using the *CLAN* programme (Version 07 aug 13), which is freely available from the *CHILDES* website: <http://childes.talkbank.org> The stories were first transcribed and then divided into clauses according to the clause-based analysis proposed by Berman and Slobin (1994).

4.6.2 Codification of the frog-story data

After the *Frog Stories* had been divided into clauses, the clauses containing motion expressions were marked by adding the dependent tier *%xmov*. Then, it was determined which category of Motion was present in the clause. These categories of Motion were based on the construction-based classification of motion verbs made by Cifuentes Honrubia (1999) and Cadierno and Ruiz (2006), which has been discussed in detail in the previous chapter. However, because it was of special interest to the present study how the boundary-crossing constraint would manifest itself across languages, and due to the fact that the category of *Change of Position* cannot occur in combination with a boundary-crossing due to its feature of *-Directionality*, it was decided to separate this category from the categories of *Displacement* and *Manner*, called *Path* and *Manner* in the present study, because these two categories do have the feature *+Directionality* and can occur in combination with a boundary-

crossing²⁷²⁸. In addition, the percentage of clauses containing a *Change of Position* may vary across languages and participant groups. This would make the comparison between languages and participant groups regarding the use of Path verbs and Manner verbs, or other elements for making reference to Manner with or without a boundary-crossing, very opaque if verbs denoting a *Change of Position* were included in the percentages. The category of *Change of Position* will therefore only be counted in the general overview of the different categories of Motion present in the data, and will not be analysed any further. The categories of *Path* and *Manner* are taken together in this overview under *Translational Motion*. Another difference with previous studies is that the category of *Manner* does not only include clauses in which a Manner verb has been used, but also clauses in which a participant has made reference to Manner by using some other type of element (cf. Cadierno and Ruiz, 2006). This will make it possible to determine whether participants differ in the total amount of reference they make to Manner between clauses with and without a boundary-crossing, or whether this difference is only visible in the use of Manner verbs.

The following categories of Motion could be marked in the %*xmov* tier:

\$COP: Change of Position

\$FIC: Fictive Motion

\$NTM: Non-translational Motion

\$OTH: some other type of Motion not fitting into one of the previous categories

\$MAN: indicates that the participant had made reference to a Manner verb in a clause containing Translational Motion

²⁷ *Path* was deemed to be a more appropriate term than *Displacement* for the analyses of the present study, because constructions in which a participant uses a Manner verb also involve some kind of displacement of the Figure. Moreover, constructions in which a participant makes reference to Manner may involve the use of a (bare) Path verb, and therefore also displacement, while Manner is expressed by other means.

²⁸ Although it is true that, in some cases, Manner verbs may appear in constructions that lack the feature of *Directionality*, such as *run everyday* (Cadierno and Ruiz, 2006: 194), these constructions are extremely infrequent in frog- story data.

\$PTH: indicates that the participant had only mentioned the Path of motion in a clause containing Translational Motion

Once the main categories had been identified, for the categories of *Path* and *Manner* it was determined whether the clause contained a boundary-crossing, and whether the participant had made reference to one or more Ground elements. For the English data, it was also determined whether the clause contained one or more satellites. It was decided to use the analysis proposed by Croft et al. (2010, in: Muñoz Carrasco, 2015: 17) and to include as a satellite “ [...] anything that is not a verb root but encodes an event component [...]”. If a clause contained more than one Ground element or satellite, the number of elements was added to the code (e.g. *GR2*, which indicates that a participant makes reference to two different Ground elements within the same clause). The following codes were used:

BC: boundary-crossing

GR: +Ground

SAT: satellite

Additionally for the category of *\$MAN*, it was analysed how this Manner had been expressed: by a Manner verb, an adverbial expression (e.g. a subordinate Manner clause), a Gerund, or a more general description of Manner (e.g. an adjective or an onomatopoeia such as *splash*). A clause could contain more than one Manner element. If the same element occurred more than once within the same clause, the number of elements was added to the code. This only holds for the types of elements other than Manner verbs, however. The following codes were used:

MAV: Manner verb

ADV: adverbial expression

GER: gerund

OTM: ‘Other Manner’: a more general description of Manner

After the *Frog Stories* had been coded, 10% of the 3121 motion clauses in the data were selected by a random number generator available at <http://www.random.org> to be re-coded by the same coder. Out of these 312 clauses, 20 clauses were coded differently the second time, leading to an intrarater-reliability of 0.936, which is acceptable.

4.6.3 Some issues regarding the codification of the frog-story data

Although the classification of the verbs into the different categories of Motion was based on the classifications made by previous research on Motion in English, French, and Spanish (Cadierno and Ruiz, 2006; Cifuentes-Honrubia, 1999; Cifuentes-Férez, 2009; Hijazo-Gascón, 2011; Kopecka, 2004, 2006, 2009; Morimoto, 2001) for English, French, and Spanish, some theoretical issues remained to be resolved before coding the frog-story data. The first issue was that the same verb was sometimes classified differently by different authors. An example is the verb *coger* in Spanish, which is classified as a verb denoting a *Change of Position* by Cadierno and Ruiz (2006), and a verb from the ‘Other’ category by Hijazo Gascón (2011), whereas it was not classified as a motion verb at all by Cifuentes Honrubia (1999) and Cifuentes Férez (2009). The second theoretical issue was that a verb that appeared to have the same meaning in two languages, received a different classification depending on the language. An example is the verb *escapar* ‘escape’ in Spanish, and its English counterpart *escape*, which Cifuentes-Férez (2009) classifies as a verb expressing both *Path* and *Manner* in Spanish, but as a verb expressing only *Path* in English. The third theoretical issue that remained to be resolved was the classification of pronominal verbs and non-pronominal verbs in

Spanish (e.g. *ir(se)* ‘go (away)'). Previous studies have not always been consistent in their treatment of the pronominal and the non-pronominal form of a verb as the same or different forms. An example is the verb *marchar(se)* ‘walk/go away), which Cadierno and Ruiz (2006) treat as one verb, whereas Cifuentes Férez (2009) treats *marchar* ‘walk’ and *marcharse* ‘go away’ as two different forms. The pronominal and the non-pronominal form of the verb *ir(se)* ‘go (away)’ are treated by the same author as one and the same form, however.

With respect to the first two theoretical issues, it was decided to analyse the actual use of these verbs by the participants in the present study. In case of doubt, dictionaries in the three languages were consulted to get an impression of the possible meanings and uses of each verb, both within and across languages. The dictionaries that were consulted were: the *Diccionario de la lengua Española* (Real Academia Española. Available online: [http:// www.rae.es](http://www.rae.es)), the *Dictionnaire de français* and the *Dictionnaires bilingues de français anglais et français – espagnol* (Larousse. Available online: <http://www.larousse.fr>, as well as *The Oxford Spanish Dictionary: Spanish-English, English-Spanish* (2008). In this way, *coger* ‘take’ was finally classified as a verb denoting a *Change of Position* due to its use in constructions like:

- (1) y el ciervo pues coge [MAD01]
and the deer well take.3SG
‘and the deer well takes (the boy)’

The verb *escape*, in turn, was classified as a *Path* verb. Cifuentes Férez (2009) classified this verb as a *Manner* verb in Spanish, because, according to her analyses, it expresses a fast rate of Motion. Nevertheless, the frog-story data, where it was mainly used to describe the frog’s escape by tiptoeing out of the jar, did not coincide with a use to describe a fast rate of Motion. Therefore, it was decided to classify it as a *Path* verb.

With respect to the distinction between pronominal and non-pronominal verbs, it was decided to follow the analysis made by Hijazo Gascón (2011), and to treat them as separate forms. In addition, their use by the participants in the present study supported a (small) difference in meaning between the pronominal and the non-pronominal form for most verbs.

Other issues with respect to the codification of the frog-story data were related to the use of non-target-like forms by the bilingual and trilingual participants in their L2 and/or L3. L1 French participants, for instance, sometimes used the verb *poner* ‘put’, denoting a *Change of Position*, in contexts where Spanish monolinguals would use *meter* ‘put into’, denoting *Translational Motion*. It was decided to treat these instances of *poner* as verbs denoting a *Change of Position*, also due to the fact that in both English and Spanish, *put* and *mettre* ‘put’ do not seem to possess the feature of *+Directionality*. In these languages, both can be used to describe Translational Motion, however, by combining them with directional satellites or prepositions.

A similar approach was taken with non-target-like forms that were insertions of a verb from the L1 or the L2 without any modifications, such as the English verb *drop* in one of the *Frog Stories* told in L2 Spanish. It was decided to treat these forms as separate verbs, and to assign them to the categories they belonged to in their source language, because they seem to reveal at least some activation of concepts in the source language (cf. Grosjean, 2001). In this way *drop* was classified as a Manner verb in the Spanish data set. Similarly, it was decided to treat lexical inventions and coinages such as *atacarse* ‘get attacked’ and *grimpar* ‘climb’ as separate verbs in all cases.

4.6.4 Questionnaire data

The questionnaire data for each participant were entered into an *SPSS*-file (*SPSS* Versions 21-23) together with his or her frog-story data. They were also entered into a separate *Excel*-file (*Office* 2011) to be able to compute medians and standard deviations should *SPSS* be temporarily unavailable.

4.6.5 Analysis of the data

The frog-story data were analysed using the *freq* and the *KWAL* commands in the *CHILDES* program (MacWhinney, 1991). The *freq* command was used to compute the number of occurrences of each Motion category, as well as the number of occurrences of the different sub-codes that could occur with *Path* and *Manner* clauses, and which have been described above. For instance, the string \$MAN:*ADV* would be entered to look for clauses containing adverbial expressions. ‘*’ means that any other sub-code could occur before or after *ADV*, as in \$MAN:MAV:ADV:GR:BC, which refers to a clause containing a boundary-crossing in which the participant has made reference to Manner by using a Manner verb and an adverbial expression, and has mentioned one Ground element. The outcomes of the *freq* analyses were then used to compute the percentages of *Path* and *Manner* clauses with and without a boundary-crossing, as well as the percentage of Manner being expressed within and outside the verb.

The *KWAL* command was used to analyse the types and tokens of motion verbs, as well as items from the *Other* category that were used in motion expressions. The outcomes of this analysis would be used to create the lists of motion verbs and other items used for describing motion events that were used by each group of participants in each of their languages. They were used as well to compute the lexical richness for each category.

4.6.5.1 Statistical analyses used

Given the low numbers of participants, a normal distribution of the data could not be assumed. Therefore, it was decided to use non-parametric tests for the statistical analyses of the present study. The tests that were used were the *Kruskal-Wallis* test for independent measures if comparisons had to be made between more than two different participant groups. The significance level α was set to .05. If the results of this *Kruskal-Wallis* test turned out to be significant, post-hoc *Mann-Whitney U* tests were used to determine between which groups the differences were significant. However, in order to

minimize the risk of making a Type I Error by incorrectly rejecting a hypothesis, the significance level of these post-hoc Mann-Whitney U tests was set to the number of Mann-Whitney U tests that had to be carried out divided by the original significance level of .05. For example, if three post-hoc Mann-Whitney U tests would have to be carried out in order to pinpoint between which groups the differences were significant, the new significance level would be $.05/3 = .0167$. If comparisons had to be made within the same group of participants (e.g. to determine whether the proficiency levels in the L2 and the L3 were significantly different), the non-parametric *Wilcoxon signed-ranks* test was used. The significance level α was again set to .05.

However, because the tests described above do not function correctly when raw percentages are used, the arcsine of the square root of each percentage was computed in *SPSS*. (cf. Hijazo-Gascón, 2011). In this way, the percentages are transformed into angular values. This improves the homogeneity of variance. This arcsine of the square root is expressed in radians, which have a value between $-\pi/2$ and $\pi/2$.

In order to see whether there were any significant associations between participants' background factors, such as proficiency and age of onset, and their linguistic behaviour, correlational analyses were carried out. The non-parametric *Spearman's Rho* was used for these analyses, because a normal distribution of the data could not be assumed. The tests were carried out on the raw percentages and values of the questionnaire data.

4.6.5.2 Qualitative analyses

The analyses of the data that were more qualitative, such as the use of Manner verbs in combination with a boundary-crossing or event conflation, were carried out by using the *KWAL* command in *CHILDES* and looking for the string \$MAN:MAV*BC*, in the case of Manner verbs that had been used in combination with a boundary-crossing, and *GR2* in the case of event conflation²⁹. The

²⁹ There were no clauses in the data set that contained more than two Ground elements.

analysis of the number of segments mentioned when describing the deer scene was carried out by counting the numbers of segments in each file and writing them down in the dependent tier *%dee6* for the division of the deer scene into six segments, and the dependent tier *%dee4* for the division of the deer scene into four segments. The numbers of occurrences could then be computed by using the *freq* command.

4.7 Some observations

Although every effort was made to ensure that the time interval between two sessions in the bilingual and trilingual participants was about one month, two of the L1 French trilinguals told two of their *Frog Stories* on consecutive days, or with one day in between the sessions, because otherwise they would not be able to participate in all three sessions. Some of the participants did not show up after the first or the second session, but the available data were nevertheless included in the analyses³⁰. This is the reason why, within participant groups, the number of participants differs between languages. One L1 French trilingual did not fill out the language background questionnaire, and therefore, her background data could not be included in the correlational analyses or to compute the mean age and ages of onset of the participants.

³⁰ Participants had the right to officially withdraw from the study, as well as to state that they would not allow their data to be used. None of the participants did this, however.

Chapter 5: Results

5.1 Introduction

In this chapter, the results of the analyses carried out on the data, and which were described in detail in the previous chapter, will be presented. This will be done separately for each analysis. In paragraph 5.2, the outcomes of the exploratory analyses of the bi- and trilingual data will be discussed briefly. These were carried out to investigate whether there were any confound variables between and within the different groups of bi- and trilingual participants caused by differences in proficiency level, language use, and order of testing. In paragraph 5.3, the participants' general linguistic behaviour when telling the frog story will be analysed, highlighting significant differences. In paragraph 5.4, then, the lexical richness of the frog stories, as well as the types of motion expressions produced by the different groups of participants will be examined in more detail. Subsequently, in paragraph 5.5, it will be investigated how participants from different participant groups make reference to Manner in each of their languages, and how they express Manner in combination with a boundary-crossing. Similarly, in paragraph 5.6, the expression of Path will be analysed. In paragraph 5.7, event granularity and event conflation in the so-called 'deer scene' will be analysed to pinpoint the role of language-specific patterns of event packaging. In order to see which linguistic and background factors could be used to predict participants' linguistic behaviour, the significant correlations that were found between these factors will be presented in paragraph 5.8. The chapter will be concluded with a summary of the results in paragraph 5.9.

5.2 Exploratory analyses of the bi- and trilingual data

In this paragraph, it will be analysed whether there were any significant differences in proficiency level and language use between the various groups of bi- and trilinguals that could affect the interpretation of the results that will be presented in the next paragraphs of this chapter. For the group of L1 French trilinguals, it will also be analysed whether testing order had had any significant

effects on linguistic behaviour. This analysis could not be carried out on the data of the L1 English trilinguals due to the low number of participants in these groups.

The different participant groups were compared by means of Mann-Whitney U tests. Each test compared two groups: bilinguals vs. trilinguals, L1 English bilinguals vs. L1 French bilinguals, L1 English trilinguals vs. L1 French trilinguals, L1 English bilinguals vs. L1 French trilinguals, L1 French bilinguals vs. L1 English trilinguals, and L1 English bi- and trilinguals taken together vs. L1 French bi- and trilinguals taken together.

5.2.1 Proficiency level

With respect to the proficiency level in Spanish, no significant differences were found. There was a marginally significant difference, however, between the groups of L1 English trilinguals and L1 French trilinguals ($p = .082$), indicating a trend of L1 French trilinguals having a higher proficiency level in Spanish than L1 English trilinguals. Apart from this difference approaching significance, English speakers were no more proficient in Spanish than French speakers, bilinguals no more than trilinguals, English bilinguals no more than French bilinguals, and English trilinguals no more than French trilinguals.

For both groups of trilinguals, the proficiency levels in L2 English and L2 French could be compared as well, because both had been obtained by means of the EOI test for the B2 level, and the scoring procedure had been the same. The results of the Mann-Whitney U test indicated that L1 French trilinguals had a significantly higher proficiency in L2 English than the L1 English trilinguals had in L2 French ($p = .000$). The percentages are shown in Figure 5.1 below. Additionally, within each group of trilinguals, the proficiency levels in the L2 and the L3 were compared. The outcomes of the Wilcoxon signed ranks test indicated that L1 French trilinguals had a significantly higher proficiency in L2 English than in L3 Spanish ($p = .049$). The results are shown in Figure 5.2. For L1 English trilinguals, no significant difference was found between the proficiency levels in L2 French and L3 Spanish.

5.2.2 Language use

Regarding the % of use that the bi- and trilingual participants had reported for each of their languages during the month and year previous to the first session with the researcher, the results found for the participants' L1 showed that L1 English participants had used their L1 significantly more often than L1 French participants, both during the past month ($p = .023$) and during the past year ($p = .018$). The percentages are found in Figures 5.3 and 5.4, respectively. When comparing bilinguals and trilinguals in general, however, there were no significant differences. The comparisons of the English and French bilinguals showed that the English bilinguals had used their L1 significantly more often than French bilinguals, but only during the past year ($p = .030$). These percentages can be found in Figure 5.5. When comparing English and French trilinguals, there were no significant differences regarding L1 use. L1 English trilinguals, however, had used their L1 significantly more often than L1 French bilinguals, both during the past month ($p = .004$) and during the past year ($p = .017$). These percentages are shown in Figures 5.6 and 5.7, respectively. There was no significant difference between L1 French trilinguals and L1 English bilinguals.

Regarding the use of Spanish, which was the bilinguals' L2 and the trilinguals L3 and of major interest in this study, no significant differences were found. This means that the use of Spanish is the same across all groups of bilinguals and trilinguals, both during the past month and during the past year.

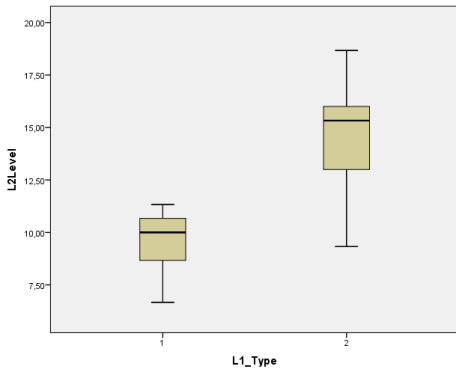
For the two groups of trilinguals, the use of their respective L2s, English and French, was compared as well. It was found that L1 French trilinguals had used their L2 English significantly more often than L1 English trilinguals had used their L2 French, both during the past month ($p = .002$) and during the past year ($p = .002$). The percentages are shown in Figures 5.8 and 5.9, respectively. Within both groups of trilinguals, the outcomes of the Wilcoxon signed ranks test indicated that L1 French trilinguals had used their L1 significantly more often than their L3, but only during the past month ($p = .039$). The percentages are shown in Figure 5.10. A marginally significant

difference was found for the use of the L1 and the L2, also during the past month ($p = .055$), indicating a trend of the L1 having been used more often. For the L1 English trilinguals, no significant differences were found between the use of the L1 and their other languages.

5.2.3 Order of testing

In addition to the background factors mentioned in the previous paragraphs, it was tested whether the order of testing (i.e. the order of the languages of the testing sessions) had had any effect on language production in each language a participant spoke. Due to the small number of participants and to the fact that there were six possible orders of testing for trilingual speakers against two possible orders for bilingual speakers, this analysis could only be conducted on the group of L1 French trilinguals ($n = 27$), and on the groups of L1 English bilinguals ($n = 6$) and L1 French bilinguals ($n = 5$). For both groups of trilinguals, the six possible testing orders were compared by means of a Kruskal-Wallis test, which was conducted separately for L1 English and L1 French trilinguals. The two possible testing orders for both groups of bilinguals were compared by means of a Mann-Whitney U test, which was conducted separately for L1 English and L1 French bilinguals. The results of both tests showed that there were no significant differences in linguistic behaviour that could be ascribed to testing order, which means that it is safe to treat participants that have been tested in different orders as one group.

**Figure 5.1: Proficiency level in the L2:
L1 English trilinguals vs. L1 French trilinguals**



L1_Type: “1” = English, “2” = French

Figure 5.2: Proficiency level in L2 English and L3 Spanish: L1 French trilinguals

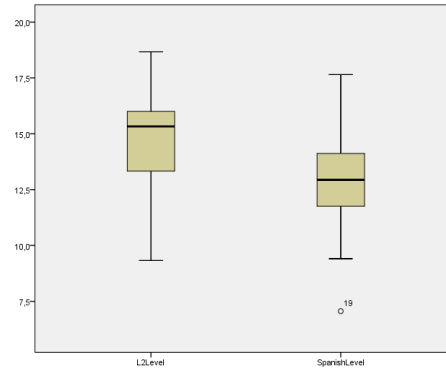
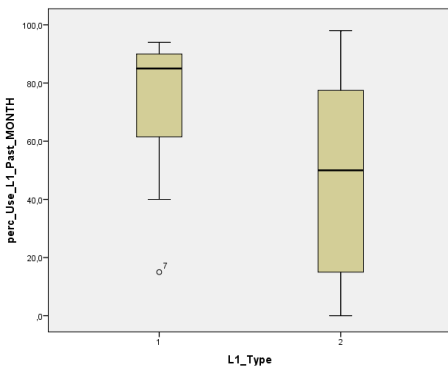
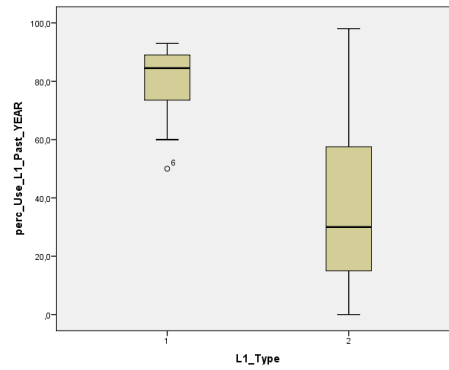


Figure 5.3: % of L1 use during the past month: L1 English participants vs. L1 French participants



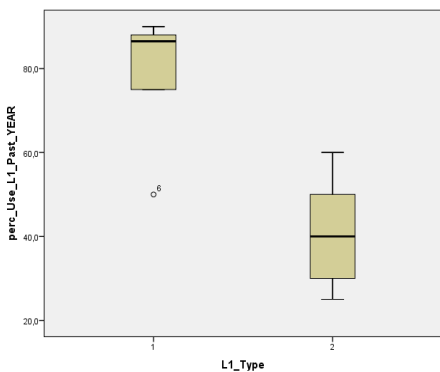
L1_Type: “1” = English, “2” = French.

Figure 5.4: % of L1 use during the past year: L1 English participants vs. L1 French participants



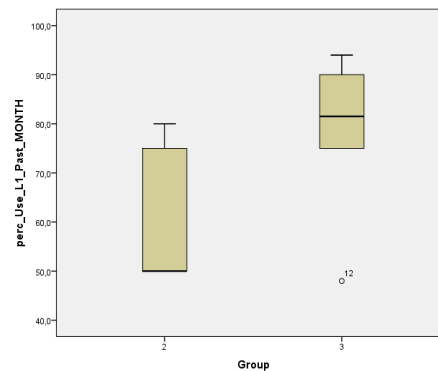
L1_Type: “1” = English, “2” = French.

Figure 5.5: % of L1 use during the past year: L1 English bilinguals vs. L1 French bilinguals



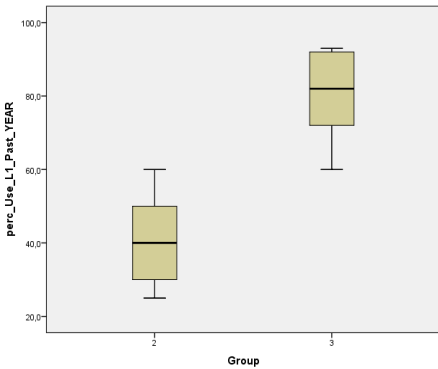
L1_Type: “1” = L1 English bilinguals, “2” = L1 French bilinguals.

Figure 5.6: % of L1 use during the past month: L1 English trilinguals vs. L1 French bilinguals



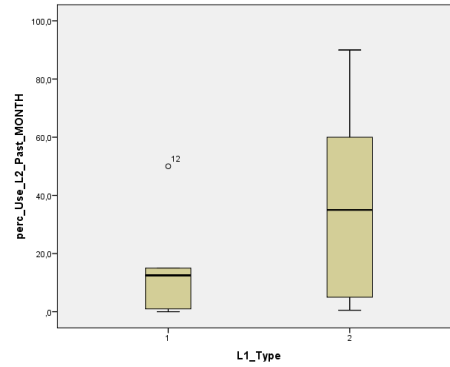
Group: “2” = L1 French bilinguals, “3” = L1 English trilinguals

Figure 5.7: % of L1 use during the past year: L1 English trilinguals vs. L1 French bilinguals



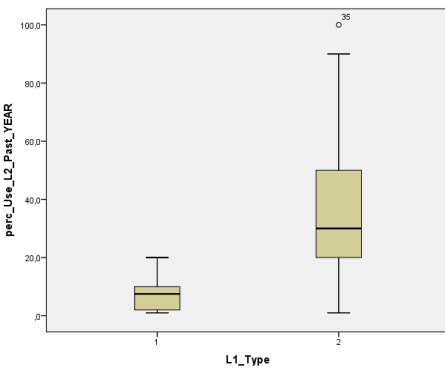
Group: “2” = L1 French bilinguals, “3” = L1 English trilingual

Figure 5.8: % of L2 use during the past month: L1 English trilinguals vs. L1 French trilinguals



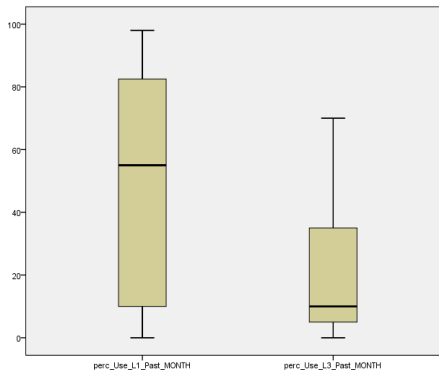
L1_Type: “1” = English, “2” = French.

Figure 5.9: % of L2 use during the past year: L1 English trilinguals vs. L1 French trilinguals



L1_Type: “1” = English, “2” = French

Figure 5.10: % of use of the L1 vs. the L3 during the past month: L1 French trilinguals



5.2.4 Summary of the exploratory analyses

The groups of bilingual and trilingual participants are comparable regarding their % of use of Spanish and their proficiency in this language. However, given the low number of participants, the trend of L1 English trilinguals having a lower proficiency than L1 French trilinguals should be kept in mind when interpreting the results.

The groups of L1 English and L1 French bilinguals turned out to differ significantly regarding their % of use of the L1. Furthermore, the groups of trilinguals differed significantly

regarding both their % of use and their proficiency in their respective L2s: L1 French trilinguals showed a higher use of their L2 English than L1 English trilinguals of their L2 French. Moreover, L1 French trilinguals were more proficient in their L2 English than L1 English trilinguals were in their L2 French. The results for proficiency and language uses are summarized in Table 5.1 below.

The results for language use and proficiency within each group of trilinguals indicated that L1 French trilinguals were significantly more proficient in their L2 English than in their L3 Spanish. In addition, they had used their L2 significantly more often than their L3. They had also used their L1 significantly more often than their L3. There were no significant differences found for the L1 English trilinguals. The results of these analyses are shown in Table 5.2.

Order of testing turned out to have had no significant effect on linguistic behaviour, and will therefore not be taken into account when interpreting the analyses of the results.

Table 5.1: Summary of the preparatory analyses. ‘✓’ indicates that the groups do not differ significantly. ‘X’ means that they do.

Comparison	L1 English vs. French	L1 bi-trilinguals	L1 English and bi-trilinguals	L1 French and bi-trilinguals	L1 English bilinguals vs. French bilinguals	L1 English trilinguals vs. French trilinguals	L1 English bilinguals vs. L1 English trilinguals	L1 English trilinguals vs. L1 French bilinguals
Proficiency in Spanish	✓	✓	✓	✓	✓	✓	✓	✓
Proficiency in the L2 in trilinguals	N/A	N/A	N/A	N/A	X	N/A	N/A	N/A
% Use L1	X	✓	✓	X	✓	✓	X	X
% Use Spanish	✓	✓	✓	✓	✓	✓	✓	✓
% Use L2 in trilinguals	N/A	N/A	N/A	N/A	X	N/A	N/A	N/A

N/A: not applicable.

Table 5.2: Summary of the preparatory analyses for language use and proficiency for both groups of trilinguals.
 ‘✓’ indicates that the difference is not significant. ‘X’ means that it is.

Comparison	L1 English trilinguals	L1 French trilinguals
% use L1 past month - % use L2 past month	✓	✓
% use L1 past year - % use L2 past year	✓	✓
% use L1 past month - % use Spanish past month	✓	X
% use L1 past year - % use Spanish past year	✓	✓
% use L2 past month - % use Spanish past month	✓	X
% use L2 past year - % use Spanish past year	✓	✓
proficiency in the L2 vs. proficiency in Spanish	✓	X

5.3 General linguistic behaviour

In the next sections, a general description of the data obtained by means of the frog story will be provided. In this way, it will be possible to pinpoint important differences between different groups of participants, as well as between languages. The comparisons will be made between the averages obtained for each group of participants.

The data were analysed by counting the occurrences of particular codes given to the motion clauses produced by each group of participants. This analysis was carried out in CLAN (V 07-Aug-2013 11:00) using the *freq* command and entering every main code (\$COP, \$FIC, \$NTM, \$OTH, \$MAN, \$PTH), as well as every main code in combination with each of its possible subparts (e.g. \$MAN:*:BC, which refers to a clause containing a boundary-crossing in which the participant refers to Manner by using one or more Manner elements³¹). The main codes and the possible combinations of subparts are described in detail in section 4.6.2 of the previous chapter. On the basis of the results of the *freq* analysis, the total numbers of clauses were then counted for the main categories of *Change of Position*, *Fictive Motion*, *Non-translational Motion*, *Translational Motion* and *Other Motion*. To enable a more fine-grained analysis within the category of *Translational Motion*, total numbers were then counted separately for +Manner and –Manner clauses, clauses with and without a boundary-crossing, and clauses with and without a reference to one or more Ground elements (+Ground vs. –Ground). The total number of +Manner clauses was also counted separately for clauses containing a boundary-crossing and clauses that did not contain such a boundary-crossing, because the outcomes of previous research suggest that there may be important differences between satellite-framed and verb-framed languages regarding the expression of Manner between clauses with and clauses without a boundary-crossing. The reader is referred to Chapter 2 for a more detailed review of the differences encountered in previous research.

³¹ The ‘*’ sign means that all possible elements used for making reference to Manner are analysed together. They will be analysed separately in paragraph 5.5.1.

5.3.1 General linguistic behaviour in monolinguals

When comparing the data of the three groups of monolingual speakers shown in tables 5.3 – 5.5, it turns out that, regarding the percentages of motion clauses that belong to each of the main categories (Table 5.3), monolingual English speakers produce a much higher proportion of clauses containing Fictive Motion (21.1%) than monolingual speakers of French and Spanish (9.7% and 7.1%, respectively). They also produce a higher proportion of clauses containing Non-translational Motion (4.3% vs. 2.8% for French monolinguals and 0.6% for Spanish monolinguals) and other types of motion, ‘Other Motion’, (3.3% vs. 1.4% for French monolinguals and 3.4% for Spanish monolinguals). On the contrary, the proportion of clauses containing Translational Motion is lower in monolingual English speakers than in both monolingual French and Spanish speakers (54.1% vs. 65.7% and 68.6%, respectively). Monolingual French and Spanish speakers are quite similar to each other, except for the slightly higher proportion of clauses containing Non-translational Motion produced by the French speakers (2.8% vs. 0.6%), and the slightly higher proportion of clauses containing other types of motion produced by the Spanish speakers (3.4% vs. 1.4% for French monolinguals). However, in both cases, the numbers are very small.

Table 5.3: Total number of motion clauses produced by the different groups of monolingual speakers

Participant group	Total nr. of motion clauses	Change of Position	Fictive	Non-translational	Other	Translational
L1 EN (n = 6)	209	36 (17.2%)	44 (21.1%)	9 (4.3%)	7 (3.3%)	113 (54.1%)
L1 FR (n = 7)	143	29 (20.3%)	14 (9.7%)	4 (2.8%)	2 (1.4%)	94 (65.7%)
L1 SP (n = 13)	325	66 (20.3%)	23 (7.1%)	2 (0.6%)	11 (3.4%)	223 (68.6%)

EN: English. **FR:** French. **SP:** Spanish.

Regarding the elements of motion events that are expressed in clauses containing Translational Motion (Table 5.4), there appear to be differences between the languages for each type of element. In all cases, one language behaves differently from the other two.

With respect to +Manner vs. –Manner clauses, English monolinguals produce a much larger proportion of clauses in which they make reference to Manner (65.5%) than both French and Spanish monolinguals (29.8% and 32.3%, respectively). As can be deduced from these percentages, French and Spanish appear to be quite similar regarding the degree to which they make reference to Manner in clauses containing Translational Motion.

With respect to the proportion of clauses containing a boundary-crossing, it turns out that, again, English monolinguals behave differently from both French and Spanish monolinguals. The proportion of clauses containing a boundary-crossing is 44.2% for English monolinguals against 29.8% for French monolinguals and 29.6% for Spanish monolinguals.

Regarding the proportion of +Ground clauses, Spanish appears to be the language that behaves differently from the other two, since Spanish monolinguals produce a much lower proportion of +Ground clauses (49.3%) than English and French monolinguals, who are quite similar to each other (64.6% and 69.1%, respectively). In other words, French and Spanish group together when it comes to the overall degree in which they make reference to Manner and to the proportion of clauses containing a boundary-crossing, whereas French groups together with English regarding the proportion of +Ground clauses.

With respect to the numbers of +Manner and –Manner clauses with and without a boundary-crossing (Table 5.5), it is evident that French and Spanish group together: monolingual speakers of both languages make reference to Manner in about 30% of cases, regardless of whether the clause contains a boundary-crossing or not. The exact percentages are 32.1% for French monolinguals and 30.3% for Spanish monolinguals for clauses with a boundary-crossing, and 28.8% for French monolinguals and 33.1% for Spanish monolinguals for clauses without a boundary-crossing. English

monolinguals, on the other hand, make reference to Manner in 58.0% of cases when the clause contains a boundary-crossing. Remarkably, when the clause does not contain a boundary-crossing, their reference to Manner increases: in clauses without a boundary-crossing, English monolinguals make reference to Manner in 71.4% of cases.

Table 5.4: Elements of motion events expressed in clauses containing Translational Motion by the different groups of monolingual speakers

Participant group	Total nr. of Translational-Motion clauses	+MAN	-MAN	+BC	-BC	+GR	-GR
L1 EN (n = 6)	113	74 (65.5%)	39 (34.5%)	50 (44.2%)	63 (55.8%)	73 (64.6%)	40 (35.4%)
L1 FR (n = 7)	94	28 (29.8%)	66 (70.2%)	28 (29.8%)	66 (70.2%)	65 (69.1%)	29 (30.9%)
L1 SP (n = 13)	223	72 (32.3%)	151 (67.7%)	66 (29.6%)	157 (70.4%)	110 (49.3%)	113 (50.7%)

BC: boundary-crossing. **GR:** Ground. **MAN:** Manner.

EN: English. **FR:** French. **SP:** Spanish.

Table 5.5: Number of +Manner and –Manner clauses with and without boundary-crossing produced by the different groups of monolingual speakers

Participant group	Nr. of +BC clauses	+BC +MAN	+BC -MAN	Nr. of -BC clauses	-BC +MAN	-BC -MAN
L1 EN (n = 6)	50	29 (58.0%)	21 (42.0%)	63	45 (71.4%)	18 (28.6%)
L1 FR (n = 7)	28	9 (32.1%)	19 (67.9%)	66	19 (28.8%)	47 (71.2%)
L1 SP (n = 13)	66	20 (30.3%)	46 (69.7%)	157	52 (33.1%)	105 (66.9%)

BC: boundary-crossing. **MAN:** Manner.

EN: English. **FR:** French. **SP:** Spanish.

In order to find out whether there were any significant differences between the three groups of monolinguals, a Kruskal-Wallis test was performed to test whether the three groups differed regarding their expression of Manner, their % of +Ground clauses, as well as their % of clauses with a boundary-crossing. Language level and % of L1 use were assumed to be the same for all monolingual participants and therefore not compared. The results of the Kruskal-Wallis test showed that the three groups differed significantly regarding the % of +Manner clauses they had produced ($p = .000$), and the % of +Ground clauses ($p = .002$). Given these significant results, a post-hoc analysis was carried out to pinpoint between which groups the differences were significant. This post-hoc analysis consisted of three Mann-Whitney U tests (monolingual English speakers vs. monolingual French speakers, monolingual French speakers vs. monolingual Spanish speakers, and monolingual English speakers vs. monolingual Spanish speakers). The significance level of the Mann-Whitney U test was therefore set to $.0167$ ($.05/3 = .0167$) to minimize the chances of a Type 1 error.

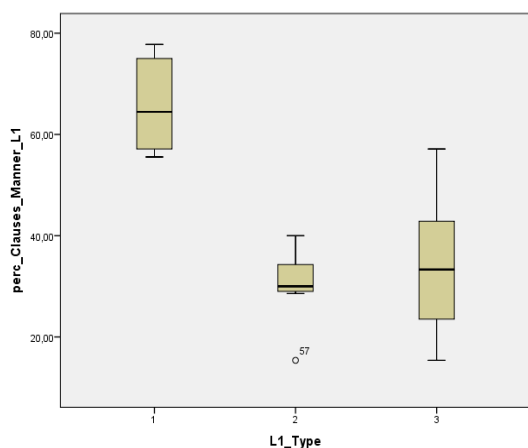
The results of the post-hoc analysis showed that for the % of +Manner clauses, there were significant differences between all the groups of monolingual speakers: between English monolinguals and French monolinguals ($p = .001$), between English monolinguals and Spanish monolinguals ($p = .000$), and between French monolinguals and Spanish monolinguals ($p = .000$). The percentage of +Manner clauses for each group can be found in Figure 5.11. English monolinguals had produced significantly more +Manner clauses than both French and Spanish monolinguals. However, Spanish monolinguals had produced significantly more +Manner clauses than French monolinguals. This latter finding is a bit surprising, and is not what would be expected on the basis of previous research.

The second post-hoc analysis between the three groups of monolingual speakers concerned the expression of Ground. It was found that English monolinguals had produced significantly fewer +Ground clauses than French monolinguals ($p = .001$), but significantly more than Spanish

monolinguals ($p = .001$). The differences between Spanish monolinguals and French monolinguals were non-significant. The percentage of +Ground clauses per language is found in Figure 5.12.

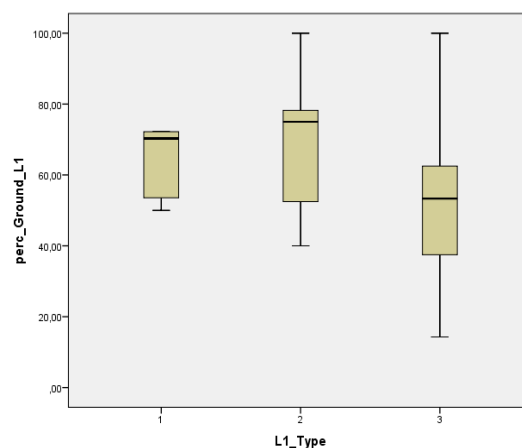
In sum, there appear to be significant differences between English, French, and Spanish regarding the amount of Manner being expressed, and the % of clauses in which Ground is being expressed by one or more overt Ground elements. The languages do not differ with respect to how Manner is expressed in clauses with a boundary-crossing nor regarding the % of clauses containing such a boundary-crossing.

Figure 5.11: Percentage of +Manner clauses: English, French, and Spanish monolinguals



L1_Type: “1” = English, “2” = French, “3” = Spanish.

Figure 5.12: Percentage of +Ground clauses: English, French, and Spanish monolinguals



L1_Type: “1” = English, “2” = French, “3” = Spanish.

5.3.2 General linguistic behaviour in L2/L3 Spanish vs. Spanish monolinguals

The general overview of the total numbers and types of motion clauses produced in Spanish by the different groups of learners and monolingual native speakers (Table 5.6) shows that, regarding the category of *Change of Position*, only the L1 French bilinguals produce about as many clauses in this category (22.5%) as Spanish monolinguals (20.3%). All other learner groups produce fewer clauses

in this category. The percentages are 13.2% for L1 French trilinguals, and 11.8% for both L1 English bi- and trilinguals. These percentages are also lower than the ones produced by the same speakers in their L1.

With respect to the category of *Fictive Motion*, all learner groups appear to produce more clauses in this category than Spanish monolinguals (7.1%). L1 English trilinguals and L1 French bi- and trilinguals are quite similar to each other, with respectively 11.8%, 11.3%, and 10.2% of clauses falling into this category. L1 English bilinguals produce somewhat more clauses containing Fictive Motion (14.7%), but this percentage is still lower than the one seen in their L1.

For the category of *Non-translational Motion*, the numbers are quite small, and all learner groups show a behaviour that is similar to the one found for Spanish native speakers (0.6%). L1 English trilinguals, L1 French bilinguals, and L1 French trilinguals respectively show 1.1%, 0.0%, and 1.3% of clauses falling into this category. Again, the L1 English bilinguals appear to rely somewhat more heavily on Non-translational Motion, with 3.9% of clauses falling in this category.

For the category of *Other*, the numbers are again very small, but the percentages of the L1 English trilinguals (3.2%), L1 French bilinguals (2.5%), and L1 French trilinguals (2.6%) are very similar to the ones found for Spanish native speakers (3.4%). In this case, the L1 English bilinguals appear to produce a slightly lower percentage of clauses containing other types of motion than the other groups: only 1.0%.

The percentages of clauses containing Translational Motion found for the learner groups are not very different from the one found for Spanish native speakers (68.6%). For L1 English bilinguals, it is even identical (68.6%). L1 French bilinguals turn out to produce a somewhat smaller percentage of Translational-Motion clauses (63.8%), whereas both groups of trilinguals produce somewhat higher percentages: 72.0% for the L1 English trilinguals, and 72.7% for the L1 French trilinguals.

Regarding the elements of motion events expressed in clauses containing Translational Motion (Table 5.7), it turns out that the percentages of +Manner clauses produced by the learner groups are similar to the one found for Spanish native speakers (32.3%), but, nevertheless, they all are a little smaller: 31.4% for L1 English bilinguals, 28.4% for L1 English trilinguals, 29.4% for L1 French bilinguals, and 25.7% for L1 French bilingual, who produce the least +Manner clauses of all groups.

For clauses containing a boundary-crossing the results are quite similar, with the difference that, now, all learner groups produce a few more clauses containing a boundary-crossing than Spanish monolinguals (29.6%). The percentages are: 30.0% for L1 English bilinguals, 29.9% for L1 English trilinguals, 35.5% for L1 French bilinguals, and 30.7% for L1 French trilinguals. L1 French bilinguals clearly produce a few more clauses containing a boundary-crossing than the other groups.

With respect to the percentages of +Ground clauses, there are larger differences between the languages, but all learner groups produce many more +Ground clauses than Spanish monolinguals, who make reference to one or more Ground elements in 49.3% of clauses. L1 French bilinguals and trilinguals show similar behaviours, with 64.7% and 65.7% of +Ground clauses, respectively. L1 English bi- and trilinguals, on the contrary, show rather different behaviours, since the former make reference to Ground in only 58.6% of clauses, whereas the latter do so in 77.6% of clauses.

Regarding the numbers of +Manner clauses with and without a boundary-crossing (Table 5.8), it becomes directly clear that learners make very little reference to Manner in clauses with a boundary-crossing, much less than Spanish monolinguals, who do so in 30.3% of clauses. The percentages for the learner groups are quite similar to each other, with the exception of the L1 English bilinguals, who make a little bit more reference to Manner in clauses with a boundary-crossing (19.0%) than the other learner groups. The percentages for the other learner groups are: 15.0% for L1 English trilinguals, 11.1% for L1 French bilinguals, and 15.5% for L1 French trilinguals.

In clauses without a boundary-crossing, L1 English trilinguals and L1 French bilinguals make a little bit more reference to Manner than Spanish monolinguals, who refer to Manner in 33.1% of clauses. L1 English trilinguals do so in 34.0% of cases and L1 French bilinguals in 39.4%. On the contrary, L1 English bilinguals and L1 French trilinguals make somewhat less reference to Manner than Spanish monolinguals. L1 English bilinguals do so in 30.6% of cases and L1 French bilinguals in 29.3%. Nevertheless, the percentages of clauses without a boundary-crossing in which learners make reference to Manner are still quite similar to the one found for Spanish monolinguals (33.1%). There are no clear patterns visible with respect to the different L1s or bi- or trilingualism.

Table 5.6: Total number of motion clauses produced in Spanish by the different groups of participants

Participant group	Total nr. of motion clauses	Change of Position	Fictive	Non-translational	Other	Translational
L1 EN / L3 SP (n = 6)	93	11 (11.8%)	11 (11.8%)	1 (1.1%)	3 (3.2%)	67 (72.0%)
L1 FR / L3 SP (n = 24)	461	61 (13.2%)	47 (10.2%)	6 (1.3%)	12 (2.6%)	335 (72.7%)
L1 EN / L2 SP (n = 5)	102	12 (11.8%)	15 (14.7%)	4 (3.9%)	1 (1.0%)	70 (68.6%)
L1 FR / L2 SP (n = 5)	80	18 (22.5%)	9 (11.3%)	- (0.0%)	2 (2.5%)	51 (63.8%)
L1 SP (n = 13)	325	66 (20.3%)	23 (7.1%)	2 (0.6%)	11 (3.4%)	223 (68.6%)

EN: English. **FR:** French. **SP:** Spanish.

