

**THE ACQUISITION OF ASPECT IN A SECOND LANGUAGE:
A BIDIRECTIONAL STUDY OF LEARNERS OF ENGLISH AND JAPANESE**

BY

ALISON GABRIELE

A DISSERTATION SUBMITTED TO THE GRADUATE FACULTY IN LINGUISTICS IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY,
THE CITY UNIVERSITY OF NEW YORK

2005

UMI Number: 3187373

Copyright 2005 by
Gabriele, Alison

All rights reserved.

UMI[®]

UMI Microform 3187373

Copyright 2005 by ProQuest Information and Learning Company.
All rights reserved. This microform edition is protected against
unauthorized copying under Title 17, United States Code.

ProQuest Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346

© 2005

ALISON GABRIELE

All Rights Reserved

This manuscript has been read and accepted by the Graduate Faculty in Linguistics in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

Date

Professor Gita Martohardjono
Chair of Examining Committee

Date

Professor Gita Martohardjono
Executive Officer

Professor Marcel den Dikken

Professor William McClure

Professor Virginia Valian

Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

THE ACQUISITION OF ASPECT IN A SECOND LANGUAGE: A BIDIRECTIONAL STUDY OF
LEARNERS OF ENGLISH AND JAPANESE

BY

ALISON GABRIELE

ADVISER: PROFESSOR GITA MARTOHARDJONO

This dissertation investigates the second language (L2) acquisition of aspectual morphology within the framework of formal, truth-conditional semantics (Tarski, 1944; Davidson, 1969). We evaluate the relative contribution of the native language grammar and the input available to the learner in an effort to develop a comprehensive model of the L2 acquisition of aspect.

The focus is on the acquisition of the semantics of the forms that mark the progressive in English and Japanese. The two forms, *be+ing* in English and *te-iru* in Japanese, interact differently with the lexical aspect of the verb phrase to which they attach. In English, the progressive denotes an event-in-progress interpretation regardless of the verb. In Japanese, achievements such as *die* are incompatible with a progressive interpretation, allowing *only* for a resultative interpretation of V+ *te-iru* (Jacobsen, 1992; McClure, 1995; Ogihara, 1998, 1999; Shirai, 2000, i.a.). The analysis that we adopt, McClure (1995), argues that the difference lies in the truth conditions of the aspectual operator PROG in the two languages.

In a controlled, bidirectional, experimental study we investigate the L2 acquisition of this crosslinguistic difference using two tasks: a grammaticality judgment task and an

interpretation task. Adult learners from a range of proficiency levels are tested including a group of near-natives in the L2 English study. The results of the interpretation task suggest that learners have more difficulty *preempting* an interpretation that is not available in the L2, but is an option in the L1. Results also indicate that L2 learners have considerably less difficulty *adding* an interpretation to their L2 grammar that is not available in the native language. We argue that these results can be accounted for if we consider the role of the input available to the learner. Results also reveal that there are contexts where L2 learners follow developmental patterns similar to L1 learners.

We argue that a comprehensive model of the L2 acquisition of aspect must consider not only properties of the learner's grammar but also the role of input and how principles of learnability interact with the learners' grammatical representation in the course of development.

ACKNOWLEDGEMENTS

Completing the work in this dissertation would have been impossible without the help and support of many people. I owe the greatest thanks to my adviser, Gita Martohardjono. Gita has guided me towards the interesting questions in second language acquisition and has pushed me to try to develop interesting answers. Without her guidance I would not have even known how to begin. I have benefited greatly from her insight and intuitions and above all I have truly enjoyed learning from her. Gita has also been overwhelmingly generous with her time, attention and advice.

Virginia Valian has been a valuable mentor and teacher from my very first year in graduate school. Virginia introduced me to the field of language acquisition and trained me in experimental methodology. Virginia's high standards and good questions have encouraged me to think more precisely and to question my assumptions. It has been a great opportunity to work with her.

William McClure has introduced me, in one way or another, to almost every topic that I have thought about in semantics and in Japanese linguistics. Bill has allowed me to ask the same questions over and over again and in doing so has helped me to understand the complexities and subtleties of aspect. I am also grateful to Bill for years of helpful advice and for extended borrowing privileges on many, many of his books.

Marcel den Dikken has taught me all that I know about syntax and much about other aspects of linguistic theory. He has taken the time to give me useful suggestions and feedback before each and every conference presentation, often at the very last minute. Marcel has often allowed me to turn up unexpected at his door with, what were

for me at the time, burning questions that I needed answers to. His thoughts and advice have contributed greatly to the work in this dissertation and to my thinking about linguistics in general. He has also been an invaluable source of encouragement and support.

I owe very special thanks to my fellow grad student and friend Mamori Sugita, who worked with me to develop the Japanese experiments in this dissertation. I am also grateful to Mamori's mother, Masako Sugita, and her grandmother, Tomiko Sugita, for countless judgments in Japanese and for being wonderful hosts when I stayed with them in Tokyo.

I am also grateful to the research assistants on this project. Leigh Garrison helped me with every aspect of the experiment, from assembling materials to recruiting and testing subjects to data entry. Agustina Carando was also helpful in recruiting and testing subjects. I am thankful to Hia Datta for drawing such great pictures.

I would also like to express thanks to the schools that so kindly helped with my data collection. I owe Noriaki Yusa very special thanks for arranging my stay at Miyagi Gakuin Women's University. I am also thankful to him for discussion of Japanese aspect and my project. I would also like to thank the many students who took part in the project and who made my stay in Sendai so enjoyable.

Also in Sendai, I am grateful to Hiroaki Sam Sone of the Tohoku Foreign Language College who arranged for me to collect data at the college. Mrs. Shiratori and Hanae Furukawa found me a great homestay and provided me with great company. Very special thanks are due to the Sadakata's for providing me with a wonderful place to live.

I am grateful to the many people in New York who made my data collection possible. Chie Helinski at Stuyvesant High School was a great help in recruiting students for the project. Bill McClure and Mamori Sugita encouraged their students at Queens College to participate. Finally, John Whitman made it possible for me to collect data at Cornell. I am grateful to the Japanese professors at Cornell, Yukiko Katagiri, Naomi Nakada Larson, Kyoko Selden and Robert Suple, for helping me with this project.

It would have been impossible to conduct a project of this size without the support of Dissertation Grant #0345697 from the National Science Foundation. I am also grateful for the Mario Capelloni dissertation fellowship from the CUNY Graduate Center.

At the Graduate Center there are many people who have helped me over the years. Special thanks are due to Ricardo Otheguy, who provided me with the opportunity to work at the Research Institute for the Study of Language in an Urban Society for three years. Christina Tortora has given me advice on many things, syntactic and otherwise. I am also grateful to Chuck and Helen Cairns, Elaine Klein and Janet Fodor for their interest and encouragement. I am grateful to Helen Cairns and Robert Vago for providing me with the opportunity to teach at Queens College. I thank the members of the CUNY Bilingualism Research Group for interesting, lively discussions.

The research in this dissertation has been presented at the Psycholinguistics Supper Club at the CUNY Graduate Center as well as at Linguistics colloquia at the University of Kansas, the University of South Carolina and Stony Brook University. Earlier versions of this work were presented at the Linguistic Society of America 2003 Annual Meeting, the American Association of Applied Linguistics 2003 conference, the ZAS Workshop on the Acquisition of Aspect in 2003, and Generative Approaches to

Second Language Acquisition conference in 2004. I am grateful for the feedback from the members of these audiences, in particular Yasuhiro Shirai, Natsuko Tsujimura, and Roumyana Slabakova. Yasuhiro Shirai and Silvina Montrul provided helpful comments on an early manuscript that helped me to develop the experiments for the dissertation.

My friendships with the other graduate students at CUNY have made the past years much more enjoyable. Erika Troseth and I share a love of aspect, black licorice and coffee. Our friendship and joint work sessions are in large part responsible for the fact that I finished my dissertation in such a good mood. I am also happy to have shared classes and discussions with other past and present students, in particular Carrie Crowther, Michele DeGoeas-Malone, Rosanne Gangi-Gaertner, Naomi Lapidus, Ana Longenecker, Eiji Nishimoto, Jed Shahr, Stephanie Solt, Mamori Sugita, Rachel Szekely, Malgosia Szupica-Pyrzanowski, Heather Conway-Visser and Tomoyuki Yabe.

In the world outside of linguistics, I am eternally grateful for the friendship of Kate Dawson, Madeline Fields, Ingrid Lemmey, Victoria Soffer and Jeanne Stevens-Shofer. Completing this dissertation would not have been as meaningful if I did not have them to celebrate with.

I owe enormous thanks to my parents, Bernadette and Frank Gabriele, for their incredible generosity, love and support. They have truly made everything possible. My brother, Jeff Gabriele, has always watched out for me and I thank him for all of his help and support over the years.

Finally, Bruno Tagliaferri has been there for me on all days, good and bad. It has been a pleasure to share them all with him.

I dedicate this work to my greatest advocate, my late grandmother Hazel Kiernan.

CONTENTS

ABSTRACT	iv
ACKNOWLEDGMENTS	vi
CONTENTS	x
LIST OF TABLES	xiv
LIST OF FIGURES	xvii
CHAPTER 1 INTRODUCTION	1
1. Summary	1
2. Theoretical Framework	1
2.1 Aspectual inquiries	3
2.2 Role of the native language	6
2.3 Learnability	9
2.4 Overview	11
CHAPTER 2 THEORETICAL APPROACHES TO ASPECT	13
1. Introduction	13
2. Defining aspect	14
2.1 VP aspect	17
2.2 Dowty (1972, 1979): an aspect calculus	23
2.3 Verkuyl (1972, 1993, 1999): Aspect is compositional	25
2.4 Defining telicity	29
3. Grammatical aspect	31
3.1 Analyzing grammatical aspect	34
4. <i>Be+ing</i> and <i>te-iru</i> : facts and background	38
4.1 The interaction of VP aspect and grammatical aspect in English and Japanese	38
4.2 Previous discussions of <i>te-iru</i>	42
4.2.1 Ogihara (1998)	44
5. McClure (1993, 1995)	48
5.1 PROG in English and Japanese	48
5.2 Aspectual structure	50
5.3 The interaction of PROG and the aspectual structure	53
5.3.1 English	53
5.3.2 Japanese	55
5.3.3 Summary	56

5.4 Interaction with past tense	57
5.5 Conclusion	60
CHAPTER 3 ASPECT IN ACQUISITION RESEARCH	62
1. Main approaches to the acquisition of aspect	62
2. Early Morpheme studies	65
3. Aspect Hypothesis	69
3.1 Studies testing the Aspect Hypothesis	75
3.1.1 Aspect Hypothesis: L2 English	76
3.1.2 Aspect Hypothesis: L2 Japanese	78
4. Interpreting grammatical aspect	81
4.1 First language	81
4.2 Second language	86
4.2.1 Hirakawa (2001)	86
4.2.2 Montrul and Slabakova (2002)	89
4.3 Near-natives	98
5. Conclusion	102
CHAPTER 4 L2 ACQUISITION OF ASPECT: A BI-DIRECTIONAL STUDY OF LEARNERS OF ENGLISH AND JAPANESE	105
1. Introduction and Background	105
1.1 Summary of Crosslinguistic Facts	105
1.2 General Research Questions	108
1.3 Hypotheses	111
1.3.1 Role of the L1	111
1.3.2 Learnability	113
1.3.3 Relationship between form and meaning	114
2. Study 1: Methodology	115
2.1 Participants	115
2.2 Test instruments	117
2.2.1 Michigan Listening Comprehension Test	117
2.2.2 Oral interview	118
2.2.3 Story Compatibility task	119
2.2.4 Grammaticality Judgment task	127
2.3 Standard procedure	130
3. Study 1 Results	132
3.1 Proficiency test: University of Michigan Listening Comprehension Test	132
3.2 Near-native interviews	133

3.3 Story Compatibility Task	133
3.3.1 Distractors	133
3.3.2 Analyses of test items	135
3.3.3 Filler items	137
3.3.4 Simple past	140
3.3.4a Accomplishments	141
3.3.4b Achievements	143
3.3.5 Present progressive	145
3.3.5a Accomplishments	146
3.3.5b Achievements	148
3.3.6 Past progressive	154
3.3.6a Accomplishments	155
3.3.6b Achievements	157
3.3.7 Summary of results: Story Compatibility Task	161
3.4 Grammaticality Judgment Task	164
3.4.1 Filler Sentences	164
3.4.2 Test Sentences	165
3.4.3 Knowledge of morphological form	166
3.4.4 Judging morphological forms in context	171
3.4.5 Summary of results: Grammaticality Judgment Task	177
4. Study 2: Methodology	178
4.1 Participants	178
4.2 Test instruments	179
4.2.1 Japanese Listening Comprehension Test	180
4.2.2 Story Compatibility Task	180
4.2.3 Grammaticality Judgment Task	185
4.3 Standard Procedure	187
5. Study 2 Results	188
5.1 Japanese Proficiency Test	188
5.2 Story Compatibility Task	188
5.2.1 Distractors	190
5.2.2 Analyses of test items	191
5.2.3 Filler items	193
5.2.4 Simple past	195
5.2.4a Accomplishments	196
5.2.4b Achievements	197
5.2.5 <i>Te-iru</i>	199
5.2.5a Accomplishments	200
5.2.5b Achievements	202
5.2.6 <i>Te-ita</i>	205
5.2.6a Accomplishments	205
5.2.6b Achievements	207
5.2.7 Summary of results: Story Compatibility Task	209
5.3 Grammaticality Judgment Task	211

5.3.1 Filler sentences	211
5.3.2 GJ Test sentences	212
5.3.3 Knowledge of morphological form	214
5.3.4 Judging morphological forms in context	217
5.3.5 Summary: Grammaticality Judgment Task	219
6. Integrating the L2 English and L2 Japanese results	220
CHAPTER 5	225
TOWARDS A COMPREHENSIVE MODEL OF THE L2 ACQUISITION OF ASPECT	
1. Introduction	225
2. How the L2 learner moves beyond the L1	226
2.1 When the L1 and L2 differ: Achievements under <i>be+ing</i> and <i>te-iru</i>	226
2.1.1 Adding an interpretation	228
2.1.2 Preempting an interpretation	231
2.2 Adding vs. preempting an interpretation	234
2.3 Optionality	239
2.4 Differences in the L2 English and L2 Japanese Study	243
2.4.1 Negative evidence	243
2.4.2 Alternative account	249
2.4.3 Summary	250
3. Is positive evidence enough?	251
3.1 Past progressive and <i>te-ita</i> : summary of results	251
3.2 Why do things become <i>progressively</i> more difficult in the past?	257
3.3 Why would adult L2 learners act like children?	264
3.4 Insufficient positive evidence	267
4. Form before meaning	271
5. Towards a comprehensive model of the L2 acquisition of aspect	274
APPENDICES	279
Appendix A. L2 English tables	279
Appendix B. L2 Japanese tables	286
Appendix C. L2 English materials	292
Appendix D. L2 Japanese materials	309
BIBLIOGRAPHY	334

LIST OF TABLES

Table 4.1A:	Interaction of <i>be+ing</i> and <i>te-iru</i> with Accomplishment Verbs	106
Table 4.1B:	Interaction of <i>be+ing</i> and <i>te-iru</i> with Achievement Verbs	106
Table 4.2:	Means and standard deviations for all participant groups on the 45-question Michigan Listening Comprehension test	132
Table 4.3:	L2 English: Means and standard deviations for all participant groups on the two types of distractor sentences	134
Table 4.4:	L2 English: Means and standard deviations for filler sentences with accomplishments and achievements in incomplete and complete contexts	139
Table 4.5:	L2 English GJ: Mean responses to grammatical and ungrammatical filler sentences	164
Table 4.6:	Means and standard deviations for all participant groups on the 16-question Japanese proficiency test	188
Table 4.7:	L2 Japanese: Means and standard deviations on the distractor sentences	190
Table 4.8:	L2 Japanese: Means and standard deviations on filler sentences with accomplishments and achievements in incomplete and complete contexts	194
Table 4.9:	L2 Japanese GJ: Mean responses to grammatical and ungrammatical filler sentences	212
Table A-1:	L2 English: Means and standard deviations for simple past sentences with accomplishments in incomplete and complete contexts	279
Table A-2:	L2 English: Means and standard deviations for simple past sentences with achievements in incomplete and complete contexts	279
Table A-3:	L2 English: Means and standard deviations for accomplishments in the present progressive with incomplete and complete contexts	280

Table A-4:	L2 English: Means and standard deviations for achievements in the present progressive with incomplete and complete contexts	280
Table A-5:	L2 English: Means and standard deviations for accomplishments in the past progressive with incomplete and complete contexts	281
Table A-6:	L2 English: Means and standard deviations for achievements in the past progressive with incomplete and complete contexts	281
Table A-7:	L2 English GJ: Means and standard deviations for filler sentences targeting word order	282
Table A-8:	L2 English GJ: Means and standard deviations for filler sentences targeting subject verb agreement	282
Table A-9:	L2 English GJ: Means and standard deviations for filler sentences targeting word order in verbal compounds	282
Table A-10:	L2 English GJ: Means and standard deviations for ungrammatical sentences	283
Table A-11:	L2 English GJ: Means and standard deviations for ungrammatical sentences by type (inflection, tense)	284
Table A-12:	L2 English GJ: Means and standard deviations for grammatical sentences	285
Table B-1:	L2 Japanese: Means and standard deviations for simple past sentences with accomplishment verbs in incomplete and complete contexts	286
Table B-2:	L2 Japanese: Means and standard deviations for simple past sentences with achievement verbs in incomplete and complete contexts	286
Table B-3:	L2 Japanese: Means and standard deviations for accomplishment verbs under <i>te-iru</i> with incomplete and complete contexts	287
Table B-4:	L2 Japanese: Means and standard deviations for achievement verbs under <i>te-iru</i> with incomplete and complete contexts	287
Table B-5:	L2 Japanese: Means and standard deviations for accomplishment verbs under <i>te-ita</i> with incomplete and complete contexts	288

Table B-6:	L2 Japanese: Means and standard deviations for achievement verbs under <i>te-ita</i> with incomplete and complete contexts	288
Table B-7:	L2 Japanese GJ: Means and standard deviations for filler sentences targeting word order	289
Table B-8:	L2 Japanese GJ: Means and standard deviations for filler sentences targeting possessive particle	289
Table B-9:	L2 Japanese GJ: Means and standard deviations for filler sentences targeting word order in verbal compounds	289
Table B-10:	L2 Japanese GJ: Means and standard deviations for ungrammatical sentences	290
Table B-11:	L2 Japanese GJ: Means and standard deviations for grammatical sentences	291

LIST OF FIGURES

Figure 4.1:	L2 English: Mean responses to accomplishments in the simple past with incomplete and complete contexts	141
Figure 4.2:	L2 English: Mean responses to achievement in the simple past with incomplete and complete contexts	143
Figure 4.3:	L2 English: Mean responses to accomplishments in the present progressive with incomplete and complete contexts	147
Figure 4.4:	L2 English: Mean responses to achievements in the present progressive with incomplete and complete contexts	148
Figure 4.5:	L2 English: Mean responses to accomplishments in the past progressive with incomplete and complete contexts	156
Figure 4.6:	L2 English: Mean responses to achievements in the past progressive with incomplete and complete contexts	158
Figure 4.7:	L2 English GJ: Mean responses to ungrammatical sentence types	167
Figure 4.8:	L2 English GJ: Mean responses to ungrammatical sentences of two types: morphological forms with incorrect inflection (INF) and sentences with incorrect tense	169
Figure 4.9:	L2 English GJ: Mean responses to grammatical sentences	172
Figure 4.10:	L2 Japanese: Mean responses to accomplishments in the Japanese simple past with incomplete and complete contexts	196
Figure 4.11:	L2 Japanese: Mean responses to achievements in the Japanese simple past with incomplete and complete contexts	198
Figure 4.12:	L2 Japanese: Mean responses to accomplishments under <i>te-iru</i> with incomplete and complete contexts	201
Figure 4.13:	L2 Japanese: Mean responses to achievements under <i>te-iru</i> with incomplete and complete contexts	202
Figure 4.14:	L2 Japanese: Mean responses to accomplishments under <i>te-ita</i> with incomplete and complete contexts	206
Figure 4.15:	L2 Japanese: Mean responses to achievements under <i>te-ita</i> with incomplete and complete contexts	207

Figure 4.16:	L2 Japanese GJ: Mean responses to ungrammatical sentence types	215
Figure 4.17:	L2 Japanese GJ: Mean responses to grammatical sentences	218
Figure 5.1:	L2 English study: Mean responses to achievements in the present progressive with incomplete contexts	228
Figure 5.2:	L2 Japanese study: Mean responses to achievements under <i>te-iru</i> with complete contexts	230
Figure 5.3:	L2 English study: Mean responses to achievements in the present progressive with complete contexts	232
Figure 5.4:	L2 Japanese study: Mean responses to achievements under <i>te-iru</i> with incomplete contexts	233
Figure 5.5:	L2 English study: Mean responses to achievements in the past progressive with incomplete contexts	252
Figure 5.6:	L2 Japanese study: Mean responses to achievements under <i>te-ita</i> with incomplete contexts	253
Figure 5.7:	L2 English study: Mean responses to accomplishments in the past progressive with complete and incomplete contexts	254
Figure 5.8:	L2 Japanese study: Mean responses to accomplishments under <i>te-ita</i> with complete and incomplete contexts	256

CHAPTER 1

INTRODUCTION

1. Summary

This dissertation investigates the second language (L2) acquisition of aspectual morphology within the framework of formal, truth-conditional semantics (Tarski, 1944; Davidson, 1969). Specifically, in a controlled, bidirectional, experimental study we investigate the L2 acquisition of the semantics of the forms that encode the progressive by learners of both English and Japanese. The study evaluates the relative contribution of native language properties and the input available to the L2 learner in an effort to develop a comprehensive model of the L2 acquisition of aspect. The results of the study suggest that a comprehensive model must take into account not only issues of grammatical representation, but also issues of learnability.

In this chapter we will introduce the theoretical framework that has been adopted as well as place our research questions in the context of current research in generative second language acquisition. We conclude the chapter with an outline of the organization of the thesis.

2. Theoretical Framework

The theoretical approach that we adopt considers semantics to be part of generative linguistic theory (Katz and Fodor, 1963; cf. review in Chierchia and

McConnell-Ginet, 2000). Generative theory presupposes that there is an abstract, innate linguistic component, or Universal Grammar (UG), that constrains natural language grammars and places restrictions on the hypotheses that learners entertain in their acquisition of a given language (Chomsky, 1965, 1981, 1986, 1995). While most L2 acquisition research conducted within the framework of generative grammar has investigated the acquisition of syntactic principles, there is a growing body of work that has begun to investigate the acquisition of semantic knowledge as well (Ionin, 2003; Ionin, Ko and Wexler, to appear; Slabakova, 2004). Under this framework, learners' hypotheses are constrained not only with respect to the structure of the L2 grammar but also with respect to the meanings that they assign to those structures. The goal of semantic theory is to determine how meaning is structured in a given language and how these structures differ crosslinguistically.

Several principles are integral to the characterization of semantic knowledge. First, semantic interpretation is compositional (Katz and Fodor, 1963). Chierchia and McConnell-Ginet (2000) point out that a speaker of a given language has no difficulty grasping the meaning of a sentence that he or she has never encountered before. For example, while perhaps no one has ever said *Yorkshire terriers prefer the 4 train during rush hour* we can easily interpret the sentence. We can do this because we know the meanings of all of the individual words and presumably we have some sort of algorithm that allows us to combine word meanings in order to interpret a given phrase or sentence (Katz and Fodor, 1963). The theory of semantics attempts to determine what that algorithm might look like.

A second very important component of formal semantic theory is the idea that the meaning of a sentence is determined, at least in part, by its truth value (Tarski, 1944; Davidson, 1969). This principle does not refer to whether or not the facts presented in a given sentence are true or false. We may have no idea whether Yorkshire terriers prefer to take the 4 express during rush hour or whether they prefer to take the local 6. But these facts are not important. What is important is that we know exactly what the world has to look like in order for the sentence *Yorkshire terriers prefer the 4 train during rush hour* to be true. This is the type of grammatical knowledge that falls within the domain of formal semantics. Under this approach, when we speak of the acquisition of semantics, we are really referring to the acquisition of truth conditions. Learners must acquire the criteria that determine whether or not a given sentence is true. In other words, they need to know what the world should look like in order for a sentence to be true.

2.1 Aspectual inquiries

While there are many different approaches to aspect within linguistics, some researchers have approached its analysis within the framework of formal semantics. In Chapter 2 we define the notion of aspect in detail and review these various theoretical approaches. In this section we outline why aspect is an interesting domain of inquiry, both within semantic theory and in acquisition research as well. We will also introduce the crosslinguistic facts that are at the center of this study.

Aspect refers to how an event unfolds in time, such as whether a given event is ongoing in time or whether the event has already been completed (Comrie, 1976). The

aspectual interpretation of a given sentence is determined by the combination of various components within the sentence such as the properties of the verb phrase, verbal morphology such as progressive *be+ing*, temporal adverbials such as *suddenly* and other predicates such as the particle *up* in *eat the pizza up*. One of the goals of semantic theory is to understand this complex interplay of factors.

Researchers generally distinguish between lexical or VP aspect, which is aspect encoded within the verb phrase, and grammatical or sentential aspect, which is encoded by inflectional morphology (Smith, 1991, 1997). These terms will be defined in detail in Chapter 2. While almost all languages encode these aspectual notions, there is very interesting variation across languages, particularly in the interaction between the verb phrase and inflectional morphology.

This type of variation is of great interest to researchers in semantics and is the primary focus of the present study. We investigate the acquisition of the aspectual forms that encode the progressive in English and Japanese. The two forms, *be+ing* in English and *te-iru* in Japanese, interact differently with the semantics of the verb phrase to which they attach. The most important difference is that with certain verbs, *te-iru* in Japanese does not allow a progressive interpretation but entails a resultative interpretation instead (Jacobsen, 1992; Kindaichi, 1950; McClure, 1993, 1995; Ogihara, 1998; Shirai, 2000). In Chapter 2 we will review these facts in detail and present the formal semantic analysis of this crosslinguistic difference that we adopt (McClure, 1995). This approach places the differences between English and Japanese in the truth-conditions of the morphological forms. On this account the goal of the learner is to determine what the world should look like in order for a sentence such as the *John is/was V-ing* to be true.

Research on the acquisition of aspectual knowledge has shown that this is not always an easy goal for the learner to achieve. A large body of work has shown that aspect is notoriously difficult for both first and second language learners (cf. reviews in Bardovi-Harlig, 2000; Li and Shirai, 2000; Slabakova, 2001, 2002; Weist, 2002). This research will be reviewed in detail in Chapter 3. With respect to second language acquisition, it has even been proposed that learners *cannot* acquire aspect to native-like levels (Coppieters, 1987) though a recent study proposes that this claim is too strong (Montrul and Slabakova, 2003).

The main goal of the present study is to evaluate why aspect is so difficult for second language learners and whether learners can in fact acquire aspect to native-like levels. Our investigation focuses on two main issues. First, we consider to what extent properties of the native language contribute to the difficulty faced by second language learners; i.e. whether transfer plays a role. Secondly, we consider the role of learnability and input, i.e. what are the factors that make the acquisition of aspect possible? The results of the experimental study that we report in Chapter 4 indicate that a comprehensive account of the acquisition of aspect requires a very subtle and complex interaction of these factors. In the next two sections we place these two issues in the context of current L2 research.

2.2 Role of the native language

In generative L2 research the role of the native language has been investigated extensively in the domain of syntax and more recently in the mapping from lexical semantics to argument structure (cf. review in White, 2003), but very little work has investigated the influence of L1 semantic properties and the domain of aspectual semantics is not an exception (cf. reviews in Li and Shirai, 2000; Slabakova, 2002).

It is likely that L2 researchers have paid less attention to semantics because in the theoretical literature, formal crosslinguistic analyses of semantic phenomena are not as prolific as they are in the domain of syntax. It is also the case that crosslinguistic differences in semantics have not until very recently been analyzed as parametric differences (Chierchia, 1998; Ionin, 2003), while parametric variation has been the focus of generative acquisition research over the last two decades. There are semantic phenomena that seem to be on par with crosslinguistic parametric variation in the domain of syntax¹. Under Chierchia's (1998) proposal for a semantic parameter, there is a constrained range of options available to languages for the semantic denotation of NPs: NPs can be either individuals or predicates. In languages such as Chinese and Japanese, only a subset of these NP types is available: all NPs are individuals. Languages such as English, on the other hand, allow the full range of options. There are syntactic reflexes of this semantic distinction: NPs that are individuals display mass noun syntax while NPs that are predicates display count noun syntax. This approach is similar to how parameters have been formulated in the domain of syntax: UG delimits the range of options available and particular languages make use of a subset of these options.

¹ I am grateful to Bill McClure for guidance and suggestions in the discussion of this topic.

However, it is unclear whether all semantic variation is amenable to analysis under a theory of parameters. The difference in the truth conditions for the progressive in English and Japanese is somewhat different from the type of variation discussed by Chierchia in that *all* languages have a way to convey the aspectual notions “event in progress” and “event completed.” Languages differ in the forms that are used to express these notions and the way in which these forms interact with verb stems.

The phenomenon under investigation in the present study arises in the interaction between the semantics of the verb phrase and the semantics of the progressive form. We will return to this issue in Chapter 2. Researchers such as Smith (1991) and Broman-Olsen (1997) have proposed that this type of interaction is constrained by Universal Grammar. In this case, the learner has at her disposal the range of options that natural languages exhibit with respect to progressive semantics.

Given the range of crosslinguistic differences in the encoding of aspect, the native language is a natural place to look in order to explain some of the difficulty for the L2 learner. It is thus somewhat surprising that there is very little research that has addressed this issue. L2 theories that predict transfer, such as the Full Transfer/Full Access hypothesis, assume that the L2 learner will initially hypothesize that the L2 should be analyzed via the L1 grammar (Schwartz and Sprouse, 1994, 1996). Therefore, the assumption is that when the native and target language are equivalent, acquisition will proceed with relative ease (positive transfer), but that when the native and target language grammar differ, acquisition will be impeded (negative transfer). In order to investigate this hypothesis we test the acquisition of a form that is basically equivalent in English and Japanese (simple past) and a form that denotes different interpretations in the two

languages depending on the verb phrase (progressive *be+ing* in English, *te-iru* in Japanese). Our results point to evidence that learners are influenced by native language properties in the domain of semantics.

However, there is also evidence that transfer cannot explain the full range of our findings. In our study, we also test the acquisition of the past progressive in English and the past form of *te-iru*, *te-ita* in Japanese. With certain verbs, the two languages denote equivalent interpretations but with other verbs the interpretation is different. Research on the acquisition of aspect by first language learners has shown that children have a great deal of difficulty with the semantics of imperfective forms such as the past progressive in English (Wagner, 2001). One of the crucial differences between L1 and L2 learners is that children learning their first language naturally do not have an L1 grammar in place already. Therefore the past progressive and *te-ita* make interesting test cases for the hypothesis of positive transfer in L2 acquisition. With respect to the contexts where the past progressive and *te-ita* denote equivalent interpretations, will the properties of the native language grammar facilitate acquisition or will L2 learners show evidence of difficulty similar to first language learners? Our results point to evidence that there may be important similarities between L1 and L2 acquisition. This study is unique in this respect. While most investigations of transfer focus on areas of *differences* between languages and look for the effects of negative transfer, we have also evaluated the presumed facilitative role of the L1 as well.

2.3 Learnability

The focus of this study extends beyond traditional studies of L1 influence in another way as well. We also investigate factors external to the learner's grammatical representation, such as learnability and input. Learnability is concerned with how language acquisition is in principle possible given the input available to the language learner (cf. Hornstein and Lightfoot, 1981; Pinker 1989, 1994; Wexler and Culicover, 1980). Researchers such as Gregg (1996), Carroll (1999a,b, 2001) and Klein and Martohardjono (1999) have argued that an understanding of *process* issues (Klein and Martohardjono) or *transition theory* (Carroll) is essential in understanding how the L2 grammar moves from one intermediate grammar representation to the next. Work in generative L2 acquisition has generally focused mainly on issues of *property* or grammar at the expense of an investigation of the factors that allow acquisition to proceed. Generative models of L2 language acquisition conceive of acquisition as the result of grammar restructuring. As is outlined in Carroll (2001), Klein and Martohardjono (1999) and White (2003), restructuring is driven by input or positive evidence.

The importance of input and learnability in second language acquisition has been highlighted in recent years in the research on L2 argument structure (Juffs, 1996; Inagaki, 2001, 2002; Mazurkewich, 1984; Sorace, 1993, 1995; White, 1987, 1991, see Juffs, 2000 and White, 2003 for a review). This research focuses on how learners acquire the mapping between the lexicon and syntax; the learners' goal in this domain is to figure out for a given verb or verb class what syntactic configurations are licensed and whether the configurations are marked morphologically.

For example, Inagaki (2001) investigates differences regarding motion verbs such as *walk* with goal prepositional phrases in English and Japanese. In English manner of motion verbs such as *walk* can combine with goal PP as in *John walked to school*. Japanese, on the other hand, disallows manner of motion verbs with goal PPs as is shown in (1). Motion verbs may only occur with goal PPs as in (2) if manner is expressed in the gerund *te* form and combined with a verb of directed motion such as *go* (*iku*).

- (1) *John-ga gakkō-ni aruita.
John-NOM school-at walked
John walked to school.
- (2) John-ga gakkō-ni aruite itta.
John-NOM school at walk-GERUND went
John went to school (by) walking.

Therefore, English allows a wider range of motion verbs to occur with goal PPs than Japanese does (English: manner of motion (*walk*) and directed motion (*go*); Japanese: directed motion only). In a bidirectional study Inagaki investigates the hypothesis that Japanese learners of English would learn the English pattern with relative ease because positive evidence would allow the learners to realize that manner of motion verbs can combine with goal PPs in English. On the other hand he predicted difficulty for the English learners of Japanese in rejecting sentences such as (1) because nothing in the input would tell the learners that this combination is ruled out.

Inagaki's results support the learnability hypothesis; he argues that positive evidence allowed the learners of English to learn that motion verbs are compatible with goal PPs while a lack of evidence led the learners of Japanese to accept sentences such as

(1) that are compatible with their L1 grammar. Inagaki's results present important empirical support for the notion that input crucially interacts with the learners' grammatical representation in the course of L2 development.

The present study, like Inagaki's, also conceives of the L2 learner's goal in two different ways: the learner must acquire representations that are not part of the L1 grammar but they must also preempt representations that are part of the L1 but not the L2. While it is likely that positive evidence can certainly play a facilitative role with respect to the first goal, it is less certain that positive evidence can also drive preemption. The results of our experimental study suggest that we cannot account for our results without an understanding of the role of input. We argue that a comprehensive model of the acquisition of aspect must integrate notions of both property and process.

2.4 Overview

In summary, we have proposed that we can investigate the acquisition of meaning by making use of the tools provided by formal semantic theory. In this framework, the learners' task in acquiring semantics is learning truth conditions or determining what the world must look like in order for a given sentence to be true. In our experimental study our predictions are rooted in a crosslinguistic semantic analysis of the progressive in English and Japanese (McClure, 1995). In the next chapter we will present the details of this analysis as well as give a general introduction to theories of aspect. In Chapter 3 we review research that has investigated the acquisition of aspect by first and second language learners. In Chapter 4 we present the methodology and results for our two

experimental studies. In Chapter 5 we discuss how our results can contribute to a more subtle and complex understanding of the L2 acquisition of aspect.

CHAPTER 2

THEORETICAL APPROACHES TO ASPECT

1. Introduction

This chapter is divided into two main sections. In the first section we review the relevant terminology with respect to aspect as well as present the main theoretical approaches to aspect in the literature. The goal is to clearly define the notions of VP aspect (also called lexical, inherent or situation aspect) and grammatical aspect (also called sentential or viewpoint aspect) as they have been represented in theoretical linguistic research.

In the second section we review the facts relevant to the crosslinguistic differences we investigate experimentally in this dissertation. While both Japanese and English have a grammatical form denoting the progressive, the two forms (*te-iru* and *be+ing*) interact differently with the semantics of the verb stem (Kindaichi, 1950; Ogihara, 1998; Shirai, 2000). Crucially, achievements under Japanese *te-iru* do not allow a progressive interpretation, but rather denote a resultative interpretation. We will review the formal semantic analysis of this crosslinguistic difference that we have adopted (McClure, 1995). McClure argues that the difference lies in the semantics of the aspectual operator PROG in English and Japanese. Given the framework we adopt, our main interest concerns the interaction between the aspectual semantics of the progressive and the semantics of the verb phrase.

2. Defining aspect

We must begin by first distinguishing aspect from tense. *Tense* places an event on a timeline, relevant to the time of speech (past, present, future) (Reichenbach, 1947). A sentence such as *Marcia read the book* refers to an event that occurred prior to speech time. *Aspect* refers to *how* an event unfolds in time, focusing on the internal properties of an event, such as whether an event is ongoing in time or whether an event has already been completed² (Comrie, 1976; Chung and Timberlake, 1985; Smith 1991, 1997). As we stated in Chapter 1, the aspectual interpretation of a sentence is compositional. Aspectual meaning is determined by various grammatical sources including: the lexical semantics of the verb phrase, verbal morphology such as progressive *be+ing*, and other predicates in the verb phrase such as the particle *up* in *eat the pizza up*. The focus of this dissertation is on the aspectual contribution of the verb phrase and verbal morphology and, in particular, on the interaction between the two.

VP aspect (also referred to as lexical aspect, inherent aspect and situation aspect) encodes the aspectual contribution of the verb phrase and usually refers to the Vendler/Dowty four-way classification³ (Vendler, 1967). This classification distinguishes stative verbs such as *know*, activities which are ongoing in time such as *run*, accomplishments which are also ongoing in time but entail an inherent endpoint such as *run a mile* and achievements which are said to happen instantaneously such as *die*. These

² Here we use “event” in its normal usage. We will outline how the notion of an event has been defined theoretically in later sections.

³ We will use the terms VP aspect and lexical aspect interchangeably throughout the dissertation.

terms will be explained in detail below. The present study focuses only on accomplishments and achievements.

It is clear from the examples with *run* that lexical aspect is not a property of verbs per se, but rather is determined compositionally by properties of the verb phrase as a whole (Verkuyl, 1972). While intransitive *run* can be classified as an activity, the verb phrases *run a race*, *run to the store*, *run around the block* would all be classified as accomplishments. The original Vendler classification that we will review below does not make this distinction.

Aspect encoded in verbal inflectional morphology, for example by perfective and imperfective grammatical morphemes, is referred to as sentential aspect (also called grammatical or viewpoint aspect). The sentence *Alex ran a mile*, which refers to a completed event, and the sentence *Alex was running a mile*, which refers to an event that was ongoing in the past, differ with respect to grammatical aspect.

We adopt an approach that assumes Universal Grammar provides the essential components of aspectual systems: the components of VP aspect and sentential aspect and their interaction in sentences (Smith, 1991, 1997). In current syntactic theory, aspect is sometimes encoded in the syntactic functional category AspP, a part of UG. We will return briefly in Section 2.4 to this literature.

Smith outlines an abstract temporal schema for the structure of events that is useful for conceptualizing aspectual interpretation. The schema is in (1):

(1) Abstract structure for events (Smith, 1991, p. 23)

.....I....F.....

This schema outlines the range of possibilities for aspectual meanings. The letters *I* and *F* indicate initial and final points; the dots represent stages or intervals. In principle the schema in (1) allows events to have preliminary, internal, and resultant stages. Aspectual meaning is constrained by the relationship between the initial and final points of an event. The lexical aspectual types are related to possible structures allowed by the structure in (1). For example, accomplishments may have internal stages while achievements do not. The focus of a particular marker of grammatical aspect will interact with the structure of the event. For example, grammatical perfective aspect modifies both the initial and final points of an event. Activities do not have a specified final point while accomplishments do. If perfective aspect modifies an activity such as *John ran*, the interpretation is that the event of running simply stopped. If perfective aspect modifies an accomplishment such as *John ran a mile*, the interpretation is that the event of *running a mile* was in fact completed.

According to Smith, the schema in (1) emphasizes that aspectual meanings, such as those denoted by grammatical aspect, depend on the structure of events or the VP. In this type of system, all languages have aspectual categories with the same basic properties. There is variation across languages at the levels of grammatical and VP aspect and also in the interaction between the two levels. For example, at the level of VP aspect, a certain verb may be a stative in one language and an activity in another. This is true of the verb that means ‘love’ in English and Japanese. *Love* is classified as a stative in English because it is somewhat awkward in the progressive, but in Japanese the verb *ai-suru* is always used in its progressive form.

At the level of grammatical aspect, languages may differ in how aspectual markers interact with the VP. For example, in English all non-stative verbs can appear in the progressive. However, in Chinese, the progressive marker *zai* is restricted to verb phrases that are durative. The interaction between VP and grammatical aspect is a central concern of the present study. In Smith's theory, the range of possible interactions between the two levels of aspect is constrained by Universal Grammar. Therefore, the language learner has at her disposal the range of options that natural languages exhibit.

In the next sections we will explain these concepts in more detail, outlining how these notions have been formalized in the literature.

2.1 VP aspect

Aristotle is generally credited with the initial observation that there are semantic properties that can differentiate some verbs from others. In the *Metaphysics* he observed that the meaning of some verbs implicates the idea of a *telos*, a result or endpoint, in a way that the meaning of other verbs does not. This is what has come to be known as the feature of *telicity* i.e. whether or not a verb phrase encodes an inherent endpoint. Philosophers such as Ryle (1949), Kenny (1963) and Vendler (1967) began to delve deeper into the particular semantic properties that delineate classes of verbs. For example, Ryle coined the term *achievements*, which he described as happening at a particular moment or instantaneously. *Activities*, on the other hand, were said to have the property of duration. Vendler (1967) categorizes verbs into the four classes based on certain logical entailments and their interaction with tense and with temporal adverbials.

Note that these classifications are based on the assumption that lexical aspect is a property of verbs and not verb phrases. For this reason, the aspectual class enterprise has been criticized in the literature.

The Vendler classification, which was developed further by Dowty (1979), will be discussed below. Examples of the verbs in each of the four classes are listed in (2) (modified version of table in Dowty, 1979, p. 54).

(2)

States	Activities	Accomplishments	Achievements
know	run	paint a picture	recognize (NP)
believe	walk	make a chair	find (NP)
have	swim	draw a circle	reach (NP)
love	push a cart	deliver a sermon	die

Vendler distinguishes the four classes on the basis of two main properties: First he groups state and achievements together because he observed that neither were generally compatible with the progressive; activities and accomplishments on the other hand are compatible⁴. This distinction makes reference to whether or not the verb classes specify internal stages. Rothstein (2004) refers to this property with the features [\pm stages]. Verkuyl (1993) refers to this property as [\pm process]. Activities and accomplishments have a process component while states and achievements do not. This is because states have no internal structure and achievements are said to occur instantaneously.

In addition, Vendler groups accomplishments and achievements together on the basis that both specify inherent endpoints, while states and activities do not. As we

⁴ However, it has since been acknowledged that there are achievements such as *die* that do occur in the progressive (Mittwoch, 1991; Smith, 1991). This is crucial for the present study since our focus is on accomplishments and achievements in the progressive. It is also important to note that statives can appear in the progressive as in *Martha is being a jerk*. When statives appear in the progressive, they often have denote events that seem particularly vivid or temporary (Dowty, 1979; Smith, 1991).

mentioned, this property is referred to as telicity and can be represented with the feature $[\pm \text{telic}]$. Krifka (1986, 1989) has since formalized the notion of telicity. We will return to this notion below.

In the literature the term *event* (or eventive VP) is sometimes used to refer to the telic verb classes (accomplishments and achievements) and at other times the term is used to refer to all non-statives (activities, accomplishments, achievements). *Eventuality* on the other hand, is used to refer both eventives and statives. Researchers who refer to eventualities, such as Bach (1986), distinguish states, processes (activities) and events (accomplishments and achievements).

The table in (3), taken from Rothstein (2004, p. 12) summarizes some of the main properties that delineate the Vendler verb classes.

(3)

	$[\pm \text{stages}]$	$[\pm \text{telic}]$
States	—	—
Activities	+	—
Accomplishments	+	+
Achievements	—	+

Vendler and Dowty use various tests involving the interaction of verb phrases with temporal adverbials and tense for classification. Some of these tests were originally described in the earlier work of Kenny and Ryle. We have already mentioned one test above: the progressive test. The progressive test distinguishes statives from non-statives. Non-statives are sometimes referred to as *dynamic*. The stative verb *know* is incompatible with the progressive while the activity in (4b) and the accomplishment in (4c) are compatible. The original classifications did not acknowledge that achievements such as

arrive in (4d) are also compatible. However, this is important for us to mention given the focus of the present study.

(4a) *Martha is knowing the solution. (stative)

(4b) Martha is playing. (activity)

(4c) Martha is building a sandcastle. (accomplishment)

(4d) Martha is arriving. (achievement)

A second test investigates the compatibility of a verb phrase with temporal adverbials. This test is often used to distinguish telic vs. non-telic verb phrases. The activity *play* in (5a-b) is compatible with the adverbial *for an hour* but is generally incompatible with the adverbial *in an hour*. The telic VPs in (5c-f) show the reverse pattern. The accomplishment *build a sandcastle* and the achievement *arrive* are generally compatible with *in an hour*⁵.

(5a) Martha played for an hour.

(5b) *Martha played in an hour.

(5c) ?Martha built a sandcastle for an hour.

(5d) Martha built a sandcastle in an hour.

⁵ The sentences we have starred are acceptable on certain readings. For example, (5b) is acceptable if there is an assumed direct object such as *the concerto* that has been previously specified in the discourse. The example in (5e) is acceptable on an iterative reading where the arriving recurred repeatedly over the course of an hour.

(5e) ?Martha arrived for an hour.

(5f) Martha arrived in an hour.

An additional test described in Kenny distinguishes activities from accomplishments on the basis of entailments from the progressive to the non-progressive. As is shown in (6a), the sentence *Martha was playing* entails that *Martha played*. This does not hold for the accomplishment in (6b). Although this was not noted in the literature at the time, this entailment also does not hold for achievements as in (6c).

(6a) Martha was playing.

Entails: Martha played.

(6b) Martha was building a sandcastle.

Does not entail: Martha built a sandcastle.

(6c) Martha was dying.

Does not entail: Martha died.

The tests we have presented so far show very similar behavior for accomplishments and achievements in English. One of the tests that is used to distinguish the two classes places the verb phrases in the complement of *finish*. While accomplishments as in (7a) fit quite naturally in this context, achievements as in (7b) are somewhat odd.

(7a) Martha finished building the sandcastle.

(7b) *Martha finished dying.

Ryle also pointed out that some achievements are quite odd with adverbs such as *attentively* or *carefully* while accomplishments again are compatible in these contexts. Both of these tests highlight the fact that achievements do not express a sense of duration while accomplishments do. They also highlight the fact that achievements are not generally compatible with expressions that convey agentivity. It is somewhat odd to say *Martha finished dying* or *Martha died carefully* because it is difficult to conceive of the event as being under her control.

It should be mentioned that these tests are not always reliable. For example, tests such as the progressive test ignore the fact that some statives can in fact appear in the progressive as in the sentence *John is loving the weather in Aruba*. However, if we acknowledge their limitations, the tests outlined above can still be useful for sorting out the behavior of various VPs and in addition, these tests are all commonly referred to in the literature.

This classification provides a useful heuristic for working on aspect, provided researchers acknowledge that it is a combination of the verb and its arguments that truly determines the aspectual properties. This point will become clear when we review the work of Verkuyl (1972, 1993). There is evidence that these aspectual classes appear in all languages, which is why it has been proposed that they are semantic universals. However, we could also propose that what is really universal is the array of features

([± stages], [± telic]) that languages make use of (Broman Olsen, 1997). Different combinations of these features result in different types of eventualities. It should also be pointed out that the specific verb phrases that fall under each class do vary to some degree from language to language. For example, *understand* is stative in English but its Japanese equivalent, *wakaru*, is an achievement and means something closer to ‘come to know’ (Ogihara, 1998, 1999). There are also verbs that demonstrate consistent behavior across languages. For example, the verb *arrive* tends to be an achievement across many languages⁶.

In the next section we will review two different analyses of lexical aspectual properties: Dowty (1972, 1979) and Verkuyl (1972, 1993). The semantic approach that we adopt incorporates the fundamental ideas of Dowty (1979).

2.2 Dowty (1972, 1979): an aspect calculus

Dowty (1972, 1979) proposes that we can explain the different aspectual properties of the four verb classes if we assume that there is a primitive stative predicate, which is a basic component of the four Vendler classes, that combines with a finite set of semantic operators. The notion of a stative as a basic component is derived from the observation that statives can be evaluated at just a single point in time while verbs in the other categories require reference to multiple points in time. For example, we need to check at only one point in time to evaluate if the statement *Martha knows French* is true

⁶ Work by Antonella Sorace (2000c) is relevant to this point. *Arrive* is also typically an unaccusative verb across languages. Sorace proposes a hierarchy where unaccusativity is a gradient notion. At the extreme of the hierarchy, core unaccusatives show consistent behavior within and across languages.

or false but we need to check at both the initial point and final point of the event to evaluate if the statement *Martha built a sandcastle* is true or false.