Table 5.7: Elements of motion events expressed in clauses containing Translational Motion in Spanish by the different groups of participants

Participant group	Total nr. of Translational - Motion clauses	+MAN	-MAN	+BC	-BC	+GR	-GR
L1 EN / L3 SP (n = 6)	67	19 (28.4%)	48 (71.6%)	20 (29.9%)	47 (70.1%)	52 (77.6%)	15 (22.4%)
L1 FR / L3 SP (n = 24)	335	86 (25.7%)	249 (74.3%)	103 (30.7%)	232 (69.3%)	220 (65.7%)	115 (34.3%)
L1 EN / L2 SP (n = 5)	70	22 (31.4%)	48 (68.6%)	21 (30.0%)	49 (70.0%)	41 (58.6%)	29 (41.4%)
L1 FR / L2 SP (n = 5)	51	15 (29.4%)	36 (70.6%)	18 (35.3%)	33 (64.7%)	33 (64.7%)	18 (35.3%)
L1 SP (n = 13)	223	72 (32.3%)	151 (67.7%)	66 (29.6%)	157 (70.4%)	110 (49.3%)	113 (50.7%)

BC: boundary-crossing. **GR:** Ground. **MAN:** Manner.

EN: English. **FR:** French. **SP:** Spanish.

One of the main interests of the present study was to investigate whether bilinguals would behave differently from trilinguals in Spanish, and to shed more light on the role played by the L1 in the case of bilinguals, and of the L1 and the L2 in the case of trilinguals. The analyses were carried out as follows: first, the behaviours of bilinguals and trilinguals with the same L1 were compared with each other and with the behaviour of monolingual native speakers of Spanish. Then, the behaviour of bilinguals with L1 English was compared with that of bilinguals with L1 French. To conclude the comparisons, the behaviour of trilinguals with L1 English and L2 French was compared with that of trilinguals with L1 French and L2 English.

Table 5.8: Number of +Manner and –Manner clauses with and without boundary-crossing produced in Spanish by the different groups of participants

Participant group	Nr. of +BC clauses	+BC		Nr. of –BC clauses	–BC	
		+MAN	–MAN		+MAN	–MAN
L1 EN / L3 SP (n = 6)	20	3 (15.0%)	17 (85.0%)	47	16 (34.0%)	31 (66.0%)
L1 FR / L3 SP (n = 24)	103	16 (15.5%)	87 (84.5%)	232	68 (29.3%)	164 (70.7%)
L1 EN / L2 SP (n = 5)	21	4 (19.0%)	17 (81.0%)	49	15 (30.6%)	34 (69.4%)
L1 FR / L2 SP (n = 5)	18	2 (11.1%)	16 (88.9%)	33	13 (39.4%)	20 (60.6%)
L1 SP (n = 13)	66	20 (30.3%)	46 (69.7%)	157	52 (33.1%)	105 (66.9%)

BC: boundary-crossing. **MAN:** Manner.

EN: English. **FR:** French. **SP:** Spanish.

The results of the Kruskal-Wallis test for the English bi- and trilinguals and the Spanish monolingual controls showed that there were significant differences regarding the % of +Ground clauses ($p = .036$). A post-hoc Mann-Whitney U test (significance level $.05/3 = .0167$) showed that the only significant difference was to be found between Spanish monolinguals and English trilinguals: the former had produced significantly fewer +Ground clauses than the latter. The percentages are found in Figure 5.13.

The outcomes of the Kruskal-Wallis test conducted on the data of the L1 French bi- and trilinguals and those of Spanish monolinguals showed that there were significant differences regarding the % of +Manner clauses ($p = .017$), the % of clauses with a boundary-crossing ($p = .004$), and the % of +Ground clauses ($p = .001$) between French bi- and trilinguals and Spanish monolingual controls.

Post-hoc Mann-Whitney U tests (significance level = $.0167$) indicated that there were no significant differences between each pair of participant-groups regarding the % of +Manner clauses.

However, the difference between Spanish monolinguals and French bilinguals was marginally significant ($p = .019$), with the Spanish monolinguals having produced more +Manner clauses than the French bilinguals. This is shown in Figure 5.14.

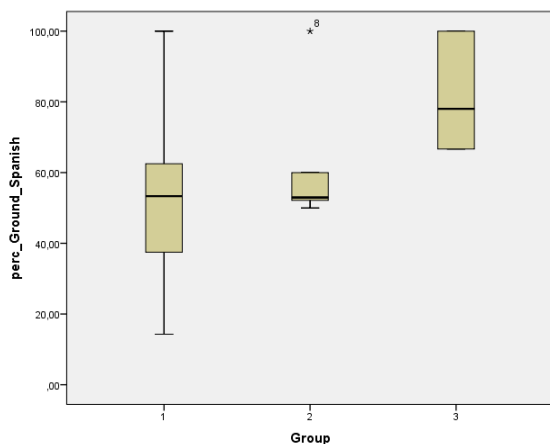
With respect to the % of clauses that contained a boundary-crossing, the outcomes revealed a significant difference between bilinguals and trilinguals ($p = .002$), and a marginally significant difference between Spanish monolinguals and French trilinguals ($p = .020$). Bilinguals had produced significantly more clauses with a boundary-crossing than trilinguals. The marginally significant effect indicated a trend of Spanish monolinguals producing more clauses containing a boundary-crossing than French trilinguals. The percentages are shown in Figure 5.15.

The post-hoc analyses of the percentages of +Ground clauses showed that there were significant differences between Spanish monolinguals and French bilinguals, as well as between French bilinguals and trilinguals. There were no significant differences between Spanish monolinguals and French trilinguals. Spanish monolinguals had produced significantly fewer +Ground clauses than French bilinguals ($p = .001$), whereas French bilinguals had produced significantly more +Ground clauses than French trilinguals ($p = .000$). The percentages are found in Figure 5.16.

When comparing the language production in Spanish of both groups of bilinguals, the outcomes of the Mann-Whitney U tests indicated that the groups differed significantly regarding the the % of +Ground clauses ($p = .008$). English bilinguals had produced significantly fewer +Ground clauses than French bilinguals. The results are shown in Figure 5.17.

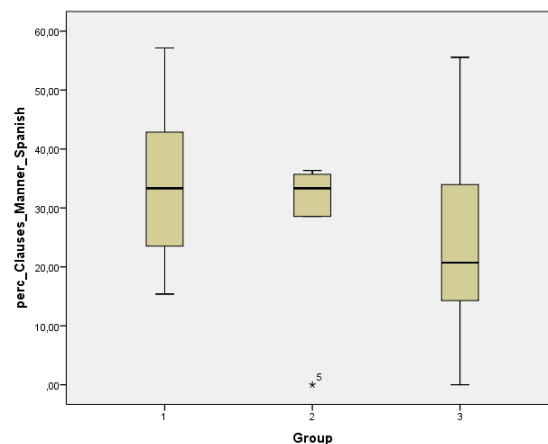
The only significant difference found between English and French trilinguals in their language production in Spanish concerned the percentage of +Ground clauses ($p = .044$). English trilinguals had produced significantly more +Ground clauses than French trilinguals, thereby showing the opposite effect to the one found between the bilingual groups. The percentages of the trilinguals are found in Figure 5.18.

Figure 5.13: Percentage of +Ground clauses; Spanish monolinguals vs. L1 English bi- and trilinguals.



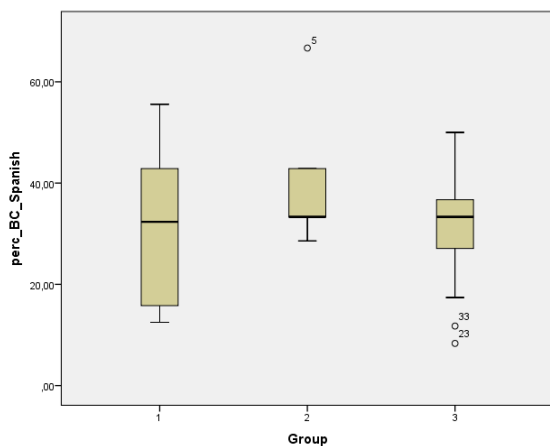
Group: “1” = Spanish monolinguals, “2” = L1 English bilinguals, “3” = L1 English trilinguals

Figure 5.14: Percentage of +Manner clauses; Spanish monolinguals vs. L1 French bi- and trilinguals



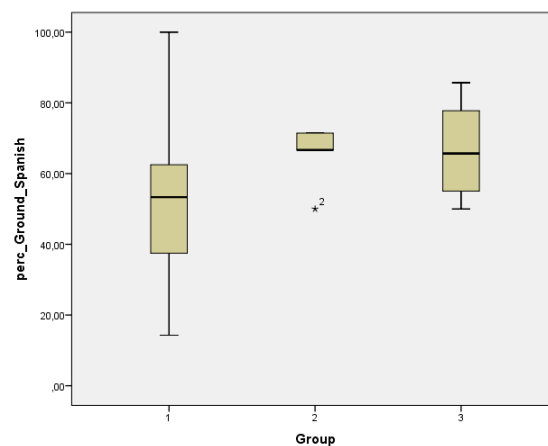
Group: “1” = Spanish monolinguals, “2” = L1 French bilinguals, “3” = L1 French trilinguals

Figure 5.15: Percentage of clauses containing a boundary-crossing; Spanish monolinguals vs. L1 French bi- and trilinguals



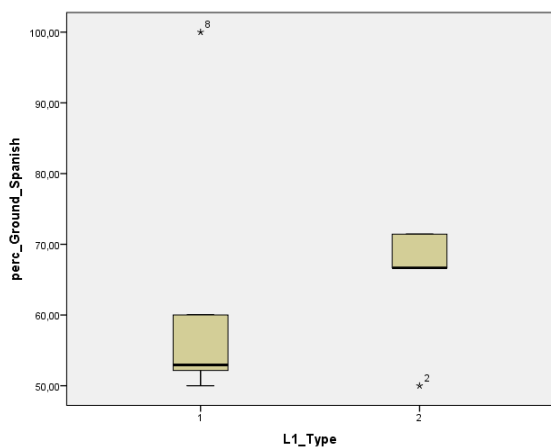
Group: “1” = Spanish monolinguals, “2” = L1 French bilinguals, “3” = L1 French trilinguals
BC: boundary-crossing

Figure 5.16: Percentage of +Ground clauses; Spanish monolinguals vs. L1 French bi- and trilinguals



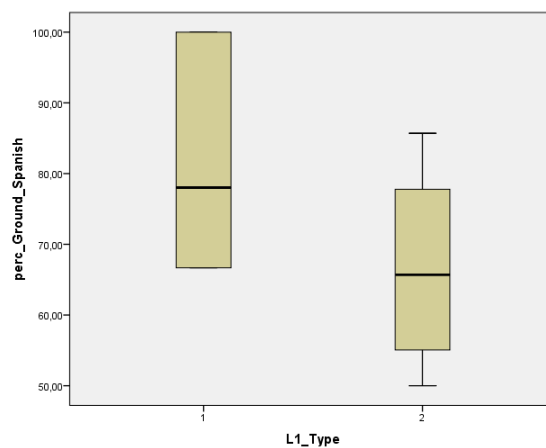
Group: “1” = Spanish monolinguals, “2” = L1 French bilinguals, “3” = L1 French trilinguals

Figure 5.17: Percentage of +Ground clauses: L1 English bilinguals vs. L1 French bilinguals



L1_Type: “1” = English, “2” = French

Figure 5.18: Percentage of +Ground clauses; L1 English trilinguals vs. L1 French trilinguals



L1_Type: “1” = English, “2” = French

5.3.3 General linguistic behaviour of the trilinguals in L2 French and L2 English

5.3.3.1 General linguistic behaviour in L2 French

When comparing the total numbers of motion clauses produced in L2 French by the L1 English trilinguals against the numbers produced by French monolinguals (Table 5.9), both groups appear to differ in their behaviour for all main categories of motion clauses. L1 English trilinguals produce fewer clauses containing a Change of Position than French monolinguals (10.2% vs. 20.3%, respectively), and they also rely a bit more heavily on clauses containing Fictive Motion (15.6% against 9.7% for French monolinguals). Furthermore, they produce fewer clauses containing Non-translational Motion (0.8%, against 2.8% for French monolinguals), and slightly more clauses containing other types of motion (2.3% against 1.4% for French monolinguals). For clauses containing Translational Motion, the percentage is also somewhat higher for L1 English trilinguals (71.1%) than for French monolinguals (65.7%).

Table 5.9: Total number of motion clauses produced in French by L2 speakers and French monolinguals

Participant group	Total nr. of motion clauses	Change of Position	Fictive	Non-translational	Other	Translational
L2 FR (n = 5)	128	13 (10.2%)	20 (15.6%)	1 (0.8%)	3 (2.3%)	91 (71.1%)
L1 FR (n = 7)	143	29 (20.3%)	14 (9.7%)	4 (2.8%)	2 (1.4%)	94 (65.7%)

FR: French.

With respect to the elements of motion events expressed in clauses containing Translational Motion (Table 5.10), the behaviours of L1 English trilinguals and French monolinguals differ for both the percentages of +Manner clauses they produce, and the percentages of clauses with a boundary-crossing. Overall, L1 English trilinguals produce more +Manner clauses than French

monolinguals (39.6% vs. 29.8%, respectively). Their percentage of clauses containing a boundary-crossing is, on the contrary, lower than the percentage found for French monolinguals (20.9% vs. 29.8%, respectively). The percentages of +Ground clauses are quite similar in both groups: 73.6% for L1 English trilinguals, and 69.1% for French monolinguals.

Regarding the numbers of +Manner clauses with and without a boundary-crossing (Table 5.11), it turns out that L1 English trilinguals make virtually no reference to Manner in combination with a boundary-crossing. In fact, they only produced one clause containing such a combination, which makes for 5.3% of clauses with a boundary-crossing. French monolinguals, on the contrary, make reference to Manner in 32.1% of clauses with a boundary-crossing. In addition, their percentage of +Manner clauses for clauses without a boundary-crossing is very similar (28.8%), whereas L1 English trilinguals make much more reference to Manner in clauses without a boundary-crossing (48.6%). This means that L1 English trilinguals make more reference in clauses without a boundary-crossing than French monolinguals.

Table 5.10: Elements of motion events expressed in clauses containing Translational Motion in French by L2 speakers and French monolinguals

Participant group	Total nr. of Translational-Motion clauses	+MAN	-MAN	+BC	-BC	+GR	-GR
L2 FR (n = 5)	91	36 (39.6%)	55 (60.4%)	19 (20.9%)	72 (79.1%)	67 (73.6%)	24 (26.4%)
L1 FR (n = 7)	94	28 (29.8%)	66 (70.2%)	28 (29.8%)	66 (70.2%)	65 (69.1%)	29 (30.9%)

BC: boundary-crossing. **GR:** Ground. **MAN:** Manner.

FR: French.

Table 5.11: Number of +Manner and –Manner clauses with and without boundary-crossing produced in French by L2 speakers and French monolinguals

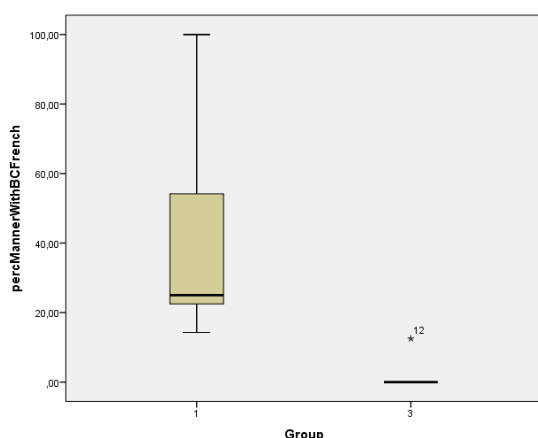
Participant group	Nr. of +BC clauses	+BC		Nr. of –BC clauses	–BC	
		+MAN	–MAN		+MAN	–MAN
L2 FR (n = 5)	19	1 (5.3%)	18 (94.7%)	72	35 (48.6%)	37 (51.4%)
L1 FR (n = 7)	28	9 (32.1%)	19 (67.9%)	66	19 (28.8%)	47 (71.2%)

BC: boundary-crossing. **MAN:** Manner.

FR: French.

With respect to the statistical analyses that were carried out on the data of the L1 English trilinguals in L2 French and those of French monolinguals, the outcomes of the Mann-Whitney U tests indicated that both groups differed significantly with respect to the % of +Manner clauses with a boundary-crossing ($p = .003$). It was found that monolingual French speakers had produced significantly more +Manner clauses than L2 speakers. The percentages are shown in Figure 5.19.

Figure 5.19: % of +Manner clauses containing a boundary-crossing: French monolinguals vs. French L2 speakers



Group: “1” = French monolinguals, “3” = French L2 speakers (L1 English trilinguals)

5.3.3.2 General linguistic behaviour in L2 English

When comparing the total numbers of motion clauses produced by L1 French trilinguals and English monolinguals (Table 5.12), it turns out that L1 French trilinguals produce fewer clauses containing a Change of Position than English monolinguals (9.3% vs. 17.2%, respectively), and more clauses containing Fictive Motion (26.1% vs. 21.1%, respectively). L1 French trilinguals also produce relatively fewer clauses containing Non-translational Motion (1.6% vs. 4.3%, respectively), and slightly more clauses containing other types of motion, but here the percentages are very similar: 4.0% for L1 French trilinguals and 3.3% for English monolinguals. Regarding clauses containing Translational Motion, the percentages are again very similar, but L1 French trilinguals produce somewhat more clauses containing Translational Motion (58.9%) than English monolinguals (54.1%).

Table 5.12: Total number of motion clauses produced in English by L2 speakers and English monolinguals

Participant group	Total nr. of motion clauses	Change of Position	Fictive	Non-translational	Other	Translational
L2 EN (n = 19)	547	51 (9.3%)	143 (26.1%)	9 (1.6%)	22 (4.0%)	322 (58.9%)
L1 EN (n = 6)	209	36 (17.2%)	44 (21.1%)	9 (4.3%)	7 (3.3%)	113 (54.1%)

EN: English.

With respect to the elements of motion events expressed in clauses containing Translational Motion (Table 5.13), it turns out that L1 French trilinguals make less reference to Manner than English monolinguals. Only 40.1% of the clauses they produce are +Manner clauses, against 65.5% for English monolinguals. L1 French trilinguals also produce a lower percentage of clauses containing a boundary-crossing than English monolinguals. The percentages are 30.4% and 44.2%,

respectively. Regarding +Ground clauses, however, the percentage is much higher for L1 French trilinguals (80.4%) than for English monolinguals (64.6%).

Table 5.13: Elements of motion events expressed in clauses containing Translational Motion in English by L2 speakers and English monolinguals

Participant group	Total nr. of Translational-Motion clauses	+MAN	-MAN	+BC	-BC	+GR	-GR
L2 EN (n = 19)	322	129 (40.1%)	193 (59.9%)	98 (30.4%)	224 (69.6%)	259 (80.4%)	63 (19.6%)
L1 EN (n = 6)	113	74 (65.5%)	39 (34.5%)	50 (44.2%)	63 (55.8%)	73 (64.6%)	40 (35.4%)

BC: boundary-crossing. **GR:** Ground. **MAN:** Manner.

EN: English.

Table 5.14: Number of +Manner and –Manner clauses with and without boundary-crossing produced in English by L2 speakers and English monolinguals

Participant group	Nr. of +BC clauses	+BC +MAN	+BC -MAN	Nr. of -BC clauses	-BC +MAN	-BC -MAN
L2 EN (n = 19)	98	23 (23.5%)	75 (76.5%)	224	106 (47.3%)	118 (52.7%)
L1 EN (n = 6)	50	29 (58.0%)	21 (42.0%)	63	45 (71.4%)	18 (28.6%)

BC: boundary-crossing. **MAN:** Manner.

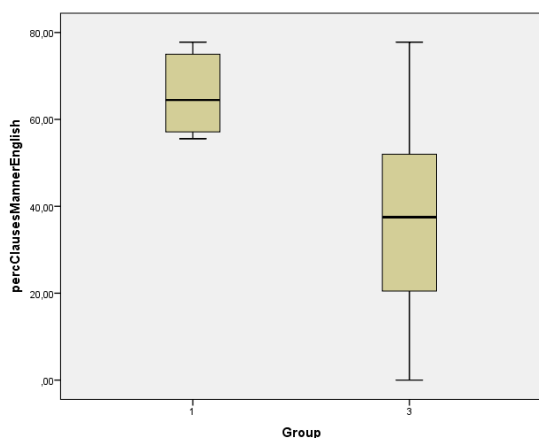
EN: English.

A closer examination of the numbers of +Manner clauses with and without a boundary-crossing (Table 5.14) reveals that L1 French trilinguals make less reference to Manner in clauses with a boundary-crossing than English monolinguals. The percentages of +Manner clauses with a

boundary-crossing are 23.5% for L1 French trilinguals and 58.0% for English monolinguals. In L1 French trilinguals, the percentage of +Manner clauses goes up for clauses without a boundary-crossing (47.3%), and the same holds for English monolinguals, who refer to Manner in 71.4% of clauses without a boundary-crossing. Nevertheless, as can be deduced from these percentages, L1 French trilinguals still make reference to Manner less frequently than English monolinguals.

Regarding the statistical analyses that were carried out in the data of the L1 French trilinguals in L2 English and the data of English monolinguals, the outcomes of the Mann-Whitney U tests showed that the monolinguals and the L2 speakers only differed with respect to the % of +Manner clauses ($p = .014$). It turned out that English monolinguals had produced significantly more +Manner clauses than L2 speakers (Figure 5.20). Marginally significant differences were found for the % of +Manner clauses with a boundary-crossing ($p = .059$), the % of +Manner clauses without a boundary-crossing ($p = .050$), and the % of +Ground clauses ($p = .050$)

Figure 5.20: % of +Manner clauses: English monolinguals vs. English L2 speakers



Group: “1” = English monolinguals, “3” = English L2 speakers (L1 French trilinguals)

5.3.4 Reverse transfer visible in general linguistic behaviour in L1 English and L1 French

5.3.4.1 Reverse transfer visible in general linguistic behaviour in L1 English

When comparing the total numbers of motion clauses produced by English monolinguals and L1 English bi- and trilinguals (Table 5.15), it turns out that English monolinguals and L1 English trilinguals group together regarding the percentages of clauses containing a Change of Position (17.2% vs. 13.2%), clauses containing Fictive Motion (21.1% vs. 23.7%), as well as clauses containing Translational Motion (54.1% vs. 55.7%). L1 English bilinguals show a different pattern for these types of clauses, producing a lower percentage of clauses with a Change of Position (9.1%) and more clauses that contain Fictive Motion (32.9%). For clauses containing Translational Motion, the differences are somewhat smaller, but L1 English bilinguals still produce fewer of these clauses (50.6%) than the other two groups. On the contrary, for clauses containing non-translation and other types of motion, bilinguals group together with trilinguals, producing similar percentages: 2.4% vs. 2.2% for clauses containing Non-translational Motion, and 4.9% vs. 5.3% for clauses containing other types of motion. English monolinguals produce more clauses containing Non-translational Motion (4.3%), and fewer clauses containing other types of motion (3.3%) than bi- and trilinguals.

Table 5.15: Total number of motion clauses produced in English by the different groups of participants with L1 English

Participant group	Total nr. of motion clauses	Change of Position	Fictive	Non-translational	Other	Translational
L1 EN / L3 SP (n = 6)	228	30 (13.2%)	54 (23.7%)	5 (2.2%)	12 (5.3%)	127 (55.7%)
L1 EN / L2 SP (n = 6)	164	15 (9.1%)	54 (32.9%)	4 (2.4%)	8 (4.9%)	83 (50.6%)
L1 EN (n = 6)	209	36 (17.2%)	44 (21.1%)	9 (4.3%)	7 (3.3%)	113 (54.1%)

EN: English. SP: Spanish.

With respect to the elements of motion events expressed in clauses containing Mmotion (Table 5.16), the percentages for +Manner clauses and +Ground clauses show a remarkable difference between English monolinguals on the one hand, and L1 English bi- and trilinguals on the other hand. Bi- and trilinguals produce lower percentages of +Manner clauses (56.6% vs. 53.5%) than monolinguals (65.5%). For +Ground clauses, it is the other way around: now, bi- and trilinguals produce more of these clauses (74.7% vs. 71.7%) than monolinguals (64.6%). With respect to clauses with a boundary-crossing, however, the percentages show that monolinguals and trilinguals produce them about as often (44.2% and 40.9%, respectively), whereas bilinguals produce fewer such clauses (33.7%).

Table 5.16: Elements of motion events expressed in clauses containing Translational Motion in English by the different groups of participants with L1 English

Participant group	Total nr. of Translational-Motion clauses	+MAN	-MAN	+BC	-BC	+GR	-GR
L1 EN / L3 SP (n = 6)	127	68 (53.5%)	59 (46.5%)	52 (40.9%)	75 (59.1%)	91 (71.7%)	36 (28.3%)
L1 EN / L2 SP (n = 6)	83	47 (56.6%)	36 (43.4%)	28 (33.7%)	55 (66.3%)	62 (74.7%)	21 (25.3%)
L1 EN (n = 6)	113	74 (65.5%)	39 (34.5%)	50 (44.2%)	63 (55.8%)	73 (64.6%)	40 (35.4%)

BC: boundary-crossing. **GR:** Ground. **MAN:** Manner.

EN: English. **SP:** Spanish.

When one takes a closer look at the percentages of +Manner clauses with and without a boundary-crossing (Table 5.17), the difference between bi- and trilinguals on the one hand, and monolinguals, on the other, becomes again apparent. In clauses with a boundary-crossing, bi- and

trilinguals make much less reference to Manner than monolinguals (39.3% and 32.7% vs. 58.0%, respectively). In clauses without a boundary-crossing, the behaviour of the bi- and trilinguals is more similar to that of monolinguals, but they still make somewhat less reference to Manner. The percentages are: 65.5% for bilinguals, 66.7% for trilinguals, and 71.4% for monolinguals. In addition, the bi- and trilinguals still seem to follow the English pattern of expressing more Manner in clauses without a boundary-crossing than in clauses with such a boundary-crossing.

Table 5.17: Number of +Manner and –Manner clauses with and without boundary-crossing produced in English by the different groups of participants with L1 English

Participant group	+BC clauses			-BC clauses		
	Nr. of +BC	+BC +MAN	+BC -MAN	Nr. of -BC	-BC +MAN	-BC -MAN
L1 EN / L3 SP (n = 6)	52	17 (32.7%)	35 (67.3%)	75	50 (66.7%)	25 (33.3%)
L1 EN / L2 SP (n = 6)	28	11 (39.3%)	17 (60.7%)	55	36 (65.5%)	19 (34.5%)
L1 EN (n = 6)	50	29 (58.0%)	21 (42.0%)	63	45 (71.4%)	18 (28.6%)

BC: boundary-crossing. **MAN:** Manner.

EN: English. **SP:** Spanish.

With respect to the statistical analyses that were carried out on the English data produced by the L1 English bi- and trilinguals, as well as the group of English monolinguals, for the English speakers, the Kruskal-Wallis tests indicated significant differences between the three groups of speakers regarding the % of +Manner clauses ($p = .002$), the % of +Manner clauses without a boundary-crossing ($p = .018$), the % of clauses with a boundary-crossing ($p = .017$), as well as the % of +Ground clauses ($p = .003$).

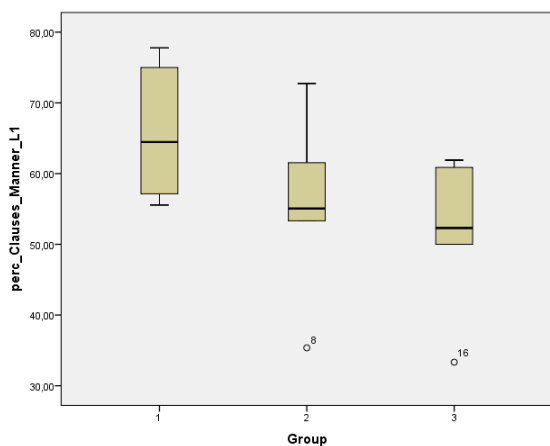
Post-hoc Mann-Whitney U tests (significance level $.05/3 = .0167$) revealed that there were no significant differences between the groups of bilinguals and trilinguals. In other words, all significant differences were found between the monolinguals and the bi- and/or trilinguals.

For the percentage of +Manner clauses (Figure 5.21), it was found that monolinguals had produced significantly more +Manner clauses than both bilinguals ($p = .002$) and trilinguals ($p = .002$). The same difference was visible for the % of +Manner clauses without a boundary-crossing (Figure 5.22). Again, monolinguals had produced significantly more +Manner clauses than both bilinguals ($p = .015$) and trilinguals ($p = .015$).

With respect to the number of clauses with a boundary-crossing, it was found that monolinguals had produced this type of clause significantly more frequently than trilinguals ($p = .004$). There were no other significant differences. The percentages can be found in Figure 5.23.

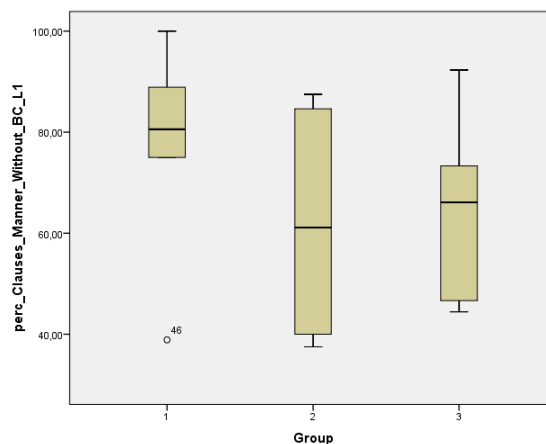
Regarding the % of +Ground clauses, it was found that monolinguals had produced significantly fewer +Ground clauses than bilinguals ($p = .002$) and trilinguals ($p = .002$), which is shown in Figure 5.24.

Figure 5.21: % of +Manner clauses in L1 English: monolinguals, bilinguals, and trilinguals



Group: “1” = monolinguals, “2” = bilinguals, “3” = trilinguals

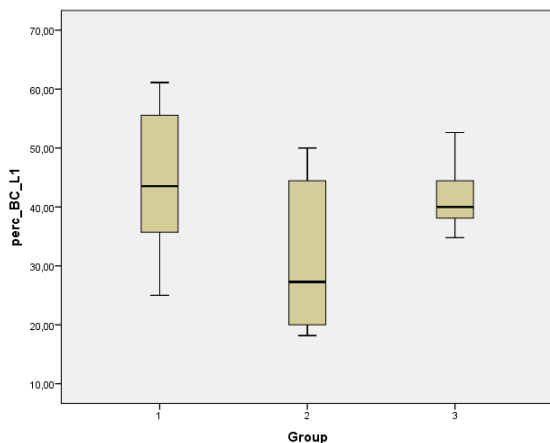
Figure 5.22: % of +Manner clauses without a boundary-crossing in L1 English: monolinguals, bilinguals, and trilinguals



Group: “1” = monolinguals, “2” = bilinguals, “3” = trilinguals

BC: boundary-crossing

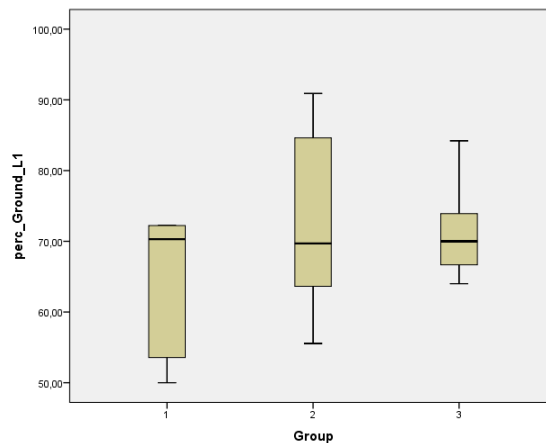
Figure 5.23: % of clauses containing a boundary-crossing in L1 English: monolinguals, bilinguals, and trilinguals



Group: “1” = monolinguals, “2” = bilinguals, “3” = trilinguals

BC: boundary-crossing

Figure 5.24: % of +Ground clauses in L1 English: monolinguals, bilinguals, and trilinguals



Group: “1” = monolinguals, “2” = bilinguals, “3” = trilinguals

5.3.4.2 Reverse transfer visible in general linguistic behaviour in L1 French

Overall, monolinguals and trilinguals show very similar behaviours, whereas the percentages of the bilinguals appear to be slightly different (Table 5.18). Especially, bilinguals produce a higher percentage of clauses containing a Change of Position than the other groups, although the differences are small (24.3% vs. 20.3% for monolinguals and 17.1% for trilinguals). The same holds for clauses containing Fictive Motion (14.9% vs. 9.7% for monolinguals, and 9.5% for trilinguals). They are also the only group that does not produce any clauses containing Non-translational Motion or other types of motion. Their percentages of clauses of Translational Motion are also a little bit lower (60.8%) than those of monolinguals (65.7%) and trilinguals (66.8%). Monolinguals and trilinguals, on the other hand, only appear to slightly differ from each other regarding clauses containing a Change of Position (20.3% vs. 17.1%), as well as clauses containing other types of motion (1.4% vs. 4.2%).

Table 5.18: Total number of motion clauses produced in French by the different groups of participants with L1 French

Participant group	Total nr. of motion clauses	Change of Position	Fictive	Non-translational	Other	Translational
L1 FR / L3 SP (n = 22)	567	97 (17.1%)	54 (9.5%)	13 (2.3%)	24 (4.2%)	379 (66.8%)
L1 FR / L2 SP (n = 5)	74	18 (24.3%)	11 (14.9%)	- (0.0%)	- (0.0%)	45 (60.8%)
L1 FR (n = 7)	143	29 (20.3%)	14 (9.7%)	4 (2.8%)	2 (1.4%)	94 (65.7%)

FR: French. **SP:** Spanish.

Table 5.19: Elements of motion events expressed in clauses containing Translational Motion in French by the different groups of participants with L1 French

Participant group	Total nr. of Translational-Motion clauses	+MAN	-MAN	+BC	-BC	+GR	-GR
L1 FR / L3 SP (n = 22)	379	134 (35.4%)	245 (64.6%)	119 (31.4%)	260 (68.6%)	247 (65.2%)	132 (34.8%)
L1 FR / L2 SP (n = 5)	45	17 (37.8%)	28 (62.2%)	16 (35.6%)	29 (64.4%)	36 (80.0%)	9 (20.0%)
L1 FR (n = 7)	94	28 (29.8%)	66 (70.2%)	28 (29.8%)	66 (70.2%)	65 (69.1%)	29 (30.9%)

BC: boundary-crossing. **GR:** Ground. **MAN:** Manner.

FR: French. **SP:** Spanish.

Table 5.20: Number of +Manner and –Manner clauses with and without boundary-crossing produced in French by the different groups of participants with L1 French

Participant group	Nr. of +BC clauses	+BC +MAN	+BC -MAN	Nr. of -BC clauses	-BC +MAN	-BC -MAN
L1 FR / L3 SP (n = 22)	119	27 (22.7%)	92 (77.3%)	260	107 (41.2%)	153 (58.8%)
L1 FR / L2 SP (n = 5)	16	3 (18.8%)	13 (81.3%)	29	14 (48.3%)	15 (51.7%)
L1 FR (n = 7)	28	9 (32.1%)	19 (67.9%)	66	19 (28.8%)	47 (71.2%)

BC: boundary-crossing. **MAN:** Manner.

FR: French. **SP:** Spanish.

With respect to the elements of motion events expressed in clauses containing Translational Motion (Table 5.19), bilinguals and trilinguals seem to group together regarding the percentages of +Manner clauses they produce (37.8% and 35.4%, respectively), whereas monolinguals produce a lower percentage of such clauses (29.8%). Regarding the percentages of clauses containing a

boundary-crossing, however, the bilinguals appear to be the group that behaves differently from the other two, producing a somewhat higher percentages of these clauses (35.6%), whereas the percentages found for the monolinguals and the trilinguals are very similar (29.8% and 31.4%, respectively). A similar difference is found for the percentages of +Ground clauses, but now the percentages of the bilinguals are much higher (80.0%) than those of the other two groups (69.1% for monolinguals, and 65.2% for trilinguals), who also seem to differ slightly from each other.

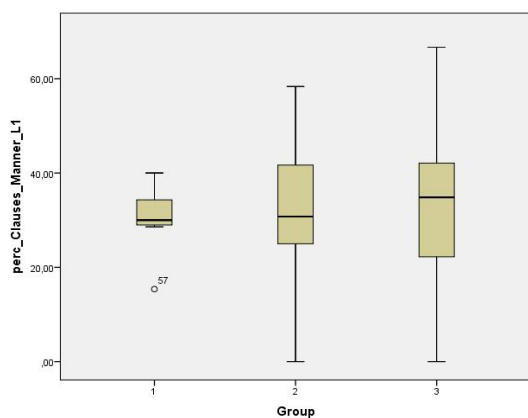
Regarding the percentages of +Manner and –Manner clauses with and without a boundary-crossing (Table 5.20), both bilinguals and trilinguals show a behaviour that is very different from that of monolinguals. First, monolinguals produce a higher number of +Manner clauses in combination with a boundary-crossing (32.1%) than both bilinguals and trilinguals (18.8% and 22.7%, respectively). Trilinguals also seem to produce slightly more +Manner clauses in combination with a boundary-crossing than bilinguals.

Second, the percentages of +Manner clauses produced by monolinguals for clauses with and clauses without a boundary-crossing are very similar (32.1% for clauses with a boundary-crossing against 28.8% for clauses without a boundary-crossing). In contrast, in both bi- and trilinguals, the percentages of +Manner clauses increase dramatically for clauses without a boundary-crossing: bilinguals go from 18.8% to 48.3%, and trilinguals from 22.7% to 41.2%, which means that both groups make much more reference to Manner in clauses without a boundary-crossing than monolingual French speakers.

The outcomes of the statistical analyses carried out on the L1 French data indicated that there were significant differences between the three groups of participants regarding the % of +Manner clauses ($p = .004$). A marginally significant difference was found for the % of +Manner clauses without a boundary-crossing ($p = .054$).

The post-hoc Mann-Whitney U test (significance level $.05/3 = .0167$) indicated that trilinguals had produced significantly more +Manner clauses than monolinguals ($p = .000$). The percentages are shown in Figure 5.25.

Figure 5.25: % of +Manner clauses in L1 French: monolinguals, bilinguals, and trilinguals



Group: “1” = monolinguals, “2” = bilinguals, “3” = trilinguals

5.3.5 Summary of the findings for general linguistic behaviour

The results for the monolinguals seem to confirm the findings of previous research regarding the expression of Manner in satellite framed and verb-framed languages: French and Spanish monolinguals make less reference to Manner than English monolinguals. In addition, the percentages of +Manner clauses do not vary between +BC and –BC clauses for French and Spanish monolinguals, whereas the percentages of +Manner clauses found for the English monolinguals indicate that they make more reference to Manner in –BC clauses than in +BC clauses. This difference was not significant, but it should be kept in mind that the number of participants was small. Nevertheless, the percentage of +Manner clauses found for English monolinguals are higher for both types of clauses than the ones found for French and Spanish monolinguals.

An unexpected finding was that the Spanish monolinguals had produced significantly more +Manner clauses than the French monolinguals. The differences between the percentages are small,

nevertheless. The percentages also indicate that English monolinguals produce more +BC clauses than the other two groups, and that English and French monolinguals group together regarding the percentage of +Ground clauses they produce, whereas Spanish monolinguals produce fewer +Ground clauses. The outcomes of the statistical analyses did not show any significant differences, however. Furthermore, English monolinguals appear to produce more clauses containing Fictive Motion than the other two groups, which leads to a slightly lower percentage of clauses containing Translational Motion. The differences found for the other categories of Motion are small.

With respect to the general linguistic behaviour of the bilinguals and trilinguals in L2/L3 Spanish, it turned out that all learner groups had produced a slightly higher percentage of clauses containing Fictive Motion than Spanish monolinguals. For clauses containing a Change of Position, only the percentage found for the L1 French bilinguals was similar to the one found for Spanish monolinguals, with all other learner groups producing lower percentages. The differences found for the remaining categories of motion were small.

Regarding reference to Manner, at first sight, all learner groups seem to produce percentages of +Manner clauses that are similar to the one found for Spanish monolinguals. Nevertheless, a closer look at the data reveals that reference to Manner becomes very low in +BC clauses in all learner groups. In –BC clauses, on the contrary, the percentages of the learner groups are more similar to the one found for Spanish monolinguals.

L1 English participants (bilinguals and trilinguals) did not differ from Spanish monolinguals regarding general linguistic behaviour. For L1 French participants, on the contrary, it was found that L1 French bilinguals had produced significantly more +BC clauses in Spanish than L1 French trilinguals and Spanish monolinguals. Regarding the percentages of +Ground clauses, it was found that L1 French bilinguals had produced significantly more +Ground clauses than both L1 French trilinguals and Spanish monolinguals.

With respect to the general linguistic behaviour of both groups of bilinguals in L2 Spanish, it was found that L1 French bilinguals had produced significantly more +Ground clauses than L1 English bilinguals. With respect to the behaviour of both groups of trilinguals in L3 Spanish, the only significant difference that was found concerned the percentage of +Ground clauses: now, L1 English trilinguals had produced more +Ground clauses than L1 French trilinguals.

The behaviour of the L1 English trilinguals in L2 French showed a slightly higher percentage of clauses containing Fictive Motion, and a slightly lower percentage of clauses containing a Change of Position. The differences found for the other categories of Motion were small. Overall, L2 French speakers produced a higher percentage of +Manner clauses than French monolinguals, but virtually all reference to Manner is made in –BC clauses. Therefore, French monolinguals turned out to have produced a significantly higher percentage of +Manner +BC clauses than L2 speakers.

With respect to the general linguistic behaviour of the L1 French trilinguals in L2 English, it turned out that they had produced lower percentages of clauses containing a Change of Position or Non-translational Motion and slightly more clauses containing Fictive Motion than English monolinguals. The differences found for the other categories of Motion were small. Furthermore, English L2 speakers turned out to have produced significantly fewer +Manner clauses than English monolinguals. Although the differences were non-significant, the percentages indicate that English L2 speakers make more reference to Manner in –BC clauses than in +BC clauses, just like English monolinguals. The former also seem to produce more +Ground clauses and fewer +BC clauses.

The last analyses looked into the existence of reverse transfer in L1 English and L1 French. It turned out that, in English, bilinguals behave somewhat differently from the other two groups regarding their production of the different Motion categories: they appear to produce fewer clauses containing a Change of Position, and more clauses containing Fictive Motion than monolinguals and trilinguals. The remaining differences between groups and categories of Motion are much smaller.

Both bi- and trilinguals produce significantly fewer +Manner clauses than monolinguals. Although non-significant, the difference is especially visible in +BC clauses. The differences between the percentages of +Manner –BC clauses are smaller, but here the difference in the % of +Manner clauses was found to be significant. English monolinguals also turned out to produce more +BC clauses than trilinguals, whereas both bilinguals and trilinguals produce more +Ground clauses than monolinguals.

Regarding the L1 French data, it turned out that, again, the bilingual group behaved somewhat differently regarding their production of the different Motion categories, producing more clauses containing a Change of Position or Fictive Motion, and no clauses containing Non-translational Motion or Other types of motion. Although non-significant, L1 French bi- and trilinguals show a difference between +BC and –BC clauses regarding the % of +Manner clauses they produce: their reference to Manner is lower in +BC clauses than in –BC clauses, whereas the two percentages found for monolinguals are similar to each other. In addition, bi- and trilinguals make less reference to Manner in +BC clauses than monolinguals do, whereas in –BC clauses, they make more reference to Manner, but again, these differences were non-significant.

The percentages for L1 French show that, in general, bilinguals and trilinguals behave more similar to each other. Nevertheless, monolinguals turned out to have produced significantly fewer +Manner clauses than trilinguals.

5.4 Lexical richness

In order to get a better impression of the variety of motion verbs and other lexical items referring to motion used by the different groups of participants when telling the frog story, Guiraud's index of lexical richness was calculated for each verb category: Manner, Path, Change of Position, Fictive Motion, Non-translational Motion and Other. It was calculated as well for all these categories taken together to get an impression of the overall lexical richness of motion expressions in each language and group of participants. Guiraud's index was deemed to be the most suitable one for the type of data used in the present study, since it corrects for the increase in the number of tokens caused by an increase in the number of types. It was calculated by dividing the total number of types in each category by the square root of the total number of tokens in the same category (cf. Vermeer, 2000). The obtained values were then compared between languages, as well as between different groups of participants. The outline of this paragraph will be identical to that of the previous paragraph in this chapter. Complete lists of all verb types produced by the different groups of participants together with their numbers of occurrences are found in Appendices VIII-X.

5.4.1 Lexical richness in monolinguals

The lexical richness values obtained for the three control groups of monolingual speakers were compared first in order to have a baseline for the comparisons between the various groups of non-native speakers. These values are shown in Table 5.21. It was found that, for Manner verbs, monolingual English speakers showed the highest value for lexical richness (3.02), followed by monolingual French speakers (2.35), and monolingual Spanish speakers (1.41). For Path verbs, the opposite pattern was found, with Spanish speakers showing the highest value for lexical richness (1.48), followed by French speakers (1.33), and English speakers (1.02). For verbs indicating a Change of Position, the same pattern as for Path verbs was found, with Spanish speakers showing the highest lexical richness (3.05), followed by French speakers (2.79), and English speakers (2.37). In the category of Fictive Motion, French and Spanish speakers showed exactly the same lexical

richness (1.07), whereas English speakers used a somewhat greater variety of verbs (1.37). Non-translational Motion displayed the greatest lexical richness in English (2.12), somewhat less in French (1.50), and the least in Spanish (1.00). The category of ‘Other’, which includes both motion verbs and other items or combinations of items referring to a single motion event, showed the highest lexical richness in English (2.85), followed by Spanish (2.60), and French (1.41). The overall lexical richness of motion expressions was the highest in English (4.81), whereas French and Spanish showed vary similar values (3.93 and 3.83, respectively).

Table 5.21: Lexical richness in monolinguals: English, French, and Spanish

	Verb types																		Overall lexical richness		
	Manner			Path			COP			Fictive			NTM			Other			Ty	To	Gi
	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi			
L1 EN mon	24	63	3.02	7	47	1.02	14	35	2.37	9	43	1.37	6	8	2.12	9	10	2.85	69	206	4.81
L1 FR mon	12	26	2.35	11	68	1.33	15	29	2.79	4	14	1.07	3	4	1.50	2	2	1.41	47	143	3.93
L1 SP mon	9	41	1.41	20	182	1.48	25	67	3.05	5	22	1.07	1	1	1.00	9	12	2.60	69	325	3.83

COP: Change of Position, **NTM:** Non-translational Motion

Ty: number of types, **To:** number of tokens, **Gi:** Guiraud’s index of lexical richness

L1: mother tongue, **L2:** second language, **L3:** third language

EN: English, **FR:** French, **SP:** Spanish, **mon:** monolinguals

5.4.2 Lexical richness in L2/L3 Spanish

The next analyses consisted in comparing values obtained for lexical richness in Spanish as an L2 and L3 for the different groups of bilinguals and trilinguals. First, the values for lexical richness of bilinguals and trilinguals with the same L1 were compared with each other and with the baseline values of monolingual Spanish speakers. Then, the values obtained for L1 English bilinguals were compared with those obtained for L1 French bilinguals. The same was done for the values obtained for L1 English trilinguals and L1 French trilinguals. All values are shown in Table 5.22.

Table 5.22: Lexical richness in L2/L3 Spanish: L1 English bi- and trilinguals, L1 French bi- and trilinguals, and Spanish monolinguals

	Verb types																		Overall lexical richness		
	Manner			Path			COP			Fictive			NTM			Other			Ty	To	Gi
	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi			
L1 EN - L3 SP	7	19	1.61	13	48	1.88	9	11	2.71	4	11	1.21	1	1	1.00	3	3	1.73	37	93	3.84
L1 FR - L3 SP	13	56	1.74	26	279	1.56	24	62	3.43	8	46	1.18	4	5	1.79	7	13	1.94	82	461	3.82
L1 EN - L2 SP	8	19	1.84	12	51	1.68	9	12	2.60	5	15	1.29	3	4	1.50	1	1	1.00	38	102	3.76
L1 FR - L2 SP	8	12	2.31	15	38	2.43	12	19	2.75	4	9	1.33	-	-	-	2	2	1.41	41	80	4.58
L1 SP mon	9	41	1.41	20	182	1.48	25	67	3.05	5	22	1.07	1	1	1.00	9	12	2.60	69	325	3.83

COP: Change of Position, **NTM:** Non-translational Motion
Ty: number of types, **To:** number of tokens, **Gi:** Guiraud's index of lexical richness
L1: mother tongue, **L2:** second language, **L3:** third language
EN: English, **FR:** French, **SP:** Spanish, **mon:** monolinguals

The values of Guiraud's index showed that both L1 English bilinguals and trilinguals showed somewhat higher values for lexical richness than Spanish monolinguals for both Manner verbs (1.84 and 1.61 vs. 1.41) and Path verbs (1.68 and 1.88 vs. 1.48), but the differences are not very remarkable. For verbs denoting a Change of Position, the values for L1 English bilinguals and trilinguals are somewhat lower than those found for Spanish monolinguals (2.60 and 2.71 vs. 3.05), but, again, the differences are not very remarkable. For verbs denoting Fictive Motion, the differences are again very small, but the values found for the L1 English bi- and trilinguals are a little bit higher than those found for Spanish monolinguals (1.29 and 1.21 vs. 1.07). For verbs denoting Non-translational Motion, the value found for L1 English bilinguals (1.50) was higher than those found for L1 English trilinguals and Spanish monolinguals, which were identical (1.00 for both groups). For the 'Other' category, lexical richness was much higher in Spanish monolinguals (2.60) than in both L1 English bi- and trilinguals (1.00 and 1.73, respectively). However, the overall lexical richness was very much the same in all three groups of participants: 3.76 for L1 English bilinguals, 3.84 for L1 English trilinguals, and 3.83 for Spanish monolinguals.

With respect to the data of the L1 French bi- and trilinguals the values of Guiraud's index indicated that L1 French bilinguals showed a much greater variety of Manner verbs (2.31) than Spanish monolinguals (1.41). The lexical richness of L1 French trilinguals was also somewhat higher (1.74) than that of Spanish monolinguals. Interestingly, L1 French bilinguals also showed a much greater variety of Path verbs (2.43) than Spanish monolinguals (1.48), whereas the difference between L1 French trilinguals and Spanish monolinguals was very small (1.56 vs. 1.48). For verbs denoting a Change of Position, however, L1 French bilinguals showed a lower lexical richness (2.75) than Spanish monolinguals (3.05), whereas L1 French trilinguals showed a greater variety of these verbs (3.43). For the category of Fictive Motion, L1 French bilinguals and trilinguals again showed a somewhat greater variety of verbs than Spanish monolinguals (1.33 and 1.18 vs. 1.07). For the category of Non-translational Motion, Guiraud's index could not be computed for the L1 French bilinguals, because they had not produced any clauses referring to such motion. The lexical richness for the L1 French trilinguals for this category was again higher than that for Spanish monolinguals (1.79 vs. 1.00). For the category of 'Other', on the contrary, Spanish monolinguals showed the greatest lexical richness (2.60), followed by the L1 French trilinguals (1.94). The L1 French bilinguals showed the smallest lexical richness in this category (1.41). With respect to overall lexical richness, L1 French bilinguals showed the greatest value by far (4.58). The values for the L1 French bilinguals and the Spanish monolinguals were very similar (3.82 vs. 3.83).

When comparing the lexical richness L2 in Spanish for both groups of bilinguals, it was found that the values were always higher for the L1 French bilinguals than for the L1 English bilinguals, except for the category of Non-translational Motion, where the L1 French bilinguals did not produce any clauses referring to this type of motion, whereas the value for the L1 English bilinguals was 1.50. The other values were: 2.31 vs. 1.84 for Manner, 2.43 vs. 1.68 for Path, 2.75 vs. 2.60 for Change Position, 1.33 vs. 1.29 Fictive Motion, and 1.41 vs. 1.00 for 'Other'. Overall lexical richness was also higher for the L1 French bilinguals: 4.58 vs. 3.76 for the L1 English bilinguals.

Remarkably, in the categories of Manner, Path and Non-translational Motion, the values for the L1 English bilinguals were more similar to those of monolingual Spanish speakers than those for the L1 French bilinguals.

When comparing the values of Guiraud's index in Spanish for both groups of trilinguals, it turned out that they were more similar to each other than the values found for the groups of bilinguals, except for the category of Change of Position, where the value was higher for the L1 French trilinguals (3.43) than for the L1 English trilinguals (2.71). The other values found for the L1 English and the L1 French trilinguals were: 1.61 vs. 1.71 for Manner, 1.88 vs. 1.56 for Path, 1.21 vs. 1.18 for Fictive Motion, 1.00 vs. 1.79 for Non-translational Motion, and 1.74 vs. 1.94 for 'Other'. In general, both groups behaved very similarly to monolingual Spanish speakers, except for the 'smaller' categories of Non-translational Motion and 'Other'. The values for the overall lexical richness also pointed in this direction: 3.84 for L1 English trilinguals, 3.82 for L1 French bilinguals, and 3.83 for monolingual Spanish speakers.

5.4.3 Lexical richness found for the trilinguals in L2 French and L2 English

For both groups of trilinguals, lexical richness values were also computed for their respective L2s and compared to those of monolingual speakers.

5.4.3.1 Lexical richness in L2 French

The values of Guiraud's Index obtained for the L1 English trilinguals in L2 French are shown in Table 5.23. It turns out that lexical richness is lower in L2 speakers than in French monolinguals for the categories of Manner, Change of Position, Non-translational Motion, and Fictive Motion, although the difference is smaller for the latter category. Lexical richness appears to be higher in L2 speakers than in monolinguals for the category of Path, and slightly higher for the category of 'Other'. Overall lexical richness turns out to be slightly higher in French monolinguals than in French L2 speakers.

Table 5.23: Lexical richness in French: L2 speakers (L1 English trilinguals) vs. French monolinguals

	Verb types																		Overall lexical richness		
	Manner			Path			COP			Fictive			NTM			Other			Ty	To	Gi
	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi			
L2 FR (L1 EN)	11	32	1.94	16	59	2.08	7	13	1.94	4	20	0.89	1	1	1.00	3	3	1.73	42	128	3.71
L1 FR mon	12	26	2.35	11	68	1.33	15	29	2.79	4	14	1.07	3	4	1.50	2	2	1.41	47	143	3.93

COP: Change of Position, **NTM:** Non-translational Motion

Ty: number of types, **To:** number of tokens, **Gi:** Guiraud’s index of lexical richness

L1: mother tongue, **L2:** second language

EN: English, **FR:** French, **mon:** monolinguals

5.4.3.2 Lexical richness in L2 English

The values of Guiraud’s Index found for the L1 French trilinguals in L2 English are shown in Table 5.24. It turns out that lexical richness is slightly higher in L2 speakers than in English monolinguals for the categories of Change of Position and Non-translational Motion. It is lower however, for the categories of Manner, Path, and ‘Other’. The values for the category of Fictive Motion are about the same for both groups. Overall lexical richness turns out to be much higher in English monolinguals than in L2 speakers. This is mainly caused by the much greater variety of Manner verbs the former produce, and which are found in categories of Manner and Non-translational Motion.

Table 5.24: Lexical richness in English: L2 speakers (L1 French trilinguals) vs. English monolinguals

	Verb types																		Overall lexical richness		
	Manner			Path			COP			Fictive			NTM			Other			Ty	To	Gi
	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi			
L2 EN (L1 FR)	24	113	2.26	12	216	0.82	18	51	2.52	20	192	1.44	7	10	2.21	11	23	2.29	92	605	3.74
L1 EN mon	24	63	3.02	7	47	1.02	14	35	2.37	9	43	1.37	6	8	2.12	9	10	2.85	69	206	4.81

COP: Change of Position, **NTM:** Non-translational Motion

Ty: number of types, **To:** number of tokens, **Gi:** Guiraud’s index of lexical richness

L1: mother tongue, **L2:** second language

EN: English, **FR:** French, **mon:** monolinguals

5.4.4 Reverse transfer visible in lexical richness in L1 English and L1 French

5.4.4.1 Reverse transfer visible in lexical richness in L1 English

The values of Guiraud's Index of the L1 English participants are shown in Table 5.25. For participants with L1 English, lexical richness in the category of Manner declines straightforwardly with any additional language the participants speak: it is 3.02 for monolinguals, 2.81 for bilinguals, and 2.14 for trilinguals. A similar pattern is visible for the category of 'Other', where lexical richness is 2.85 for monolinguals, 2.67 for bilinguals, and 2.31 for trilinguals. For the other categories, the patterns are less clear: bilinguals used a wider variety of Path verbs (1.56 vs. 1.02 for monolinguals and 1.00 for trilinguals), and in the category of Change of Position, bilinguals and trilinguals were more similar to each other (2.58 vs. 2.56) than to monolinguals (2.37). Bilinguals used a smaller variety of verbs in the category of Fictive Motion (0.82 against 1.37 for monolinguals and 1.22 for trilinguals), whereas monolinguals showed a greater lexical richness in the category of Non-translational Motion than the other two groups (2.12 vs. 1.50 for bilinguals and 1.79 for trilinguals). The overall lexical richness showed a pattern similar to those found for the Manner and 'Other' categories: it declined with every additional language the participants spoke. The values for overall lexical richness were 4.81 for monolinguals, 4.29 for bilinguals, and 3.97 for trilinguals.

Table 5.25: Lexical richness in L1 English: trilinguals, bilinguals, and monolinguals

	Verb types																		Overall lexical richness		
	Manner			Path			COP			Fictive			NTM			Other			Ty	To	Gi
	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi			
L1 EN – L3 SP	17	63	2.14	8	64	1.00	14	30	2.56	9	54	1.22	4	5	1.79	8	12	2.31	60	228	3.97
L1 EN- L2 SP	18	41	2.81	10	41	1.56	10	15	2.58	6	54	0.82	3	4	1.50	8	9	2.67	55	164	4.29
L1 EN mon	24	63	3.02	7	47	1.02	14	35	2.37	9	43	1.37	6	8	2.12	9	10	2.85	69	206	4.81

COP: Change of Position, **NTM:** Non-translational Motion

Ty: number of types, **To:** number of tokens, **Gi:** Guiraud's index of lexical richness

L1: mother tongue, **L2:** second language, **L3:** third language

EN: English, **SP:** Spanish, **mon:** monolinguals

5.4.4.2 Reverse transfer visible in lexical richness in L1 French

The values of Guiraud’s Index found for the L1 French participants are shown in Table 5.26. For participants with L1 French, lexical richness tended to increase with every additional language the participants spoke, which is exactly opposite to what was found for participants with L1 English. This was especially visible in the ‘larger’ categories of Manner, Change of Position, and Fictive Motion. The values for monolinguals, bilinguals, and trilinguals with L1 French in these categories were: 2.35, 2.60 and 3.22 for Manner, 2.79, 3.30 and 3.64 for Change of Position, 1.07, 1.21 and 1.51 for Fictive Motion. In the category of Path, bilinguals showed a much greater lexical richness than both monolinguals and trilinguals (2.61 vs. 1.33 and 1.71). Bilinguals did not produce any clauses belonging to the ‘smaller’ categories of Non-translational Motion and ‘Other’. In these categories, trilinguals showed a greater lexical richness than monolinguals: 1.94 vs. 1.50 for Non-translational Motion, and 2.79 vs. 1.41 for ‘Other’. The values for the overall lexical richness also pointed towards an increase in lexical richness with every additional language the participants spoke. They were 3.93 for monolinguals, 4.88 for bilinguals, and 5.38 for trilinguals.

Table 5.26: Lexical richness in L1 French: trilinguals, bilinguals, and monolinguals

	Verb types																		Overall lexical richness		
	Manner			Path			COP			Fictive			NTM			Other			Ty	To	Gi
	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi	Ty	To	Gi			
L1 FR – L3 SP	30	87	3.22	29	287	1.71	36	98	3.64	11	53	1.51	7	13	1.94	15	29	2.79	128	567	5.38
L1 FR- L2 SP	9	12	2.60	15	33	2.61	14	18	3.30	4	11	1.21	-	-	-	-	-	-	42	74	4.88
L1 FR mon	12	26	2.35	11	68	1.33	15	29	2.79	4	14	1.07	3	4	1.50	2	2	1.41	47	143	3.93

COP: Change of Position, **NTM:** Non-translational Motion

Ty: number of types, **To:** number of tokens, **Gi:** Guiraud’s index of lexical richness

L1: mother tongue, **L2:** second language, **L3:** third language

FR: French, **SP:** Spanish, **mon:** monolinguals

5.4.5 Summary of the findings for lexical richness

With respect to the monolingual data, lexical richness turns out to be the highest in English, whereas French and Spanish show similar values. This difference is mainly caused by the wider variety of Manner verbs produced by the English monolinguals, which can be used to denote either Translational or Non-translational Motion. Therefore, these verbs are found in the categories of Manner and Non-translational Motion. In addition, English monolinguals appear to use a slightly greater variety of verbs denoting Fictive Motion than the other two groups.

Regarding the values found for L2/L3 Spanish, it turns out that overall lexical richness is the highest in L1 French bilinguals. The value found for this learner group is even higher than the one found for Spanish monolinguals, whereas the values of the other learner groups are all similar to the one found for Spanish monolinguals. This difference seems to be caused by the wider varieties of Manner verbs and Path verbs used by the L1 French bilinguals. They also produce a slightly greater variety verbs denoting Fictive Motion.

For participants with the same L1, it was found that the values found for L1 English bi- and trilinguals were quite similar, with bilinguals producing a slightly greater variety of Manner verbs and Path verbs, and trilinguals producing a slightly greater variety of verb denoting a Change of Position. For the categories of Non-translational Motion, and ‘Other’, however, the differences are larger: bilinguals produce more verbs denoting Non-translational Motion, and trilinguals more types belonging to the ‘Other’ category. Between the values found for L1 French bi- and trilinguals, on the contrary, the differences were quite large: L1 French bilinguals produce much wider varieties of Manner verbs and Path verbs than L1 French trilinguals, whereas L1 French trilinguals produce slightly more types belonging to the categories of Change of Position, Fictive, and ‘Other’. The category of Non-translational Motion is quite varied in L1 French trilinguals, whereas it is non-existent in L1 French bilinguals. The difference between the numbers of participants in both groups is large, however, and should be taken into account.

Regarding the differences between both groups of bilinguals, as has been mentioned above, lexical richness was much higher in L1 French bilinguals than in L1 English bilinguals. L1 French bilinguals had produced a greater variety of tokens in the categories of Manner, Path, and Change of Position, and ‘Other’. L1 English bilinguals were the only group that had produced any tokens in the category of Non-translational Motion, whereas the values for Fictive Motion are similar for both groups.

With respect to the differences found between both groups of trilinguals, it turned out that the values for Manner and Fictive Motion were similar, whereas L1 French trilinguals had produced a greater variety of tokens in the categories of Change of Position and Non-translational Motion, as well as a slightly greater variety in the category of ‘Other’. L1 English trilinguals had produced a slightly greater variety of Path verbs. Nevertheless, the large difference between the numbers of participants in both groups should be taken into account when interpreting the results.

5.5 The expression of Manner

The first part, section 5.5.1, will be dedicated to an analysis of the Manner elements used for making reference to Manner, both with and without a boundary-crossing. In the second part, section 5.5.2, a qualitative analysis will be made of the use of Manner verbs in clauses with a boundary-crossing. Special attention will be paid to the grammaticality or target-likeness of the clauses produced by bilinguals and trilinguals in their L2/L3. In addition, given that the outcomes of the analyses in section 5.3 of this chapter suggested that the expression of Manner by L1 English bi- and trilinguals in their L1 might have been affected by the acquisition of one or two verb-framed languages, three scenes from the frog story depicting a clear boundary-crossing-event will be selected for a more in-depth analysis. The narrations of these scenes made by monolinguals, bilinguals, and trilinguals will be compared to see whether there are any differences.

5.5.1 Elements used for making reference to Manner

To count the total numbers of elements used for making reference to Manner (Manner verb, Gerund, Adverbial expression, and Description), the *freq* command in *CLAN* was used. This was done separately for clauses without a boundary-crossing and clauses containing a boundary-crossing. The main code “\$MAN” was entered in combination with the different subparts for Manner elements (e.g. \$MAN:MAV, which refers to a clause in which the participant refers to Manner by using a Manner verb). For clauses with a boundary-crossing, the subpart “BC”, indicating a boundary-crossing, was added (e.g. \$MAN:PAV:ADV:BC, which refers to a clause containing a boundary-crossing in which the participant uses a Path verb, but refers to Manner by using an adverbial expression). The elements used for making reference to Manner in clauses without a boundary-crossing were then counted by subtracting the elements used in clauses with a boundary-crossing from the total number of elements. The main codes and the possible combinations of subparts are described in detail in section 4.6.2 of the previous chapter.

5.5.1.1 Elements used for making reference to Manner in monolinguals

When one looks at the types of elements monolingual speakers use for making reference to Manner, it turns out that in clauses without a boundary-crossing (Table 5.27), French monolinguals rely exclusively on Manner verbs (100%). English monolinguals slightly less so (77.4%), and Spanish monolinguals the least (52.4%). In addition, English and Spanish monolinguals use all other three types of elements for making reference to Manner, but Spanish monolinguals use them slightly more often than English monolinguals, especially gerunds (15.3% vs. 3.8%) and descriptions (16.9% vs. 5.7%). For adverbial expressions, the percentages are more similar: 15.3% for Spanish monolinguals and 13.2% for English monolinguals.

Table 5.27: Elements used for referring to Manner without a boundary-crossing by the different groups of monolingual speakers

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L1 EN (n = 6)	41 (77.4%)	2 (3.8%)	7 (13.2%)	3 (5.7%)	53
L1 FR (n = 7)	19 (100%)	- (0.0%)	- (0.0%)	- (0.0%)	19
L1 SP (n = 13)	31 (52.4%)	9 (15.3%)	9 (15.3%)	10 (16.9%)	59

EN: English. **FR:** French. **SP:** Spanish.

For clauses with a boundary-crossing (Table 5.28), the percentages show that French monolinguals rely less heavily on Manner verbs (77.8%) than in clauses without a boundary-crossing. In fact, their reliance on Manner verbs in clauses with a boundary-crossing is comparable to that of English monolinguals (75.0%). English monolinguals, however, do not show a clear difference in behaviour regarding the use of Manner verbs in both types of clauses, which means that their use of these verbs is not affected by the presence of a boundary-crossing. Spanish monolinguals, again, rely the least on Manner verbs for making reference to Manner in clauses with a boundary-crossing (43.5%), and they use an even smaller percentage of Manner verbs than in clauses without a boundary-crossing. Regarding the use of other elements, French monolinguals only use adverbial expressions (22.2%), whereas English and Spanish monolinguals again use all three types of elements. English monolinguals rely most heavily on gerunds (12.5%), followed by adverbial expressions (9.4%), and descriptions (3.1%). Spanish monolinguals rely most heavily on adverbial expressions and descriptions (26.1% and 21.7%), and the least on gerunds (8.7%). Overall, Spanish monolinguals again make more use of elements other than Manner verbs than English monolinguals.

Table 5.28: Elements used for referring to Manner in combination with a boundary-crossing by the different groups of monolingual speakers

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L1 EN (n = 6)	24 (75.0%)	4 (12.5%)	3 (9.4%)	1 (3.1%)	32
L1 FR (n = 7)	7 (77.8%)	- (0.0%)	2 (22.2%)	- (0.0%)	9
L1 SP (n = 13)	10 (43.5%)	2 (8.7%)	6 (26.1%)	5 (21.7%)	23

EN: English. FR: French. SP: Spanish.

In order to find out whether the differences between the three groups of monolinguals were significant, a Kruskal-Wallis test was carried out on the % of Manner being expressed within the verb, and the % of Manner being expressed outside the verb (gerunds, adverbial expressions, and descriptions taken together³²). This was done separately for clauses without a boundary-crossing and clauses with a boundary-crossing.

The results showed that the three groups differed significantly regarding the % of Manner expressed within the verb without a boundary-crossing ($p = .000$), and the % of Manner expressed outside the verb without a boundary-crossing ($p = .000$). There were no significant differences between the groups for clauses containing a boundary-crossing.

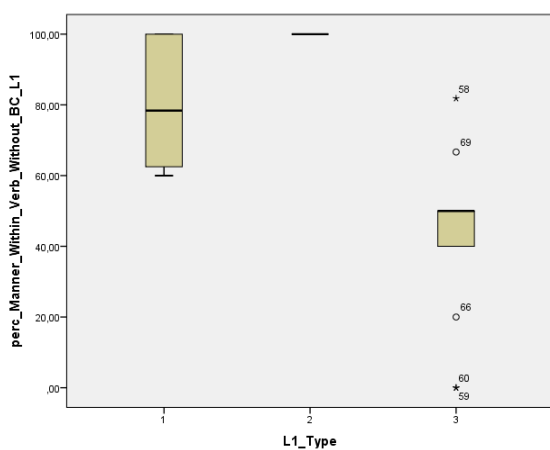
Post-hoc Mann-Whitney U tests showed that, with respect to the % of Manner being expressed within the verb in clauses without a boundary-crossing, there were no significant differences between English and French monolinguals. The differences between English monolinguals and Spanish monolinguals did turn out to be significant ($p = .005$), as did those between French monolinguals and Spanish monolinguals ($p = .000$). English and French monolinguals had both expressed significantly more Manner within the verb in clauses without a

³² It was decided to take these three types of elements together, because the distinction % Manner within the verb/% Manner outside the verb is the most relevant one with respect to the boundary-crossing constraint.

boundary-crossing than Spanish monolinguals. The % of Manner expressed within the verb in clauses without a boundary-crossing for each language can be found in Figure 5.26. It turned out that among the Spanish monolinguals, there were more outliers than in the other two groups.

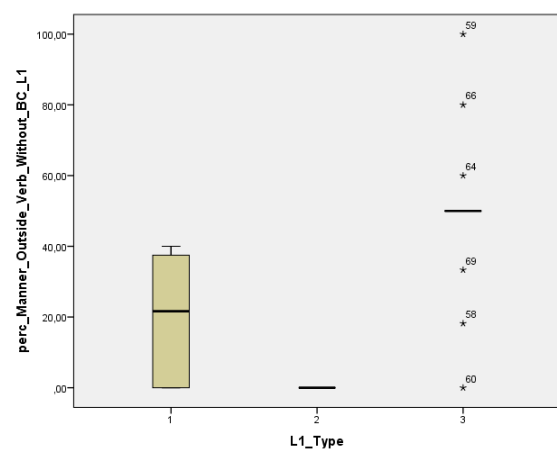
Regarding the % of Manner being expressed outside the verb in clauses without a boundary-crossing, there were significant differences between all three groups. English monolinguals had expressed significantly more Manner outside the verb in clauses without a boundary-crossing than French monolinguals ($p = .001$), but significantly less than Spanish monolinguals ($p = .012$). French monolinguals had also expressed significantly less Manner outside the verb in clauses without a boundary-crossing than Spanish monolinguals ($p = .000$). The percentages are shown in Figure 5.27. It was again found that among the Spanish monolinguals, there were more outliers than in the other two groups.

Figure 5.26: Percentage of Manner expressed within the verb in clauses without a boundary-crossing: English, French, and Spanish monolinguals



L1_Type: “1” = English, “2” = French, “3” = Spanish.
BC: boundary-crossing

Figure 5.27: Percentage of Manner expressed outside the verb in clauses without a boundary-crossing: English, French, and Spanish monolinguals



L1_Type: “1” = English, “2” = French, “3” = Spanish.
BC: boundary-crossing

5.5.1.2 Elements used for making reference to Manner in L2/L3 Spanish

When one looks at the elements that are used by learners and Spanish monolinguals in clauses without a boundary-crossing (Table 5.29), it turns out that learners use more Manner verbs than Spanish monolinguals, who make use of a Manner verb in 52.4% of cases, and the L1 French trilinguals appear to be the learner group that comes closest to the Spanish system, making use of all types of elements and to similar extents as Spanish monolinguals. On the contrary, L1 French bilinguals and L1 English trilinguals show very similar behaviours. They both follow a French-like pattern, and only make use of Manner verbs and adverbial expressions, to similar extents. In other words, the latter seem to follow an L2-French-like pattern in their L3 Spanish. The L1 English bilinguals, on the contrary, appear to follow an English-like pattern, with many Manner verbs, even more than in their L1, and a relatively low use of other elements (5.3% for both adverbial expressions and descriptions). They do not use any gerunds in clauses without a boundary-crossing.

Table 5.29: Elements used for referring to Manner without a boundary-crossing in Spanish by the different groups of participants

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L1 EN / L3 SP (n = 6)	16 (80.0%)	- (0.0%)	4 (20.0%)	- (0.0%)	20
L1 FR / L3 SP (n = 24)	49 (59.0%)	9 (10.8%)	14 (16.9%)	11 (13.3%)	83
L1 EN / L2 SP (n = 5)	17 (89.5%)	- (0.0%)	1 (5.3%)	1 (5.3%)	19
L1 FR / L2 SP (n = 5)	12 (85.7%)	- (0.0%)	2 (14.3%)	- (0.0%)	14
L1 SP (n = 13)	31 (52.4%)	9 (15.3%)	9 (15.3%)	10 (16.9%)	59

EN: English. **FR:** French. **SP:** Spanish.

Table 5.30: Elements used for referring to Manner in combination with a boundary-crossing in Spanish by the different groups of participants

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L1 EN / L3 SP (n = 6)	3 (100.0%)	- (0.0%)	- (0.0%)	- (0.0%)	3
L1 FR / L3 SP (n = 24)	6 (33.3%)	1 (5.6%)	8 (44.4%)	3 (16.7%)	18
L1 EN / L2 SP (n = 5)	2 (50.0%)	1 (25.0%)	1 (25.0%)	- (0.0%)	4
L1 FR / L2 SP (n = 5)	1 (50.0%)	- (0.0%)	1 (50.0%)	- (0.0%)	2
L1 SP (n = 13)	10 (43.5%)	2 (8.7%)	6 (26.1%)	5 (21.7%)	23

EN: English. **FR:** French. **SP:** Spanish.

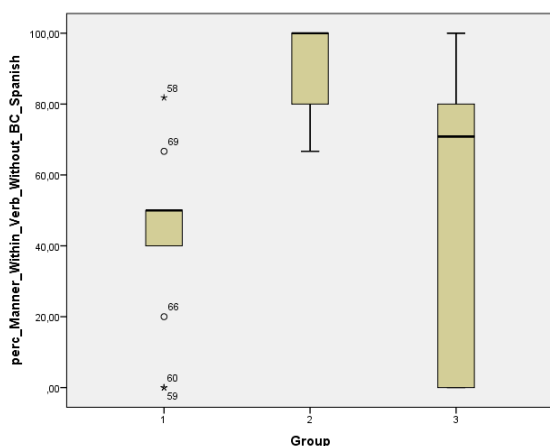
When looking at the elements that are used by learners and Spanish monolinguals in clauses with a boundary-crossing (Table 5.30), the patterns become very different. Even though all learner groups, except the L1 French trilinguals, still use more Manner verbs than Spanish monolinguals, in most cases the numbers have dropped considerably. The only exception is the L1 English trilinguals, who rely exclusively on Manner verbs in clauses with a boundary-crossing. L1 English and L1 French bilinguals both use Manner verbs in 50.0% of cases when referring to Manner, but the L1 French bilinguals still follow a more French-like pattern of only using Manner verbs and adverbial expressions (50.0%), whereas the L1 English bilinguals perform somewhat closer to Spanish monolinguals, especially with respect to their use of adverbial expressions (25.0% vs. 26.1% by Spanish monolinguals). They also make frequent use of gerunds (25.0%). Neither group of bilinguals makes use of descriptions. Again, the learner group whose overall performance is most similar to that of monolinguals is that of the L1 French trilinguals, the only clear difference being their stronger preference for adverbial expressions over Manner verbs: L1 French trilinguals use a Manner verb in

33.3% of cases, and adverbial expressions in 44.4%, whereas Spanish monolinguals use these elements in 43.5% and 26.1% of cases, respectively.

The results of the Kruskal-Wallis test for the English bi- and trilinguals and the Spanish monolingual controls showed that there were significant differences regarding the % of Manner that had been expressed outside the verb in clauses with a boundary-crossing ($p = .032$), and the % of Manner that had been expressed outside the verb, also in clauses without a boundary-crossing ($p = .003$).

Post-hoc Mann-Whitney U tests (significance level $.05/3 = .0167$) showed that there were no significant differences between the groups regarding the % of Manner expressed within the verb in clauses without a boundary-crossing. With respect to the % of Manner being expressed outside the verb in clauses without a boundary-crossing, the outcomes of the Mann-Whitney U tests showed that Spanish monolinguals had expressed significantly more Manner outside the verb in clauses without a boundary-crossing than both bilinguals ($p = .007$) and trilinguals ($p = .005$). The differences between English bi- and trilinguals were non-significant. The percentages are shown in Figure 5.28.

Figure 5.28: Percentage of Manner expressed within the verb in clauses without a boundary-crossing; Spanish monolinguals vs. L1 English bi- and trilinguals



Group: “1” = Spanish monolinguals, “2” = L1 English bilinguals, “3” = L1 English trilinguals

BC: boundary-crossing

The outcomes of the Kruskal-Wallis test conducted on the data of the L1 French bi- and trilinguals and those of Spanish monolinguals showed that there were no significant differences regarding the % of Manner that had been expressed within and outside the verb in both types of clauses. The same was found when comparing L1 English bilinguals and L1 French bilinguals, as well as L1 English trilinguals and L1 French trilinguals.

5.5.1.3 Elements used for making reference to Manner by the trilinguals in L2 French and L2 English

5.5.1.3.1 Elements used for making reference to Manner in L2 French

When examining the types of elements used for making reference to Manner in clauses without a boundary-crossing (Table 5.31), L1 English trilinguals again appear to follow a very English-like pattern, using all elements. The exact percentages are: 78.0% for Manner verbs, 4.9% for gerunds, 14.6% for adverbial expressions, and 2.4% for descriptions. French monolinguals rely exclusively on Manner verbs in clauses without a boundary-crossing.

Regarding the use of elements for making reference to Manner in clauses with a boundary-crossing (Table 5.32), it turns out that L1 English trilinguals now rely exclusively on Manner verbs. However, as was already mentioned before, they only produced one clause in which they make reference to Manner in combination with a boundary-crossing. French monolinguals make use of both Manner verbs and adverbial expressions, with a clear preference for the former. The exact percentages are: 77.8% for Manner verbs, and 22.2% for adverbial expressions.

With respect to the statistical analyses that were carried out on the data of the L1 English trilinguals in L2 French and those of French monolinguals, the outcomes of the Mann-Whitney U tests indicated that both groups differed significantly with respect to the % of Manner being expressed within the verb in clauses without a boundary-crossing ($p = .018$) and the % Manner being expressed outside the verb in clauses, also without a boundary-crossing ($p = .003$). It turned out that

monolinguals had expressed significantly more Manner within the verb and significantly less Manner outside the verb than L2 speakers. The results are shown in Figures 5.29 and 5.30, respectively.

Table 5.31: Elements used for referring to Manner without a boundary-crossing in French by L2 speakers and French monolinguals

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L2 FR (n = 5)	32 (78.0%)	2 (4.9%)	6 (14.6%)	1 (2.4%)	41
L1 FR (n = 7)	19 (100%)	- (0.0%)	- (0.0%)	- (0.0%)	19

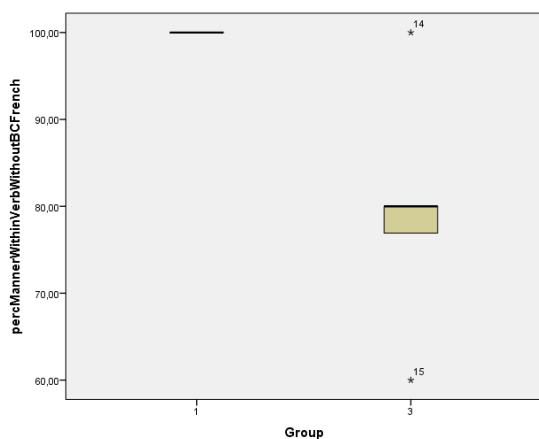
FR: French.

Table 5.32: Elements used for referring to Manner in combination with a boundary-crossing in French by L2 speakers and French monolinguals

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L2 FR (n = 5)	1 (100%)	- (0.0%)	- (0.0%)	- (0.0%)	1
L1 FR (n = 7)	7 (77.8%)	- (0.0%)	2 (22.2%)	- (0.0%)	9

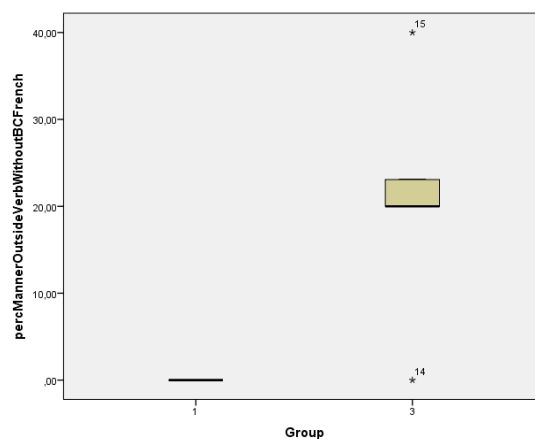
FR: French.

Figure 5.29: % of Manner expressed within the verb in clauses without a boundary-crossing: French monolinguals vs. French L2 speakers



Group: “1” = French monolinguals, “3” = French L2 speakers (L1 English trilinguals)

Figure 5.30: % of Manner expressed outside the verb in clauses without a boundary-crossing: French monolinguals vs. French L2 speakers



Group: “1” = French monolinguals, “3” = French L2 speakers (L1 English trilinguals)

5.5.1.3.2 Elements used for making reference to Manner in L2 English

A closer examination of the elements used for making reference to Manner in clauses without a boundary-crossing (Table 5.33) reveals a very English-like pattern in the L1 French trilinguals. In fact, their percentages are very similar to the ones found for English monolinguals for most elements. Remarkably, L1 French trilinguals produce more gerunds than English monolinguals in clauses without a boundary-crossing (5.6% vs. 3.8%, respectively). The other percentages are: 73.4% vs. 77.4% for Manner verbs, 15.3% vs. 13.2% for adverbial expressions, and 5.6% vs. 5.7% for descriptions.

In clauses with a boundary-crossing (Table 5.34), very different patterns are visible for L1 French trilinguals and English monolinguals. L1 French trilinguals now use Manner verbs in only 50.0% of cases when making reference to Manner, against 75.0% for English monolinguals, whose percentages do not differ much between clauses with and without a boundary-crossing. Moreover, L1 French trilinguals do not use gerunds, whereas English monolinguals use them in 12.5% of cases. The former also rely heavily on adverbial expressions and descriptions. The exact percentages for L1

French trilinguals and English monolinguals are: 38.5% vs. 9.4% for adverbial expressions, and 11.5% vs. 3.1% for descriptions.

Table 5.33: Elements used for referring to Manner without a boundary-crossing in English by L2 speakers and English monolinguals

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L2 EN (n = 19)	91 (73.4%)	7 (5.6%)	19 (15.3%)	7 (5.6%)	124
L1 EN (n = 6)	41 (77.4%)	2 (3.8%)	7 (13.2%)	3 (5.7%)	53

EN: English.

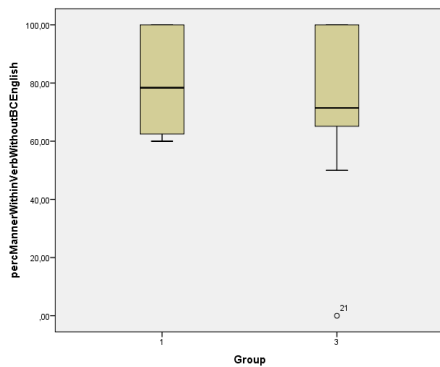
Table 5.34: Elements used for referring to Manner in combination with a boundary-crossing in English by L2 speakers and English monolinguals

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L2 EN (n = 19)	13 (50.0%)	- (0.0%)	10 (38.5%)	3 (11.5%)	26
L1 EN (n = 6)	24 (75.0%)	4 (12.5%)	3 (9.4%)	1 (3.1%)	32

EN: English.

Regarding the statistical analyses that were carried out on the data of the L1 French trilinguals in L2 English and the data of English monolinguals, the outcomes of the Mann-Whitney U tests showed that the monolinguals and the L2 speakers only differed with respect to the % of Manner expressed within the verb in clauses without a boundary-crossing ($p = .000$). English monolinguals had expressed significantly more Manner within the verb in these clauses than L2 speakers. The results are shown in Figure 5.31.

Figure 5.31: % of Manner expressed within the verb in clauses without a boundary-crossing: English monolinguals vs. English L2 speakers



Group: “1” = English monolinguals, “3” = English L2 speakers (L1 French trilinguals)

5.5.1.4 Reverse transfer visible in the use of elements for making reference to Manner in L1 English and L1 French

5.5.1.4.1 Reverse transfer visible in the use of elements for making reference to Manner in L1 English

Regarding the types of elements that are used for making reference to Manner in clauses without a boundary-crossing (Table 5.35), it turns out that trilinguals rely more on Manner verbs (83.3% vs. 78.6% for bilinguals, and 77.4% for monolinguals). They also use slightly fewer adverbial expressions (8.3% vs. 11.8% for bilinguals, and 13.2% for monolinguals). Trilinguals do not use any descriptions, whereas bilinguals and monolinguals use them in, respectively, 4.8% and 5.7% of cases.

For clauses with a boundary-crossing (Table 5.36), bi- and trilinguals appear to rely on Manner verbs to similar extents (66.7% and 68.4%, respectively), whereas monolinguals show a higher percentage of these verbs (75.0%). Regarding the other three types of elements, bilinguals show a greater preference for gerunds (16.7% against 5.3% for trilinguals, and 12.5 % for monolinguals), whereas trilinguals show a greater preference for adverbial expressions (26.3% against 8.3% for bilinguals, and 9.4% for monolinguals). Also, bilinguals use relatively more

descriptions than monolinguals (8.3% vs. 3.1%), whereas trilinguals do not use them. The general impression is that bilinguals and trilinguals are more similar to each other regarding the use of Manner verbs, whereas bilinguals and monolinguals are more similar to each other regarding the use of other elements. Nevertheless, each group has its own unique pattern of element use.

Table 5.35: Elements used for referring to Manner without a boundary-crossing in English by the different groups of participants with L1 English

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L1 EN / L3 SP (n = 6)	50 (83.3%)	5 (8.3%)	5 (8.3%)	- (0.0%)	60
L1 EN / L2 SP (n = 6)	33 (78.6%)	2 (4.8%)	5 (11.8%)	2 (4.8%)	42
L1 EN (n = 6)	41 (77.4%)	2 (3.8%)	7 (13.2%)	3 (5.7%)	53

EN: English. SP: Spanish.

Table 5.36: Elements used for referring to Manner in combination with a boundary-crossing in English by the different groups of participants with L1 English

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L1 EN / L3 SP (n = 6)	13 (68.4%)	1 (5.3%)	5 (26.3%)	- (0.0%)	19
L1 EN / L2 SP (n = 6)	8 (66.7%)	2 (16.7%)	1 (8.3%)	1 (8.3%)	12
L1 EN (n = 6)	24 (75.0%)	4 (12.5%)	3 (9.4%)	1 (3.1%)	32

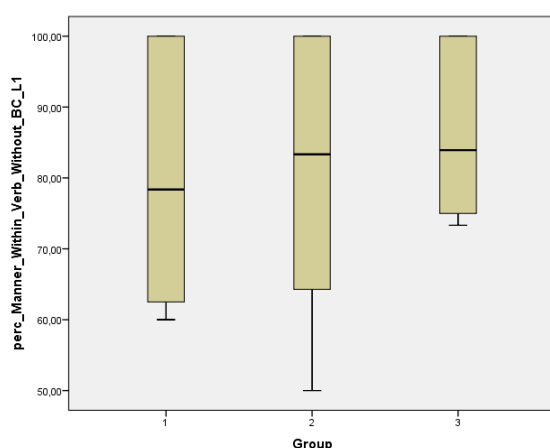
EN: English. SP: Spanish.

With respect to the statistical analyses that were carried out on the English data produced by the L1 English bi- and trilinguals, as well as the group of English monolinguals, the Kruskal-Wallis

tests indicated significant differences between the three groups of speakers regarding the % of Manner being expressed within the verb in clauses without a boundary-crossing ($p = .003$).

A post-hoc Mann-Whitney U tests (significance level $.05/3 = .0167$) revealed that, in clauses without a boundary-crossing, the % of Manner being expressed within the verb was significantly lower for bilinguals than for monolinguals ($p = .002$) and, also significantly lower than for trilinguals ($p = .003$). There was no significant difference between monolinguals and trilinguals. The percentages are shown in Figure 5.32.

Figure 5.32: % of Manner expressed within the verb in clauses without a boundary-crossing in L1 English: monolinguals, bilinguals, and trilinguals



Group: “1” = monolinguals, “2” = bilinguals, “3” = trilinguals

BC: boundary-crossing

5.5.1.4.2 Reverse transfer visible in the use of elements for making reference to Manner in L1

French

With respect to the use of elements for making reference to Manner in clauses without a boundary-crossing (Table 5.37), it turns out that bilinguals and trilinguals use all types of elements, whereas monolinguals exclusively rely on Manner verbs. It appears to be the case that, the more languages a group of participants speaks, the less this group relies on Manner verbs, and the more it relies on adverbial expressions and descriptions. For Manner verbs, the percentages are 100% for monolinguals, 62.5% for bilinguals, and 57.6% for trilinguals. For adverbial expressions, they are

0.0%, 6.3%, and 16.0%, respectively, and for descriptions 0.0%, 6.3%, and 16.8%. The pattern found for gerunds is a different one, with monolinguals not using them, bilinguals relying on them to a large extent (25.0%), and trilinguals also using them, but to a lesser extent (9.6%).

Regarding the use of elements for making reference to Manner in clauses with a boundary-crossing (Table 5.38), the patterns become very different. Bilinguals now turn to a more ‘French-like pattern’, using only Manner verbs and adverbial expressions. The only difference with monolinguals is that bilinguals rely a bit less on Manner verbs (66.7% vs. 77.8% for monolinguals), and somewhat more on adverbial expressions (33.3% vs. 22.2% for monolinguals). The trend found for the use of elements in clauses without a boundary-crossing is still visible for clauses with a boundary-crossing: the more languages a group of participants speaks, the less this group relies on Manner verbs for making reference to Manner, the percentages being 77.8% for monolinguals, 66.7% for bilinguals, and 46.9% for trilinguals. The latter are the only group that makes use of all types of elements. They rely on descriptions to an important extent (15.6%), and less so on gerunds (3.1%). Their reliance on adverbial expressions (34.4%) is virtually identical to that of bilinguals (33.3%).

Table 5.37: Elements used for referring to Manner without a boundary-crossing in French by the different groups of participants with L1 French

Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L1 FR / L3 SP (n = 22)	72 (57.6%)	12 (9.6%)	20 (16.0%)	21 (16.8%)	125
L1 FR / L2 SP (n = 5)	10 (62.5%)	4 (25.0%)	1 (6.3%)	1 (6.3%)	16
L1 FR (n = 7)	19 (100%)	- (0.0%)	- (0.0%)	- (0.0%)	19

FR: French. **SP:** Spanish.