Statives correspond directly to these basic stative predicates in logical structure. Dowty also assumes a finite set of sentential operators and connectives: BECOME, CAUSE and DO. Statives do not make use of these operators. Verbs in the other categories, on the other hand, have logical structures that consist of one or more stative predicates embedded in a more complex structure with one or more of the aspectual operators: BECOME for achievements, DO for activities, and both DO and BECOME in combination with the connective CAUSE for accomplishments. The operator BECOME brings a particular state into existence. CAUSE brings about a change of state by one event causing another event to happen. DO does not play a central role in the theory and it is not given a definition in terms of interval semantics. DO simply represents the volitionality of the subject. It means that the subject is a sentient being, in control of the course of events. In the semantic approach that we adopt in Section 5, the operator DO is given an alternative definition.

In (8) we present a simplified representation for each of the four Vendler classes in Dowty's aspectual calculus (Dowty, 1979, p. 124). The π represents the primitive stative predicate while the $\alpha_1 \dots \alpha_n$ represents the arguments of the predicate.

(8a) Stative: $\pi_n (\alpha_1 \dots \alpha_n)$
 [jerk (Martha)]
Martha is a jerk.

(8b) Activities: DO (α_1 , [$\pi_n (\alpha_1 \dots \alpha_n)$])
 DO [Martha, run (Martha)]
Martha runs.

(8c) Achievements: BECOME [$\pi_n (\alpha_1 \dots \alpha_n)$]
 BECOME [dead (Martha)]
Martha died.

(8d) Accomplishments: [[DO (α_1 , [$\pi_n (\alpha_1 \dots \alpha_n)$])]] CAUSE [BECOME [$\pi_n (\alpha_1 \dots \alpha_n)$]]
 DO [Martha, break (Martha, window)] CAUSE [BECOME [broken (window)]]
Martha broke the window.

It is clear in (8b-d) how the non-stative aspectual classes are derived from the basic representation of the primitive stative predicate in (8a). This predicate forms the entire logical structure for the statives. Activities consist of the stative predicate as well as the operator DO to introduce the volitionality of the agent subject. Achievements consist of the stative predicate as well as the operator BECOME which indicates that a particular state comes into existence that was not present before (change of state). The representation for the accomplishments is the most complex in that the first part of the formula is identical to representation for the activities and the last part is identical to the representation for achievements. The two parts are connected by CAUSE. This representation matches the intuitive notion that an accomplishment denotes a change of state that was caused by a particular event or activity⁷. The account that we adopt builds upon these representations with certain modifications.

2.3 Verkuyl (1972, 1993, 1999): Aspect is compositional

Verkuyl (1972, 1993, 1999) is credited with the notion that aspectual interpretation is compositional and should be evaluated at the level of the verb phrase or

⁷ Dowty also uses the operator CAUSE in other structures, for example in non-agentive accomplishments such as *The door's opening causes the lamp to fall down*. In this case the structure does not implicate the DO operator, but rather two instances of the BECOME operator linked by CAUSE. In this study we make reference only to transitive agentive accomplishments of the kind represented in (8d).

sentence. The examples in (9) demonstrate that the verb alone cannot be responsible for aspectual interpretation.

(9a) Martha ate three sandwiches.

(9b) Martha ate sandwiches.

(9c) Martha wanted a sandwich.

If we apply the entailment test described above to (9a) and (9b) we see that (9a) would be classified as a Vendler/Dowty accomplishment and (9b) as a Vendler/Dowty activity.

Martha is eating three sandwiches does not entail that *Martha has eaten three sandwiches* but *Martha is eating sandwiches* does entail that *Martha has eaten*

sandwiches. Therefore the verb *eat* is at once an accomplishment and an activity; it is

clear that the classification cannot be at the verb level. (9a) and (9b) have different types

of direct objects: (9a) specifies a specific quantity while the bare plural in (9b) does not.

Therefore, it may be that the classification relies on the semantics of the direct object.

But the example in (9c) shows that there are verbs that can take a quantified direct object and yet still not be classified as accomplishments. If we try the test we applied to (9a-9b)

we see that (9c) is quite odd in the progressive. (9c) most likely corresponds to a stative

in the Vendler/Dowty system. Using examples such as these, Verkuyl showed that

aspectual interpretation is dependent on an interaction between the semantics of a verb

and its arguments, the internal argument in particular.

In Verkuyl's system the most important contrast is the telic-atelic distinction or in his terms, terminative-durative. The distinction arises by considering the composite

semantic properties of the verb and its arguments. In this system, verbs are classified as $[\pm \text{ADD-TO}]$ and nominals are classified as $[\pm \text{Specified Quantity of A (SQA)}]$. The verbal property $[\pm \text{ADD-TO}]$ essentially distinguishes statives from the other types of verbs. A verb such as *eat* would be $[\text{+ADD-TO}]$ while *want* is $[\text{-ADD-TO}]$. The SQA feature indicates whether the nominal expresses a specific quantity that can be counted or measured. Using the examples in (9), a sandwich and three sandwiches are $[\text{+SQA}]$ while sandwiches is $[\text{-SQA}]$. The nominal subject also receives an SQA value; in (9) Martha would be marked $[\text{+SQA}]$. Given these features, we can see how the system works in (10). In Verkuyl (1993, 1999), this system is framed formally within model-theoretic semantics.

(10a)	Martha	$[\text{VP ate}]$	three sandwiches]	<i>terminative/telic</i>
	$[\text{+SQA}]$	$[\text{T}_{\text{VP}} [\text{+ADD-TO}]]$	$[\text{+SQA}]$	$\Rightarrow [\text{+T}_S]$
(10b)	Martha	$[\text{VP ate}]$	sandwiches]	<i>durative</i>
	$[\text{+SQA}]$	$[\text{T}_{\text{VP}} [\text{+ADD-TO}]]$	$[\text{-SQA}]$	$\Rightarrow [\text{-T}_S]$
(10c)	Martha	$[\text{VP wanted}]$	a sandwich]	<i>durative</i>
	$[\text{+SQA}]$	$[\text{T}_{\text{VP}} [\text{-ADD-TO}]]$	$[\text{+SQA}]$	$\Rightarrow [\text{-T}_S]$

As is shown in (10a), a telic interpretation arises when a verb that is $[\text{+ADD-TO}]$ combines with a nominal that is $[\text{+SQA}]$. This is indicated by the positive value of $[\text{+T}_S]$. The S indicates that this is the interpretation relevant to the sentential level.

In Verkuyl's system, the features of the verb first combine with the features of the internal argument to produce a value, which is then computed with the features of the external argument. According to Verkuyl, the terminative or telic $[\text{+T}_S]$ is the marked form and can only be derived in one way: by the combination of all positive values.

These assumptions arise from what he calls the PLUS-principle. The verb and its arguments must all be marked with plus-features in order to yield a composite [+T_S].

The composite [−T_S] on the other hand can be derived in several different ways, as is shown in (10b) and (10c). If the internal argument has a negative value as in (10b) or the verb is non-eventive as in (10c), the formula will yield a negative value for telicity. The resulting interpretation will be atelic or durative. As is shown in (10c), the presence of a stative verb will necessarily bring about a durative interpretation.

Several issues have been raised with respect to this system⁸. First, it is clear that the four verb classes that we outlined above are no longer relevant. Verkuyl instead uses the tripartite distinction that includes *states* as in (10c), *processes* as in (10b) and *events* as in (10a). The verb phrases that we referred to as accomplishments and achievements are grouped together under telic events. However, this distinction is important for the present study where the main point of focus is the fact that the Japanese aspectual marker *te-iru* denotes distinct interpretations depending on the semantics of the verb phrase with which it combines. If the verb phrase is an activity or accomplishment, the resulting interpretation is progressive but if the verb phrase is an achievement, the resulting interpretation is resultative. This phenomenon, which will be outlined in detail in Section 4 of this chapter, provides evidence that the distinction between the two classes is important.

⁸ It is often pointed out that Verkuyl's system does not easily account for processes such as *push a cart* and *carry the luggage*. Under his proposal the verbs *push* and *carry* are non-stative and would have the feature [+ADD-TO]. In addition, *a cart* and *the luggage* should be marked [+SQA]. Given the PLUS-principle, the end composite feature of the VP should be [+T_{VP}]. However, these verb phrases actually denote processes. To account for this problem, Verkuyl is forced to stipulate that in *push a cart*, *push* has actually combined with a [−SQA] direct object and should be interpreted as *give pushes to*. However, this solution is unsatisfactory because if a prepositional phrase such as *to the store* is present, the desired result would be [+T_{VP}]. The VP *push a cart to the store* should denote a telic interpretation. However, the PLUS principle states that the [+T_{VP/S}] feature can be derived only by the combination of all positive values.

We may also ask what other types of elements can be assigned the features outlined above, especially since Verkuyl has stated that the appropriate level of interpretation is the sentence. In (10) we have illustrated only very simple transitive sentences. Verkuyl proposes that other syntactic components, such as the prepositional phrase *to the store* in *John pushed the cart to the store*, may also be assigned these features. In this example, the prepositional phrase is responsible for the resulting telic interpretation. Verkuyl (1999) explicitly states that aspectual operators such as the progressive and tense operators such as the past “escape from the range of the Plus-principle” (106). Therefore, these operators do not have the features outlined in this section. In fact, much of the literature that focuses on the notion of telicity does not pay attention to the interaction with aspectual operators. This is the level to which we turn to in Section 3.

2.4 Defining telicity

Verkuyl’s proposal that telicity emerges from the interaction of an eventive verb with nominal arguments of a specified quantity has greatly influenced subsequent treatments of aspect⁹. The bulk of this literature is not directly relevant to the present study because much of the research focuses on accounting for shifts in telicity between activity and accomplishment verb phrases. While the verb classes we focus on are in fact telic verb classes, the computation of telicity *per se* is not our main interest. Our focus is on the semantics of the aspectual operator PROG and how it interacts with accomplishments and achievements. We will briefly mention these accounts in order to

⁹ Rosen (1999) presents a comprehensive review of this literature.

illustrate how telicity is derived under formal proposals and because the notion of telicity will become important in our Discussion in Chapter 5.

In the semantics literature, the notion of compositionality is most evident in the seminal work of Dowty (1979, 1991) and Krifka (1989, 1992). These researchers propose that the notion of an Incremental Theme argument is important to the computation of telicity; an Incremental Theme argument measures out (the path of) the event (see also Tenny, 1987, 1994). For example, if we take an accomplishment verb phrase such as *mow the lawn*, it is argued that the progress of the event of mowing the lawn can be measured by an inspection of the lawn. In this respect, each part of the lawn corresponds to a different part of the event of *mowing the lawn*. Krifka formally defines this relationship as a homomorphism between the event and the Incremental Theme argument.

A similar idea was proposed by Tenny (1987, 1994), an important work that triggered a large body of research of the syntax of aspect (Borer, 1994, 2005; Benua and Borer, 1996; Kratzer, 1996; McClure, 1994; Ramchand, 1997; Ritter and Rosen, 1996, 1998; Slabakova, 1997; Tenny, 1987, 1994; Travis, 1991, 1994, 2000; Van Hout, 1996 among others). Tenny's work also highlights the importance of the direct object of the verb in the computation of the aspectual structure of an event. Recent work in generative syntax proposes that telicity is computed within functional projections dedicated to aspect. These accounts vary in the extent to which properties of the verb are considered relevant to aspectual computation. Approaches such as Borer (1994, 2005) argue for an extreme position in which the verb plays a very small role. On Borer's approach, the verb has only a core meaning that serves as a modifier for the structural meaning imposed

by the syntax. Others, such as Travis (1991), argue that the semantic representations that we outlined for each of the lexical aspectual classes in Dowty's work are mapped directly into the syntax. In this way, a telic verb phrase is defined by a particular syntactic configuration. The representation of aspect in syntax remains a somewhat controversial issue, even at the level of the verb phrase. Filip (2005) argues against such an approach in favor of a semantic/pragmatic account. As this is one of the fastest growing areas of research, future research will surely shed light on these very interesting questions.

3. Grammatical aspect

Grammatical aspect is usually encoded by inflectional verbal morphology. Most languages encode the distinction between the *perfective* and *imperfective*. This distinction was originally referred to as a distinction in *viewpoint* because it was proposed that perfective aspect views an event as whole, disregarding its internal structure, while imperfective aspect views an event from within, disregarding both the beginning and endpoint on an event (Comrie, 1976; Smith, 1991). *Sean ate a carrot cake* encodes perfective aspect while *Sean was eating a carrot cake* encodes imperfective aspect.

Smith represents this distinction using the temporal schema we presented earlier in (1). (11a) represents the range of perfective aspect while (11b) represents imperfective aspect.

(11a) I F perfective
 ///////////////

(11b) I.....F imperfective
 ////

Recall that I and F represent the initial and final stages of an event. This is an abstract representation of the possible structures an event can take at the level of VP aspect. The slashes below the I and F refer to the part of the event that the grammatical aspect focuses on. Perspective aspect focuses on the entire event while imperfective aspect does not make reference to either the Initial or Final point.

Grammatical aspect interacts with VP aspect. Smith argues that the English past tense can also encode perfective aspect. However, the interpretation of a VP under perfective aspect is different depending on the semantics of the VP. In (12a) and (12b) the interpretation is that the events of loving and running have simply *terminated* while in (12c) and (12d), the interpretation is that the events of making a cake and arriving have been *completed*.

(12a) Zachary loved Phoebe. (stative)

(12a) Zachary ran. (activity)

(12b) Zachary made a cake. (accomplishment)

(12c) Zachary arrived. (achievement)

These examples show that the telic verb phrases (accomplishments and achievements) interact differently with perfective aspect. Note that the notion of telicity is relevant only at the level of the VP, not at the level of grammatical aspect. At the level of grammatical aspect, the appropriate distinction is that of *boundedness*: an event is bounded if it has

come to a temporal boundary, irrespective of whether the event has an inherent endpoint or not (Depraetere, 1995). The examples in (12) are all examples of bounded events. Perfective aspect denotes bounded events while imperfective aspect denotes unbounded events.

Grammatical aspect interacts differently with VP aspect in different languages. However, this is a point of crosslinguistic variation that has not been investigated extensively. According to Smith (1991), French is a language for which all the available markers of grammatical aspect can combine with all of the verb classes. In other languages, this range is more restricted. We have already seen one example of this restriction. It was pointed out above that some statives in English are generally incompatible with the progressive, as in *?Zachary is loving Phoebe*. This is also true of the progressive in Spanish. In Chinese, the progressive marker *zai* is incompatible with achievements.

The main point of focus of the study to be reported in Chapter 4 is an interaction between the forms that marks the progressive in English and Japanese and the inherent semantics of the VP. The approach that we adopt argues that the interaction between the progressive and the VP is constrained by the truth conditions of the progressive. We will review those facts in detail in Section 4. First we will outline how grammatical aspect has been analyzed formally in syntax and semantics.

3.1 Analyzing grammatical aspect

There has been considerably less formal crosslinguistic research in the domain of grammatical aspect. Rosen (1999) points out that very few researchers who have worked extensively on aspect at the level of the verb phrase have considered the important interaction between the VP and aspectual morphology. There are researchers who propose that grammatical aspect and the interaction of grammatical aspect and VP aspect should be represented entirely in the syntax. Giorgi and Pianesi (1997) as well as Demirdache and Uribe-Etxebarria (1997, 2000) argue for this approach. In Giorgi and Pianesi's work, various aspectual differences across languages, particularly between Germanic and Romance, can be explained as differences in the feature composition of an aspectual phrase (AspP).

Other researchers maintain that grammatical aspect is more properly treated as a semantic phenomenon and thus it is the level of the sentence that is relevant for analysis. Approaches that analyze aspectual forms such as the progressive as sentential operators necessarily fall into this category (De Swart, 1998; Dowty, 1979; McClure, 1995; Smith, 1991). This is the approach we adopt here because it is the approach that best allows us to formally account for the semantic crosslinguistic difference we investigate¹⁰. Work within this framework, such as De Swart (1998), is especially relevant for the present

¹⁰ This is not to deny that there are syntactic functional projections relevant to aspect. At the level of VP aspect, there is strong evidence that the syntax is implicated (e.g. Borer, 1994; Travis, 1991). It is also not our goal to present arguments against approaches that have found cause to represent grammatical aspect in the syntax. However, because our focus is on the progressive, and the progressive has been traditionally analyzed as a sentential operator, we adopt a semantic approach. This is a standard assumption, even by researchers who work on the syntax of aspect (Borer, 2005, 241). Furthermore, our main interest is in explaining formally the crosslinguistic variation observed in the progressive across languages. To our knowledge, this type of crosslinguistic difference has not been analyzed and perhaps should not be as a point of *syntactic* variation.

study as it is especially concerned with the meaning effects that particular combinations of verbal classes and grammatical forms give rise to. De Swart outlines her general framework using the syntactic structure in (13). Smith (1991) and Olsen (1997) outline similar systems.

(13) [Tense [Aspect* [eventuality description]]]

In (13) the lowest layer refers to the eventuality description, which represents the level at which lexical aspectual class is determined, or the VP. Aspectual class is determined compositionally by the verb and its arguments (Verkuyl, 1972, 1993). The second layer corresponds to the level at which aspectual operators act on the eventuality description. Aspectual operators, such as the Progressive (PROG), take the eventuality description as input and produce as output an eventuality description, which may be the same or may be potentially a different type. The Kleene star at this level indicates that there may be zero, one or more operations at this level. At the outermost layer, the Tense operator maps the event onto a time axis with respect to speech time. For example, the PAST operator would map an event to a point on a timeline prior to the time of speech.

The work we reviewed in Section 2 was concerned primarily with the level that De Swart refers to as the eventuality description or VP. Now we are moving up to the sentential level to consider the aspectual properties of grammatical morphology, represented by aspectual operators. The focus of our study is at this level. Differences between English and Japanese are analyzed as the result of differences in the aspectual

operator PROG in the two languages¹¹. We will move to the details of this analysis in Section 5.

Previous work in semantics on operators such as PROG has not been concerned with crosslinguistic analysis nor has this work necessarily focused on the interaction with lexical or VP aspect. Much of the semantic literature on the progressive in English has focused on presenting solutions to what is known as the Imperfective Paradox (Dowty, 1979; Landman, 1992, Parsons, 1990). The Imperfective Paradox concerns data we have already presented above: the fact that the progressive sentence in (14) does not entail the perfective sentence in (15).

(14) Mary was building a house.

(15) Mary built a house.

Note that it is *possible* that the house was in fact built but (14) does not *entail* that it was. It is possible that a tornado came through town and demolished the house that Mary was building. The puzzle centers around the fact that a telic VP, which is defined by a definite endpoint, can be used to describe an event in which that endpoint may never be reached. In other words, why is it that under the progressive, completion entailments can be suspended?

There are several approaches to this problem. Parsons (1990) proposes that the denotation of a telic VP such as *build a house* has the representation for both a complete event where the house was built and an incomplete event where it was not. For Dowty

¹¹ DeSwart (1998) and also Smith (1991) formalize the semantics of the aspectual operators in the framework of Discourse Representation Theory. Since the analysis we adopt does not use this formalism, we will not review the details of DR theory.

(1979) and Landman (1992) on the other hand, the solution does not lie in the denotation of the verb phrase. Dowty appeals to the notion of *inertia worlds*. In an inertia world, all that is supposed to happen, actually does happen. Therefore, in the event of a tornado in the real world, the inertia world would bring us to the world where there is no unnatural interruption and Mary is able to complete the building of her house. However, it is difficult to understand why the occurrence of a tornado should be viewed as an unnatural interruption. Landman's solution appeals to the notion of a continuation branch.

Landman's semantics allows us to isolate the particular event of building a house and follow that event on a continuation branch even after the point of interruption (the tornado). The continuation branch allows us to jump to the next closest world where the event was not interrupted to see if it reached completion. If we find the event reached completion in an intensional world, then a progressive such as (14) is also true in the real world. We will return to Landman's (1992) formal account in the next section.

In Section 4 we review the specific crosslinguistic facts that we are interested in and then summarize some of the previous literature on this topic. We present the semantic analysis of McClure (1993, 1995) in Section 5. McClure's approach is unique in that it builds on previous work on operators such as PROG but also develops a crosslinguistic analysis of the progressive in English and Japanese.

4. *Be+ing* and *te-iru*: facts and background

4.1 The interaction of VP aspect and grammatical aspect in English and Japanese

Shirai (2000) presents a comprehensive comparison of the interaction between VP aspect and grammatical aspect in English and Japanese. The examples in Table 2.1 summarize the facts for *be+ing* and the examples in Table 2.2 summarize the facts for *te-iru*. The tables presented here are modified versions of the paradigms presented in Shirai (2000) and Shirai and Nishi (2005).

Table 2.1 Interaction of VP aspect and English *be+ing*

Aspectual class	Interpretation	Examples
Activities	action-in-progress	(16) John is singing.
Accomplishments	action-in-progress	(17) John is making a chair.
Statives	incompatible	(18) ?I am knowing him.
	temporary/vivid	(19) Karen living in New York.
		(20) He's being a jerk.
Achievements	<i>process leading up to endpoint</i>	(21) The plane is arriving.
		(22) John is reaching the summit.
	incompatible	(23) ?Karen is finding the book.

Table 2.2 Interaction of VP aspect and Japanese *te-iru*

Aspectual class	Interpretation	Examples
Activities	action-in-progress	(24) <i>Ken-ga utat-te i-ru</i>
		Ken-NOM sing-ASP-NPST
		Ken is singing.
Accomplishments	action-in-progress	(25) <i>Ken-wa isu-o tukut-te i-ru</i>
		Ken-TOP chair-ACC make-ASP-NPST
		Ken is making a chair.
Statives	incompatible	(26) <i>Okane-ga it-te i-ru.</i>
		Money-NOM be necessary-ASP-NPST
		Money is needed.
	temporary/vivid	(27) <i>Huzisan-ga mie-te-iru.</i>
		Mt. Fuji-NOM be visible-ASP-NPST
		We can see Mt. Fuji (at this moment).
Achievements	<i>resultative</i>	(28) <i>Hikōki-ga kūkō -ni tui-te i-ru.</i>
		plane-NOM airport at arrive ASP-NPST
		The plane (arrived and) is at the airport.

The tables above show that the interpretation of *be+ing* and *te-iru* is equivalent with respect to activities and accomplishments. In these cases, both forms denote action-in-progress interpretations. As we discussed earlier, the progressive is usually compatible with events that have a process or stage component. These examples also show that similar verb phrases fall into these categories in both English and Japanese. Furthermore, many of the same classification tests that were outlined for English can successfully classify predicates in Japanese. For example, just as in English, the Japanese activity example in (24) entails the perfective *Ken sang* but the accomplishment example in (25) does not entail the perfective.

Further comparison of the two tables shows that statives are generally incompatible with both *be+ing* and *te-iru*. This is shown in examples (18) and (26).

Some researchers argue that this is because statives do not have a process component. However, both *be+ing* and *te-iru* are compatible with certain statives that connote notions of vividness or transience, as is shown in (19-20) and (27). In these instances, the statives are actually being used as activities (Smith, 1991). The class of statives in Japanese is considerably smaller than the class in English if compatibility with *te-iru* is used as a test for classification. McClure (1995) argues that there are only three stative verbs in Japanese (*iru* animate verb of existence, *aru* inanimate verb of existence, and *iru* need or want). Many verbs that are classified as statives in English are classified as activities ('ai-suru' *love*) or achievements ('wakaru' *understand*) in Japanese.

The crucial difference between English and Japanese lies in the interaction with achievements, shown in (21) and (28). The Japanese equivalent of *is arriving* is *has arrived*. Achievements under the progressive in English focus on the process leading up to the endpoint of an event. This is because achievements do not have a process component; they express only a change of state. Achievements under Japanese *te-iru* on the other hand must focus on the endpoint. The English example in (21) refers to the point just before the plane's arrival¹². The Japanese example in (28) highlights the fact that the plane is already there. Importantly, (28) does not allow the reading *the plane is arriving at the airport*. This interpretation is often referred to as *resultative* because achievements under *te-iru* focus on the state that results from a particular change of state. This means that the resulting state still obtains in the present.

The focus of the study we report in Chapter 4 is the distinction between (21) and (28) and the similarity between (17) and (25). Before we move to the literature that has

¹² Achievements under the English progressive have been the point of extensive discussion in the literature, most recently in Rothstein (2004). She points out several interesting differences between progressive accomplishments and progressive achievements.

reading *Ken has made a chair* (sometime in the past) or *Ken has had the experience of making a chair*.

- (33) *Ken-wa isu-o tukut-te i-ru*
 ‘Ken is making a chair.’
 ‘Ken has made a chair.’

In summary, the crucial distinction between English *be+ing* and Japanese *te-iru* is that *te-iru* denotes resultative and perfect interpretations in addition to the action-in-progress interpretation while *be+ing* does not. With achievements, *te-iru* must focus on the endpoint of the event while *be+ing* focuses on the process leading up to the endpoint (the point just before *dying*, *arriving*). With other aspectual classes, the behavior of the two forms is actually quite similar.

4.2 Previous discussions of *te-iru*

Kindaichi (1950) was the first Japanese linguist to observe that the Japanese form *te-iru* allows two distinct interpretations, progressive and resultative. Independently of Vendler, Kindaichi developed his own aspectual classification for Japanese verbs, based solely on the interpretation of a given verb under *te-iru*. For Kindaichi, duration was the key to understanding the behavior of *te-iru*. He proposed that verbs that expressed duration or were ‘continuative’ denoted progressive interpretations while verbs that expressed ‘instantaneous’ events denoted a resultative interpretation under *te-iru*¹⁴.

¹⁴ Kindaichi also proposed 2 other verb classes, verbs that do not allow *te-iru* and verbs that require *te-iru*. The verbs that do not allow *te-iru* are generally compatible with the class of statives. The verbs that require *te-iru* (such as *shiru* (come to know)) have been reclassified as achievements (Jacobsen, 1992; McClure, 1993; Shirai, 2000). Kindaichi did not propose a class that corresponds to accomplishments.

Following Kindaichi, these facts have been discussed extensively in the literature on Japanese aspect (Kindaichi, 1950; Fujii, 1966; Jacobsen, 1992; McClure, 1993, 1995; Ogihara, 1998, 1999; Okuda, 1978; Shirai, 1998, 2000; Uesaka, 1996, Yoshikawa, 1973, among others). Okuda (1978) strongly criticized Kindaichi's proposal and argued that the duration approach does not account for the fact that a verb such as 'open' in Japanese allows both progressive and resultative interpretations under *te-iru* depending on the syntactic frame. If the Japanese equivalent of 'open' appears in a transitive frame with *te-iru*, the VP denotes an action-in-progress interpretation but if 'open' appears in an intransitive frame with *te-iru*, the VP denotes a resultative interpretation. Therefore, it cannot be that the duration of a particular event in the real world is the sole determinant of the interpretation of *te-iru*. Jacobsen (1992) presents an extensive review of the original proposals. Only recently have researchers attempted explanatory proposals that look crosslinguistically and analyze the semantics of *te-iru* with respect to other progressive forms across languages (McClure, 1993, 1995; Ogihara, 1998; Shirai, 1998)¹⁵.

Shirai (1998) presents an interesting proposal that compares markers of imperfective aspect in Japanese, Chinese, Korean, and English and argues that differences in the semantics of the various forms are due to different patterns and degrees of grammaticization. He bases his proposal on a functional theory of grammaticization put forth by Bybee, Perkins and Pagliuca (1994).

In the following sections, we will review accounts put forth in the framework of formal semantics.

¹⁵ Uesaka (1996) presents a formal syntactic account. However, the analysis is not crosslinguistic.

4.2.1 Ogihara (1998)

In the formal semantics literature there are two main proposals: Ogihara (1998) and McClure (1995). We will summarize the account of Ogihara (1998, 1999) before moving to McClure's analysis, the approach we adopt in the present study, in Section 5. Ogihara proposes that the semantic representation of achievements is different in English and Japanese. For English, he adopts Landman's (1992) account of the progressive.

Under Landman's theory, the progressive is an operator that interacts with the VP, on par with tense operators such as the PAST¹⁶. Landman's theory is also event based, which means he assumes, along the lines of Parsons (1990), that verbs are predicates of eventualities. This means that all eventive verbs will take an event argument. In (34) the progressive is represented as an operator PROG. The event denoted by the VP is represented in two segments, e and e' . The event e represents a stage of e' if it develops into e' : e' is a continuation of e . We will show how this works with the example. Based on this formula, *Mary is building a house* is rendered as in (35). The PROG operator is defined as in (36).

(34) BE ING (VP) $\rightarrow \lambda e. \text{PROG}(e, \lambda e'. \text{VP}(e') \wedge \text{Ag}(e')=x$.

(35) $\exists e[\text{PROG}(e, \lambda e'. \text{BUILD A HOUSE}(e') \wedge \text{Ag}(e')= \text{Mary}]$

(36) $\|\text{PROG}(e, P_e)\|_{w, g} = 1$ iff $\exists e' \exists w' [\langle e', w' \rangle \in \text{CON}(g(e), w) \ \& \ \|P_e\|_{w', g}(e') = 1]$
 where $\text{CON}(g(e), w)$ is the continuation branch of $g(e)$ in w .

¹⁶ My summary of Landman (1992) is based on the helpful summary found in Rothstein (2004). I use her examples.

The statement *Mary is building a house* is true if we can find in w an event e that is a stage of an event e' that is in the denotation of *build a house*. We first look in w to see if we find an event e that has the characteristics of house building. We then follow that event e in w to see if it develops into an event e' of the right kind. If the e develops into e' in w and the event of building a house was completed, the sentence is true. But if the event is interrupted in w (perhaps by a tornado) and e does not develop into e' , then we can jump to the next closest world w' in which the event was not interrupted. This is how the notion of the continuation branch that we described in Section 3.1 works. The continuation branch allows us to look in the next world w' where the event was not interrupted, in order to see if the event e has developed into the event e' of the right kind. *Mary is building a house* is true in the real world as long as we can find an event e' where the house building was completed; if the completed e' does not develop in the real world, then we may find it along the continuation branch in an intensional world.

On this view, the semantic representation for an eventive VP simply combines with the semantics of the progressive operator. Though the example we gave used an accomplishment VP, the same process can derive the form *X is VP-ing* for other verb types as well. The examples in (37) and (38), taken from McClure (2004), illustrate in simplified form how the semantic representation of the VP and PROG combine given activity and achievement VPs¹⁷.

(37a) $\lambda x \lambda e [\text{swim}(e) \wedge \dots]$ (37b) $\|\text{PROG}(e, \text{swim}_e)\|_{w, g} = 1$ iff....

(38b) $\lambda x \lambda e [\text{arrive}(e) \wedge \dots]$ (38b) $\|\text{PROG}(e, \text{arrive}_e)\|_{w, g} = 1$ iff...

¹⁷ See Rothstein (2004) for a revised analysis of progressive achievements using Landman's semantics.

Ogihara assumes that a similar process is at work for Japanese *te-iru*. He outlines the semantics for *te-iru* in (39).

(39) For any tenseless sentence ϕ , $\|\phi\text{-}te\text{ }iru\|$ is true at t iff there is an interval t' that completely contains t (and t is neither an initial subinterval nor a final subinterval of t') such that ϕ is true at t' .
(Ogihara, 1998)

The definition in (39) indicates that the semantics for *te-iru* is analogous to the semantics for English *be+ing*. The evaluation of a statement $\phi\text{-}te\text{ }iru$ takes place at an interval t' , which contains the interval t , similar to Landman's account where evaluation takes place at e' .

Ogihara then derives the multiple interpretations for *te-iru* by positing different lexical semantic representations for different verb types. Activity and accomplishment VPs in Japanese have semantic representations equivalent to the representations for their equivalents in English. For example, the representations for *oyogu* and *swim* are equivalent, as in (40).

(40) $\|\textit{oyogu}\|_{w,g} = \lambda x \lambda e [\textit{swim}(e) \wedge \dots]$

However, he proposes that the translational equivalents of achievements in Japanese have different lexical semantic representations from their English counterparts¹⁸. The representation for *tuku*, the Japanese equivalent for *arrive* is given in (41).

¹⁸ See also Kageyama (1996) for a similar proposal.

- (41) $\|tuku\|_{w,g} = \lambda x \lambda e [\text{STOP-HERE-AFTER-ARRIVING}(e) \vee$
 $\exists e_1 \exists e_2 [\text{STOP-HERE-AFTER-ARRIVING}(e_1) \& \text{BE-HERE-AFTER-ARRIVING}(e_2)$
 $\& e_2 \supset \supset e_1 \& e_1 \oplus e_2]] \& \text{TH}(e) = x]$

The semantic representation for *te-iru* interacts with the semantic representation for the achievement VP to bring about the resultative interpretation. The resultative interpretation is not available with English *be+ing* because achievements in English do not have the representation in (41).

While this analysis accounts for the descriptive facts in Japanese, we are left with the unsatisfying conclusion that the translational equivalents of achievements in English and Japanese have different lexical semantics.

There is reason to believe that the difference between English and Japanese lies not in the semantics of achievements but rather in the semantics of the forms, *be+ing* and *te-iru*¹⁹. Different dialects of Japanese use separate morphological forms in order to express the two meanings, progressive and resultative. In the Uwajima dialect, discussed in Shirai (1998), the morpheme *yo* expresses the progressive semantics while the morpheme *to* combines with VPs in order to express the resultative interpretation. Interestingly, *yo* is able to combine with achievements to derive a progressive interpretation, on par with the English progressive. Shirai discusses the example in (42), taken from Kudo (1995).

- (42) *Kinoo niwa-de hebi-ga sini-yo-tta*
 yesterday yard-LOC snake-NOM die-ASP PAST
 Yesterday, a snake was dying in the yard.

¹⁹ Thanks to Mark Volpe for this suggestion.

The example in (42) provides evidence that achievements, in some dialects of Japanese, can receive an interpretation on par with the English progressive. The verb *shinu*, which means *to die*, is used in both standard Japanese and the Uwajima dialect. It is unlikely then that it is the *verb* that is responsible for the progressive interpretation in the Uwajima dialect and the resultative interpretation in standard Japanese. It is likely that the progressive interpretation is derived from the semantics of the morpheme *yo* in the Uwajima dialect. It appears then that it is the semantics of the aspectual form that is responsible for the multiple interpretations of *te-iru* and the distinct interpretations of achievements under the progressive in English and Japanese. The account we review in the next section formalizes this notion.

5. McClure (1993, 1995)

5.1 PROG in English and Japanese

Under McClure's account, achievements are semantically equivalent in English and Japanese. His proposal shifts the focus to the semantics of the grammatical form as the locus of crosslinguistic differences. This proposal also expands upon the work of traditional analyses such as Landman (1992), reviewed above, that treat the progressive as a semantic operator that interacts with verb stem to which it attaches. McClure (1995) provides the following definitions for the progressive operator in English (43) and Japanese (44):

- (43) *be-ing*
 $\text{PROG}(P) = 1$ during the interval i iff
- [1] $\exists \varepsilon$ s.t. $\varepsilon \in P$ & $\tau(\varepsilon) < i$ &
 - [2] $\neg[\forall \varepsilon^* \text{ s.t. } \varepsilon^* \in P, \tau(\varepsilon^*) \leq \tau(\varepsilon)]$ &
 - [3] $\forall \varepsilon' [[\forall \varepsilon^* \text{ s.t. } \varepsilon^* \in P, \tau(\varepsilon^*) \leq \tau(\varepsilon')] \rightarrow \tau(\varepsilon') > i]$
- (44) *-te iru*
 $\text{PROG}(P) = 1$ during the interval i iff
- [1] $\exists \varepsilon$ s.t. $\varepsilon \in P$ & $\tau(\varepsilon) < i$ &
 - [2] $\neg[\forall \varepsilon^* \text{ s.t. } \varepsilon^* \in P, \tau(\varepsilon^*) \leq \tau(\varepsilon)]$ &
 - [3] $\forall \varepsilon' [[\forall \varepsilon^* \text{ s.t. } \varepsilon^* \in P, \tau(\varepsilon^*) \leq \tau(\varepsilon')] \rightarrow \neg[\tau(\varepsilon') > i]]$

The semantics for English in (43) reads as follows (McClure, 1995):

Be+ing is true during the interval i if:

- [1] there is a segment ε of a predicate P which is manifested before i , the interval of evaluation;
- [2] it is not the case that this segment is later than all other segments of the predicate (i.e. ε is not a final segment) and
- [3] any segment which is a final segment is manifested after the interval of evaluation.

The progressive is true for a particular interval of time if during that interval the eventuality has begun but is not yet complete.

The notion of a segment will be defined in the next section. In summary, (43) indicates that in order for a statement *X is VP-ing* to be true, the event denoted by the VP must have begun but it may not be over. The semantics for Japanese *te-iru* is identical in

lines [1] and [2]. However, in line [3] of (44) there is one important difference. Japanese *te-iru* requires at least one event entailed by the predicate to be manifested completely. This is the crucial difference in the two forms²⁰.

The definitions for PROG make reference to segments. Therefore it is necessary that we show how McClure recasts the semantics for the various aspectual classes in terms of segments before we can show how the two levels interact.

5.2 Aspectual structure

McClure's representations for the aspectual classes maintain the basic assumption of Dowty (1979) that stative verbs have the simplest and most basic representation. Furthermore, the aspectual structures are defined to reflect the basic notions of Dowty's aspectual operators BECOME and DO. The aspectual structures are recast into collections of states as the simplified representations in (45) show. We will review each representation in turn.

(45) Aspectual structures

states =	s, a situation
achievements =	<S ₁ S ₂ >
activities =	{ <S ₁ S ₂ > <S ₂ S ₃ > <S ₃ S ₄ > ... <S _n S _{n+1} > }
	where n is, in general, infinite
accomplishments =	{ <S ₁ S ₂ > <S ₂ S ₃ > <S ₃ S ₄ > ... <S _n S _{n+1} > }
	where n is finite

²⁰ This definition reflects a slightly revised interpretation of the semantics in (44) from McClure (2004).

In (45) states are represented by a single situation and are therefore the most basic. Single situations have no internal structure and do not entail any change that can represent an endpoint.

Achievements are defined by a pair of states: the state before and the state after a point of change. This structure reflects the intuitions of Dowty's BECOME operator. The change of state is defined by the two situations.

The DO operator that Dowty incorporates in the representation for activities and accomplishments is recast in McClure's semantics as sets of pairs of states, or sets of BECOMEings. This notion reflects the intuition that activities or processes such as *run* are composed of infinitesimally small sets of achievements (for example, steps). A process is then a collection of states united under one agent.

The difference between activities and accomplishments lies in the presence of a well-defined final segment. Before we elaborate on this difference, we must define the notion of a *segment*. A *segment* is defined in (46).

(46) A segment ε is any continuous and proper subset of the situations which define a particular predicate.

McClure defines the possible segments for statives, achievements and activities in (47):

(47) Possible segments of each eventuality type ($\varepsilon \in P$)

states =	s $\varepsilon = \emptyset$
achievements =	$\langle s_1 s_2 \rangle$ $\varepsilon \in \{s, s'\}$

$$\begin{aligned}
 \text{activities} = & \{ \langle s_1 s_2 \rangle \langle s_2 s_3 \rangle \langle s_3 s_4 \rangle \dots \langle s_n s_{n+1} \rangle \} \\
 \varepsilon = & \text{any continuous subset } \{ \langle s_p \dots s_q \rangle \} \text{ of} \\
 & \{ \langle s_1 s_2 \rangle \langle s_2 s_3 \rangle \langle s_3 s_4 \rangle \dots \langle s_n s_{n+1} \rangle \} \\
 & \text{where } 1 \leq p \leq q < n
 \end{aligned}$$

(47) shows that states are not composed of segments while achievements are made up of exactly two segments, corresponding to the initial and final state. Any continuous subset of states corresponds to a segment of an activity.

A *final segment* is any segment that contains a final state. According to McClure achievements unambiguously have final segments. This is shown in (48).

$$\begin{aligned}
 (48) \\
 \text{states} = & \quad s \\
 & \text{final } \varepsilon = \emptyset \\
 \\
 \text{achievements} = & \quad \langle s, s' \rangle \\
 & \text{final } \varepsilon \in \{s'\} \\
 \\
 \text{activities} = & \quad \{ \langle s_1 s_2 \rangle \langle s_2 s_3 \rangle \langle s_3 s_4 \rangle \dots \langle s_n s_{n+1} \rangle \} \\
 & \text{final } \varepsilon \in \emptyset
 \end{aligned}$$

States are not composed of segments; therefore they naturally do not have final segments. Achievements are defined by a single segment or event that is composed of two states. Activities do not have a defined final segment. Accomplishments are not spelled out explicitly in (47) and (48) because McClure considers them to be a derived class. In essence, accomplishments have the structure as activities in addition to a well-defined final segment. This also represents the intuitive structure of Dowty's analysis in which accomplishments are defined by a process component and a change component.

In summary, states are basic. States do not have any internal structure (segments). Achievements are defined by a single segment that represents a change of state.

Activities are defined by an infinite series of segments. Accomplishments are defined by a finite series of segments in that they specify an explicit final segment. These aspectual structures are universals: therefore the structure of a given eventuality type in English is equivalent to the same eventuality type in Japanese.

Therefore, in the study to be reported in Chapter 4 we will assume equivalence between the two languages at the level of aspectual structure. This is different from the analysis put forth by Ogihara, in which the locus of crosslinguistic difference resides exactly at this level. Now that we have defined the aspectual structure of the VPs we will see how the semantics of PROG, defined in (43) and (44), interacts with the different aspectual classes in the two languages.

5.3 The interaction of PROG and the aspectual structure (McClure, 1995)

5.3.1 English

We will first outline how PROG in English interacts with the different aspectual structures. The truth conditions in (43) state that a given event is in progress during a given interval if some but not all of its situations have been realized during that interval. The first line in [1] requires that there be a segment ε of a given predicate. As we saw in (47), statives are not composed of segments and therefore are not generally compatible with the progressive. As all other aspectual structures are defined by segments, they satisfy this requirement.

The second line in [2] requires that the segment that is identified be a non-final segment. The semantics in [3] requires that any segment that is a final segment be manifested after the interval of evaluation.

As we saw in (48), activities do not specify final segments so the requirements in [2] and [3] will be fulfilled by default. Activities are processes defined by an infinite set of segments. The progressive is true as soon as one of these segments is manifested.

Accomplishments are defined by a set of segments and a well-defined final segment. The progressive is true as soon as one of the process segments is fulfilled. By [3] the final segment must not be manifested until after the point of evaluation.

Achievements entail a single segment, composed of an initial and final state. The progressive is true as soon as the initial state is manifested. However, the final state cannot be manifested until after the interval of evaluation. Therefore, the progressive is true at exactly the point before the change of state is realized.

Given the semantics outlined above, we can explain why statives are generally incompatible with the progressive. We also see that the event-in-progress interpretation denoted by activities and accomplishments is derived by the progressive making reference to the process component of the aspectual structure. Achievements under the progressive make reference to the point just before the endpoint of change of state because that is exactly the point at which the truth conditions for the progressive in English are realized.

5.3.2 Japanese

We will now outline how PROG in Japanese interacts with the same aspectual structures. The truth conditions in (44) require that a given event must have begun in a given interval and that at least one complete segment (or event) entailed by the predicate be manifested prior to the interval of evaluation.

Just as in English, the truth conditions require that there be a segment ε of a given predicate. Therefore, statives in Japanese are not compatible with *te-iru* for the same reason that they are not compatible with *be+ing*. Because all other aspectual structures are defined by segments, they will satisfy this requirement.

The truth conditions for PROG in Japanese then require that at least one segment (event) entailed by the predicate be manifested before the point of evaluation.

Activities are processes defined by an infinite set of segments. *Te-iru* is true as soon as one of these segments is manifested. This is why activities under the progressive denote an action-in-progress interpretation in Japanese as well as in English.

Achievements on the other hand entail a single segment, composed of an initial and final state. The progressive is true as soon as this segment is manifested. Unlike English, the change of state must be manifested prior to the interval of evaluation. Therefore, *te-iru* is not true in Japanese *until* the change of state is realized. That is why achievements under *te-iru* denote a resultative interpretation and disallow an action-in-progress interpretation.

Accomplishments are more complex; they are defined by a set of segments that entail a process as well as a well-defined final segment. *Te-iru* is true as soon as one

segment is manifested. If one of the process segments is manifested, the resulting interpretation is progressive. This is the usual interpretation of an accomplishment under *te-iru*. However, because accomplishments do define a final segment, an additional interpretation is also available. This semantic structure explains the ambiguity we presented in (33). Accomplishments under *te-iru* in Japanese such as ‘make a chair’ are usually progressive, but a secondary perfective interpretation is also available. Now we see that this perfective interpretation arises if in fact the final segment of an accomplishment is manifested. Note that achievements, which are defined by a single change of state segment, do not allow for this ambiguity.

5.3.3 Summary

In summary, the data outlined in Tables 2.1 and 2.2 can be explained by an account that posits minimal differences in the aspectual operator PROG in English and Japanese. The truth conditions for English *be+ing* require that any segment that is a final segment be manifested after the interval of evaluation. In this way, English *be+ing* will never allow a resultative interpretation. The truth conditions for *te-iru* on the other hand, require that at least one complete segment entailed by the predicate be manifested before the interval of evaluation. Achievements are defined by a single segment. Therefore, *te-iru* is only true when the change of state has already occurred. On this account, the crucial difference between achievements under PROG in English and Japanese boils down to a difference in the manifestation of the final state.

5.4 Interaction with past tense

In section 3.1 we outlined the general framework we adopt. The structure in (49) simply repeats (13).

(49) [Tense [Aspect* [eventuality description/VP]]]

Up until this point we have outlined semantics for the VP and for the aspectual operator PROG, as in (50).

(50) PROG[VP]

We have outlined how PROG interacts with the VP in English and Japanese to bring about distinct interpretations depending on the aspectual structure of the VP. Next we will briefly consider the interaction with tense. (51) represents a VP in the past such as *ate a cake*. The PAST operator simply places the event *eat a cake* on a timeline prior to the time of speech.

(51) PAST[VP]

According to De Swart, the telicity of the VP *ate a cake* is derived not from the PAST but from the structure of the VP. In English, it is very difficult to isolate telicity derived by the VP from grammatical perfective aspect because English does not encode the two

notions in separate morphemes, as the Slavic languages do. Japanese behaves just as English does in this respect.

The simple past morphemes in English and Japanese, *-ed* and *-ta*, denote basically equivalent interpretations regardless of the aspectual properties of the VP. A telic VP in the past such as *John ate a cake* in (52) will express the same notion of completion in Japanese in (53). Likewise, an activity VP in the past such as *John ran* in (54) will bring about the same notion of termination in Japanese in (55).

(52) John ate a cake.

(53) John-wa keeki-o tabeta.
John-TOP cake-ACC eat-PAST
'John ate a cake.'

(54) John ran (yesterday).

(55) John-ga (kinoo) hashitta.
John-NOM (yesterday) run-PAST
'John ran (yesterday).'

Finally, we will consider the interaction of the PAST tense operator with the PROG aspectual operator as is represented in (56).

(56) PAST[PROG[VP]]

We have already discussed one past progressive sentence in English in light of our brief discussion of the Imperfective Paradox. We mentioned that the sentence in (57) *Mary was building a house* does not entail that the building of the house ever was ever completed.

(57) Mary was building a house.

These facts fall out from the analysis we have presented for PROG. PAST[PROG[build a house]] is true if and only if at some past time, PROG[build a house] is true.

PROG[build a house] is true in English if all final segments of house building are not realized during the point of evaluation. Therefore, PAST[PROG[build a house]] means that at some past point, the event of building a house continued into the future. There is no formal entailment that the house building was in fact ever completed, only that at some point in the past, the house building was underway. Note that the semantics is also compatible with the interpretation that the house building was completed at some point. The truth conditions underdetermine the possible outcomes. *Mary was building a house* is compatible with an outcome in which the house was not completed and also a different outcome in which it was.

In Japanese, the past form of *te-iru* is *te-ita*. With activities and accomplishments the same patterns hold for *te-ita* that hold for the English past progressive. The truth conditions for the sentence in (58) are also compatible with the two outcomes outlined for the equivalent sentence in English.

(58) Mari-wa uchi-o *tukut-te i-ta*.
 Mari-TOP house-ACC build-ASP-PAST
 Mari was building a house.

Achievements under *te-ita*, on the other hand, necessarily have different entailment patterns due to their distinctive interaction with *te-iru*. Achievements under *te-iru* denote

resultative interpretations, therefore achievements under *te-ita* as in (59) necessarily do as well.

- (59) Hikōki-ga kūkō –ni tuit-~~te~~-i-~~ta~~.
 plane-NOM airport at arrive ASP-PAST
 The plane had arrived at the airport.

The sentence in (59) is compatible only with an event in which the event of arriving was completely realized prior to the point of evaluation. The English sentence in (60), on the other hand, is compatible with dual outcomes.

- (60) The plane was arriving at the airport.

Due to the semantics of *be+ing* in English, it is possible that the plane's arrival was never actually realized.

In summary, the differences we outlined for *be+ing* and *te-iru* with achievements in the present tense carry over to the past tense as well. In addition, the similarities we outlined for the two forms in their interaction with activities and accomplishments is maintained in the past tense.

5.5 Conclusion

In summary, we have outlined an analysis for aspectual forms in English and Japanese using the general structure repeated above in (49).

(49) [Tense [Aspect* [eventuality description/VP]]]

Using McClure's analysis we propose that English and Japanese are equivalent at two levels of the structure in (49). First, at the level of the VP, the two languages are *semantically* equivalent²¹. The aspectual structures we outlined above are universals and thus are equivalent in the two languages. Secondly, with respect to the past tense, the two languages are essentially equivalent²². We have identified differences only at the level of the aspectual operator, with specific reference to PROG in English and Japanese.

By adopting this analysis, we have identified the goal of the L2 learner in terms of the acquisition of the truth conditions for PROG. This is the locus of crosslinguistic differences and thus the level at which we will make predictions with respect to L1 influence in second language acquisition. We will return to those predictions in our presentation of the experimental studies in Chapter 4.

²¹ Naturally, in syntax, the two languages differ in head position.

²² See Ogihara (1999) for details on the past marker in Japanese. While there are some differences outlined for English and Japanese, they are irrelevant to the present study.

CHAPTER 3

ASPECT IN ACQUISITION RESEARCH

1. Main approaches to the acquisition of aspect

Various grammatical sources contribute to the aspectual interpretation of a sentence including: the lexical semantics of the verb, morphology on the verb such as progressive *be+ing*; other predicates in the verb phrase such as the particle *up* in *eat the pizza up*; and at the sentential level, temporal adverbial phrases such as *yesterday*.

Research on the acquisition of aspect in both first and second language acquisition has addressed each of these contributing factors from several different perspectives.

Perhaps the largest body of work in both L1 and L2 research has investigated what is known as the Aspect Hypothesis (Antinucci and Miller, 1976; Bloom, Lifter and Hafitz, 1980; Bronckart and Sinclair, 1973, recent reviews in Bardovi-Harlig, 1999, 2000; Li and Shirai, 2000; Slabakova, 2001; Weist, 2002). Proponents of this model argue that lexical aspectual classes guide early language learners in their production of inflectional morphology. For example, it has been observed that learners first use perfective or past morphology with telic verb phrases.

Other researchers have focused more on the acquisition of the semantic properties of the inflectional morphology itself. Research has been conducted with first language learners (Weist et al., 1984, Wagner, 1997, 2001) and more recently with second language learners as well (Slabakova and Montrul, 2003; Montrul and Slabakova, 2002, 2003). Recently, two interesting studies have addressed the use and interpretation of

aspectual morphology by near-native L2 speakers (Koslowska-Macgregor, 2002; Montrul and Slabakova, 2003). This work addresses early claims by researchers such as Coppieters (1987), who argued that aspect could not be acquired to native-like levels.

There are also researchers who have looked in depth at the acquisition of lexical aspect and the aspectual contribution of syntactic elements such as particles. Van Hout (1998) initiated an interesting research program addressing the acquisition of telicity by children and Slabakova (1997, 2001) has investigated this same issue with second language learners.

A very recent body of work has begun to look at the role of aspectual properties in what is known as the Root Infinitive stage in young children's language development (Brun, 1999; Hoekstra and Hyams, 1998; Hyams, 2002, 20005; Torrence and Hyams, 2004; Varlotska, 2002). Gavrusseva (2002, 2003) has pursued this issue in the realm of child L2 acquisition as well.

While the work mentioned so far primarily addresses aspect encoded within the verb phrase and inflectional morphology, other researchers have taken a broader perspective. For example, researchers such as Bardovi-Harlig (1994), Dietrich, Klein and Noyau (1995) and Giacolone-Ramat (1995) have focused on the ways in which language learners express various temporal and aspectual notions at early stages of development. Dietrich, Klein and Noyau (1995) propose that learners first express temporal and aspectual notions via discourse structuring and lexical means before they have even mastered inflectional morphology.

Given the focus of the present study, in this chapter we will review the research that has investigated the acquisition of aspectual morphology and its interaction with

aspectual properties of the verb phrase. While there is a large body of data on this topic, the field is still working towards an explanatory theory of *why* learners have apparent difficulty acquiring aspectual notions (cf. discussion in Slabakova, 2002). In both first and second language acquisition, researchers have concentrated mostly on learners' production. This data has been informative in illuminating certain patterns that appear to be pervasive in learner speech. We have also learned on the basis of production data that learners use aspectual morphology from very early stages of acquisition. However, as Dittmar (1981) observed, a morpheme and its meaning are not "indissolubly wedded." Although learners *use* aspectual morphology at early stages, it does not necessarily follow that they have mastered the semantics associated with the forms (cf. Slabakova, 2002). If we want to truly understand the acquisition of aspect, it is necessary that we tap learners' interpretations as well. We will review a new body of experimental research that looks beyond production data and targets the semantic component of learner knowledge in controlled studies. An additional advantage of controlled experimental research is that we are also able to test native speaker interpretations as well²³. Any researcher who works on aspect is likely to grapple with variability in native speaker judgments, which are not always compatible with the judgments outlined in the syntax and semantics literature. Controlled testing of native speaker judgments will allow us to develop more precise theories of the syntax and semantics of aspect.

Furthermore, as Slabakova (2002) and Shirai (2002) point out, many of the aspect studies in second language acquisition have failed to take the L2 learners' native

²³ I acknowledge that corpus studies of native speech are also relevant and useful in this respect. However, the advantage of experimental studies over corpus studies is that the researcher does not have to "wait" for the form of interest to appear in the speech sample. Experimental studies also allow for direct comparison between several forms, given that we can control for verb type and number of items in a given category, etc.

language into account. Naturally we can formulate much more precise research questions if we consider properties of the first language and investigate properties that differ in first and second language. As this is of central interest to the present study, we will outline some of the studies that have considered the issue of L1 influence.

In the first part of the review, we will discuss the early studies on morpheme acquisition and the Aspect Hypothesis. We will then review more current work on the Aspect Hypothesis, focusing on work in English and Japanese and the explanations that have been put forth to account for the skewed distribution of aspectual morphology. We will then move on to studies that have focused on the semantics of aspectual morphology in acquisition, including a study that investigates near-native speakers.

2. Early Morpheme Studies

Early work in child language acquisition, such as Brown (1973) and De Villiers and De Villiers (1973), revealed that children seem to follow similar stages in their acquisition of morphology. These studies took a broad approach, investigating the order of acquisition of both verbal morphology, such as markers of tense, aspect and agreement, and nominal morphology, including markers of plurality and possession. One of the main findings relevant to the acquisition of aspect was that the English progressive aspect marker, *be+ing*, was the first to appear in children's speech. Also relevant to aspect was Brown's observation that children were most likely to use the past tense with verb phrases that denoted punctual or instantaneous events such as *fell* or *broke*. This

observation constitutes one of the main points of interest for researchers investigating the claims of the Aspect Hypothesis.

According to the criteria used in Brown's study, correct suppliance of a form in 90% of all obligatory contexts provided evidence of successful acquisition. Researchers who subsequently investigated the order of morpheme acquisition in second language learners modeled their studies after the L1 studies and thus used similar methods of analysis. Results of studies by Dulay and Burt (1973) and Bailey, Madden and Krashen (1974) showed that child and adult second language learners showed similar patterns of acquisition to the L1 learners of English. Again the progressive marker *be+ing* was the first morpheme to be successfully acquired. An issue that has been criticized in the morpheme acquisition order studies is that the results do not shed light on the characteristics of morphological *development*. Brown points out that the acquisition of a morpheme involves the acquisition of a form and the syntax and semantics associated with that form. But by focusing on particular morphological forms only after learners have begun to use them with 90% accuracy, we neglect the interesting process of development for a particular form, which may reveal a disparity in knowledge of the morphological *form* and knowledge of the *meaning* associated with the form (Hakuta, 1985). If we want to understand the development of morphosemantics, we will have to evaluate earlier stages of acquisition. Later studies, such as Bloom, Lifter and Hafitz (1980), took this factor into account.

The early morpheme acquisition order studies also tended to focus on the acquisition of the verbal morphemes themselves, with little discussion of the particular verbs to which they were attached. But this issue then became the central focus of the

first aspect studies. Bloom, Lifter and Hafitz (1980) were particularly interested in the emergence of verbal morphology and the verbal contexts in which inflections appeared. They studied the spontaneous speech of four American English-speaking children during the course of 15 separate observations. At the beginning of study the children were at an MLU of 1.5-2.0 and by the end of the study they had advanced to an MLU of 2.5-3.0. Bloom, Lifter and Hafitz noticed patterns within the children's speech that echoed some of Brown's original observations: children tended to use past tense marking with verbs that denoted non-durative/completive events (telic verb phrases) and they tended to use progressive marking with verbs that were durative/non-completive (activities). They also found that statives were rarely inflected. Based on these observations, they proposed that children were essentially using verbal morphology to mark lexical aspect. They argue that "children's use of inflections to code aspect was essentially redundant in relation to the inherent lexical aspect of the verbs themselves," (Bloom, Lifter, Hafitz, 1980, 406). In other words, at early stages of development, verbal morphology simply re-encodes lexical aspect.

Bloom et al. propose that their findings are compatible with other studies on the acquisition of French (Bronckart and Sinclair, 1973), Italian (Antinucci and Miller, 1976) and Turkish (Aksu, 1978) in which similar patterns were attested. However, some of these earlier studies explained the skewed distribution of verbal morphology in terms of a cognitive limitation. For example, Antinucci and Miller and Bronckart and Sinclair propose that children only use verbal morphology to encode whether or not an event is complete. As evidence for this claim Bronckart and Sinclair note that children rarely use imperfective past forms. This is a stronger claim that explicitly states children do not

have the cognitive capacity to map events on a timeline with respect to past and present. Smith (1980) took issue with this proposal and showed that young English-speaking children did demonstrate knowledge of temporal ordering. Bloom et al. do not clearly explain the relationship they propose between tense and aspect. They explicitly state that they believe temporal notions are being acquired alongside aspectual notions and that in essence what they propose is that lexical aspect strongly influences use of verbal morphology (407). However, they label their account Aspect Before Tense. As Andersen and Shirai (1996) point out, they also do not explicitly distinguish lexical from grammatical aspect. As support of their Aspect Before Tense proposal, they cite a 1975 study by Radulovič, which showed that Serbo-Croatian children acquire the grammatical aspectual distinction of perfective-imperfective before they have acquired tense. Therefore, the proposal is unclear.

Weist, Wysocka, Witkowska-Stadnik, Buczowska and Konieczna (1984), like Smith (1980), argue specifically against the idea of the sequential acquisition of aspect followed by tense. Weist et al. label the Aspect Before Tense hypothesis, the Defective Tense Hypothesis. Their well-known study investigates young children learning Polish, a language that grammaticizes both tense and aspect in separate morphemes. Results show that Polish children do not simply use markers of tense to redundantly mark aspect. The children use past tense inflections with verbs that do not denote complete events. They use markers of tense to encode deictic relationships as they do in adult speech. The results also show that children do not seem to have difficulty with the perfective-imperfective distinction (see also Weist, Wysocka, Lyytinen, 1991), contra Bronckart and Sinclair's claims. Their results provide evidence that tense marking is not in fact

completely dependent on aspect. A recent study by Valian (in progress) also provides evidence that children as young as two-years old have knowledge of tense. We will return to this study below.

Bloom and colleagues (Rispoli and Bloom, 1985; Bloom and Harner, 1989) responded to Weist's criticism by stating that at the crux of their proposal was not the idea that tense was defective, but rather that lexical aspect strongly influences acquisition of verbal morphology, some instances of which are markers of tense. This is essentially the version of the Aspect Hypothesis that has been adopted in more recent studies. It has been referred to as Relative Defective Tense Hypothesis (Andersen, 1989) or the weaker version of the Aspect Hypothesis (Slabakova, 2001). We turn to this revised version of the Aspect Hypothesis in the next section.

3. Aspect Hypothesis

The main descriptive claims of the current Primacy of Aspect or Aspect Hypothesis are as follows (from Andersen and Shirai, 1996):

(1) Learners first use past marking (e.g. English) or perfective marking (Chinese, Spanish, etc.) on achievement and accomplishment verbs, eventually extending its use to activity and stative verbs.

(2) In languages that encode the perfective-imperfective distinction, imperfective past appears later than perfective past, and imperfective past marking begins with stative and activity verbs, then extending to accomplishment and achievement verbs.

(3) In languages that have progressive aspect, progressive marking begins with activity verbs, then extends to accomplishment or achievement verbs.

(4) Progressive markings are not incorrectly overextended to stative verbs.

Proponents of this model argue that lexical aspectual classes guide early language learners in their acquisition of inflectional morphology. The claim in (1) suggests that the Aspect Hypothesis does not distinguish tense and grammatical aspect.

The model predicts that tense/aspect morphemes will show a complementary distribution in early acquisition: past/perfective marking will appear on telic verb phrases, progressive marking will appear on activities and imperfective marking will appear on statives. The main difference between the revised Aspect Hypothesis and the original proposal is that under the revised proposal, tense/aspect marking is not completely redundant. For example, the morpheme *-ed* may not only mark the lexical aspectual feature +telic, but it may also encode past tense. However, in the learner grammar, the application of the morpheme is initially much more restricted than it is in the adult native grammar. This restriction is claimed to hold universally. The explanations for *why* these patterns are expected to emerge include accounts that implicate prototypes, distributional biases in the input, and strong influences of discourse structure.

Prototype theory assumes that there is gradient membership within a given category (Rosch, 1973, 1978; Rosch and Mervis, 1975). Within each category there are best exemplars (the prototypes) of that category. Other members will be more or less prototypical than others. In the realm of language acquisition, it is proposed that learners start with the prototype in acquiring a linguistic category and only later extend beyond the prototype to more peripheral members of the category. In the realm of tense-aspect acquisition it has been proposed that learners begin with the prototypes for the categories of *past tense* and *progressive aspect* (Andersen, 1991; Andersen and Shirai, 1994; Shirai, 1991; Shirai and Andersen, 1995). The prototypical past describes a punctual, completed event and therefore learners begin to use the past only with verb phrases that denote completed events (achievements and accomplishments). Similarly, the prototypical progressive describes an event in progress. Because this meaning is most salient with activities, learners first associate progressive marking with this verb class. What is unclear is exactly how the prototype is determined, especially given that proponents of this model argue strongly against innate constructs. In recent work, Li and Shirai (2000) have proposed a connectionist model of tense/aspect acquisition whereby the learner is capable of extracting prototypical associations from distributional biases in the input.

Other researchers have focused on how narrative structure influences learners in their use of tense and aspect morphology (Andersen and Shirai, 1994; Bardovi-Harlig, 1995, 1998, 2002). For example, the past is primarily used in the foreground to narrate a story while the progressive is predominantly used to provide background information. Bardovi-Harlig (1998) argues that the requirements of narrative structure may provide the

impetus for the learner to extend beyond the prototypical associations discussed by the Aspect Hypothesis.

In contrast to these functional accounts, earlier proposals such as Bickerton's (1981, 1984) Language Bioprogram Hypothesis and Slobin's (1981, 1985) Basic Child Grammar Hypothesis argued that certain semantic distinctions are innate and therefore emerge early in language acquisition. Bickerton proposes that both the punctual-nonpunctual and state-process distinction are innate. He bases his claims on the emergence of these aspectual distinctions in creole grammars. He takes the fact that children do not generally overextend progressive marking to statives (cf. claim 4 of the Aspect Hypothesis) as evidence that the state-process distinction is innate (see also Smith 1991, 1997).

Olsen and Weinberg (1999) propose a more recent nativist account of the skewed distribution of tense/aspect morphology observed in learner speech. They follow the standard generative assumption that a learner chooses from an array of possible grammars that are made available by Universal Grammar, all of which correspond to existing natural languages. They also assume that language acquisition is constrained by learnability principles such as the Subset Principle (Berwick, 1985). They propose that due to the Subset Principle, learners initially hypothesize the most restricted grammar, which they will later abandon if there is evidence in the input that requires them to move to a less restricted grammar. In the realm of aspect, the most restricted grammar is one that restricts a marker of grammatical aspect to one particular lexical aspectual feature. For example, in Korean the grammatical aspect marker *-e issta* is compatible only with telic intransitives. With respect to English, if learners begin with the most restrictive

mapping as their initial hypothesis, then the learners will hypothesize that perfective aspect markers are compatible only with telic verb phrases. Olsen and Weinberg present data that shows that in English *-ed* is associated with telic verb phrases in child production, but not in adult production. Therefore, they argue that the skewed distribution in the child's speech cannot be due solely to distributional biases in the input, but is instead due to their restricted grammar. Based on these findings they argue against an input-driven proposal in favor of a generative model (cf. Li and Shirai, 2000 for a response and critique of methodology).

The claims of the Aspect Hypothesis and the explanations for the skewed distribution of aspectual morphology are not directly relevant to the present study for several reasons. First, with respect to the past and progressive marking, there is an important distinction between telic and atelic verb classes. Past marking is initially restricted to telic verb phrases; progressive marking is initially restricted to activities and later extends to the telic verb classes. The present study contrasts the acquisition of accomplishments and achievements, both telic verb classes, and does not include statives and activities. Therefore, a true evaluation of these claims is neither intended nor possible given the design²⁴.

Secondly, the claims and the studies that have evaluated them generally target learners' *use* of tense/aspect morphology. Research investigating the Aspect Hypothesis has looked mainly at learner's naturalistic production data, though there are several studies in second language acquisition that have included grammaticality judgment tasks and cloze passages, for example Badovi-Harlig (1992), Bergstrom (1995), Collins (1997),

²⁴ In addition, the Aspect Hypothesis is primarily interested in lexical, not grammatical aspect (Andersen, 1989). In the present study English and Japanese are equivalent at the level of lexical aspect and differ in grammatical aspect. Therefore, grammatical aspect is our primary interest.

Kurono (1994) and Salaberry (1997). It is actually somewhat unclear what predictions the model makes for learners' initial comprehension and interpretation of morphology. For example, if the learners' grammar is restricted as the model predicts, would the learner then hypothesize that the combination of a telic verb and the progressive marker such as *dying* is an impossible morphological structure or is that the learner accepts the structure as grammatical but has difficulty assigning an interpretation?

If we are interested in the development of aspectual semantics, we cannot rely on production data alone. Instead we must try to understand how learners comprehend and interpret aspectual morphology. We will review some of the work that has begun to investigate interpretive knowledge in Section 3.4 (Valian, in progress; Wagner, 1997, 2002; Weist et al., 1984, 1991; Montrul and Slabakova, 2002).

Finally, because the Aspect Hypothesis is predicted to hold universally, most research has focused on documenting the patterns in (1-4) in a range of typologically different languages. In the second language research conducted in this domain, only recently have researchers paid attention to how other factors, including the existing L1 grammar, could influence the developmental patterns predicted by the claims in (1-4). We will review some of those studies below.

Despite the fact that the present study asks different research questions from the studies that target investigation of the Aspect Hypothesis, there are results from this body of literature that are relevant for our study. We will outline this work briefly in the next section.

3.1 Studies testing the Aspect Hypothesis

In first language acquisition, the associations predicted by the Aspect Hypothesis have been investigated in a wide array of different languages, some of which have been mentioned already, including: French (Bronckart and Sinclair, 1973), Italian (Antinucci and Miller, 1976), Turkish (Aksu, 1978, 1988), English (Bloom, Liftner and Hafitz, 1980; Harner, 1981; Kuczaj, 1976, 1978; Shirai, 1991; Shirai and Andersen, 1995), Modern Greek (Stephany, 1981), German (Behrens, 1993), Chinese (Li, 1990; Li and Bowerman, 1998) and Japanese (Cziko and Koda, 1987; Rispoli, 1981; Shirai, 1993). Andersen and Shirai (1996), Li and Shirai (2000), Slabakova (2001) and Weist (2002) present comprehensive reviews.

The model has also been influential in the domain of second language research as well (Andersen, 1986, 1991; Bayley, 1991, 1994; Shirai, 1995; Shirai and Kurono, 1998; Bardovi-Harlig, 1992, 1995, 1998, 2002; Bardovi-Harlig and Bergström, 1996; Bardovi-Harlig and Reynolds, 1995; Collins, 1997; Robison, 1990, 1995; Salaberry, 1997, among many others). Bardovi-Harlig (1999, 2000) provides a comprehensive review of the L2 aspect literature. Many of the papers in Salaberry and Shirai (2002) reflect current L2 research on the claims outlined above. We will review the research most relevant to the present study conducted with learners of L2 English and L2 Japanese.

3.1.1 *Aspect Hypothesis: L2 English*

Several studies have investigated the Aspect Hypothesis in L2 English (Bardovi-Harlig, 1992, 1998; Bardovi-Harlig and Bergström, 1996; Bardovi-Harlig and Reynolds; Bayley, 1994; Collins, 1997; Housen, 2002; Kumpf, 1984; Robison, 1990, 1993, 1995; Rohde, 1996, 1997, 2002). Within this body of work, we are most concerned with studies addressing claims (1) and (3). Several studies have addressed the use of both past and progressive morphology. With respect to the use of past morphology, Robison (1995) analyzes oral interviews and written data from Spanish-speaking students studying English in Puerto Rico. Learners showed a bias for marking telic verbs with the past tense, but contra the predictions of the Aspect Hypothesis, the association was actually stronger in the higher proficiency levels. Robison observed that learners marked achievements with the past tense even in instances when they were referring to present or future events. This is taken as evidence that the past marker *-ed* emerges as a tense marker (as opposed to a marker of lexical aspect) only for learners at high proficiency levels. Rohde (1996, 1997) reported the same bias for the past tense to mark achievements in the speech of young German-speaking children learning English.

Bardovi-Harlig and Reynolds (1995) studied tutored learners of L2 English from a very wide range of L1 backgrounds. Their participants were provided with a cloze test with short story passages. They were asked to inflect verbs that were provided in their base form depending on the context of the sentence. 62 items targeted the simple past tense. Participants were much more accurate in providing the target past tense morphology for achievements and accomplishments as opposed to stative and activities.

Learners at the lowest level performed best with accomplishments while learners at the higher levels seemed to perform equivalently with the two verb classes. Bardovi-Harlig (1998) studied oral and written narratives from learners of five different L1 backgrounds. She found differences in performance on accomplishments and achievements in the simple past depending on the type of data collected. In written narratives learners of English performed equivalently with the two classes while in oral narratives, they used the simple past with achievements significantly more than accomplishments.

Housen (2002) presents a recent counterexample to the claim in (1). French and Dutch learners of English who were living in Belgium showed a high tendency to mark stative verbs in the past, contrary to predictions of the Aspect Hypothesis. Rohde (2002) also reports similar results.

With respect to the present progressive, several studies have reported the predicted association between progressive marking and activities. Robison (1995) reports that this affiliation even appears to become stronger at higher levels of proficiency. The studies mentioned above by Bardovi-Harlig and her colleagues report the same association in cloze passages (Bardovi-Harlig and Reynolds, 1995) and in oral and written narratives (Bardovi-Harlig, 1998). The results of Bardovi-Harlig (1998) show very little use of the progressive with either accomplishments or achievements. However, in his study of L2 child acquisition, Rohde (1996) found a strong association for achievements in the progressive, a potential counterexample to the Aspect Hypothesis.

A study by Quick (1997), reported in Li and Shirai (2000), explicitly addresses the role of the native language in the acquisition of progressive achievements. She

studies how native speakers of Chinese, Japanese and Spanish acquire the progressive in English. The participants were ESL students in the United States. While achievements are compatible with the progressive in Spanish, they are generally incompatible with the progressive in Chinese and receive a resultative interpretation when combined with the progressive marker *te-iru* in Japanese. On three separate tasks the Spanish learners often outperformed the speakers of Chinese and Japanese. However, at advanced levels, the Japanese learners actually showed a higher association than the Spanish learners between achievements and the progressive. These results indicate that properties of the native language play a key role in the development of aspectual morphology and that crosslinguistic differences can be overcome in L2 acquisition.

Results for the progressive often collapse the present and past progressive, but in some studies, the results of the two are teased apart. Bardovi-Harlig and Reynolds (1995) and Bardovi-Harlig and Bergström (1996) reported that the past progressive emerges after the present progressive in past time contexts. The use of the tensed progressives follows a stage in which a bare progressive form is used in past contexts.

3.1.2 *Aspect Hypothesis: L2 Japanese*²⁵

In the literature on L2 Japanese, there has been support for the claim in (1) and much more mixed results with respect to the claim in (3). Shirai (1995), reported in Shirai and Kurono (1998), reports that Chinese learners of Japanese used the past marker *-ta* predominantly with achievements. In this study, the learners used *-ta* much more

²⁵ The summary of literature in this section is adapted largely from Shirai (2002) and Ishida (2004), two comprehensive reviews that outline much of the literature that has been published in Japanese.

frequently with achievements than accomplishments, though in the data there were very few occurrences of accomplishments in general²⁶. Shibata (1999) also reports a strong association between achievements and *-ta* for English-speaking learners of Japanese.

Much of the research addressing the Aspect Hypothesis has focused on the aspectual marker *te-iru*, which we discussed in detail in the previous chapter. Although *te-iru* denotes both progressive and resultative interpretations, the Aspect Hypothesis predicts that learners will acquire the progressive interpretation first and thus associate *te-iru* more strongly with activities. According to Shirai (2002), this prediction is based on the fact that learners often create one-to-one associations in form-meaning mappings. Because *te-iru* is considered a durative aspect marker, the prediction is that learners will initially restrict its use to durative verb phrases such as activities and only later extend the use of *te-iru* to achievements, which denote resultative interpretations. This is based on the claim in (3), outlined on page 70. The progressive interpretation is considered the prototypical interpretation and the resultative interpretation an extension from it. This prediction is not consistently born out in studies of L1 acquisition (cf. review in Li and Shirai, 2000).

Kurono (1995), reported in Shirai and Kurono (1998), uses a grammaticality judgment task in order to test knowledge of *te-iru* and found that learners of various native language backgrounds had more difficulty with sentences with achievements than with activities or accomplishments. Nishikawa (1998) also finds that learners, again of mixed L1 backgrounds, were more accurate in using *te-iru* in progressive contexts than

²⁶ Nishi and Shirai (2000) report the results of a corpus study that shows that accomplishments are somewhat rare in Japanese.

resultative contexts. Therefore the results of early studies seem to show a universal pattern of development, irrespective of the learners' native language.

However, the results of several other studies have shown that acquisition is highly influenced by the properties of the native language (Koyama, 1998; Sheu, 1997; Shibata, 1999; Sugaya, 2001, 2003). Shibata (1999) asks English-speaking learners of Japanese to describe pictures and she then analyzes their oral narration. Her analysis shows that the learners actually use *te-iru* more with achievements, contra the predictions of the Aspect Hypothesis. However, the learners sometimes use achievements with *te-iru* to denote progressive interpretations, an option that is available to them in English but is ruled out in Japanese. For example, learners used the achievement *deru* 'leave' with *te-iru* to describe the action of a frog emerging from a glass jar. However, *dete-iru* can only be used in this context if the frog is already outside of the jar. Shibata's interesting findings illuminate the advantages of using a controlled production task. Because Shibata has controlled the context she would like her participants to describe, we can be sure of the meaning they intend to express. The analysis of spontaneous production data may be sufficient for calculating the appearance of particular morphemes but may not always allow such clear *interpretation* of those occurrences.

In a second study, Shibata (2000) reports greater use *te-iru* with activities and accomplishments to denote progressive interpretations. The preponderance of the use of *te-iru*, even with achievements, to denote a progressive interpretation is strong evidence of influence from the native language. However, it is not always the case that the progressive interpretation of *te-iru* is easier, even for speakers of English. Ishida (2004) reports that learners of Japanese were more accurate in the resultative use of *te-iru*. She

argues that the learners may have been influenced by the fact that the resultative interpretation of *te-iru* was introduced first in the textbook and in the classroom. Several researchers have also begun to look at learners whose native languages do not have a corresponding progressive form, such as Russian (Uozomi, 1998; Sugaya, 2001, 2002). Results of these studies show that learners seem to acquire the two interpretations of *te-iru* at about the same time.

In summary, this large body of work shows that the acquisition of the aspectual morphology requires a much more subtle and complex model than the Aspect Hypothesis in its current formulation provides. While there is evidence that learners are biased in their use of morphology, there is also evidence that other factors, such as the properties of the native language, play an important role. Recent reviews of work in this domain, such as Salaberry and Shirai (2002), acknowledge that both learner internal (i.e. native language, innate constructs) and learner external (i.e. environment, input, instruction) factors are perhaps more important than proponents of the Aspect Hypothesis had originally considered and certainly need to be taken into account in the development of the model.

4. Interpreting grammatical aspect

4.1 First language

In this section we will review very recent work that has looked specifically at the comprehension and interpretation of aspectual morphology. This type of work began in

Weist's studies (Weist et al. 1984, 1991) where children were asked to match inflected sentences to pictures that depicted events that were either ongoing or complete.

Recently, more researchers have begun to delve deeper into the interpretive properties of aspect acquisition. In first language acquisition, several researchers have looked at the interpretation of the imperfective in languages such as Russian (Vinnitskaya and Wexler, 2001; Kazanina and Phillips, submitted), Dutch (Van der Feest and Van Hout, 2002), Greek (Delidaki and Varlokosta, 2003) and Italian (Van Hout and Hollebrandse, 2001). Wagner (1997,2001) and Valian (in progress) have investigated children's interpretation of aspectual morphology in English.

In a series of experiments, Wagner (1997) shows that young children are able to master the concepts associated with grammatical aspect in English but still have difficulty interpreting the particular morphological forms that encode these concepts. In Wagner's experiments, the children are presented with two versions of the same event: a complete version and an incomplete version. They are told that there were two stuffed animals that are each responsible for one event. For example, the children were presented with a complete circle and an incomplete circle and were told that the bunny was responsible for one of the circles and the kitty for the other. The animals then tell the child which circle they are responsible for. For example, in one item the bunny said *I drew a circle* while the kitty said *I was drawing a circle*. The child is then asked to place the animals sequentially with the appropriate circle. Importantly, the child hears both sentences before they are asked to place the first animal. All of the sentences included telic accomplishment verb phrases. The aspectual distinction at issue was the boundedness of the marker of grammatical aspect (*-ed* vs. *be(past)+ing*).

In order for the child to perform correctly with the example given above, she would need to place the bunny with the complete circle and the kitty with the incomplete circle. Although the past progressive is compatible with either event, the simple past is only compatible with the complete event. Therefore, there is only one correct response. A control group of adults performed according to this target pattern, as did the older children in the experiment (age 3;7 and up). However, the youngest group of children performed at chance. If the predictions of the Aspect Hypothesis hold for comprehension and interpretation, we would expect that children would have performed better with the telic verb phrases in the past as opposed to the past progressive. However, there was no difference in performance on the two sentences types.

Given the results of the younger children, Wagner proposes two different accounts: either the young children simply do not have the semantic knowledge that is encoded by aspectual morphology or the children have the semantics but they are unsure of how the semantics is mapped onto the morphosyntax of English. The first proposal is similar to the hypothesis put forth by Bronckart and Sinclair (1973) and Antinucci and Miller (1976), where children are not sufficiently cognitively mature to interpret events correctly. The second proposal predicts that children should be able to display knowledge of these semantic distinctions when the semantics is encoded for example in open class lexical items, as opposed to morphosyntax. In order to test the second proposal, Wagner conducts the same type of experiment, but only this time the notion of boundedness is encoded in open class vocabulary items such as adverbials and aspectual verbs. For example, the bunny says *I finished drawing the circle* and the kitty says *I was in the middle of drawing the circle*. On this revised task, the young children were able to

perform significantly better than chance. Based on these findings, Wagner concludes that children do in fact have the semantic concepts underlying grammatical aspect, but they are still figuring out how these notions are encoded in the morphology of English. She points out that it is not surprising that children have less difficulty mapping these semantics concepts to open-class vocabulary items because these are the first lexical items that children acquire (Gleitman and Wanner, 1982).

Wagner (2001) focuses on the distinction between the present and past progressive. In one experiment, children watch a cat walk down a road and perform activities at different spots (X's) on the road. In half of the test sentences, the cat starts to do something at the first X but doesn't complete the activity and then moves to the second X, where the cat begins the activity again. In the other half of the test sentences, the cat completely finishes an action at the first X and then moves on the second X where the cat begins the activity again. While the cat is performing the activity at the second X, the child is asked *Where is Kitty V-ing?* or *Where was Kitty V-ing?* Results showed that children performed better on the test sentences in the past progressive (*Where was Kitty V-ing?*) in the second half of the test sentences where the first or past event referred to a completed action. This suggests that children do not understand that the past progressive does not have completion entailments. The statement *Kitty was V-ing* is true regardless of whether the cat finished the activity at the first X or not, but the children seem to have a more restricted interpretation of the past progressive.

Wagner suggests that children may be conflating tense and aspect, interpreting any occurrence of a past marker, including the auxiliary *was*, as referring to completed action. She argues that because many languages do conflate tense and grammatical

aspect in morphological forms and because there is cross-linguistic variation at this level, it would not be surprising if children showed difficulty in the mapping of these semantic categories onto the particular morphological forms. However, it is likely that this account is too strong because it predicts that children do not have knowledge of tense (cf. Weist et al., 1984).

A recent study by Valian (in progress) provides evidence that young children do demonstrate knowledge of tense, particularly in contexts where aspect does not interfere. Valian's study compares children's comprehension of present and past tense in three different contrasts: *will/did*, copula *is/was*, and progressive *is/was*. The three tense contrasts vary in the extent to which aspect plays a role in their interpretation: In the contrast *will/did*, tense is expressed lexically and neither form has a clear aspectual interpretation. There is also no clear role for aspect in the interpretation of the present and past copula *is/was*. On the other hand, the interpretation of the progressive forms requires an integration of both tense and aspect. In the case of the past progressive, the past tense auxiliary *was* is implicitly at odds with the ongoing, progressive aspect marker *-ing*.

Results of a comprehension task showed that children were successful with the tense distinctions between *will/did*, and the copula *is/was*, providing evidence that children represent tense in their grammars. Similar to the children in Wagner's study, the children had difficulty with the contrast between the present and past progressive; they often interpreted the past progressive as referring to present, ongoing events. However, due to the children's success with the first two contrasts, Valian argues that the difficulty with the past progressive is not due to a *conflation* of tense and aspect, as Wagner

proposed. Instead, Valian suggests that aspect trumps tense, particularly in contexts such as the past progressive where tense and aspect are implicitly at odds. Therefore, while aspect may *influence* tense comprehension, it does not mean that tense is not represented in the child's grammar.

In summary, a wide body of work in first language acquisition has shown that children have difficulty integrating the semantics of tense and aspect. One of the greatest points of contention has been whether the interpretation of tense is completely dependent on aspect. However, researchers such as Valian and Weist have provided evidence that this claim is too strong.

4.2 Second language

In second language acquisition, research investigating the interpretation of grammatical aspect is just beginning. The work that we will review in this section has been conducted in the generative framework. First we will review the one study that has investigated the acquisition of L2 Japanese. We will also review research that has been conducted by Silvina Montrul and Roumyana Slabakova on L2 Spanish.

4.2.1 Hirakawa (2001)

Hirakawa (2001) investigates the interpretation of the Japanese aspectual marker *te-iru* by English-speaking learners, but from a slightly different perspective. Hirakawa

uses the interpretation of *te-iru* as a diagnostic of unaccusativity in Japanese²⁷.

Unaccusatives are intransitive verbs that project only an internal argument; Unergatives, on the other hand, are intransitives that project an external argument (cf. Perlmutter, 1978). With unaccusatives as in (5), *te-iru* allows only a resultative interpretation of *V+te-iru*. But with unergative verb phrases, as in (6), the progressive interpretation is strongly preferred. A progressive interpretation is also preferred with transitives.

- (5) Hikoki-ga kuko-ni tui-te-iru
 plane-NOM airport at arrive ASP-NPST
 The plane (arrived and) is at the airport.
- (6) Gakusei-ga hasit-te-iru
 student-NOM run te-ASP-NPST
 The student is running.

These facts are identical to the facts we reviewed in Chapter 2. It is not entirely clear in Hirakawa's proposal exactly how and why it is the *argument structure* in particular and not the lexical aspect of the particular verb that is responsible for the interpretation of *te-iru*. The unaccusatives that Hirakawa selects are achievements and the unergatives are activities²⁸. It is not explained how unaccusativity in and of itself is linked to the resultative interpretation. Furthermore, at the level of argument structure in the cases described in (5) and (6), English and Japanese are equivalent. Since the verbs tested are unaccusatives both in English and Japanese, it seems that the real difference

²⁷ Hirakawa also looks at a syntactic diagnostic of unaccusativity, interpretation of the adverb *takusan* which can only be used to modify an underlying object, not a subject. See Hirakawa (2001) for further details.

²⁸ It is not the case that all unaccusatives in Japanese are achievements (Jacobsen, 1992).

between the two languages lies in the interaction of these verbs with the aspectual forms that mark the progressive in the two languages.

Hirakawa presents participants with a written sentence in Japanese and then asks them to match the sentence to one of two pictures: one picture presented an action in progress while the other picture depicted the resulting state of the same action. In general, the learners had no difficulty correctly associating the unergatives and transitives (activities and accomplishments) with the picture that depicted an action in progress. However, several learners had difficulty assigning a resultative interpretation to the unaccusative (achievement) verbs, particularly the Japanese equivalents of *burn*, *fall*, and *arrive*. Instead, they incorrectly assigned these verbs a progressive interpretation.

These results suggest the effects of L1 influence, as unaccusatives under English *be+ing* denote a progressive interpretation. In a footnote, Hirakawa suggests, following Kageyama (1996), that unaccusatives in English and Japanese may have different lexical semantic representations; she proposes that this difference may account for some of the difficulty. According to Kageyama (1996), in Japanese, an achievement such as *sinu* (die) in (7) has the semantic operator BECOME while the English equivalent in (8) has the semantic operator MOVE.

- (7) [y BECOME [y BE DEAD]] ‘sinu’ Japanese
 (8) [y MOVE [y TO DEAD]] ‘die’ English

Both structures imply a resulting state, however BECOME in (7) is telic while MOVE in (8) is atelic, and thus allows a progressive interpretation. Activities and accomplishments, on the other hand, will have the same lexical semantic representation

in both languages. Kageyama's proposal is very similar to Ogihara's (1998) proposal, which was outlined in Chapter 2. In both proposals, the different interpretation of achievements under *te-iru* and *be+ing* is due to the semantics of the achievements themselves. In Chapter 2 we argued that proposals that place the locus of crosslinguistic differences in the verbs themselves do not account for differences in the semantics of aspectual forms in various Japanese dialects. However, regardless of the theoretical analysis, Hirakawa's results are important in that they show a clear effect for the semantic properties of the native language. This is one of the first studies to present this type of evidence in the domain of semantics.

4.2.2 *Montrul and Slabakova (2002)*

4.2.2.1 *Background*

Montrul and Slabakova (2002) (see also Slabakova and Montrul, 2002) have conducted several studies on the acquisition of the Spanish Preterite/Imperfective contrast by native speakers of English. The Preterite is used to mark perfective aspect as in (9) and denotes complete or bounded events. On the other hand, the imperfect is used to mark imperfective aspect as in (10) and denotes unbounded or incomplete events.

- (9) Juan corrió 5 kms.
 Juan ran-PRET 5 kms
 Juan ran 5 kms.
- (10) Juan corría 5 kms.
 Juan ran-IMPF 5 kms
 Juan was running 5 kms.

With activities, accomplishments, achievements, the Preterite in Spanish is roughly equivalent to the simple past in English. English does not have a simplex past form equivalent to the Spanish Imperfect but the Imperfect can usually be translated into English with the past progressive (although the interpretation is heavily dependent on context).

Montrul and Slabakova adopt a primarily syntactic approach to the analysis of this distinction in grammatical aspect. Following Giorgi and Pianesi (1997), Montrul and Slabakova assume a parametric difference between English and Spanish in the feature composition of the functional category AspP. In English all event predicates are marked with the feature [+perfective], which encodes boundedness. All event predicates in English must check this feature in AspP. In Spanish, on the other hand, verbs are not inherently associated with semantic features. Instead the features [+/- perfective] are associated with overt tense morphology and must also be checked in AspP. Montrul and Slabakova assume that in Spanish, the features (+) and (−) perfective are checked overtly in AspP through Imperfect and Preterite morphology. In this framework, the successful acquisition of aspectual contrasts, such as the perfective-imperfective distinction, is evidence of semantic feature assignment under the functional category, AspP.

This study addresses two main issues. First, they investigate whether L2 learners have access to semantic properties of functional categories that are not available to them in their native language. Secondly, they investigate how strong the connection is between the acquisition of the semantics associated with a functional category on one hand and the acquisition of the inflectional morphology that encodes these semantic concepts on the other.

The first question asks whether English learners of Spanish will be able to acquire an aspectual distinction that is not present in the L1. The second issue is more complex. In the theoretical framework they assume, there is a strict correspondence between morphosyntax and semantics: if learners have acquired the functional projection AspP, then they should demonstrate knowledge of both the inflectional morphology and the semantics associated with the functional category. This question is a very interesting extension of some earlier generative L2 research that investigated to what extent surface L2 inflectional morphology is indicative of underlying *syntactic* competence. We will review this literature briefly.

For some researchers, learners' faulty suppliance of inflectional morphology was evidence of a permanent syntactic deficit (Clahsen and Muysken, 1989 and Miesel, 1991, 1997). For other researchers, variability in the use of morphology was interpreted as a syntactic impairment, either in terms of absent functional categories (Vainikka and Young-Scholten's (1996) Minimal Trees hypothesis) or in terms of impaired features (Eubank, 1994, 1996; Beck 1997). For these researchers, the syntactic deficit is part of a developmental phenomenon (cf. Radford, 1984 and Rizzi, 1994 for similar arguments in L1 acquisition); L2 learners can in principle attain full competence.

Finally, for a third group of researchers, difficulty with inflectional morphology is not interpreted as evidence of a syntactic deficit (Epstein et al., 1996; Grondin and White, 1996; Haznedar and Schwartz, 1997; Lardiere, 1998, 2000; Prevost and White, 2000; Ionin and Wexler, 2002). For these researchers, the syntactic structure is present but learners are having difficulty mapping from syntax to surface morphology. In a longitudinal case study, Lardiere (1998a, 1998b, 2000) looks at the production of an

advanced learner of English who shows great variability in her use of inflectional morphology such as past tense marking. Nevertheless, the learner's production data reveals that syntactic operations such as nominative case licensing and agreement are fully specified in the learner's grammar.

The data suggest that morphological and syntactic development may be autonomous in L2 acquisition. This position has come to be known as the Missing Surface Inflection Hypothesis (Prevost and White, 2000). Although L2 learners may have learned the particular morphological forms, they may not be able to consistently retrieve them. "For L2 acquirers, the problem lies in figuring out how (and whether) to spell out *morphologically* the categories they already represent *syntactically*, i.e., the "mapping problem," (Lardiere, 2000, p. 121, emphasis AG). The research of Lardiere and many others points to the possibility that syntactic competence can develop independently of surface morphology. The question that Montrul and Slabakova (2002) want to explore is what type of relationship exists between *semantic* competence and inflectional morphology, redirecting the focus from the syntactic to the semantic reflexes of functional categories.

4.2.2.2 *Method*

Learners were tested with two tasks. The first task targeted learners' use of the morphology associated with the Preterite and Imperfect. Learners were asked to choose between the two verb forms in the context of a narrative, as in (11) below. Therefore the

learners needed to interpret the context and then decide which verb form is compatible with the context.

- (11) El jefe le *daba/dio* el dinero a la empleada para depositarlo en el banco.
The boss was giving/gave the money to the employee to deposit in the bank.

For the second task, Montrul and Slabakova used sentence conjunction in order to target the semantics associated with the Preterite and the Imperfect. On the sentence conjunction judgment task, two sentences were conjoined by *pero* (but) and learners were asked to determine on a five-point scale (from -2 to 2) whether the combination of the two sentences was possible. Examples are given in (12). Test sentences included accomplishment, achievement and stative verbs.

- (12) La clase fue a las 10 pero empezó a las 10:30. (Preterite)
The class was-PRET at 10 but started at 10:30
-2 -1 0 1 2

La clase era a las 10 pero empezó a las 10:30. (Imperfect)
The class was-IMP at 10 but started at 10:30
-2 -1 0 1 2

In the first example, the first verb is inflected with Preterite morphology and the interpretation is bounded. The combination of the two sentences is ruled out. However, in the second example, the verb is inflected with Imperfect morphology and therefore the interpretation is unbounded. The combination of the two sentences is thus possible. The second example would be similar in English to *The class was going to begin at 10:00 but*

began at 10:30. The point of the task is to see if learners are able to correctly assign the Preterite a bounded interpretation and the Imperfect an unbounded interpretation.

4.2.2.3 *Results on test of aspectual semantics*

We will summarize the results for the sentence conjunction task first. Montrul and Slabakova found that both intermediate and advanced learners successfully distinguish Imperfect and Preterite sentences with all verb classes, although the contrast is much smaller for the intermediate learners. They interpret the group results as evidence that L2 learners can acquire formal features associated with the functional category AspP, which are not instantiated in the native language. They propose that the depressed performance of the intermediate group is due to initial transfer of the English functional category AspP, which is associated with the feature value [+ perfective]. The Preterite/Imperfect contrast cannot emerge until the feature value [– perfective], associated with AspP in Spanish, is in place.

In addition, results showed that advanced learners were indistinguishable from native speakers in all but one of the conditions: achievements in the Imperfect, as in (13). Native speakers of Spanish consistently accepted sentences such as the one in (13) but intermediate and advanced learners categorically rejected them. This finding is surprising given that the direct English translation of the sentence is acceptable.

- (13) Los Gonzalez vendían la casa pero nadie lo compró
The Gonzalez's were selling the house but nobody bought it.

Montrul and Slabakova propose, following De Swart (1998), that (13) is an example of a *coercion* context. According to De Swart, coercion is triggered if there is an aspectual conflict between the aspectual properties of the verb phrase and the aspectual constraints of some other element in the sentence, in this case the Imperfect. The sentence in (13) is an example of a coercion context because the telic achievement is in conflict with the unbounded nature of the Imperfect. Coercion requires supplying a special context for the event; therefore according to Montrul and Slabakova, it recruits pragmatic knowledge. In the case of (13), the speaker needs to extend the telic event to the moment just before completion, instead of focusing on the endpoint of the event. Montrul and Slabakova propose that coercion, and pragmatic knowledge in general, may not be acquirable by L2 learners because it is outside of the domain of knowledge that is constrained by UG. Although it is quite natural for native speakers to coerce in their own language, because coercion is peripheral to UG, it may be harder for L2 learners.

The proposal is interesting in that they suggest we can explain residual differences between second language learners and native speakers by examining knowledge peripheral to UG. Their account is in line with the proposals of other researchers who have argued that we should look to peripheral areas such as processing or discourse to explain non-targetlike behavior (cf. Juffs and Harrington, 1995; Klein and Martohardjono, 1999; Sorace, 1999, 2003). It is also an interesting proposal in that it takes seriously the fact that the interpretation of imperfective forms requires an integration of both semantic and pragmatic knowledge. However, it remains puzzling why this type of pragmatic knowledge should be out of reach for adult learners. The notion of selling a house, while it is classified as an achievement, is often conceptualized

as an extended process. We might begin “selling our home” the day that we look up the realtor’s phone number and make a decision to arrange an appointment. Since this concept is salient in English, it remains difficult to see why the learners cannot simply apply it to Spanish.

4.2.2.3 *Relationship between aspectual semantics and morphology*

In this section we summarize how Montrul and Slabakova look at the relationship between knowledge of inflectional morphology and knowledge of aspectual semantics. They divided learners into two groups based on their performance on the morphology test. An example from this test is shown above in (11). They considered learners who scored 80% or above to know the morphology associated with the Preterite and Imperfect (Yes-Morphology group) and they considered learners who scored below 75% to be uncertain of the morphology (No-Morphology group). Within each group, they then looked at each individual’s performance on the sentence conjunction task, which targeted aspectual semantics. With very few exceptions, learners who did not show knowledge of the morphology associated with the Preterite and Imperfect (No-Morphology group), also did *not* perform well on the sentence conjunction task. On the other hand, only 60-70% of the individuals in the Yes-Morphology group also performed well on the test of aspectual semantics. Based on these results, Montrul and Slabakova propose that acquisition and use of the Preterite/Imperfect inflectional morphology precedes acquisition of the semantics associated with these forms. The results of the Yes-Morphology group suggest that knowledge of morphology is a necessary *but not*

sufficient condition for acquisition of the semantics of these forms. In other words, knowledge of morphology does not appear to necessarily trigger acquisition of the semantics.

Montrul and Slabakova point out that morphological paradigms are often emphasized in the L2 classroom. Based on this instruction, the learners may be able to use the morphology at an early point in acquisition. However, they propose that full knowledge of the semantics associated with these forms may develop at a later point. These results are compatible with the findings of Bardovi-Harlig (1992) who reported that in a cloze test instructed learners often supplied well-formed morphological markers but in inappropriate contexts (see also Klein, 1994). Bailey (1987) also points out that forms such as the past progressive in English are quite simple with respect to form but are more complex with respect to semantics.