Table 5.38: Elements used for referring to Manner in combination with a boundary-crossing in French by the different groups of participants with L1 French

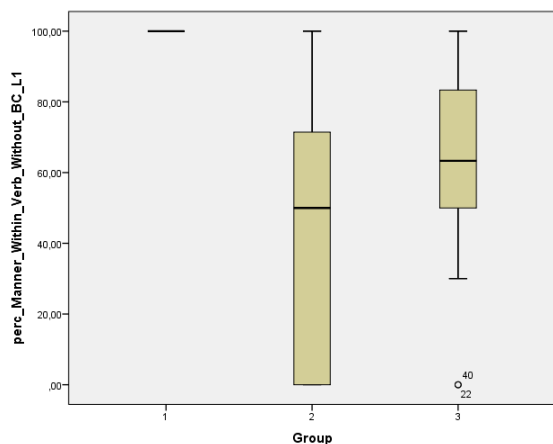
Participant group	Manner verb	Gerund	Adverbial expression	Description	Total nr. of Manner-elements
L1 FR / L3 SP (n = 22)	15 (46.9%)	1 (3.1%)	11 (34.4%)	5 (15.6%)	32
L1 FR / L2 SP (n = 5)	2 (66.7%)	- (0.0%)	1 (33.3%)	- (0.0%)	3
L1 FR (n = 7)	7 (77.8%)	- (0.0%)	2 (22.2%)	- (0.0%)	9

FR: French. **SP:** Spanish.

The outcomes of the statistical analyses carried out on the L1 French data indicated that there were significant differences between the three groups of participants regarding the % of Manner being expressed within the verb in clauses without a boundary-crossing ($p = .001$), and the % of Manner being expressed outside the verb in clauses without a boundary-crossing ($p = .018$).

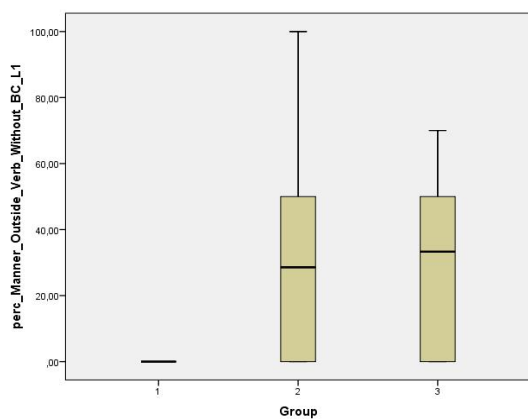
The post-hoc Mann-Whitney U tests (significance level $.05/3 = .0167$) indicated that monolinguals had expressed significantly more Manner within the verb in these clauses than trilinguals ($p = .000$), and significantly less Manner outside the verb ($p = .005$). The percentages are shown in Figures 5.33 and 5.34, respectively. A marginally significant difference was found between monolinguals and bilinguals for the % of Manner being expressed within the verb in clauses without a boundary-crossing ($p = .018$), indicating a trend of the latter having expressed less Manner within the verb (Figure 5.33).

Figure 5.33: % of Manner being expressed within the verb in clauses without a boundary-crossing in L1 French; monolinguals, bilinguals, and trilinguals



Group: “1” = monolinguals, “2” = bilinguals, “3” = trilinguals. BC: boundary-crossing

Figure 5.34: % of Manner being expressed outside the verb in clauses without a boundary-crossing in L1 French; monolinguals, bilinguals, and trilinguals



**Group: “1” = monolinguals, “2” = bilinguals, “3” = trilinguals
BC: boundary-crossing**

5.5.2 The use of Manner verbs in combination with a boundary-crossing

In order to shed more light on the ways in which the boundary-crossing constraint or the absence of such a constraint manifests itself in the three languages under investigation in the present study, in this section, the use of Manner verbs in combination with a boundary-crossing will be investigated in more detail for all participant groups.

5.5.2.1 The use of Manner verbs in combination with a boundary-crossing in monolinguals

As has been explained in detail in Chapter 2, English does not show a boundary-crossing constraint, whereas both French and Spanish impose restrictions on the use of Manner verbs in combination with a boundary-crossing. A closer inspection of all clauses containing a Manner verb in combination with a boundary-crossing found in the monolingual data sets revealed that English monolinguals had indeed used wide variety of Manner verbs: a total of 15 Manner-verb types were found in 24 clauses with a boundary-crossing in which a Manner verb had been used, leading to a Guiraud's Index of 3.06. In addition, these Manner verbs not only included more first-tier verbs such as 'climb', 'jump', and 'throw' but also second-tier verbs such as 'shoot', 'slink' and 'toss' (cf. Slobin, 1997):

(1) uh@i (.) an owl has shooten away [EDM14]

(2) and the elk has tossed the boy off the cliff into w@x what looks like a pond [EDM14]

(3) and the dog is kind of slunk into the water [EDM14]

The Manner verbs in monolingual English were found throughout the frog story. The complete list of Manner verbs found in the English data together with their satellites and number of occurrences can be found in Table 5.39 below.

A closer examination of the monolingual-French data revealed that there were seven clauses with a boundary-crossing that contained a Manner verb, and that five different Manner-verb types had been used in these clauses leading to a Guiraud's Index of 1.89. The most frequent verb was *jeter* 'throw', used in the description of the deer scene, as in:

(4) (..) <et le> [/] euh (..) et le jette <par dessus> [///] (.) dans le precipice [21c]

(..) <and the> [/] uh (..) and him throw.3SG <over> [///] (.) into the ravine

'and [the deer] throws him into the ravine'

(5) (.) et <il les> [/] il les jette tous les deux dans l' eau [21d]

(.) and <he them> [/] he [= the deer] them throw.3SG both of them into the water

'and the deer throws both of them into the water'

The other verbs were used to describe the frog's escape from the jar, with the exception of *sauter* 'jump', which was used to refer to the dog jumping (or falling) out of the window:

(6) uh@i le chien saute par la fenêtre [MOP17]

uh the dog jump.3SG through the window

'the dog jumps out of the window'

(7) la grenouille (.) s'enfuie du bocal [21d]

the frog (.) REFL.flee.3SG from the jar

'the frog escapes from the jar'

(8) pour s'évader de [/] de son bocal [21e]

to REFL.flee.INF from [/] from his jar

'to escape from his jar'

(9) (...) la grenouille se sauve dans la nuit [21i]

(...) the frog REFL.flee.3SG into the night

'the frog flees into the night'

The complete list of verbs, as well as the number of occurrences, can be found in Table 5.39 below.

A closer inspection of the monolingual-Spanish data showed that only two different Manner-verb types had been used in combination with a boundary-crossing: *saltar* 'jump' and *tirar* 'throw'. The former had been used eight times, and the latter two, leading to a Guiraud's Index of 0.63. The verbs can also be found in Table 5.39. Like in French, *saltar* had been used to describe the dog (and the boy) jumping from the window, whereas *tirar* had been used in the description of the deer scene:

(10) eh@i decidió saltar la ventana <por su amigo> [//] con su perro [MAD17]

uh [he] decide.PFV.3SG jump the window <for his friend> [//] with his dog

'he decided to jump through the window with his dog'

(11) y el ciervo le tira por pues una especie de como de miniprecipicio chiquitito [MAD10]

and the deer him throw.3SG over well a sort of like of minicliff tiny

'and the deer, well, throws him over a sort of like tiny minicliff'

Some Spanish monolinguals provided extra Manner information in the form of gerunds, a pattern that was not found in the monolingual-French data:

- (12) y el ciervo tiró al niño por un [//] a una charca &=tongue:click (.) empujándole con los cuernos [MAD02]
 and the deer throw.PFV.3SG to.the boy over a [//] into a place.of.water pushing.GER.him with the horns
 ‘and the deer threw the boy into a pool by pushing him with its horns’
- (13) y corriendo ya asustado, junto con el perro, le tiró por un precipicio [/] un precipicio <al perro> [//] eh@i <ay al perro> [//], al [/] al niño . [MAD17]
 and run.GER already frightened together with the dog him throw.PFV.3SG over a cliff [/] a cliff <to.the dog> [//] eh <ay to.the dog> [//], to.the [/] to.the boy
 ‘and, already being frightened and running alongside the dog, he threw the boy over a cliff’

5.5.2.2 The use of Manner verbs in combination with a boundary-crossing in L2/L3 Spanish

A count of the Manner verbs that had been used in combination with a boundary-crossing by the different groups of bi- and trilinguals in L2/L3 Spanish revealed that, in general, participants tended to produce very few Manner verbs. The complete list of Manner verbs produced, as well as their number of occurrences, can be found in Table 5.40. L1 English bilinguals only used one verb-type, *tirar* ‘throw’, and had produced two clauses containing this verb, leading to a Guiraud’s Index of 0.71. Like in the monolingual-Spanish data, the verb *tirar* had been used in the description of the deer scene, resulting in quite target-like productions regarding verb use, as in:

- (14) el ciervo tira al niño en [//] sobre la [/] (..) la pequeña montaña &=laughs [BCN20]
 the deer throw.3SG to.the boy into [//] over the [/] (..) the small mountain [= cliff]
 ‘the deer throws the boy over the cliff’

With respect to the data of the L1 French bilinguals in L2 Spanish, it turned out that they had also produced only one Manner-verb type, *saltar* ‘jump’. This verb had been used only once, leading to a Guiraud’s Index of 1.00. Like in the monolingual-French and Spanish data, the verb *saltar* had been used to describe the dog jumping (or falling) from the window:

(15) (..) y hm@i (..) hm@i el perro salta por la ventana [AIX05]

(..) and uhm (..) uhm the dog jump.3SG through the window

‘and the dog jumps out of the window’

Regarding the data from the L1 English trilinguals in L3 Spanish, three different verb-types were found, and none of these verbs had a target-like Spanish form. The verb types were: *correrse* ‘run (away)’, an insertion of the English verb ‘drop’, and *grimpar* ‘climb’, the latter probably being a coinage based on the L2 French verb *grimper* ‘climb’. Each verb was used only once, leading to a Guiraud’s Index of 1.73.

(16) um@i (.) el ciervo (.) uh@i drops@s:eng el niño uh@i en un [/] un lago [EDM02]

uhm (.) the deer (.) uh drop.3SG the boy uh in a [/] a lake

‘the deer drops the boy into a lake’

(17) sí, y después el [/] el perro uh@i (.) uh@i grimpar@c uh@i (..) uh@i en el [/] uh@i

(.) el pelo de el niño [EDM02]

yes, and after.that the [/] the dog uh (.) uh climb.INF uh (..) uh in the [/] uh (.) the hair of the boy

‘yes, and after that the boy climbs into the boy’s hair’

- (18) y um@i se corre por uh@i no sabemos &=laughs [EDM03]
 and uhm [the deer] run.REFL.3SG through uh not know.1PL
 ‘and the deer runs away through we don’t know’

Production (16), although not being target-like, does not seem to violate the boundary-crossing constraint in Spanish, since similar productions were made by Spanish monolinguals using the verb *tirar* ‘throw’. Productions (17) and (18) are more questionable in this respect.

With respect to the data from the L1 French trilinguals in L3 Spanish, a total of four Manner-verb types had been used in combination with a boundary-crossing: *huir* ‘flee’, *huirse* ‘flee’, *saltar* ‘jump’, and *tirar* ‘throw’. These verbs had been used in seven different clauses, leading to a Guiraud’s Index of 1.51. *Tirar* was the most frequent one with three tokens. Like in the monolingual-French data, *huir*, and *huirse*, which seem to be translations of the French verb *s’enfuir* ‘flee’, had been used to describe the frog’s escape from the jar:

- (19) la rana está huyéndose (.) de la botella [MOP01]
 the frog be.AUX.3SG flee.REFL.GER (.) from the bottle
 ‘the frog is escaping from the bottle’

- (20) &=tongue:click y podemos ver que [/] que la rana um@i está huyendo de [//] del bocal
 [MON11]
 and can.1PL see.INF that [/] that the frog uhm be.AUX.3SG flee.GER from [/] from.the jar
 ‘and the can see that the frog is escaping from the jar’

Both productions are at least questionable in Spanish, since they appear to violate the boundary-crossing constraint. In addition, monolingual Spanish speakers did not produce any clauses containing *huir* when describing the frog’s escape from the jar.

L1 French trilinguals had also used the verb *saltar* ‘jump’ to describe the frog’s escape:

- (21) uh@i la rana saltar del [/] <del boc@x> [//] <del boco@c> [//] del uh@i glass@s:eng
[QUE10]
uh the frog jump.INF from.the [/] <from.the boc...> [//] <from.the boco> [//] from.the uh glass
‘and the frog jumps out of the glass’

Although none of the Spanish monolinguals used *saltar* to indicate the frog’s escape from the jar, similar constructions are found in Spanish describing the dog jumping out of the window.

The three tokens of the verb *tirar* ‘throw’ were all used in descriptions of the deer scene, resulting in quite target-like productions regarding verb use:

- (22) (.) &=laughs y el ciervo (.) decidió (.) uh@i tirar Jordi por [/] por el precipicio . [BCN16]
(.) and the deer (.) decide.PFV.3SG (.) uh throw.INF Jordi over [/] over the cliff
‘and the deer decided to throw Jordi over the cliff’

- (23) y um@i (.) &=tongue:click el [/] el ciervo ne@i tira el [/] el chico y el perro um@i en un
precipicio . [BCN18]
and uhm (.) the [/] the deer ne... throw.3SG the [/] the boy and the dog uhm in a ravine
‘and the deer throws the boy and the dog into a ravine’

- (24) y le tira por el río o <por un> [//] en el agua [MOP13]
‘and him throw.3SG over the river or <through a> [//] into the water
‘and [the deer] throws him over the river or into the water’

Table 5.39: Manner verbs used by monolinguals in combination with a boundary-crossing in English, French, and Spanish together with their number of occurrences

English monolinguals (n = 6)	French monolinguals (n = 7)	Spanish monolinguals (n = 13)
Climb + out (1), out of (1), over (2)	Jeter (3) 'throw'	Saltar (2) 'jump'
Creep + out (1), out of (1), over (1)	Sauter (1) 'jump'	Tirar (8) 'throw'
Fly + out (1)	S'enfuir (1) 'flee'	
Jump + out (1), out of (1)	S'évader (1) 'escape/flee'	
Knock + out (1), out of (1)	Se sauver (1) 'flee/escape'	
Pop + out of (1)		
Run + out into (1), over to (1)		
Shoot + away (1)		
Slink + into (1)		
Sneak + out (1), out of (1)		
Throw + over (1)		
Toss + off into (1)		
Tumble + over (1)		
Wade + through (1)		
Walk + through (1)		

Table 5.40: Manner verbs used in combination with a boundary-crossing by the different groups of bi- and trilinguals in L2/L3 Spanish together with their number of occurrences

L1 English bilinguals (n = 5)	L1 French bilinguals (n = 5)	L1 English trilinguals (n = 6)	L1 French trilinguals (n = 24)
Tirar (2) 'throw'	Saltar (1) 'jump'	Correrse (1) 'run (away)'	Huir (1) 'flee'
		Drop (English) + bare (1)	Huirse (1) 'flee'
		Grimpar (1) 'climb'	Saltar (1) 'jump'
			Tirar (3) 'throw'

5.5.2.3 The use of Manner verbs in combination with a boundary-crossing by the trilinguals in L2 French and L2 English

A count of the number of Manner verbs used in combination with a boundary-crossing in L2 French and L2 English by the groups of L1 English trilinguals and L1 French trilinguals, respectively, revealed that the L1 French trilinguals had produced a larger number of Manner verbs in their L2 than L1 English trilinguals. As has already been discussed in previous sections of this chapter, this may not only be due to the difference between English and French regarding the boundary-crossing constraint, but also to differences in both proficiency level and use between both groups, as well as the much larger number of participants in the L1 French group. This should be kept in mind when interpreting the results. The verb types produced by both groups of participants together with their number of occurrences can be found in Table 5.41 at the end of this paragraph.

5.5.2.3.1 The use of Manner verbs in combination with a boundary-crossing in L2 French

An analysis of the data from the L1 English trilinguals in L2 French showed that they had produced only one verb token in one clause containing a boundary-crossing, resulting in a Guiraud's Index of 1.00. The verb token was *lancer* 'throw', and it had been used in the description of the deer scene:

(25) uh@i la cerf lance le garçon uh@i sur uh@i sur l' autre côté de la precipice [EDM02]

uh the deer throw.3SG the boy uh onto uh onto the other side of the cliff

“the deer throws the boy over the cliff”

Although *lancer* had not been used by French monolinguals when telling the frog story, its use here does not seem to violate the boundary-crossing constraint.

5.5.2.3.2 The use of Manner verbs in combination with a boundary-crossing in L2 English

As has already been mentioned above, L1 French trilinguals had produced a larger number of verb types in their L2 than L1 English trilinguals. A total of 11 verb types were found in the L2 English data. These had been used in thirteen different clauses containing a boundary-crossing, resulting in a Guiraud's Index of 3.05. This value is virtually identical to the one found for English monolinguals, which showed a value of 3.06. A closer inspection of the verb types revealed that they included both first-tier verbs, such as 'climb', 'jump', and 'run', and second-tier verbs such as 'leap', 'swarm', and 'swim'. One participant even produced the second-tier Manner verb 'eject' in a caused-motion construction:

(26) and Thomas was ejected out of the antlers [MON06]

Like for the monolingual English-data, Manner verbs were found throughout the entire frog story, and most of their uses were target-like. A few examples are:

(27) that the frog just leapt out [of the jar] [MON07]

(28) the bees are swarming out [of the hive] [MON07]

(29) and they started walking into the field [MOP14]

Non target-like uses involved the use of incorrect satellites, as in:

(30) and he pushed uh@i the boy um@i on a lake (.) uh@i <a lake> [//] uh@i a pound@c
[MOP09]

(31) the frog is running away (.) obviously by the window [QUE10]

The complete list of verbs can be found in Table 5.41 below.

Table 5.41: Manner verbs used in combination with a boundary-crossing in L2 French and L2 English together with their number of occurrences

L2 French (n = 5)	L2 English (n = 19)
Lancer (1) ‘throw’	Climb + up into (1) Eject + out of (caused) (1) Fly + out (1) Jump + out from (1), out of (1) Leap + out (1) Pop + out (1), out of (1) Push + on (1) Run + away by (1) Swarm + out (1) Swim + across (1) Walk + into (1)

5.5.2.4 Reverse transfer visible in the use of Manner verbs in combination with a boundary-crossing in L1 English and L1 French

In order to find out whether there would be any differences visible in L1 English and L1 French between monolinguals and bi- and trilinguals regarding the use of Manner verbs in combination with a boundary-crossing, the number of Manner verbs used in combination with a boundary-crossing was counted in the bilinguals’ and trilinguals’ respective L1s. The results were then compared with the results found for monolinguals.

5.5.2.4.1 Reverse transfer visible in the use of Manner verbs in combination with a boundary-crossing in L1 English

The data presented above already suggested that both L1 English bilinguals and trilinguals had expressed less Manner in combination with a boundary-crossing than English monolinguals. Therefore, in this section, in addition to the analysis of the Manner verbs used by the bi- and trilinguals, their behaviour in three boundary-crossing scenes of the frog story will be analysed and compared with that of English monolinguals. These three scenes of the story are: 1) the frog escaping (from the jar/through the window), 2) the mole or gopher appearing from the hole in the ground, and 3) the owl's appearance from the tree. The scenes all depict a clear boundary-crossing, and will be used to get a better insight into how L1 English bi- and trilinguals cope with boundary-crossings in their L1, which does not have a boundary-crossing constraint. The pictures belonging to the scenes are found in Appendix V.

An analysis of the Manner-verb types produced by L1 English bi- and trilinguals showed that both groups had produced a lower variety of Manner verbs in clauses with a boundary-crossing than English monolinguals. L2 English bilinguals had produced a total of six Manner-verb types in eight clauses containing a boundary-crossing, resulting in a Guiraud's Index of 2.12. L1 English trilinguals had produced a slightly greater variety of Manner verbs, but the difference with the bilingual group is small: there were nine different Manner-verb types found in thirteen clauses containing a boundary-crossing, resulting in a Guiraud's Index of 2.50. The value of this Index found for English monolinguals was 3.06.

A closer examination of the verb types used by the bilinguals revealed that virtually all of them are first-tier verbs, with the exception of 'tumble'. The complete list of verbs together with their number of occurrences can be found in Table 5.42. Examples are:

(32) and there is a swarm of bees flying out of it and around it [it = the hive] [EDM05]

(33) and the dog tumbling after him into [//] uh@i <looks like (i)s sort of a> [//] <looks like>[//]
into like a pond [EDM05]

(34) &=sniffs um@i &=coughs and [the deer] knocks the boy and the dog off the cliff
into (.) looks like, yeah, a pond [EDM09]

A closer examination of the verb types used by the trilinguals revealed that they had used slightly more second-tier verbs, such as ‘hop’, ‘sneak’, and ‘wade’. One participant had produced a passive construction with the verb ‘carry’. There were no other differences between the bilingual and trilingual groups. The complete list of verbs together with their number of occurrences can be found in Table 5.42. Examples from the trilingual English data are:

(35) and he wades through the pond saying goodbye to uh@i the two frogs
and all their babies [EDM03]

(36) they [= the bees] started chasing the dog across [/] (.) across the forest [EDM04]

(37) &=laughs and the kid is carried across to a cliff <on the> [/] on the deer's head [EDM08]

(38) and they hop over the log [EDM13]

Table 5.42: Manner verbs used in combination with a boundary-crossing in English by the L1 English bi- and trilinguals together with their number of occurrences. The monolingual data have been included as a comparison.

English monolinguals (n = 6)	L1 English bilinguals (n = 6)	L1 English trilinguals (n = 6)
Climb + out (1), out of (1), over (2)	Climb + over (1)	Carry + across (caused) (1)
Creep + out (1), out of (1), over (1)	Fly + out of (1), out of and around (1)	Chase + across (1)
Fly + out (1)	Jump + out of (1)	Climb + out of (1), over (3), up over (1)
Jump + out (1), out of (1)	Knock + off into (1)	Fly + out (1)
Knock + out (1), out of (1)	Throw + over into (2)	Hop + over (1)
Pop + out of (1)	Tumble + after into (1)	Run + over to (1)
Run + out into (1), over to (1)		Sneak + out of (1)
Shoot + away (1)		Wade + through (1)
Slink + into (1)		Walk+ through back in (1)
Sneak + out (1), out of (1)		
Throw + over (1)		
Toss + off into (1)		
Tumble + over (1)		
Wade + through (1)		
Walk + through (1)		

The more in-depth analysis of the three boundary-crossing scenes from the frog story also showed that there were differences between monolinguals, bilinguals, and trilinguals regarding the way in which they tended to describe these scenes. A closer look at their behaviour when narrating the first scene, in which the frog escapes from the jar and which was mentioned by all participants, revealed that four out of six monolinguals had made reference to Manner of motion. On the contrary, none of the bilinguals had made any reference to Manner. For trilinguals, it was found that two out of six participants had made reference to Manner. In monolinguals, the most frequent way of narrating the scene was by using two Manner verbs in two separate clauses (two participants). An equally frequent option was the use of a single Path verb (two participants). The remaining two participants had either used a Path verb in combination with the dummy verb ‘get’, which belongs to the ‘Other’ category in two separate clauses, or the dummy verb ‘get’ in combination with a Manner verb, again in two separate clauses.

For bilinguals, the most frequent option for narrating the ‘frog + jar scene’ was to use a single Path verb (four participants). In all cases, this Path verb was ‘escape’. The other two options were the use of the Path verb ‘escape’ with the dummy verb ‘get’ in two separate clauses, and the use of the dummy verb ‘get’ in combination with the verb ‘disappear’, denoting a change-of-position, again in two separate clauses.

For trilinguals, the most frequent option for narrating the ‘frog + jar scene’ was to use a single Path verb (three participants). Again, this Path verb was ‘escape’ in all cases. The other options were the use of the Path verb ‘escape’ in combination with a Manner verb, ‘climb’, in two separate clauses (one participant), the use of the Manner verb ‘sneak’ in combination with the Path verb ‘leave’ in two separate clauses, and the use of the dummy verb ‘get’ (one participant). The complete narrations of the ‘frog + jar scene’ can be found in Table 5.43.

With respect to the narrations the participants had made of the second scene, in which the mole or gopher appears from a hole in the ground, it turned out three out of six monolinguals had mentioned the animal, against all six bilinguals, and five out of six trilinguals. None of the participants had used a Manner verb. Monolinguals either tended to use a verb denoting a change-of-position (one participant), a description of the boy finding the gopher without making reference to motion (one participant), and a description of some other activity of the gopher, in this case scratching the boy, using a verb denoting Non-translational Motion (one participant). For bilinguals, on the contrary, the most frequent option for narrating the ‘gopher scene’ was by using a single Path verb, ‘come’ in all cases (four participants). One of the participants did not include the boundary-crossing when using the verb, whereas the other three all used ‘come’ together with the satellite ‘out’. The two remaining participants both had used descriptions of the boy finding the gopher. One of these descriptions included a verb denoting Fictive Motion.

For trilinguals, the most frequent option for narrating the ‘gopher scene’ was again the use of the Path verb ‘come’ (two participants), in both cases in combination with the satellite ‘out’. Two

other participants had provided descriptions of the boy finding the gopher or of the gopher simply being there. The remaining participant had used a verb denoting a change-of-position, ‘stick’, in combination with the satellite ‘out’. The complete narrations of the ‘gopher scene’ are found in Table 5.44³³.

Regarding the narrations participants had made of the third scene, in which the owl appears from the hole in the tree, it was found that this scene had been mentioned by five out of six monolinguals, and all bi- and trilinguals. All five monolinguals had made reference to Manner in some way, against one of the bilinguals, and one of the trilinguals.

For monolinguals, the most frequent option for narrating the ‘owl scene’ was to use a single Manner verb (three participants), followed by stating the owl’s existence followed by a single Manner verb in combination with some further elaboration of the event in the form of a gerund (one participant), and the use of a single Path verb in combination with a reference to the owl being ‘scary’ (one participant). For bilinguals, the most frequent option was a general description of the boy finding the owl or disturbing it (three participants), followed by the use of a single Path verb (two participants). In both cases, this Path verb was ‘come’ in combination with the satellite ‘out’ or ‘out of’. The remaining participant had used the Manner verb ‘fly’ in combination with the satellite ‘out of’ to describe the owl’s appearance from the tree.

For trilingual participants, it was found that each participant had used a different option for describing the ‘owl scene’. The six options that were found in the data were: 1) the use of a single Path verb, ‘come’, in combination with the satellite ‘out of’, 2) describing some other aspect of the event, namely the boy getting scared by the owl, 3) the use of a Path verb, ‘come’ in combination with the satellite ‘out’ and an adverbial expression making reference to Manner: ‘suddenly’, 4) merely stating that the boy found the owl, 5) taking a boy-centred approach by saying that the boy ‘scared the owl out of the tree’, using a verb from the ‘Other’ category, and 6) providing a static

³³ The gopher was presented as being a mole in the word list that was given to all participants at the beginning of the session, but this does not matter for the present analysis.

description of the owl’s behaviour. The complete narrations of the ‘owl scene’ are found in Table 5.45.

Table 5.43: Narrations of the ‘frog + jar scene’ in English: monolinguals, bilinguals, and trilinguals.

English monolinguals (n = 6)	L1 English bilinguals (n = 6)	L1 English trilinguals (n = 6)
<p>then the frog got out of the jar. and ran away. [COR01]</p> <p>later that night, the frog creeps out of the jar. (.) and sneaked out the window. [COR02]</p> <p>but the frog uh@i seems to be coming out of the container. [EDM11]</p> <p>and the frog is acting sort of anthropomorphically. and climbing out of the jar. [EDM14]</p> <p><his dog snack@x> [/] or his frog sneaked out of the jar. and crept out. [EDM15]</p> <p>and the frog escapes from his jar. [EDM18]</p>	<p>so this night, he saw his opportunity to escape. because John left the window open. haha, the frog got out! [BCN17]</p> <p>and the frog is escaping from the jar. [BCN20]</p> <p>um@i then one night uh@i the frog escaped the [/] the container. [EDMb01]</p> <p>and the frog is escaping from the jar. [EDM05]</p> <p>the frog escaped. [EDM06]</p> <p>the frog (.) gets out of the jar. and disappears. [EDM09]</p>	<p>um@i you can see that the [/] uh@i the frog is escaping from the jar. [EDM02]</p> <p>and the frog has [/] is just about to escape from the jar. [EDM03]</p> <p>but the frog decided to escape. and so he climbed out of his jar. [EDM04]</p> <p>and the frog sneaks out of his bottle. and leaves the room. [EDM08]</p> <p>and the frog gets out of the jar. [EDM12]</p> <p>and the frog uh@i is escaping from the jar. [EDM13]</p>

Table 5.44: Narrations of the ‘gopher scene’ in English: monolinguals, bilinguals, and trilinguals.

English monolinguals (n = 3)	L1 English bilinguals (n = 6)	L1 English trilinguals (n = 5)
<p>a mole appears from this hole looking surprised. [COR02]</p> <p>um@i &=tongue:click uh@i but there seems to be a little gopher or groundhog.</p> <p>that he finds instead of the frog. [EDM11]</p> <p>&=tongue:click looks like the boy just got scratched by a gopher. [EDM14]</p>	<p>&=laughs only to find that the gopher was the only one.</p> <p>that lived in the hole.</p> <p>(.) that he was looking in. [BCN17]</p> <p>a gopher comes out. [BCN20]</p> <p>&=sniffs uh@i a gopher came. [EDM01]</p> <p>um@i &=tongue:click the (.) gopher comes out of the hole. [EDM05]</p> <p>and out came a musk+rat. [EDM06]</p> <p>where they find a gopher. [EDM09]</p>	<p>um@i in the second picture there (i)s a gopher sticking his head out of the hole. [EDM02]</p> <p>and then a gopher comes out of the hole. [EDM03]</p> <p>and there was a mole there. [EDM04]</p> <p>and a gopher comes out. [EDM08]</p> <p>and then he finds a gopher (.) and [//] or some animal like that. [EDM12]</p>

Table 5.45: Narrations of the ‘owl scene’ in English: monolinguals, bilinguals, and trilinguals.

English monolinguals (n = 5)	L1 English bilinguals (n = 6)	L1 English trilinguals (n = 6)
<p>an owl flew out the tree. [COR01]</p> <p>here is an owl.</p> <p>this owl pops out of nowhere scaring the boy to the ground. [COR02]</p> <p>uh@i (.) an owl has shooten away. [EDM14]</p> <p>a large owl jumped out. [EDM15]</p> <p>because a scary owl comes out. [EDM18]</p>	<p><and he got> [//] hm@i <he was> [//] and he disturbed an owl. [BCN17]</p> <p>the boy finds an owl. [BCN20]</p> <p>um@i but he found an owl. and not the frog. [EDM01]</p> <p>uh@i looks like an owl has come out of the hole. [EDM05]</p> <p>and an owl flew out of the tree. [EDM06]</p> <p>an owl comes out of the tree. [EDM09]</p>	<p>because an owl came out of the hole. [EDM02]</p> <p>um@i the boy then gets scared by an owl. [EDM03]</p> <p>and suddenly an owl came out. [EDM04]</p> <p>and [= the boy] finds an owl. [EDM08]</p> <p>and then he scares an owl out of the tree. [EDM12] oth</p> <p>be)cause there was an owl in the hole. and the [//] the owl had its wings out and everything. [EDM13]</p>

5.5.2.4.2 Reverse transfer visible in the use of Manner verbs in combination with a boundary-crossing in L1 French

A closer examination of the Manner-verb types that had been used in French by the L1 French bi- and trilinguals did not reveal any substantial differences between bilinguals and trilinguals: bilinguals had used two different Manner-verb types in two clauses containing a boundary-crossing, *précipiter*, ‘push someone in order to make him/her fall’ in a caused-motion-construction, and *s'enfuir* ‘flee’, resulting in a Guiraud’s Index of 1.41. The first verb had been used in the description of the ‘deer scene’, whereas the second had been used to describe the frog’s escape from the jar:

(39) eh*m*@i donc il le fait précipiter dans [/] dans un grand étang [AIX01]

uhm well he him make.AUX.3SG fall.by.pushing.INF into [/] into a large pond

‘well, he [the deer] pushes him into a large pond’

(40) mais pendant ce temps, uh*h*@i la grenouille um*h*@i s'enfuit [AIX01]

but during this time uh*h*@i the frog uhm flee.3SG

‘but during that time the frog escapes’

A closer examination of the trilingual data showed that L1 French trilinguals had used seven different Manner-verb types in fifteen clauses containing a boundary-crossing, resulting in a Guiraud’s Index of 1.81. However, this value should be taken with caution, because the number of participants in the trilingual group was much higher than in the other two groups. A difference with the monolingual and bilingual data was that the Manner-verbs were found throughout the frog story, and not only in the scenes depicting the frog’s escape from the jar, the dog jumping (or falling) from the window, and the deer scene. The Manner-verb types also included less frequent types, such as *jaillir* ‘leap out’ and *basculer* ‘lose one’s balance and fall’. In addition, L1 French trilinguals had used the verb *grimper* ‘climb’ in combination with a boundary-crossing:

- (41) et en fait uh@i il fait basculer le petit+garçon <dans un> [/] dans un fossé [MOP09]
 and actually uh he make.AUX.3SG lose.one's.balance.and.fall.INF the boy <in a> [/] in a ditch
 'and he [the deer] actually makes the boy lose his balance and fall into a ditch'
- (42) quand soudainement une taupe jaillit [MOP14]
 when suddenly a mole leap.out.3SG
 'when suddenly a mole leaps out [of the hole]'
- (43) &=tongue:click ils grimpent dans les arbres [MOP02]
 they climb.3PL into the trees
 'they climb into the trees'
- (44) &=sniffs &=tongue:click uh@i le garçon grimpa dans l' arbre [MON02]
 uh the boy climb.PFV.3SG into the tree
 'the boy climbed into the tree'

The values of Guiraud's Index found for the bilinguals (1.41) and trilinguals (1.81) were quite similar to the one found for French monolinguals (1.89). The complete list of Manner verbs produced by the L1 French participants together with their number of occurrences can be found in Table 5.46 below.

Table 5.46: Manner verbs used in combination with a boundary-crossing in French by the L1 French bi- and trilinguals together with their number of occurrences. The monolingual data have been included as a comparison.

French monolinguals (n = 7)	L1 French bilinguals (n = 5)	L1 French trilinguals (n = 22)
Jeter (3) ‘throw’	Précipiter (caused) (1) ‘push	Basculer (caused) (1) ‘lose one’s
Sauter (1) ‘jump’	someone in order to make him/her	balance and fall’
S’enfuir (1) ‘flee’	fall’	Enfuir (1) ‘flee’
S’évader (1) ‘escape/flee’	S’enfuir (1) ‘flee’	Grimper (3) ‘climb’
Se sauver (1) ‘flee/escape’		Jaillir (2) ‘leap out’
		Jeter (4) ‘throw’
		S’enfuir (3) ‘flee’
		Tirer (1) ‘throw’

5.5.3 Summary of the findings for the expression of Manner

With respect to the use of different types of elements for making reference to Manner, French monolinguals turn out to rely exclusively on Manner verbs in –BC clauses. English monolinguals rely less heavily on them, and Spanish monolinguals the least. In +BC clauses, on the contrary, the use of Manner verbs decreases for both French and Spanish monolinguals, but more so for the former. Both groups show an increase in the use of adverbial expressions, whereas the percentages of element use remain very much the same for English monolinguals. Both English and Spanish monolinguals use all types of elements, whereas French monolinguals only use Manner verbs and adverbial expressions.

Regarding the results in L2/L3 Spanish found for the groups of bilinguals and trilinguals in –BC clauses, it turned out that most learner groups rely heavily on Manner verbs for making reference to Manner, with the exception of the L1 French trilinguals, who show a percentage of Manner verbs that is similar to the one found for Spanish monolinguals. L1 English trilinguals and L1 French bilinguals both show ‘French-like’ patterns of element use, whereas the L1 English bilinguals show a more ‘English-like’ pattern. In +BC clauses, however, the percentages of Manner

verbs used by the different learner groups drop sharply, although they still use more Manner verbs than Spanish monolinguals. The only exception are the L1 English trilinguals, who rely exclusively on Manner verbs in +BC clauses. L1 French bilinguals still show a ‘French-like pattern’, whereas the percentages found for the L1 English bilinguals are now slightly more similar to the ones found for Spanish monolinguals. Nevertheless, the L1 French trilinguals still are the group whose percentages are most similar to the ones found for Spanish monolinguals, despite the fact that the former still produce a higher percentage of adverbial expressions.

With respect to the results found for both groups of trilinguals in their respective L2s, it turns out that, in –BC clauses, L1 English trilinguals show very English-like patterns of element use in L2 French. In +BC clauses, they rely exclusively on Manner verbs. This pattern was not found for any of the monolingual groups. However, L1 English trilinguals only produced one +Manner +BC clause in L2 French in the entire data set. L1 French trilinguals, on the contrary, show very target-like English patterns of element use in L2 English in –BC clauses. In +BC clauses, however, their pattern of element use becomes very different from the one found for English monolinguals: they use fewer Manner verbs and rely more heavily on adverbial expressions and descriptions. They do not use any gerunds, whereas English monolinguals use all types of elements in +Manner +BC clauses.

Regarding the results for element use found for the L1 English participants in English, the percentages found for –BC clauses do not show any important differences between the groups of monolinguals, bilinguals, and trilinguals, with the exception that trilinguals do not use any descriptions. They also appear to use slightly more Manner verbs and fewer adverbial expressions than both monolinguals and bilinguals. For +BC clauses, on the contrary, a unique pattern of element use becomes visible for each participant group. Nevertheless, bilinguals and trilinguals appear to be more similar to each other regarding the use of Manner verbs (fewer than monolinguals), whereas bilinguals and monolinguals are more similar to each other regarding the use of the other elements.

The results for element use found for the L1 French participants in French in –BC clauses show that each group has its own unique pattern of element use. Bilinguals and trilinguals make use of all elements, whereas monolinguals only use Manner verbs and adverbial expressions. However, it appears to be the case that, the more languages participants speak, the fewer Manner verbs they use, and the more adverbial expressions and descriptions. There appears to be no clear trend for gerunds. In +BC clauses, however, bilinguals return to the French-like pattern of only using Manner verbs and adverbial expressions, whereas trilinguals still use all elements. It still seems to be the case, however, that, the more languages participants speak, the fewer Manner verbs they use, and the more adverbial expressions and descriptions.

With respect to the use of Manner verbs in combination with a BC, it was found that English monolinguals had used these verbs throughout the frog story, using both first-tier and second-tier verbs. French and Spanish monolinguals, on the contrary, had only used Manner verbs to describe specific scenes from the frog story, such as the dog jumping (or falling) from the window, and the deer scene. French monolinguals also used Manner verbs to describe the frog's escape from the jar. The Manner verbs used by both groups tended to be relatively high-frequent ones, such as *jeter* 'throw' in French, and *saltar* 'jump' in Spanish. Spanish monolinguals sometimes added extra Manner information in the form of gerunds, a pattern not found for the French monolinguals.

Regarding the use of Manner verbs in combination with a BC in L2/L3 Spanish, it turned out that the production of these clauses was low across all learner groups. Nevertheless, both groups of bilinguals showed quite target-like behaviours, whereas both groups of trilinguals sometimes used non-targetlike verb forms and produced clauses that appeared to violate the boundary-crossing constraint in Spanish.

The results for the use of Manner verbs in combination with a BC by the two groups of trilinguals in their respective L2s showed that L1 English trilinguals had only produced one such clause in L2 French, and this clause turned out to be target-like. L1 French trilinguals, on the

contrary, sometimes produced non-targetlike clauses in L2 English. However, this non-targetlikeness always involved the use of an incorrect satellite. Furthermore, the Manner verbs produced by the L1 French trilinguals in L2 English were found throughout the entire frog story, and also involved second-tier verbs. Nevertheless, the difference in proficiency between both groups of trilinguals should be kept in mind here.

The results found for the use of Manner verbs in combination with a BC by the groups of L1 English participants in English indicated that both bilinguals and trilinguals produced a lower variety of Manner verbs than English monolinguals. In addition, virtually all verbs produced by the bi- and trilinguals were first-tier verbs, although trilinguals also had produced a few second-tier verbs. The more in-depth analysis of the three scenes from the frog story showed that bi- and trilinguals had narrated these scenes differently from monolinguals. Bi- and trilinguals made less reference to Manner and strongly preferred the use of Path verbs, such as ‘come’ and ‘escape’.

With respect to the results found for the L1 French participants in French, there turned out to be no important differences between monolinguals, bilinguals, and trilinguals regarding the variety of Manner verbs they had produced. Nevertheless, trilinguals had produced more second-tier verbs than the other two groups, but this may be due to the larger number of participants in this group. In addition, their Manner verbs were found throughout the frog story, and not only in specific scenes.

5.6 The expression of Path

The expression of Path will be analysed by looking at how participants narrated the so-called ‘deer scene’ from the frog story in each of their languages. In this deer scene, which comprises four pictures and contains the most complex motion events of the story, the boy runs into a deer and is being carried away by it to the edge of a cliff, while the dog follows them. When they arrive at the cliff, the deer stops and thereby throws the boy off. Both the boy and the dog fall down the cliff and land in a forest pond. The pictures can be found in Appendix V.

The expression of Path will be analysed by examining whether participants make use of ‘event conflation’, and whether they produce static or dynamic descriptions of the scene. According to Slobin (1996) speakers of satellite-framed languages often combine two or more Ground elements of a complex motion trajectory or ‘journey’ within a single clause, whereas this is a rare phenomenon in verb-framed languages. In addition, speakers of satellite-framed languages tend to provide dynamic descriptions of motion trajectories, thereby including the scene(s) in which the motion event takes place as Ground elements. Speakers of verb-framed languages, on the contrary, show a tendency to provide static descriptions of the scene(s) in which the motion event takes place, after which they mention the actual motion event in a separate clause.

5.6.1 The expression of Path in monolinguals

In this section, it will be analysed whether monolingual speakers of English, French and Spanish indeed show the prototypical patterns described above. These results will serve as a baseline for comparing the data of the bilingual and trilingual participants.

The results for the monolingual speakers are shown in Table 5.47 below. Event conflation is only present in English, with a third of the participants (33.3%) using it. Moreover, all English monolinguals provided dynamic descriptions of the deer scene. Remarkably, this option also seems to be the most popular one in both French and Spanish: in French, six participants (85.7%) provided a dynamic description of the deer scene, whereas one (14.3%) provided a static description. Similar percentages are found for Spanish: 12 participants (92.3%) provided a dynamic description of the deer scene, whereas one participant (7.7%) provided a static description.

Table 5.47: Event conflation and static vs. dynamic descriptions in monolinguals.

	Event conflation	Dynamic description	Static description
L1 English (n = 6)	2 (33.3%)	6 (100%)	0 (0.0%)
L1 French (n = 7)	0 (0.0%)	6 (85.7%)	1 (14.3%)
L1 Spanish (n = 13)	0 (0.0%)	12 (92.3%)	1 (7.7%)

5.6.2 The expression of Path in L2/L3 Spanish

The results for event conflation and static vs. dynamic descriptions in L2 and L3 Spanish found for the groups of bilingual and trilingual participants are shown in Table 5.48. The data of the Spanish monolinguals have been included as a baseline. The results show that event conflation is only produced by both groups of trilinguals. However, the number of participants who produce event conflation is very low in both groups: one participant (16.7%) in the L1 English group, and two participants (8.3%) in the L1 French group.

For static vs. dynamic descriptions, the behaviour appears to be very uniform across learner groups, with roughly 80% of the participants providing dynamic descriptions, and 20% providing static descriptions. The exact percentages for dynamic and static descriptions are: 83.3% vs. 16.7% for L1 English trilinguals, 83.3% vs. 16.7% for L1 French trilinguals, 80.0% vs. 20.0% for L1 English bilinguals, and 80.0% vs. 20.0% for L1 French bilinguals. These percentages appear to differ slightly from the ones found for Spanish monolinguals, who produce more dynamic descriptions (92.3%) and fewer static descriptions (7.7%). However, given the low numbers of participants, no firm conclusions can be drawn in this respect.

Table 5.48: Event conflation and static vs. dynamic descriptions in L2/L3 Spanish compared with the data found for Spanish monolinguals.

	Event conflation	Dynamic description	Static description
L1 EN/L3 SP (n = 6)	1 (16.7%)	5 (83.3%)	1 (16.7%)
L1 FR/ L3 SP (n = 24)	2 (8.3%)	20 (83.3%)	4 (16.7%)
L1 EN/L2 SP (n = 5)	0 (0.0%)	4 (80.0%)	1 (20.0%)
L1 FR/ L2 SP (n = 5)	0 (0.0%)	4 (80.0%)	1 (20.0%)
L1 SP mon (n = 13)	0 (0.0%)	12 (92.3%)	1 (7.7%)

mon: monolinguals, **EN:** English, **FR:** French, **SP:** Spanish

5.6.3 The expression of Path by the trilinguals in L2 French and L2 English

The number of participants who produced event conflation, as well as the numbers of participants who provided static and dynamic descriptions were also analysed in the respective L2s of both groups of trilinguals. Again, for each analysis the data from monolingual speakers were included as a baseline.

5.6.3.1 The expression of Path in L2 French

The data obtained for the L1 English trilinguals in L2 French are shown in Table 5.49. The patterns found for L2 French turn out to be similar to the ones found for French monolinguals: there is no event conflation, and the percentages found for dynamic vs. static descriptions are 80.0% and 20.0%, respectively, in L2 French against 85.7% and 14.3%, respectively, in French monolinguals. However, the small numbers of participants do not allow for any firm conclusions with respect to event conflation and static vs. dynamic descriptions.

Table 5.49: Event conflation and static vs. dynamic descriptions in L2 French compared with the data found for French monolinguals.