Montrul and Slabakova consider how their results, which suggest that knowledge of surface morphology is a prerequisite to knowledge of aspectual morphosemantics, compare with the results of Lardiere and others, whose results suggest that knowledge of syntax can emerge *without* appropriate use of the associated surface morphology. Montrul and Slabakova's results suggest that there may in fact be a tight relationship between morphology and semantics, unlike the relationship observed between morphology and syntax. However, they acknowledge that the difference is potentially methodological. Montrul and Slabakova tested use of morphology by giving classroom learners a typical classroom grammar exercise. Lardiere and other proponents of the MSIH (Prevost and White, 2000) have more commonly investigated learners' use of morphology by analyzing naturalistic production data. They suggest that naturalistic

production may be more subject to production and performance errors as learners might pay more attention to the communicative, rather than grammatical, value of their utterances. In these contexts, learners may be likely to omit morphology. The classroom grammar exercise on the other hand actually provided the learners with the morphological forms and perhaps may have given them more opportunity to succeed.

Another possibility is that two tasks employed by Montrul and Slabakova tapped, to some degree, the same knowledge. In the morphology test, shown in (11), learners are asked to choose between the Preterite and Imperfect in context. The learner must first interpret the context and then decide which verb form is appropriate. In order to perform well on this task, the learner must already have some grasp of the aspectual implications of the Preterite and Imperfect. If learners cannot perform well on these simplistic contexts then it seems unlikely that they will perform well on the more demanding sentence conjunction task that explicitly targets knowledge of boundedness. In other words, both tasks target interpretation to some degree but perhaps learners can succeed on the cloze test without perfect knowledge of boundedness and completion entailments. This may explain why many of the learners who did not perform well on the morphology test also did not perform well on the test of semantics.

4.3 Near-natives

An early study by Coppieters (1987) was the first study to investigate the interpretation of aspect by near-native speakers. Coppieters was interested in investigating whether the intuitions of near-natives matched the intuitions of native

speakers. He tested a group of 21 adults from varying L1 backgrounds who were able to pass as native speakers of French in conversation. He tested the learners on a variety of aspects of French grammar targeting both syntax and semantics. He found that the near-natives performed similarly to native speakers on the syntactic conditions but had much more difficulty with the items targeting semantics. For example, near-natives had particular difficulty with aspectual distinction between the two past tenses in French: the *Imparfait* and *Passé Composé*. The distinction between these two aspectual forms is very similar to the distinction between the Imperfect and the Preterite that we outlined for Spanish. While the *Imparfait* is unbounded, the *Passé Composé* is bounded. Coppieters found that near-natives whose native language was a Romance language were able to clearly distinguish the two forms. However, native speakers of other languages were unsure of the interpretive difference.

Coppieters argues that knowledge of this aspectual distinction is outside of Universal Grammar and is thus unattainable by L2 learners who are past the critical period. Although Coppieters' conclusion is controversial and his study has been widely criticized on methodological grounds (cf. Birdsong, 1992), the study nonetheless drew researchers' attention to the fact that even extremely advanced learners, who have seemingly mastered the L2 syntax, have difficulty with subtle interpretive differences between aspectual forms in the second language. In other words, L2 learners use forms before they have necessarily mastered the complete semantics associated with those forms.

Coppieters' claims pertaining to aspect were not addressed until Montrul and Slabakova (2003) extended their investigation of the acquisition of the Spanish Preterite

and Imperfect to a group of near-native speakers. In their study, all L2 speakers of Spanish were native English speakers who lived in the U.S. and used Spanish on a daily basis. Speakers were classified as near-native based on a series of assessments modeled on the selection criteria developed in White and Genesee (1996). Unlike Coppieters, they argue that the semantic distinction between the Preterite and Imperfect does fall under the umbrella of Universal Grammar. As we mentioned earlier, they adopt the analysis of Giorgi and Pianesi (1997), which posits a parametric difference between English and Spanish in the functional category AspP. They hypothesize that near-natives will be able to acquire the semantic distinction because they have access to Universal Grammar.

Learners were tested with two tasks: the sentence-conjunction task which was used with intermediate and advanced learners in the study outlined above (Montrul and Slabakova, 2002; Slabakova and Montrul, 2002)) and a Truth Value Judgment (TVJ) task which targeted a subtle semantic property associated with the Preterite and Imperfect. On the sentence-conjunction task, the near-native speakers as a group performed at the same level as native speakers. They were able to distinguish between the Preterite and Imperfect with all verb classes. Individual analyses indicated that 12 out of 17 near-natives (or 70%) performed like native speakers. Montrul and Slabakova point out that the aspectual semantics of the Preterite and Imperfect tenses are topics that are reviewed extensively in the L2 classroom. Therefore, it is possible that the learners' success is due to instruction and not to UG.

Because their goal was to provide evidence of access to UG, they included a second task that targeted properties of the Preterite and Imperfect tenses that are relatively infrequent in the input and are never discussed in the classroom. They

investigated whether near-natives have acquired the interpretation of impersonal constructions with null subjects when they appear in the Preterite and Imperfect as in (14) and (15) below:

- (14) Se comía bien en ese restaurante. Imperfect: generic or specific interpretation
clitic eat-IMP well in that restaurant.
'One/ We ate well in that restaurant.
- (15) Se comió bien en ese restaurante. Preterite: only specific interpretation
clitic eat-PRET well in that restaurant.
'We/ *One ate well in that restaurant.

In (14) when the verb appears in the Imperfect, the sentence is ambiguous. The sentence in (14) can refer to a specific group of people (*We*) or it can refer to people in general (*One*). However, in (15), when the verb appears in the Preterite, the generic interpretation is ruled out and the sentence must refer to a specific group of people.

Montrul and Slabakova argue that the subtle contrast between (14) and (15) cannot be easily deduced from L2 input alone and thus presents a learnability problem for the L2 learner. They propose this contrast is especially difficult because it presents a negative constraint: learners must acquire the fact that the generic interpretation is ruled out with the Preterite. Therefore if learners demonstrate knowledge of this contrast, it presents strong evidence for the claim that the functional category AspP is instantiated in the L2 grammar with the appropriate L2 feature settings.

In the TVJ task near-natives read short stories that established a context that referred to either a specific or more general group of people. They were then asked to decide whether sentences such as the ones in (14) and (15) were compatible with the

story they just read. Near-natives performed quite well on these sentences. For the contrast depicted in (14) and (15), 15 out of 17 (or 88.22%) near-natives performed at the same level as native speakers.

Montrul and Slabakova interpret their results, contra Coppieters, as evidence that native-like competence in the domain of aspect is attainable, even when the L2 speakers are not immersed in the target language. They argue that these results provide support for the notion that aspect is constrained by UG. Many more studies of this type are necessary in order for us to get a clear picture of the near-native grammar. While Montrul and Slabakova's findings suggest that Coppieter's claims may be too strong, other studies on L2 aspect have reported that near-natives are not always as successful as native speakers (Kosłowska-Macgregor, 2002).

Furthermore, even on the sentence conjunction task, there were still five learners who were classified as near-natives that did not perform at the level of native speakers on the task. Therefore, while it has been shown that aspect is in fact acquirable to native-like levels, we still do not have a very clear understanding of why not all learners are successful. The present study intends to address exactly that issue by considering not only properties of the L1 and L2 grammar, but also external factors relevant to input and learnability.

5. Conclusion

It is clear from our discussion in this chapter that researchers in both first and second language acquisition are still working towards an understanding of the

complexities of the acquisition of aspect. Work in first language acquisition has focused on whether or not tense comprehension is dependent on aspect. However, very few studies have truly tried to tease apart the relative contribution of tense and aspect. The study we reviewed by Valian shows that when this effort is made, it is clear that children do have a basic understanding of tense. Studies such as Valian's also demonstrate the benefits of moving beyond production data and tapping learners' judgments in controlled, experimental studies.

Nevertheless, it is also clear that children have a great deal of difficulty with forms such as the past progressive, which require a subtle integration of tense and aspect. Researchers are still working towards an explicit understanding of why these contexts are so difficult. It has been proposed that children have knowledge of the semantics underlying tense and aspect but have difficulty mapping these concepts onto specific pieces of morphology. The present study investigates the acquisition of the past progressive by L2 learners. The results that will be reviewed in the next chapter suggest that there are important similarities in L1 and L2 acquisition.

Research on the acquisition of aspect in a second language suggests that properties of the native language grammar strongly influence L2 acquisition. It has even been suggested that L2 learners cannot acquire aspectual properties that are not present in the native language (Coppieters, 1987). However, recent work by Montrul and Slabakova (2002, 2003) has shown this claim is too strong. This recent research has focused on how learners interpret sentences in a second language and has brought us closer to a better understanding of the acquisition of aspectual semantics. While there is evidence that knowledge of aspectual semantics is acquirable by L2 learners, there is also evidence that

certain aspectual forms remain difficult even for very advanced learners. In order to understand why this difficulty persists, researchers in second language acquisition need to work towards a model of how the various factors, including innate principles, input, instruction, the native language, and discourse principles, interact in the development of aspectual knowledge.

The present study contributes to this goal by focusing in particular on two of these factors. We consider not only the role of the L1 grammar, but also the role of input and learnability in an effort to develop a more subtle understanding of the acquisition of aspect. The details of the study are provided in the next chapter.

CHAPTER 4

L2 ACQUISITION OF ASPECT: A BIDIRECTIONAL STUDY OF LEARNERS OF ENGLISH AND JAPANESE

1. Introduction and Background

This chapter presents the results of two studies with very similar methodology. Study 1 investigates the acquisition of aspectual morphology in L2 English, with a specific focus on the present and past progressive. The main group of L2 learners was made up of native speakers of Japanese who were studying English at universities in Japan. The second study investigates the acquisition of aspectual morphology in L2 Japanese, with a specific focus on *te-iru* and the past form of *te-iru*, which is realized as *te-ita*. The L2 learners in this study were native speakers of English who were studying Japanese at high schools and universities in New York.

Section 1 reviews the crosslinguistic facts under investigation as well as presents the general research questions and specific hypotheses of the two studies. Sections 2-3 describe the methodology and results for Study 1. Sections 4-5 describe the methodology and results for Study 2. The results of the two studies are integrated in Section 6.

1.1 Summary of Crosslinguistic Facts

Tables 4.1A and 4.1B below summarize the semantic properties of the aspectual morphological markers under investigation in English and Japanese. Table 4.1A compares the behavior of English and Japanese when the morphological markers are

attached to an accomplishment verb phrase while Table 4.1B compares the behavior of English and Japanese when the markers are attached to achievements.

In these tables we restrict our focus to whether the aspectual markers under investigation are truth conditionally compatible with two types of events: events that are ongoing and have not yet reached completion and events that have reached completion²⁹. These are the two types of events that are tested in the experiment to be reported.

Table 4.1A Interaction of *be+ing* and *te-iru* with Accomplishment Verbs

	Incomplete/Ongoing Event	Complete Event
English <i>be+ing</i>	√	X
Japanese <i>te-iru</i>	√	X
English <i>be (past) +ing</i>	√	√
Japanese <i>te-ita</i>	√	√
English simple past <i>-ed</i>	X	√
Japanese simple past <i>-ta</i>	X	√

Table 4.1B Interaction of *be+ing* and *te-iru* with Achievement Verbs

	Incomplete/Ongoing Event	Complete Event
English <i>be+ing</i>	√	X
Japanese <i>te-iru</i>	X	√
English <i>be (past) +ing</i>	√	√
Japanese <i>te-ita</i>	X	√
English simple past <i>-ed</i>	X	√
Japanese simple past <i>-ta</i>	X	√

²⁹ Other event types, in which the progressive form may be used, such as futurate or habitual contexts, are beyond the scope of this study.

As was described in Chapter 2, *be+ing* and *te-iru* denote basically equivalent interpretations with accomplishment verbs. In the present tense, both forms are compatible with ongoing events and are incompatible with complete events. In the past tense, both forms are compatible both types of events.

The main differences under investigation are highlighted in the shaded cells in Table 1B. With achievement verbs, *be+ing* in English and *te-iru* in Japanese denote different interpretations. As was outlined in Chapter 2, the truth conditions for *be+ing* requires that an event have begun, but crucially it cannot have been completed. Achievements under the English progressive cannot denote complete events.

The truth conditions of *te-iru* on the other hand require that at least one event entailed by the predicate be manifested. Achievement verbs entail only a single event of the kind named by the predicate. Therefore that single event *must* be manifested in order for *te-iru* to obtain. As Table 1B shows, with achievements, *te-iru* is only true in instances when the event is complete and is incompatible with events that are incomplete or ongoing.

As was discussed in Chapter 2, the interpretation of progressive forms in the past tense is more complicated. In English, the past progressive can describe both events in the past that were completed and events in the past that were not completed. For example, the truth conditions of the sentences *James was crossing the street* and *James was dying* do not entail that James in fact did make it across the street or that James did in fact die. The sentences can be true in both the scenario where the event reached

completion and in the scenario where it did not³⁰. The same is true of *te-ita*, but only with respect to accomplishment verbs.

With achievement verbs, *te-ita* is only compatible with complete events, for the same reason that *te-iru* is only compatible with complete events. The semantics of the form require that the single event be manifested. Therefore, with achievements, the English past progressive and Japanese *te-ita* differ in the context of an incomplete event.

The simple past has been included in the tables above as a reminder that these forms denote basically equivalent interpretations with both accomplishment verbs and achievement verbs, in both English and Japanese. Due to these similarities, the past has been included in the design of the experiments as a contrast to the progressive, where English and Japanese behave differently.

1.2 General Research Questions

The two studies address several broad research questions. The first question addresses the extent of L1 influence in the acquisition of aspect. Our study investigates both areas of equivalence and areas of difference in the aspectual properties on English and Japanese. The specific crosslinguistic difference we investigate is in the semantics of the aspectual operator PROG in English and Japanese; the theoretical analysis we adopt is presented in Chapter 2, Section 5.

In the framework we have adopted, the truth conditions of the aspectual operator specify how the operator interacts with the semantics of the verb stem in a given

³⁰ Clearly pragmatics will influence whether a speaker would in fact use a sentence such as *James was dying* if in fact the event had come to completion.

language. As we described in Chapter 2, the range of possible interactions between the operator and the lexical aspectual classes is constrained by Universal Grammar. The learner has at her disposal the range of options that natural languages exhibit. The goal of the learner is to acquire, based on a semantic analysis of the input, the truth conditions for the aspectual operator in the target language and then to map from those truth conditions to the appropriate surface morphology.

If L1 influence were to manifest itself in this domain, the L2 learner would essentially face a semantic mapping problem. The L2 learner would map the truth conditions for the L1 aspectual operator onto L2 inflectional morphology. In order to investigate whether there is L1 influence, we investigate two different types of contexts: contexts where the truth conditions for *be+ing* and *te-iru* overlap (accomplishments) and contexts where the truth conditions differ (achievements). To further assess the role of the L1, a bidirectional design has been used in this study. Testing learners of both L2 English and L2 Japanese will allow us to establish whether the same contrast in a given language pair, L_x and L_y , has similar effects when learners go from L_x to L_y or from L_y to L_x .

If we assume that the L1 will play a role to some extent in L2 acquisition, a related question is how properties of the L1 will interact with the input available to the L2 learner. This question moves beyond the representation of the learners' grammar and addresses issues of learnability, how acquisition is in principle possible given the input available to the learner (Hornstein and Lightfoot, 1981). We will focus in this section on the acquisition of achievements under *be+ing* and *te-iru*, the area where English and Japanese differ.

Given the differences outlined in Table 4.1B, we will state the specific goals of the learners of English and Japanese. The goal of the two groups is actually very similar: in both cases the interpretation of achievements under PROG has to be altered. On the one hand, an interpretation that does not exist in the L1 must be acquired in the L2. The learners of English need to acquire a progressive interpretation for achievements under PROG while the learners of Japanese need to acquire a resultative interpretation for achievements under PROG. On the other hand, both groups of learners need to repress an interpretation that is available in the L1 but is ruled out by the truth conditions for PROG in the L2. The Japanese learners of English need to preempt a resultative interpretation for achievements under PROG while the English-speaking learners of Japanese need to preempt a progressive interpretation for achievements under PROG.

Thus the L2 learners have two separate goals: *adding* an interpretation to the L2 grammar that does not exist in the L1 and *preempting* an interpretation that exists in the L1 but not in the L2. We might expect that adding an interpretation can be facilitated by the positive evidence available to the learner while preempting is more difficult given that there is usually no information in the input as to what interpretations are *not* possible. The design of our experiment allows us to consider these two goals individually and evaluate to what extent the ability to overcome L1 influence is dependent on the type of evidence that is available to the L2 learner.

A related question within the domain of learnability is the issue of ultimate attainment. There are second language learners who reach extremely high levels of proficiency in the second language, even when they have acquired the L2 after puberty. The main question is whether these advanced learners attain the same mental

representation for the L2 grammar as monolingual native speakers do. In previous studies researchers found that near-natives differ from monolingual native speakers with respect to the acquisition of aspect (Coppieters, 1987). However, in a recent study, Montrul and Slabakova (2003) argue that native-like attainment is possible in this domain. Our study addresses not only how aspect is mastered throughout development, but also, whether or not it can in fact be acquired to native-like levels. To that end we test learners of several levels of proficiency, including in the L2 English study, a group of near-native speakers.

A final question addresses the relationship between domains of knowledge in the acquisition of aspectual morphology. Very little is known about the relationship between knowledge of aspectual semantics on the one hand and knowledge of the morphosyntactic forms that encode the semantics on the other. As we outlined in the literature review in Chapter 3, it has been proposed that knowledge of *form* is acquired before knowledge of *meaning*. To further investigate this relationship, multiple tasks are included in each study to tap knowledge of aspectual morphology from different perspectives.

Specific hypotheses for the two studies are presented in the next section.

1.3 Hypotheses

1.3.1 Role of the L1

We take the strongest position with respect to L1 influence and assume that the L1 grammar constrains the L2 learners' hypotheses regarding semantic properties of the

L2 (White, 1985; Schwartz and Sprouse, 1994, 1996). This model predicts differential success in initial L2 development depending on the overlap between the native and target language. Naturally, if properties of the two languages are similar, acquisition should proceed with little difficulty while if properties of the native and target language differ, acquisition will be impeded by negative transfer.

Given this hypothesis, neither group of learners should have difficulty with accomplishments under *be+ing* or *te-iru*. The interaction of PROG with accomplishments results in the same action-in-progress interpretation in both English and Japanese. This is true of both the present and past tense. Even if learners map the truth conditions for the L1 operator onto L2 morphology, they should still succeed in these cases. Likewise, successful acquisition is predicted for both groups of learners with respect to the simple past because the forms are basically equivalent in the two languages.

On the other hand if learners map the truth conditions for the aspectual operator in the L1 onto L2 morphology, then they will interpret achievements under PROG in the L2 incorrectly. English-speaking learners of Japanese will incorrectly assign achievements under *te-iru* a progressive interpretation while Japanese learners of English will incorrectly assign achievements under *be+ing* a resultative interpretation. These predictions again hold for both the present and past tense.

1.3.2 Learnability

Our second hypothesis addresses second language development and learnability. While we assume that the representation of the L2 grammar is influenced by properties of the L1 grammar, we also expect that learners will overcome the effects of L1 influence at higher levels of proficiency. The question is how this grammar restructuring takes place. We predict that the input will play an important role in L2 development. We expect to see differential success in acquisition with respect to the two different goals that we outlined above for the L2 learners in this study. With respect to the goal of *adding* an interpretation to the L2 grammar, we believe that the positive evidence available to the learner will facilitate acquisition. On the other hand, we predict that learners will have more difficulty preempting an interpretation that is available in the L1 but not in the L2, given that there is usually little information in the input as to what interpretations are ruled out in the second language.

With respect to the issue of ultimate attainment we predict that near-natives will be able to acquire the truth conditions for the L2 progressive operator on par with native speakers. We assume a generative framework whereby the learners' hypothesis space is constrained by Universal Grammar. Aspectual operators interact with lexical aspectual classes in a limited number of ways; we assume that learners have this range of options available to them. We hypothesize that near-natives will be able to converge on the target representation and thus overcome the influence of the native language.

1.3.3 *Relationship between form and meaning*

Prior L2 research has shown that learners' use of morphological forms seems to precede learners' knowledge of the aspectual semantics associated with those forms (Bardovi-Harlig, 1992; Coppieters, 1987; Montrul and Slabakova, 2002). As we mentioned in Chapter 3, some studies have used L2 classroom exercises to assess knowledge of morphological form. In this study, both knowledge of morphological form and aspectual interpretation are tested in controlled psycholinguistic experiments, attempting to get at knowledge of form and meaning independently, but using similar methods. Knowledge of morphological form is tested using a timed grammaticality judgment (GJ) task while interpretive knowledge is tested using a timed interpretation task. Both tasks target the same aspectual forms. The tasks are described in the following section.

Based on the results of prior research, we predict that learners will perform well on tests tapping knowledge of morphological form. We define knowledge of morphological form as the ability to identify whether or not a particular verb + morphology complex (i.e. *was running*) is *well-formed* in the L2. Learners' ability to correctly judge the ungrammatical sentences on the GJ task will be taken to indicate knowledge of form.

The ability to correctly judge the grammatical sentences on the GJ task will be taken to indicate knowledge of how to *use* morphology in the context of a sentence. The ability to identify an appropriate use of a morphological form in a given context crucially involves an element of interpretation. The distinction between knowledge of *form* and

use will be addressed in further detail in Section 2.2.4. We predict that learners will perform better on tests of form than on tests of use. We also predict that we will see a close relationship between performance on tests targeting use of morphology and tests specifically targeting the interpretation of aspectual morphology.

2. Study 1: Methodology

Section 2 presents the methodology for Study 1, which examines the acquisition of the English progressive by learners of Japanese.

2.1 Participants

Three groups of participants took part in Study 1. The largest group was made up of 101 native speakers of Japanese who were studying English at universities in Sendai, Japan. Participants were recruited through flyers and announcements at two universities. Background information was collected through a written questionnaire. All participants were classroom, foreign language learners who were initially exposed to English in junior high school around the age of 12. Several of the English learners had studied abroad in English-speaking countries, but none had done so for more than one year³¹. The mean age of the English learners was 20 (SD 1.5). The average number of years the participants had studied English was seven. Although the participants have been exposed to English in Japan for many years, this does not necessarily mean that the participants

³¹ Only five participants indicated on their questionnaire that they had spent time in an English-speaking country.

had reached a high level of proficiency. An independent measure of proficiency was administered to the learners and will be described below.

The second group of participants was made up of nine native speakers of Japanese who had become ‘near-native’ speakers of English and who were living and working in New York City at the time of testing. Participants were recruited through flyers in Japanese supermarkets and web postings on Craig’s List New York City. Thirteen native speakers of Japanese in total were actually tested but four of these speakers did not meet the proficiency criteria to be included in the analyses. Participants had to pass two different tests in order to be included. First, they had to score 40 out of 45 on an English proficiency measure that is described below. Secondly, they had to pass an interview examination. Near-native candidates were asked to answer three interview questions that were recorded. Two native speaker judges then evaluated the recorded interview responses. The interview protocol is described below. Participants who scored at least a 40 on the proficiency exam and were also evaluated to be ‘near-native’ by the two judges were then included in the analyses. The near-native participants also filled out an extensive language background questionnaire in order to assess their use of both English and Japanese³². The participants were either graduate students or professionals in New York City. The mean age of this group was 30. All near-natives had begun to study English in Japan around the age of 12. The average length of stay in the US was 7 years.

Finally, 23 native speakers of English made up the control group. These participants were monolingual undergraduate and graduate students who were tested in New York City. A brief questionnaire was given to collect background information. The

³² I am grateful to Eva Fernández for allowing me to modify the language background questionnaire she developed in Fernández (2000, 2004).

participants in the control group had never studied linguistics. The mean age of the English native speakers was 28.

2.2 Test instruments

In this study, four separate measures were used: standardized proficiency test, a published interview protocol and two experimental tasks specifically developed for this study.

2.2.1 Michigan Listening Comprehension Test

All participants, including the English native speakers, took the University of Michigan English Language Institute Listening Comprehension test. This proficiency measure is designed to assess knowledge of English grammar. It is made up of 45 multiple-choice questions. A listening comprehension test was selected to measure proficiency because the experimental tests also involved a listening comprehension component. Test questions were pre-recorded by a native speaker of English and were administered via a speaker connected to a laptop. Participants listened to the test items, which were either one-sentence questions or one-sentence statements and then they chose the appropriate response from a list of choices provided on an answer sheet.

2.2.2 *Oral interview*

The interview protocol we developed was a shortened and modified version of the interview portion of the University of Cambridge Certificate of Proficiency in English (CPE) exam, which is specifically designed to assess whether learners of English are at a native-like level of proficiency. The only participants who took the interview exam were the Japanese native speakers in New York who were being considered for inclusion in the near-native group.

A native speaker of English conducted the interviews. There were three different parts to the interview. The interview questions are included in Appendix C. In Part 1 the interviewer asked the participant a series of background questions pertaining to where the participant lived and how long they had been in New York. These questions were meant to serve as a warm-up. In Part 2 the participant was shown a list of 5 topics or questions. They were then asked to speak for two minutes on the topic of their choice. These topics were challenging in that they addressed politics, education and technology. The idea is that only an advanced speaker of English would have the vocabulary to talk for two minutes on one of these topics. The interview questions required that the participant form an argument or state an opinion. In Part 3 the participants were asked to look at a picture that depicted a scene at a hotel. In the picture several hotel employees were shown to be busy performing their particular job. For example, there was a picture of a porter carrying luggage, a chef preparing a meal, a piano player performing, etc. The participants were asked to talk about which job would be the easiest to perform without training and which job would be the hardest to perform without training and why. They were

asked to speak for 1-2 minutes. These questions were again designed to force the participants to form an opinion and argue for a point. Interviews were recorded on a Sony digital voice recorder. The interview lasted for about five minutes.

2.2.3 *Story Compatibility task*

The main task of the study was an interpretation task. This task was designed to tap learners' interpretations of aspectual morphology in English. The task that was developed is a modified form of the Truth Value Judgment task (Crain and McKee, 1986); I will refer to it as the Story Compatibility task.

The task presented learners with stories that depicted events that were either complete or incomplete and ongoing. These short stories were illustrated with two pictures that were scanned and inserted into a PowerPoint presentation. The narration of the story (one-two sentences per picture) was digitally recorded and inserted alongside the picture in PowerPoint. The participants looked at the pictures, which were projected on a screen via an LCD projector, and listened to the short stories, which were played via a speaker connected to the laptop. Following each story, a test sentence appeared on the projection screen. The test sentence was also presented aurally via the speaker. Participants were asked to judge the test sentence on a scale of 1-5, evaluating whether or not the sentence was compatible with the story they had just listened to. The numbers on the scale were defined qualitatively so that a score of "1" was equal to the statement *I definitely cannot say this sentence in the context of the story* and a score of "5" was equal

to *I definitely can say this sentence in the context of the story*. Learners were given written instructions in Japanese. The English instructions are provided in Appendix C.

The test sentence remained on the projection screen for ten seconds, during which time the participants were told to circle an appropriate response (1-5) on their answer sheet. After ten seconds, the presentation advanced to the next slide. The slide following a test sentence always contained the test item number for the following story; slides with test item numbers were also accompanied by the sound of camera click in order to alert participants that a new test story was about to begin. The test item number stayed on the screen on the screen for just one second before the presentation advanced and the following test story began. The entire test lasted for about 30 minutes.

An example of a complete story context with the accomplishment verb *make a cake* is provided in (1):

(1) Accomplishment verb: complete context

Picture 1: Mari likes to cook. At 3:00 she begins to make a cake for her friend.

Picture 2: At 5:00 she serves the cake to her friend.

Test sentence: Mari made a cake for her friend. Predicted Response: 5

The detailed design including verbs and test sentences will be explained below. As can be seen in the example above, aural story narrations were presented in the simple present tense. We did not want any of the story narrations to make use of any of the aspectual forms targeted in the test sentences lest the participants be influenced by the story.

The Story Compatibility task has several advantages. First, the simple story narrations accompanied by the pictures were very easy for the learners to understand, even when the stories were narrated in the second language. Interpretation tasks in second language research often use the native language of the participants in order to be sure that the learners understand the context. Usually the story is written in the native language and then the test sentence will follow the story written in the second/target language. Given that L1 influence was of primary interest in this study, it would be inappropriate to use the native language for the story presentation. This type of task allows participants to remain focused in English for the duration of the test.

Secondly, the ability to present the stories and sentences using a computer and LCD projected made it possible for numerous participants to take the test at one time. Finally, the automated presentation of the stories in PowerPoint allowed us to use static pictures but still create somewhat of an illusion that the stories were progressing in real time³³.

The Story Compatibility task targeted the interpretation of accomplishments and achievements under simple past, present progressive and past progressive morphology. Eight accomplishments and eight achievements were tested. The verb phrases we selected have the same lexical aspectual classification in both languages. These 16 verbs were selected for inclusion based on the behavior of those verbs' Japanese translational equivalents under Japanese *te-iru*. For the accomplishment class, it was necessary that the verbs denote an ongoing, action-in-progress, interpretation under English *be+ing* and that the Japanese equivalent of those verbs also denote an ongoing, progressive

³³ Ideally these stories would have been animated, as Wagner has done in some of her studies (cf. Wagner and Carey, 2003). However, not all of the story contexts in this study lend themselves easily to simple animation.

interpretation under Japanese *te-iru*³⁴. For the achievement class, it was necessary that the verbs selected denote a progressive interpretation under *be+ing* but that the Japanese equivalents of those verbs unambiguously denote a resultative interpretation under *te-iru*. The verbs included in the study are listed in (2) below³⁵:

- (2) Accomplishments: make a cake, build a sandcastle, drink a glass of coke, eat a bowl of ramen, write a book, paint a portrait, read a pile of books, wash a pile of dishes

Achievements: arrive, die, come, return, open_{INT}, close_{INT}, leave, go (to the store)

For each verb, a complete story context and an incomplete/ongoing story context were developed. The goal was to elicit learners' judgments as to the compatibility of sentences in the simple past, present progressive and past progressive with stories in each context. A full paradigm of stories and test sentences for the accomplishment *paint a portrait* and the achievement *arrive* is presented in (3) and (4) below. A complete list of test stories is included in Appendix C. Included in the tables on (3) and (4) are the judgments expected for native speakers of English (on the scale of 1-5 described above) as well as the expected judgments of Japanese learners. These tables allow us to directly compare the behavior of accomplishment and achievement verbs under English and Japanese aspectual morphology. The shaded areas highlight differences between English and Japanese; these are the areas where we predict difficulty for the L2 learners.

³⁴ As we mentioned in Chapter 2, Japanese accomplishment verbs under *te-iru* can allow in certain contexts a perfective interpretation. The requirement for the experiment was that the *preferred* interpretation under *te-iru* be progressive. These same verbs were tested in the Japanese study and it is clear that native speakers of Japanese assign a progressive interpretation to these verbs under *te-iru*.

³⁵ At an earlier stage of this study Yasuhiro Shirai provided several useful comments that helped me in the selection of these verbs.

(3) *paint a portrait* (accomplishment)Complete Story Context

Picture 1: Ken is an artist. At 12:00 he begins to paint a portrait of his family.

Picture 2: At 8:00 he gives the portrait to his mother for her birthday.

	English Native	Japanese equivalent
Ken painted a portrait of his family.	5	5
Ken is painting a portrait of his family.	1	1
Ken was painting a portrait of his family.	5	5

Incomplete/Ongoing Story Context

Picture 1: Ken is an artist. At 12:00 he begins to paint a portrait of his family.

Picture 2: At 12:30 he paints his mother and father.

	English Native	Japanese equivalent
Ken painted a portrait of his family.	1	1
Ken is painting a portrait of his family.	5	5
Ken was painting a portrait of his family.	5	5

(4) *arrive* (achievement)Complete Story Context

Picture 1: This is the plane to Tokyo. At 4:00 the plane is near the airport.

Picture 2: At 5:00 the passengers are at the airport.

	English Native	Japanese equivalent
The plane arrived at the airport.	5	5
The plane is arriving at the airport.	1	5
The plane was arriving at the airport.	5	5

Incomplete/Ongoing Story Context

Picture 1: This is the plane to Tokyo. At 4:00 the plane is near the airport.

Picture 2: There is a lot of wind. At 4:30 the plane is still in the air.

	English Native	Japanese equivalent
The plane arrived at the airport.	1	1
The plane is arriving at the airport.	5	1
The plane was arriving at the airport.	5	1

Each participant heard 32 test story contexts (there were 16 verbs tested and each verb had two story contexts, complete and incomplete). The participants heard each of the 32 stories just once. In addition, each participant provided a judgment on only *one* of the test sentence types (simple past, present progressive, past progressive) per story. The motivation behind this design is that a subject's response to an item on a test might be influenced by other items on the same test. For example, a participant may hear the complete story for the verb *arrive* and then correctly judge the simple past sentence *The plane arrived at the airport* to be compatible with that story and give it a score of 5. If the same participant were then to hear the same story again and this time get the sentence *The plane was arriving at the airport* it is possible that they would give the past progressive sentence a lower score simply because they are comparing it to the simple past. Eliciting judgments as subtle as those required for sentences in the past progressive is very difficult and requires that participants be allowed to evaluate sentences in isolation. For this same reason we felt it would have been less revealing to give participants a preference task, letting them judge more than one sentence at the same time.

One other aspect of the design is also important to mention. If a participant responded to a past progressive test sentence on the complete context for a given verb, then the design was set up so that the participant would respond to a different test sentence type (simple past or present progressive) on the incomplete context for that same verb. This was again done to at least lessen the risk of having prior items influence participants' judgments.

Due to the factors described above, the final design of this task was quite complex; items were counterbalanced across four different test batteries. The end result was that each participant provided responses to only half of the target test categories. This element of the design is not ideal because it requires a larger number of participants in each proficiency level and more importantly, takes away the possibility of conducting meaningful individual analyses for a given subject. However, given the difficulty of eliciting clear aspectual judgments, even from native speakers, it was felt that the design was a necessary compromise.

In addition to sentences in the simple past, present progressive and past progressive, participants also responded to filler items that were designed to test whether the 32 test stories actually conveyed the information they were intended to. They also tested whether learners understood the concepts underlying the story contexts: event in progress and event completed. In addition these fillers were used to balance out the number of items expected to be acceptable and unacceptable on a given battery.

For the verb *paint a portrait* the filler item for the complete context was the sentence *Ken did not finish painting the portrait of his family yet* which should be rejected if the participants clearly understand that the portrait was in fact completed in the

course of the story. These fillers used transparent lexical means of expressing aspect such as adverbs and aspectual verbs like *finish*. If participants perform well on these fillers it shows that they understand the stories and the task and also that they grasp the concepts underlying the aspectual semantics even if they still have difficulty interpreting aspectual morphology.

Finally, there were also 16 distractor stories; the same distractors were used on all batteries. These were stories that presented the sequence of two events (for example, a girl goes to the zoo with her brother one day and then watches TV with her brother the next day) but did not involve the notions of completion or incompleteness. Eight of the distractor sentences were in the past progressive; those distractor sentences were all intended to be unacceptable. This was necessary because within the test sentences on each battery there were eight past progressive sentences that were expected to be rated as acceptable. This allowed us to balance acceptable and unacceptable test sentences across sentence types as well. The remaining eight distractor sentences were simple statements presented in the simple present; these eight sentences were expected to be rejected.

In summary, each test battery had 48 items (24 acceptable/24 unacceptable) that can be divided into five categories as is shown below. Test items on all batteries were randomized.

8 simple past sentences (4 accomplishment, 4 achievement)

8 present progressive sentences (4 accomplishment, 4 achievement)

8 past progressive sentences (4 accomplishment, 4 achievement)

8 filler items (4 accomplishment, 4 achievement)

16 distractor items

2.2.4 Grammaticality Judgment task

The Grammaticality Judgment task targeted the same categories as the Story Compatibility task. This task was designed to evaluate learners' knowledge of aspectual morphology from a different perspective. On the GJ task the goal of the learner is to determine whether a given string is grammatical or ungrammatical. In order for a string to be grammatical, the verb + morphology complex must be well-formed in terms of inflection and also must be appropriate in terms of tense and aspect, given the context of the sentence as a whole. On this task, the ability to recognize a morphological form as ungrammatical is a more pure indicator of knowledge of *form* while the ability to recognize a form as grammatical is an indicator of knowledge of how that particular form can be *used*.

I will address the ungrammatical sentences first. Two different types of ungrammatical sentences were included. In half of the ungrammatical sentences the tense of the aspectual morphology was inappropriate for the adverbial in the sentence (*The chef is making a new dessert yesterday*). On the other half of the ungrammatical sentences, the inflection on the verb was simply ill-formed (*Today John is draw a portrait of my family*). In order for a participant to recognize a sentence such as *Today John is draw a portrait of my family* as ungrammatical requires that the participant be aware that *is draw* is not a possible form in English. Interpretation does not have to play a role. In order to evaluate *The chef is making a new dessert yesterday* as ungrammatical, the participant would have to be aware that the tense of the progressive form does not match the tense required by the adverb *yesterday*. While interpretation of tense is required, *aspectual*

information does not have to play a role. These sentences allow us to evaluate knowledge of tense separately from knowledge of aspect. In summary, in order to perform well on the ungrammatical sentences on this test, attention to the properties of the form is mandatory but attention to aspectual properties is not important.

Next we turn to the grammatical sentences on the task. A well-formed inflected verb phrase such as *is arriving* can only be evaluated if the rest of the sentence is taken into account. In order for *is arriving* to be evaluated as grammatical, the subject of the sentence must be third person singular and all words in the sentence, such as time adverbials, would have to be compatible with the present or future tense. Furthermore, adverbials would have to be compatible with the lexical aspect of the verb *arrive*; adverbials such as *for hours* should make the sentence unacceptable. In order to judge a sentence such as *Sally is arriving in California next week* as grammatical, the participant also must know that the present progressive can be used in futurate contexts. In other words, on the grammatical sentences, interpretive knowledge must come into play. The form is consistently *well-formed* as it were, so in addition to identifying the form as appropriate, the learner must also determine whether the form has been used correctly.

The GJ task, like the Story Compatibility task, was administered via PowerPoint. Sentences were projected on a screen and were also heard aurally by the participants. Participants were asked to evaluate the sentence on a scale of 1-5 with a score of “1” being equivalent to *This is definitely a bad sentence* and a score of “5” being equivalent to *This is definitely a good sentence*. Participants were given nine seconds to make their judgment; they were asked to circle the appropriate response on an answer sheet. The task did not ask the participants to correct ungrammatical sentences.

There were 48 sentences targeting aspectual morphology (24 acceptable and 24 unacceptable) as well as 24 fillers (12 acceptable and 12 unacceptable)³⁶. Filler sentences targeted word order and subject verb agreement and were always presented in the simple present tense. The 48 test sentences were categorized as follows:

8 Past Accomplishment

8 Past Achievement

8 Past Progressive Accomplishment

8 Past Progressive Achievement

8 Present Progressive Accomplishment

8 Present Progressive Achievement

In (5) an example of the three test sentence types (grammatical, ungrammatical-inflection, ungrammatical-adverb) within the present progressive accomplishment class is given. A list of all sentences is provided in Appendix C.

(5) Example sentences: present progressive accomplishment

My mother is drinking a glass of wine right now. (grammatical)

Today John is draw a portrait of my family. (ungrammatical-inflection)

Last week Sam is running a marathon in Boston. (ungrammatical-tense)

³⁶ The entire grammaticality judgment task was actually comprised of 120 sentences, including several other types of sentence that will not be discussed in this dissertation.

All sentences included a temporal adverb that was placed at the beginning of the sentence in half of the items and at the end of the sentence in the other half. Sentences were controlled for length, with all sentences having on average 11-14 syllables. All participants evaluated the same sentences but two test batteries were developed in order to control for ordering effects.

2.3 Standard procedure

All participants attended two separate testing sessions. In Japan, testing sessions for the L2 learners were conducted in a university classroom with a group of several participants taking the tests at one time. Tests were not conducted during class hours; participants signed up for test sessions that occurred either during their lunch break or after university classes had finished for the day. In New York, testing for the English native and near-native speakers was conducted in the Second Language Acquisition lab at the CUNY Graduate Center. These sessions were often conducted on an individual basis.

During Session 1 the participants took the Grammaticality Judgment task and the Michigan Listening Comprehension test. Before administering the Grammaticality Judgment task the experimenter provided the learners with a list of words that were to appear on the GJ task. The list isolated the most difficult words on the task and translated those words into Japanese. The participants were given several minutes to look over the list and ask any questions about any of the words. Native speakers were not given the word lists.

Session 1 usually lasted for about 45 minutes. At the end of Session 1 participants were provided with a questionnaire and a second word list. They were told that the list contained words that would be included on the tests in Session 2. Japanese translations were provided for each word on the list. Participants were asked to look at the lists and mark any words that they were unfamiliar with.

Session 2 usually took place several days following Session 1. In some cases as much as one week separated the two sessions. At the beginning of Session 2, the experimenter collected the completed questionnaires and went over the word list with the participants. If an item was difficult for a participant the experimenter used the word in a sentence to make the meaning clear.

During Session 2, the participants took two tests: the Story Compatibility test targeting aspectual morphology, which is described above, and a second Story Compatibility test which will not be discussed in this dissertation. Participants were given a five-minute break in between the two tests. During the break the experimenter offered the participants a piece of candy. Session 2 usually lasted for about 1 hour and 20 minutes. At the end of Session 2, participants were compensated for completing both testing sessions (2,000 yen in Japan, \$20 dollars in the U.S).

3. Study 1 Results

3.1 Proficiency test: University of Michigan Listening Comprehension Test

The English learners who were tested in Japan scored between 19 and 42 on the 45-question test, with a mean score of 29 (SD 5.47). This group of learners (n=101) was then divided into three proficiency levels based on their performance: learners who scored below the mean, scores of 19-28, were classified as Low; learners who scored between 29 and 35 were classified as Intermediate; learners who scored between 36 and 45 were classified as High.

Native speakers of English scored between 41 and 45 on the exam. Participants in the near-native group were selected for inclusion in the study only if they scored between 40-45 on the proficiency exam. Table 4.2 presents means and standard deviations for all participant groups.

Table 4.2. Means and standard deviations for all participant groups on the 45-question Michigan Listening Comprehension test

Proficiency test	Low (n = 46)	Intermediate (n = 39)	High (n = 16)	Near-native (n = 9)	Native English (n = 23)
<u>Michigan</u>					
M	24.76	31.62	38.38	42.00	43.91
SD	2.65	2.06	1.86	1.5	1.24

3.2 Near-native interviews

Interviews were scored based on guidelines provided by the University of Cambridge for the interview portion of the Certificate of English Proficiency. Two native speaker judges individually scored each interview. Each interview was scored on a scale of 1-5 on four different areas: grammatical resource, lexical resource, discourse management and global achievement. In most cases, the two judges did not differ more than .5 on a given score. Scores from the two judges were averaged.

We then averaged the four scores for each participant to produce one composite interview score. The nine participants that were selected for inclusion in the analysis received composite scores of 4 or above.

3.3 Story Compatibility Task

This task targeted interpretive knowledge of the aspectual semantics of the English simple past, present progressive and past progressive with accomplishment and achievement verbs. In this section we will outline results on the distractor sentences, then describe the analyses that were run on test sentences and finally present results on the fillers and the sentences targeting aspectual morphology.

3.3.1 Distractors

All test batteries included 16 distractor items. As is mentioned above, distractor stories did not include the target test verbs. These stories were included to be sure that

the participants understood the task at hand. All groups were expected to reject the Past Progressive distractors; all groups were expected to accept Statement distractors. As is shown in Table 4.3 below, all groups performed as expected on distractor sentences.

Table 4.3. L2 English: Means and standard deviations for all participant groups on the two types of distractor sentences

Distractor type	Low (n = 46)	Intermediate (n = 39)	High (n = 16)	Near-native (n = 9)	Native English (n = 23)
<u>Past progressive</u>					
M	1.4	1.33	1.21	1.08	1.01
SD	.41	.43	.42	.18	.04
<u>Statement</u>					
M	4.6	4.49	4.41	4.84	4.38
SD	.35	.42	.59	.21	.51

Two separate univariate one-way ANOVAs with proficiency level (low, intermediate, high, near-native, native speaker) as the between-subjects factor were conducted on the two types of distractor sentences. Results for the distractor sentences with the Past Progressive revealed significant differences between the groups, $F(4, 128) = 5.221$, $p < .001$. Differences between groups were investigated through Tukey's HSD post-hoc procedures. Results indicated that the Low and Intermediate group performed significantly different from the native speaker group. However, based on the fact that the scores are consistently under 2, we can tell that even the lower level groups are correctly rejecting the distractor sentences. On the Statement distractor sentences, all learner groups performed at the level of the English native speakers, with no significant differences between the learner groups. Results on these distractor sentences show that all learner groups clearly understand the task and do not show a general response bias to accept or reject all sentence types.

3.3.2 Analyses of test items

In the design section above it was explained that the test sentences (as opposed to the distractors) on the Story Compatibility task had to be counterbalanced across subjects so that one group of subjects provided responses to half of the test categories while the second group of subjects provided responses to the other half of the test categories.

Roughly equal numbers of participants from each proficiency level were assigned to the two groups. A series of independent samples t-tests showed that within each proficiency level, the two groups did not differ in terms of performance on the proficiency test.

The first group of participants responded to the following test sentence types:

Group 1

Simple Past Accomplishment Incomplete³⁷

Simple Past Achievement Complete

Present Progressive Accomplishment Incomplete

Present Progressive Achievement Complete

Past Progressive Accomplishment Complete

Past Progressive Achievement Incomplete

Filler Accomplishment Complete

Filler Achievement Incomplete

³⁷ This means for example that a participant in Group 1 was presented with a simple past sentence with an accomplishment verb such as *Ken painted a portrait of his family* after seeing the incomplete/ongoing version of that story where Ken is still in the process of painting the picture. Participants in Group 2 on the other hand would be asked to evaluate that same sentence after seeing the complete version of the story where Ken presents his mother with the completed picture.

The second group of participants responded to the complementary sentence types:

Group 2

Simple Past Accomplishment Complete

Simple Past Achievement Incomplete

Present Progressive Accomplishment Complete

Present Progressive Achievement Incomplete

Past Progressive Accomplishment Incomplete

Past Progressive Achievement Complete

Filler Accomplishment Incomplete

Filler Achievement Complete

The first goal of the analyses was to determine if participants' responses to a given sentence type (for example, simple past accomplishment) were different depending on the context that was provided (complete or incomplete). Secondly, we wanted to see if learners' responses differed from native speakers, particularly for sentence types that are not equivalent in English and Japanese (present and past progressive sentences with achievements). Because a single participant did not provide a response for a given sentence type with both the complete and incomplete contexts, we could not run repeated-measures ANOVAs. Instead, factorial univariate ANOVAs were performed separately for each sentence type with context (complete, incomplete) and proficiency level (low, intermediate, high, near-native, native speaker) entered as between-subjects factors. This type of analysis allows us to see if responses to complete and incomplete

contexts were different overall across all groups. In order to see if the responses to the two contexts were different for each group individually, independent samples t-tests were conducted.

The factorial univariate ANOVA also indicates whether there were overall differences between the proficiency levels. However, this analysis collapses across the incomplete and complete contexts. Therefore, in some cases, we also performed univariate one-way ANOVAs on each context individually. These analyses allowed us to see whether the learners performed more or less like native speakers depending on the particular context.

Finally, the factorial univariate ANOVA allows us to see whether the difference in scores between the complete and incomplete contexts was the same across all proficiency levels (interaction effects).

These are the main statistics that will be reported in the following sections³⁸. All graphs include error bars, which indicate the standard error of the mean. In addition to the group results, we will also present descriptive data on individual responses in the discussion of categories that are particularly significant. We report results for filler items first, followed by results for the simple past, present progressive and past progressive.

3.3.3 *Filler items*

Unlike the distractors, which used completely different story contexts, the filler sentences were evaluated against the 32 test stories (16 test verbs, 2 contexts each).

³⁸ Statistical item (F2) analyses were not run because we believe we have nearly exhausted the pool of possible items for this experiment.

However, these sentences used explicit adverbs and therefore they were not included in order to provide information with respect to the interpretation of aspectual morphology. As is mentioned above, these sentences provided a way to check whether in fact the test stories actually expressed the complete or ongoing context that they were intended to. They also provided a test of whether the learners understood the concepts that we are targeting in the test items.

In an effort to balance acceptable and unacceptable items on the interpretation task as a whole, all filler sentences were designed to be unacceptable. Therefore, all groups were expected to reject the filler sentences in both the incomplete and complete contexts. Correct rejection of these sentences indicates comprehension of the context. Means and standard deviations for the filler sentences with accomplishment and achievement verbs are provided in Table 4.4 below.

Table 4.4. L2 English: Means and standard deviations for filler sentences with accomplishments and achievements in incomplete and complete contexts

Context type	Low (n = 46)	Intermediate (n = 39)	High (n = 16)	Near-native (n = 9)	Native English (n = 23)
<u>Accomplishment</u>					
<u>Incomplete</u>					
M	1.28	1.40	1.32	1.00	1.41
SD	.42	.55	.47	.00	.46
n	22	20	7	4	11
<u>Accomplishment</u>					
<u>Complete</u>					
M	1.40	1.28	1.44	1.20	1.15
SD	.55	.53	1.01	.33	.34
n	24	19	9	5	12
<u>Achievement</u>					
<u>Incomplete</u>					
M	1.73	1.37	1.11	1.16	1.04
SD	.77	.41	.25	.23	.14
n	24	19	9	5	12
<u>Achievement</u>					
<u>Complete</u>					
M	1.31	1.41	1.14	1.00	1.16
SD	.62	.47	.38	.00	.23
n	22	20	7	4	11

The results in Table 4.4 indicate that learners performed similarly to native speakers.