	Event conflation	Dynamic description	Static description
L2 FR (n = 5)	0 (0.0%)	4 (80.0%)	1 (20.0%)
L1 FR mon (n = 7)	0 (0.0%)	6 (85.7%)	1 (14.3%)

mon: monolinguals, FR: French

5.6.3.2 *The expression of Path in L2 English*

The data regarding event conflation and static vs. dynamic descriptions produced by the L1 French trilinguals in L2 English are shown in Table 5.50. The number of participants for L2 English is 18, because the data from the participant that did not mention the deer scene at all could not be included.

The results show that, regarding event conflation, the percentage found for L2 English (27.8%) is not too different from the one found for English monolinguals (33.3%). For dynamic descriptions, it was found that 83.3% of French trilinguals provided them in L2 English, whereas all English monolinguals did. Static descriptions were provided by 16.7% of French trilinguals. They were not present in English monolinguals.

Table 5.50: Event conflation and static vs. dynamic descriptions in L2 English compared with the data found for English monolinguals.

	Event conflation	Dynamic description	Static description
L2 EN (n = 18)	5 (27.8%)	15 (83.3%)	3 (16.7%)
L1 EN mon (n = 6)	2 (33.3%)	6 (100%)	0 (0.0%)

mon: monolinguals, EN: English

5.6.4 **Reverse transfer visible in the expression of Path in L1 English and L1 French**

In order to investigate whether the acquisition of one or more additional languages had had an effect on event conflation and static vs. dynamic descriptions produced by the bilingual and trilingual

participants in L1 English and L1 French, the L1 data were also analysed for these characteristics and compared with the data obtained for English and French monolinguals.

5.6.4.1 Reverse transfer visible in the expression of Path in L1 English

As can be seen in Table 5.51, the behaviour of the bi- and trilinguals does not appear to differ much from that of English monolinguals, with the exception of the static description of the deer scene provided by one trilingual participant and the slightly higher percentages found for event conflation, especially in bilinguals. However, the numbers of participants are too low to draw any firm conclusions in this respect.

Table 5.51: Event conflation and static vs. dynamic descriptions in L1 English: trilinguals, bilinguals, and monolinguals

	Event conflation	Dynamic description	Static description
L1 EN tri (n = 6)	3 (50.0%)	5 (83.3%)	1 (16.7%)
L1 EN bi (n = 6)	4 (66.6%)	6 (100%)	0 (0.0%)
L1 EN mon (n = 6)	2 (33.3%)	6 (100%)	0 (0.0%)

mon: monolinguals, **bi:** bilinguals, **tri:** trilinguals, **EN:** English

5.6.4.2 Reverse transfer visible in the expression of Path in L1 French

The results obtained for the groups of French trilinguals, bilinguals, and monolinguals are found in Table 5.52. At first sight, all groups seem to show a different behaviour: L1 French trilinguals show event conflation in 13.6% of cases, whereas bilinguals and monolinguals do not produce it. Furthermore, bilinguals only produce dynamic descriptions of the deer scene, whereas trilinguals and monolinguals produce them in 72.7% and 85.7% of cases, respectively. However, the number of participants is much higher in the trilingual group than in the other two groups, which complicates making direct comparisons between them.

Table 5.52: Event conflation and static vs. dynamic descriptions in L1 French: trilinguals, bilinguals, and monolinguals

	Event conflation	Dynamic description	Static description
L1 FR tri (n = 22)	3 (13.6%)	16 (72.7%)	6 (27.3%)
L1 FR bi (n = 5)	0 (0.0%)	5 (100%)	0 (0.0%)
L1 FR mon (n = 7)	0 (0.0%)	6 (85.7%)	1 (14.3%)

mon: monolinguals, **bi:** bilinguals, **tri:** trilinguals, **FR:** French

5.6.5 Summary of the findings for the expression of Path

In the monolingual data, event conflation is only present in English. In addition, English monolinguals only provide dynamic descriptions of the deer scene, whereas both French and Spanish monolinguals also provide static descriptions. Nevertheless, dynamic descriptions appear to be favoured over static descriptions in all three languages.

The data for L2/L3 Spanish showed that both groups of trilinguals produced event conflation in Spanish, a pattern not found for Spanish monolinguals. All groups produce both static and dynamic descriptions of the deer scene, but dynamic descriptions are still the favoured option, although all learner groups turn out to produce slightly fewer of these than Spanish monolinguals. The numbers of participants are small, however.

For the group of L1 English trilinguals, it was found that they had produced no event conflation in L2 French and that their behaviour was similar to the one of French monolinguals. Similarly, the behaviour of the L1 French trilinguals in L2 English was not too different from the one shown by English monolinguals, with the exception of some L1 French trilinguals providing static descriptions of the deer scene.

Regarding the behaviour of the L1 English participants in English, it was found that both bi- and trilinguals produced slightly more event conflation than monolinguals. Furthermore, one had produced a static description of the deer scene. For the L1 French participants, it was found that each

group showed a unique behaviour: trilinguals were the only group to produce event conflation, whereas bilinguals were the only group that provided no static descriptions. The numbers of participants in the monolingual and bilingual groups are small, however.

5.7 Event granularity

Like in the analyses of the previous paragraph, event granularity will be examined by analysing the ‘deer scene’ from the frog story. It will be analysed how many segments of the deer scene participants mention in each of their languages. This will be done twice, the first time using the six segments described by Slobin (1996a), and the second time using the four segments described by Slobin (1997).

Slobin (1996a: 203) divides the deer scene into six segments that can be mentioned by participants when telling the scene: 1) deer starts to run, 2) deer runs, carrying boy, 3) deer stops at cliff, 4) deer throws boy (off of antlers/down), 5) boy and dog fall, 6) boy and dog land in water.

On the contrary, Slobin (1997: 448) divides the deer scene into only four segments, combining some of the six segments mentioned above: 1) deer moves, runs, arrives at cliff (change of location), 2) deer stops at cliff (negative change of location), 3) deer throws boy, makes boy/dog fall (cause change of location), 4) boy/dog fall into water (change of location).

In the next paragraphs, the amount of event granularity will be determined using both types of divisions of the frog story into segments. For the division based on six segments, the number of participants who mention three or more segments will be computed as well in order to be able to compare the results with the results found by Slobin (1996a). Event granularity will be analysed for the different groups in the same way as in the analyses presented above.

5.7.1 Event granularity in monolinguals

The results for event granularity in monolingual speakers of English, French, and Spanish dividing the deer scene into six segments are shown in Table 5.53. It turns out that, on average, English monolinguals mention more segments of the deer scene (3.7) than both French and Spanish monolinguals, for whom the averages are almost identical (2.7 and 2.8, respectively). In addition, all English monolinguals mention three or more segments, against little more than half of the French monolinguals, and about two thirds of Spanish monolinguals.

The results for event granularity in monolingual speakers of English, French, and Spanish dividing the deer scene into four segments are shown in Table 5.54. Again, the average found for the English monolinguals is higher than the ones found for the groups of French and Spanish monolinguals, which are quite similar. The averages are: 3.0 for English, and 2.4 for both French and Spanish.

Table 5.53: Event granularity in monolinguals. The deer scene in six segments.

Nr. of segments mentioned ->	0	1	2	3	4	5	6	Average per participant	Participants who mention three or more segments
L1 English (n = 6)	- (0.0%)	- (0.0%)	- (0.0%)	2 (33.3%)	4 (66.6%)	- (0.0%)	- (0.0%)	3.7	6 (100%)
L1 French (n = 7)	- (0.0%)	- (0.0%)	3 (42.9%)	3 (42.9%)	1 (14.3%)	- (0.0%)	- (0.0%)	2.7	4 (57.1%)
L1 Spanish (n = 13)	- (0.0%)	- (0.0%)	4 (30.8%)	8 (61.5%)	- (0.0%)	1 (7.7%)	- (0.0%)	2.8	9 (69.2%)

Table 5.54: Event granularity in monolinguals. The deer scene in four segments.

Nr. of segments mentioned ->	0	1	2	3	4	Average per participant
L1 English (n = 6)	- (0.0%)	- (0.0%)	1 (16.7%)	4 (66.7%)	1 (16.7%)	3.0
L1 French (n = 7)	- (0.0%)	- (0.0%)	4 (57.1%)	3 (42.9%)	- (0.0%)	2.4
L1 Spanish (n = 13)	- (0.0%)	1 (7.7%)	6 (46.2%)	6 (46.2%)	- (0.0%)	2.4

5.7.2 Event granularity in L2/L3 Spanish

The results for event granularity in L2/L3 Spanish for all groups of bilinguals and trilinguals dividing the deer scene into six segments are shown in Table 5.55. It turns out the group of L1 English bilinguals shows the highest percentage of participants (80.0%) who mention three or more segments. On average, however, they mention virtually the same number of segments as Spanish monolinguals (3.0 vs. 2.8 for Spanish monolinguals). Nevertheless, both the average number of segments mentioned in L2 Spanish by the L1 English bilinguals and the percentage of participants who mention three or more segments are lower than the ones found for English monolinguals, who mention an average of 3.7 segments and mention three or more segments in 100% of cases. The results for English monolinguals are shown in Table 5.53 above.

For L1 French bilinguals, the average number of segments mentioned (2.6) and the percentage of participants who mention three or more segments (60.0%) are virtually identical to the ones found for Spanish monolinguals (2.8 and 69.2%). Nevertheless, the percentages are also similar to the ones found for French monolinguals, who mention an average of 2.7 segments, and mention three or more segments in 57.1% of cases.

The two groups of trilinguals show very similar behaviours: L1 English trilinguals mention an average of 2.7 segments and mention three or more segments in 50.0% of cases, whereas L1 French trilinguals mention an average of 2.6 segments, and mention three or more segments in 54.2% of cases. The average numbers of segments are almost identical to the one found for Spanish

monolinguals (2.8), but the differences are larger for the percentages of participants who mention three or more segments (Spanish monolinguals mention three or more segments in 69.2% of cases). Furthermore, the average numbers of segments mentioned and the percentages of participants who mention three or more segments are lower than the ones found for English monolinguals (3.7, and 100%), but very similar to the ones found for French monolinguals (2.7, and 57.1%).

Regarding the results for event granularity in L2/L3 Spanish dividing the deer scene into four segments, it turns out that the differences between the average numbers of segments mentioned are small. The results can be found in Table 5.56. Nevertheless, L1 English trilinguals tend to mention slightly fewer segments (2.0) than Spanish monolinguals (2.4). The other participant groups show averages that are similar to the one found for Spanish monolinguals. These averages are: 2.3 for L1 French trilinguals, 2.4 for L1 English bilinguals, and 2.2 for L1 French bilinguals.

Table 5.55: Event granularity in L2/L3 Spanish compared with the results found for monolinguals. The deer scene in six segments.

Nr. of segments mentioned ->	0	1	2	3	4	5	6	Average per participant	Participants who mention three or more segments
L1 EN / L3 SP (n = 6)	- (0.0)	1 (16.7)	2 (33.3)	1 (16.7)	2 (33.3)	- (0.0)	- (0.0)	2.7	3 (50.0%)
L1 FR / L3 SP (n = 24)	- (0.0)	1 (4.2%)	10 (41.7)	10 (41.7)	3 (12.5)	- (0.0)	- (0.0)	2.6	13 (54.2%)
L1 EN / L2 SP (n = 5)	- (0.0)	- (0.0%)	1 (20.0)	3 (60.0)	1 (20.0)	- (0.0)	- (0.0)	3.0	4 (80.0%)
L1 FR / L2 SP (n = 5)	- (0.0)	2 (40.0)	- (0.0%)	1 (20.0%)	2 (40.0%)	- (0.0%)	- (0.0%)	2.6	3 (60.0%)
L1 SP mon (n = 13)	- (0.0%)	- (0.0%)	4 (30.8%)	8 (61.5%)	- (0.0%)	1 (7.7%)	- (0.0%)	2.8	9 (69.2%)

bi: bilinguals, **mon:** monolinguals, **tri:** trilinguals, **EN:** English, **FR:** French, **SP:** Spanish

Table 5.56: Event granularity in L2/L3 Spanish compared with the results found for monolinguals. The deer scene in four segments.

Nr. of segments mentioned ->	0	1	2	3	4	Average per participant
L1 EN / L3 SP (n = 6)	- (0.0%)	2 (33.3%)	2 (33.3%)	2 (33.3%)	- (0.0%)	2.0
L1 FR / L3 SP (n = 24)	- (0.0%)	2 (8.3%)	14 (58.3%)	6 (25.0%)	2 (8.3%)	2.3
L1 EN / L2 SP (n = 5)	- (0.0%)	- (0.0%)	3 (60.0%)	2 (40.0%)	- (0.0%)	2.4
L1 FR / L2 SP (n = 5)	- (0.0%)	2 (40.0%)	- (0.0%)	1 (20.0%)	2 (40.0%)	2.2
L1 SP mon (n = 13)	- (0.0%)	1 (7.7%)	6 (46.2%)	6 (46.2%)	- (0.0%)	2.4

bi: bilinguals, **mon:** monolinguals, **tri:** trilinguals, **EN:** English, **FR:** French, **SP:** Spanish

5.7.3 Event granularity by the trilinguals in L2 French and L2 English

5.7.3.1 Event granularity in L2 French

The results for event granularity in L2 French for the L1 English trilinguals dividing the deer scene into six segments are shown in Table 5.57. They appear to be much more similar to the ones found for English monolinguals than to the ones found for French monolinguals. L1 English trilinguals mention an average of 3.4 segments in L2 French, and all participants mention three or more segments. For French monolinguals, the average number of segments is 2.7, and only slightly more than half of the participants (57.1%) mention three or more segments. English monolinguals mention an average of 3.7 segments and all participants mention three or more segments. Their results are shown in Table 5.53 above.

With respect to the results for event granularity in L2 French for the L1 English trilinguals dividing the deer scene into four segments, the differences between L1 English trilinguals and French monolinguals turn out to be much smaller: in both groups, participants mention either two or three

segments, the averages being 2.6 for the L1 English trilinguals and 2.4 for French monolinguals (see Table 5.58)

Table 5.57: Event granularity in L2 French compared with the results found for French monolinguals. The deer scene in six segments.

Nr. of segments mentioned ->	0	1	2	3	4	5	6	Average per participant	Participants who mention three or more segments
L2 FR (n = 5)	- (0.0%)	- (0.0%)	- (0.0%)	3 (60.0%)	2 (40.0%)	- (0.0%)	- (0.0%)	3.4	5 (100%)
L1 FR mon (n = 7)	- (0.0%)	- (0.0%)	3 (42.9%)	3 (42.9%)	1 (14.3%)	- (0.0%)	- (0.0%)	2.7	4 (57.1%)

mon: monolinguals, FR: French

Table 5.58: Event granularity in L2 French compared with the results found for French monolinguals. The deer scene in four segments.

Nr. of segments mentioned ->	0	1	2	3	4	Average per participant
L2 FR (n = 6)	- (0.0%)	- (0.0%)	2 (40.0%)	3 (60.0%)	- (0.0%)	2.6
L1 FR mon (n = 7)	- (0.0%)	- (0.0%)	4 (57.1%)	3 (42.9%)	- (0.0%)	2.4

mon: monolinguals, FR: French

5.7.3.2 Event granularity in L2 English

The results for event granularity in L2 English for the L1 French trilinguals dividing the deer scene into six segments are shown in Table 5.59. On average, L1 French trilinguals appear to mention fewer segments (3.0) than English monolinguals (3.7). Another difference is that only 73.1% of L1 French trilinguals mention three or more segments, whereas all English monolinguals do so. Nevertheless, both the average number of segments mentioned and the percentage of participants who mention three or more segments are higher than the ones found for French monolinguals (2.7,

and 57.1%), which are shown in Table 5.53 above. The difference, however, is much more pronounced for the percentage of participants who mention three or more segments than for the average number of segments mentioned.

Regarding the results for event granularity in L2 English for the L1 French trilinguals dividing the deer scene into four segments, which are shown in Table 5.60, L1 French trilinguals turn out to mention fewer segments (2.5) on average than English monolinguals (3.0).

For both the division into six segments and the division into four segments, a major difference between L1 French trilinguals and English monolinguals is that one of the L1 French trilinguals did not mention the deer scene at all, whereas all English monolinguals did.

Table 5.59: Event granularity in L2 English compared with the results found for English monolinguals. The deer scene in six segments.

Nr. of segments mentioned ->	0	1	2	3	4	5	6	Average per participant	Participants who mention three or more segments
L2 EN (n = 19)	1 (5.3%)	1 (5.3%)	1 (5.3%)	12 (63.2%)	2 (10.5%)	2 (10.5%)	- (0.0%)	3.0	14 (73.7%)
L1 EN mon (n = 6)	- (0.0%)	- (0.0%)	- (0.0%)	2 (33.3%)	4 (66.6%)	- (0.0%)	- (0.0%)	3.7	6 (100%)

mon: monolinguals, EN: English

Table 5.60: Event granularity in L2 English compared with the results found for English monolinguals. The deer scene in four segments.

Nr. of segments mentioned ->	0	1	2	3	4	Average per participant
L2 EN (n = 19)	1 (5.3%)	1 (5.3%)	6 (31.6%)	10 (52.6%)	1 (5.3%)	2.5
L1 EN mon (n = 6)	- (0.0%)	- (0.0%)	1 (16.7%)	4 (66.7%)	1 (16.7%)	3.0

mon: monolinguals, EN: French

5.7.4 Reverse transfer visible in event granularity in L1 English and L1 French

5.7.4.1 Reverse transfer visible in event granularity in L1 English

The results for event granularity in English when the deer scene is divided into six segments, and which can be found in Table 5.61 show that L1 English trilinguals, on average, mention slightly more segments in English (4.0) than English monolinguals (3.7). L1 English bilinguals, on the contrary, mention slightly fewer segments on average (3.3). Furthermore, L1 English trilinguals, like English monolinguals, mention three or more segments in 100% of cases, whereas L1 English bilinguals only do so in 50.0% of cases.

When the deer scene is divided into four segments (Table 5.62), the results are slightly different. Although the differences are small, English monolinguals now mention the most segments on average (3.0), whereas L1 English bilinguals and trilinguals both mention fewer segments (2.7 and 2.8, respectively). In addition, L1 English bilinguals and trilinguals mention either two or three segments, whereas in the group of English monolinguals, one participant made reference to all four segments.

Table 5.61: Event granularity in L1 English: trilinguals, bilinguals, and monolinguals. The deer scene in six segments.

Nr. of segments mentioned ->	0	1	2	3	4	5	6	Average per participant	Participants who mention three or more segments
L1 EN tri (n = 6)	- (0.0)	- (0.0)	- (0.0%)	1 (16.7)	4 (66.7)	1 (16.7)	- (0.0%)	4.0	6 (100%)
L1 EN bi (n = 6)	- (0.0%)	- (0.0%)	3 (50.0%)	2 (33.3%)	1 (16.7%)	- (0.0%)	- (0.0%)	3.3	3 (50.0%)
L1 EN mon (n = 6)	- (0.0%)	- (0.0%)	- (0.0%)	2 (33.3%)	4 (66.6%)	- (0.0%)	- (0.0%)	3.7	6 (100%)

bi: bilinguals, **mon:** monolinguals, **tri:** trilinguals, **EN:** English, **FR:** French, **SP:** Spanish

Table 5.62: Event granularity in L1 English: trilinguals, bilinguals, and monolinguals. The deer scene in four segments.

Nr. of segments mentioned ->	0	1	2	3	4	Average per participant
L1 EN tri (n = 6)	- (0.0%)	- (0.0%)	1 (16.7%)	5 (83.3%)	- (0.0%)	2.8
L1 EN bi (n = 6)	- (0.0%)	- (0.0%)	2 (33.3%)	4 (66.6%)	- (0.0%)	2.7
L1 English (n = 6)	- (0.0%)	- (0.0%)	1 (16.7%)	4 (66.7%)	1 (16.7%)	3.0

bi: bilinguals, **mon:** monolinguals, **tri:** trilinguals, **EN:** English, **FR:** French, **SP:** Spanish

5.7.4.2 Reverse transfer visible in event granularity in L1 French

The results for event granularity in French when the deer scene is divided into six segments, and which can be found in Table 5.63, show that L1 French trilinguals mention more segments on average (3.4) than both L1 French bilinguals (2.4) and French monolinguals (2.7). In addition, the percentage of participants making reference to three or more segments is higher for L1 French trilinguals (81.8%) than for both L1 French bilinguals (40.0%) and French monolinguals (57.1%). Both the average number of segments mentioned and the percentage of participants mentioning three or more segments is lower for L1 French bilinguals than for French monolinguals.

When the deer scene is divided into four segments (Table 5.64), the results are quite similar. Now, L1 French trilinguals mention slightly more segments on average (2.8) than both L1 French bilinguals and French monolinguals (both 2.4).

Table 5.63: Event granularity in L1 French: trilinguals, bilinguals, and monolinguals. The deer scene in six segments.

Nr. of segments mentioned ->	0	1	2	3	4	5	6	Average per participant	Participants who mention three or more segments
L1 FR tri (n = 22)	- (0.0%)	- (0.0%)	4 (18.2%)	8 (36.4%)	8 (36.4%)	2 (9.1%)	- (0.0%)	3.4	18 (81.8%)
L1 FR bi (n = 5)	- (0.0%)	- (0.0%)	3 (60.0%)	2 (40.0%)	- (0.0%)	- (0.0%)	- (0.0%)	2.4	2 (40.0%)
L1 FR mon (n = 7)	- (0.0%)	- (0.0%)	3 (42.9%)	3 (42.9%)	1 (14.3%)	- (0.0%)	- (0.0%)	2.7	4 (57.1%)

bi: bilinguals, **mon:** monolinguals, **tri:** trilinguals, **EN:** English, **FR:** French, **SP:** Spanish

Table 5.64: Event granularity in L1 French: trilinguals, bilinguals, and monolinguals. The deer scene in four segments.

Nr. of segments mentioned ->	0	1	2	3	4	Average per participant
L1 FR tri (n = 22)	- (0.0%)	- (0.0%)	7 (31.8%)	12 (54.5%)	3 (13.6%)	2.8
L1 FR bi (n = 5)	- (0.0%)	- (0.0%)	3 (60.0%)	2 (40.0%)	- (0.0%)	2.4
L1 FR mon (n = 7)	- (0.0%)	- (0.0%)	4 (57.1%)	3 (42.9%)	- (0.0%)	2.4

bi: bilinguals, **mon:** monolinguals, **tri:** trilinguals, **EN:** English, **FR:** French, **SP:** Spanish

5.7.5 Summary of the findings for event granularity

The results for the monolinguals indeed show that English monolinguals mention more segments on average than both French and Spanish monolinguals. This holds for both divisions of the deer scene into segments. In addition, all English monolinguals mention three or more segments when the deer scene is divided into six segments.

For L2/L3 Spanish, it was found that, when the deer scene was divided into six segments, L1 English bilinguals mentioned slightly more segments on average than the other groups. They also

showed a higher percentage of participants mentioning three or more segments. Nevertheless, the average number of segments mentioned, as well as the percentage of participants mentioning three or more segments were lower than the ones found for English monolinguals. The behaviour of the L1 French bilinguals was in turn virtually identical to that of both Spanish monolinguals and French monolinguals. The two groups of trilinguals showed very similar behaviours, both mentioning slightly fewer segments than Spanish monolinguals and showing a lower percentage of participants mentioning three or more segments. Both the average number of segments mentioned and the percentage of participants mentioning three or more segments are lower than the ones found for English monolinguals, but similar to the ones found for French monolinguals. When the deer scene was divided into four segments, only the L1 English trilinguals appeared to mention slightly fewer segments than Spanish monolinguals. The averages found for the other learner groups were very similar to the one found for Spanish monolinguals.

Regarding the behaviour of both groups of trilinguals in their respective L2s, it was found that, when the deer scene was divided into six segments, L1 English trilinguals showed a very English-like behaviour in L2 French, mentioning more segments on average and showing a higher percentage of participants mentioning three or more segments than French monolinguals. When the deer scene was divided into four segments, the differences were smaller, but the L1 English trilinguals still mentioned slightly more segments on average. For L1 French trilinguals, it was found that, when the deer scene was divided into six segments, they mentioned fewer segments on average and showed a lower percentage of participants mentioning three or more segments in English than English monolinguals. Nevertheless, both the average number of segments mentioned and the percentage of participants mentioning three or more segments were higher than the ones found for French monolinguals. Similar results were obtained when the deer scene was divided into four segments: L1 French trilinguals still mentioned fewer segments in English than English monolinguals.

With respect to the event granularity shown by the L1 English participants in English, it turned out that, when the deer scene was divided into six segments, bilinguals mentioned slightly more segments on average than monolinguals, and trilinguals slightly fewer, but the differences were very small. Furthermore, bilinguals only mentioned three or more segments in 50% of cases, whereas both trilinguals and monolinguals did so in 100% of cases. When the deer scene was divided into four segments, both bilinguals and trilinguals turned out to mention slightly fewer segments on average than monolinguals, but the differences were again very small.

For the event granularity shown by the L1 French participants in French, it was found that trilinguals mentioned more segments on average and showed a higher percentage of participants mentioning three or more segments than the other two groups when the deer scene was divided into six segments. When the deer scene was divided into four segments, trilinguals still mentioned more segments on average than both monolinguals and bilinguals.

5.8 Background factors associated to linguistic behaviour in bi- and trilingual participants

For the bilingual and trilingual participants in the present study, information about various background and behavioural variables was collected by means of the questionnaires they had to fill out during the first and the last session with the researcher. It was decided to perform correlational analyses on these background data, to investigate whether they were associated to participants' linguistic behaviour in any way. This was motivated by the fact that, within each group, participants did not behave in a uniform way, as can be seen from the Figures presented in previous sections of this chapter. The variables that were entered into the analyses were: the percentage of use of the L1 during the past month, the percentage of use of the L1 during the past year, the time participants reported thinking in their L1 when speaking it, the raw language-test scores the participants obtained on the Spanish language test, the age of onset of learning Spanish, the percentage of use of Spanish

during the past month, the percentage of use of Spanish during the past year, as well as the percentage of time they reported thinking in Spanish when speaking it. For the groups of trilinguals, the L2 background data were analysed as well. The background data were correlated with various language-behavioural measures of the participants when telling the frog story, such as the expression of Manner. These behavioural measures have been described in detail in sections 5.3 and 5.5.1 of the present chapter. In addition, the available background data were correlated with each other for each group of participants, to see whether there were any significant associations between them. Since a normal distribution of the data could not be assumed, the non-parametric *Spearman's Rho* was used for the analyses.

In the next sections, the significant correlations found for each group of bi- and trilinguals will be presented in tables. Given the fact that, within each participant group, the percentages of use of the different languages were always significantly associated because a higher percentage of use of one language always entailed a lower percentage of use of the other language(s), these associations found between the percentages of use of the different languages within each group of participants will not be mentioned in the tables in order to highlight the other significant associations. The paragraph will conclude with a short summary of the results.

5.8.1 Associations found for L1 English bilinguals

The significant associations found for the L1 English bilinguals are shown in Table 5.65.

Table 5.65: significant associations found for the L1 English bilinguals

Associations between L1 background factors and linguistic behaviour		Associations between L2 background factors and linguistic behaviour		Associations between background factors other than percentages of use
L1 linguistic behaviour	L2 linguistic behaviour	L1 linguistic behaviour	L2 linguistic behaviour	
Use L1 past month - % +BC clauses $r = .832, p = .040$	None	Age of Onset L2 - % Manner Within verb With BC $r = .883, p = .020$ TimeThinkingL2 - % +Manner L1 $r = .900, p = .037$ L2 level - % Manner Within Verb Without BC L1 $r = -.918, p = .028$ L2 level - % Manner Outside Verb Without BC L1 $r = .918, p = .028$ % Use L2 Past Month - % +BC L1 $r = -.832, p = .040$	Age of Onset L2 - % Manner Within Verb Without BC L2 $r = .894, p = .041$ Age of Onset L2 - % Manner Outside Verb Without BC L2 $r = .984, p = .041$ L2 level - % Ground L2 $r = -.894, p = .041$ % Use L2 Past Year - % +Manner L2 $r = -.900, p = .037$ % Use L2 Past Year - % +Manner +BC L2 $r = -.894, p = .041$	None

5.8.2 Associations found for L1 French bilinguals

The significant associations found for the L1 French bilinguals are shown in Table 5.66.

Table 5.66: significant associations found for the L1 French bilinguals

Associations between L1 background factors and linguistic behaviour		Associations between L2 background factors and linguistic behaviour		Associations between background factors other than percentages of use
L1 linguistic behaviour	L2 linguistic behaviour	L1 linguistic behaviour	L2 linguistic behaviour	
None	TimeThinkingL1 - % +Ground L2 $r = -.892, p = .042$	None	None	TimeThinkingL1 – TimeThinkingL2 $r = .895, p = .040$ Use L1 Past Month – TimeThinkingL2 $r = -.918, p = .028$ TimeThinkingL2 – Use L2 Past Month $r = .918, p = .028$

5.8.3 Associations found for L1 English trilinguals

The significant associations between L1 and L2 background factors and linguistic behaviour found for the L1 English trilinguals are shown in Table 5.67, whereas the significant correlations found between L3 background factors and linguistic behaviour, as well as the significant associations between background factors are shown in Table 5.68.

Table 5.67: Significant associations found between L1 and L2 background factors for the L1 English trilinguals

Associations between L1 background factors and linguistic behaviour			Associations between L2 background factors and linguistic behaviour		
L1 linguistic behaviour	L2 linguistic behaviour	L3 linguistic behaviour	L1 linguistic behaviour	L2 linguistic behaviour	L3 linguistic behaviour
TimeThinkingL1 - % Manner Outside Verb With BC L1 r = - 1.000 Use L1 Past Year - % +Manner L1 r = .829, <i>p</i> = .042	None	Use L1 Past Year - % Manner Within Verb –BC L3 r = .841, <i>p</i> = .036	Age of Onset L2 - % +BC L1 r = -.868, <i>p</i> = .025	None	Age of Onset L2 - % +Ground L3 r = -.851, <i>p</i> = .032

Table 5.68: Significant associations found between L3 background factors and linguistic behaviour, as well as between background factors for the L1 English trilinguals

Associations between L3 background factors and linguistic behaviour			Associations between background factors other than percentages of use
L1 linguistic behaviour	L2 linguistic behaviour	L3 linguistic behaviour	
TimeThinkingL3 - %+BC L1 r = -.921, <i>p</i> = .026	None	TimeThinkingL3 - % +Ground L3 r = -.892, <i>p</i> = .042 L3 level - % Manner Within Verb –BC L3 r = .912, <i>p</i> = .011	% Use L1 Past Year – TimeThinkingL2 r = .900, <i>p</i> = .037 Age of Onset L2 – TimeThinkingL3 r = 1.000 Age of Onset L2 - % Use L3 Past Month r = .812, <i>p</i> = .050

5.8.4 Associations found for L1 French trilinguals

The significant associations between L1 and L2 background factors and linguistic behaviour found for the L1 French trilinguals are shown in Table 5.69, whereas the significant correlations found between L3 background factors and linguistic behaviour, as well as the significant associations between background factors are shown in Table 5.70.

Table 5.69: Significant associations found between L1 and L2 background factors for the L1 French trilinguals

Associations between L1 background factors and linguistic behaviour			Associations between L2 background factors and linguistic behaviour		
L1 linguistic behaviour	L2 linguistic behaviour	L3 linguistic behaviour	L1 linguistic behaviour	L2 linguistic behaviour	L3 linguistic behaviour
Use L1 Past Month - % +Manner -BC L1 $r = .454, p = .034$	Use L1 Past year - % +BC L2 $r = .508, p = .031$	None	Age of Onset L2 - % +Manner +BC L1 $r = .554, p = .009$ TimeThinkingL2 - % Manner Within Verb -BC L1 $r = .532, p = .028$ TimeThinkingL2 - % Manner Outside Verb -BC L1 $r = -.531, p = .028$	Use L2 Past Year - % +BC L2 $r = -.562, p = .015$	None

Table 5.70: Significant associations found between L3 background factors and linguistic behaviour, as well as between background factors for the L1 French trilinguals

Associations between L3 background factors and linguistic behaviour			Associations between background factors other than percentages of use
L1 linguistic behaviour	L2 linguistic behaviour	L3 linguistic behaviour	
Use L3 Past Month - % +Manner L1 $r = -.506, p = .016$ Use L3 Past Month - % +Manner -BC L1 $r = -.584, p = .004$	TimeThinkingL3 - % Manner Within Verb +BC L2 $R = -.484, p = .049$ Use L3 Past Month - % Manner Within Verb -BC L2 $r = -.494, p = .031$	% Use L3 Past Year - % +Ground L3 $r = -.462, p = .026$	TimeThinking L1 – Time Thinking L2 $r = .683, p = .003$ Use L1 Past Month – L3 Level $r = -.426, p = .038$ Use L1 Past Year – L3 Level $r = -.425, p = .043$ Use L2 Past Month – L3 Level $r = .483, p = .017$ L3 Level – Use L3 Past Year $r = .446, p = .033$

5.8.5 Summary of the findings for associations between background factors and linguistic measures

For the L1 English bilinguals, it was found that certain aspects of linguistic behaviour in the L1 were significantly associated to the % of use of the L1 during the past month, the Age of Onset of L2 learning, the % of time participants had reported to be thinking in the L2 while speaking it, L2 level, and the % of use of the L2 during the past month. Of these factors, L2 level and the respective use of the L1 and the L2 during the past month yielded the most correlations.

For linguistic behaviour in L2 Spanish, significant associations were found with the Age of Onset of L2 learning, L2 level, as well as the % of use of the L2 during the past year. Age of Onset and % of use during the past year turned out to be the most influential. There were no significant associations between background factors.

For the L1 French bilinguals, the results of the correlational analyses showed that there were no background factors that were significantly associated to L1 linguistic behaviour. On the contrary, the linguistic behaviour in L2 Spanish (the % of +Ground clauses) turned out to be associated to the % of time participants had reported to think in their L1 French while speaking it. Regarding the significant association between background factors, the % of time participants had reported to be thinking in their L2 Spanish while speaking it, turned out to be associated to the % of time participants had reported to be thinking in their L1 French while speaking it, the % of use of the L1 during the past month, as well as the % of use of the L2 during the past month.

For the group of L1 English trilinguals, the linguistic behaviour in the L1 turned out to be significantly associated to the % of time participants had reported to be thinking in their L1 English while speaking it, the % of use of the L1 during the past year, the Age of Onset of L2 learning, as well as the % of time participants had reported to be thinking in their L3 Spanish while speaking it. There was no factor that appeared to be the most influential one.

Regarding linguistic behaviour in the L2 French, no significant associations were found, but certain aspects of linguistic behaviour in L3 Spanish were associated to the % of use of the L1 during

the past year, the Age of Onset of L2 learning, the % of time participants had reported to be thinking in their L3 Spanish while speaking it, and L3 level. Again, there was no factor that appeared to be the most influential one.

With respect to the significant associations between background factors, it was found that the % of use of the L1 during the past year was associated to the % of time participants had reported to be thinking in their L2 French while speaking it, whereas the Age of Onset of L2 learning was associated to both the % of time participants had reported to be thinking in their L3 Spanish while speaking it and the % of use of the L3 during the past month.

Regarding the significant associations found for the L1 French trilinguals, it turned out that certain aspects of L1 linguistic behaviour were associated to the % of use of the L1 during the past month, the Age of Onset of L2 learning, the % of time participants had reported to be thinking in their L2 English while speaking it, and the % of use of the L3 during the past month. The % of time participants had reported to be thinking in their L2 English while speaking it and the % of use of the L3 during the past month turned out to be the most influential factors.

With respect to linguistic behaviour in L2 English, this was found to be associated to the % of use of the L1 during the past year, the % of use of the L2 during the past year, the % of use of the L3 during the past month, and the % of time participants had reported to be thinking in their L3 Spanish while speaking it. The percentages of use of the respective languages turned out to be the most influential.

The behaviour of the L1 French trilinguals in L3 Spanish (the % of +Ground clauses) was found to be associated to the % of use of this language during the past year. Regarding the significant associations found between background factors, Spanish level turned out to be associated to the % of use of the L1 during the past month, the % of use of the L1 during the past year, the % of use of the L2 during the past month, as well as the % of use of the L3 Spanish during the past year. The % of

time participants had reported to be thinking in L1 French while speaking it was associated to the % of time participants had reported to be thinking in their L2 English while speaking it.

In sum, the findings of the present paragraph suggest that it is important to take background factors into account when analysing participants' linguistic behaviour. Use and the percentage of time participants report to be thinking in a given language while speaking it appear to be especially important.

5.9 General summary of the results

An overview of the results for the groups of bilingual and trilingual participants in L2/L3 Spanish, which is the main focus of this study, can be found in Table 5.71.

Table 5.71: Overview of the findings for the groups of bilingual and trilingual participants in L2/L3 Spanish with respect to the findings for Spanish monolinguals

Type of analysis	L1 English bilinguals	L1 English trilinguals	L1 French bilinguals	L1 French trilinguals
General linguistic behaviour	Produce more clauses containing Fictive Motion Expression of Manner is burdensome in combination with BC Express more Manner within the verb and less Manner outside the verb in –BC clauses	Produce more clauses containing Fictive Motion Expression of Manner is burdensome in combination with BC Express more Manner within the verb and less Manner outside the verb in –BC clauses Produce more +Ground clauses	Produce more clauses containing Fictive Motion Expression of Manner is burdensome in combination with BC Produce more +Ground clauses	Produce more clauses containing Fictive Motion Expression of Manner is burdensome in combination with BC
Overall lexical richness	Similar	Similar	Much higher	Similar
Element use	English-like for –BC, slightly more-target-like for +BC	French-like patterns for –BC, exclusive reliance on Manner verbs in +BC	French-like patterns	Quite target-like patterns
Manner verbs with BC	Quite target-like productions	Some non-target-like verb forms and violations of the BC constraint	Quite-target-like productions	Some non-target-like verb forms, incorrect satellite- usage, and violations of the BC constraint
Expression of Path	Quite target-like pattern of descriptions	Quite target-like pattern of descriptions Produce event conflation	Quite target-like pattern of descriptions	Quite target-like pattern of descriptions Produce event conflation
Event granularity	6: Mention slightly more segments on average. More participants mentioning three or more segments. 4: Mention about the same number of segments	6: Mention slightly fewer segments on average. Fewer participants mentioning three or more segments. 4: Mention slightly fewer segments	6: Quite target-like patterns 4: Mention about the same number of segments	6: Mention slightly fewer segments on average. Fewer participants mentioning three or more segments. 4: Mention about the same number of segments

BC: Boundary-crossing

Chapter 6: Discussion and Conclusions

6.1 General discussion of the results

With respect to the results found for the three groups of monolinguals, these largely confirm the findings of previous research into the expression of motion in verb-framed and satellite-framed languages. First of all, as it concerns the expression of Manner, and as was shown in previous research by Slobin (1996a, 1997, 2006) and Talmy (1985, 1991, 2000), the % of +Manner clauses indeed turns out to be much lower in the two verb-framed languages than in English. This indicates that speakers of verb-framed languages pay more attention to Manner in general than speakers of satellite-framed languages. In addition, the percentage of +Manner clauses does not vary much between +BC and –BC clauses in monolingual speakers of verb-framed languages, suggesting that they indeed have become accustomed to language-specific patterns of expressing relatively less Manner explicitly, even when they are ‘free’ to do so, as is the case in –BC clauses, as was already suggested by Slobin (1997). This hypothesis is also supported by the fact that French and Spanish monolinguals tend to use very few second-tier Manner verbs in their stories (cf. Slobin, 1997), whereas English monolinguals use both first and second-tier verbs. An unexpected finding of the present study, however, was that English monolinguals showed a much lower percentage of +Manner clauses for +BC clauses than for –BC clauses. This suggests that in +BC clauses, English monolinguals show a higher preference for focusing on the actual boundary-crossing event by using a bare Path verb, although their percentage of +Manner clauses remains much higher than the ones found for French and Spanish monolinguals. However, many boundary-crossing scenes from the frog story involve one or more characters falling out of something or into something (e.g. into the water), and this makes the use of the Path verb ‘fall’ highly likely in these cases, unless the participant wants to foreground Manner by using a second-tier Manner verb such as ‘tumble’. A closer look at the clauses produced by the English monolinguals to describe these scenes shows that this was indeed

the case. Furthermore, it is complicated to compare these results with the results found in previous studies on the topic, due to the fact that, to the best of our knowledge, only one previous study has made the distinction between +BC and –BC clauses when looking at the use of Manner vs. Path verbs in English (Muñoz Carrasco, 2015). However, apart from the different elicitation method used in this study, the values for the amount of Path verbs used by English monolinguals were only presented for -BC clauses.

With respect to Manner-verb use by the groups of monolinguals, the results of the present study also confirm that the boundary-crossing constraint in verb-framed languages is not absolute, and that certain verbs describing sudden, high-energy motor patterns, such as ‘jump’ or ‘throw’ may be used to describe events involving a boundary-crossing (cf. Naigles et al.,1998; Slobin, 2006.). Nevertheless, the use of these verbs remains restricted to specific scenes from the frog story. In –BC clauses, however, French monolinguals used Manner verbs in 100% of cases to express Manner, a percentage that contrasts sharply with the percentage found for Spanish monolinguals (52.4%). English monolinguals also used a lower percentage of Manner verbs in –BC clauses (77.4%) than French monolinguals. Due to the low numbers of participants, especially in the groups of French and English monolinguals, the exact percentages should be taken with care, but they nevertheless indicate an intratypological difference between French and Spanish in this respect. Moreover, French monolinguals also used a higher percentage of Manner verbs in +BC clauses (77.8%) than Spanish monolinguals (43.5%), whereas the percentage was similar to the one found for English monolinguals (75.0%). This finding seems to suggest that there is a difference between the total amount of reference to Manner speakers of a particular language make, on the one hand, and the type(s) of elements speakers tend to use for making this reference. French is similar to Spanish regarding the total amount of reference to Manner, but totally different when it comes to the elements that are used for making this reference. The results point in the same direction as the ones reported by Hijazo-Gascón (2011), who also found that French speakers used slightly more Manner verbs

than Spanish speakers, even though the differences were smaller than the ones found in the present study. Taken together, the high percentages of Manner verbs found in French monolinguals appear to be more similar to the percentages found for satellite-framed English. In this way, they may be reminiscent of French satellite-framed past as shown by the research on Old French and Modern French carried out by Kopecka (2006, 2009). Especially, verbs such as *envoler* ‘fly away’, which include a Path particle are used quite frequently. However, more research would be needed to confirm this hypothesis.

The findings for the expression of Path in the frog stories told by the groups of monolinguals, and which was analysed by taking a closer look at participants’ descriptions of the deer scene, largely confirmed the findings from previous studies (cf. Berman & Slobin, 1994; Cadierno, 2004; Slobin, 2006). They confirmed that English monolinguals tend to provide dynamic descriptions of the deer scene, which they did in 100% of cases, sometimes producing event conflation when providing these descriptions. The findings also confirmed that French and Spanish monolinguals provide static descriptions of the deer scene, and that neither group produces event conflation, showing very verb-framed-like patterns. (cf. Slobin, 1996, 1997).

With respect to event granularity, the results turned out to be in line with those of previous research by Berman and Slobin (2004) and Slobin (1996, 1997). They differ slightly from the results found by Hijazo Gascón (2011), however, regarding the difference this researcher found between French and Spanish: in the present study, the average numbers of segments mentioned are virtually identical for both languages, and the percentages of participants who mention three or more segments are also more similar. English monolinguals tend to mention more segments of the deer scene than both French and Spanish monolinguals, and they always mention three or more segments, whereas French and Spanish monolinguals only mention three or more segments in 57.1% and 69.2% of cases, respectively. These percentages are slightly higher than the ones found in previous research, but results should be treated with caution because of the small number of participants.

Regarding the findings for both groups of bilinguals and both groups of trilinguals in L2/L3 Spanish, which was the main interest of the present study, the exploratory analyses revealed that there were a number of confound variables that should be taken into account when interpreting the results. It turned out that L1 French bilinguals had used their L2 significantly more often than L1 English bilinguals and that, consequently, L1 French bilinguals had also used their L1 significantly less often than L1 English bilinguals, during both the month and the year prior to the first interview with the researcher. L1 English trilinguals had used their L1 significantly more often than L1 French trilinguals, and their L2 significantly less often, during both the month and the year prior to the first interview with the researcher. Furthermore, the L1 French trilinguals had used their L2 significantly more often than their L3 than L1 English trilinguals, but only during the past month. The use of Spanish, however, was about the same across all groups of participants, although there were small, non-significant differences in proficiency. Furthermore, the L1 French trilinguals turned out to be significantly more proficient in their L2 English than the L1 English trilinguals were in their L2 French. Moreover, L1 French trilinguals were significantly more proficient in their L2 English than they were in their L3 Spanish, whereas the difference found between L2 French and L3 Spanish for the L1 English trilinguals turned out to be non-significant.

There are some characteristics of the Spanish frog-story data that turned out to be identical for all learner groups, regardless of L1 and of whether the participants were bilingual or trilingual. First, learners make very little reference to Manner in +BC clauses; the percentages of +Manner clauses were always lower than the one found for Spanish monolinguals. Second, learners tend to produce more clauses containing Fictive Motion than Spanish monolinguals. Third, all learner groups produce more +Ground clauses than Spanish monolinguals, although the difference was only found to be significant for the group of L1 French bilinguals and L1 English trilinguals.