Two separate factorial univariate ANOVAs were conducted on fillers with accomplishment verbs and fillers with achievement verbs; context (complete, incomplete) and proficiency level (low, intermediate, high, near-native, native speaker) were entered as between-subjects factors. On the fillers with accomplishment verbs, results indicated that, as expected, there were no significant differences between responses to the complete and incomplete contexts and there were also no significant differences between

proficiency levels. All participants correctly rejected filler sentences, with both incomplete and complete contexts, to the same degree.

On the fillers with achievement verbs, results indicated that there were no significant differences between responses to the complete and incomplete contexts. Results indicated that there were significant differences between proficiency levels, $F(4, 123) = 4.175$, $p. < .01$. Post-hoc comparisons using the Bonferroni adjustment for multiple comparisons revealed significant differences between the Low group and the native speakers, $p. < .05$. This means that the Low group did accept fillers with achievements to a greater degree than Native speakers. However, despite these differences, the Low learners do correctly reject these sentences, giving them scores below 2. The difference between the two groups is simply in degree of rejection.

Results on the filler sentences indicate that the story contexts were clearly understood by all participants. We can also be sure that the learners understand the concepts of an event being in progress and an event having been completed. We turn to the results for the sentences targeting aspectual morphology in the next section.

3.3.4 *Simple past*

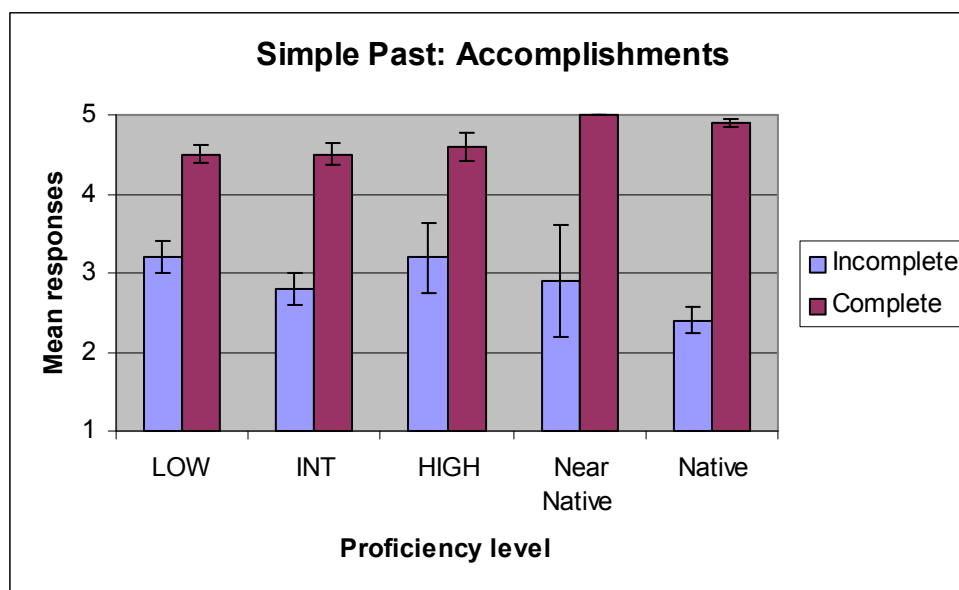
Sentences with telic verb phrases in the simple past denote basically equivalent perfective interpretations in both English and Japanese regardless of the verb phrase to which the simple past morphology attaches. Therefore sentences in the simple past in both languages are compatible with complete story contexts and incompatible with incomplete story contexts. Therefore with both types of simple past sentences we expect

to see an effect for context. Because of the similarity between English and Japanese we do not expect to see an effect for proficiency level nor an interaction between context and proficiency level. In this respect, the category of simple past was included as a control.

3.3.4a Simple Past Accomplishments

Figure 4.1 shows the mean responses for all participant groups on the simple past with accomplishments in both complete and incomplete contexts. Means and standard deviations are provided in Table 1 in Appendix A.

Figure 4.1. L2 English: Mean responses to accomplishments in the simple past with incomplete and complete contexts



Scores on simple past sentences with accomplishments were submitted to a factorial univariate ANOVA with context (complete, incomplete) and proficiency level (low,

intermediate, high, near-native, native speaker) as between-subjects factors. Results indicated that there was a significant effect for context ($F(1, 123) = 113.952, p. < .001$), but there was not a significant effect for proficiency level nor was there an interaction between context and proficiency level. Results show that there is a clear distinction between responses to simple past sentences with incomplete and complete contexts. Independent samples t-test confirmed that this distinction was significant for all groups (Low: $t(44) = -5.542, p. < .001$; Intermediate: $t(37) = -6.785, p. < .001$; High: $t(14) = -2.553, p. < .05$; Near-native: $t(7) = -2.941, p. < .05$; Native speaker: $t(21) = -14.553, p. < .001$). Because there was not an interaction between context and proficiency level, it seems that all proficiency levels distinguish the two contexts to the same degree.

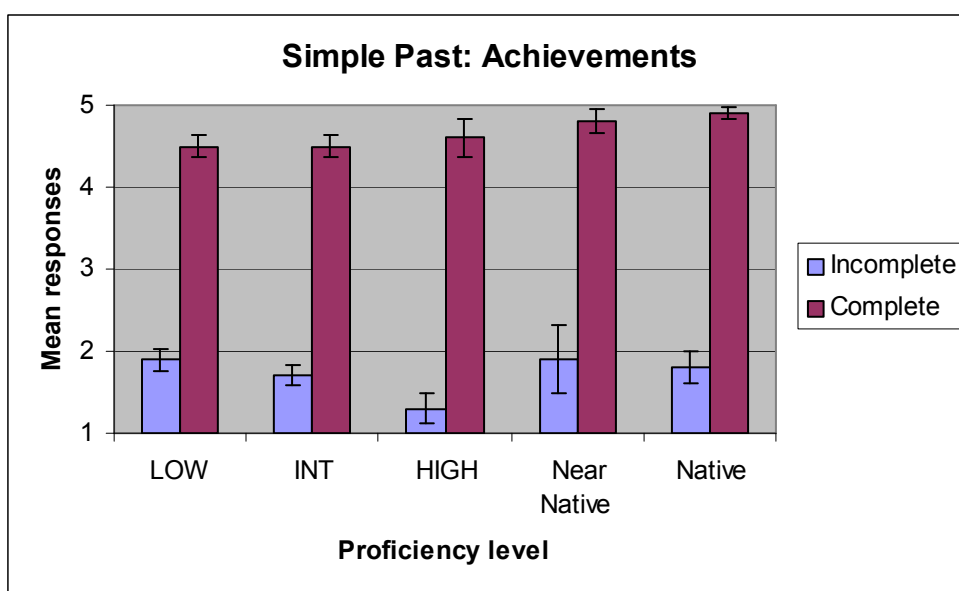
The only surprising result is that mean responses to sentences in the incomplete context are not quite as low as we might predict them to be. Accomplishments in the simple past are usually considered to be telic and thus should be unacceptable in contexts where the event has not come to its natural endpoint. It is possible that because the accomplishments tested involve creation or consumption verb phrases, speakers are more likely to accept the simple past sentences even when just part of the object has been created or consumed. Sentences with verb phrases such as *eat a bowl of ramen* were given higher scores on the incomplete context than sentences with verb phrases such as *make a cake*. The event of eating a bowl of ramen is measured out directly with respect to the direct object (Dowty, 1991; Krifka, 1989; Tenny, 1994). As we discussed in Chapter 2, each portion of the event corresponds to a given portion of the ramen in the bowl. The verb phrase *make a cake* on the other hand is measured out along the process of making the cake. A portion of the event of event of making a cake corresponds to

reading the recipe, cracking the eggs, stirring the batter etc. There is not as direct a correspondence between the event and the direct object as there is in the event of eating ramen. It is possible that this difference accounts for some of the difference in the judgments. There also seems to be variability between speakers with respect to these judgments. We will return to this issue in the discussion.

3.3.4b *Simple Past Achievements*

Figure 4.2 outlines the mean responses to achievements under the simple past in both incomplete and complete contexts. Means and standard deviations are provided in Table 2 in Appendix A.

Figure 4.2. L2 English: Mean responses to achievements in the simple past with incomplete and complete contexts



Scores on simple past sentences with achievements were submitted to a factorial univariate ANOVA with context (complete, incomplete) and proficiency level (low, intermediate, high, near-native, native speaker) as between-subjects factors. Results indicated that there was a significant effect for group, $F(1, 123) = 537.913$, $p. < .001$ but again there was not a significant effect for proficiency level nor an interaction between the two factors. As with the simple past accomplishments, there was a clear distinction between responses to incomplete and complete contexts. Independent samples t-tests confirm that this distinction was significant for all groups (Low: $t(44) = 13.190$, $p. < .001$; Intermediate: $t(37) = 14.676$, $p. < .001$; High: $t(14) = 10.482$, $p. < .001$; Near-native: $t(7) = 7.174$, $p. < .001$; Native speaker: $t(21) = 15.049$, $p. < .001$).

It is clear that, with achievements, all participants strongly reject the simple past with incomplete contexts, unlike the accomplishments. These results suggest that a verb's taking a direct object in general plays an important role in aspectual interpretation, as has been discussed extensively in the aspect literature (Borer, 1994; Tenny, 1987, 1994). Achievements cannot be measured out along a direct object, a process or a path in the same way that accomplishments can be. Because achievements denote events that occur instantaneously, an event of arriving for example does not count as an arrival until that instantaneous change of state has occurred.

Results on the simple past with both verb classes indicate that all learner groups follow the same patterns as the English native speakers, correctly giving high scores to simple past sentences with complete contexts and giving significantly lower scores to simple past sentences with incomplete contexts. These results indicate that when the semantics of the aspectual morphology is equivalent in the L1 and the L2, learners of

English do not have difficulty with either accomplishments or achievements. This result is significant because it allows us to clearly evaluate acquisition of these two verb classes under the progressive, which has different semantics in English and Japanese. It is not the case that verbs that are either accomplishments or achievements are just inherently more difficult for the L2 learner to interpret. In the next section, we outline results for the present and past progressive.

3.3.5 *Present progressive*

The present progressive is our primary test case for semantic transfer. While *be+ing* and *te-iru* both denote equivalent event-in-progress interpretations with accomplishments, the two forms denote different interpretations with achievements. *Te-iru* denotes a resultative interpretation with achievements.

The English progressive *be+ing* is, regardless of the verb stem, compatible with incomplete/ongoing contexts and incompatible with complete contexts. Therefore, with accomplishments we predict that there will be a significant effect for context. Given that *be+ing* and *te-iru* behave similarly with accomplishments, we do not predict an effect for proficiency level nor do we predict an interaction between context and proficiency level.

With achievements, if the transfer hypothesis is correct, and the learners' hypotheses regarding the semantics of the L2 are constrained by the L1 grammar, then the L2 learners are predicted to give the opposite scores of native speakers. If the learners map the L1 representation for PROG onto English *be+ing* then they will give high scores to the present progressive with the complete context and low scores to the

present progressive with the incomplete context. Given this hypothesis we predict that there will be a significant effect for context and that there will be an interaction between context (complete, incomplete) and proficiency level. Naturally we also predict that there will be a significant effect for proficiency level.

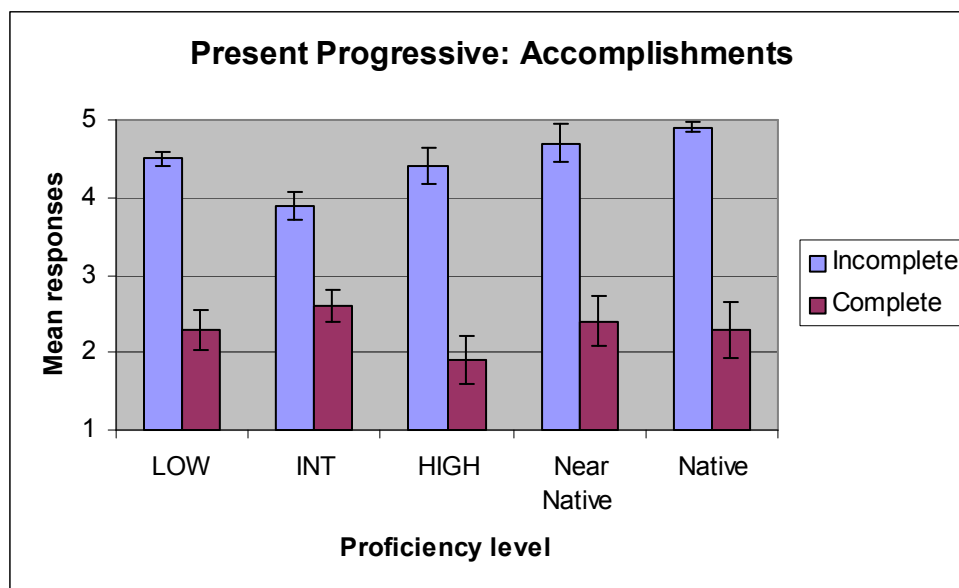
We will also evaluate L2 learner performance on each context (complete and incomplete) separately. We predict that learners at advanced levels will perform well on the incomplete context but may still show difficulty on the complete context. The incomplete context evaluates learners' ability to add the progressive interpretation to their grammar, a task that may be facilitated by positive evidence, while the complete context evaluates their ability to preempt an L1 interpretation, a task that may not be facilitated by input.

We first present results for the accomplishments where no differences were predicted.

3.3.5a Present Progressive Accomplishments

Figure 4.3 shows mean responses for the present progressive sentences with accomplishments in incomplete and complete contexts. Means and standard deviations are provided in Table 3 in Appendix A. As can be seen from the graph, all participant groups correctly give generally high scores to present progressive sentences in incomplete contexts and generally low scores in complete contexts.

Figure 4.3. L2 English: Mean responses to accomplishments in the present progressive with incomplete and complete contexts



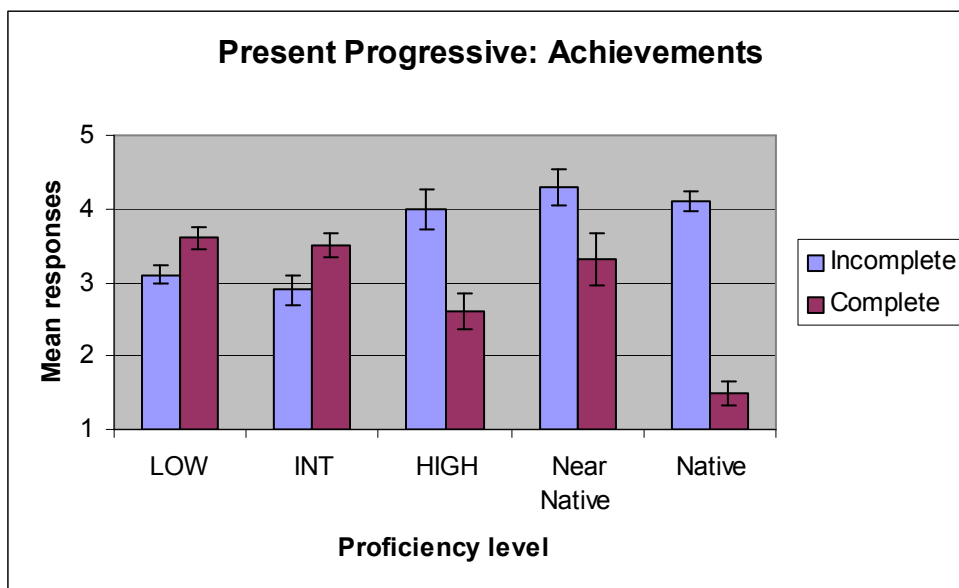
Scores on present progressive accomplishments were submitted to a factorial univariate ANOVA with context (incomplete, complete) and proficiency level (low, intermediate, high, near-native, native speaker) as between-subjects factors. Results indicated that there was a significant effect for context ($F(1, 123) = 157.670$, $p < .001$) but there was not a significant effect for proficiency level. There was however a significant interaction between context and proficiency level ($F(4, 124) = 2.971$, $p < .05$). This means that the distinction between responses to the present progressive with complete and incomplete contexts was not the same across proficiency levels. Follow-up analyses were conducted to ensure that each group individually distinguished significantly between incomplete and complete contexts. Independent samples *t*-tests revealed that the distinction was in fact significant for all groups (Low: $t(44) = 8.439$, $p < .0001$; Intermediate: $t(37) = 4.871$, $p < .001$; High: $t(14) = 6.70$, $p < .001$; Near-native: $t(7) = 5.676$, $p < .001$; Native

speaker: $t(21) = 7.348, p. < .001$). In sum, with accomplishment verbs, results generally confirm our predictions; all learner groups perform similarly to native speakers.

3.3.5b Present Progressive Achievements

As is mentioned above, with achievements we predict that lower level learners will give the opposite scores of native speakers on both the incomplete and complete contexts. At higher levels of proficiency we predict more difficulty on the complete context. Figure 4.4 shows mean scores on both incomplete and complete contexts. Means and standard deviations are provided in Table 4 in Appendix A.

Figure 4.4. L2 English: Mean responses to achievements in the present progressive with incomplete and complete contexts



The results in Figure 4.4 indicate that learners in the beginner and intermediate group follow the general *pattern* of the transfer prediction, giving higher scores to the present progressive in complete contexts, the opposite pattern of the English native speakers. However, scores on the incomplete context are not as low as predicted and scores on the complete context are not as high as predicted. Scores for both groups hover around 3; we will investigate these results further below.

Scores on present progressive achievements were submitted to a factorial univariate ANOVA with context (incomplete, complete) and proficiency level (low, intermediate, high, near-native, native speaker) as between-subjects factors. Results indicated that there was a significant effect for context ($F(1, 123) = 28.606, p. < .001$), a significant effect for proficiency level ($F(1, 123) = 3.816, p. < .01$), as well as a significant interaction between context and proficiency level ($F(4, 123) = 26.098, p. < .001$).

Results indicate a distinction between responses to incomplete and complete contexts. However, we must discern whether the distinction is significant for all groups individually and in what direction the distinction is (complete higher than incomplete or incomplete higher than complete). Results of individual samples t-tests revealed that both the Low and Intermediate group did give significantly higher scores to the present progressive with *complete* contexts (Low: $t(44) = 2.723, p. < .01$; Intermediate: $t(37) = 2.212, p. < .05$). This was the predicted pattern of responses for L2 learners.

Results for the advanced groups are somewhat more puzzling. Learners in the High group distinguish between the incomplete and complete contexts in the direction of native speakers, correctly giving higher scores to the present progressive with the

incomplete contexts (High: $t(14) = -3.859$, $p. < .01$; Native speaker: $t(21) = -12.203$, $p. < .001$). However, the near-native speakers do not make this distinction. While their scores are numerically higher on the incomplete context, the t-test revealed that the difference between responses to the two contexts was not significant. It is possible that the low number of individuals in the near-native group is responsible for this result; we would not have predicted differences between the High and Near-native group.

In sum, the Low and Intermediate learners show the general pattern that we predicted if we assume transfer of the semantic properties of *te-iru*; they give higher scores to the present progressive with complete contexts. However, it is not clear that the learners consistently accept these sentences. Because the mean responses for the Low and Intermediate group hovered around 3 it was necessary to investigate responses at the individual level³⁹. We will address two contexts in turn.

First we predicted that lower level learners would incorrectly give high scores to the present progressive with the complete context. In the Low group, out of the 24 learners who provided responses to the present progressive complete category, 12 accepted at least 75% of the items with a score of 4 or 5. In the Intermediate group 11 out of 19 learners accepted at least 75% of the items with a score of 4 or 5⁴⁰. Therefore half of the learners at the lower levels performed strictly according to the predictions of transfer, fully accepting the present progressive to describe complete events.

³⁹ Note that the standard deviations for the learner groups and the native speakers are not very different so it does not seem that the learner groups are simply making random guesses (cf. Appendix A-Table 4).

⁴⁰ The choice of 75% percent as a criterion is admittedly arbitrary. However, given that there are four test items in each category, three out of four items represents a majority of the responses. We will use this criterion throughout in analyzing individual responses.

Many of the other learners in the Low and Intermediate groups seemed to perform at chance, giving half of the items scores of 4-5 and giving half of the items scores of 1-2. There were very few learners who provided responses of 3. At the higher levels of proficiency, two out of nine learners in the High group and two out of five learners in the Near-native group accepted 75% of these items. Interestingly, even in the more advanced groups, there were no learners who correctly rejected all of these sentences.

Next, we also predicted that learners would incorrectly give low scores to the present progressive with the incomplete context. The learners had difficulty with this context. In the Low group, only four out of 22 learners correctly accepted 75% or more of these sentences and in the Intermediate group only four out of 20 learners accepted at least 75% of these sentences. While there is clearly evidence of difficulty, the results are not clear with respect to transfer. Many low level learners performed at chance, giving half of the items scores of 4-5 and giving half of the items scores of 1-2. However, the responses are not at all random; performance on this context seemed highly dependent on the particular verb. Learners had much less difficulty accepting the present progressive with the verbs *close*, *leave*, *die* and *go* than they did with the verbs *arrive*, *open*, *come* and *return*. Some learning seems to be taking place on a verb-by-verb basis.

An indication that the difficulty reported above may be due to L1 influence is based on the results for the verb *go*, used in the verb phrase *go to the store*. We were somewhat puzzled to see that for this particular verb, all learners correctly accepted the sentence *Vicky is going to the store* with the incomplete context. We looked at the results for the native speakers of Japanese in the L2 Japanese study because both studies used the same verbs. Interestingly, some native speakers of Japanese allowed this

achievement under *te-iru* to refer to the incomplete, event-in-progress context. With all other achievements, all native speakers consistently rejected V+ *te-iru* with scores of 1 on the incomplete context. Therefore, it may be that *go* in Japanese, in some contexts, allows the progressive interpretation, unlike the other achievements tested. If this is true, the L1 could have aided the learners in this context.

With respect to the learners at the more advanced proficiency levels, six out of seven learners in the High group and all learners in the near-native group correctly accepted 100% of the present progressive sentences with the incomplete context. These results seem to suggest, as we predicted, that advanced learners perform better on the incomplete context when their goal is to *add* an interpretation to the L2 grammar.

To further compare performance on the two contexts we conducted two univariate one-way ANOVAs with responses to incomplete and complete contexts. As we mentioned in Section 3.3.2, the factorial univariate ANOVA evaluates differences between groups by first collapsing scores on incomplete and contexts and thus cannot provide information that is specific to each context.

Results of a one-way ANOVA on responses to the incomplete context revealed significant differences between groups ($F(4, 59) = 9.554, p < .01$). Post-hoc tests using Tukey's HSD procedures indicated that the Low and Intermediate group performed differently from the High, Near-native and Native speaker groups. The Low and Intermediate Group did not differ from each other. These results suggest that the lower level learners have difficulty assigning an ongoing interpretation to the present progressive with achievement verbs, as has already been made clear by the individual analyses. More advanced learners on the other hand, do not have this difficulty. The bars

on the graph in Figure 4 show that the ongoing interpretation of the present progressive emerges across proficiency levels, with advanced learners performing at the level of native speakers.

Results of a one-way ANOVA on responses to the complete context again reveal that there are differences between groups ($F(4, 64) = 20.479, p. < .001$). The results of Tukey's HSD post-hoc procedures indicate that on the complete context all learner groups, including the Near-natives, accept the present progressive to refer to complete contexts to a greater degree than native speakers. While native speakers strongly reject achievements in the progressive to refer to complete contexts, all learner groups give these sentences higher scores. There are also differences between the learner groups. The High group performed significantly different from the Low and Intermediate Group. Interestingly, the Near-native group did not perform differently from any of the learner groups, they differed only from the Native speakers. These results confirm what we saw in the individual analyses. At the lower level, half of the learners incorrectly accept at least 75% of the present progressive sentences with the complete context. This difficulty remains for several advanced learners as well, even two learners at the near-native level.

In summary, there are differences in the results of the incomplete and complete contexts for achievements in the present progressive. The graph in Figure 4.4 shows that accepting the present progressive with incomplete contexts is difficult only for the lower level learners. Individual analyses seem to show that learners may acquire this interpretation on a verb-by-verb basis, or at least that certain verbs are easier than others. However, the target-like interpretation emerges across proficiency levels. As proficiency increases, learners are more likely to allow an achievement verb in the present

progressive to refer to an incomplete or ongoing event. The learners in the Advanced and Near-native groups do not differ from native speakers.

As we predicted, we do not see the same pattern of emerging development on the complete context where the goal of the learner is to preempt an L1 interpretation. None of the learner groups, including the near-natives performed at the level of native speakers. The individual analyses showed that even at the advanced levels, none of the learners correctly rejected all of these sentences.

3.3.6 *Past Progressive*

With accomplishment verbs, both the English past progressive and Japanese *te-ita* denote equivalent interpretations. Both forms are compatible with both incomplete and complete contexts. Therefore with accomplishment verbs we do not predict a significant effect for context. In addition, because of the similarities between English and Japanese, learners are not expected to have difficulty. If learners make use of the semantic properties of the L1, they should be able accept the English past progressive with accomplishment verbs to the same degree as native speakers.

With achievement verbs, we predict that if Japanese learners transfer the semantics of *te-ita*, they will initially reject past progressive sentences with the incomplete context. Native speakers on the other hand should accept these sentences. Therefore, if the transfer predictions hold we will see a significant effect for context, for

proficiency level and a significant interaction between context and proficiency level⁴¹.

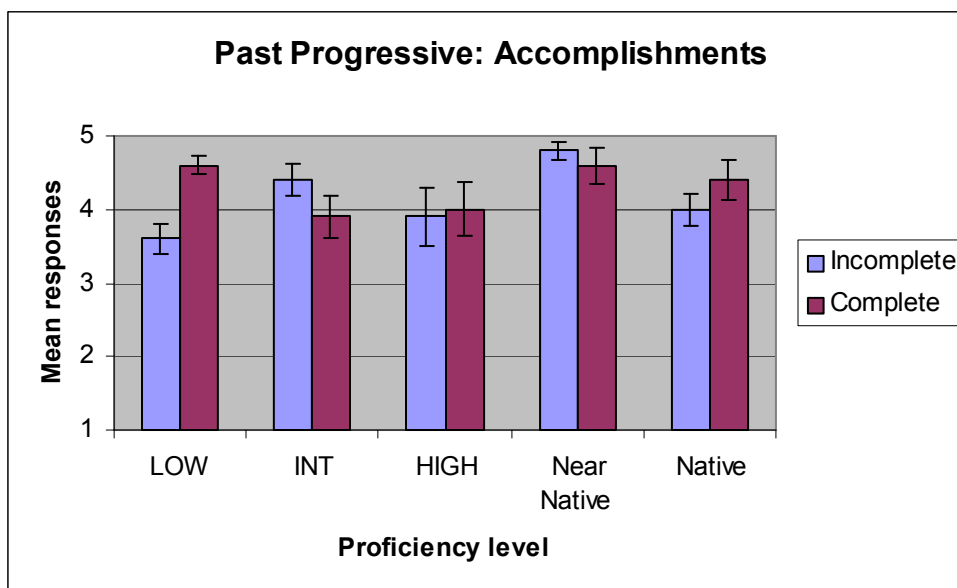
We first turn to results for the past progressive with accomplishment verbs.

3.3.6a Past Progressive Accomplishments

Figure 4.5 shows mean performance on past progressive sentences with accomplishments in incomplete and complete contexts. Means and standard deviations are provided in Table 5 in Appendix A. Results of a factorial univariate ANOVA with context (incomplete, complete) and proficiency level (low, intermediate, high, near-native, native) as between-subjects factors indicated that there was neither a significant effect for context nor a significant effect for proficiency level. However, there was a significant interaction between context and proficiency level ($F(4, 123) = 3.568, p < .01$).

⁴¹ The complete context does not allow us to evaluate the transfer hypothesis. The English past progressive is compatible with a complete event in the past while the truth conditions of Japanese *te-ita* require that the event be completed in the past. Therefore if Japanese learners accept achievement verbs under the English past progressive with complete contexts we will not be able to discern whether it is because they are transferring the semantic properties of *te-ita* or because they have successfully acquired the semantics of the English past progressive.

Figure 4.5. L2 English: Mean responses to accomplishments in the past progressive with incomplete and complete contexts



This significant interaction indicates that the distinction in responses to past progressive sentences with complete and incomplete contexts is not the same across proficiency levels. The graph in Figure 5 shows that the learners in the Low group have a tendency to give higher scores to the past progressive in the complete context while participants in other groups give very similar scores to both contexts. Results of an independent samples t-test revealed that the Low group did give higher scores on the complete context, $t(44) = 4.216$, $p < .001$. Results of t-tests with all other proficiency levels were not significant.

This means that the learners who are not in the Low group follow the same pattern as native speakers; they give past progressive sentences with both incomplete and complete contexts equivalent scores. Learners at the lowest proficiency level show a tendency to give lower scores on the incomplete context. This pattern was confirmed by

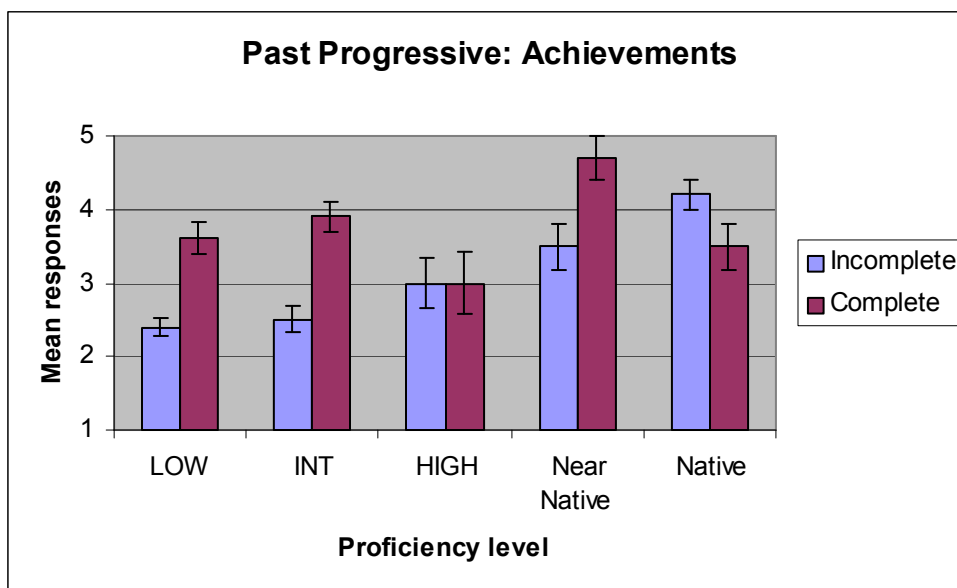
looking at individual responses. Of the learners who responded to the complete context in the Low group, 23 out of 24 learners correctly accepted 75-100% of the items in this category. On the other hand, on the incomplete context, only 11 out of 22 learners in the Low group correctly accepted 75-100% of the past progressive sentences. This difficulty on the part of the Low group was not predicted by the transfer hypothesis.

It should be noted that the native speaker responses are perhaps lower than we would expect on these sentences. High standard deviations (see Table 5 in Appendix A) indicate that there is variability in native speaker judgments. Analyses of individual responses showed that out of the native speakers who responded to the complete context, two out of 12 participants rejected half of the test items; on the incomplete context three out of 11 native speakers reject half of the test items. The variability is between and not within speakers. This variability is not present in responses to the present progressive with accomplishments. We will return to this result in the Discussion. In the next section, we present results for the achievements in the past progressive.

3.3.6b Past Progressive Achievements

Figure 4.6 presents the results for the achievements in the past progressive. Means and standard deviations are provided in Table 6 in Appendix A.

Figure 4.6. L2 English: Mean responses to achievements in the past progressive with incomplete and complete contexts



Scores were submitted to a factorial univariate ANOVA with context (incomplete, complete) and proficiency level (low, intermediate, high, near-native, native speaker) as between-subjects factors. Results indicated that there was a significant effect for context ($F(1, 123) = 13.250, p. < .001$), a significant effect for proficiency level ($F(4, 123) = 6.634, p. < .001$) and a significant interaction between context and proficiency level ($F(4, 123) = 7.588, p. < .001$). Post-hoc comparisons using the Bonferroni adjustment for multiple comparisons indicated that the Low, Intermediate and High group performed significantly different from the native speakers, $p. < .05$. In addition, the Low group was different from the Near-native group, $p. < .01$.

Since differences between responses to incomplete and complete contexts were not predicted for native speakers, but were predicted for English learners, it was necessary to conduct individual samples t-tests within each proficiency level. Results of the t-tests showed that participants in the Low, Intermediate and Near-native group gave significantly higher scores to past progressive sentences with achievements in complete contexts (Low: $t(44) = -4.903$, $p. < .001$; Intermediate: $t(37) = -5.552$, $p. < .001$; Near-native: $t(7) = -2.844$, $p. < .05$). Participants in the High group gave mean responses of 3 to past progressive sentences in both contexts, which was unexpected.

For the native speakers, although the scores are numerically higher on the incomplete context, the reverse of the learners, a t-test revealed that the scores on the incomplete and complete contexts were not significantly different. There is variability in native speaker responses to past progressive sentences with achievements (see standard deviations in Appendix A-Table 6). Again the variability is between and not within speakers. Analyses of individual responses showed that on the incomplete context two out of 12 native speakers rejected 50% of these items. One participant also gave 50% of the items a score of 3. There was more variability on the complete context. Two out of 11 native speakers rejected 50% of these items while an additional Three of 11 native speakers rejected all of these items. There were speakers who gave scores of 4-5 on all items.

It was necessary to conduct further analyses to examine the differences in proficiency level revealed by the factorial univariate ANOVA. As we mentioned earlier, this statistical test collapses scores on incomplete and complete contexts before examining group differences. Since we predicted that learners would differ from native

speakers on the incomplete context but perform similarly on the complete context, we had to run individual one-way ANOVAs on scores on the two contexts. A one-way ANOVA on scores for the complete context revealed that there are no differences between learners and native speakers on this category. Although numerically the groups differ, particularly the Near-native and native speaker group, the variability is high and therefore these differences are not significant.

On the other hand, a one-way ANOVA on the incomplete context revealed significant differences between groups ($F(4, 64) = 15.391, p. < .001$). Tukey's post-hoc procedures revealed significant differences between the native speakers and the Low, Intermediate and High groups, $p. < .01$. There was also a significant difference between the Low group and the Near-native group, $p. < .05$.

These results reveal that our predictions were confirmed with achievement verbs in the past progressive in that learners had more difficulty on the incomplete context. Yet, there are several interesting questions that can be raised. First, if transfer is driving the difficulty with the achievement verbs in the past progressive on the incomplete context, then why do we not see the same level of difficulty with the present progressive? Results for the High group are important. On the present progressive with the incomplete context, only the Low and Intermediate learners differed from native speakers. The High group performed well on present progressive achievements. However, in the past progressive, out of the nine learners who gave responses on the incomplete context, only three correctly accept 75% of the sentences. In addition, four learners perform at chance and two learners incorrectly reject 75% of the items. Why are achievements in the past progressive more difficult? Furthermore, this is an example of a context where the

learners need to add an interpretation to their grammar. We expected these contexts to cause less difficulty.

Furthermore, in the Low and Intermediate groups, out of the 43 learners who provided responses for past progressive achievements with the incomplete context, only two learners correctly accepted 75% of the test items. It should be pointed out that learners in the Low group also had some difficulty with *accomplishments* in the past progressive in the incomplete context. Transfer cannot explain this finding because accomplishments under *te-ita* in Japanese are compatible with incomplete contexts.

Results for both accomplishments and achievements suggest that there is something globally more difficult with interpreting the past progressive, particularly for lower level learners. The difficulty is highlighted on the incomplete context, where learners seem less likely to accept the past progressive form. Similar results have been reported for children acquiring English as an L1 (Wagner, 2002). Why does putting the progressive in the past make things harder for learners? We will return this issue in the Discussion in Chapter 5.

An additional issue we will return to is why there is variability in the judgments of native speakers.

3.3.7 *Summary of results: Story Compatibility Task*

We will summarize the results of the Story Compatibility task according to our predictions. First we predicted that when semantic properties are equivalent in the L1 and L2, acquisition should proceed with relative ease. The results for the simple past and

the present progressive with accomplishments support that hypothesis. However, the Low group showed evidence of difficulty with accomplishments in the past progressive, a result not predicted by positive transfer. Results showed that the Low group gave higher scores to the past progressive when it referred to a complete story context. As we mentioned in Chapter 3, Wagner (2002) reported that two-year olds learning their first language also showed a preference for the past progressive to refer to complete events. We will return to Wagner's results in the Discussion in Chapter 5.

Secondly, we also predicted that when there are crosslinguistic difference in the native and target language, learners would demonstrate evidence of transfer. The strongest support for the transfer hypothesis comes from the responses to the present progressive achievements on the complete context. In this context, half of the Low and Intermediate learners strongly accepted sentences such as *The plane is arriving at the airport* to refer to complete events. Furthermore, there were learners at very high levels of proficiency that continued to accept these sentences as well. In Japanese, achievements under *te-iru* must refer to complete events. This result shows that L1 properties may still constrain learners' interpretations to some degree.

The results on the incomplete context with present progressive achievements are not as clear with respect to transfer. The lower level learners had great difficulty; many performed at chance. Transfer would predict that they would completely reject all of the sentences. A closer look at the individual results showed that the learners may be acquiring the progressive interpretation with certain verbs before others, a result we did not predict. Therefore it is possible that L1 influence is simply harder to overcome for some verbs. At the higher proficiency levels, learners allow achievements in the present

progressive to refer to ongoing events, just as English native speakers do. These results lend support to our hypothesis that adding an interpretation is easier than preempting an interpretation. While advanced learners still have difficulty on the complete context, where they need to preempt an L1 interpretation, they have no difficulty on the incomplete context for present progressive achievements, where their goal is to add an interpretation.

However, results for the achievements under the past progressive complicate the picture. Even learners in the High group gave low scores to the past progressive with incomplete contexts. While this result was predicted by the transfer hypothesis, it is puzzling why learners in the High group can overcome transfer on the incomplete context with the present progressive, but not the past progressive. The question then is, why is there a difference between performance on the present and past progressive? Researchers such as Bailey (1987) and Bardovi-Harlig (2002) have pointed out that the past progressive is in general, harder to acquire. In Chapter 5 we will return to the past progressive results and try to account for the learners' difficulty with both accomplishments and achievements.

Finally there were two instances where native speaker judgments showed variability: simple past accomplishments and past progressive achievements. These results indicate that the aspectual judgments predicted by the theory do not always conform to how native speakers interpret a given form in context. In the Discussion we consider what if any repercussions this has for L2 acquisition.

3.4 Grammaticality Judgment Task

In this section we present results for the Grammaticality Judgment (GJ) task. The results of two participants, one in the Low group and one in the Intermediate group, were not included because these participants failed to provide responses to many of the test items. We first present results for filler items and then summarize results on test sentences.

3.4.1 Filler Sentences

Filler sentences were included to ensure that the learners understood the task and that they did not show a general response bias to accept or reject sentences. Table 4.5 summarizes overall mean responses to grammatical and ungrammatical fillers. A summary of mean responses to the three different types of filler sentences (word order, subject-verb agreement, verb compounds) is included in Appendix A Tables 7-9.

Table 4.5. L2 English GJ: Mean responses to grammatical and ungrammatical filler sentences

Fillers	Low (n = 45)	Intermediate (n = 38)	High (n = 16)	Near-native (n = 9)	Native English (n = 23)
<u>Grammatical</u>					
M	4.1	4.3	4.5	4.6	4.7
SD	.40	.46	.39	.24	.29
<u>Ungrammatical</u>					
M	2.5	2.1	1.7	1.8	1.5
SD	.68	.62	.39	.41	.39

Scores on filler sentences overall were submitted to a repeated-measures ANOVA with grammaticality (grammatical, ungrammatical) as a within-subjects factor and proficiency level (low, intermediate, high, near-native, native) as a between-subjects factor. The results showed a main effect for grammaticality, $F(1, 126) = 1069.066$, $p. < .001$) and an interaction between grammaticality and proficiency level, $F(4, 126) = 24.176$, $p. < .001$. There were no significant differences between proficiency levels. The interaction can be explained by the fact that participants in the Low group do not distinguish between grammatical and ungrammatical fillers to the same extent as the other participants. When the filler types are looked at individually (see Appendix A Tables 7-9) it is clear that this effect arises because the Low group had difficulty with the Subject-Verb agreement fillers. On the other two types of fillers, the Low group distinguishes grammatical and ungrammatical sentences to a stronger degree. Results of the filler sentences indicate that participants generally understood the task and were not prone to a response bias.

3.4.2 *Test sentences*

Scores on all test sentences were submitted to a factorial repeated-measures ANOVA with sentence type (simple past, present progressive, past progressive), verb type (accomplishment, achievement) and grammaticality (grammatical and ungrammatical) as within-subjects factors and proficiency level (low, intermediate, high, near-native, native) as a between-subjects factor. The results revealed a main effect for sentence type ($F(2, 252) = 84.411$, $p. < .001$), verb type ($F(1, 126) = 23.022$, $p. < .001$) and grammaticality ($F(1, 126) = 1423.120$, $p. < .001$). There were also significant

differences between proficiency levels, $F(4, 126) = 3.620$, $p. < .01$. Results also revealed significant interactions between: sentence type and proficiency level ($F(8, 252) = 7.495$, $p. < .01$), grammaticality and proficiency level ($F(4, 126) = 29.354$, $p. < .01$), sentence type and verb type ($F(2, 252) = 14.007$, $p. < .01$), sentence type and grammaticality ($F(2, 252) = 39.041$, $p. < .01$) as well as verb type and grammaticality ($F(1, 126) = 12.193$, $p. < .01$).

These results establish that participants significantly distinguish grammatical and ungrammatical sentences. Results also indicate that there are significant differences between responses to the different sentence types and different verb types. In order to see where these differences lie, follow-up analyses were conducted.

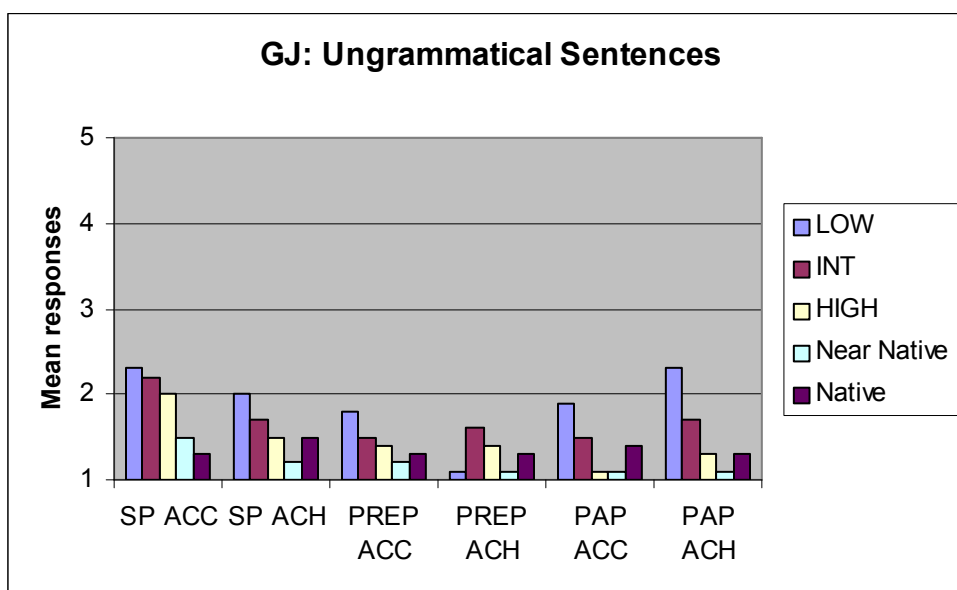
Results for ungrammatical and grammatical sentences will be presented separately because the main interest of this task was evaluating two types of knowledge: knowledge of morphological form, which is best evaluated by looking at performance on the ungrammatical sentences, and knowledge of how to use morphological forms in context, which is best evaluated by looking at performance on the grammatical sentences.

3.4.3 *Knowledge of morphological form*

The graph in Figure 4.7 summarizes participants' mean responses to ungrammatical sentences categorized by the six sentence types (simple past with accomplishments (SP ACC), simple past with achievements (SP ACH), present progressive with accomplishments (PREP ACC), present progressive with achievements (PREP ACH), past progressive with accomplishments (PAP ACC), past progressive with

achievements (PAP ACH)). Means and standard deviations are summarized in Table 10 in Appendix A. These scores collapse responses to the two types of ungrammatical sentences (inflection errors, tense errors). We will separate results for the two types of ungrammatical sentences in the next section. It is clear from the graph in Figure 4.7 that on most sentence types, participants perform quite accurately, correctly assigning mean scores of 2 or below to ungrammatical sentences. However, participants in the Low group seem to have some difficulty correctly rejecting some ungrammatical sentences, particularly achievements in the past progressive.

Figure 4.7. L2 English GJ: Mean responses to ungrammatical sentence types



Responses to ungrammatical sentences were submitted to a repeated-measures ANOVA with sentence type (simple past, present progressive and past progressive) and verb type (accomplishment, achievement) as within-subjects factors and proficiency level (low, intermediate, high, near-native, native) as a between-subjects factor. Results

indicated that there was a significant effect for sentence type ($F(2, 252) = 13.481, p. < .01$) but no significant effect for verb type. There were significant interactions between sentence type and proficiency level ($F(8, 252) = 2.664, p. < .01$), sentence type and verb type ($F(2, 252) = 9.941, p. < .01$) and a three-way interaction between sentence type, verb type and proficiency level ($F(8, 252) = 2.905, p. < .01$). In order to see where the differences in sentence type lie, post-hoc comparisons using the Bonferroni adjustment for multiple comparisons were conducted. Results revealed that the participants gave significantly higher scores to ungrammatical simple past sentences; responses to present and progressive sentences were not different from each other. Although participants were still quite accurate on the simple past, these results indicate that participants had some difficulty identifying ungrammatical simple past forms. Some participants accepted sentences in the simple past when either the inflection was incorrect or there was a tense mismatch; we will show in the next section which error type was more prevalent.

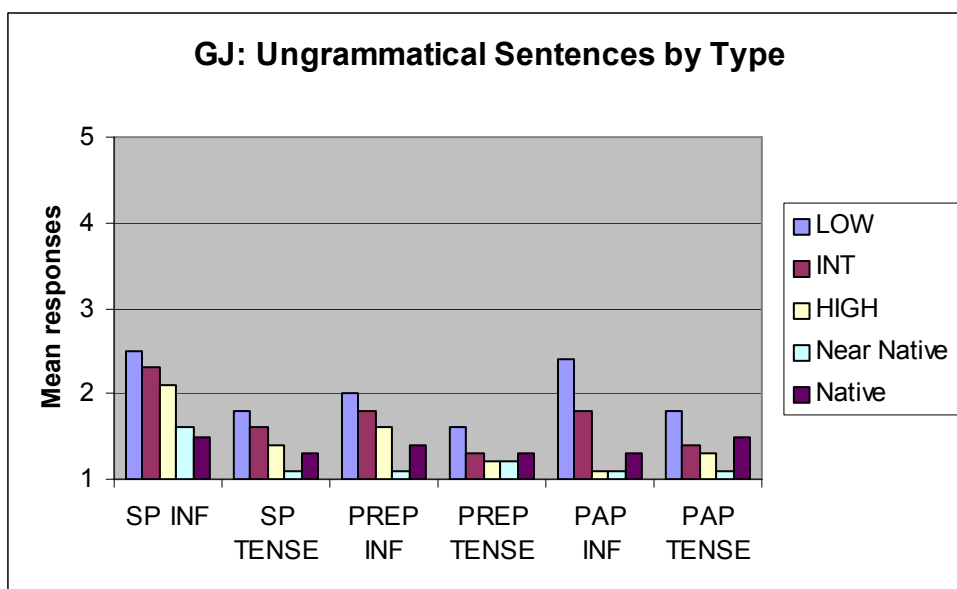
There was not a main effect for verb type but there were interactions between verb type and sentence type as well as verb type, sentence type and proficiency level. This is due to the fact that lower level learners incorrectly gave somewhat higher scores to simple past sentences with accomplishments and past progressive sentences with achievements.

Post-hoc comparisons using the Bonferroni adjustment for multiple comparisons were also conducted for Proficiency level. Results revealed that the Low group performed significantly worse than the other proficiency levels. In addition, the Intermediate group was different from the Near-natives and Native speakers. Therefore, in terms of knowledge of form, it is only the lower level learners who do not

categorically reject ungrammatical instances of morphological forms in all cases. Furthermore, it seems that this slight difficulty is most prevalent in a few specific contexts.