The first of these findings seems to indicate that making reference to Manner is very burdensome for learners in combination with a BC, even more burdensome than it is for Spanish

monolinguals. This appears to be in line with the findings reported by Larrañaga et al. (2011). It also indicates that learners are sensitive to the boundary-crossing constraint, since the differences between the percentages were much smaller for –BC clauses. This sensitivity appears to be quite similar across all learners groups, again regardless of L1 and of whether the participants were bilinguals or trilinguals, which seems to contradict the findings reported by Larrañaga et al. (2011), whose learners produced more violations of the boundary-crossing constraint, even at the highest proficiency level. It seems thus to be the case that learners are able to make reference to Manner in Spanish to similar extents as Spanish monolinguals do, but only in –BC clauses. A possible explanation for the large difference visible for +BC clauses can be found when one takes a closer look at the types of elements learners use to make reference to Manner in Spanish. It turns out that all learner groups, except the L1 French trilinguals, rely very heavily on Manner verbs for making reference to Manner, showing very large differences with Spanish monolinguals. It is precisely the use of these Manner verbs that is restricted in +BC clauses, except for the verbs describing sudden, high-energy motor patterns described above. Slobin (2006: 11) already indicated that one of the least burdensome options for expressing Manner is to express it in the main verb, and this is what most learners prefer to do: they choose the option that is the least burdensome by using Manner verbs. In addition, expressing Manner within the verb appears to be the default option in both English and French, and especially at these intermediate levels of proficiency, learners may fall back to it in their attempts to express Manner in Spanish. This may also be caused by the cognitive demands of narrating the frog story in real time while being recorded in the presence of a researcher, a hypothesis that is supported by the fact that the group with the highest proficiency, the L1 French trilinguals, relies less on Manner verbs than the other learner groups. Due to their relatively limited proficiency, the nature of the task, or a combination of both, learners may be unable to find an alternative way of expressing Manner in +BC clauses by using other types of elements, resulting in a lower amount of reference to Manner in these clauses.

The second finding concerns the slightly higher percentages of clauses containing Fictive Motion. These are almost entirely due to participants describing how the boy and the dog are (still) looking or calling for the frog. This may have given them more time to retrieve the verb(s) they actually wanted to use to describe the scenes in question. This could be investigated in the future by asking participants why they have narrated a particular scene in a certain way, and by looking at their answers to the questions of the communication strategies' questionnaire, which could not be included in the present thesis.

The third finding was the higher percentages of +Ground clauses produced by all learner groups. It remains unclear whether they are due to a learner strategy (in this case, being more explicit) or to the characteristics of both English and French, which show higher percentages of +Ground clauses than Spanish.

There are also a number of characteristics of the frog-story data that were different across participant groups. With respect to the differences that were found between the learner groups regarding their general linguistic behaviour when telling the frog story, it was found that both groups of L1 English learners had expressed more Manner within the verb and less Manner outside the verb in –BC clauses in Spanish than Spanish monolinguals, whereas there was no significant difference in this respect between both groups of L1 French participants and Spanish monolinguals. However, as has been discussed above, the percentages of Manner-verb use indicate that all learner groups except the L1 French trilinguals use more Manner verbs than Spanish monolinguals. Moreover, the numbers of participants are small, and L1 French bilinguals had used their L2 Spanish significantly more often than L1 English bilinguals. Therefore, the higher use of Manner verbs in the L1 English bilinguals could be a sign of a more English-like strategy for expressing Manner. In fact, this is supported by the L1 English bilinguals' element use: in –BC clauses, they show very English-like patterns of element use, whereas their behaviour is slightly more target-like in +BC clauses, due to

their sensitivity to the boundary-crossing constraint. This seems to suggest that, at this level of proficiency, learners indeed fall back to an English-like strategy of expressing Manner whenever this is possible: in –BC clauses. For L1 English trilinguals, however, it cannot be said with certainty if their higher percentage of Manner being expressed within the verb is due to a more English-like strategy, a more French-like strategy, or a combination of both due to the fact that the monolingual data indicated that in both English and French, significantly more Manner is being expressed within the verb than in Spanish. The patterns found for element-use in the L1 English trilinguals nevertheless show very French-like patterns in –BC clauses. In +BC clauses, L1 English trilinguals rely exclusively on Manner verbs to express Manner. In addition, L1 English trilinguals produce significantly more +Ground clauses in Spanish than Spanish monolinguals, a difference that was also found for the group of L1 French bilinguals. Taken together, these findings suggest at least some influence from L2 French in L3 Spanish. They also support the hypothesis of Manner verbs being the default or least burdensome option for expressing Manner. Overall lexical richness was about the same for both groups of L1 English learners and Spanish monolinguals.

With respect to the findings for general linguistic behaviour in Spanish for the two groups of L1 French learners, it was found that L1 French trilinguals did not differ significantly from Spanish monolinguals, except for their slightly higher percentages of clauses containing Fictive Motion and their low amount of reference to Manner in +BC clauses discussed above. L1 French bilinguals, on the contrary, did turn out to differ significantly from Spanish monolinguals, but only regarding the percentage of +Ground clauses they had produced: L1 French bilinguals had produced significantly more +Ground clauses than Spanish monolinguals, which could be due to cross-linguistic influence from L1 French, where the percentage of +Ground clauses is higher than in Spanish. When one looks at the patterns of element-use by the L1 French bilinguals, these also turn out to be French-like in both types of clauses, suggesting a French-like strategy for expressing Manner. Another important difference between the L1 French bi- and trilinguals was that the overall lexical richness was much

higher in L1 French bilinguals than in both L1 French trilinguals and Spanish monolinguals. This difference was mainly caused by the use of a wider variety of Manner verbs and Path verbs on behalf of the L1 French bilinguals. A closer inspection of the types of Manner and Path verbs used by these learners showed that in both categories, there were lexical inventions based on French such as *atacarse* ‘get attacked’ and *reir* ‘go again’, which were counted as separate verbs. This leads to a higher lexical richness whereas, in fact, these lexical inventions indicate that participants did not know or were unable to retrieve the correct Spanish verbs. They also indicate that French was quite active at the time the participants were telling the story in Spanish, at least for some of them (cf. Grosjean, 2001) This makes sense, because all interviews with L1 French bilinguals were conducted in Aix-en-Provence, France, in a French-speaking environment. Interestingly, there was only one lexical invention found in the data of the L1 English bilinguals in these categories. It concerned an overuse of *se* in the verb *correrse*, meaning to ‘run’. This seems to indicate that the bilingual participants were able to detect typological differences and similarities regarding word formation, at least to some extent (cf. Kellerman, 1978, 1986).

Regarding the more qualitative analyses of the data, which involved a closer look at the use of Manner verbs in +BC clauses, the expression of Path, and event granularity of the deer scene, it turned out that most groups of learners had showed a quite target-like behaviour overall. The use of Manner verbs in +BC clauses was found to be target-like in both groups of bilinguals, with no violations of the boundary-crossing constraint, although the number of clauses was very low. Both groups of trilinguals, however, had produced some non-target-like verb forms and clauses violating the boundary-crossing constraint. In L1 English trilinguals, these non-target-like productions suggested either an underlying English-like pattern of event construal, or a combined influence from English and French. The non-target-like productions of the L1 French trilinguals, on the contrary, involved the translation of an L1 verb together with its underlying (conceptual) properties, resulting in violations of the boundary-crossing constraint in Spanish. This seems to indicate an L1-like

pattern of event construal. Taken together, the results for the two groups of trilinguals suggest an interplay of psychotypology and L1 influence, with the latter being the most visible. It is therefore remarkable that there were no cases of boundary-crossing-constraint violations found in the two groups of bilinguals. However, the numbers of participants were small, and participants made very little reference to Manner in combination with a BC. Furthermore, the proficiency of the L1 English bilinguals was slightly higher than that of their trilingual counterparts, which may have caused the latter to produce more non-target-like constructions. L1 French trilinguals had the highest proficiency of all groups, but the number of participants in this group was also much larger, making it more likely for incidental violations of the boundary-crossing constraint to appear.

With respect to the expression of Path, it turned out that all learner groups had produced virtually the same mix of static and dynamic descriptions of the deer scene as Spanish monolinguals. However, both groups of trilinguals had produced event conflation, whereas the groups of bilinguals had not. Event conflation was a typically English phenomenon in the monolingual data, suggesting some influence from English. In addition, event conflation seems to be transferred regardless of typological proximity or L1/L2 status, since English was the L1 English trilinguals' L1 and the L1 French trilinguals' L2. It is therefore likely that the recency of use of English may have played a role here (cf. Cenoz, Hufeisen, and Jessner, 2001; Cenoz and Jessner, 2009; Hammarberg, 2001;): most L1 French trilinguals were using their L2 English actively at the time they were interviewed for the present study. The exploratory analyses discussed above also indicated that L1 French trilinguals had used their L2 significantly more often than L1 English trilinguals had used their L2 French. This favoured the use of English in both cases. Moreover, L1 French trilinguals were highly proficient in English. All this makes it likely that a recent use of English favours the transfer of event construal into Spanish, at least when participants are highly proficient in English.

Regarding the outcomes of the remaining qualitative analyses of the frog-story data, the analyses of event granularity of the deer scene, the differences between the learner groups and

Spanish monolinguals were small on average. Only the L1 English bilinguals showed a slightly more English-like behaviour of mentioning more segments when the deer scene was divided into six segments. This was not the case, however, when the deer scene was divided into four segments. Similar differences between both analyses were visible for other groups of participants. To put an example: the group of L1 French trilinguals, who had mentioned slightly fewer segments on average than Spanish monolinguals when the deer scene was divided into six segments, mentioned about the same number of segments as Spanish monolinguals when the deer scene was divided into four segments. This suggests that, apart from the fact that speakers of satellite-framed languages, in this case English, tend to mention more segments on average (cf. Slobin 1996a, 1997), some of the six segments are more likely to be mentioned by certain groups of participants than by others, whereas with four segments, the differences are much smaller. This could be due to the fact that some of the segments from the six-segment division were taken together to yield the segments for the four-segment division (cf. Slobin, 1997). More research is needed, however, to see whether there is any relation to linguistic typology or thinking-for-speaking.

For both groups of trilinguals, the frog-story data were also analysed in their respective L2s, French and English. Like for the L3 Spanish data, the results showed that both groups of learners produced slightly more clauses containing Fictive Motion in their L2 than monolinguals. They also showed that expressing Manner in combination with a boundary-crossing was very burdensome for the L1 English trilinguals in L2 French. The patterns found for element-use in L2 French suggest that, like in L3 Spanish, participants fall back to an English-like strategy for expressing Manner in –BC clauses, whereas it is impossible for them to follow this strategy in +BC clauses due to the boundary-crossing constraint. The results for +BC clauses in L2 French are again similar to the results found in L3 Spanish: L1 English trilinguals rely exclusively on Manner verbs to express Manner.

With respect to the behaviour of the L1 French trilinguals in L2 English, it was found that they had produced fewer +Manner clauses in general than English monolinguals. Just like for English monolinguals, the percentage of +Manner clauses was higher for –BC clauses than for +BC clauses. Moreover, their patterns of element use were very English-like in –BC clauses, whereas the use of Manner verbs dropped considerably in +BC clauses in favour of the use of, especially, adverbial expressions and to a lesser extent also descriptions, suggesting patterns of event construal that are still quite French-like. Furthermore, it was found that both groups of learners had expressed significantly less Manner within the verb than monolinguals, which is in sharp contrast with the results found for L3 Spanish. In the case of the L1 English trilinguals, the difference was visible in –BC clauses, whereas for the L1 French trilinguals, it was only visible in +BC clauses. However, when one takes a look at the percentages of Manner-verb use by the L1 English trilinguals, in –BC clauses, these do not differ much between languages, suggesting that they use an English-like strategy for expressing Manner in all of their languages whenever this is possible. The significant difference with the French monolinguals may have therefore been caused by the exclusive reliance on Manner verbs by the latter in –BC clauses. L1 French trilinguals, on the contrary, show very English-like percentages of Manner-verb use in –BC clauses, probably due to their high proficiency in this language. The significant difference with English monolinguals is therefore caused by their much lower use of Manner verbs in +BC clauses. Again, this suggests that, in general, L1 French trilinguals are still behaving as if the boundary-crossing constraint was also applicable to English. L1 English trilinguals, in turn, appear to be equally sensitive to the boundary-crossing constraint in French as they were to the boundary-crossing constraint in Spanish. Overall lexical richness was lower in both groups of learners than in monolinguals.

With respect to the more qualitative analyses of the data, it turned out that, overall, participants from both groups had used Manner verbs in combination with a boundary-crossing in quite target-like ways. The data of the L1 French trilinguals only included some cases of incorrect

satellite-usage. Contrarily to what was found for L3 Spanish, the L1 English trilinguals had not produced any event conflation in L2 French, and had provided a quite target-like mix of static and dynamic descriptions. Given the fact that the percentage of use of L2 French and L3 Spanish did not differ significantly and that proficiency was slightly higher in L2 French than in L3 Spanish, this suggests that non-target-like event conflation may disappear when proficiency increases. The L1 French trilinguals, in turn, had produced event conflation to almost the same extent as English monolinguals in L2 English. Nevertheless, they still provided a mix of static and dynamic descriptions, whereas English monolinguals had only provided dynamic descriptions. Dynamic descriptions were the most frequent option in both groups of learners.

Regarding event granularity, it was found that the L1 English trilinguals showed a quite English-like pattern of mentioning more segments in L2 French when the deer scene was divided into six segments. When the deer scene was divided into four segments, however, the differences with French monolinguals were much smaller. L1 French trilinguals, on the contrary, had mentioned fewer segments than English monolinguals in both divisions of the deer scene. Both findings suggest L1-like patterns of event construal with respect to the number of segments mentioned.

Taken together, the results for L2/L3 Spanish, as well as for L2 French and L2 English for the two groups of trilinguals seem to suggest that linguistic behaviour is influenced by various factors, among which proficiency and use turn out to be especially important. Due to the characteristics of the participant groups, however, it was not feasible to pinpoint the unique contribution of each of these two factors, but the frequent use of English did turn out to have affected the expression of Path in L3 Spanish in the L1 French trilinguals, who showed event conflation. The results also indicate that learners start out with the patterns of event construal found in their respective L1s. This is most visible in their use of different types of elements for making reference to Manner. With increasing proficiency, learners showed more target-like patterns of element use, but the boundary-crossing constraint turned out to be especially hard to unlearn in L2 English for the L1 French trilinguals,

whereas L1 English bi- and trilinguals showed a sensitivity to this constraint even at relatively lower levels of proficiency in both L2 French and L3 Spanish, although the lower proficient bilinguals had produced some clauses that violated the boundary-crossing constraint. Perceived typological similarity between French and Spanish played a minor role, and was mainly visible at the lexical level, where, in the case of negative transfer it manifested itself in incorrect translations or coinages based on French verbs in the Spanish narrations made by L1 French participants and L1 English trilinguals. Sometimes, however, the conceptual information of the French verbs was copied together with the lexical information, resulting in clauses that violated the boundary-crossing constraint. The results for the event granularity of the deer scene showed that the differences between the learner groups and Spanish monolinguals were minimal, whereas both groups of trilinguals showed very L1-like patterns in their respective L2s. At this point, it remains unclear what has caused this difference, and more research into event granularity in combination with various background and linguistic factors would be needed.

In order to see whether the acquisition of one or more additional languages had had any effect upon the expression of Manner in the bilinguals' and trilinguals' L1s, their linguistic behaviour in these languages was investigated as well. For L1 English bi- and trilinguals, it was found that the expression of Manner was especially affected, and that this effect was more pronounced in +BC clauses than in –BC clauses, although the differences were only found to be significant for the latter, probably due to the higher number of –BC clauses. Nevertheless, the findings are in line with the ones reported by Muñoz Carrasco (2015) although this researcher only looked at reverse transfer in L1 English bilinguals, and the effects reported became more visible with an increasing proficiency level in L2 Spanish. There were virtually no differences between bi- and trilinguals, which suggests that learning one additional verb-framed language already has an effect upon the expression of Manner in satellite-framed English. In –BC clauses, the percentage of Manner being expressed

within the verb was significantly lower for bilinguals than for trilinguals and monolinguals. Bilinguals and trilinguals had also produced significantly more +Ground clauses than monolinguals. Both findings are again in line with the ones reported by Muñoz Carrasco (2015). Moreover, monolinguals had produced significantly more +BC clauses than bilinguals. Lexical richness dropped straightforwardly with every additional language participants spoke, mainly due to a smaller variety of Manner-verb types. A look at the elements used for making reference also shows a drop in the use of Manner verbs in +BC clauses, whereas the percentages remain very English-like in –BC clauses. The analysis of the use of Manner verbs in +BC clauses also revealed that bi- and trilinguals had used fewer second-tier verbs than monolinguals. An additional analysis of three clear boundary-crossing scenes from the frog story also showed that bi- and trilinguals had made less reference to Manner, and that they preferred the use of bare Path verbs. This ‘Path-verb preference’ was also found by Muñoz Carrasco (2015). The outcomes of the analysis of the expression of Path, in turn, indicated that both bilinguals and trilinguals showed somewhat more event conflation than monolinguals, and that trilinguals had produced both static and dynamic descriptions of the deer scene, whereas none of the bilinguals and monolinguals had done so. Event granularity was still quite English-like in trilinguals, whereas bilinguals tended to mention fewer segments when the deer scene was divided into six segments. The difference found for the trilinguals was much smaller, however, when the deer scene was divided into four segments.

Taken together, the results for reverse transfer in the L1 English bi- and trilinguals indicate that reference to Manner is especially affected by the acquisition (and use) of one or two verb-framed languages. L1 English bi- and trilinguals make less reference to Manner overall than monolinguals, and this difference is especially visible in +BC clauses, suggesting that, once it had been established that there is a boundary-crossing constraint in one of the languages a participant speaks, this constraint is applied to all languages. This even happens at intermediate levels of proficiency, and when the use of the verb-framed language(s) is not very frequent. Furthermore, in +BC clauses, bi-

and trilinguals use more first-tier verbs, which suggests that even low percentage(s) of use of the other language(s) have an effect on lexical retrieval in the L1, making it less efficient, especially for less frequent items. It also makes participants rely more heavily on the default strategy, which is expressing Manner within the verb. However, because their expression of Manner in English is now affected by the boundary-crossing constraint from the other language(s) they speak, this default strategy is only visible in –BC clauses. Furthermore, L1 English bi- and trilinguals prefer bare Path verbs for describing boundary-crossing scenes, a pattern that turns out to be more similar to the ones found in French and Spanish. Therefore, it is not unlikely that the participants systems for event construal are at least partly shared between languages, as was already proposed by de Bot (1992, 2004a, 2004b, 2012), De Angelis (2007), and Herdina & Jessner (2002). It turns out that participants have chosen the option that works in all of their languages, which is the use of Path verbs such as ‘come’ and ‘escape’. This strategy of choosing the option that works in all languages was also found by Filipović (2011) in a study with English-Spanish balanced bilinguals. Event conflation in English does not seem to be affected to great extents, which suggests that it is more susceptible to frequency of use. L1 English trilinguals, however, provided both static and dynamic descriptions of the deer scene, which is a pattern normally found in French and Spanish, again suggesting that the types of descriptions participants provide are more susceptible to the actual knowledge of the additional language(s), independent from the amount of use. There are virtually no differences for event granularity between trilinguals and monolinguals, whereas bilinguals had mentioned slightly fewer segments. The low numbers of participants should be taken into account, however.

The investigation of reverse transfer in the groups of L1 French bi- and trilinguals revealed that the overall percentages for general linguistic behaviour of the bilinguals differed from those of the trilinguals and monolinguals, who showed very similar behaviours, but numbers were very small. A closer look at the amount of reference made to Manner in +BC and –BC clauses revealed, however, that bilinguals and trilinguals grouped together: the percentages showed that both groups

had made less reference to Manner in +BC clauses than monolinguals, and that, in addition, they had made more reference to Manner in –BC clauses than in +BC clauses, whereas the percentages found for both types of clauses were about the same in monolinguals. The differences were non-significant, however. Moreover, the outcomes of the statistical analyses indicated that all significant differences were to be found between the groups of trilinguals and monolinguals, and that the bilinguals' behaviour did not differ significantly from that of either of the other groups. These significant differences indicated that trilinguals had produced more +Manner clauses than monolinguals, but that they had expressed more Manner outside the verb in –BC clauses. It cannot be ruled out that the trilinguals' knowledge and active use of English has played a role here, since it may have directed their attention more toward Manner when it comes to event construal, while at the same time making lexical access in French less efficient due to a less frequent use of the language, causing participants to express Manner in the form of (more general) adverbial expressions. However, the L1 French trilinguals may also have resorted to these adverbial expressions because it was complicated to express all additional Manner in the form of Manner verbs, due to the nature of the Manner-verb lexicon in French, which is less rich than the English Manner-verb lexicon. Lexical richness, in turn, turned out to increase with every additional language participants spoke. In other words, it was the highest in trilinguals, but it should be kept in mind that the number of participants in this group was also much larger than that of the other two groups.

With respect to the elements used for making reference to Manner, the percentages indicated a trend of participants producing fewer Manner verbs and more adverbial expressions the more languages they spoke. In addition, trilinguals had used all types of elements in both types of clauses, showing very similar percentages in L1 French and L3 Spanish, especially in –BC clauses, whereas monolinguals had only used Manner verbs and adverbial expressions, and had relied exclusively on Manner verbs in –BC clauses. Bilinguals had also used all types of elements in –BC clauses, but they returned to the French-like pattern of only using Manner verbs and adverbial expressions in +BC

clauses. The use of elements in L1 French thus seems to be affected by the elements that are used in the other language(s) a participant speaks. It was again found that the boundary-crossing constraint was applied to all languages.

The analysis of the use of Manner verbs in combination with a BC did not reveal any substantial differences between the groups of bi- and trilinguals and monolinguals, which may be due to the fact that all three groups applied the boundary-crossing constraint, because it is a characteristic of their L1. It was only found that trilinguals had used a larger number of second-tier Manner verbs than the other two groups, again indicating that they might have been paying attention to more fine-grained distinctions of Manner. Furthermore, trilinguals had used the verb *grimper* 'climb' in combination with a BC on several occasions, whereas the verb had not been used by monolinguals, and only once by bilinguals, but in a –BC clause. Moreover, the Manner verbs used in combination with a BC were found throughout the story in trilinguals, whereas they had only been used to describe specific scenes in bilinguals and monolinguals. This again suggests a more English-like pattern of making reference to Manner, at least in combination with a BC. This possible influence of English was also visible in the expression of Path in trilinguals, because this group was the only one to produce event conflation in French, again suggesting that their high frequency of use of English played a role. They did not differ from monolinguals, however, with respect to the types of descriptions that they had provided of the deer scene: both groups had provided both static and dynamic descriptions, to similar extents, and with dynamic descriptions being the most frequent option. This suggests, once more, that the types of descriptions participants provide are more susceptible to the actual knowledge of the additional language(s) than to the amount of use. Bilinguals, on the contrary, had only provided dynamic descriptions of the deer scene. This result may have been due, however, to the very low number of participants in this group.

With respect to event granularity, it was found that trilinguals had mentioned more segments on average, and that a larger percentage of participants in this group had mentioned three or more

segments when the deer scene was divided into six segments. The results were similar when the deer scene was divided into four scenes, the only difference being that the difference between the trilinguals and the other groups was smaller. This again points in the direction of a possible influence from English.

All results from the present study taken together show that in L3 acquisition, cross-linguistic influence takes place in all directions and between all languages, being mediated by frequency of use and proficiency, and, to a lesser extent, also perceived typological distance. All participants turned out to be very sensitive to the boundary-crossing constraint, applying it to all their languages. Apart from this sensitivity to the boundary-crossing constraint, L1-like patterns of event construal are very pervasive and only seem to disappear with increasing proficiency. It was also found that some aspects of event construal are more susceptible to the actual knowledge of several languages (static vs. dynamic descriptions), whereas others are more influenced by the actual amount of use (e.g. event conflation, and possibly also numbers of segments mentioned in the deer scene). When one relates these findings to the current models of L3 acquisition described in detail in Chapter 3, they provide support for those models that state that there is interdependence between the various languages systems of a speaker, at least in production, such as the Dynamic Model of Multilingualism (Herdina & Jessner, 2002), the Multilingual Production Model (de Bot, 1992, 2004, 2012), and the Combined CLI Model (De Angelis, 2007). The outcomes of the present study do not allow for any conclusions regarding interdependence of the language systems during processing. The results do not support, however, the claims made by models that state that cross-linguistic influence is determined exclusively by the degree of (perceived) structural similarity between languages (the Typological Primacy Model (Rothman 2011, 2013, 2015), because L1 patterns of event construal were present in L3 Spanish regardless of typological similarity between the languages. The results do not support either that transfer is only facilitative (the Cumulative Enhancement Model (Flynn et al.,

2004), or that cross-linguistic influence in the L3 always comes from the L2 due to similar cognitive representations (the L2 Status Factor Model (Bardel & Falk 2007, 2012). Hammarberg's Role-Function Model (Williams and Hammarberg, 1998; Hammarberg 2001, 2009) is not supported either by the results of the present thesis, because the L2 only worked as a supplier language in L3 Spanish in L1 English trilinguals. In L1 French trilinguals, the supplier language was always the L1 in the cases in which the source language could be determined with certainty. This L1 was structurally more similar to Spanish. In addition, meta-comments and requests for help were not always made in the participant's L1. With respect to the Factor Model presented by Hufeisen and Marx (2007), the results of the present study confirm the large number of factors that play a role in L3 acquisition. Regarding reverse transfer, however, they do not support the claim that the largest qualitative change takes place between L2 acquisition and L3 acquisition, since L1 English bilinguals and trilinguals showed very similar behaviours. Finally, with respect to Kellerman's *Transfer to nowhere* principle (Kellerman, 1995), the results suggest that accessibility to meta-awareness may not be necessary for thinking-for-speaking patterns to be restructured. This becomes especially visible in the presence of reverse transfer in the L1.

Regardless of the models, the results of the present thesis suggest that rethinking-for-speaking occurs at different paces depending on which part of event construal has to be 'rethought', which is in line with the results found by some previous studies (cf. Cadierno, 2004, Cadierno and Ruiz, 2006). Furthermore, this rethinking is mediated by factors such as proficiency and language use. Moreover, thinking-for-speaking in the L1 can be altered by having to rethink-for-speaking in one or more additional languages, indicating that, in bi- and multilinguals, the patterns are not completely language-specific. The visibility of this overlap between patterns of event construal is again mediated by factors such as proficiency and language use, suggesting that thinking-for-speaking is dynamic, and that speakers can become habituated to new patterns, irrespective of the language. The results indeed seem to suggest that bi- and multilinguals are multicompetent speakers (cf. Cook, 1997), who

have their own unique characteristics, and therefore may not show a completely ‘monolingual-like’ behaviour in any of their languages.

6.2 The results vs. the hypotheses

In this section, the results of the present study will be compared to the initial research hypotheses presented in chapter IV in order to see whether they have been confirmed or should be rejected.

Hypothesis 1: The role played by the L2

1a. If the L2 plays a major role in the acquisition process of the L3, independently of other factors, this influence is expected to occur irrespective of typological similarity between the L2 and the L3. In this case, each group of trilinguals is expected to pattern with the group of bilinguals that has the trilinguals’ L2 as their L1: L1 English trilinguals will pattern with L1 French bilinguals, whereas L1 French trilinguals will pattern with L1 English bilinguals regarding their behaviour in the target language. This hypothesis was only partially confirmed by the data. It was confirmed for the patterns of element use for making reference to Manner in L1 English trilinguals in -BC clauses, but not by the patterns of element use in L1 French trilinguals. It was also confirmed by the higher % of +Ground clauses produced by the L1 English trilinguals, which suggested a more French-like pattern, as well as by some word coinages based on French verbs produced by this group of participants. This suggests that psychotypology or language distance may be a more important factor than L2 status. The hypothesis was not confirmed, however, by the other data from the present study.

1b. If, on the other hand, in trilinguals the L2 does not play a unique major role in the acquisition process of the L3, we expect trilinguals and bilinguals who have the same L1 to show the same patterns in the target language. This hypothesis was only partially confirmed by the data. Although L1 thinking-for-speaking patterns turned out to be quite pervasive for some

aspects of motion expression (e.g the tendency of L1 English participants to express Manner within the verb in –BC clauses), this influence was less visible in other aspects (e.g static vs. dynamic descriptions of the deer scene). Furthermore, across the board, learners behaved quite similarly regardless of L1.

Hypothesis 2: Reverse transfer

2a. Both bilinguals and trilinguals will show a behaviour in their L1 regarding the expression of motion that is different from that of monolinguals. This hypothesis was indeed confirmed by the data. In L1 English bi- and trilinguals, the expression of Manner appeared to be especially affected, with both groups making less reference to Manner than English monolinguals. This difference was most visible in +BC clauses, and suggests some influence of the boundary-crossing constraint present in Spanish in the case of bilinguals, and in both French and Spanish in the case of trilinguals.

With respect to L1 French bi- and trilinguals, it turned out that both groups had made less reference to Manner in +BC clauses than monolinguals. Furthermore, they had made more reference to Manner in –BC clauses than in +BC clauses, whereas the percentages of +Manner clauses were about the same for both types of clauses in monolinguals. In addition, L1 French trilinguals showed event conflation in French, and appeared to pay attention to Manner in a more English-like way, suggesting reverse transfer from their L2 English. This influence was also visible in the number of segments of the deer scene mentioned by this group of participants.

2b. Bilinguals and trilinguals with the same L1 will differ from each other due to the fact that the latter have learned and speak two additional languages and the former only one. In addition, for trilinguals with an L1 that is typologically similar to the L3 and an L2 that is typologically different, the difference with bilinguals with the same L1 will be larger, due to the trilinguals' acquisition and use of the typologically different L2. This hypothesis was only

partially confirmed by the data. It could not be confirmed for the L1 English bi- and trilinguals, because both groups showed very similar behaviours. It was confirmed for the L1 French bi- and trilinguals, however.

6.3 Conclusions

On the basis of the outcomes of the analyses, the following conclusions can be drawn with respect to the expression of motion in L3 Spanish by L1 English trilinguals and L1 French trilinguals, as well as the existence of reverse transfer in this population:

- In L3 acquisition, cross-linguistic influence in thinking-for-speaking patterns takes place in all directions and between all languages, being mediated by frequency of use and proficiency, and, to a lesser extent, also perceived typological distance.
- Cross-linguistic influence may come from more than one source language at the same time.
- Some aspects of thinking-for-speaking patterns appear to be more susceptible to the actual knowledge of more than one language, irrespective of the amount of use (e.g. static vs. dynamic descriptions) than others (e.g. event conflation).
- If the L1 has a boundary-crossing constraint, trilinguals tend to apply this constraint to all of their languages regardless of its actual applicability (e.g. in L2 English in the case of the L1 French trilinguals).
- If the L1 does not have a boundary-constraint, but the participant's other languages do, the effects of this constraint will become visible in the L1 even when the languages that have the constraint are not frequently used.
- Thinking-for-speaking patterns are not entirely language-specific, and can be restructured under the influence of increased use and proficiency. Therefore, this restructuring may be a dynamic and continuous process.

6.4 Limitations of the present study

Like every other study, the present study has a number of limitations:

- In the majority of participant groups, the number of participants was very small. Therefore, the effect of outliers may have been larger (e.g. in the group of Spanish monolinguals).
- There were a number of confound variables, especially with regard to use and proficiency level, which may have influenced the results.
- The participants told the frog story to the same researcher in every session, and the researcher was not a native speaker. This may have influenced the levels of activation of the languages they spoke.
- The use of a wordless picture book may have led to some ambiguity with respect to some boundary-crossing events because these had to be inferred. The use of video clips could solve this problem.
- This study has only looked at learners who had a B2/C1 proficiency level in the target language. Therefore, nothing can be said about what happens at higher or lower proficiency levels with respect to thinking-for-speaking patterns.

6.5 Suggestions for further research

The following topics could be investigated with respect to the expression of motion in L3 Spanish:

- Future studies could look at how learners with different L1s and L2s interpret sentences expressing motion. Some of these sentences could be manipulated in such ways that they violate the boundary-crossing constraint.
- It could be investigated whether learners with different L1s and L2s pay attention to different aspects of motion events by using techniques such as eye-tracking.

- The present study could be replicated to see what happens at other proficiency levels. However, the frog story might not be a suitable elicitation method at lower proficiency levels, due to the cognitive demands of the task and the vocabulary needed to narrate the story.
- The study could be replicated using larger participant groups.

References

- Álvarez Fernández, E. (2001). Developing narratives: a bilingual case study. Unpublished PhD dissertation, University of Barcelona.
- Andersen, R.W. (1983). Transfer to Somewhere. In: S. Gass and L. Selinker (Eds.), *Language Transfer in Language Learning. Issues in Second Language Research* (pp.177-201). Rowley, MA: Newbury House.
- Aronin, L. and Hufeisen, B. (Eds.) (2009). *The Exploration of Multilingualism*. Amsterdam: John Benjamins.
- Aske, J (1989). Path Predicates in English and Spanish: A Closer Look. *Proceedings of the Fifteenth Annual Meeting of the Berkeley Linguistics Society* (pp. 1-14). Berkeley, CA, Berkeley Linguistics Society .
- Bardel, C. and Falk, Y. (2007). The role of the L2 in L3 acquisition: the case of Germanic syntax. *Second Language Research*, 23(4), 459-484.
- Bardel, C. and Falk, Y. (2012). The L2 status factor and the declarative/procedural distinction. In: J. Cabrelli Amaro, S. Flynn, and J. Rothman (Eds.), *Third Language Acquisition in Adulthood*, (pp. 61-78). Philadelphia/Amsterdam: John Benjamins.
- Beavers, J., Levin, B., and Tham, S.W. (2010) The typology of motion expressions revisited. *Journal of Linguistics*, 46, 331-377 doi:10.1017/ S0022226709990272
- Berkes, É, and Flynn, S. (2012). Further evidence in support of the Cumulative-Enhancement Model. CP structure development. In: J. Cabrelli Amaro, S. Flynn, and J. Rothman (Eds.), *Third Language Acquisition in Adulthood*, (pp. 143-164). Philadelphia/Amsterdam: John Benjamins.
- Berman, R. and Slobin, D.I. (1994) *Relating Events in Narrative*. Hillsdale, New Jersey: Lawrence Erlbaum.

- Berthele, R. (2009). The Many Ways to Search for a Frog Story. *On a Fieldworker's Troubles Collecting Spatial Language Data*. In: J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura and S. Özçalışkan (Eds.) *Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin* (pp. 163-174). New York/London: Psychology Press.
- Bowerman, M., and Choi, S. (1991). Learning to express motion events in English and Korean: The influence of language-specific lexicalization patterns. *Cognition*, 41, 83-121.
- Brown, A. and Gullberg, M. (2008). Bidirectional crosslinguistic influence in L1-L2 encoding of manner in speech and gesture. A Study of Japanese Speakers of English. *Studies in Second Language Acquisition* 30 (2), 225-251. doi: 10.10170/S0272263108080327
- Bylund, E. (2009). Effects of age of L2 acquisition on L1 event conceptualization patterns. *Bilingualism: Language and Cognition* 12(3), 305-322.
- Bylund, E., and Athanasopoulos, P. (Eds.) (2015). *The Modern Language Journal*, 99 (S1). doi: 10.1111/modl.12176
- Cabrelli Amaro, J., Flynn, S., and Rothman, J. (Eds.), *Third Language Acquisition in Adulthood*. Philadelphia/Amsterdam: John Benjamins.
- Cadierno, T. (2004). Expressing motion events in a second language: A cognitive typological approach. In M. Achard & S. Neimeier (Eds.), *Cognitive Linguistics, Second Language Acquisition and Foreign Language Pedagogy* (pp. 13–49). The Hague: Mouton de Gruyter.
- (2010). Motion in Danish as a Second Language. Does the Learner's L1 Make a Difference? In: Z. Han, and T. Cadierno (Eds.), *Linguistic Relativity in SLA. Thinking for Speaking*, (pp. 1-33). Bristol/Buffalo/Toronto: Multilingual Matters.
- Cadierno, T., & K. Lund. (2004). Cognitive linguistics and second language acquisition: Motion events in a typological framework. In B. VanPatten, J. Williams, S. Rott & M. Overstreet (Eds.), *Form-meaning Connections in Second Language Acquisition* (pp. 139–154).

Mahwah, NJ: Lawrence Erlbaum.

- Cadierno, T. and Robinson, P. (2009). Language typology, task complexity and the development of L2 lexicalization patterns for describing motion events. *Annual Review of Cognitive Linguistics*, 7, 245-276.
- Cadierno, T., and Ruiz, L. (2006). Motion events in Spanish L2 acquisition. *Annual Review of Cognitive Linguistics*, 4, 183-216.
- Cenoz, J., Hufeisen, B., and Jessner, U. (Eds.) (2001). *Cross-linguistic Influence in Third Language Acquisition. Psychological Perspectives*. Clevedon: Multilingual Matters.
- Cenoz, J. and Jessner, U. (2009). The study of multilingualism in educational contexts. In: L. Aronin, and B. Hufeisen (Eds.) (2009). *The Exploration of Multilingualism* (pp. 121-138) Amsterdam: John Benjamins.
- Choi, S. y J. Lantolf (2008). Representation and embodiment of meaning in L2 communication. Motion events in the speech and gesture of advanced L2 Korean and L2 English speakers. *Studies in Second Language Acquisition* 30 (2), 191-224.
doi: 10.1017/S0272263108080315
- Cifuentes Férrez, P. (2009). *A Crosslinguistic Study on the Semantics of Motion Verbs in English and Spanish*. Muenchen: LINCOM GmbH.
- Cifuentes Honrubia, J.L. (1999). *Sintaxis y semántica del movimiento. Aspectos de Gramática Cognitiva*. Valencia: Instituto de Cultura Juan Gil-Albert.
- Cook, V. (1997). Monolingual bias in second language acquisition research. *Revista Canaria de Estudios Ingleses*, 34, 35-49.
- Cuenca, M.J. and Hilferty, J. (1999/2013). *Introducción a la lingüística cognitiva*. Barcelona: Editorial Planeta.
- DeAngelis, G. (2007). *Third or Additional Language Acquisition*. Clevedon/Buffalo/Toronto: Multilingual Matters.

- de Bot, K. (1992). A bilingual production model: Levelt's Speaking model adapted. *Applied Linguistics*, 13: 1-24.
- (2004). The multilingual lexicon: Modelling selection and control. *International Journal of Multilingualism*, 1, 17-32. DOI: 10.1080/14790710408668176
- (2012) Rethinking multilingual processing: From a static to a dynamic approach. In: J. Cabrelli Amaro, S. Flynn and J. Rothman (Eds.) *Third Language Acquisition in Adulthood*, (pp. 79-93). Amsterdam: John Benjamins.
- Demagny, A.-C. (2012). Paths in L2 Acquisition: The Expression of Temporality in Spatially Oriented Narration. In M. Watorek, S. Benazzo and M. Hickmann (Eds.) *Comparative Perspectives on Language Acquisition. A Tribute to Clive Perdue* (pp. 482-501). Bristol, UK: Multilingual Matters.
- Dewaele, J.M. (2010). Multilingualism and affordances: Variation in self-perceived communicative competence and communicative anxiety in French L1, L2, L3 and L4. *International Review of Applied Linguistics*, 48, 2, 105-129.
- Dörnyei, Z., and Scott, M.L. (1997). Communication Strategies in a Second Language: Definitions and Taxonomies. *Language Learning*, 47(1), 173-210.
- Falk, Y. and Bardel, C. (2010). The study of the role of the background languages. *International Review of Applied Linguistics in Language Teaching (IRAL)*, 48, 2, 185-219.
- Filipović, L. (2007). *Talking about Motion. A crosslinguistic investigation of lexicalization patterns*. Amsterdam/Philadelphia: John Benjamins.
- (2011). Speaking and remembering in one or two languages: bilingual vs. monolingual lexicalisation and memory for motion events. *International Journal of Bilingualism*, 15, 466-485.
- Fillmore, C.J. (1968). The Case for Case. In E. Bach and R. Harms (Eds.), *Universals in Linguistic Theory* (pp. 1- 88). New York: Holt-Rinehart y Winston.

- (1977). The case for case reopened. In P. Cole and J.M Shadock (Eds.), *Syntax and semantics 8: Grammatical relations* (pp. 59-82). New York: Academic Press.
- Finkbeiner, M., Nicol, J., Greth, D. and Nakamura, K. (2002). The Role of Language in Memory for Motion. *Journal of Psycholinguistic Research*, 31(5), September 2002, 447-457.
- Flynn, S., Foley, C., & Vinnitskaya, I. (2004). The Cumulative-Enhancement Model for language acquisition: Comparing adult's and children's patterns of development in first, second and third language acquisition of relative clauses. *International Journal of Multilingualism*, 1, 3-16.
- Franceschina, F. (2002) Case and phi-feature agreement in advanced L2 Spanish grammars. *EUROSLA Yearbook*, 2, 71-86.
- Gass, S., and Selinker, L. (1994). *Language Transfer in Language Learning*. Amsterdam/Philadelphia: John Benjamins.
- Gennari, S.P., Sloman, S.A., Malt, B.C. and Tecumseh Fitch, W. (2002). Motion events in language and cognition. *Cognition*, 83, 49-79.
- Grosjean, F. (1992). Another view of bilingualism. In: R. Harris (Ed.), *Cognitive Processing in bilinguals* (pp. 51-62). Amsterdam: North-Holland.
- (2001). The Bilingual's Language Modes. In: J.L. Nicol (Ed.), *One Mind, Two Languages. Bilingual Language Processing*, (pp. 1-22).
- Guo, J. and Chen, L. (2009). Learning to Express Motion in Narratives by Mandarin-Speaking Children. In J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura and S. Özçalışkan (Eds.) *Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin* (pp. 193-208). New York/London: Psychology Press.
- Hammarberg, B. (2001). Roles of L1 and L2 in L3 production and acquisition. In J. Cenoz, B. Hufeisen, and U. Jessner (Eds.), *Cross-linguistic influence in third language acquisition: Psycholinguistic perspectives*, (pp. 21-41). Clevedon, UK: Multilingual Matters.

- (2009). *Processes in third language acquisition*. Edinburgh: Edinburgh University Press.
- Hendriks, H. and Hickmann, M. (2015). Finding One's Path Into Another Language: On the Expression of Boundary Crossing by English Learners of French. *The Modern Language Journal*, 99, Supplement, 14-31.
- Herdina, P, and Jessner, U. (2002). *A Dynamic Model of Multilingualism. Perspective of Change in Psycholinguistics*. Clevedon: Multilingual Matters.
- Hickmann, M., Hendriks, H. and Champaud, C. (2009). Typological Constraints on Motion in French and English Child Language. In J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura and S. Özçalışkan (Eds.) *Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin* (pp. 209-224). New York/London: Psychology Press.
- Hickmann, M., Taranne, P. and Bonnet, P. (2009). Motion in first language acquisition: Manner and Path in French and English child language. *Journal of Child Language*, 36, 705-741.
- Hijazo Gascón, A. (2011). *La expresión de eventos de movimiento y su adquisición en segundas lenguas*. Unpublished PhD dissertation. Universidad de Zaragoza, Spain.
- Hohenstein, J., Eisenberg, A., and Naigles, L. (2006). Is he floating across or crossing afloat? Cross-influence of L1 and L2 in Spanish–English bilingual adults. *Bilingualism: Language and Cognition*, 9, 249–261.
- Hufeisen, B. (2000). How do Foreign Language Learners Evaluate Various Aspects of their Multilingualism? In: B. Hufeisen, and B. Lindemann (Eds.), *Tertiär- und Drittsprachen. Projekte und empirische Untersuchungen* (pp. 23 - 39). Tübingen: Stauffenburg Verlag.
- Hufeisen, B. and Marx, N. (2007). How can DaFnE and EuroComGerm contribute to the concept of receptive multilingualism? Theoretical and practical considerations. In J.D. ten Thije and L. Zeevaert (Eds.) *Receptive Multilingualism* (pp. 307-322). Amsterdam: John Benjamins.

- Ibarretxe-Antuñano, I. (2004). Motion Events in Basque Narratives. In: S. Strömqvist, and L. Verhoeven (Eds.) (2004). *Relating Events in Narrative. Volume 2: Typological and Contextual Perspectives*. (pp. 89-111) Mahwah, NJ: Lawrence Erlbaum Associates.
- (2009) Path Saliency in Motion Events. In: J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura & S. Özçalışkan (Eds.), *Crosslinguistic Approaches to the Psychology of Language: Research in the Tradition of Dan Isaac Slobin* (pp. 403–414). London: Psychology Press.
- Ibarretxe-Antuñano, I. and Valenzuela, J. (2012). LINGÜÍSTICA COGNITIVA: ORIGEN, PRINCIPIOS Y TENDENCIAS. In: I. Ibarretxe-Antuñano and J. Valenzuela (Eds.), *Lingüística Cognitiva* (pp. 13-38). Barcelona: Anthropos Editorial.
- Iverson, M. (2010). Informing the age-of-acquisition debate: L3 as a litmus test. *International Review of Applied Linguistics in Language Teaching (IRAL)*, 48 (2), 221-243.
- Jarvis, S. and Pavlenko, A. (2008). *Crosslinguistic Influence in Language and Cognition*. New York/London: Routledge.
- Kaufman, D. (2001). Narrative development in Hebrew and English. In L. Verhoeven and S. Strömqvist (Eds.) *Narrative Development in a Multilingual Context* (pp. 319-340). Amsterdam: John Benjamins.
- Kellerman, E. (1978). Giving learners a break: native speaker intuitions as a source of predictions about transferability. *Working Papers on Bilingualism*, 15, 59-92.
- (1983). Now you see it, now you don't. In: S. Gass and L. Selinker (Eds.), *Language Transfer in Language Learning. Issues in Second Language Research*. (pp. 112-134).
- (1995). Crosslinguistic influence: Transfer to nowhere? *Annual Review of Applied Linguistics*, 15, 125-150.
- (2001). New Uses for Old Language: Cross-Linguistic and Cross-gestural Influence in the Narratives of Non-Native Speakers. In J. Cenoz, B. Hufeisen and U. Jessner (Eds.) *Cross-*

Linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives

(pp. 170-191). Clevedon: Multilingual Matters.