In Figure 4.8 we present mean responses to the two different types of ungrammatical sentences. Means and standard deviations are summarized in Table 11 in Appendix A. Scores were submitted to a factorial repeated-measures ANOVA with sentence type (simple past, present progressive and past progressive) and error type (inflection, tense) as within-subjects factors and proficiency level (low, intermediate, high, near-native, native) as a between-subjects factor. We collapse across verb type because the previous analysis showed no differences between accomplishments and achievements.

Figure 4.8. L2 English GJ: Mean responses to ungrammatical sentences of two types: morphological forms with incorrect inflection (INF) and sentences with incorrect tense



Results revealed that there were significant main effects for sentence type ($F(2, 252) = 9.610$, $p. < .001$) as well as error type (inflection, tense), ($F(1, 126) = 26.690$, $p. < .001$). There were also significant interactions between error type and proficiency ($F(4, 126) = 2.945$, $p. < .05$) and error type and sentence type ($F(2, 252) = 6.008$, $p. < .01$). Post-hoc comparisons using the Bonferroni adjustment for multiple comparisons revealed that participants gave significantly higher scores to morphological forms with incorrect inflection. As can be seen in the graph in Figure 4.8, morphological forms with incorrect tense were correctly given mean scores below 2 in all sentence types. Identifying errors in tense caused no difficulty for the learners.

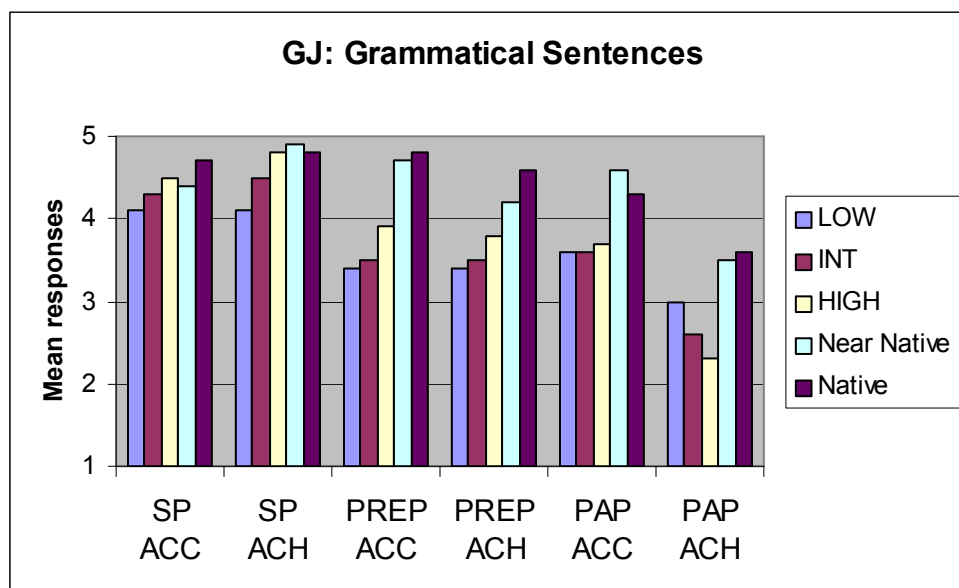
The slight difficulty with inflection is particularly evident in the simple past and past progressive. Difficulty with past progressive inflection is only evident in the Low group while difficulty with simple past inflection remains somewhat of a problem for some in the Intermediate group. The sentences that were ungrammatical in terms of inflection in the simple past used non-finite forms where only finite tensed forms would be appropriate given that a past tense adverb was present in the sentence. It is a very well documented phenomenon in second language acquisition that learners will often produce non-finite forms where finite past tense forms are required (cf. Lardiere, 1998, 2000). Difficulty with surface past tense inflection in production has been attributed to a range of factors from perceptual salience to phonological irregularity to difficulty “mapping” from features to surface morphology (see White, 2003 for a review). It is clear that lower level learners have an easier time identifying instances of ungrammatical “forms” in the progressive forms. Given the regularity of the progressive form, this is not surprising.

Overall, performance on the ungrammatical sentences is quite good for most learner groups. These results show that most learners have come to acquire the knowledge of what is and what is not an appropriate morphological form. This knowledge is in place even for categories such as the progressive where the learners showed evidence of difficulty on the Story Compatibility interpretation task. This provides support for the observation that learners come to acquire the properties of form before they have fully acquired the full range of the semantic properties associated with the forms.

3.4.4 Judging morphological forms in context

The graph in Figure 4.9 summarizes participants' mean responses to grammatical sentences categorized by the six sentence types (simple past with accomplishments, simple past with achievements, present progressive with accomplishments, present progressive with achievements, past progressive with accomplishments, past progressive with achievements). Means and standard deviations are summarized in Table 12 in Appendix A.

Figure 4.9. L2 English GJ: Mean responses to grammatical sentences



Responses to grammatical sentences were submitted to repeated-measures ANOVA with sentence type (simple past, present progressive, past progressive) and verb type (accomplishment, achievement) as within-subjects factors and proficiency level (low, intermediate, high, near-native, native) as a between-subjects factor. Results revealed a main effect for sentence type ($F(2, 252) = 92.241, p. < .001$) as well as a main effect for verb type ($F(1, 126) = 25.622, p. < .001$). There were significant interactions between sentence type and proficiency level ($F(8, 252) = 6.006, p. < .001$), sentence type and verb type ($F(2, 252) = 44.419, p. < .001$) as well as three-way interaction between sentence type, verb type and proficiency level ($F(8, 252) = 2.035, p. < .05$). There were also significant differences between the proficiency levels ($F(4, 126) = 14.457, p. < .001$).

Post-hoc comparisons using the Bonferroni adjustment for multiple comparisons were conducted in order to see where the specific differences lie. With respect to sentence type, participants did best on the grammatical sentences with the simple past,

the opposite of the results for the ungrammatical sentences. Mean responses to the grammatical simple past sentences were significantly higher than responses to present and past progressive sentences. Furthermore, responses to present progressive sentences were significantly higher than past progressive sentences.

The graph in Figure 4.9 shows very interesting patterns across sentence types and across proficiency levels. In the simple past with both verb classes, all learner groups correctly assign mean responses of 4 or above to grammatical sentences. Results of two one-way ANOVAs for the simple past reveal that there are significant differences across the proficiency levels (simple past accomplishments: $F(4,126) = 2.796$, $p < .05$; simple past achievements: $F(4, 126) = 8.972$, $p < .01$) but post-hoc comparisons indicate that it is only the Low group who performs significantly differently from the Native speakers. All learners generally understand how simple past morphology can be used in context.

On sentences in the present progressive, mean responses do improve across proficiency levels but many learners seem to have some difficulty with these sentences. Results of two one-way ANOVAs reveal that there are significant differences across the proficiency levels (present progressive accomplishments: $F(4,126) = 22.398$, $p < .001$; present progressive achievements: $F(4, 126) = 10.388$, $p < .001$). Post-hoc comparisons indicate that with both accomplishment and achievement verbs, the Low, Intermediate and High group provide significantly lower responses than the Native speakers. It is surprising to see this difficulty with present progressive accomplishments, as the equivalents of these sentences are grammatical in Japanese and denote equivalent interpretations. The results of the present progressive show that learners are still working out how the present progressive is used in certain contexts. It is surprising that there is

difficulty with both accomplishments and achievements. We will return to this issue below.

There is also evidence of difficulty with the past progressive. Results indicated that there were significant differences across proficiency levels ($F(4, 126) = 5.651, p. < .01$) but post-hoc comparisons indicated that only the Intermediate and High group were different from the Native speakers. There is also high variability in the learner responses. There is clearly a great deal of variability in native speaker responses to these sentences as well (cf. means and standard deviations in Appendix A, Table 12). A closer look at the data reveals that the variability is mostly between native speakers, similar to the results of the Story Compatibility task: there are some native speakers who accept all of the past progressive achievement sentences and others who reject them all. Out of the 23 native speakers, four participants give all past progressive achievements scores of 1-2.

Native speakers do generally accept past progressive sentences with accomplishments. The learner groups do not accept these sentences to the same degree. Results of a one-way ANOVA revealed significant differences across proficiency levels ($F(4, 126) = 4.752, p. < .01$) and post-hoc comparisons indicated that the Low and Intermediate groups gave significantly lower scores than the Near-native and Native speakers. Past progressive accomplishments are more of a problem for the lower proficiency levels.

Finally we will investigate the main effect for verb type further. Three separate repeated-measures ANOVAs were performed on the grammatical sentences for the three different sentence types with verb (accomplishment, achievement) as the within-subjects factor. The effect for verb type was not significant for present progressive sentences but

there was a significant effect for sentences in the simple past ($F(1, 126) = 14.041, p. < .001$) and the past progressive ($F(1, 126) = 63.637, p. < .001$). On the simple past, there was a slight but significant preference for achievements (mean response for accomplishments: 4.388, mean response for achievements: 4.637). However, overall participants in all proficiency levels correctly accepted both sentence types. On the past progressive sentences there was a stronger preference for accomplishment verbs (mean response for accomplishments: 3.963, mean response for achievements: 3.003). Past progressive sentences with achievements are generally given low mean scores by all groups including native speakers of English. The lack of difference between accomplishments and achievements in the present progressive is surprising given the crosslinguistic differences between the two languages. The Japanese equivalents of the accomplishment sentences are fully grammatical. Therefore, we would predict that they should be easy for the learners. We return to this issue below.

In summary, results of the grammatical sentences show that learners are still working out how to use progressive aspectual morphology in the context of a sentence: The present progressive with both verb classes caused difficulty for most learner groups. The past progressive with accomplishments was difficult for only the lower level learners. It is difficult to make generalizations about past progressive achievements because the native speaker judgments were highly variable. On the other hand, the use of the simple past seems to be in place for even the low level learners.

These results fit well with the results of the Story Compatibility interpretation task. On the interpretation task, the simple past was also relatively easy for the learners. However, the present and past progressive caused more difficulty, particularly with

achievements. We hypothesized that knowledge of how to *use* or judge morphology in context necessarily involved knowledge of how to interpret those forms. Therefore if interpretation is a problem, we expected to see difficulty arise on both tasks.

There is one area where results on the two tasks do not overlap, present progressive accomplishments. We believe that there is a possible explanation for the disparity. On the Story Compatibility task learners were required to accept sentences with accomplishments in the present progressive to refer to events that were ongoing. This is a basic use of the present progressive in English and it is also an interpretation that is available in Japanese. However, a close look at the sentences included on the GJ task (Appendix A) will show that these sentences included uses of the progressive that were less prototypical. For example, the sentence *This month the professor is writing a book on Taiwan* requires that the learner know that the progressive can also be used in habitual contexts to refer an event that is in progress (writing a book) in separate intervals over the course of a time period (one month). Andersen and Shirai (1996) observe that these extended uses of the progressive are acquired later. However, note that this use is fully acceptable in Japanese. Native speakers of Japanese accept the translational equivalents of these sentences on the Japanese GJ task to be described in Section 4. However, the learners still have difficulty with the English equivalent. It is possible that *extended* uses of the progressive in English, such as the habitual or futurate, remain difficult for the L2 learner whether or not the uses are available in the L1.

3.4.5 Summary of results: Grammaticality Judgment Task

Results on the Grammaticality Judgment task show that indeed knowledge of form does precede knowledge of use and interpretation. Results of the ungrammatical sentences show that learners have almost no difficulty identifying what is and what is not a well-formed verb+morphology complex. When there was evidence of difficulty it was in the simple past, where some lower level learners accepted sentences with past tense adverbs but non-finite bare verb forms. This is a common error often noted in the production of second language learners. These results show that this error does not persist in *comprehension* past a certain level of proficiency. The learners also had little difficulty identifying tense mismatches. In general, knowledge of form seems to have been acquired even by the lower level learners.

On the other hand, results on the grammatical sentences show that learners do have some difficulty identifying how aspectual morphology can be used in contexts. The areas that were difficult, the present and past progressive are generally the same areas that were difficult on the Story Compatibility task. Note however that the near-natives performed at the level of native speakers in all contexts on the GJ task, despite some evidence of difficulty on the Story Compatibility task.

The results of the grammatical sentences also pointed out an interesting characteristic of the English native speaker grammar. Some native speakers find achievements in the past progressive to be unacceptable. Interestingly, we also saw native speaker variability with past progressive achievements on the Story Compatibility task. We will consider explanations for this variability in Chapter 5.

4. Study 2: Methodology

4.1 Participants

Two groups of participants took part in Study 2. The first group was made up of 33 native speakers of English who were studying Japanese at high schools or universities in New York. Participants were recruited through flyers and announcements at one high school in New York City and at two universities, one in New York City and one in upstate New York. Background information was collected through a written questionnaire. Only participants who indicated on the questionnaire that they were native speakers of English were included in the analysis⁴². All participants were classroom, foreign language learners who were initially exposed to Japanese in either high school or college after the age of 15. None of the Japanese learners had ever lived in Japan. The mean age of the learners was 21(SD 6.9)⁴³. On average, the learners had been studying Japanese for about two years. This group is not directly comparable to the group of English learners in Study 1 because their length of exposure to the second language is much shorter⁴⁴.

⁴² It proved challenging to find native speakers of English who were studying Japanese at universities in New York City. Several participants had to be eliminated from the analysis because they took part in the study although they were native speakers of other languages.

⁴³ At one of the universities, some of the participants were undergraduate students who had been taking Japanese as an elective while other participants were enrolled in an intensive Japanese language course. A few of the students in the intensive language course were older than the average undergraduate student; therefore, the standard deviation for age is quite high.

⁴⁴ Ideally we would have been able to test a group of English learners in Japan who had studied English for only two years, similar to the learners of Japanese. However, because of the focus of English education

In addition, a group of 31 native speakers of Japanese made up the control group. These participants were undergraduate students who were tested in Japan. The Japanese native speakers who are in the control group are not the same students who participated in Study 1 as learners of English, although they were tested at one of the same universities. A brief questionnaire was given to collect background information. The participants in the control group had never studied linguistics. Their mean age was 20 (SD 1.38).

4.2 Test instruments

In this study three measures were used: a proficiency test and two experimental tasks developed specifically for this study. When sentences were presented in written form, Japanese script was used. However, all Chinese characters (kanji) were always phonetically transcribed (in hiragana). Therefore, the tasks required that the learners know the phonetic alphabets of hiragana and katakana but did not require knowledge of any kanji. Since the learners were studying at universities, they were all very familiar with the Japanese phonetic alphabets.⁴⁵

at the junior high level in Japan we thought that the tasks were too difficult to give to students who had been studying English for only two-three years. At the junior high school level, English study in Japan focuses mostly on reading and simple translation.

⁴⁵ Naturalistic learners sometimes do not study the written language but reading is always a component of the curriculum at the university level.

4.2.1 Japanese Listening Comprehension Test

Study 2 also used a listening comprehension test as a proficiency measure. The 16 test items were selected from the Japanese government proficiency exam. Half of the items were taken from Level 3 (san-kyu) and half of the items were taken from Level 2 (ni-kyu)⁴⁶. Participants listened to test items, which were 60-90 second long dialogues followed by four answer choices that were also presented aurally. Participants chose the appropriate answer by checking a box on an answer sheet that was provided to them. The test lasted for about 25 minutes.

4.2.2 Story Compatibility task

The Story Compatibility task in Japanese is very similar in design to the English task. The Japanese task targeted the interpretation of accomplishments and achievements under the simple past *-ta*, *te-iru* and the past form of *te-iru*, *te-ita*. The Japanese translations of the eight accomplishments and eight achievements included in the English study were tested in the Japanese study. As is mentioned in the design of the English study, the accomplishments were selected on the basis that they denote progressive interpretations under both English *be+ing* and Japanese *te-iru*. The eight achievements were selected because they unambiguously denote a perfective interpretation under *te-iru*;

⁴⁶ Level 4 (yon-kyu) was not used because the questions are very simple for a student who has studied Japanese for more than one year. In order to be sure that the exam results would distinguish between learners at different levels of proficiency we used part of Level 3 which is targeted for Low Intermediate learners and part of Level 2 which is targeted at quite advanced learners.

in English achievements under *be+ing* denote progressive interpretations. The verbs included in the test are listed in (6).

- (6) Accomplishments: *keeki-o tsukuru* (make a cake), *tsuna no shiro-o tatsu* (build a sandcastle), *cupu ippai no koora-o nomu* (drink a glass of coke), *ippai no ramen-o taberu* (eat a bowl of ramen), *hon-o kaku* (write a book), *e-o kaku* (paint a portrait), *yamazumi no hon-o yomu* (read a pile of books), *yamazumi no shoki o arau* (wash a pile of dishes)

Achievements: *tsuku* (arrive), *shinu* (die), *kuru* (come), *kaeru* (return), *aku* (open_{INT}), *shimaru* (close_{INT}), *deru* (leave), *iku* (go)

Just as in the English version, a complete story context and an incomplete/ongoing story context were developed for each verb. The Japanese story contexts were also presented in the simple present and were as similar as possible to the story contexts used in the English version. A full paradigm of stories and test sentences for the accomplishment *e-o kaku* (paint a portrait) and the achievement *tsuku* (arrive) is presented in (7) and (8) below. A complete list of stories is included in Appendix D. Included in (7) and (8) are the judgments expected for native speakers of Japanese (on the scale of 1-5 described above) as well as the expected judgments of English native speakers if the test sentences were directly translated into English. These tables allow us to directly compare the behavior of accomplishment and achievement verbs under English and Japanese aspectual morphology.

(7) *e-o kaku* (paint a portrait) (accomplishment)

Complete Story Context

Picture 1: Ken-wa gaka desu. 12ji-ni Ken-wa kazoku no e o kaki-hajimemasu.

Picture 1: Ken is an artist. At 12:00 Ken begins to paint a portrait of his family.

Picture 2: 8ji-ni Ken-wa tanjobi puresento toshite okaasan ni e o watashimasu.

Picture 2: At 8:00 Ken gives the portrait to his mother for her birthday.

	Japanese Native	English equivalent
Simple past <i>-ta</i> Ken-wa kazoku no e o kakimashita. (Ken painted a portrait of his family.)	5	5
<i>Te-iru</i> (polite realized as <i>te-imasu</i>) Ken-wa kazoku no e o kaite-imasu. (Ken is painting a portrait of his family.)	1	1
<i>Te-ita</i> (polite form realized as <i>te-imashita</i>) Ken-wa kazoku no e o kaite-imashita. (Ken was painting a portrait of his family.)	5	5

Incomplete/Ongoing Story Context

Picture 1: Ken-wa gaka desu. 12ji-ni Ken-wa kazoku no e o kaki-hajimemasu.

Picture 1: Ken is an artist. At 12:00 Ken begins to paint a portrait of his family.

Picture 2: 12:30pun-ni Ken-wa okaasan to otōsan no e-o kaki-hajimemasu.

Picture 2: At 12:30 Ken begins to paint his mother and father.

	Japanese Native	English equivalent
Ken-wa kazoku no e o kakimashita. (Ken painted a portrait of his family.)	1	1
Ken-wa kazoku no e o kaite-imasu. (Ken is painting a portrait of his family.)	5	5
Ken-wa kazoku no e o kaite-imashita. (Ken was painting a portrait of his family.)	5	5

(8) *tsuku* (arrive) (achievement)

Complete Story Context

Picture 1: Kore-wa Tōkyo yuki no hikōki desu. Ima 4ji desu. Hikōki-wa kūkō no chikaku desu.

Picture 1: This is the plane bound for Tokyo. It's 4:00 now. The plane is near the airport.

Picture 2: 5ji desu. Jyōkyaku-wa kūkō-ni imasu.

Picture 2: It's 5:00. The passengers are at the airport.

	Japanese Native	English equivalent
Hikōki-wa kūkō ni tsukimashita. (The plane arrived at the airport.)	5	5
Hikōki-wa kūkō ni tsuite-imasu. (The plane is at the airport.)	5	1
Hikōki-wa kūkō ni tsuite-imashita. (The plane had arrived at the airport.)	5	5

Incomplete/Ongoing Story Context

Picture 1: Kore-wa Tōkyo yuki no hikōi desu. Ima 4ji desu. Hikōki-wa kūkō no chikaku desu.

Picture 1: This is the plane bound for Tokyo. It's 4:00 now. The plane is near the airport.

Picture 2: Kaze-ga tsuyoi desu. 4:30pun-ni hikōki-wa mada sora-o hikō-chyū desu.

Picture 2: The wind is strong. At 4:30 the plane is still in the sky.

	Japanese Native	English equivalent
Hikōki-wa kūkō ni tsukimashita. (The plane arrived at the airport.)	1	1
Hikōki-wa kūkō ni tsuite-imasu. (The plane is at the airport.)	1	5
Hikōki-wa kūkō ni tsuite-imashita. (The plane had arrived at the airport.)	1	5

Just as in the English version, each participant heard 32 test story contexts (16 verbs tested and each verb had two story contexts, complete and incomplete). The

participants heard each of the 32 stories just once. Each participant provided a judgment on only *one* of the test sentence types (simple past, *te-iru*, *te-ita*) per story. Participants also responded to filler items that were designed to test whether the 32 test stories actually conveyed the information they were intended to.

Finally, there were also 16 distractor stories. The distractor stories on the English and Japanese versions of the test were comparable. Again distractor stories did not require that the participant make a judgment based on the aspectual properties of the context or the sentence. The actual distractor sentences included on the Japanese version were different than the distractors on the English version. In order to balance the number of acceptable and unacceptable items on the Japanese version, half of the distractor sentences were acceptable and half unacceptable. On two of the four test batteries, the distractor sentences included 8 sentences with *te-ita* that were unacceptable and 8 sentences with *te-iru* that were acceptable. This was done in order to balance the number of acceptable/unacceptable items across sentence type. We did not want it to be the case that on a given battery, every sentence with *te-iru* or *te-ita* should be rated as either acceptable or unacceptable. On the other two test batteries the distractor sentences included 8 sentences with *te-iru* that were unacceptable and 8 simple statements that were acceptable. This again was done to balance acceptable/unacceptable items across the test as a whole and also across sentence type.

In summary, each test battery had 48 items (24 acceptable/24 unacceptable) that were divided up as follows:

8 simple past sentences (4 accomplishment, 4 achievement)

8 *te-iru* sentences (4 accomplishment, 4 achievement)

8 *te-ita* sentences (4 accomplishment, 4 achievement)

8 filler items (4 accomplishment, 4 achievement)

16 distractor items

Test items on all batteries were randomized.

4.2.3 *Grammaticality Judgment task*

The Grammaticality Judgment task targeted the same categories as the Story Compatibility task. The task is similar in design to the English version. There were 48 sentences targeting aspectual morphology (24 acceptable and 24 unacceptable) as well as 24 fillers (12 acceptable and 12 unacceptable)⁴⁷. Filler sentences targeted word order and particles and were presented in the simple present tense.

Due to morphological differences between English and Japanese, the ungrammatical sentences on the Japanese version were somewhat different than the ungrammatical sentences on the English version. However, like the English version, the ungrammatical sentences still focus on knowledge of morphological form. On the Japanese version ungrammatical sentences in the past categories (past and past progressive) were ungrammatical in that either a present or future tense adverb was combined with past morphology or a past tense adverb was combined with present tense morphology. In both cases, the error involved a mismatch between the tense of the

⁴⁷ The entire grammaticality judgment task was actually comprised of 112 sentences, including several other types of sentence that will not be discussed in this dissertation.

inflection and the time reference of the adverb. In other words, the inflection was well-formed but it was inappropriate for the context of the sentence. On the sentences with present tense *te-iru*, ungrammatical sentences included only the verb root, uninflected for tense⁴⁸.

The 48 test sentences were categorized as follows:

8 Past Accomplishment

8 Past Achievement

8 *te-ita* Accomplishment

8 *te-ita* Achievement

8 *te-iru* Accomplishment

8 *te-iru* Achievement

In (9) examples of test sentences within the simple past accomplishment class are given. A list of all of the sentences is provided in Appendix D.

(9) Example sentences: simple past accomplishment

Sengetsu, chefu-wa sushi ni tsuite no hon o kakimashita. (grammatical)
 Last month chef-TOP sushi about book ACC write-PAST
 Last month the chef wrote a book about sushi.

⁴⁸ We found in pilot testing that it was very difficult to have native speakers of Japanese judge sentences as unacceptable when a past adverb was present in the same sentence as a verb with present tense *te-iru* inflection. This is most likely because the interpretation of *te-iru* is somewhat flexible. For this reason we had to use a different strategy for the ungrammatical *te-iru* sentences. We did not use the non-finite uninflected verb root in *all* ungrammatical sentences because it makes the learner's task too simple. This verb root can simply not be used on its own in Japanese and is easily identifiable as ungrammatical in any context. This is different in English where it is often found that L2 learners use non-finite uninflected verb stems such as *eat* in contexts that require a finite inflected form.

Ashita, Yumiko-wa aoi kuruma-o araimashita. (ungrammatical)
 Tomorrow, Yumiko-TOP blue car-ACC wash-PAST
 Tomorrow, Yumiko washed a blue car.

Senshū, Takashi-wa resotoran de piza- o tabemasu. (ungrammatical)
 Last week Takashi-TOP restaurant at pizza-ACC eat-PRES
 Last week Takashi eats a pizza at the restaurant.

All sentences included a temporal adverb that was placed at the beginning of the sentence. Sentences were controlled for length, with all sentences having, on average, 20-24 morae. All participants evaluated the same sentences but two test batteries were developed in order to control for ordering effects.

4.3 Standard Procedure

The procedure for the L2 Japanese study followed the same procedure as the L2 English study. All participants attended two separate testing sessions. The native speaker control group was tested in Japan. Testing sessions were conducted in a university classroom with a group of several participants taking the tests at one time.

All Japanese learners were tested in New York; testing was conducted at three different universities. One group of Japanese learners was tested at the CUNY Graduate Center. There were two other groups of learners that were tested at the universities where they were studying Japanese. Test sessions were again conducted in a classroom, in group sessions. Upon completing both test sessions, participants were compensated for their time.

5. Study 2 Results

5.1 Japanese proficiency test

On the Japanese proficiency test, the mean score for the 33 Japanese learners of English (out of a possible 16) was 6.8 (SD 3.5). Based on these results the learners were divided into two proficiency levels. Learners who scored below the mean (1-6) were put in the Low group (n = 16) while participants who scored above the mean (7-14) were placed in the High group (n = 17). Means and standard deviations for the two groups are summarized in Table 4.6 below⁴⁹.

Table 4.6. Means and standard deviations for all participant groups on the 16-question Japanese proficiency test

	Low (n = 16)	High (n = 17)
<u>Proficiency test</u>		
M	3.81	9.71
SD	1.72	1.99

5.2. Story Compatibility Task

This task targeted interpretive knowledge of the aspectual semantics of the Japanese simple past marker *-ta*, as well as the aspectual marker *te-iru* and its past form

⁴⁹ The native speakers of Japanese took a proficiency test as well. However, they took the listening comprehension section of the Level 1 Japanese government proficiency exam, a harder version of the test the Japanese learners took. At the outset of the study, we hoped that we would test near-native speakers of Japanese who would be tested with the Level 1 exam; the native speakers were then tested with Level 1 so that we would be able to compare groups. Unfortunately near-natives of Japanese proved very difficult to find in the area where the study was conducted so this group could not be included.

te-ita. In this section we will outline results on the distractor sentences, then describe the analyses that were run on test sentences and finally present results on the fillers and the sentences targeting aspectual morphology.

5.2.1 *Distractors*

All test batteries included 16 distractor items. As is mentioned above, distractor stories did not include the target test verbs. These stories were included to be sure that the participants understood the task at hand. As is described in 4.2.2, half of the distractor sentences were acceptable and half were unacceptable: two of the test batteries included 8 unacceptable sentences with *te-iru* and 8 acceptable simple statement sentences as distractors while the other two test batteries included 8 unacceptable sentences with *te-ita* and 8 acceptable sentences with *te-iru* as distractors. As is shown in table 4.7 below, all groups performed as expected on distractor sentences.

Table 4.7. L2 Japanese: Means and standard deviations on the distractor sentences

Distractor type	Low (n=16)	High (n=17)	Native Japanese (n=31)
<u><i>Te-iru</i></u> (unacceptable)			
M	2.04	1.46	1.15
SD	1.10	.27	.28
n	7	10	16
<u>Statement</u> (acceptable)			
M	4.39	4.48	4.56
SD	.45	.33	.44
n	7	10	16
<u><i>Te-ita</i></u> (unacceptable)			
M	2.03	1.38	1.31
SD	.74	.34	.34
n	9	7	15
<u><i>Te-iru</i></u> (acceptable)			
M	4.29	4.21	4.81
SD	.63	.46	.26
n	9	7	15

Four separate univariate one-way ANOVAs with proficiency level (low, high, native speaker) as the between-subjects factor were conducted on the four types of distractor sentences. All groups performed at the same level on the Statement distractors. There were significant differences between the groups on the other three distractor types (*Te-iru* unacceptable: $F(2, 30) = 6.281$, $p. < .01$; *Te-ita* unacceptable: $F(2,28) = 6.574$, $p. < .01$; *Te-iru* acceptable: $F(2, 28) = 6.240$, $p. < .01$). Differences between groups were investigated through Tukey's HSD post-hoc procedures. The Low group differed from the Native speakers on all three distractor types while the High group differed from the Native speakers only the *Te-iru* acceptable distractors. While there are some differences in *degree* of acceptance and rejection between the learners and native speakers, overall the participants perform as they should, giving high scores above 4 to acceptable

sentences and low scores around 2 to unacceptable sentences. The learners clearly understand the task. Furthermore, the learners do not appear to show a response bias.

5.2.2 *Analyses of test items*

The design of the Japanese Story Compatibility task is similar to the English version in that test items had to be counterbalanced across subjects so that one group of subjects provided responses to half of the test sentences while the second group of subjects provided responses to the other half of the test sentences. Just as in the L2 English study, roughly equal numbers of participants from each proficiency level were assigned to the two groups. A series of independent samples t-tests showed that within each proficiency level, the two groups did not differ in terms of performance on the proficiency test.

The first group of participants responded to the following test sentence types:

Group 1

Simple Past *-ta* Accomplishment Incomplete

Simple Past *-ta* Achievement Complete

Te-iru Accomplishment Incomplete

Te-iru Achievement Complete

Te-ita Accomplishment Complete

Te-ita Achievement Incomplete

Filler Accomplishment Complete

Filler Achievement Incomplete

The second group of participants responded to the complementary sentence types:

Group 2

Simple Past *-ta* Accomplishment Complete

Simple Past *-ta* Achievement Incomplete

Te-iru Accomplishment Complete

Te-iru Achievement Incomplete

Te-ita Accomplishment Incomplete

Te-ita Achievement Complete

Filler Accomplishment Incomplete

Filler Achievement Complete

Because a single participant did not provide a response for a given sentence type with both the complete and incomplete contexts, we could not run repeated-measures ANOVAs. Instead, analyses were conducted just as they were in the L2 English study. Factorial univariate ANOVAs were performed separately for each sentence type with context (complete, incomplete) and proficiency level (low, high, native speaker) entered as between-subjects factors.

5.2.3 *Filler items*

Filler sentences used explicit adverbs and aspectual verbs such as *oeru* (finish) and therefore they were not included in order to provide information with respect to the interpretation of aspectual morphology. As is mentioned above, these sentences provided a way to check whether in fact the test stories actually expressed the complete or ongoing context that they were intended to. In an effort to balance acceptable and unacceptable items on the task as a whole, 75% of the filler sentences were unacceptable, 25% acceptable: all fillers with accomplishments were unacceptable; on the filler sentences with achievements, fillers that followed complete contexts were acceptable, fillers that followed incomplete contexts were unacceptable. Means and standard deviations for performance on the filler sentences with accomplishment and achievement verbs are provided in Table 4.8.

Table 4.8. L2 Japanese: Means and standard deviations on filler sentences with accomplishments and achievements in incomplete and complete contexts

Context type	Low (n = 16)	High (n = 17)	Native Japanese (n = 33)
<u>Accomplishment</u>			
<u>Incomplete</u>			
M	2.17	1.43	1.20
SD	(1.17)	(.40)	(.41)
n	9	7	15
<u>Accomplishment</u>			
<u>Complete</u>			
M	2.78	1.45	1.09
SD	1.56	.61	.20
n	7	10	16
<u>Achievement</u>			
<u>Incomplete</u>			
M	2.00	1.80	1.33
SD	.71	.60	.43
n	7	10	16
<u>Achievement</u>			
<u>Complete</u>			
M	3.94	4.46	4.82
SD	.63	.37	.39
n	9	7	15

Two separate factorial univariate ANOVAs were conducted on fillers with accomplishment verbs and fillers with achievement verbs; context (complete, incomplete) and proficiency level (low, high, native speaker) were entered as between-subjects factors. On the fillers with accomplishment verbs, results indicated that, as expected, there were no significant differences between responses to the complete and incomplete contexts. However, there were significant differences between proficiency levels ($F(2, 58) = 16.534, p. < .001$). Post-hoc comparisons using the Bonferroni adjustment for

multiple comparisons revealed that the Low group was different from both the High group and the Native speakers, $p. < .01$. The Low group had some difficulty rejecting filler sentences with the complete context, but on the incomplete context it is clear that they understand the task and the stories. The difficulty with the complete contexts is most likely due to the fact that these filler sentences included verbal compounds in the negative as in *mada tsukuri-oemasen deshita*, which would be translated as *did not finish building yet*. This construction is perhaps too advanced for lower level learners.

On the fillers with achievement verbs, results indicated that there were, as expected, significant differences between responses to the complete and incomplete contexts ($F(1, 58) = 401.008$, $p. < .01$). There were also no significant differences between proficiency levels. It seems that the learners generally understand the task and the contexts. They also understand the two concepts of an event being in progress and an event having been completed. In the next sections we present the results for the sentences targeting aspectual morphology.

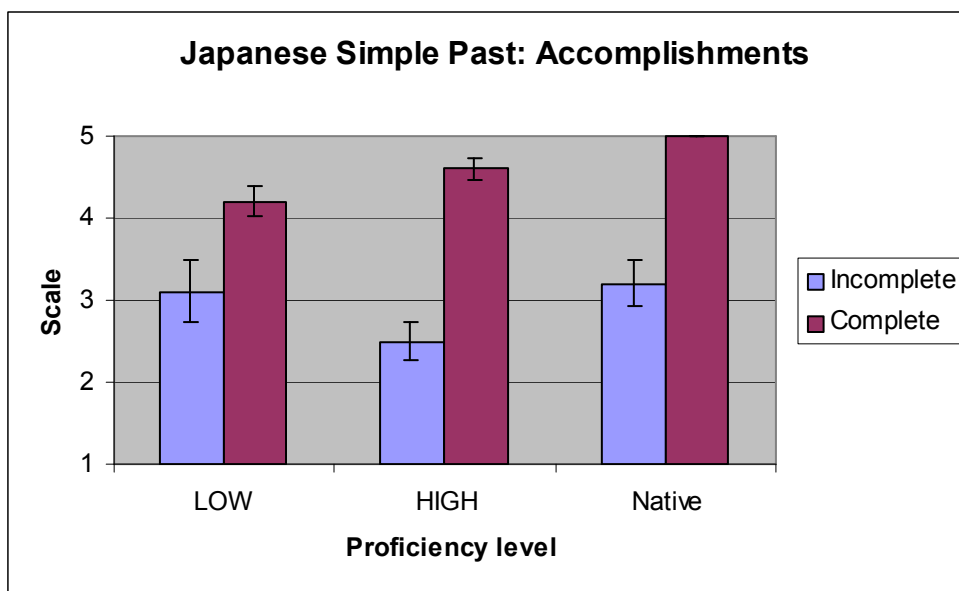
5.2.4 *Simple past*

Just as in the English study, the category of simple past was included as a control. Sentences in the simple past in Japanese are compatible with complete story contexts and incompatible with incomplete story contexts. Therefore we expect to see an effect for context. Because of the similarity between English and Japanese in the simple past we do not expect to see an effect for proficiency level nor an interaction between context and proficiency level.

5.2.4a Simple Past Accomplishments

Figure 4.10 shows the mean responses for all participant groups on the simple past with accomplishments in both complete and incomplete contexts. Means and standard deviations are provided in Table 1 in Appendix B.

Figure 4.10. L2 Japanese: Mean responses to accomplishments in the Japanese simple past with incomplete and complete contexts



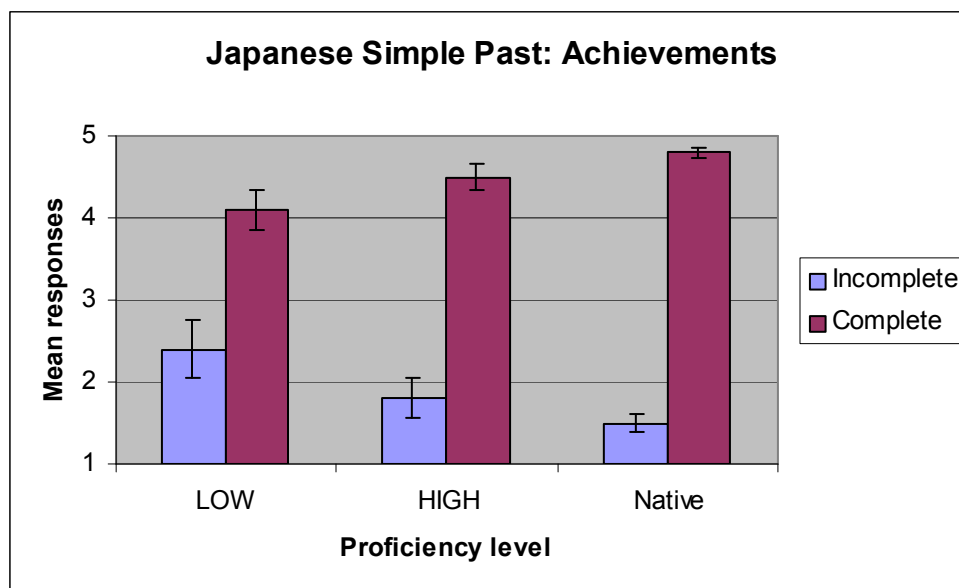
Scores on simple past sentences with accomplishments were submitted to a factorial univariate ANOVA with context (complete, incomplete) and proficiency level (low, high, native speaker) as between-subjects factors. Results indicated that there was a significant effect for context ($F(1, 58) = 74.929, p. < .01$). Independent samples t-tests confirmed that this effect is significant for all proficiency groups (Low: $t(14) = -2.892, p. < .05$;

High: $t(15) = -7.409$, $p. < .001$; Native Japanese: $t(29) = -6.431$, $p. < .001$). Results of the ANOVA indicated a significant effect for proficiency level ($F(2, 58) = 3.493$, $p. < .05$). However, post-hoc comparisons using the Bonferroni adjustment for multiple comparisons did not reveal significant differences between any of the groups. There was no interaction between context and proficiency level. These results indicate that the participants generally perform as they were expected to on the simple past with accomplishments. The only surprising result is that, just as in the English study, all participants including Japanese native speakers rate simple past sentences higher than we would expect with the incomplete context. It seems that in Japanese and English, accomplishments in the simple past are, for some speakers, compatible with contexts where the event has not come to its inherent endpoint. We will next summarize the results for achievements.

5.2.4b Simple Past Achievements

Figure 4.11 outlines the mean responses for all proficiency levels to achievements under the simple past in both incomplete and complete contexts. Means and standard deviations are provided in Table 2 in Appendix B.

Figure 4.11. L2 Japanese: Mean responses to achievements in the Japanese simple past with incomplete and complete contexts



Scores on simple past sentences with achievements were submitted to a factorial univariate ANOVA with context (complete, incomplete) and proficiency level (low, high, native speaker) as between-subjects factors. Results indicated that there was a significant effect for context, $F(1, 58) = 288.764$, $p. < .001$ but there was not a significant effect for proficiency level. There was however an interaction between the two factors, $F(2, 58) = 10.850$, $p. < .001$. As with the simple past accomplishments, there was a clear distinction between responses to incomplete and complete contexts. Independent samples t-tests confirmed that this contrast is significant for all proficiency groups (Low: $t(14) = 3.930$, $p. < .01$; High: $t(15) = 10.360$, $p. < .001$; Native Japanese: $t(29) = 25.873$, $p. < .001$).

In addition, learners performed at the level of native speakers. The distinction between responses with incomplete and complete contexts is not as pronounced in the Low group as it is in the High and Native speaker group, which explains the significant

interaction. However, the Low group still distinguishes significantly between the two contexts.

In general, results on the simple past show that when the semantics of the aspectual morphology is similar in the two languages, learners do not have difficulty. While it is clear that the Low group is still sharpening their knowledge of the aspectual properties of the past marker *-ta*, they nevertheless show the same patterns of responses that the native speakers do.

5.2.5 *Te-iru*

Te-iru is our primary test case for semantic transfer. While *be+ing* and *te-iru* both denote equivalent event-in-progress interpretations with accomplishments, the two forms denote different interpretations with achievements.

When *te-iru* attaches to an accomplishment, the form is compatible with incomplete/ongoing contexts but is incompatible with complete contexts. Therefore we predict that there will be a significant effect for context with accomplishments. Given that *be+ing* and *te-iru* behave similarly with accomplishments, we do not predict an effect for proficiency level nor do we predict an interaction between context and proficiency level.

With achievements, *te-iru* denotes a resultative interpretation and therefore is compatible only with the complete context. However, if the transfer hypothesis is correct, and the learners' hypotheses regarding the semantics of the L2 are constrained by the L1 grammar, then the L2 learners are predicted to give the opposite scores of native speakers. If the learners map the L1 representation for PROG onto Japanese *te-iru* then

they will give high scores to *te-iru* on the incomplete context and low scores to *te-iru* with the complete context. Given this hypothesis, we predict that there will be a significant effect for context and that there will be an interaction between context (complete, incomplete) and proficiency level. Naturally we also predict that there will be a significant effect for proficiency level.

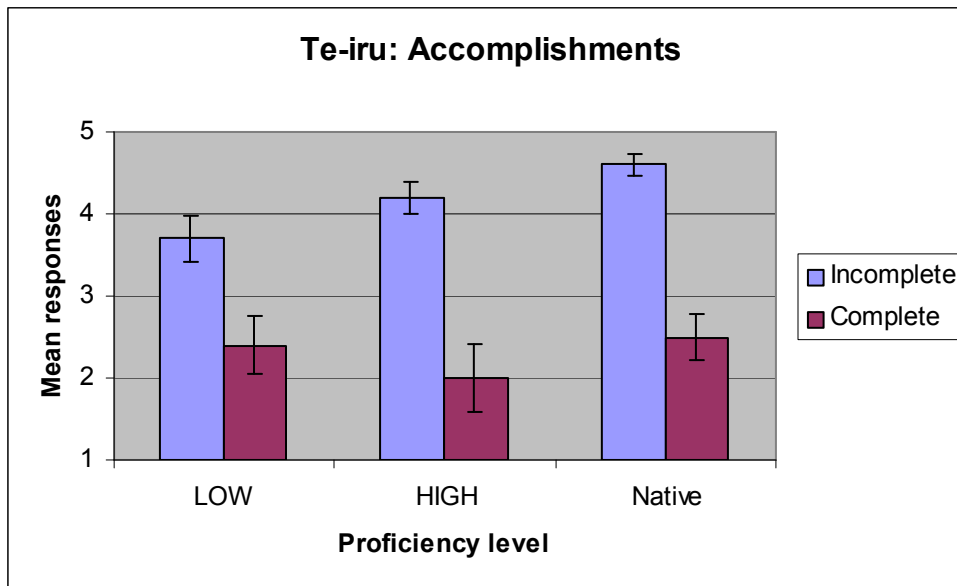
We will also evaluate L2 learner performance on each context (complete and incomplete) separately. We predict that learners in the High group will perform well on the complete context but may still show difficulty on the incomplete context. The complete context evaluates learners' ability to add the progressive interpretation to their grammar, a task that may be facilitated by positive evidence, while the incomplete context evaluates their ability to preempt an L1 interpretation, a task that may not be facilitated by input.

We first present results for the accomplishments where no differences were predicted.

5.2.5a Accomplishments

Figure 4.12 shows mean responses to *te-iru* with accomplishments in incomplete and complete contexts. Means and standard deviations are provided in Table 3 in Appendix B.

Figure 4.12. L2 Japanese: Mean responses to accomplishments under *te-iru* with incomplete and complete contexts



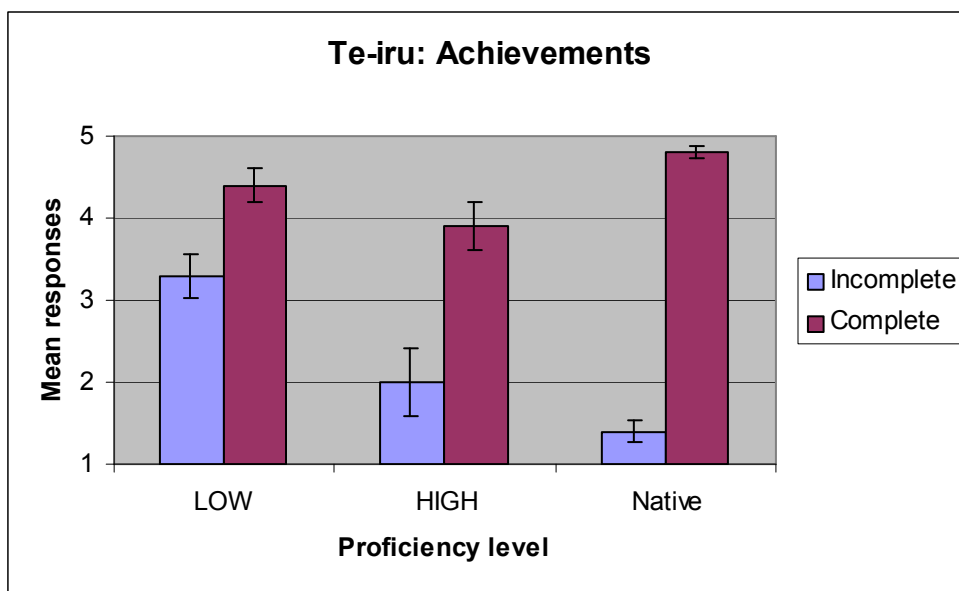
Responses to *te-iru* with accomplishments were submitted to a factorial univariate ANOVA with context (incomplete, complete) and proficiency level (low, high, native speaker) as between-subjects factors. Results indicated that there was a significant effect for context ($F(1, 58) = 67.470$, $p < .001$). Independent samples t-tests confirmed that this contrast is significant for all proficiency groups (Low: $t(14) = 2.695$, $p < .05$; High: $t(15) = 5.378$, $p < .001$; Native Japanese: $t(29) = 6.891$, $p < .001$). Results of the ANOVA also revealed that there was not a significant effect for proficiency level nor was there an interaction between context and proficiency level.

In summary, participants clearly distinguished between incomplete and complete contexts and the distinction was the same across proficiency levels. In general predictions were confirmed with accomplishments under *te-iru*.

5.2.5b Achievements

We predicted that with achievements under *te-iru*, learners would give exactly the opposite scores that native speakers would give on both the incomplete and complete contexts. Figure 4.13 shows mean scores on both incomplete and complete contexts. Means and standard deviations are provided in Table 4 in Appendix B.

Figure 4.13. L2 Japanese: Mean responses to achievements under *te-iru* with incomplete and complete contexts



Scores on present progressive achievements were submitted to a factorial univariate ANOVA with context (incomplete, complete) and proficiency level (low, high, native speaker) as between-subjects factors. Results indicated that there was a significant effect for context ($F(1, 58) = 148.015, p. < .001$), a significant effect for proficiency level ($F(2, 58) = 8.031, p. < .01$) as well as a significant interaction between context and proficiency

level ($F(2, 58) = 18.354, p. < .001$). Post-hoc comparisons indicate that the Low group is significantly different from the High group and the Native speakers.

It is clear from the graph that responses do not conform to the transfer predictions. Instead learners' responses generally follow the same pattern of Japanese native speakers, giving higher scores to sentences with *te-iru* when the story presented a complete context. Independent samples t-tests confirmed that all groups correctly give significantly higher scores on the complete context (Low: $t(14) = 3.093, p. < .01$; High: $t(15) = 3.942, p. < .01$; Native Japanese: $t(29) = 22.802, p. < .001$).

We analyzed individual responses in order to get a better understanding of the results. First we will look at the complete context where the goal of the learners is to add the resultative interpretation to their grammar. We predicted that the High group would perform well on this context, but it seems that the Low group also performs well. Of the learners in the Low group who responded to the complete context, six out of seven correctly accepted at least 75% of the items with scores of 4-5. In the High group, seven out of ten learners correctly accepted at least 75% of these items. Many learners accepted 100%. These results show that with respect to the resultative interpretation of *te-iru*, even many learners in the Low group do not have difficulty.

Next we turn to the incomplete context. The transfer hypothesis predicted the Low group would incorrectly accept these sentences. We also expected to see evidence of difficulty in the High group as well as this context involves preemption of an L1 option. In the Low group there were three out of nine learners whose results support the strong transfer hypothesis. These learners accepted, with scores of 4-5, 75% of these test items. There were no learners in the Low group who correctly rejected, with scores of 1-

2, at least 75% of the items. This was one of the only contexts in which learners frequently gave sentences scores of 3. The number 3 on the scale of 1-5 is defined as a sentence that might be compatible with the story. This shows that the learners in the Low group have some uncertainty. For certain verbs they are unsure whether achievements under *te-iru* allow a progressive interpretation. There is evidence, just as there was in the L2 English study, that the learners perform better with some verbs than others. For example, most learners correctly rejected the verb *die* under *te-iru* with the incomplete context.

In the High group, learners performed better. Four out of seven learners were able to correctly reject 75% of the test items. However, there were three learners who performed at chance, correctly rejecting two of the items but incorrectly accepting the other two items with scores of 4-5. Therefore, while there is evidence that some of the learners in the High group have difficulty preempting the L1 option, the difficulty is more apparent in the Low group. These results are different from the results in the L2 English study where even some near-native speakers had difficulty preempting the L1 option in the acquisition of the present progressive.

Finally, the native speakers of Japanese performed almost exactly as expected except for one verb. Three out of eight Japanese native speakers allowed the verb *iku* 'go' under *te-iru* to refer to an incomplete/ongoing context. However, the L2 learners of Japanese did not treat this verb differently from the others.

5.2.6 *Te-ita*

With accomplishment verbs, Japanese *te-ita* is compatible with both incomplete and complete contexts. Therefore we do not predict a significant effect for context. In addition, because of the similarities between English and Japanese, learners are not expected to perform differently from native speakers.

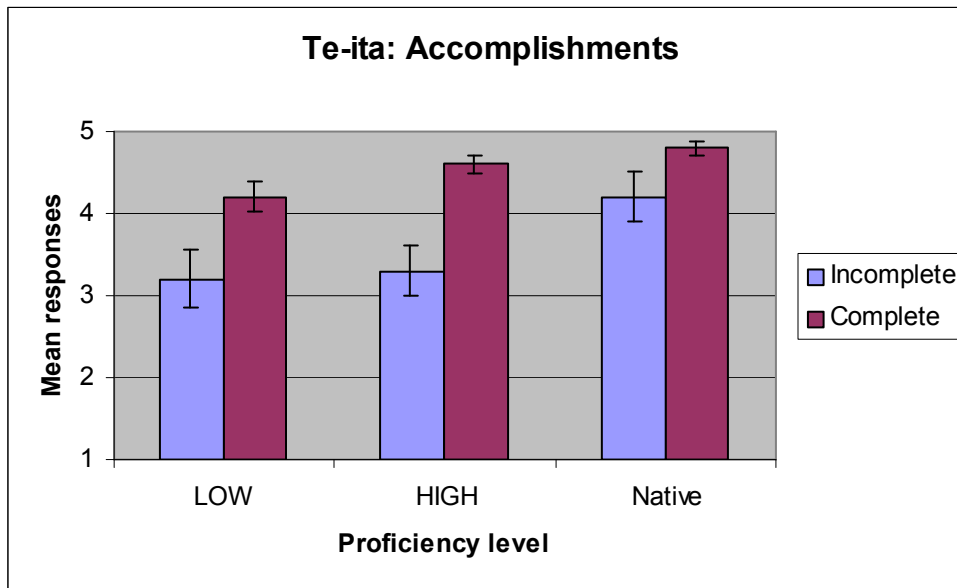
With achievement verbs, we predict that if the learners of Japanese transfer the semantics of *be(past)+ing*, they will incorrectly accept *te-ita* with the incomplete context. Native speakers on the other hand should reject these sentences. Therefore, if the transfer predictions hold, we will see a significant effect for context, for proficiency level and a significant interaction between context and proficiency level⁵⁰. We first turn to results for *te-ita* with accomplishment verbs.

5.2.6a *Accomplishments*

Figure 4.14 shows mean responses to *te-ita* with accomplishments in incomplete and complete contexts. Means and standard deviations are provided in Table 5 in Appendix B. Results of a factorial univariate ANOVA with context (incomplete, complete) and proficiency level (low, high, native) as between-subjects factors indicated that there was a significant effect for context ($F(1, 58) = 21.762, p. < .001$) and a significant effect for proficiency level ($F(2, 58) = 6.463, p. < .01$). There was not a significant interaction between context and proficiency level.

⁵⁰ As we mentioned in the L2 English study, the complete context does not allow us to evaluate the transfer hypothesis.

Figure 4.14. L2 Japanese: Mean responses to accomplishments under *te-ita* with incomplete and complete contexts



Because differences between responses to incomplete and complete contexts were not predicted, it was necessary to conduct individual samples t-tests within each proficiency level to see if each group responded differently to the two contexts. Results of t-tests show that participants in the Low, and High group gave significantly higher scores on the complete context (Low: $t(14) = 2.409$, $p < .05$; High: $t(15) = 3.906$, $p < .01$). The difference between the two contexts is not significant for the native speakers of Japanese.

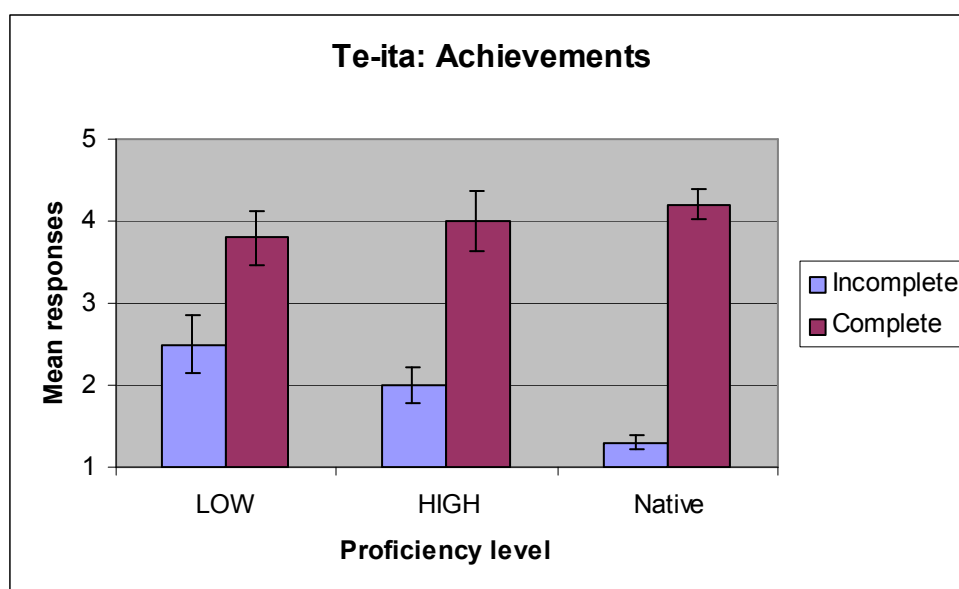
It seems that the learners have a preference for accomplishments with *te-ita* with the complete context. We looked at individual responses in order to investigate these results further. With respect to the complete context, all learners in both the Low and High groups (17 out of 17) were able to correctly accept at least 75% of these test items

with scores of 4-5. On the other hand, on the incomplete context, only seven out of 16 learners (4/9 in the Low group, 3/7 in the High group) correctly accepted 75% of the past progressive sentences with scores of 4-5. This finding, which is not predicted by the transfer model, is similar to the finding we saw for the Low group with the English past progressive. There is a tendency to prefer these past imperfective forms to refer to complete events.

5.2.6b Achievements

Figure 4.15 presents the results for the achievements under *te-ita*. Means and standard deviations are summarized in Table 6 in Appendix B.

Figure 4.15. L2 Japanese: Mean responses to achievements under *te-ita* with incomplete and complete contexts



Scores were submitted to a factorial univariate ANOVA with context (incomplete, complete) and proficiency level (low, high, native speaker) as between-subjects factors. Results indicated that there was a significant effect for context ($F(1, 58) = 112.536, p. < .001$) and a significant interaction between context and proficiency level ($F(2,58) = 6.666, p. < .01$). There were no significant differences between the proficiency levels.

Results indicate that all groups correctly distinguish between the incomplete and complete contexts. Results of independent samples t-tests show that all participants gave significantly higher scores on the complete context (Low: $t(14) = -2.574, p. < .05$; High: $t(15) = -5.145, p. < .001$; Native Japanese: $t(29) = -14.389, p. < .001$).

We had predicted that due to transfer learners would accept *te-ita* on the incomplete context and thus not show a strong distinction. However, the learners do not conform strictly to the transfer predictions. Learners do not reject *te-ita* as strongly as native speakers, which most likely accounts for the significant interaction. However, the graph in Figure 4.15 shows that they are clearly moving in the right direction. Analyses of individual responses showed that out of the seven learners in the Low group who responded to *te-ita* in the incomplete context, five learners were able to correctly reject 75% of the test items. In the High group, six out of 10 learners were able to correctly reject 75% of the items; some learners gave these sentences scores of 3.

These results are surprising for two reasons. First, on the incomplete context learners do not show evidence of transfer. They strongly reject these sentences. Secondly, this is a context in which learners are expected to have particular difficulty because they need to preempt an L1 interpretation. In English, past progressive sentences are compatible with incomplete contexts.

These results suggest an interesting contrast between *te-iru* and *te-ita*. With the achievements under *te-iru*, there were no learners in the Low group who consistently correctly rejected *te-iru* with the incomplete context. However, with *te-ita*, the majority of the learners were able to do so. With *te-iru*, several learners even incorrectly accepted the majority of the sentences with the incomplete context. We took this as evidence that they had transferred the semantics of the English progressive, which is compatible with the incomplete/ongoing context. Why then do we not have evidence of transfer with *te-ita* with the same context?

These results could be taken to mean that the learners have overcome transfer and have acquired the semantics of *te-ita* with achievements, but there is reason to be hesitant with that interpretation. First, why would learners be able to overcome transfer with *te-ita* in the past tense, but not with *te-iru* in the present tense?

Secondly, in order to perform correctly with the achievements, the learners had to give low scores to *te-ita* on the incomplete context. While it appears that they do this correctly, it also should be pointed out that the learners also give lower scores to *accomplishments* under *te-ita* on the incomplete context, when they are not supposed to. It is possible that the learners generally reject *te-ita* with incomplete contexts regardless of whether the verb is an accomplishment or achievement.

5.2.7 Summary of results: Story Compatibility Task

We will summarize the results of the Story Compatibility task according to our predictions. First we predicted that when semantic properties are equivalent in the L1

and L2, acquisition should proceed with relative ease. The results for the simple past and for *te-iru* with accomplishments support that hypothesis. However, learners in both the Low and High group showed evidence of difficulty with accomplishments under *te-ita*, a result not predicted by positive transfer. Learners showed a tendency to reject these sentences with incomplete contexts. This preference for *te-ita* to refer to complete contexts is similar to the results of the L2 English study where the learners in the Low group also showed the same preference.

With respect to the transfer predictions, the results of the L2 Japanese study show that the predictions are too strong. With *te-iru*, results on the complete context show that the resultative interpretation is in place even for many of the learners at lower proficiency levels. The learners are aware that an achievement verb under *te-iru* denotes a resultative interpretation and is truth conditionally compatible with the complete context. We predicted that the complete context would be easier for the High group because in this context the goal of the learner is to add an interpretation to the L2 grammar. But we had not predicted that learners in the Low group would perform as well as they did.

There is some evidence of transfer with *te-iru* on the incomplete context, where the goal of the learner is to preempt an L1 interpretation. Results of individual responses indicated that the learners have not completely ruled out a progressive interpretation for achievements + *te-iru*. They still allow a progressive interpretation to some extent, which is expected if they transfer from English.

However, the findings from the incomplete context with *te-ita* do not fit neatly into this pattern. The learners consistently correctly reject achievements + *te-ita* on the incomplete context. We must account for why learners can reject *te-ita* with the

incomplete context but not *te-iru*. We propose that the learners in general have a tendency to reject *te-ita* with the incomplete context. This is evident in the results for the accomplishments + *te-ita* as well. This general tendency brings about the right results for achievements but the wrong results for the accomplishments. We will return to an account of these findings in the Discussion in Chapter 5.

5.3 Grammaticality Judgment task

In this section we report results for the Grammaticality Judgment task. Scores for five participants were not included because these participants failed to provide responses to many of the test items. We first present results for filler items and then summarize results on test sentences.

5.3.1 Filler Sentences

Filler sentences were included to ensure that the learners understood the task and that they did not show a general response bias. Table 4.9 presents participants' overall mean responses to grammatical and ungrammatical fillers. A summary of mean responses to the three different types of filler sentences (word order, possessive particle, word order in verb compounds) is included in Appendix B Tables 7-9.

Table 4.9. L2 Japanese GJ: Mean responses to grammatical and ungrammatical filler sentences

Fillers	Low (n = 14)	High (n = 14)	Native Japanese (n = 31)
<u>Grammatical</u>			
M	3.81	3.94	4.81
SD	.35	.60	.22
<u>Ungrammatical</u>			
M	2.85	2.23	1.68
SD	.47	.52	.49

Scores on filler sentences overall were submitted to a repeated-measures ANOVA with grammaticality (grammatical, ungrammatical) as a within-subjects factor and proficiency level (low, high, native) as a between-subjects factor. The results showed a main effect for grammaticality, $F(1, 56) = 503.842, p. < .001$) and an interaction between grammaticality and proficiency level, $F(2, 56) = 70.538, p. < .001$. Results indicate that there were no significant differences between proficiency levels. This result may be surprising given that the mean scores are different across groups, but the non-significance is explained by the fact that RM ANOVA collapses scores on grammatical and ungrammatical contexts and then evaluates between groups differences. The average of the responses to grammatical and ungrammatical contexts is very similar across groups. All groups distinguish grammatical and ungrammatical sentences; however the learners do not distinguish these sentence types to the same extent as the native speakers, which explains the significant interaction between factors. When the filler types are looked at individually (see Appendix B Tables 7-9), it is clear that the Low group had difficulty with two of the filler types. This was not taken as indication that these learners simply did not understand the task because on other sentence types, which are not reported in

this dissertation, the Low group performed similarly to native speakers. Furthermore, on the Word Order fillers, the Low group does distinguish grammatical and ungrammatical sentences to a strong degree. In general, the filler results indicate that the task was difficult for the participants who were at a lower proficiency level. While they understood the task at hand, the fact that the task gave the learners only nine seconds to respond to a given sentence may have been challenging⁵¹.

5.3.2 *GJ Test sentences*

Scores on all test sentences were submitted to a factorial repeated-measures ANOVA with sentence type (simple past, *te-iru*, *te-ita*), verb type (accomplishment, achievement) and grammaticality (grammatical and ungrammatical) as within-subjects factors and proficiency level (low, high, native) as a between-subjects factor. The results revealed a main effect for sentence type ($F(2, 112) = 27.372$, $p. < .001$) and grammaticality ($F(1, 56) = 563.293$, $p. < .001$). There was not a significant effect for verb type nor were there significant differences between proficiency levels. Results also revealed significant interactions between: grammaticality and proficiency level ($F(2, 56) = 55.153$, $p. < .001$), sentence type and grammaticality ($F(2, 112) = 6.753$, $p. < .01$), verb type and grammaticality ($F(1, 56) = 31.684$, $p. < .001$) as well three-way interactions between sentence type, grammaticality and proficiency level ($F(4, 112) = 6.765$, $p. < .001$) and verb type, grammaticality and proficiency level ($F(2, 56) = 3.514$, $p. < .05$).

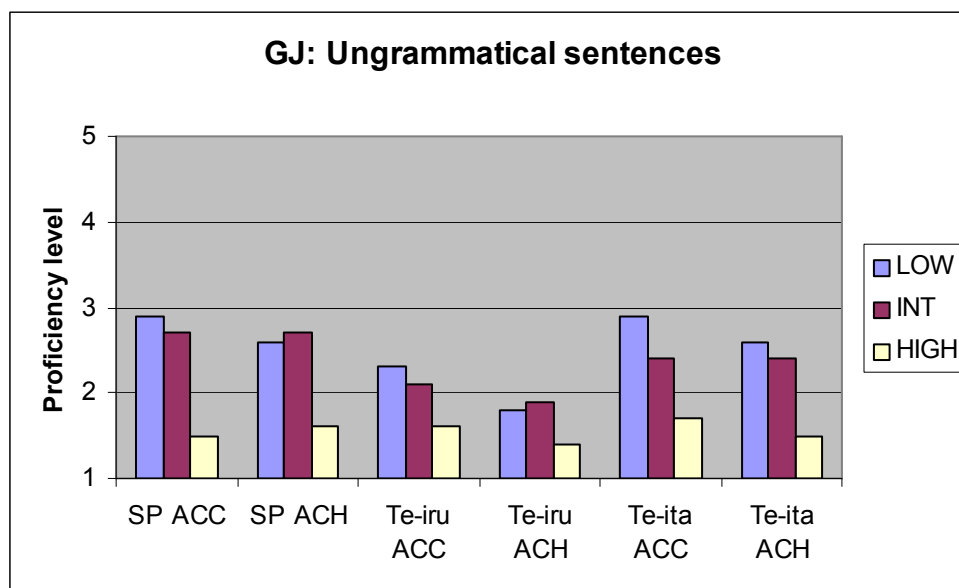
⁵¹ Furthermore these learners have only been exposed to Japanese for about two years. Although the sentences were presented both aurally and in written form, it may have been difficult for the learners to go back and read the Japanese script quickly if they were unsure of what they heard. The learners may have needed more time. In the L2 English study participants had been exposed to English particularly in written form for an average of seven years.

These results establish that participants significantly distinguish grammatical from ungrammatical sentences. Results also indicate that there are significant differences between responses to the different sentence types and different verb types. In order to see where these differences lie, follow-up analyses were conducted. Just as in the L2 English study, results for ungrammatical and grammatical sentences will be presented separately.

5.3.3 *Knowledge of morphological form*

The graph in Figure 4.16 summarizes participants' mean responses to ungrammatical sentences categorized by the six sentence types (simple past with accomplishments, simple past with achievements, *te-iru* with accomplishments, *te-iru* with achievements, *te-ita* with accomplishments, *te-ita* with achievements). Means and standard deviations are summarized in Table 10 in Appendix B. These scores collapse responses to the two types of ungrammatical sentences because both types involved a mismatch between the temporal reference of an adverb and the tense of the morphology. Furthermore there were no significant differences in responses to the two types of ungrammatical sentences. It is clear from the graph in Figure 4.16 that on the *te-iru* sentences, participants perform quite accurately, correctly assigning mean scores of 2 or below to ungrammatical sentences. However, learners do seem to have some difficulty correctly rejecting the simple past and *te-ita* ungrammatical sentences.

Figure 4.16. L2 Japanese GJ: Mean responses to ungrammatical sentence types



Responses to ungrammatical sentences were submitted to a factorial repeated measures ANOVA with sentence type (simple past, *te-iru* and *te-ita*) and verb type (accomplishment, achievement) as within-subjects factors and proficiency level (low, high, native) as a between-subjects factor. Results indicated that there was a significant effect for sentence type ($F(2, 112) = 17.702, p. < .001$) and a significant effect for verb type ($F(1, 56) = 16.786, p. < .001$). There were significant interactions between sentence type and proficiency level ($F(4, 112) = 4.308, p. < .01$) and verb type and proficiency level ($F(2, 56) = 4.378, p. < .05$). There were also significant differences between the proficiency levels, $F(2, 56) = 24.975, p. < .001$.

In order to see where the differences in sentence type lie, post-hoc comparisons using the Bonferroni adjustment for multiple comparisons were conducted. Results revealed that the participants performed the best on the ungrammatical *te-iru* sentences,

giving these sentences very low scores. They gave significantly higher scores to ungrammatical simple past and *te-ita* sentences; these two sentence types were not different from each other. Recall that with the past and *te-ita* ungrammatical sentences, the error was that of an adverb-morphology tense mismatch; on the *te-iru* sentences, the error was that the verb was in its root form (cf. fn. 16). The learners clearly have an easier time identifying incorrect inflection (*te-iru* sentences) than identifying mismatches between well-formed inflection and temporal adverbs (past and *te-ita*). The native speakers on the other hand correctly give very low scores to all three sentence types, not differentiating between the three. This disparity between the learners and the Native speaker explains the interaction between sentence type and proficiency level.

Results of post-hoc comparisons on the two verb classes revealed that participants performed better with achievements, giving them significantly lower scores. This difference is due mostly to the Low group's responses to sentences with accomplishments in the simple past and past progressive. The Low group's responses also account for the interaction between verb type and proficiency level.

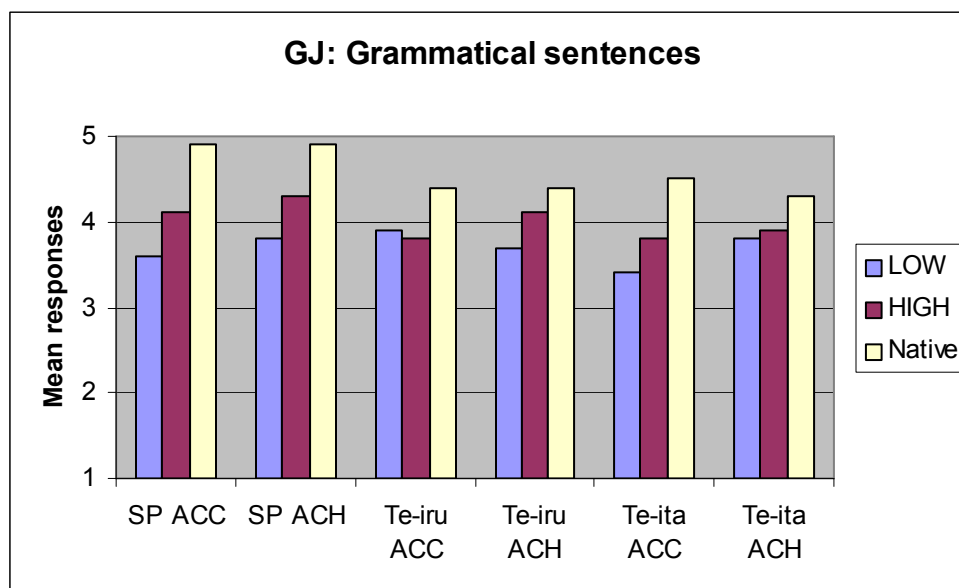
Post-hoc comparisons using the Bonferroni adjustment for multiple comparisons were also conducted for Proficiency level. Results revealed that the Low and High groups performed significantly worse than the Native speakers; the two learner groups did not differ from each other.

It is clear from the results on the ungrammatical sentences that the learners do not have any difficulty identifying inappropriate inflection, as is evident in their responses to the sentences with *te-iru*. They have somewhat more difficulty identifying tense mismatches between temporal adverbs and inflectional morphology.

5.3.4 Judging morphological forms in context

The graph in Figure 4.17 summarizes participants' mean responses to grammatical sentences categorized by the six sentence types (simple past with accomplishments, simple past with achievements, *te-iru* with accomplishments, *te-iru* with achievements, *te-ita* with accomplishments, *te-ita* with achievements). Means and standard deviations are summarized in Table 11 in Appendix B. Responses to grammatical sentences were submitted to a factorial repeated-measures ANOVA with sentence type (simple past, *te-iru*, *te-ita*) and verb type (accomplishment, achievement) as within-subjects factors and proficiency level (low, high, native) as a between-subjects factor. Results revealed a main effect for sentence type ($F(2, 112) = 9.486, p. < .01$) as well as a main effect for verb type ($F(1, 56) = 4.170, p. < .05$). There was a significant interaction between sentence type and proficiency level ($F(4, 112) = 2.669, p. < .05$). There were also significant differences between the proficiency levels ($F(2, 56) = 39.993, p. < .001$).

Figure 4.17. L2 Japanese GJ: Mean responses to grammatical sentences



Post-hoc comparisons using the Bonferroni adjustment for multiple comparisons were conducted in order to see where the specific differences lie. With respect to sentence type, participants gave significantly higher scores to grammatical sentences with the simple past than to sentences with *te-iru* and *te-ita*. There were no significant differences between responses to *te-iru* and *te-ita*. This preference for the simple past is most evident in the Native speakers, which explains the interaction between sentence type and proficiency level. The learner groups give similar scores to all sentence types. With respect to verb type, participants gave sentences with achievements significantly higher scores though the actual difference between the two verb classes is not drastic (4.12 vs. 4.03).

Finally, post-hoc comparisons were also performed to investigate differences between the proficiency levels. The Native Speaker performed significantly better than the Low group and the High Group; furthermore, the High group performed better than

the Low group. Results on the grammatical sentences show that the Low group is still developing their knowledge of how to use aspectual forms in context. It is clear from their results overall that the task was somewhat difficult for this group. The High group is quite accurate, giving scores very close to 4 on all categories. Native speakers of Japanese perform generally as predicted, with not at much variability as the native speakers of English.

5.3.5 *Summary: Grammaticality Judgment Task*

Results on the GJ task reveal that knowledge of morphological form does precede knowledge of how to use morphology. On this task it was particularly clear that knowledge of identifying what is and what is not an acceptable form in Japanese is acquired first. The learners had no difficulty identifying the uninflected verb root as unacceptable.

The learners had more difficulty identifying ungrammatical tense mismatches between temporal adverbs and inflectional morphology. It is possible that the task may have been too difficult in that it required learners to make their judgment in a short amount of time. Five of the learners found it difficult to keep up with the task and were eliminated from the analysis. The learners in this study had only been exposed to Japanese in the classroom for about two years. The sentences were presented in Japanese script (with hiragana and katakana); most likely they are not accustomed to reading under pressure. Participants in the L2 English study had been exposed to English for at least six years. In addition, the use of roman letters is not uncommon in Japanese, especially in

advertising. The learners of Japanese are only exposed to Japanese script in school. It is possible that the Japanese learners could have used more time given that they had less experience with the language. It is also possible that the learners had difficulty remembering what the temporal adverbs actually mean. They were provided with a word list before the task to alleviate this problem, but they still may have had difficulty with some of the lexical items.

With respect to the grammatical sentences, the High group performed quite well. The High group also performed quite well on the Story Compatibility task. Therefore it seems that knowledge of use and interpretation are closely connected. For the Low group, results show that the learners are moving in the right direction; task difficulty may account for their lower scores on these sentences. Interestingly, the Low group has some difficulty with the accomplishments under *te-ita*, an area that was also difficult on the Story Compatibility Task.

The Native speakers provided generally clear judgments on all sentence types.

6. Integrating the L2 English and L2 Japanese results

In our discussion of the two studies we outlined several important findings that address the issue of L1 influence and also the learnability predictions that we outlined early in the chapter. In this section, the main points will be summarized. Each of these points will then be elaborated in the Discussion in Chapter 5.

With respect to the areas where we did not predict difficulty, results for the simple past and accomplishments with *be+ing* and *te-iru* support the idea that equivalence

between the native and target language facilitates acquisition. However, the results for the accomplishments under the past progressive and *te-ita* show that equivalence does not always result in ease of acquisition. There seems to be a developmental issue with the past imperfective forms in general. Early learners prefer for these forms to refer to complete events. These results are compatible with findings in first language acquisition literature (Wagner, 2001).

With respect to the areas where transfer was predicted to play a role, several interesting patterns emerge. We will consider the goals of the learners with respect to how the representation for PROG must be altered. First we will consider performance when the learners' goal was to add an interpretation to their grammar: the Japanese learners of English needed to add a progressive interpretation for achievements under *be+ing* while the English-speaking learners of Japanese needed to add a resultative interpretation for achievements under *te-iru*. The results of the two studies show that learners had less difficulty with this task. In the L2 English study, only the Low and Intermediate groups differed from the native speakers in allowing the present progressive to refer to an ongoing event. At the higher proficiency levels, the learners performed at the level of native speakers. In the L2 Japanese study, even the Low group performed at the level of native Japanese speakers in allowing *te-iru* to refer to a complete event. Therefore, in the L2 Japanese study, there is actually no evidence of transfer in this context. It is possible that if the learners were at an earlier stage of acquisition we may see evidence of transfer, but only future research can address that question.

These results suggest that acquisition can proceed on the basis of positive evidence. If the input is consistent and it is robust, L1 differences can be overcome or perhaps avoided.

However, there were also cases where positive evidence is in theory available, but learners still had a great deal of difficulty. While the L2 English learners in the High group allowed achievements in the present progressive to refer to ongoing events, they were less likely to do so with the past progressive. Why is positive evidence not sufficient to override transfer in this case? It will be argued further in Chapter 5 that this difficulty cannot be accounted for solely by transfer. As we mentioned, learners of English also had difficulty with accomplishments in the past progressive. A similar pattern of results followed for the L2 Japanese learners with accomplishments under *te-ita*. There seems to be a tendency for learners prefer for these past imperfective forms to refer to complete events.

Next we turn to the contexts where the learners' task was to *preempt* an L1 interpretation that was not available in the L2. In these contexts, they had more difficulty. Again, recall the goals of the two groups of learners: the Japanese learners of English needed to preempt a perfective interpretation for achievements under *be+ing* while the English-speaking learners of Japanese needed to preempt a progressive interpretation for achievements under *te-iru*. In the L2 English study, even some of the near-native speakers of English had difficulty in this context. To some extent, all of the L2 groups allowed the present progressive to refer to a complete event.

In the L2 Japanese study, there were participants in both the Low and High group who allowed achievements + *te-iru* to refer to an ongoing event. However, as we pointed

out earlier, the learners correctly rejected achievements with *te-ita* to refer to incomplete/ongoing events. There is a thus distinction between performance on the present and past tense.

These results discussed so far introduce two interesting disparities. First, the results of the L2 English study point to very interesting differences between the native grammar and the grammar of L2 learners and even near-native English speakers. Learners at the advanced levels have clearly begun to converge on the target-like truth conditions for the English progressive: they allow the present progressive to refer to ongoing events. However, learners at these advanced levels *also* allow the progressive to refer to complete events, an option that is available to them in their L1. These results suggest that there is optionality in L2 grammars, even at very advanced levels of proficiency. The learnability scenario is important in this respect. Positive evidence does not bring the learners to knowledge of what interpretations are *not* permissible in the L2.

There is evidence of optionality in the L2 Japanese study as well, but the optionality is only apparent with learners in the Low group. Results on the complete context show that the Low group has correctly converged on the target-like resultative interpretation for achievements under *te-iru*. However, to some extent, learners at this level allow a progressive interpretation for achievements under *te-iru* as well.

The question is then why this optionality persists to very advanced levels of proficiency in the L2 English study but is a problem only for lower level learners in the L2 Japanese study. In Chapter 5 we will consider possible accounts for the differences in the results of the two studies.

A second interesting disparity arises when we compare performance on the present and past tenses. While performance with accomplishments under the present progressive and *te-iru* was native-like for all learners, there was evidence of some difficulty for the lower level learners with accomplishments under the past progressive and *te-ita*. Although this developmental pattern has been established in the L2 literature (Bailey, 1987; Bardovi-Harlig, 2000), these results are not predicted if we assume that learners can make use of L1 properties. Positive transfer should be at work in both the present and past tense. There were also differences in performance with the achievements in the present and past tenses. We will return in detail to these findings.

A comparison of the results of the GJ and Story Compatibility task points to a different developmental pattern, which is relevant to how learners come to acquire morphological properties. While the results summarized above pertain to interpretation, learners were also tested in the GJ task on their knowledge of morphological form and use. It seems that learners come to acquire the morphological form before they acquire knowledge of use and interpretation. Furthermore, knowledge of use and interpretation seems to develop in tandem.

Finally, another interesting issue that emerges from the English study is native speaker variability. In Chapter 5, the areas where results point to variability in the native speaker grammar will be described and discussed. We will also discuss how this variability may influence acquisition.

CHAPTER 5:

TOWARDS A COMPREHENSIVE MODEL OF THE L2 ACQUISITION OF ASPECT

1. Introduction

In this section we will synthesize the results of the two studies as well as expand upon the issues outlined in Section 6 of Chapter 4. We will review the evidence that addresses each of our hypotheses, focusing in particular on the extent of L1 input and the importance of learnability considerations. We will argue that a comprehensive model of the L2 acquisition of aspect needs to consider not only the properties of the L1 and L2 grammar but also the input available to the L2 learner and general developmental factors, which we will argue influence both L1 and L2 learners.

In the first two sections of this chapter we will extend our discussion of the results of the Story Compatibility task. In Section 2 we consider the results for present tense *be+ing* and *te-iru* with achievements, evaluating the evidence relevant to our predictions concerning L1 influence and learnability. We argue that because input plays a crucial role in language development, learners have more difficulty preempting L1 options than they do in adding a representation to the L2 grammar. In Section 3 we consider the results for the past progressive in English and *te-ita* in Japanese. We propose that when the input is not robust, even the goal of adding to the grammar may be impeded. Furthermore, we discuss the lack of evidence for positive transfer. We argue that there are developmental factors that seem play a role for both first and second language learners in the acquisition of aspect. In Section 4 we consider the relationship between

knowledge of aspectual semantics and knowledge of the morphological forms that encoded these meanings. Finally, in Section 5 we consider how our results contribute to the development of a comprehensive model of the second language acquisition of aspect

2. How the L2 learner moves beyond the L1

2.1 When the L1 and L2 differ: Achievements under *be+ing* and *te-iru*

In this section we will integrate the results concerning achievements under the present tense *be+ing* in English and *te-iru* in Japanese. We will first restate the goals of the two groups of learners. We argued in Chapter 4 that the goal of the L2 learners of English and Japanese was quite similar. If we assume that learners begin with the L1 grammar as their initial hypothesis then both groups of learners need to alter their representation of PROG in order to interpret the forms successfully. The analysis that we adopt of McClure (1995) posits minimal differences between the representations in the two languages. While the truth conditions for PROG in Japanese require that at least one complete event be manifested, the truth conditions for PROG in English require that an event have begun, but crucially the event cannot have been completed.

In this framework we propose that learners need to acquire the appropriate truth conditions for the form in the L2 and then map those truth conditions to the appropriate morphological form. We have proposed that in order for the learner to be successful they need to achieve two different goals. On the one hand, learners need to acquire a new semantics for the operator in the L2. Learners of Japanese need to acquire the resultative

interpretation of achievements under *te-iru*. Learners of English need to acquire the event-in-progress interpretation of achievements under *be+ing*. Neither interpretation is possible if the L2 learners in either group rely on the truth conditions from the L1.

On the other hand, the learners need to preempt the interpretations denoted by PROG in their native language. Learners of Japanese must learn that the progressive interpretation available in English can never apply to achievements under *te-iru*. Learners of English need to learn that the resultative interpretation available in Japanese can never apply to achievements under *be+ing*. In other words, not only must the L2 learners acquire a new semantics, they must also learn that their existing L1 semantic representation must be repressed.

In our hypotheses we predicted two general patterns with respect to these two goals. First we predicted that at early stages of acquisition we would see evidence of L1 influence in both contexts. In other words, the L1 grammar would constrain the learners' hypotheses with respect to the L2. We also assume that learners will be able to overcome the effects of L1 influence and will be able to restructure their grammar in accordance with the L2. We proposed that input plays an important role in this process. Therefore, we predicted differential success in acquisition with respect to the two different goals that we outlined above. With respect to the goal of *adding* an interpretation to the L2 grammar, we predicted that the positive evidence available to the learner would facilitate acquisition. In these terms, adding is essentially restructuring the L1 representation. On the other hand, we predicted that learners would have more difficulty *preempting* an interpretation that is available in the L1 but not in the L2, given that there is usually little information in the input as to what interpretations are ruled out in the second language.

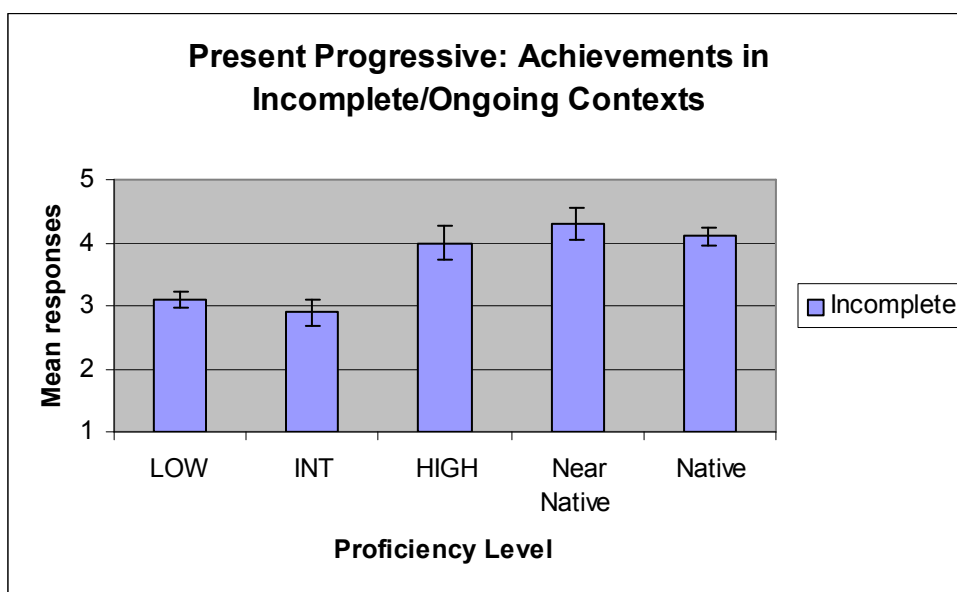
In the next section we evaluate the evidence with respect to these predictions, first reviewing the results of the L2 learners when their goal was to add an interpretation and then the results for when their goal was to preempt an L1 interpretation.

2.1.1 Adding an interpretation

As we predicted, in both the L2 English and L2 Japanese studies, learners seemed to perform better when their goal was to add an interpretation for achievements under PROG that is not available in the L1. The graphs in Figures 5.1 and 5.2 present the results relevant to this goal. We will discuss each in turn.

Figure 5.1 summarizes mean responses in the L2 English study for achievements under the English present progressive with incomplete/ongoing contexts.

Figure 5.1 L2 English study: mean responses to achievements in the present progressive with incomplete contexts



In Japanese, a progressive interpretation is not available for achievements under *te-iru*. It is clear from the graph in Figure 1 that the acquisition of the progressive interpretation is emerging across proficiency levels. The analyses summarized in Chapter 4 revealed that both the High and Near-native group performed at the level of native speakers.

As we discussed in Chapter 4, the results for the Low and Intermediate groups are difficult to evaluate with respect to transfer. They do not categorically reject these sentences as the transfer hypothesis predicted they would. Many of the learners in the lower levels give half of the items low scores and half of the items high scores. However, performance is not random and seems to be dependent on the particular achievement verb. Furthermore, we argued in Chapter 4 that results for the verb *go* may present a strong indication that learners are influenced by the L1.

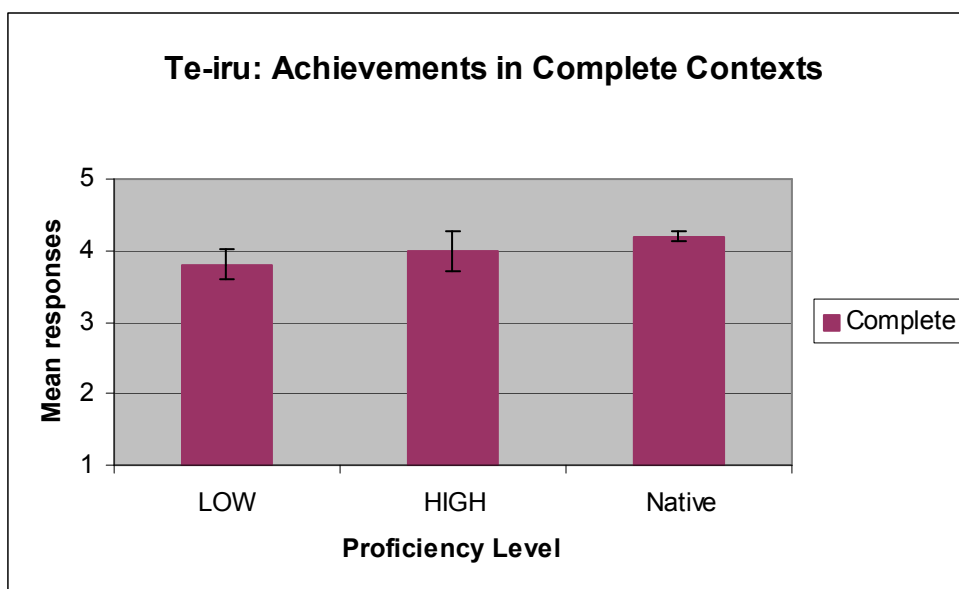
Therefore, it seems that acquisition of some verbs is easier than the acquisition of other verbs. It is possible that these learners have acquired the truth conditions for the L2 operator but are still working out how the semantics interacts with individual verbs. We did not expect this result because we purposely selected verbs that are equivalent with respect to VP/lexical aspect in English and Japanese. Therefore, we predicted the only task for the learners was to acquire the semantics for PROG.

But these results suggest that learners are working to decipher semantic properties at the level of the VP as well. These results could potentially provide support for a theoretical analysis along the lines of Ogihara (1998, 1999), which places the locus of crosslinguistic differences in the achievements themselves. As we stated in Chapter 2, we

did not adopt this type of approach because there is evidence from different dialects of Japanese that the phenomenon under investigation is due to the semantics of the morphological form, and not the semantics of the verb. In the Uwajima dialect, achievements can denote a progressive interpretation, on par with the English progressive, under the aspectual form *yo*. It is unlikely then that achievements in Japanese are semantically different from achievements in English. Our results suggest that the acquisition of the semantics of the progressive does not automatically apply to all of the verbs within a given class. Only future investigation can determine why certain verbs are easier than others.

Figure 5.2 summarizes mean responses in the L2 Japanese study for achievements under *te-iru* with complete contexts.

Figure 5.2. L2 Japanese study: mean responses to achievements under *te-iru* with complete contexts



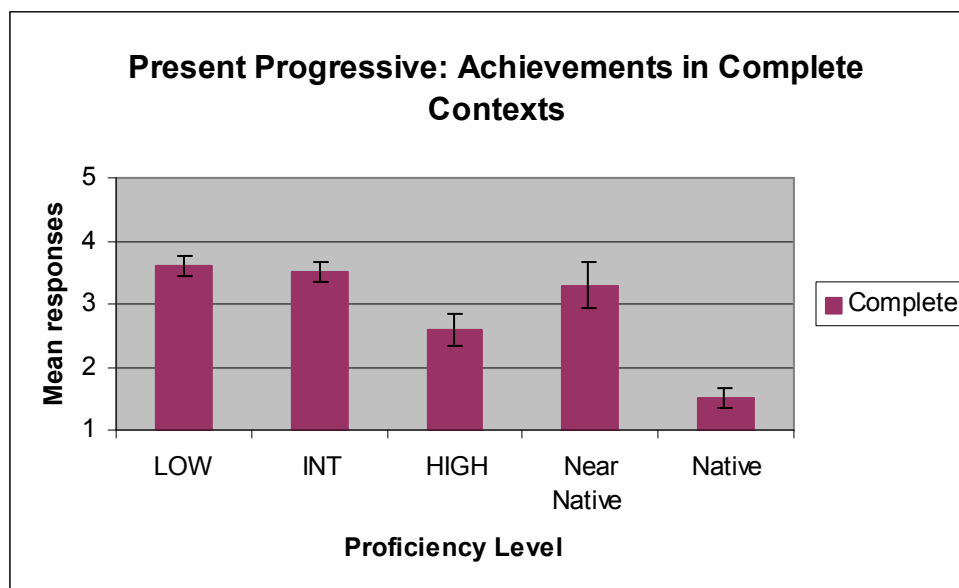
In English, a resultative interpretation is never available for *be+ing*. The analyses summarized in Chapter 4 revealed that both groups of learners performed at the level of native speakers. Further analyses of individual responses confirmed that almost all learners had successfully acquired the resultative interpretation. In this set of results, there is no evidence of L1 transfer because the learners have already acquired the target.

The results reviewed above highlight the relative ease of adding an interpretation to the L2 grammar. In the L2 Japanese study the goal has been reached by almost all of the learners. In the L2 English study learners at the advanced levels of proficiency have all successfully acquired the progressive interpretation, but learners at the lower proficiency levels still show evidence of difficulty.

2.1.2 *Preempting an interpretation*

Next we turn to the results for the contexts in which the learners' goal was to preempt an interpretation available in the L1. Figure 5.3 summarizes the mean responses in the L2 English study to present progressive sentences such as *The plane is arriving at the airport* with complete contexts. In Japanese, the equivalent sentence is compatible with the complete context.

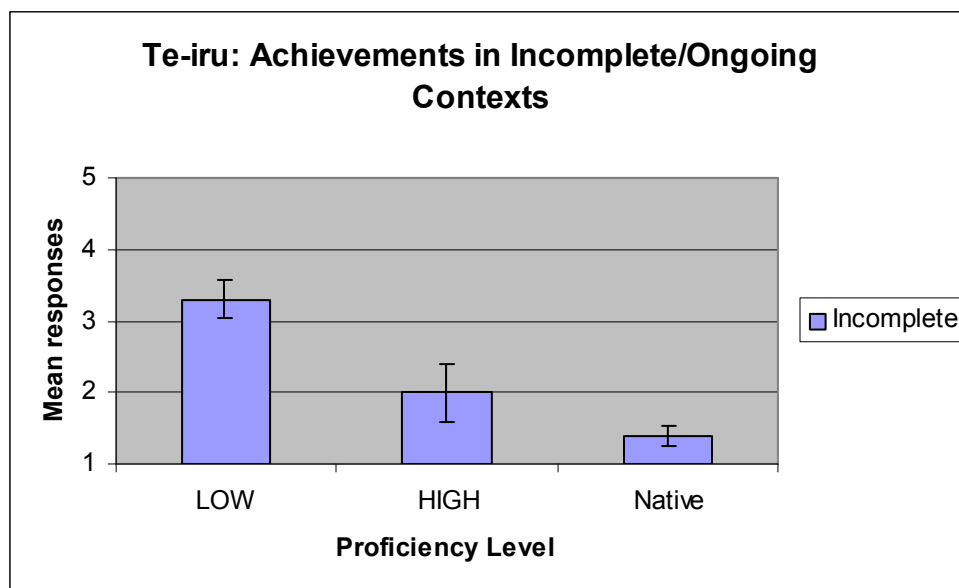
Figure 5.3 L2 English study: mean responses to achievements in the present progressive with complete contexts



As predicted, English native speakers strongly reject these sentences. However, the results summarized in Chapter 4 indicated that all of the learner groups, including some of the Near-native speakers, accept these sentences to a higher degree. This context presented stronger evidence for the transfer hypothesis. Half of the learners at the lower proficiency levels accepted at least 75% of these sentences. Furthermore, there were no learners at the advanced levels who were able to successfully reject all of the test items in this category. These results suggest that in this context, the L2 learners are still influenced by L1 semantics even at very high levels of proficiency.

Next we review the results for the L2 Japanese study. Figure 5.4 summarizes mean responses for achievements under *te-iru* with an incomplete context. In Japanese, an achievement under *te-iru* cannot denote an event in progress. However, an equivalent English sentence is compatible with a context that depicts an event in progress.

Figure 5.4 L2 Japanese study: mean responses to achievements under *te-iru* with incomplete contexts



The graph in Figure 5.4 shows that the Japanese native speakers behave as predicted, strongly rejecting these sentences. The Low group gives significantly higher scores than either the High group or the Native speakers. The analysis of individual responses reviewed in Chapter 4 showed that several of the learners conform to the strict transfer prediction, accepting the majority of these test items. Other learners seem uncertain of the correct interpretation.

The High group performs quite accurately in this context, a surprising result given that the learner's goal here is to preempt an L1 interpretation. The results summarized in Chapter 4 indicated that the majority of the learners in the High group correctly rejected most of these sentences. These results suggest that there may be evidence of L1 influence, but it is apparent only to some extent with learners at the lower proficiency level.

There are two patterns evident in the results summarized above. First the results are generally compatible with our prediction that *adding* an interpretation is easier for L2 learners than *preempting* an L1 interpretation. In the next two sections we discuss why this pattern emerges in L2 development (Section 2.2) and why the difficulty in preempting an L1 interpretation remains even for some of the very advanced learners in the L2 English study (Section 2.3).

Secondly, it is clear that there are differences in the outcomes of the L2 English and L2 Japanese study. In the L2 Japanese study, the preemption problem seems to manifest itself only in the lower level learners. This issue will be addressed in detail the Section 2.4.

2.2 Adding vs. preempting an interpretation

In this section we outline how a model of L1 transfer potentially interacts with a model of learnability to bring about the pattern of acquisition outlined in the previous section. Learnability is concerned with how language acquisition is in principle possible given the input available to the language learner (cf. Hornstein and Lightfoot, 1981). As we mentioned in the introduction, researchers such as Gregg (1996), Carroll (2001) and Klein and Martohardjono (1999) have argued that generative models of L2 acquisition must consider *how* the L2 grammar moves from one intermediate grammar representation to the next. In this framework, acquisition is the result of grammar restructuring and is driven by input or positive evidence. The process of restructuring is failure driven. If the L2 input to the learner is incompatible with the learner's current grammatical

representation, restructuring takes place. Since the bulk of the discussion in the existing literature concerns grammar restructuring in the domain of syntax, we will consider how the acquisition of semantics can also be framed in this way.