Kellerman, E., and Sharwood Smith, M. (Eds.). *Crosslinguistic influence in second language acquisition*. Oxford, UK: Pergamon.

Kellerman, E. & A. Van Hoof. (2003). Manual accents. *International Review of Applied Linguistics*, 41, 251–269.

Koike, D.A., and Palmiere, D.T.L. (2011). First and Second Language Pragmatics in Third Language Oral and Written Modalities. *Foreign Language Annals*, 44, 1, 80-104.

Kopecka, A. (2004). *Étude typologique de l'expression de l'espace: localisation et déplacement en français et en polonais*. Lyon, Université Lumière Lyon 2.

---- (2006). The semantic structure of motion verbs in French: Typological perspectives.

In: M. Hickmann, and S. Robert (Eds.): *Space in languages: Linguistic systems and cognitive categories*, (pp. 83-101). Amsterdam / Philadelphia, John Benjamins.

----(2009). Continuity and Change in the Representation of Motion Events in French. In J. Guo,

E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura and S. Özçalışkan (Eds.) *Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin* (pp. 415-426). New York/London: Psychology Press.

Krashen, S.D. (1983). Newmark's "Ignorance Hypothesis" and Current Second Language

Acquisition Theory. In: S. Gass and L. Selinker (Eds.), *Language Transfer in Language Learning. Issues in Second Language Research*. (pp. 135-153).

Larrañaga, P., Treffers-Daller, J., Tidball, F., y M. Gil Ortega. (2011). L1 transfer in the acquisition of Manner and Path in Spanish by native speakers of English. En *International Journal of Bilingualism*, 16 (1), 117-138.

Leung, Y.-K. I. (2009). *Third Language Acquisition and Universal Grammar*. Bristol: Multilingual Matters.

- Levelt, W. (1989). *Speaking; From Intention to Articulation*. Cambridge, MA: MIT Press.
- (1993). Language use in normal speakers and its disorders. In G. Blanken, E. Dittman, H. Grimm, J. Marshall, and C. Wallesch (Eds.), *Linguistic Disorders and Pathologies. An International Handbook* (pp. 1-15). Berlin: Walter de Gruyter.
- MacWhinney, B. (1991). *The CHILDES project: Tools for analyzing talk*. Hillsdale, NJ, Erlbaum.
- Mayer, M. (1969). *Frog, Where are You?* New York: Dial Press.
- McNeill, D. (2009). Imagery for Speaking. In: In J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura and S. Özçalışkan (Eds.) *Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin* (pp. 517-530). New York/London: Psychology Press.
- Morimoto, Y. (2001). *Los verbos de movimiento*. Madrid: Visor Libros.
- Muñoz Carrasco, M. (2015). *La transferencia bidireccional inglés- español en las situaciones de movimiento*. Unpublished PhD dissertation. Universidad Nebrija, Madrid.
- Naigles, L., Eisenberg, A., Kako, E., Hightler, M. and McGraw, N. (1998). Speaking of Motion: Verb Use in English and Spanish. *Language and Cognition Processes*, 13,(5), 526-549.
- Narasimhan, B. (2003). Motion events and the lexicon: a case study of Hindi. *Lingua*, 113, 123-160.
- Odlin, T. (1989). *Language transfer. Cross-linguistic influence in language learning*. Cambridge: Cambridge University Press.
- Oh, K.-J. (2009). Motion Events in English and Korean Fictional Writings and Translations. In: In J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura and S. Özçalışkan (Eds.) *Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin* (pp. 253-262). New York/London: Psychology Press.
- Özçalışkan (2009). Learning to Talk About Spatial Motion in Language-Specific Ways. In: In J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura and S. Özçalışkan (Eds.)

- Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin* (pp. 263-276). New York/London: Psychology Press.
- Pourcel, S. (2003). Rethinking 'Thinking for Speaking'. *Proceedings of the 29th annual meeting of the Berkeley Linguistics Society* (pp. 349-358).
- (2009). Relativistic Application of Thinking for Speaking. In J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura and S. Özçalışkan (Eds.) *Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin* (pp. 493-503). New York/London: Psychology Press.
- Ringbom, H. (1987). *The Role of the First Language in Foreign Language Learning*. Clevedon: Multilingual Matters.
- Robinson, P., Cadierno, T. and Shirai, Y. (2009). Time and Motion: Measuring the Effects of the Conceptual Demands of Tasks on Second Language Speech Production. *Applied Linguistics*, 30(4), 533-554.
- Robinson, P., and Ellis, N.C. (Eds.). (2008). *Handbook of Cognitive Linguistics and Second Language Acquisition*. London / New York: Routledge.
- Rothman, J. (2010). On the typological economy of syntactic transfer: Word order and relative clause high/low attachment preference in L3 Brazilian Portuguese. *International Journal of Applied Linguistics in Language Teaching (IRAL)*, 48(2), 245-273.
- (2011). L3 Syntactic Transfer Selectivity and Typological Determinacy: The Typological Primacy Model. *Second Language Research*, 27(1), 107-127.
- (2015). Linguistic and cognitive motivations for the Typological Primacy Model (TPM) of third language (L3) transfer: Timing of acquisition and proficiency considered. *Bilingualism: Language and Cognition*, 18(2), 179-190.
- Safont-Jordà, M.-P., (2005). *Third Language Learners. Pragmatic Production and Awareness*. Clevedon: Multilingual Matters.

- (2011). Early requestive development in consecutive third language learning. *International Journal of Multilingualism*, 1-21, iFirst Article. [downloaded June 14th 2011]
- Selinker, L. (1972). Interlanguage. *International Review of Applied Linguistics*, 10, 3, 209-231.
- Skinner, B.F. (1957). *Verbal Behavior*. Englewood Cliffs (N.J.) : Prentice-Hall.
- Slabakova, R. (2016). The Scalpel Model of third language acquisition. *International Journal of Bilingualism*. DOI: 10.1177/1367006916655413.
- Slobin, D.I. (1987). Thinking for speaking. In: *Proceedings of the 13th Annual Meeting of the Berkeley Linguistics Society*, (pp.435-444).
- (1991). Learning to think for speaking. Native language, cognition and rhetorical style. *Pragmatics*, 1, 7-29.
- (1996a). Two ways to travel: Verbs of motion in English and Spanish. In: M. Shibatani, and S. A. Thompson (Eds.), *Grammatical constructions. Their Form and Meaning* (pp. 195-317). Oxford, Clarendon Press.
- (1996b). From "thought and language" to "thinking for speaking". In: J. Gumperz, and S. Levinson (Eds.), *Rethinking Linguistic Relativity* (pp. 70-96). Cambridge: Cambridge University Press.
- (1997). Mind, Code and Text. In: J. Bybee, J.Haiman, and S.A. Thompson (Eds.), *Essays on language function and language type: Dedicated to T. Givón* (pp. 437-467). Amsterdam: John Benjamins.
- (2000). Verbalized events. A Dynamic Approach to Linguistic Relativity and Determinism. In: S. Niemeier, and R. Dirven (Eds.), *Evidence for Linguistic Relativity* (pp. 107 – 138). Amsterdam/Philadelphia: John Benjamins.
- (2004). The Many Ways to Search for a Frog. In: S. Strömquist, and L. Verhoeven (Eds.) (2004). *Relating Events in Narrative. Volume 2: Typological and Contextual Perspectives*, (pp. 219-257) Mahwah, NJ: Lawrence Erlbaum Associates.

- (2006). What makes manner of motion salient? Explorations in linguistic typology, discourse, and cognition. In M. Hickmann, and S. Robert (Eds). *Space in languages: Linguistic systems and cognitive categories* (pp. 59-81). Amsterdam/Philadelphia: John Benjamins.
- Slobin, D. I., and Hoiting, N. (1994). Reference to movement in spoken and signed language: Typological considerations. In: *Proceedings of the 20th Annual Meeting of the Berkeley Linguistic Society*. (pp.487-505). Berkeley: Berkeley Linguistics Society.
- Stam, G. (2006). Thinking for speaking about motion: L1 and L2 speech and gesture. *International Review of Applied Linguistics in Language Teaching (IRAL)*, 44 (2), 145-171.
- Strömquist, S. and Verhoeven, L. (Eds.) (2004) *Relating Events in Narrative. Volume 2: Typological and Contextual Perspectives*. (pp. 89-111) Mahwah, NJ: Lawrence Erlbaum Associates.
- Strömquist, S., Holmqvist, K. and Andersson, R. (2009). Thinking for Speaking and Channeling of Attention. *A Case for Eye-Tracking Research*. In J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura and S. Özçalışkan (Eds.) *Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin* (pp. 505-515). New York/London: Psychology Press.
- Talmy, L. (1985). Lexicalization patterns: Semantic structure in lexical forms. In T. Shopen (Ed.), *Language Typology and Syntactic Description, Vol. 3: Grammatical categories and the lexicon* (pp. 36–149). Cambridge: Cambridge University Press.
- (1991). Path to realization: A typology of event conflation. *Proceedings of the 17th Annual Meeting of the Berkeley Linguistics Society* (pp.480–519). Berkeley, CA: Berkeley Linguistics Society.
- (2000a). *Toward a Cognitive Semantics, Vol. 1: Concept Structuring Systems*. Cambridge, MA: MIT Press.
- (2000b). *Toward a Cognitive Semantics, Vol. 2: Typology and Process in Concept Structuring*. Cambridge, MA: MIT Press.

- (2009) Main verb properties and equipollent framing. In J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura & S. Özçalışkan (Eds.), *Crosslinguistic Approaches to the Psychology of Language: Research in the Tradition of Dan Isaac Slobin* (pp. 389–402). London: Psychology Press.
- Tesnière, L. (1959). *Elements de syntaxe structural*. [Elements of structural syntax]. Paris: Klincksieck.
- Trévisiol, P. (2012). The Development of Reference to Time and Space in French L3: Evidence from Narratives. In M. Watorek, S. Benazzo and M. Hickmann (Eds.) *Comparative Perspectives on Language Acquisition. A Tribute to Clive Perdue* (pp. 133 - 152). Bristol, UK: Multilingual Matters.
- Vermeer, A. (2000) Coming to grips with lexical richness in spontaneous speech data. *Language Testing*, 17, 65-83.
- Vulchanova, M. and Van der Zee, E. (2013). *Motion Encoding in Language and Space*. Oxford: Clarendon.
- Weinreich, U. (1953/1968). *Languages in Contact*. The Hague: Mouton & Co.
- Westergaard, M. Mitrofanova, N. Mykhaylyk, R., and Rodina, Y. (2016). Cross-linguistic influence in the acquisition of a third language: The Linguistic Proximity Model. *International Journal of Bilingualism*. DOI: 10.1177/1367006916648859.
- White, L. (1994). Universal Grammar: Is It Just a New Name for Old Problems? In: S.M. Gass, and L. Selinker (Eds.), *Language Transfer in Language Learning* (pp. 217-236). Amsterdam: John Benjamins.
- White, L., Valenzuela, E., Kozłowska-MacGregor, M., and Leung, Yan-Kit I. (2004). Gender and Number Agreement in Nonnative Spanish. *Applied Psycholinguistics*, 25, 1, January, 105-133.

- Williams, S. and Hammarberg, B. (1998). Language Switches in L3 Production: Implications for a Polyglot Speaking Model. *Applied Linguistics* 19, 3, 295-333.
- Yoshioka, K. and Kellerman, E. (2006). Gestural introduction of Ground reference in L2 narrative discourse. *International Review of Applied Linguistics in Language Teaching (IRAL)*, 44 (2), 173-195.
- Zlatev, J. and Yangklang, P. (2004). A Third Way to Travel. The Place of Thai in Motion-Event Typology. In: S. Strömquist, and L. Verhoeven (Eds.) (2004). *Relating Events in Narrative. Volume 2: Typological and Contextual Perspectives*. (pp. 159-190) Mahwah, NJ: Lawrence Erlbaum Associates.

Appendices

Appendix I: Language background questionnaire

The languages you speak

I've got some questions for you. They are about the languages you speak, and about when you use them. Please answer them as completely as possible. If you have any questions, please feel free to ask them.

1. Name (please note that your name will be kept confidential; it will only be used to link you to the correct participant ID in the next sessions and to give you access to your data/results should you wish so)

.....

2. Age

.....

3. Gender

.....

4. Where were you born?

.....

5.a. Have you always lived in **CITY**?

.....

b. IF NO : in what other places did you live, and for how many years?

.....

.....

.....

6. Could you tell me about the certificates you obtained during or upon finishing primary, secondary, and higher education? What other courses have you taken?

.....

.....

.....

.....

The following questions are about your French. Please answer them as completely as possible.

7. At what age did you start learning French?

.....

8. Where did you learn French?

.....

9. How much French (in percentage terms) do you speak in the following situations:

At home

With family

At work

With friends

When you're on holiday

When you're shopping

At parties and other social gatherings

10. a. How much of the language (in percentage terms) you've used over the past year has been French?

b. How about last month?

11. Who are the people you usually speak French with?

.....
.....
.....
.....

12. On a scale of 1 to 7 (where 7 means "really well") how would you rate your ability:

a. to speak French?

b. to understand spoken French?

c. to read French?

d. to write French?

The following questions are about your Spanish. Please answer them as completely as possible.

13. At what age did you start learning Spanish?

.....

14. Where did you learn Spanish?

.....

15. How much Spanish (in percentage terms) do you speak in the following situations:

- a. At home
- b. With family
- c. At work
- d. With friends
- e. When you're on holiday
- f. When you're shopping
- g. At parties and other social gatherings

16. a. How much of the language (in percentage terms) you've used over the past year has been Spanish?

b. How about last month?

17. Who are the people you usually speak Spanish with?

.....
.....
.....
.....

18. On a scale of 1 to 7 (where 7 means "really well") how would you rate your ability:

- a. to speak Spanish?
- b. to understand spoken Spanish?
- c. to read Spanish?
- d. to write Spanish?

19.a. Do you know any languages other than English, French and Spanish?

.....

b. If so, how would you rate your proficiency in each of these languages on a scale of 1 to 7 (where 7 means "very high")?

.....
.....
.....

THANK YOU VERY MUCH FOR FILLING OUT THE QUESTIONNAIRE!!!

Appendix II: English Language Test

Part 1

Read the text and choose the correct answer for each item. Mark your answers with a cross (X) on your answer sheet. a b c d

Text 1

Safaris and Sensitivity

As more camera-packing ecotourists go gently into the rain forest, environmentalists are trying to make sure they don't trample all over it.

Ever since ecotourism became big business a decade ago, throngs of travellers have been making their **-1-** to the remotest corners of the planet to observe nature and hopefully help save it at the same time. Now conservationists are fighting to revive the idealistic notion at ecotourism's core - **-2-**, opening the planet's last wild places to tourism can be the best way to preserve them. As one of these conservationists declares - **-3-** before, many species wouldn't be close to extinction at present. Take Eastern Africa, where hunting was banned in favour of photo safaris when economic studies proved wild animals were worth much more **-4-** than dead. As a consequence, mass killing parties are **-5-** so much in fashion.

However, this has sometimes meant that the savannah has also hosted some of ecotourism's worst excesses. Not only have tour guides been known to have hounded wild animals so ferociously that this has totally disrupted their lives, but also created unnecessary problems with local tribes.

Nevertheless, in general, the introduction of this new form of tourism **-6-** have been a bad thing for local people, as they declare they have now been attributed a much greater stake in tourism in their areas, not just as employees, as before, but as owners and managers - all of this in exchange for allowing access to tribal lands.

Naturally, they now have a real incentive to protect the game on their lands and many ecotourism initiatives and proposals have been **-7-** as a result - ecologists and elevated "canopy walkways" in the jungles **-8-** others. Visitors go home happy, with rolls of impressive photos, and the people who live in these areas have a reason to protect them.

The next challenge: getting tourists to interact more with local people. Many visitors **-9-** demanding this sort of close contact. Experienced travellers are determined that "nontouristy interaction" with local tribes makes all the difference.

However, despite the obvious advantages of the increasingly popular ecological option, measures will have to be taken to **-10-** visitors from inadvertently trashing the spot they want to protect - millions of visiting feet can trample an awful lot of underbrush and previously unknown parasites hitchhike to remote reserves on visitors' clothes and **-11-** untold damage.

Still, if these areas had not become important tourist destinations, whole swaths of their environment **-12-** over the years to more destructive development. And that's the thing. Packs of foreigners, parasites, chocolate bar wrappers and all, might not fit an idealist's vision of a perfectly preserved rain forest. But compared with poachers and loggers, maybe a few more pairs of Bermuda shorts in the wilderness don't look so bad.

Adapted from Thomas Hayden, *Newsweek*, June 5, 2000

1. a) tread b) way c) path d) walks
2. a) that of b) rather said c) to other words d) that is to say
3. a) had this been done c) provided this would be done
b) if this were done d) unless this would have been done
4. a) livable b) lively c) live d) alive
5. a) no longer b) not yet c) not still d) any more

6. a) mustn't b) can't c) oughtn't d) didn't need to
 7. a) roused b) risen c) rose d) raised
 8. a) around b) between c) among d) beside
 9. a) are said to be c) are said that they are
 b) it is said that are d) are said of being
 10. a) prevail b) stop c) detain d) brake
 11. a) create b) do c) make d) provoke
 12. a) could have been lost c) would be lost
 b) had been lost d) might have lost

Text 2

Jonathan's Gap Year in Colombia

The year off between school and university should be an experience 18-year-olds remember for ever.

Jonathan Glennie had absolutely no doubts about what he would do in his gap year. —13— the moment a representative of the charity "Let the Children Live" spoke at his school, he wanted to work with the street children of Colombia. He would help wean them from glue-sniffing and encourage them —14— an education.

No matter that the Salesian Fathers at Ciudad Don Bosco were reluctant to take an 18-year-old youth who spoke no Spanish, that he would have to pay his return —15— to Medellín, one of the most drug-infested, crime-ridden cities in South America, nor that his parents wrung their hands in horror, crying, "Anywhere —16— there!" He scraped together funds, bought 16 tapes of *Teach Yourself Spanish* and persuaded the priests about his sheer determination and enthusiasm that he could be useful.

And, despite missing his connecting flight from Bogotá and causing a hue and cry for 24 hours, his time in Medellín proved a —17— experience. "I discovered that, away from my friends and home, I was a different, quieter person," he says. "I found that I could work with kids and enjoy it, and I learnt to be reasonably good —18— coping with situations. It was the best five months of my life." Jonathan is a singular young man, —19—, because the tragedy of Colombia's street children is a challenge that —20— school-leavers might wish to undertake. Even so, thousands of 18- and 19-year-olds are teaching English to youngsters in China and India, working on farms in Thailand and helping disabled children in Namibia.

Anne Woodham. *Good Housekeeping*, September 1996

13. a) From b) For c) At d) Since
 14. a) seeking b) to seek c) seek d) to seeking
 15. a) price b) cost c) fare d) expense
 16. a) but b) not c) yet d) unless
 17. a) costless b) valuable c) worthless d) pricey
 18. a) in b) on c) at d) for
 19. a) yet b) although c) so d) however
 20. a) many b) little c) lots d) few

Part 2

Choose the correct answer for each item.

a b X

- 21.** The father tiptoed out of the room _____ wake the baby up.
 a) for not to
 b) so that he didn't
 c) so as not to
 d) in order that he wouldn't
- 22.** By the look on her face, we could tell that she was _____ to cry. And so she did.
 a) about
 b) on the point
 c) supposed
 d) certainly
- 23.** She dislikes him so much that she wouldn't ask him for help _____ he were the only soul on earth.
 a) considering
 b) given that
 c) even if
 d) provided
- 24.** There are over 6,000 students at this university, many of _____ come from overseas.
 a) which
 b) whom
 c) who
 d) them
- 25.** Only after visiting the cathedral _____ to the hotel to rest.
 a) did we go
 b) went we
 c) they let us go
 d) we were allowed to go
- 26.** I can't quite _____ out what the sign says; I need my glasses.
 a) read
 b) get
 c) make
 d) carry
- 27.** Jim's wife died in a car crash. Apparently, _____ broke the news to him.
 a) a wife's friend
 b) a friend of his wife's
 c) a friend of his wife
 d) one of his friend's wife
- 28.** Another company offered me a job but I _____. I'm happy with my present job just now.
 a) turned it down
 b) called it off
 c) turned down it
 d) called off it
- 29.** The worker _____ the money but neither his colleagues nor the management believed him.
 a) refused to steal
 b) refused stealing
 c) denied to steal
 d) denied stealing
- 30.** — Do you mind if I open the window?
 — _____ .
 a) I'd better not
 b) I'd prefer you didn't
 c) I don't want to
 d) I'd rather you didn't

Appendix III: French language test

B2

1ère partie

Texte 1

Lisez le texte ci-dessous. Choisissez et encerclez la réponse correcte.

Pierre Larousse et Émile Littré

Littré (1801- 1881) et Larousse (1817-1875) représentent tous deux les hommes du XIXe siècle.

Littré traverse le siècle comme Victor Hugo (1802-1885) presque **-1-**, il a 3 ans lorsque naît le premier Empire, 14 ans à la fin de l'Empire, 29 ans au moment **-2-** éclatent, en 1830, les Trois Glorieuses, cette révolution sans lendemain.

Il est alors un homme qui, ayant fini ses études, cherche encore sa voie, mais ses idées politiques sont déjà forgées du côté de la République. Larousse, n'a, de son **-3-** que treize ans et n'a probablement pas encore **-4-** politiques. Mais en 1834, il est l'un des premiers à profiter de la loi Guizot qui crée les Écoles Normales, et ce sera **-5-** en heureux lauréat qu'il entrera à l'École Normale de Versailles pour en sortir instituteur en 1838: Pierre Larousse appartient désormais à un corps professionnel qui sera plus tard assimilé à **-6-** des "hussards noirs de la République", selon la formule percutante de Péguy.

Littré a, depuis 1840, **-7-** pleinement à la "philosophie positive" d'Auguste Comte, convaincu des bienfaits de cette philosophie qui rejette toute investigation métaphysique. Il est convaincu que cette philosophie est **-8-** au bonheur de l'humanité et il **-9-** sera le meilleur propagateur. Plus réformiste que révolutionnaire, il rejette en fait la violence, qu'il **-10-** de celle des insurgés ou bien de celle de la répression de Cavaignac.

- | | | | | |
|-----|--------------|---------------|--------------------|--------------|
| 1. | a) à travers | b) de travers | c) de bout en bout | d) d'un bout |
| 2. | a) où | b) qu' | c) qui | d) quand |
| 3. | a) côté | b) aspect | c) parti | d) air |
| 4. | a) ces | b) des idées | c) idées | d) d'idées |
| 5. | a) donc | b) pourtant | c) certain | d) sûr |
| 6. | a) ce | b) celui | c) ceux | d) cet |
| 7. | a) souscrit | b) soussigne | c) prescrit | d) affilié |
| 8. | a) prête | b) propice | c) sujette | d) encline |
| 9. | a) y | b) ø | c) en | d) le |
| 10. | a) s'agit | b) s'agite | c) s'est agi | d) s'agisse |

1

Texte 2

Lisez le texte ci-dessous. Choisissez et encerclez la réponse correcte.

Le Grand Meaulnes

Les quatre dernières pages, que j'ai pu reconstituer, racontaient ce voyage et cette dernière faute...

25 août — De l'autre côté de Bourges, à l'extrémité des nouveaux faubourgs, il découvrit, après **—11—** la maison de Valentine Blondeau. Une femme -la mère de Valentine- **—12—** de la porte, semblait l'attendre. C'était une bonne figure de ménagère, lourde, fripée, mais belle encore. Elle la regardait venir avec curiosité, et **—13—** il lui demanda : « si Mesdemoiselles Blondeau étaient ici », elle lui expliqua doucement avec bienveillance, qu'elles étaient rentrées à Paris depuis le 15 août. « Elles m'ont défendu de dire où **—14—**, ajouta-t-elle, mais en écrivant à leur **—15—** adresse on fera suivre leurs lettres. »

En revenant **—16—** ses pas, sa bicyclette à la main, à travers **—17—** jardinet, il pensait : « Elle est partie... Tout est fini comme je l'ai voulu. C'est moi qui l'ai forcée à cela. « Je deviendrai certainement une fille perdue », disait-elle. Et c'est moi qui l'ai jetée là... »

Et tout bas, il se répétait avec folie : « Tant mieux ! Tant mieux ! » avec **—18—** que c'était bien « tant pis » **—19—** et que, sous les yeux de cette femme, avant d'arriver à la grille, il allait buter des deux pieds et tomber sur les genoux.

Il ne pensa pas à déjeuner et s'arrêta dans un café où il écrivit longuement à Valentine, **—20—** pour crier, pour se délivrer du cri désespéré qui l'étouffait.

Alain-Fournier. *Le Grand Meaulnes*. Ed. Fayard, 1983

- | | | | | |
|-----|----------------------------|------------------|------------------------------|----------------|
| 11. | a) avoir longtemps cherché | | c) de chercher longtemps | |
| | b) chercher longtemps | | d) d'avoir cherché longtemps | |
| 12. | a) sous le pas | b) sur le pas | c) sur le bas | d) sous le bas |
| 13. | a) alors qu' | b) du moment qu' | c) lorsqu' | d) après qu' |
| 14. | a) elles allaient | | c) allaient-elles | |
| | b) allaient | | d) est-ce qu'elles allaient | |
| 15. | a) antique | b) ancienne | c) obsolète | d) désuète |
| 16. | a) à | b) sous | c) sur | d) de |
| 17. | a) du | b) ce | c) de ce | d) le |

18. a) la sécurité c) la certitude
b) la sûreté d) la vraisemblance
19. a) au contraire c) mais
b) contrairement d) quand bien même
20. a) seulement que c) sauf que
b) alors que d) rien que

∅ signifie qu'il ne faut rien mettre

2ème partie

Encerclez la bonne réponse.

21. Mes voisins de palier ont mené une vie de château ces derniers temps.
Maintenant ils sont dans la misère. S'ils avaient mené une vie moins extravagante, ils
- a) n'auraient pas été là
b) ne seraient pas là
c) n'en seraient pas là
22. Ne parlez pas trop fort, soeur Angélique, de crainte que le malade
- a) ne se réveille pas b) ne se réveille c) ne se réveillait
23. Bienvenus à Barcelone. Je vais vous faire un plan détaillé de la ville vous ne vous perdrez pas.
- a) de sorte que b) pour que c) afin que
24. Ne vous faites pas d'illusions. Quoi que vous, vous n'aurez jamais le dernier mot avec cet énergumène.
- a) fassiez b) faites c) aurez fait

25. Le journaliste déclara à son patron qu'il son article deux jours avant la date prévue.
Malheureusement il n'y parvint pas.
a) aura fini b) a fini c) aurait fini
26. Il y avait eu un malentendu. Pourtant le professeur avait bien averti les étudiants que le cours n'aurait pas lieu la semaine
a) prochaine b) suivante c) après
27. Si le charcutier a dû fermer son établissement ce n'est pas que ses produits plus mauvais que ceux d'un autre, c'est qu'il n'était pas aimable avec la clientèle.
a) avaient été b) étaient c) aient été
28. Mes chers amis, je vous parlerai de la peinture hollandaise jusqu'à ce que vous bien la comprendre et l'apprécier.
a) sachiez b) saurez c) savez
29. Ils n'ont pas réussi à à bien la négociation.
a) mener b) emmener c) conduire
30. Heureusement que tu m'as appelé, j'..... oublier le rendez-vous.
a) ai fallu b) ai failli c) ai risqué

Appendix IV: Spanish language test

Español para extranjeros. Certificado de nivel avanzado

Uso de la lengua

Primera parte

Lea el texto y seleccione la opción adecuada en el menú desplegable, para completar el espacio en blanco.

La maestra
<p>Habían trabajado bien y ya no quedaba más papel para escribir por hoy. Además, pronto se marcharían a sus chozas, a su hambruna, a su miseria, en una palabra.</p> <p>Pero necesitaba contarles un cuento. Un cuento que los <input type="text" value="-- 1 --"/> , pero no hacia algo inalcanzable de un mundo de golosinas, juguetes y placeres infantiles. No un cuento de brujas, nomos o hadas, <input type="text" value="-- 2 --"/> para miedos ya tenían bastantes.</p> <p>Con la mirada puesta en sus alumnos decidió el cuento:</p> <p>"Había una vez, en un país lejano, un rey muy rico que perdió su sonrisa. Trataba <input type="text" value="-- 3 --"/> forzar su mandíbula y no conseguía mover ni un ápice su boca, ni un gesto, nada. Sus ministros <input type="text" value="-- 4 --"/> porque cuando llegaban extranjeros a visitarlo ni les sonreía, con <input type="text" value="-- 5 --"/> que resultaba un rey antipático con quien no querían tratar. <input type="text" value="-- 6 --"/> al hablar no expresaba nada en su cara, sus conferencias <input type="text" value="-- 7 --"/> aburridas. Sus ministros no sabían en las reuniones si <input type="text" value="-- 8 --"/> propuestas que hacían para su país le gustaban. Así, el rey, al no mover la boca perdió también el habla. '¡Qué desastre! ¿Cómo resolveremos los problemas?' se decían sus ministros".</p> <p>Entre todos, al día siguiente, <input type="text" value="-- 9 --"/> el cuento. Estaba satisfecha. Había conseguido que esos ojos negros, brillantes y muy abiertos, tuvieran además curiosidad y, diciendo adiós con la mano, se repetía sin cesar: ¡que nadie os <input type="text" value="-- 10 --"/> la sonrisa!</p> <p>Texto adaptado de M^o Dolores Andrino Miranda, Cuadernos de Pedagogía, nº 355, marzo 2006</p> <p>Habían trabajado bien y ya no quedaba más papel para escribir por hoy. Además, pronto se marcharían a sus chozas, a su hambruna, a su miseria, en una palabra.</p> <p>Pero necesitaba contarles un cuento. Un cuento que los <input type="text" value="-- 1 --"/> , pero no hacia algo inalcanzable de un mundo de golosinas, juguetes y placeres infantiles. No un cuento de brujas, nomos o hadas, <input type="text" value="-- 2 --"/> para miedos ya tenían bastantes.</p> <p>Con la mirada puesta en sus alumnos decidió el cuento:</p> <p>"Había una vez, en un país lejano, un rey muy rico que perdió su sonrisa. Trataba <input type="text" value="-- 3 --"/> forzar su mandíbula y no conseguía mover ni un ápice su boca, ni un gesto, nada. Sus ministros <input type="text" value="-- 4 --"/> porque cuando llegaban extranjeros a visitarlo ni les sonreía, con <input type="text" value="-- 5 --"/> que resultaba un rey antipático con quien no querían tratar. <input type="text" value="-- 6 --"/> al hablar</p>

no expresaba nada en su cara, sus conferencias aburridas. Sus ministros no sabían en las reuniones si propuestas que hacían para su país le gustaban. Así, el rey, al no mover la boca perdió también el habla. '¡Qué desastre! ¿Cómo resolveremos los problemas?' se decían sus ministros".

Entre todos, al día siguiente, el cuento. Estaba satisfecha. Había conseguido que esos ojos negros, brillantes y muy abiertos, tuvieran además curiosidad y, diciendo adiós con la mano, se repetía sin cesar: ¡que nadie os la sonrisa!

Texto adaptado de M^a Dolores Andriño Miranda, Cuadernos de Pedagogía, nº 355, marzo 2006

Corregir

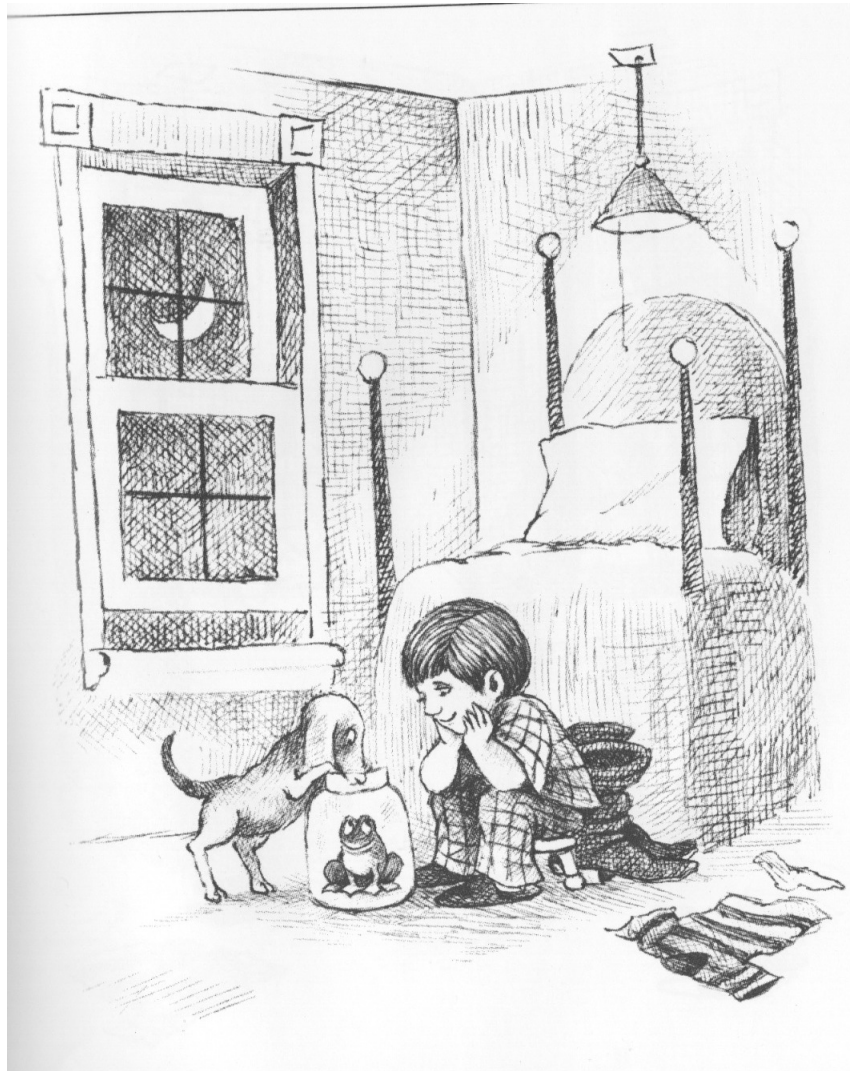
Borrar

Segunda parte

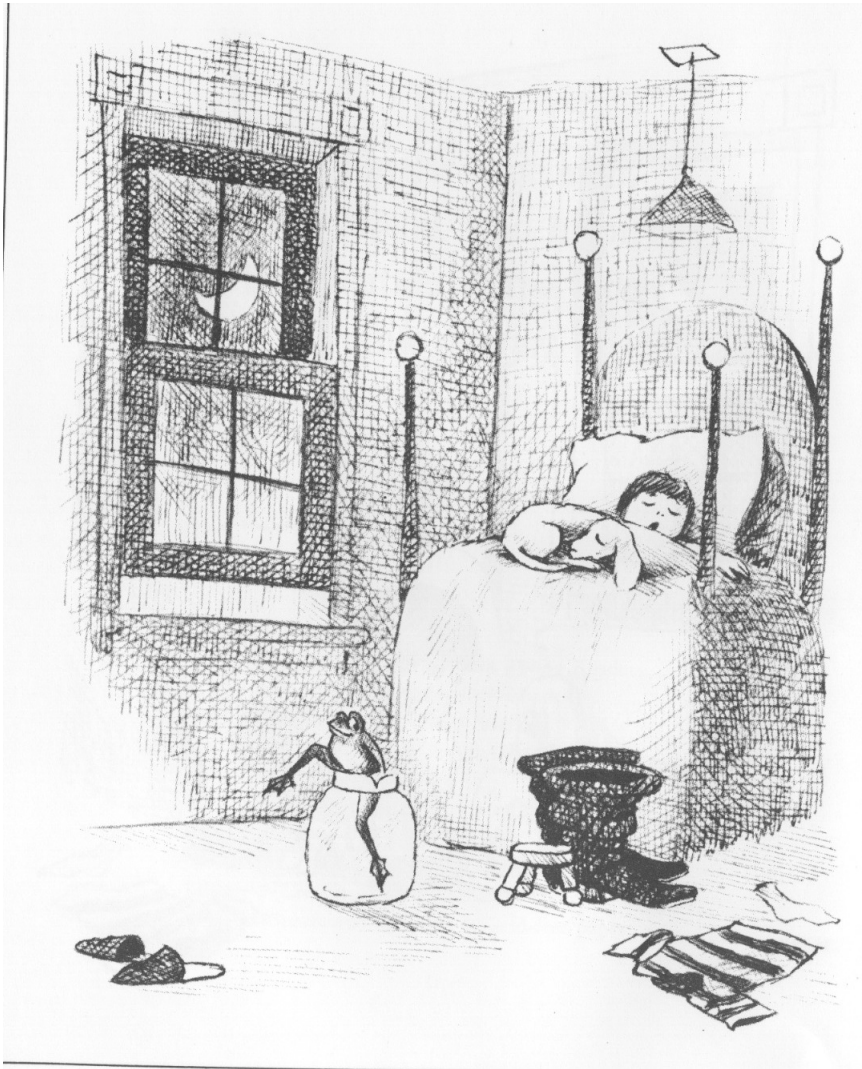
Elija la opción correcta para completar los espacios en blanco.

- ¿Estás seguro de que quieres que a los Martínez a cenar?
 a. invitamos b. invitemos c. invitáramos
- Podéis contar con que nosotros llegaremos a eso de las 6 de la tarde. Bueno, encontremos caravana ¡claro!
 a. siempre que b. con tal de que c. a no ser que
- Acuérdate de que tienes que ir sentando a los invitados en sus puestos vayan llegando.
 a. a medida que b. mientras c. una vez que
- ¿Usted aceptaría que le la mitad cuando empiece los trabajos y el resto en dos mensualidades, una vez terminada la obra?
 a. pagamos b. pagaremos c. pagáramos
- Ya le dijiste a tu madre que no, que íbamos a llegar tarde.
 a. nos esperaba b. nos esperara c. nos esperaría
- Ya sabes cómo es tu hermana. no vas a conseguir que cambie de opinión.
 a. Por mucho que te esfuerces b. Por más esfuerzo c. Por muy esforzado que seas
- Oye, no podemos seguir esperando a tu amiga Carmen. Igual no Entremos a ver la película, está a punto de empezar, ya le dijiste a qué hora empezaba ¿no?
 a. venga b. viene c. vendría

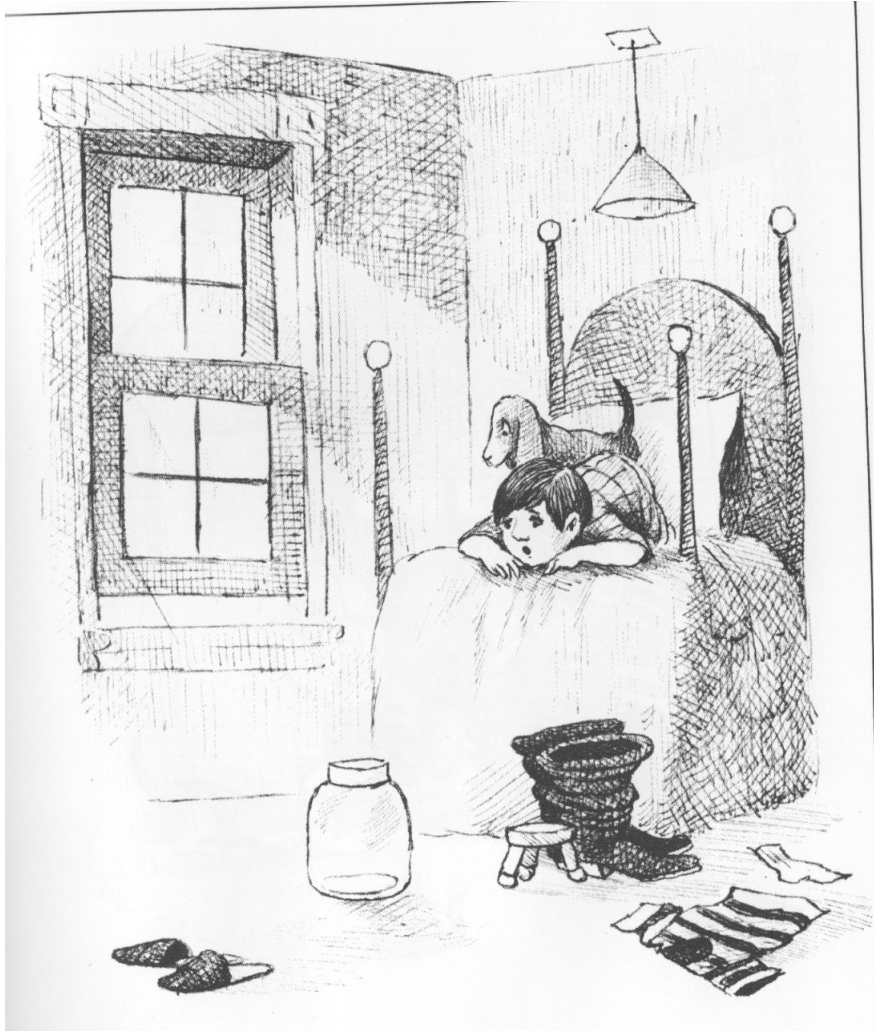
Appendix V: the frog story



Picture 1



Picture 2
Frog + jar scene



Picture 3



Picture 4



Picture 5



Picture 6



Picture 7



Picture 8



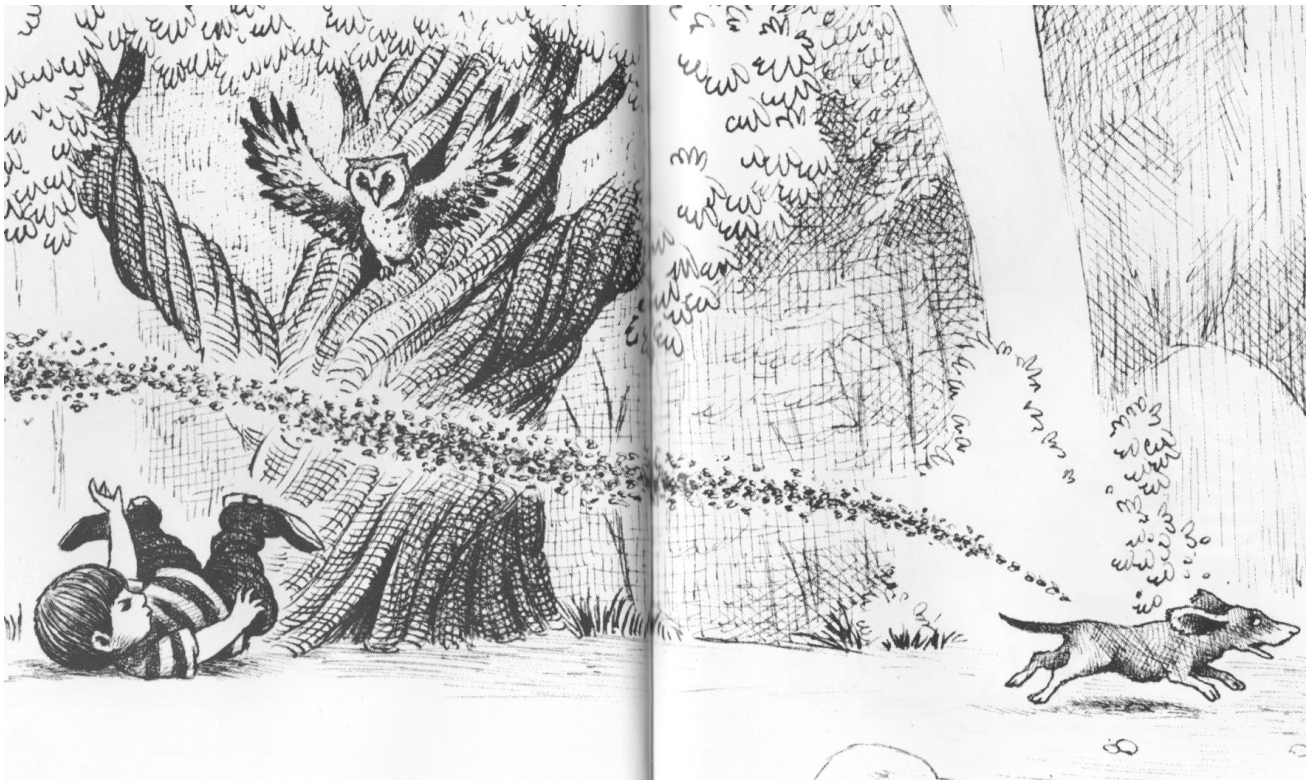
Picture 9



Picture 10
Gopher scene



Picture 11



Picture 12
Owl scene



Picture 13



Picture 14



Picture 15
Deer scene



Picture 16
Deer scene



Picture 17
Deer scene



Picture 18
Deer scene



Picture 19



Picture 20



Picture 21



Picture 22

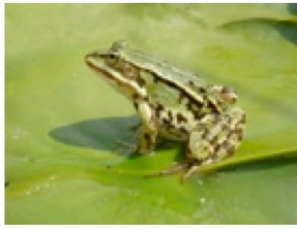


Picture 23



Picture 24

Appendix VI: Word list



the frog



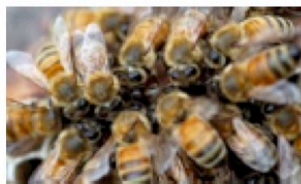
the boots



the window



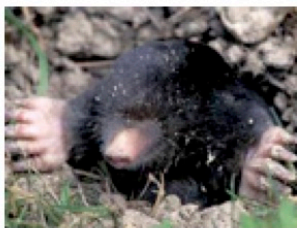
the beehive



the bees



the hole



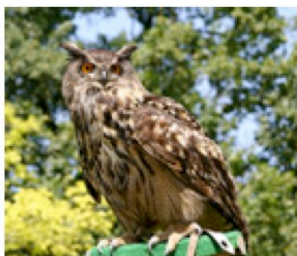
the mole



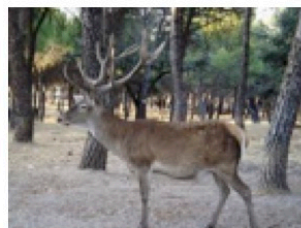
the tree



the branch



the owl



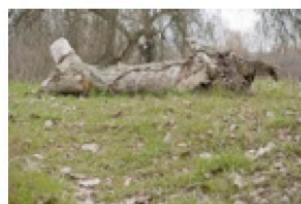
the deer



the antlers



the cliff



the log

Appendix VII: Communication strategies questionnaire



Your opinion about the languages you speak

These questions are about the languages you speak, when you use them, and about what you do when 'things aren't going so smoothly' when speaking them. In most cases it will suffice to circle the answer you find most appropriate (see Example 1) or to place a check mark in the column that contains the answer you find most appropriate (see Example 2).

Example 1. I have hot dogs for lunch.

(Almost) never Sometimes Often (Almost) always

In this case, the participant has indicated that he/she often has hotdogs for lunch.

Example 2. I do my homework...	(Almo st) never	Some- times	Often	(Almo st) always
...at home			✓	
b. ...in the library		✓		

In example 2, the participant has indicated that he/she often does his or her homework at home. The participant has also indicated that he/she sometimes does the homework in the library.

The information you provide by filling out this questionnaire will be treated confidentially, and will not be disclosed to any third persons in a way that could identify you. If you have any questions, please feel free to ask them!

Thank you!!!

A.1 When things aren't going so smoothly... Part I

The following questions are about situations in which you are speaking in French or Spanish. Please circle the answer you find most appropriate.

1. When I'm speaking in French, words from Spanish unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

2. When I'm speaking in French, words from English unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

3. When I'm speaking in Spanish, words from French unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

4. When I'm speaking in Spanish, words from English unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

5. When I'm reading in French, I accidentally read words as if they belong to Spanish

(Almost) never Sometimes Often (Almost) always

6. When I'm reading in French, I accidentally read words as if they belong to English

(Almost) never Sometimes Often (Almost) always

7. When I'm reading in Spanish, I accidentally read words as if they belong to French

(Almost) never Sometimes Often (Almost) always

8. When I'm reading in Spanish, I accidentally read words as if they belong to English

(Almost) never Sometimes Often (Almost) always

9. When I'm speaking in French and I don't know how to say something, I switch to Spanish

(Almost) never Sometimes Often (Almost) always

10. When I'm speaking in French and I don't know how to say something, I switch to English

(Almost) never Sometimes Often (Almost) always

11. When I'm speaking in Spanish and I don't know how to say something, I switch to French

(Almost) never Sometimes Often (Almost) always

12. When I'm speaking in Spanish and I don't know how to say something, I switch to English

(Almost) never Sometimes Often (Almost) always

13. When I'm speaking in French, syntactic structures (e.g. word order) from Spanish unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

14. When I'm speaking in French syntactic structures (e.g. word order) from English unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

15. When I'm speaking in Spanish, syntactic structures (e.g. word order) from French unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

16. When I'm speaking in Spanish, syntactic structures (e.g. word order) from English unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

17. When I'm speaking in French, I find myself producing words in a way that sounds "Spanish"

(Almost) never Sometimes Often (Almost) always

18. When I'm speaking in French, I find myself producing words in a way that sounds "English"

(Almost) never Sometimes Often (Almost) always

19. When I'm speaking in Spanish, I find myself producing words in a way that sounds "French"

(Almost) never Sometimes Often (Almost) always

20. When I'm speaking in Spanish, I find myself producing words in a way that sounds "English"

(Almost) never Sometimes Often (Almost) always

21. When speaking in French, it happens that I know the word I want to use, but I'm unable to remember it

(Almost) never Sometimes Often (Almost) always

22. When speaking in Spanish, it happens that I know the word I want to use, but I'm unable to remember it

(Almost) never Sometimes Often (Almost) always

For the next questions, please place a check mark in the column that contains the answer you find most appropriate for every option.

23. When I don't know a word in French...	(Almo st) never	Some- times	Often	(Almo st) always
a. ... I try to illustrate or describe the properties of the object or action				
b. ... I use a more general or related word from the same language				
c. ... I use a more general or related word from Spanish				
d. ... I use a more general or related word from English				
e. ... I try to create a word by applying the rules of the language				
f. ... I try to literally translate from Spanish				
g. ... I try to literally translate from English				
h. ... I try to adapt words from Spanish				
i. ... I try to adapt words from English				
j. ... I use a similar-sounding word from the same language				
k. ... I use a similar-sounding word from Spanish				
l. ... I use a similar-sounding word from English				
m. I just leave a gap in the sentence				

24. When I don't know a word in Spanish...	(Almo st) never	Some- times	Often	(Almo st) always
a. ... I try to illustrate or describe the properties of the object or action				
b. ... I use a more general or related word from the same language				
c. ... I use a more general or related word from French				
d. ... I use a more general or related word from English				
e. ... I try to create a word by applying the rules of the language				
f. ... I try to literally translate from French				
g. ... I try to literally translate from English				
h. ... I try to adapt words from French				
i. ... I try to adapt words from English				
j. ... I use a similar-sounding word from the same language				
k. ... I use a similar-sounding word from French				
l. ... I use a similar-sounding word from English				
m. I just leave a gap in the sentence				

A.2 When things aren't going so smoothly... Part II

The following questions are about situations in which you are speaking in English. Please circle the answer you find most appropriate.

25. When I'm speaking in English, words from French unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

26. When I'm speaking in English, words from Spanish unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

27. When I'm reading in English, I accidentally read words as if they belong to French

(Almost) never Sometimes Often (Almost) always

28. When I'm reading in English, I accidentally read words as if they belong to Spanish

(Almost) never Sometimes Often (Almost) always

29. When I'm speaking in English, syntactic structures (e.g. word order) from French unintentionally come to my mind

(Almost) never Sometimes Often (Almost) always

30. **When I'm speaking in English, syntactic structures (e.g. word order) from Spanish unintentionally come to my mind**

(Almost) never Sometimes Often (Almost) always

31. **When I'm speaking in English, I find myself producing words in a way that sounds "French"**

(Almost) never Sometimes Often (Almost) always

32. **When I'm speaking in English, I notice that I pronounce words in a way that sounds "Spanish"**

(Almost) never Sometimes Often (Almost) always

33. **When speaking in English, it happens that I know the word I want to use, but I'm unable to remember it**

(Almost) never Sometimes Often (Almost) always

B. Some last questions

Please answer these last questions as completely as possible.

34. How much of the language (in percentage terms) you've used over the past month has been French?

35. How much of the language (in percentage terms) you've used over the past month has been Spanish?

36. In your opinion, how similar are English, French and Spanish? You can make a drawing, if you wish.

.....
.....
.....
.....

37.a. In which language(s) do you usually think when speaking in English?

.....

b. If you think in more than one language when speaking in English, please give an estimate of the percentage of time you think in each of them.

.....

c. Can you think of anything that makes you switch between these languages?

.....

.....

.....

.....

38. a. In which language(s) do you usually think when speaking in French?

.....

b. If you think in more than one language when speaking in French, please give an estimate of the percentage of time you think in each of them.

.....

c. Can you think of anything that makes you switch between these languages?

.....

.....

.....

.....

39. a. In which language(s) do you usually think when speaking in Spanish?

.....

b. If you think in more than one language when speaking in Spanish, please give an estimate of the percentage of time you think in each of them.

.....

c. Can you think of anything that makes you switch between these languages?

.....

.....

.....

.....

40. Can you think of any situations in which the languages you speak influence each other that have not been addressed in this questionnaire? You can describe them below.

.....

.....

.....

.....

THANK YOU VERY MUCH FOR FILLING OUT THE QUESTIONNAIRE!!!

Appendix VIII: Complete list of motion verbs together with their satellites produced in English by the different groups of participants

L1 English (monolinguals)

Manner verbs

Carry (1); towards (1)
Chase (7); bare (6), after (1)
Climb (7); out (1), out of (1), over (2), up (1), up onto (2)
Creep (4); around (1), out (1), out of (1), over (1)
Drop (1); bare (1)
Fly (2); bare (1), around (1), out (1)
Jump (4); out (1), out of (1), up on (2)
Knock (4); down (1), down to (1), out (1), out of (1)
Pop (1); out of (1)
Push (1); off (1)
Run (12) ; bare (2), away (3), by (1), into (2), near (1), on top of (1), out into (1), over to (1), towards (1)
Shatter (1); on (1)
Shoot (1); away (1)
Slink (1); into (1)
Smash (1); bare (1)
Scoop (1); up (1)
Sneak (2); out (1), out of (1)
Swoop (1); down at (1)
Take (1); off (1)
Throw (3); about (1), off (1), over (1)
Toss (1); off into (1)
Tumble (1); over (1)
Wade (1); through (1)
Walk (4); along (1), around (1), off (1), through (1)

Number of Manner-verb types: 24

Number of Manner-verb tokens: 63

Path verbs

Come (9); along (1), bare (1), from (3), out (2), out of (1), to (1)
Escape (4); bare (2), from (2)
Fall (17); bare (2), back (1), from (1), in (1), into (3), off (1), off into (1), out (3), out of (4)
Follow (3); bare (1), along (1), into (1)
Go (10); bare (2), away (1), home (2), into (1), out (2), out into (1), over (1)
Land (2); in (1), in beside (1)
Leave (2); bare (1), through (1)

Number of Path-verb types: 7

Number of Path-verb tokens: 47

Change of Position

Appear (1); from (1)
Be gone (4)
Catch (2); bare (2)

Get (6); away from (1), out (3), out of (2), stuck (1)
Hide (2); behind (1), under (1)
Knock (1); over (1)
Lose (1); bare (1)
Open (1); bare (1)
Pick (6); bare (1), up (4), up over (1)
Place (1); on (1)
Put (5); in (2), on (3)
Steal (1); bare (1)
Take (3); bare (2), back (1)
Tilt (1); over (1)

Number of Change of Position verb-types: 14

Number of Change of Position verb-tokens: 35

Fictive

Bark (2); at (2)
Call (11); for (4), into (1), out (2), out for (3), out to (1)
Check (4); in (1), into (1), over (1), up (1)
Come (1); up to (1)
Have a peek (1); at (1)
Look (21); at (1), behind (1), down (1), for (4), in (5), inside of (1), into (4), out (1), outside (1), to (1), up (1)
Shout (1); for (1)
Stare (1); into (1)
Watch (1); from (1)

Number of Fictive Motion verb-types: 9

Number of Fictive Motion verb-tokens: 43

Non-translational

Lick (1); bare (1)
Pull (1); up (1)
Scratch (1); bare (1)
Shake (1); bare (1)
Unscrew (1); bare (1)
Wave (3); bare (1), at (1), to (1)

Number of Non-translational Motion verb-types: 6

Number of Non-translational Motion verb-tokens: 8

Other

Bam (1) onomatopoeia
Bite (1); bare (1)
Boom (1) onomatopoeia
Hit the road (1)
Motion (1); to (1)
Scare (1); out of (1)
Sting (1); bare (1)
Stop (1); bare (1)
Take (2); away from (1), back home (1)

Number of 'Other' types: 9

Number of 'Other' tokens: 10

L1 English (bilinguals)

Manner verbs

Attack (3); bare (3)
Bash (1); away (1)
Chase (8); bare (7), after (1)
Climb (5); bare (1), over (1), up (1), up on (1), up to (1)
Drop (1); off (1)
Fly (2); out around (1), out of (1)
Hit (2); bare (1), on (1)
Jump (2); around (1), out of (1)
Knock (3); down (1), off (1), off into (1)
Prance (1); away (1)
Run (2); towards (2)
Smash (1); bare (1)
Sneak (1); up on (1)
Stumble (1); upon (1)
Swim (1); behind (1)
Throw (5); off (3), over into (2)
Tumble (1); after into (1)
Walk (1); away (1)

Number of Manner-verb types: 18

Number of Manner-verb tokens: 41

Path verbs

Come (8); bare (2), out (2), out of (4)
Cross (1); to (1)
Enter (1); bare (1)
Escape (7); bare (5), from (2)
Fall (12); down (1), from (1), into (3), off (2), out (3), out of (2)
Go (8); bare (2), away (2), on top of (1), over to (1), to (2)
Leave (1); bare (1)
Lift (1); on top of (1)
Reenter (1); bare (1)
Return (1); back home (1)

Number of Path-verb types: 10

Number of Path-verb tokens: 41

Change of Position

Appear (1); bare (1)
Be gone (1)
Disappear (1); bare (1)
Get (4); away (1), out (1), out of (2)
Give (1); bare (1)
Hang (1); onto (1)
Hide (1); bare (1)
Lean (1); against (1)
Pick (2); up (2)
Take (2); bare (2)

Number of Change of Position verb-types: 10

Number of Change of Position verb-tokens: 15

Fictive

Bark (4); at (1), to (1), up (2)

Call (7); for (4), from (1), out (2)

Look (37); around (1), down for (1), for (11), high and low (1), in (11), in for (1), inside (1), into (2), for in (1), out (1), outside (2), over (3), throughout (1)

Reveal (1); bare (1)

Stare (1); at from (1)

Yell (4); into (1), out (2), out for (1)

Number of Fictive Motion verb-types: 6

Number of Fictive Motion verb-tokens: 54

Non-translational

Lick (1); bare (1)

Swarm (1); bare (1)

Wave (2); at (1), to (1)

Number of Non-translational Motion verb-types: 3

Number of Non-translational Motion verb-tokens: 4

Other

Appear (1); out of (1)

Bite (1); bare (1)

End (1); up on (1)

Get (1); out of (1)

Play (1); around (1)

Splash (1) onomatopoeia

Sting (1); bare (1)

Take (2); back (1), home (1)

Number of 'Other' types: 8

Number of 'Other' tokens: 9

L1 English (trilinguals)

Manner verbs

Attack (1); bare (1)

Carry (2); across to (1), with (1)

Chase (12); bare (9), across (1), after (1), around (1)

Climb (12); bare (1), in (1), on (2), on top of (2), out of (1), over (3), up onto (1), up over (1)

Drop (1); off (1)

Float (1); in (1)

Fly (5); around (1), away (1), everywhere (1), off of (1), out (1)

Hit (3); bare (1), in (1), on (1)

Hop (1); over (1)

Jump (1); up at (1)

Knock (3); down (1), off of (2)

Run (13); bare (2), around (2), away (4), away from (1), beside (1), by (1), over to (1), towards (1)

Smash (2); on (2)

Sneak (1); out of (1)

Tumble (1); off of (1)
Wade (1); through (1)
Walk (3); away back home (1), in the opposite direction of (1), trough back in the direction (1)

Number of Manner-verb types: 17
Number of Manner-verb tokens: 63

Path verbs

Approach (1); bare (1)
Come (14); bare (1), across (1), from (1), out (4), out of (2), out from out (1), out of (4)
Escape (6); bare (3), from (3)
Fall (23); bare (2), down (1), in (1), into (1), off (2), off into (2), on (1), on top of (1), out (3), out of (8), over (1)
Go (10); bare (2), away (1), away through (1), home (1), into (1), out to (1), outside (1), over there (1), towards (1)
Land (4); in (3), on (1)
Leave (5); bare (5)
Return (1); bare (1)

Number of Path-verb types: 8
Number of Path-verb tokens: 64

Change of Position

Be gone (3)
Catch (3); bare (3)
Get (5); bare (1), loose (1), out of (1), stuck in (1), stuck on (1)
Give a kiss (1); bare (1)
Hide (1); behind (1)
Join (1); bare (1)
Knock (1); over (1)
Lose (1); bare (1)
Open (2); bare (2)
Overturn (1); bare (1)
Pick (5); up (5)
Put (1); on top of (1)
Stick (3); in (1), out of (2)
Take (2); bare (2)

Number of Change of Position verb-types: 14
Number of Change of Position verb-tokens: 30

Fictive

Bark (1); at (1)
Be (1); off in (1)
Call (6); for (2), out (2), out for (2)
Come (1); over (1)
Get dressed (1); out of (1)
Happen (1); from on top of (1)
Look (37); around (3), at (5), back (1), for (6), for over outside (1), in (10), in in (1), in for (1), inside (1), inside of (2), out (1), out of (1), outside (1), over (2), over for (1)
Surround (1); bare (1)
Yell (5); into (3), out for (1), up at (1)

Number of Fictive Motion verb-types: 9

Number of Fictive Motion verb-tokens: 54

Non-translational

Move (1); bare (1)

Press (1); on (1)

Push (1); bare (1)

Wave (2); to (2)

Number of Non-translational Motion verb-types: 4

Number of Non-translational Motion verb-tokens: 5

Other

Bite (1); bare (1)

Get (1); out of (1)

Goof (1); around (1)

Mess (1); around (1)

Scare (2); out of (2)

Show (2); up (2)

Stop (3); bare (2), at (1)

Take (1); home (1)

Number of 'Other' types: 8

Number of 'Other' tokens: 12

L2 English (L1 French trilinguals)

Manner verbs

Attack (6); bare (6)

Bump (1); into (1)

Carry (2); away (2)

Chase (11); bare (8), after (3)

Climb (27); bare (3), back on (1), on (6), on to (1), on top of (1), onto (1), up (4), up into (1)

Drop (1); off (1)

Eject (1); out of (1)

Flee (1); bare (1)

Fly (7); after (3), in (1), out (1), to (2)

Hit (1); bare (1)

Hop (1); towards (1)

Jump (8); from (1), on (3), onto (1), out (1), out of out of (1), out from (1)

Leap (1); out (1)

Pop (2); out (1), out of (1)

Punch (1); bare (1)

Pursue (= chase) (2); bare (2)

Push (1); on (1)

Run (32); bare (16), after (2), along with (1), away (2), away by (1), away from (2), into (2), into (= to?) (1) off to (1), towards (2), with (1)

Swarm (1); out (1)

Swim (1); across (1)

Take (1); off with (1)

Tiptoe (1); away from (1)

Throw (1); over (1)

Walk (2); into (1), up to (1)

Number of Manner-verb types: 24
Number of Manner-verb tokens: 113

Path verbs

Approach (5); bare (5)
Arrive (2); in (1), in (=to) (1)
Bring (3); bare (1), home with (1), with (1)
Come (26); bare (1), across (1), along (1), back (5), back home (2), back to (2), down (1), from (1), out (6), out from (1), out of (4), up from (1)
Emerge (1); from (1)
Escape (16); bare (7), from (9)
Fall (78); bare (11), by (1), down (12), down from (3), down in (3), down into (2), from (6), from into (3), from onto (= from into) (1), from to (1), in (3), into (11), into (=on) (2), off (7), on (7), out (2), out of (2), through (1)
Follow (6); bare (6)
Go (68); bare (12), above (=on top of) (1), after (1), away by (1), back home (2), back to (3), behind (1), beyond (1), down outside (1), for (1), home (2), in (2), into (1), near (2), on (2), out (7), out from (5), out of (3), out through (1), outside (6), over (1), to (7), toward (1), under (1), up (1), up from (1), up to (1)
Land (1); in (1)
Leave (9); bare (8), through (1)
Scatter (1); on (1)

Number of Path-verb types: 12
Number of Path-verb tokens: 216

Change of Position

Appear (1); bare (1)
Be gone (5)
Catch (2); bare (2)
Disappear (3); bare (3)
Get (6); back on his feet (1), stuck (1), stuck in (1), stuck on (1), trapped in (1), up (1)
Grab (1); bare (1)
Hide (3); bare (1), behind (1), into (1)
Knee(1) (1); bare (1)
Lean (2); onto (2)
Let go (1); of (1)
Lift (1); up (1)
Open (5); bare (5)
Pick (5); bare (1), up (4)
Put (5); in (3), into (1), on (1)
Rise (1); up (1)
Seize (1); bare (1)
Take (7); bare (6), between (1)
Touch (1); bare (1)

Number of Change of Position verb-types: 18
Number of Change of Position verb-tokens: 51

Fictive

Bark (4); at (4)

Call (67); for (6), for in (1), in (1), into (1), out (1), out for (1), out of into (1), outside (1), outside of (1), outside through (1), over (1), through (2)
Catch (1); bare (1)
Come (3); bare (3)
Cry (3); for (1), in (1), out to (1)
Echo (1); into (1)
Follow (1); bare (1)
Get (1); to (1)
Go (1); through (1)
Look (93); at (15), after (= for) (8), after in (= for in) (2), for (28), for around in in under (1), for for (1), for in (2), for inside (1), in (13), in in (1), into (5), in under in (1), inside (2), into (5), out of (1), outside (1), over (3), through through (1), to (1), under (1)
Pass (1); bare (1)
Run (1); into (1)
Scream (1); in (1)
See (1); through (1)
Stare (2); at (2)
Shout (4); in (2), into (1), out for (1)
Surround (1); bare (1)
Turn (1); upside down (1)
Yell (2); for (1), outside (1)
Watch (= look) (3); at (1), for (1), to (1)

Number of Fictive Motion verb-types: 20
Number of Fictive Motion verb-tokens: 192

Non-translational

Hang (1); around (1)
Jump (2); up down (2)
Lick (2); bare (1), at (1)
Move (1); bare (1)
Shake (1); bare (1)
Sway (1); bare (1)
Wave (2); to (2)

Number of Non-translational Motion verb-types: 7
Number of Non-translational Motion verb-tokens: 10

Other

Be (1); around (1)
Bite (3); bare (3)
Get (5); back (1), closer to (2), on her way (1), out of (1)
Leave (1); to (1)
Let go (1); of into (1)
Play (1); around (1)
Pluff (1) onomatopoeia
Plum (1) onomatopoeia
Sting (1); bare (1)
Stop (6); bare (6)
Take (2); back to (1), back with (1)

Number of 'Other' types: 11
Number of 'Other' tokens: 23

Appendix IX: Complete list of motion verbs produced in French by the different groups of participants

L1 French (monolinguals)

Manner verbs

Attaquer (1) 'Attack'
Chasser (1) 'Chase'
Courir (4) 'Run'
Courser (1) 'Run after'
S'enfuir (5) 'Flee'
S'évader (1) 'Escape/Flee'
Jeter (3) 'Throw'
Poursuivre (4) 'Chase'
Sauter (2) 'Jump'
Se sauver (1) 'Flee/Escape'
Transporter (1) 'Transport'
Voler (2) 'Fly'

Number of Manner-verb types: 12
Number of Manner-verb tokens: 26

Path verbs

Aller (6) 'Go'
S'en aller (4) 'Go away'
Amener (1) 'Take along'
S'échapper (3) 'Escape'
Monter (10) 'Go up'
Partir (6) 'Leave'
Rentrer (1) 'Go back'
Repartir (3) 'Leave again'
Sortir (9) 'Go out'
Suivre (1) 'Follow'
Tomber (24) 'Fall'

Number of Path-verb types: 11
Number of Path-verb tokens: 68

Change of Position

S'accrocher (1) 'Hang on to'
S'appuyer (1) 'Lean against'
Attraper (2) 'Catch'
Capturer (3) 'Capture'
Se coucher (1) 'Lie down'
Disparaître (1) 'Disappear'
Se lever (2) 'Get up'
Mettre (5) 'Put'
Ouvrir (1) 'Open'
Se pencher (1) 'Lean over'
Prendre (3) 'Take'
Récupérer (4) 'Get back'

Rejoindre (1) 'Join'
Ressortir (1) 'Get out again'
Se coincer (2) 'Get stuck'

Number of Change of Position verb-types: 15
Number of Change of Position verb-tokens: 29

Fictive

Appeler (1) 'Call'
Regarder (10) 'Look'
Tomber (2) 'Encounter unexpectedly'
Venir (1) 'Come'

Number of Fictive Motion verb-types: 4
Number of Fictive-Motion verb-tokens: 14

Non-translational

Faire une léchouye (1) 'Lick'
Secouer (2) 'Shake'
Taper (1) 'Drum'

Number of Non-translational Motion verb-types: 3
Number of Non-translational Motion verb-tokens: 4

Other

Faire (1) 'Gesture'
Mordre (1) 'Bite'

Number of 'Other' types: 2
Number of 'Other' tokens: 2

L1 French (bilinguals)

Manner verbs

Amener (1) 'Take with oneself'
Attaquer (3) 'Attack'
S'enfuir (1) 'Flee'
Expédier (1) 'Get rid of something quickly'
Courir (1) 'Run'
Grimper (1) 'Climb'
Parcourir (1) 'Go all through/all around'
Poursuivre (2) 'Chase'
Précipiter (1) 'Push someone in order to make him/her fall'

Number of Manner-verb types: 9
Number of Manner-verb tokens: 12

Path verbs

Aller (1) 'Go'
S'en aller (1) 'Go away'
S'approcher (1) 'Get closer to'
S'avancer (1) 'Go forward'
S'échapper (2) 'Escape'

Continuer (1) 'Continue'
Se diriger (1) 'Direct oneself'
Monter (2) 'Go up'
Partir (2) 'Leave'
Passer (1) 'Pass'
Rentrer (1) 'Go back'
Repartir (1) 'Leave again'
Revenir (3) 'Come back'
Sortir (3) 'Go out'
Tomber (12) 'Fall'

Number of Path-verb types: 15
Number of Path-verb tokens: 33

Change of Position

Se cacher (2) 'Hide'
Se coincer (2) 'Get stuck'
Se coucher (1) 'Lie down'
Disparaître (2) 'Disappear'
Enfermer (1) 'Lock up'
Libérer (1) 'Free'
Mettre (1) 'Put'
Montrer sa présence (1) 'Show its presence'
Pencher (1) 'Lean towards'
Se pencher (2) 'Lean over'
Perdre l'équilibre (1) 'Lose one's balance'
Pincer (1) 'Pinch'
Récupérer (1) 'Get back'
Se surgir (1) 'Emerge'

Number of Change of Position verb-types: 14
Number of Change of Position verb-tokens: 18

Fictive

Appeler (3) 'Call'
Regarder (2) 'Look'
Tomber (5) 'Encounter unexpectedly'
Venir (1) 'Come'

Number of Fictive Motion verb-types: 4
Number of Fictive Motion verb-tokens: 11

Non-translational

-

Other

-

L1 French (trilinguals)

Manner verbs

Attaquer (4) 'Attack'
S'attaquer (1) 'Attack'
Balader (1) 'Walk around'

Basculer (1) 'Lose one's balance and fall'
Charger (1) 'Attack in an unexpected and violent way'
Chasser (3) 'Chase'
Cordonner (1) 'Line up' (?)
Courir (17) 'Run'
Emporter (3) 'Take with oneself'
Enfuir (1) 'Flee'
S'enfuir (8) 'Flee'
Entraîner (2) 'Drag along'
S'envoler (1) 'Fly away'
Escalader (1) 'Climb'
Fuir (1) 'Flee'
Galoper (1) 'Gallop'
Gambader (1) 'Caper about'
Grimper (9) 'Climb'
Jaillir (2) 'Leap out'
Jeter (4) 'Throw'
Parachuter (1) 'Parachute'
Pourchasser (3) 'Chase'
Poursuivre (8) 'Chase'
S'en prendre (2) 'Attack'
Se promener (2) 'Go for a walk'
Rouler (1) 'Roll'
Sauter (4) 'Jump'
Tirer (1) 'Throw'
Traîner (1) 'Drag'
Voler (1) 'Fly'

Number of Manner-verb types: 30

Number of Manner-verb tokens: 87

Path verbs

Aller (10) 'Go'
S'en aller (11) 'Go away'
S'approcher (2) 'Approach'
Amener (2) 'Take along'
Arriver (2) 'Arrive'
S'avancer (1) 'Go forward'
Continuer (1) 'Continue'
Descendre (1) 'Descend'
Se diriger (8) 'Direct oneself'
Échapper (2) 'Escape'
S'échapper (13) 'Escape'
Embarquer (2) 'Take on board'
Monter (11) 'Go up'
Partir (25) 'Leave'
Passer (6) 'Pass'
Porter (1) 'Carry'
Ramener (4) 'Take back'
Se rapprocher (1) 'Come closer'
Reculer (1) 'Retreat'

Rentrer (3) 'Go back'
Repartir (5) 'Leave again'
Retourner (6) 'Return'
Revenir (5) 'Come back'
Sortir (46) 'Go out'
Suivre (12) 'Follow'
S'en tirer (1) 'Get out of'
Tomber (102) 'Fall'
Traverser (1) 'Cross'
Venir (2) 'Come'

Number of Path-verb types: 29

Number of Path-verb tokens: 287

Change of Position

S'accrocher (1) 'Hang on'
S'agripper (1) 'Cling to'
Apparaître (2) 'Appear'
S'appuyer (4) 'Lean on'
Attraper (7) 'Catch'
Cacher (1) 'Hide'
Se cacher (1) 'Hide oneself'
Capturer (3) 'Capture'
Coincer (3) 'Stick'
Se coincer (2) 'Get stuck'
Se coucher (9) 'Lie down'
Déposer (1) 'Drop off'
Disparaître (3) 'Disappear'
Donner (1) 'Give'
Enfo(u)rcher (1) 'Mount'
Fermer (1) 'Close'
Se lancer (1) 'Throw oneself'
Se lever (1) 'Get up'
Se libérer (1) 'Free oneself'
Mettre (8) 'Put'
Se mettre (2) 'Start to do something'
Ouvrir (5) 'Open'
Se pencher (2) 'Lean over'
Se poser (2) 'Place oneself'
Prendre (11) 'Take'
Récupérer (10) 'Get back'
Rejoindre (2) 'Join'
Relever (1) 'Get back up'
Se rendre (1) 'Go'
Renverser (1) 'Turn over'
Se réfugier (1) 'Take shelter'
Se relever (2) 'Get back up'
Retourner (2) 'Turn over'
Se retrouver (2) 'Find oneself'
Se soulever (1) 'Raise oneself up'
Sursauter (1) 'Jump up'

Number of Change of Position verb-types: 36
Number of Change of Position verb-tokens: 98

Fictive

Aboyer (1) 'Bark'
Appeler (9) 'Call'
Crier (5) 'Shout'
Entendre (2) 'Hear'
Japper (1) 'Yap'
Passer (1) 'Pass'
Regarder (25) 'Look'
Sortir (2) 'Go out'
Tomber (1) 'Encounter unexpectedly'
Venir (2) 'Come'
Voir (4) 'See'

Number of Fictive Motion verb-types: 11
Number of Fictive Motion verb-tokens: 53

Non-translational

Bouger (3) 'Move'
Japper (1) 'Yap'
Lecher (4) 'Lick'
Sauter (2) 'Jump'
Secouer (1) 'Shake'
Soulever (1) 'Lift'
Tourner (1) 'Turn'

Number of Non-translational Motion verb-types: 7
Number of Non-translational Motion verb-tokens: 13

Other

Baaahhhh (1) onomatopoeia
Arrêter (2) 'Stop'
S'arrêter (3) 'Stop'
Assigner des coups d'ailes (1) 'Hit with its wings'
Confier (1) 'Entrust'
Faire l'imbécile en suivant quelque-chose (1) 'Make a fool of oneself by following something'
Faire signe (1) 'Sign'
Faire tout ce chemin (1) 'Come all this way'
Freiner (3) 'Brake'
Ohp (1) onomatopoeia
Pluff (2) onomatopoeia
Mordre (3) 'Bite'
Patatrap (2) onomatopoeia
Piquer (6) 'Sting'
Prendre avec soi (1) 'Take with oneself'

Number of 'Other' types: 15
Number of 'Other' tokens: 29

L2 French (L1 English trilinguals)

Manner verbs

Attaquer (3) 'Attack'

Chasser (6) 'Chase'

Courir (7) 'Run'

S'enfuir (1) 'Flee'

Escaler (1) 'Climb'

Frapper (2) 'Hit'

Grimper (4) 'Climb'

Lancer (2) 'Throw'

Marcher (2) 'Walk'

Nager (1) 'Swim'

Voler (3) 'Fly'

Number of Manner-verb types: 11

Number of Manner-verb tokens: 32

Path verbs

Aller (5) 'Go'

S'aller (1) 'Go away'

Apporter (1) 'Bring' participant probably meant 'Take'

Arriver (1) 'Arrive'

Échapper (2) 'Escape'

S'échapper (5) 'Escape'

Laisser (1) 'Leave'

Monter (2) 'Go up'

Partir (2) 'Leave'

Quitter (1) 'Leave/Get out of'

Retourner (3) 'Return'

Revenir (1) 'Come back'

Sortir (6) 'Go out'

Suivre (3) 2 cases of 'suivre' 'Follow'

Tomber (23) 'Fall'

*Se tomber (2) 'Fall (over)'

Number of Path-verb types: 16

Number of Path-verb tokens: 59

Change of Position

S'asseoir (3) 'Sit down'

Cacher (1) 'Hide oneself'

Disparaître (1) 'Disappear'

Mettre (2) 'Put'

Prendre (4) 'Take'

Ramasser (1) 'Pick up'

Toucher (1) 'Touch'

Number of Change of Position verb-types: 7

Number of Change of Position verb-tokens: 13

Fictive

Appeler (3) 'Call'

Crier (2) 'Shout'

Regarder (14) 'Look'

Venir (1) 'Come'

Number of Fictive Motion verb-types: 4

Number of Fictive Motion verb-tokens: 20

Non-translational

Lecher (1) 'Lick'

Number of Non-translational Motion verb-types: 1

Number of Non-translational Motion verb-tokens: 1

Other

Arrêter (1) 'Stop'

S'arrêter (1) 'Stop'

*Bite (English) (1) 'Bite'

Number of 'Other' types: 3

Number of 'Other' tokens: 3

Appendix X: Complete lists of motion verbs produced in Spanish by the different groups of participants

L1 Spanish (monolinguals)

Manner verbs

Atacar (4) 'attack'
Correr (4) 'run'
Huir (5) 'flee'
Perseguir (7) 'chase'
Pirarse (1) 'to make oneself scarce'
Saltar (3) 'jump'
Tirar (14) 'throw/make fall'
Tregar (2) 'climb'
Volar (1) 'fly'

Number of Manner-verb types: 9
Number of Manner-verb tokens: 41

Path verbs

Acercarse (1) 'get closer'
Avanzar (1) 'move forward'
Bajar (1) 'go down'
Caer (9) 'fall'
Caerse (36) 'fall'
Dejar (3) 'leave'
Escaparse (14) 'escape'
Ir (14) 'go'
Irse (22) 'go away/off'
Llegar (2) 'arrive'
Llevar (2) 'take'
Llevarse (14) 'take with oneself'
Meter (3) 'put into'
Meterse (5) 'get/put into'
Salir (42) 'come/go out, leave'
Seguir (1) 'follow'
Subir (2) 'go up'
Subirse (8) 'go up'
Traer (1) 'bring'
Venir (1) 'come'

Number of Path-verb types: 20
Number of Path-verb tokens: 182

Change of Position

Agarrar (1) 'grab'
Aparecer (13) 'appear'
Apoyarse (1) 'lean on'
Asomar (1) 'to begin to appear'
Asomarse (5) 'to begin to appear'
Caber (1) 'fit'

Capturar (1) ‘capture’
Coger (15) ‘catch/take’
Cogerse (1) ‘hold on’
Dar (1) ‘give’
Desaparecer (1) ‘disappear’
Deshacerse (1) ‘get rid of’
Devolver (3) ‘give back’
Enganchar (2) ‘hook’
Levantarse (3) ‘get up’
Librarse (1) ‘escape/get rid of’
Meter (3) ‘put into’ (head)
Poner (2) ‘put’
Ponerse (3) ‘put oneself’
Quedarse atrapado (1) ‘get trapped’
Quedarse enganchado (1) ‘get hooked on’
Quitar (1) ‘take away/off’
Regalar (1) ‘give as a present’
Robar (3) ‘rob/steal’
Toparse (1) ‘come across’

Number of Change of Position verb-types: 25
Number of Change of Position verb-tokens: 67

Fictive

Gritar (1) ‘shout’
Llamar (1) ‘call’
Mirar (18) ‘look’
Oír (1) ‘hear’
Vigilar (1) ‘keep an eye on’

Number of Fictive Motion verb-types: 5
Number of Fictive Motion verb-tokens: 22

Non-translational

Mover (1) ‘move’

Number of Non-translational Motion verb-types: 1
Number of Non-translational Motion verb-tokens: 1

Other

Acabar (3) ‘end up’
Achuchar (1) ‘press against oneself, hug’
Darle con los cuernos (1) ‘hit him with its horns’
Darse la vuelta al tronco (1) ‘go around the tree trunk’
Darse un culotazo (1) ‘fall on one’s bottoms’
De paseo (1) ‘going for a walk’
Pegar un mordisco (1) ‘bite’
Picar (2) ‘sting’
Ponerse en marcha (1) ‘start to move’

Number of ‘Other’ types: 9
Number of ‘Other’ tokens: 12

L2 Spanish (L1 English bilinguals)

Manner verbs

Atacar (5) 'attack'

Correr (5) 'run'

*Correrse (1) 'run'

Escalar (3) 'climb'

Perseguir (1) 'chase'

Saltar (1) 'jump'

Tirar (2) 'throw'

Volar (1) 'fly'

Number of Manner-verb types: 8

Number of Manner-verb tokens: 19

Path verbs

Bajarse (1) 'go down'

Caer (7) 'fall'

Caerse (20) 'fall'

Ir (2) 'go'

Escapar (5) 'escape'

Escaparse (4) 'escape'

Levantarse (1) 'lift'

Pasar (1) 'pass'

Regresar (1) 'return'

Salir (6) 'go out'

Subir (1) 'go up'

Traer (2) 'bring'

Number of Path-verb types: 12

Number of Path-verb tokens: 51

Change of Position

Caerse (1) 'fall down' (tree)

Coger (2) 'catch/take'

Dar (1) 'give'

Levantarse (2) 'get up'

Ponerse (1) 'put on'

Quitar (1) 'remove'

Sentarse (1) 'sit down'

Tomar (2) 'take'

Tumbarse (1) 'fall down' (tree)

Number of Change of Position verb-types: 9

Number of Change of Position verb-tokens: 12

Fictive

Gritar (3) 'shout'
Ladrar (1) 'bark'
Llamar (1) 'call'
Mirar (9) 'look'
Ver (= mirar) (1) 'look'

Number of Fictive Motion verb-types: 5
Number of Fictive Motion verb-tokens: 15

Non-translational

Brincar (1) 'hop'
Lamer (1) 'lick'
Levantar (2) 'lift'

Number of Non-translational Motion verb-types: 3
Number of Non-translational Motion verb-tokens: 4

Other

Tomar a casa (1) 'take home'

Number of 'Other' types: 1
Number of 'Other' tokens: 1

L2 Spanish (L1 French bilinguals)

Manner verbs

Andar (1) 'walk'
Atacar (2) 'attack'
*Atacarse (1) 'get attacked'
Correr (3) 'run'
*Grimpar (1) 'climb'
Huir (1) 'flee'
Saltar (2) 'jump'
Volar (1) 'fly'

Number of Manner-verb types: 8
Number of Manner-verb tokens: 12

Path verbs

Acercarse (1) 'get closer'
Caer (11) 'fall'
Caerse (1) 'fall'
Escapar (1) 'escape'
Escaparse (1) 'escape'
Ir (4) 'go'
Irse (5) 'go away/off'
Pasar (1) 'pass'
*Reir (1) 'go again'
Salir (7) 'come/go out, leave'
*Se sortir (French) (1) 'come/go out, leave'
Seguir (1) 'follow'
Subir (1) 'go up'

*Tomber (French) (1) ‘fall’
Volver (1) ‘return’

Number of Path-verb types: 15
Number of Path-verb tokens: 38

Change of Position

Apoyarse (1) ‘lean on’
Desaparecer (3) ‘disappear’
Encarcelar (1) ‘imprison’
(En)cerrar (1) ‘shut in’
Escondarse (2) ‘hide’
*Gripar (1) ‘cling to’
Levantarse (2) ‘get up’
Ponerse (1) ‘put oneself’
Refugiarse (1) ‘take refuge, shelter’
*Retomar (1) ‘take back’
Sentarse (1) ‘sit down’
Tomar (4) ‘take’

Number of Change of Position verb-types: 12
Number of Change of Position verb-tokens: 19

Fictive

Gritar (1) ‘shout’
Llamar (1) ‘call’
Mirar (6) ‘look’
Venir (1) ‘come’

Number of Fictive Motion verb-types: 4
Number of Fictive Motion verb-tokens: 9

Non-translational

Number of Non-translational Motion verb-types: 0
Number of Non-translational Motion verb-tokens: 0

Other

*Estoparse (1) ‘stop’
Picar (1) ‘sting’

Number of ‘Other’ types: 2
Number of ‘Other’ tokens: 2

L3 Spanish (L1 English trilinguals)

Manner verbs

Atacar (1) 'attack'

Correr (9) 'run'

*Correrse (2) 'run away'

*Drop (English) (1) 'drop'

*Grimpar (4) 'climb'

Saltar (1) 'jump'

Volar (1) 'fly'

Number of Manner verb-types: 7

Number of Manner-verb tokens: 19

Path verbs

Caer (6) 'fall'

Caerse (8) 'fall'

Escapar (3) 'escape'

Escaparse (2) 'escape'

*Fall (English) (4) 'fall'

Ir (6) 'go'

Irse (4) 'go away'

Leave (English) (1) 'leave'

Llegar (2) 'arrive'

Salir (7) 'come/go out, leave'

Seguir (2) 'follow'

Venir (2) 'come'

Venirse (1) 'come'

Number of Path verb-types: 13

Number of Path verb-tokens: 48

Change of Position

Atrapar (1) 'catch'

*Darse (1) 'appear'

Dar un abrazo (1) 'give a hug'

Levantarse (1) 'get up'

Hide (English) (1) 'hide'

*Pick up (English) (1) 'pick up'

Ponerse (1) 'put on'

Tocar (1) 'touch'

Tomar (3) 'take'

Number of Change of Position verb-types: 9

Number of Change of Position verb tokens: 11

Fictive

Buscar (1) 'search'

Llamar (2) 'call'

*Look for (English) (3) 'look for'

Mirar (5) 'look'

Number of Fictive Motion verb-types: 4

Number of Fictive Motion verb-tokens: 11

Non-translational

Saltar (1) 'jump'

Number of Non-translational Motion verb-types: 1

Number of Non-translational Motion verb-tokens: 1

Other

Morder (1) 'bite'

Pararse (1) 'stop'

Tomar a su casa (1) 'take home'

Number of 'Other' types: 3

Number of 'Other' tokens: 3

L3 Spanish (L1 French trilinguals)

Manner verbs

Atacar (7) 'attack'

*Chocarse (1) 'crash'

Correr (23) 'run'

*Escaladar (1) 'climb'

*Grimper (French) (1) 'climb'

Huir (4) 'flee'

*Huirse (1) 'flee'

Perseguir (1) 'chase'

Propulsar (1) 'propel'

Saltar (3) 'jump'

Tirar (3) 'throw'

Transportar (1 French) (2) 'transport'

Volar (8) 'fly'

Number of Manner-verb types: 13

Number of Manner-verb tokens: 56

Path verbs

Acercarse (3) 'get closer'

*Arrivar (2) 'arrive'

Caer (34) 'fall'

Caerse (42) 'fall'

Dejar (3) 'leave'

Entrar (1) 'enter'

Escaparse (14) 'escape'

Ir (19) 'go'

Irse (74) 'go away/off'

Llegar (4) 'arrive'

Llevar (1) 'take'

Llevarse (1) 'take with oneself'

Marcharse (2) 'go away, leave'

*Partir (2) 'leave'

Pasar (1) 'pass'

Regresar (2) 'return'

Salir (35) 'come/go out, leave'

Salirse (1) ‘come/go out, leave’
Seguir (10) ‘follow’
Subir (16) ‘go up’
Subirse (1) ‘go up’
*Tomber (French) (2) ‘fall’
Traer (3) ‘bring’
Venir (3) ‘come’
Volver (2) ‘return’
Volverse (1) ‘return’

Number of Path-verb types: 26
Number of Path-verb tokens: 279

Change of Position

Abrazar (1) ‘hug’
Abrir (2) ‘open’
Acostarse (2) ‘lie down, go to bed’
Atrapar (2) ‘catch’
Aparecer (1) ‘appear’
Apoyarse (2) ‘lean on’
*Blocarse (1) ‘get stuck’
Cambiar de orientación (1) ‘change position’
Coger (6) ‘catch/take’
Dar (2) ‘give’
Dar un beso (1) ‘give a kiss’
Desaparecer (3) ‘disappear’
Entrar (1) ‘put in’ (head)
Levantarse (5) ‘get up’
Poner (10) ‘put’
Ponerse (3) ‘put, get closer’
Quedarse alrededor de su cabeza (1) ‘get stuck around his head’
Recibir (1) ‘receive’
Recoger (3) ‘pick up’
Recuperar (1) ‘get back’
*Salir (= extender) (1) ‘spread out’
Tocar (1) ‘touch’
*Tocarse (1) ‘touch’
Tomar (10) ‘take’

Number of Change of Position verb-types: 24
Number of Change of Position verb-tokens: 62

Fictive

*Criar (1) ‘shout’
Gritar (10) ‘shout’
Ladrar (1) ‘bark’
Llamar (7) ‘call’
Mirar (20) ‘look’
Provenir (1) ‘come from’
Venir (2) ‘come’
Ver (= mirar) (4) ‘look’

Number of Fictive Motion verb-types: 8
Number of Fictive Motion verb-tokens: 46

Non-translational

Chupar (=lamer) (2) 'lick'
Levantar (1) 'lift'
Saltar (1) 'jump'
Volar (1) 'fly'

Number of Non-translational Motion verb-types: 4
Number of Non-translational Motion verb-tokens: 5

Other

Acabar (1) 'end up'
*Estopar (1) 'stop'
Morder (6) 'bite'
Picar (2) 'sting'
Pum (1) onomatopoeia
Terminar (1) 'end up'
Tomar consigo (1) 'take with oneself'

Number of 'Other' types: 7
Number of 'Other' tokens: 13