In our study we hypothesized that the learner would start out with the L1 semantic representation for the aspectual operator PROG. This constitutes a hypothesis about a specific *property* of the L2 grammar. We assume that the learner will try to analyze L2 input using the L1 grammar. How the input interacts with the L1 grammar is a question of *process*. We will refer to the input that is available to the learner as positive evidence. Positive evidence is input that has been analyzed and that can provide evidence for a particular analysis. In the domain of syntax, models conceive of input as being analyzed by the parser. If a parse is successful, the structure is compatible with the current grammar. If the parse is unsuccessful, then restructuring must take place. The situation is different in the domain of semantics. In the semantic framework we have adopted, a successful semantic analysis indicates that a sentence was evaluated as true with respect to a particular context. In other words, we compute truth conditions for a given sentence and then the output of the grammar actually needs to be judged against a context in the world⁵².

As an example, we will focus on the main interest of our investigation: achievements under PROG. Imagine a particular context where an L2 learner of English who is a native speaker of Japanese is watching a movie with a friend. In the movie, the protagonist is in the hospital, terminally ill but still speaking. A second friend enters the room and inquires about what is happening in the movie. The first friend replies *the old man is dying*. If the L2 learner's grammar is constrained by L1 properties, PROG will

⁵² This includes both the real world and possible worlds (Dowty, 1979; Landman, 1992).

interact with the achievement VP and the truth conditions of PROG will require that the final state of the event be manifested: the sentence will be interpreted as *the old man is dead*. The output of the semantic analysis in this case will be transparently incompatible with the context at hand. The old man is still speaking, he cannot be dead already. This type of incompatibility is the type of input or process that may drive the restructuring of the L1 semantic representation. It is not hard to imagine that this kind of input might be readily available to the learner.

However, this is not to say that all input will always be so transparent. Imagine a different context where the same L2 learner is now waiting at the train station with her friend. The L2 learner is chatting on her cell phone in the stairwell while the friend waits on the platform. Suddenly the friend calls down to the L2 learner and says *The train is coming*. If the L2 learner analyzes this sentence through the L1 as she did before, the sentence will be interpreted as *The train is here*. As the L2 learner bounds the stairs to the platform, she will be puzzled to see that the train is in the distance, soon to be pulling into the station. However, in this scenario the learner may just assume that her friend is uptight and wanted her to come as quickly as possible. Importantly, there may be no impetus for the learner to restructure her incorrect semantic analysis.

Furthermore, it will often be the case that the learner will not have the opportunity to test the output of her grammar against a directly observable real world context. It is likely that these instances may not result in immediate restructuring. We will return to this point in our discussion of the past progressive.

We have argued in this section that the input available to the L2 learner will allow the learner to move beyond the L1 grammar. It is this type of interaction that we propose

allowed the learners in both the L2 English and L2 Japanese study to successfully *add* an interpretation to their grammars (cf. results in Figures 5.1-5.2). The analyzed input allows the learner to hypothesize that the current semantic representation needs to be altered⁵³. The question is then how the learner converges on the target-like representation. We have proposed that the learners' hypothesis space is constrained by UG: aspectual operators interact with lexical aspectual classes in a finite number of ways. The input will guide the learner from the representation of PROG that requires the final event be manifested (Japanese) to the representation of PROG that requires that the final event still be in progress (English). Therefore the goal of adding an interpretation in this particular learning scenario is guided by innate principles and positive evidence.

However, there is also evidence that although learners may converge on the target-like representation, they may nevertheless hold on to L1 analysis as well. This evidence is directly relevant to the goal of preempting an interpretation that is available in the L1 but not in the L2. In these contexts, both groups of learners had more difficulty (cf. results in Figures 5.3-5.4). This means that the learners have begun to converge on the target-like truth conditions for the L2 progressive operator. However, the representation for the L1 progressive operator remains active. To use the L2 English case as an example: the learners are exposed to ample positive evidence that allows them to acquire the ongoing interpretation of *be+ing*, but there is no evidence in the input that

⁵³ We can propose that there is L1 influence in the contexts where the goal was to add to an interpretation based on the findings of the L2 English study where the lower level learners still seem to be in the process of acquiring the progressive interpretation. The L2 Japanese learners on the other hand seem to have fully acquired the resultative interpretation of *te-iru*. These results do not then provide evidence for L1 influence. In these instances it can always be argued that the intermediate learners are beyond the point where they are constrained by the L1. However, only further data can provide support for that argument.

will tell the learner that *be+ing* is not *also* compatible with events that have already been completed.

There are at least two ways in which an L1 option that is not available in the L2 can be preempted. The first possibility is that positive evidence of the type described above will guide the learner to converge on the target in the L2 *and* drive out the incorrect L1 analysis⁵⁴. The advanced L2 learners of English seem to suggest this type scenario is not at work here. The advanced L2 learners perform at the level of native speakers in allowing the present progressive to refer to events in progress but nevertheless also allow the present progressive to refer to completed events. It seems that learners in the L2 English study may exhibit optionality. We will return to this finding in the next section.

The second possibility is that negative evidence, explicit information as to what is not possible or interpretable, is necessary. If negative evidence is not available, it is possible that the learners will then maintain both the L1 and L2 options for the PROG operator. It is possible that differences in the availability of negative evidence could explain differences in the results of the L2 English and L2 Japanese studies. In the L2 English study, there was evidence of optionality even in very advanced learners while in the L2 Japanese study, only the lower level learners showed evidence of difficulty with preempting the L1 option. We will return to a discussion of this disparity in Section 2.4.

In summary, we have addressed several issues with respect to the results for the present tense *be+ing* and *te-iru*: First, we have presented a model of how L2 input interacts with the L1 semantic representation in the acquisition of the contrast under

⁵⁴ Thanks to Janet Fodor for discussion of this point.

investigation. We have also suggested that if the right type of input is not available, even very advanced L2 learners may exhibit optionality.

2.3 Optionality

In this section we will consider the grammar of the advanced L2 learners of English who correctly allow the present progressive to refer to events in progress but nevertheless sometimes allow the present progressive to refer to completed events as well. These results suggest that the grammar of the L2 learners may exhibit optionality: they have two possible interpretations for the progressive operator. One interpretation conforms to the target while one interpretation is L1 derived⁵⁵. The two interpretations do not have equal status. While the target is strongly preferred, the L1 option can also emerge with the use of subtle elicitation measures such as the interpretation task in this study. An analysis of a learner's production, for example, may not be revealing in this respect.

In the recent L2 literature there has been a renewed interest in optionality and, in particular, the domains of language that are susceptible to optionality even in very advanced learners (Eubank, 1998; Hopp, 2005; Papp, 2000, Roberston and Sorace, 1999; Sorace, 1999, 2000a, b, 2003, i.a.).

Sorace (2003) defines characteristics of end state optionality that are compatible with the results of the study described in this dissertation:

⁵⁵ Note that this evidence of optionality does not appear to be evidence of an unnatural interlanguage grammar (cf. White, 1992; Schwartz, 1993). The L1 grammar in this case, Japanese, is an example of a grammar in which the PROG operator denotes both progressive and resultative interpretations.

The persistence of optionality at advanced stages of development, including L2 end-state, is a consequence of the fact that L2 learners may not be exposed to data that are robust and/or frequent enough to expunge one of the optional variants from the grammar. In the typical L2 end-state characterized by optionality, optional variants are not in free variation: a steady state is reached in which the target option is strongly but not categorically preferred and the non-target option surfaces in some circumstances (Sorace, 2003).

In Sorace's discussion, the source of the optionality is usually taken to be the L1 grammar. In addition, Sorace proposes that optionality arises in cases where the input is underspecified. In our study we argue that optionality may arise in cases where an L1 option needs to be preempted, an area where positive evidence may not in fact be useful. Sorace also points out that these optional variants can often only be detected with the appropriately subtle elicitation measures.

A related question is whether the whole of the endstate L2 grammar is characterized by optionality or whether specific domains are more susceptible. Optionality has been discussed in syntax, particularly in the domain of verb-raising in L2 development (Eubank, 1994, 1996; Schwartz and Gubala-Ryzak, 1992; White 1990/91, 1992; Trahey and White, 1993). In fact, an entire 2000 issue of *Second Language Research* is devoted to the topic of syntactic optionality (issue 16,2).

However, of interest to the present study is evidence of optionality that pertains to interpretive knowledge. Ionin (2003) proposes that learners fluctuate between two settings of a semantic parameter, even in cases where transfer is not at issue, before converging on the target semantics for articles (see also Ionin, Ko and Wexler, in press). Because Ionin and colleagues focus on L2 development, they do not address the issue of whether fluctuation may remain a part of the L2 grammar.

Sorace (in press) argues that Coppeters' (1987) original distinction between acquisition of core syntactic constraints and acquisition of interpretive knowledge is probably on the right track in terms of delineating the areas of knowledge that remain difficult even for very advanced learners. In her own work, Sorace provides evidence for difficulty at the interface of syntax and discourse (see also Hopp, 2005). She describes a study investigating the use of null and overt subjects by native speakers of English who have become near-native speakers of Italian. The near-native Italian speakers have generally acquired the Italian null subject grammar: they use null subjects and when they use them, they are consistently in appropriate contexts. However, there are also cases where the near-natives use *overt* pronouns in places that native speakers of Italian would not. For example, given the question in (1), *Why hasn't Maria talked to anyone*, near-natives may answer with the response in (2), *Because she is too shy*.

(1) Perchè Maria non ha parlato con nessuno
 why Maria not has talked with anyone

(2) Perchè lei è troppo timida
 Because she is too shy

In this example, the near-natives allow an overt pronoun to refer to a continuous topic (Maria). This is a violation of a rule of discourse: Italian requires a null subject in these cases (Cardinaletti and Starke, 1994; Grimshaw and Samek-Lodovici, 1998). It is likely that the near-natives are influenced by their L1 English.

Also relevant to the kind of optionality observed in the present study are studies that discuss the “mapping problem” (Epstein et al., 1996; Grondin and White, 1996; Haznedar and Schwartz, 1997; Lardiere, 1998a,b, 2000; Prevost and White, 2000; Ionin

and Wexler, 2002). As we mentioned in Chapter 3, Lardiere (1998a,b, 2000) studies an advanced learner of English who often omits inflectional morphology. Nevertheless, the learner's data point to evidence that syntactic operations such as nominative case licensing and agreement are fully specified in the learner's grammar. Lardiere proposes that learners are still figuring out how to "spell out *morphologically* the categories they already represent *syntactically*, i.e., the "mapping problem," (Lardiere, 2000, p. 121, emphasis AG). Importantly, this type of problem is evident in end state learners.

The two cases of optionality that we outlined above deal with issues at the syntax-discourse and the syntax-morphology interfaces. Our study is relevant to the semantics-morphology interface. We propose that a different type of "mapping" to surface morphology is relevant to our study. We argued that the goal of the L2 learner is to *map* from the truth conditions to the appropriate surface morphology. When we predicted transfer in this domain, we predicted that the learner would essentially face a mapping problem: the L2 learner would map the truth conditions for the L1 aspectual operator onto L2 inflectional morphology. The results of the L2 English learners suggest that this type of incorrect mapping can be observed even after the target-like mapping has already been acquired. The residual difficulty reported in this study is attributed to L1 influence. In other words, in certain circumstances the learners do not repress the L1 option. Similar proposals, where learners entertain two options on their way to the target grammar, have been discussed for L1 acquisition (Valian, 1990) and L2 development (White, 1992; Ionin, 2003). The difference between the proposals for development and the proposal discussed here is that without robust evidence in the input, the optionality may actually remain a part of the endstate grammar (Sorace, 2003).

In summary, the discussion of this body of L2 research suggests that it is the coordination of the relationship between two different domains of the grammar that remains difficult for L2 learners (cf. White, 2003; Sorace, 2003). The present study provides new evidence that the semantics-morphology interface is one such domain.

2.4 Differences in the L2 English and L2 Japanese Study

We now turn to the differences between the L2 English and the L2 Japanese studies. While even advanced learners in the L2 English study had difficulty preempting the L1 interpretation, in the L2 Japanese study only the lower level learners had difficulty in this context. In the next two sections we consider two possible accounts for this difference.

2.4.1 Negative evidence

We proposed earlier that differences in the availability of negative evidence could explain differences in the results of the L2 English and L2 Japanese studies. First we will review what type of negative evidence could be relevant to the task at hand.

Negative evidence is explicit information as to what is not possible in the L2 grammar. As Carroll (2001) outlines, negative evidence can take several forms. The sentence in (3) presents negative evidence about word order in Japanese. Japanese is a

head final language so the verb must come last, after the direct object⁵⁶. The sentence in (4) conveys the same information in a different way.

(3) *Taro-ga tabeta ringo-o.
Taro-NOM ate apple-ACC

(4) In Japanese, the verb must follow the direct object.

Carroll points out that in order for the sentences in (3) and (4) to provide usable negative evidence, inferencing on the part of the learner is required. The learner must infer from (3) that it is the word order that is responsible for the ungrammaticality; in (4) the learner must infer what is *not* possible based on the rule that presents what *is* possible. These examples allow us to place negative evidence in context for the acquisition of syntax, but what type of negative evidence could be relevant for the acquisition of semantics? We will consider the task at hand for one of the groups of learners in our study: the L2 English learners need to learn that progressive is not compatible with complete events.

The sentence in (5) might allow the learner to infer that the sentence is unacceptable, but the ungrammaticality is due to tense, not aspect. It is actually very difficult to construct a sentence that would allow the learner to infer that *be+ing* cannot refer to complete events.

(5) *The dog is dying yesterday.

(6) The dog is dying already.

⁵⁶ This is putting aside discourse contexts in which word order in Japanese can be relaxed.

(7) The form *be+ing* in English is used to convey that an event is in progress.

Sentences such as (6) in the input could actually be misleading if the learner believes that *be+ing* denotes a resultative interpretation. It is likely that sentences such as (7), which might appear in a textbook, could be useful to the learner. However, the learner still has to infer that the interpretation given in (7) is the *only* possible interpretation.

Because the *be+ing* form is considered to be so consistent, it is unlikely that EFL instructors would guide the learners to an understanding of the interpretations that *be+ing* does *not* permit. This type of instruction would also require a sophisticated linguistic awareness of the learners' native language. The results of the L2 English study suggest that this type of instruction is not present in the L2 classroom in Japan.

The situation may in fact be different in the L2 Japanese classroom in the United States. The first difference is that the form *te-iru* is not consistent. *Te-iru* denotes at least two distinct interpretations and is actually ambiguous with certain verbs. Textbooks usually point out, in separate lessons, that *te-iru* denotes two meanings⁵⁷. Therefore, it is likely that more focused attention is drawn to the semantics of the form.

Secondly, the participants in the L2 Japanese study were recruited from high schools and universities that have quite linguistically sophisticated curricula. At one university, the Japanese program is directed by a linguist. Therefore, there is a heightened awareness as to native language-target language differences and that the fact that it might be beneficial to outline these differences in the classroom. These reasons lead us to believe that the appropriate type of instruction could be available to the L2

⁵⁷ As we reviewed in Chapter 2 there are other readings available as well.

Japanese learners and might have guided them towards not only acquiring the target-like representation, but also preempting the L1 option.

This proposal is naturally somewhat speculative. Although it may be the case that this type of negative evidence is available, it nevertheless remains an empirical question whether the negative evidence would actually be beneficial. We will briefly review several studies that have addressed this issue empirically.

Two studies have addressed issues related to negative evidence with respect to *te-iru*. Ishida (2004) investigated the effectiveness of recasts in Japanese learners' use of *te-iru* in a series of conversational sessions. Interestingly, the recasting sessions seemed to be more effective in improving learners' use of the resultative *te-iru* as opposed to the various progressive uses of *te-iru*. Therefore it seems that this type of focused input is more beneficial for certain interpretations. Secondly, the effectiveness of the recasting did not seem to be tied to the quantity of the input. One participant received more tokens of recasts involving the progressive use of *te-iru* than the resultative use, but nevertheless improved only in the resultative use. Ishida argues that the learners may need to be at a particular stage in development before this type of focused input can be useful.

Nishi (2003) conducted a classroom study to investigate the effectiveness of form-focused instruction in teaching the various interpretations of *te-iru*. The study is interesting in that the learners in the experimental group were actually guided through a short linguistics lesson that outlined how lexical aspect interacts with grammatical aspect with a specific focus on *te-iru*. Results of a post-test following the instruction showed improvement in the experimental group but the difference in the results of the experimental group and the control group, who did not receive instruction, was not large

enough to be conclusive. It is clear that we will need more studies of this nature in order to understand the potential benefits of negative evidence with *te-iru*.

In general there is uncertainty in the literature at large as to the usefulness of negative evidence. Various studies have looked at the benefits of instruction on the acquisition of tense and aspect in other languages other than Japanese (Bardovi-Harlig and Reynolds, 1995; Bardovi-Harlig, 2000; Cadierno, 1995; Doughty and Varela, 1998; Harley, 1989; Leeman, Artegoitia, Fridman and Doughty, 1995). Many studies find some support for the role of instruction in L2 learners' success with tense-aspect forms, but as Bardovi-Harlig (2000) points out, it is difficult to tease apart the benefits of explicit instruction versus the benefits of sheer increased input.

White and colleagues (White, 1990/91, 1992; Trahey and White, 1993; Trahey, 1996) addressed this issue directly in the domain of syntactic parameter setting. They conducted related studies that evaluated both the role of negative evidence (explicit instruction) and the role of increased positive evidence (flood of input) with respect to the acquisition of the verb raising parameter. The data of interest are in (8) and (9). The French learners of English generally accepted the target-like SAVO word order in English in (9) but nevertheless would accept the deviant SVAO word order in (8) as well. The French equivalent of the English sentence in (8) is acceptable.

(8) *John watches often television.

Jean regarde souvent la television

(9) John often watches television.

White (1991) argued that French children learning English benefited from explicit instruction that the surface word order in (8) is unacceptable in English. However, when the same participants were retested one year later, they once again accepted the ungrammatical SVAO word order. Furthermore, Trahey and White (1993) found that flooding learners with positive evidence of the SAVO order did not serve to expunge the SVAO order from their grammar. Interestingly, the learners in the White studies show similar patterns of behavior to the L2 English learners with *be+ing*. They have acquired the target, but nevertheless hold on to an option made available by the L1.

With respect to the role of negative evidence, the data are clearly inconclusive. An interesting debate in the literature addresses whether negative evidence can truly restructure the syntax of underlying grammars or whether the positive effects seen in some studies are the result of *learning* in the traditional sense (White, 1992; Schwartz and Gubala-Ryzak, 1993; Schwartz, 1993). Furthermore Schwartz (1993), who argues strongly that negative evidence cannot restructure underlying syntactic representations, also argues that negative evidence may in fact be useful in the acquisition of the lexicon or morphology, which are often considered to involve learning. Whether we can provide empirical support for this proposal and whether this proposal extends to the semantic representations of morphological items such as the progressive remains an interesting area for future research.

2.4.2 *Alternative account*

In this section we consider whether there is an alternative explanation as to why the learners of Japanese performed better than the learners of English in preempting L1 options⁵⁸. Earlier we stated that the goal of the learners of English and Japanese was actually very similar: in both cases the interpretation denoted by achievements under PROG in the L1 (progressive in English, perfective in Japanese) has to be repressed and the interpretation denoted by PROG in the L2 has to be acquired.

However, there are differences in the base L1 forms that may be significant: PROG in Japanese interacts with the semantics of the verb classes to bring about two distinct interpretations while PROG in English uniformly denotes an event in progress. We can consider the possibility that this difference in the base forms could make the learners more or less tolerant of optionality in the acquisition of the related form in the L2.

Learnability principles such as the Subset Principle argue that learners initially hypothesize the most restrictive grammar. As we outlined in Chapter 3, Olsen and Weinberg (1999) have applied this principle to the acquisition of tense/aspect morphology in L1 acquisition. We might consider that L2 learners may be more or less influenced by this learnability principle depending on how a particular form is represented in their L1 grammar. Because English native speakers begin with a more restricted base form for PROG, they may look for each verb class-PROG interaction to denote a single interpretation, abiding by a form of the Subset Principle. They add the

⁵⁸ Recall that level of proficiency is not an explanation as the learners of English were actually more advanced than the learners of Japanese.

resultative interpretation for achievements under *te-iru* based on positive evidence and their hypotheses do not extend beyond what is available in the input. The Japanese native speakers on the other hand begin with a base form for PROG that allows multiple, very different interpretations. The flexibility of the base L1 form may make the learners more tolerant of verb-class-PROG interactions that denote multiple meanings, leading to a grammar that exhibits optionality. In order to test this hypothesis we would need to test a group of learners from a different L1 background and see what pattern of results emerges.

2.4.3 *Summary*

In this section we have discussed a model of how grammar restructuring in the domain of L2 semantics can be conceptualized. The evidence of our two studies brings us to a refined notion of L1 influence: when input is available to override L1 options, acquisition proceeds with more success; when negative evidence is required to preempt L1 options that are not available in the L2, learners have more difficulty.

In Section 2.4 we have considered how differences with respect to input and learnability could potentially account for differences in the L2 English and L2 Japanese studies. We proposed two possible accounts, both of which require further research to evaluate their claims.

In the next section, we turn to results for the past progressive and *te-ita*.

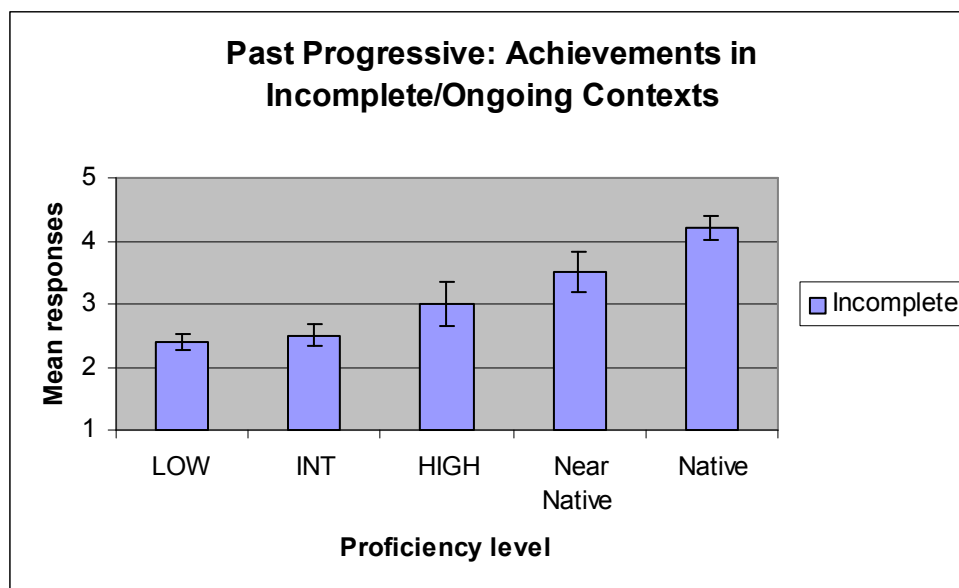
3. Is positive evidence enough?

3.1 Past progressive and *te-ita*: summary of results

In section 2 we outlined results for achievements under the present progressive and *te-iru*. We presented results that showed that the Japanese learners of English performed better on the present progressive with the ongoing/incomplete context. These results are shown in Figure 5.1. The advanced learners are indistinguishable from native speakers. We argued that the learners are able to successfully acquire the event in progress interpretation on the basis of positive evidence. Now we will consider how those results compare with results for the past progressive.

The graph in Figure 5.5 isolates these results. It is clear from the graph that the past progressive in this context remains difficult even for more advanced learners.

Figure 5.5. L2 English study: Mean responses to achievements in the past progressive with incomplete contexts

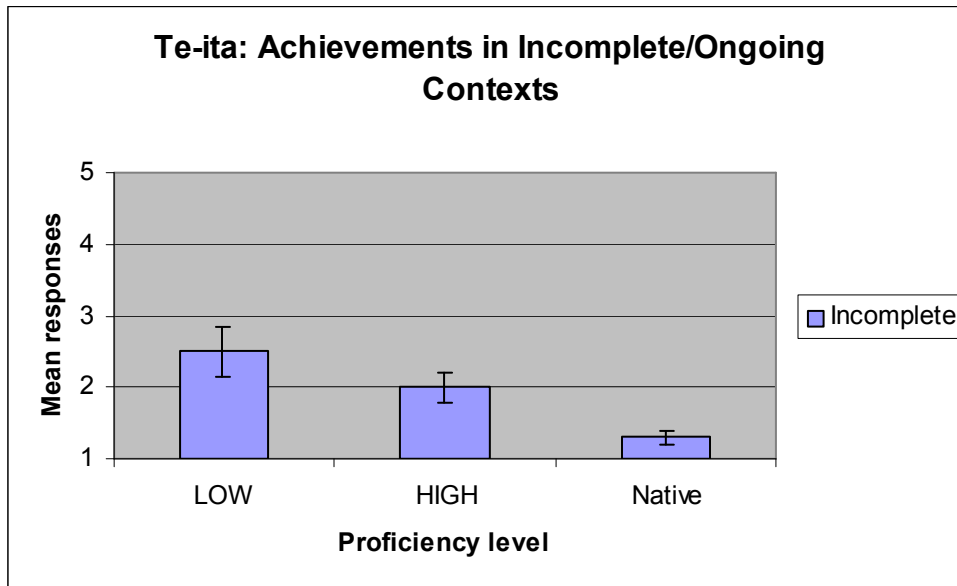


Why is positive evidence not sufficient in the case of the past progressive? Some of the difficulty can be explained by transfer: achievements + *te-ita* are unacceptable in this context. However, there remains an interesting disparity between the present and past progressive. Why would advanced learners be able to overcome transfer in the present progressive but not the past progressive? It is likely that other factors may be conspiring along with transfer to bring about this pattern of results.

Next we review the results for the L2 Japanese learners. With present tense *te-iru* some of the learners in the Low group incorrectly accepted achievements under *te-iru* to refer to events in progress. These results are shown in Figure 5.4 in Section 2. We proposed that L1 transfer could account for these results: the learners have not yet preempted the L1 English interpretation for achievements under PROG. However, we

see a different pattern of results for achievements under *te-ita*. These results are shown in Figure 5.6.

Figure 5.6 L2 Japanese study: mean responses to achievements under *te-ita* with incomplete contexts



In the case of *te-ita*, the results summarized in Chapter 4 revealed that the learners do not differ from the native speakers. These results then present another interesting disparity between the present and the past: learners incorrectly accept achievements under *te-iru* to refer to events in progress but they do not make this same mistake with *te-ita*. Why is it that the learners perform like native speakers only with *te-ita*?

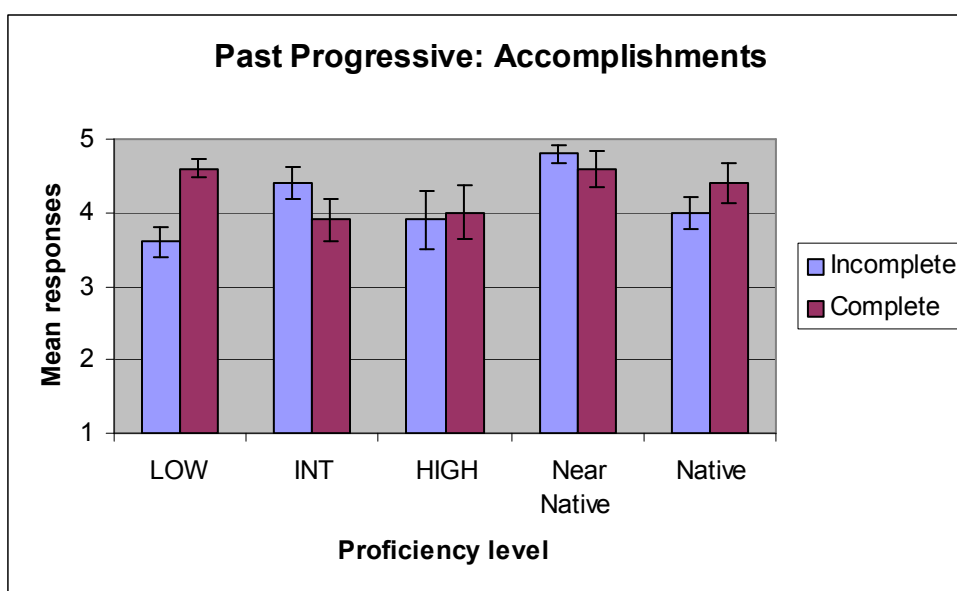
In summary, the results of both the L2 English and L2 Japanese studies point to an interesting pattern of results: learners tend to give lower scores to both the past progressive and *te-ita* with the incomplete/ongoing contexts. In both cases, the results differ from the patterns observed in the present tense. In the L2 English study, this

tendency leads the learners to the wrong interpretation while in the L2 Japanese study, it brings them in line with Japanese native speakers.

It is clear then that there is something about the progressive form being in the past tense that influences the learners' responses. In order to evaluate if this influence extends to the past progressive and *te-ita* globally we need to review the results for the accomplishments in these contexts. The results reviewed in Chapter 4 revealed that these learners had difficulty with accomplishments under the past progressive and *te-ita* although they were not expected to on the transfer hypothesis.

We first review results for the L2 English study. The graph in Figure 5.7 (shown as Figure 5 in Chapter 4) summarizes mean responses to accomplishments in the past progressive with both contexts.

Figure 5.7. L2 English study: mean responses to accomplishments in the past progressive with complete and incomplete contexts

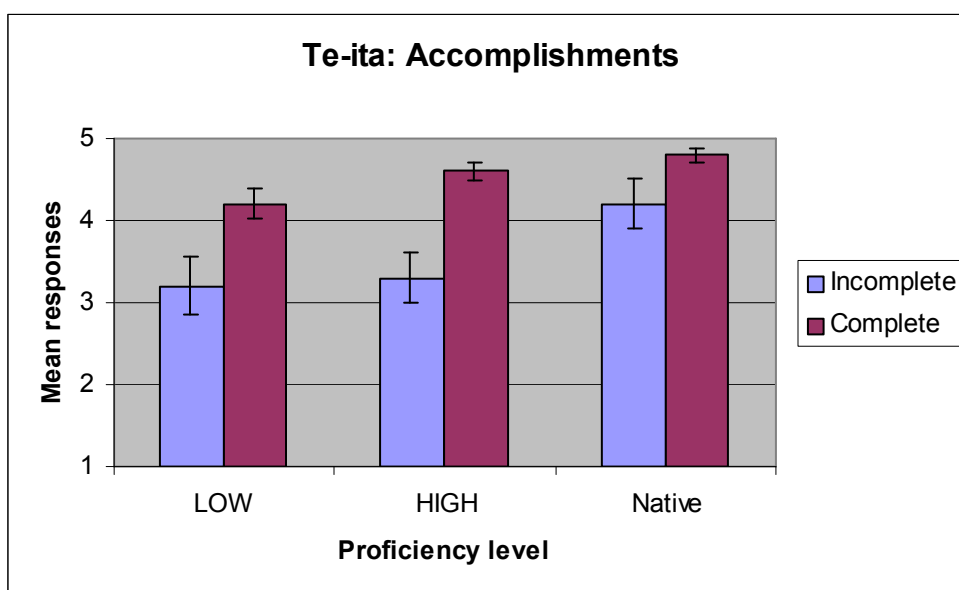


The results reviewed in Chapter 4 revealed that there is a tendency for learners in the Low group to give higher scores to the past progressive with complete contexts. Results indicated that this tendency was not evident in the other proficiency levels. In addition, the native speaker responses show high variability (see Table 5 in Appendix A for means and standard deviations).

Before we move to the results for the L2 Japanese study we will consider whether transfer can account for the results of the Low group in 5.7. Recall that in Chapter 3 we pointed out that accomplishments under *te-iru* also allow, in certain contexts, an additional reading that has been referred to as the perfect or experiential reading (cf. Chapter 3, Section 4.2, ex. 33). An accomplishment under *te-iru* such as the Japanese equivalent of *Ken is making a chair* can also allow the interpretation *Ken has made a chair*. The question is then whether the low level native speakers of Japanese could have transferred this perfect reading in Japanese onto accomplishments under *be+ing* in English. If they did, they should give high scores to the complete context and low scores to the incomplete context. However, it is important to point out that if this hypothesis is correct, then we should see the same pattern of results with accomplishments under present tense *te-iru* as well and we do not. Learners perform well with accomplishments under *te-iru*. This particular hypothesis was also disconfirmed in the study reported by Gabriele and Martohardjono (in press). In that study learners performed well on accomplishments in the present progressive but nevertheless had difficulty in the past progressive. Based on the comparison with the present progressive, we do not believe that transfer can account for these results.

Next we review results for the L2 Japanese speakers with accomplishments under *te-ita*. We find the same the pattern of results for these learners that we saw in the Low proficiency group in the L2 English study. The graph in Figure 5.8 (shown as Figure 14 in Chapter 4) summarizes these results (see Table 5 in Appendix B for means and standard deviations).

Figure 5.8. L2 Japanese study: means responses to accomplishments under *te-ita* with complete and incomplete contexts



On the L2 Japanese study, both the Low and High group give significantly higher scores to accomplishments under *te-ita* with the complete context. Therefore, we see the same tendency for learners to prefer the past progressive with complete contexts in both studies. It could be argued in the L2 Japanese study that L2 learners are overgeneralizing the resultative interpretation denoted by *te-iru* onto accomplishments. However, if the learners were to overgeneralize the resultative interpretation onto accomplishments we

would expect to see evidence of this in *both* present tense *te-iru* and past tense *te-ita*. Because we don't find evidence of overgeneralization in the present tense, it is unlikely that this is the right account.

The results for both the past progressive and *te-ita* point to several interesting issues that will be discussed in detail in the following sections. First, we need to account for the lack of positive transfer with accomplishments under the past progressive and *te-ita*. These results are unexpected if learners interpret the L2 form via the L1. In interpreting both accomplishments and achievements under the past progressive and *te-ita*, learners showed a tendency to give lower scores with the incomplete context. We will try to account for this pattern.

Secondly, there is variability in the judgments of native speakers. We will consider whether there is a potentially a relationship between these two main findings.

3.2 Why do things become *progressively* more difficult in the past?

The results outlined in the section above suggest that learners prefer for both the past progressive and *te-ita* to refer to complete contexts. While this preference is evident with both accomplishments and achievements, it seems to be stronger with achievements. We will address this further below.

This preference is non-targetlike in both English and Japanese for accomplishments. With accomplishments, both the past progressive and *te-ita* are fully compatible with past incomplete events. Native speakers accept these forms to refer to both complete and incomplete events.

With achievements on the other hand, the preference for these forms to refer to complete events is non-targetlike only in English. In Japanese, achievements under *te-ita* can *only* refer to complete events.

Given these facts, in the L2 Japanese study, we cannot determine whether the learners have acquired the appropriate semantics for achievements under *te-ita* or whether they are following this general non-targetlike tendency. For this reason our discussion of achievements will focus primarily on the L2 English results.

That learners should prefer for past imperfective forms to refer to complete contexts is somewhat surprising if we consider that learners use these morphological forms to talk about events in progress from early stages of acquisitions (see Bardovi-Harlig, 2000 for a review). In addition, native speakers often use past imperfective forms to talk about events that were either interrupted or not actually completed as in (10) and (11) (cf. Binnick, 1991; Hornstein, 1977; Leech, 1971; Smith, 1991).

(10) Olivia was eating fish (until she read all the stories about the dangers of mercury).

(11) Marcus was writing his dissertation until his funding ran out.

However, this tendency is not surprising for a different reason. Wagner (2001) reported the same tendency for children acquiring English as their first language. In the study reviewed in Chapter 3, Wagner found that young children were more likely to match past progressive sentences (*Where was Kitty X-ing?*) with past events that referred to a completed action. Wagner suggests that children may conflate tense and aspect; therefore they interpret any occurrence of a past marker including the auxiliary *was* as

referring to completed action. In Wagner's proposal, grammatical aspect (perfectivity) is incorrectly mapped onto tense. Because many natural languages conflate past tense and perfective aspect in a single morpheme, Wagner proposes that the children are still figuring out how these semantic distinctions are mapped onto inflectional morphology in their language. We will adopt a similar approach to account for the performance of the L2 learners. However, as we pointed out in Chapter 3, we do not believe that tense and aspect are truly conflated, i.e. that tense is completely dependent on aspect. There is evidence in L1 studies that children have knowledge of tense (Valian, in progress) and we believe the results of our GJ task provide evidence that our learners also demonstrate knowledge of tense.

We will argue that learners have the underlying semantic distinctions of tense and aspect in place but that they have difficulty deciphering what semantic distinctions are relevant to each piece of morphology.

The theoretical account we have adopted places aspectual operators in the scope of tense operators. The syntactic representation in (12) is modified from De Swart (1998).

(12) [PAST [PROG [VP]

According to De Swart (1998), in the representation in (12), the PAST operator is aspectually neutral. In this case, the PROG operator modifies the lexical aspect of the VP and the PAST tense operator simply places that event in time.

Given the representation in (12) we can conceptualize the learners' difficulty with forms such as the past progressive in two ways. It is possible that the difficulty comes in at the level where the learner applies the PROG operator to the VP. Given that PROG encodes unbounded aspect and the VPs we tested are all telic, it could be possible that learners have difficulty "undoing the telicity of the VP," or interpreting the telic VP as unbounded⁵⁹. This account predicts difficulty in both the present and past progressive with telic VPs and is similar in spirit to one of the claims of the Aspect Hypothesis, which was reviewed in Chapter 3. In the L2 English study this account is feasible for the achievements, but not for the accomplishments. Learners in the Low group did not have difficulty with the accomplishments in the present progressive but they did have difficulty with the past progressive. The same is true of learners in both the Low and High groups in the L2 Japanese study. This results show that the presence of the PAST operator must influence interpretation.

A second possibility is that Wagner's account is compatible with our results as well. She proposed that learners map perfectivity onto the past. This account is compatible with the theoretical framework we have adopted. If the learners incorrectly map perfective aspect onto the PAST, then the perfective aspect will take scope over the progressive aspect. The perfective aspect will "win." If that is the case, the past progressive form will in fact only be compatible with complete events. On this account the learners are again facing a "mapping" problem: they are having difficulty mapping semantic distinctions onto specific pieces of morphology.

The second account can explain why we may see difficulty with past imperfective forms with both accomplishments and achievements. As long as the PAST operator is

⁵⁹ I am grateful to Roumyana Slabakova for discussion of this issue.

present, it is possible that learners will incorrectly map perfective aspect onto the past. This is not to say that the learners do not understand the temporal semantics of the past tense. On the Grammaticality Judgment task both groups of learners performed well on sentences that targeted tense morphology. The limitation of this account is that it places the difficulty entirely in the past, and it then becomes hard to explain why learners had more difficulty with achievements than accomplishments. Given the focus of our study, we could first consider that issues of transfer may be playing a role with the achievements and thus cause more difficulty. However, since performance on achievements in the *present progressive* was better, it is unlikely that transfer is the only factor at work. For example, in the L2 English study, the learners in the High group perform like native speakers with present progressive achievements but show a great deal of difficulty with past progressive achievements. Therefore, the results cannot only be due to transfer.

It seems that what we really need to account for our data is a combination of the two proposals above. Clearly the semantics of the VP is relevant because we see increased difficulty with achievements. The presence of an achievement VP is more likely than an accomplishment VP to cause learners to interpret the past progressive as perfective. These results suggest that achievements are in a sense “more” telic than accomplishments. Results on the Story Compatibility task suggest that this may be true. Both learners and native speakers strongly rejected achievements in the past with the incomplete contexts. They strongly rejected sentences such as *the plane arrived* at the airport if the plane had not yet landed. With accomplishments on the other hand, both groups gave comparatively higher scores on the incomplete contexts. They sometimes

accepted sentences such as *the girl built a sandcastle* even when the sandcastle was not completely finished. In Chapter 4 we pointed out that a verb's taking a direct object plays an important role in aspectual interpretation (Borer, 1994; Tenny, 1987, 1994; Verkuyl, 1972, 1993). The event that achievements denote cannot be measured out along a direct object, a process or a path in the same way that the event that accomplishments denote can be. It is possible that the strong telicity of achievements makes it more difficult for the learners to put the verb phrase in a progressive form. But our results indicate that learners do not have global difficulty putting achievements in the progressive. The difficulty becomes more evident when the progressive is in the past. That is the point at which Wagner's account becomes relevant.

It is clear from our discussion that the interpretation of a form such as the past progressive in English and *te-ita* in Japanese involves multiple levels of computation. The learner must determine how telicity is computed in the VP and how telicity interacts with the levels of grammatical aspect and tense. The learners perform well when they are only asked to compute the interaction of a telic VP and the past tense. In both studies, performance on the past was target-like. At this level, the learners do not have to distinguish the telicity of the VP from the semantics encoded by the past tense marker. In DeSwart's theory, the PAST does not encode grammatical aspect; the PAST simply places the event in time. However, even if the learners do assign perfective aspect to the past tense marker, they will still interpret the sentence correctly. This may lead learners to believe that telicity and perfectivity go hand in hand.

The learners have some difficulty when they are asked to compute the interaction of a telic VP and grammatical aspect, such as the progressive. In the L2 English study,

accomplishments in the present progressive do not cause difficulty but some of the lower level learners do have difficulty with achievements.

The difficulty becomes most pronounced when the learners need to compute the interaction of a telic VP with markers of both grammatical aspect and tense at the same time, as they need to in order to interpret the past progressive or *te-ita*. At this level, accomplishments are difficult for the lower level learners in the L2 English study and for many of the learners in the L2 Japanese study. Achievements are difficult even for some of the advanced learners in the L2 English study. In order to interpret these forms correctly, learners must distinguish the semantics encoded in the telic VP from the semantics encoded by the past marker. However, it is possible that they are still working out how all of the pieces that are relevant to successful aspectual interpretation are actually encoded by the different morphological markers. It seems that when the VP is strongly telic the learners are more likely to interpret imperfective forms incorrectly. It is possible that the telicity of the VP may make the learners more likely to map perfectivity onto the past tense. This would explain why the effect is stronger with achievements.

Note that in Wagner's (2001) study, she tested the present and past progressive but she did not test the simple past. Therefore, in her study we cannot be sure whether the difficulty is due to the past or the progressive or a combination of the two. Because our study targeted all three morphological forms, we can put together a more comprehensive picture of the learners' semantic system.

In summary, we have argued that past imperfective forms are so difficult because they require that the learners compute a very complex interaction between the VP and the markers of grammatical aspect and tense. We have proposed that our learners, similar to

the children in Wagner's study, incorrectly map perfectivity onto the past tense. While this mapping brings about the right result in the simple past, it causes difficulty with the past progressive and *te-ita*. Specifically this mapping brings about the learners' tendency to reject past imperfective forms with incomplete events. We have proposed that this tendency is stronger when the VP is an achievement. Therefore, it appears that the learners' difficulty is really due to a problem with integrating the semantics that is encoded at each level.

It is very interesting that the same type of difficulty is evident in both first and second language learners. It appears that there may be a general developmental tendency for learners to map aspectual semantics incorrectly at least in early stages of development. The issue we will take up in the next section is why this developmental tendency would prevail for adult second language learners in contexts that should in principle be acquired either on the basis of L1 knowledge (in the case of the accomplishments) or on the basis of positive evidence (in the case of achievements).

3.3 Why would adult L2 learners act like children?

The difficulty with accomplishments under the past progressive and *te-ita* is a difficult finding to account for if we assume that second language learners can truly make use of their L1 grammar to interpret the L2. In previous work, we found the same results using different methodology. Learners of English at a range of proficiency levels had difficulty interpreting accomplishments in the past progressive (Gabriele, Martohardjono and McClure, 2003; Gabriele and Martohardjono, in press). The result is surprising

because in the case of accomplishments, no restructuring should be necessary on the part of the learners. The L1 and L2 are equivalent. We would expect that positive transfer should facilitate acquisition.

There are at least two possibilities. The first is that the L1 does not constrain the L2 representation. However, this conclusion is somewhat difficult to rest with since we did find evidence of transfer with other aspectual forms. A second possibility is that there are developmental difficulties that can override the potential benefits of positive transfer. In this case, the equivalent L1 representation may be present but it is not sufficient to drive acquisition. In other words, models of transfer do not suffice as models of language acquisition. L2 acquisition involves more than restructuring the native grammar into the L2 grammar. Other factors clearly play important roles. The question that we will need to return to is *why* the past progressive and *te-ita* present contexts in which developmental tendencies are allowed to trump the potential benefits of positive transfer.

The difficulty with the achievements under the past progressive in the L2 English study is easier to account for under our original transfer predictions. In this context, the L1 representation of PROG is only compatible with a complete context and that could be put forth as a proposal to explain why L2 learners of English are then less likely to accept the past progressive with the incomplete context. However, as we have mentioned, the results of the present progressive suggested that a straight transfer account is insufficient. Advanced learners of English accept the present progressive with the incomplete contexts, which is an indication that they have already overcome the effects of negative transfer. We proposed that the advanced learners succeeded in the acquisition of present

progressive semantics on the basis of positive evidence. The question is then why positive evidence is not sufficient in the case of the past progressive. Why is the developmental tendency to reject the past progressive with incomplete contexts strong enough to trump the potential benefits of positive evidence?

With respect to the insufficiency of positive evidence with the achievements, the first logical possibility is that the right type of positive evidence is simply not available. The results of a study conducted by Inagaki (2002) are relevant. Inagaki found that Japanese learners of English had difficulty allowing both a locational and directional reading for sentences such as *John swam under the bridge*. In English, this sentence can mean that John was swimming back and forth under the bridge (locational) or that John swam with the result of ending up under the bridge (directional). In Japanese, only the locational reading is allowed and this was the only reading that the learners allowed in English as well. Inagaki argued the learners are unable broaden their interlanguage grammar if the positive evidence available to the learner is not frequent enough or clear enough. This suggests that if the input is not robust, learners will have difficulty adding an interpretation that is not available in their L1.

In relation to the present study, it may be that if the input is not sufficient, the learners may not have the appropriate evidence that will allow them to acquire the appropriate semantics for achievements under the past progressive.

A question that to my knowledge has not been raised in the literature is whether positive evidence is also necessary to *confirm* an existing representation. In the case of the accomplishments, we hypothesized that the L1 representation should guide the learners towards successful acquisition in the L2. Yet the results suggested that the

learners, particularly at the lower levels, were not relying on the L1. Perhaps a certain level of L2 input is required to confirm equivalence between the L1 and L2. If this threshold is not reached, the learner does not use the L1 to analyze the L2. It is in these instances that we may expect learners to behave more like children acquiring their first language. This could be why developmental tendencies prevailed even in instances where we expected positive transfer.

3.4 Insufficient positive evidence

Given that our account of difficulty with the past imperfective forms relies on the notion of insufficient positive evidence, we must consider why the input may in fact be insufficient. With respect to frequency of use, Shirai and Nishi (2005) found in a corpus study that *te-ita* was used less frequently than *te-iru* by native speakers. Out of a corpus that contained 455 occurrences of finite *te-iru*, only 130 of the forms were inflected were past tense. However, we would argue that even if the forms were more frequent in the input, the task of acquisition may still be difficult. In our earlier discussion of how positive evidence aids acquisition we outlined a mechanism that evaluates the output of semantic representations against contexts in the world. We identified the type of situation that might provide very robust evidence to the learner, a case where the semantic output clearly contradicted a real world event. We also pointed out that there would be other less robust cases where the learner will not have an observable real world context for the evaluation, for example the progressive in English is also used to talk about futurate contexts.

It is likely that in the input for imperfective forms, the learner will often *only* be provided with the less robust form of evidence. There are examples of particular uses of the past progressive such as *Yesterday you were coming tomorrow*, which Binnick (1991) cites as appearing in Huddleston (1970), that highlight the difficulty of mapping to the appropriate reference point. But even in more transparent cases, the interpretation may be difficult. Imperfective forms are often used to provide background information which means that the action referred to can often not be directly observed. For example, our L2 learner and her friend are now talking about their weekend. The friend might say: *I was mowing the lawn when lightening struck and I had to run inside*. This use is a typical example of the interrupted use of the past progressive. However, we cannot be sure how salient the interruption is to the learner who cannot actually take the statement and evaluate it against the image of a lawn. The friend may also use the past progressive to talk about events in her past as in: *My parents were paying the bills while I was reading Whitman*. Note that completion information is not crucial to comprehension, whether or not all the bills were paid or whether or not her friend made it all the way through *Leaves of Grass* is not important.

Another reason to believe that the positive evidence is less than robust is the native speaker performance on the past progressive, particularly in the L2 English study. On the Story Compatibility task, while the group means show the native speakers performed basically as predicted, the high standard deviations show that there is variability in their responses. The variability is most pronounced between speakers, there are some speakers who give high scores to all past progressive sentences as predicted and

others that give low scores to all sentences. This was also the case on the Grammaticality Judgment task, particularly for past progressive achievements.

We will consider the variability on the Story Compatibility task first. The past progressive form lacks completion entailments, which means if we are abiding by truth conditions, these sentences should have been acceptable on both the complete and incomplete contexts. It is possible that speakers allowed pragmatic considerations to interfere. Consider first the complete context for the verb *arrive*. In the first picture, the plane begins its descent towards the Tokyo airport (the airport is in distant view) and in the second picture the plane has landed and the passengers are already outside of the plane. In order to accept the sentence *The plane was arriving at the airport*, the participant must consider the first picture where the action of arriving was in progress. However, it has been observed that the event of the arrival in the second picture is so salient that the participant may feel they are defying Gricean maxims to define the event with anything other than *The plane arrived at the airport*. It has been observed that this Gricean violation feels stronger with the achievements⁶⁰. Note that participants were given practice items to show that sometimes the sentence could be evaluated by considering an event depicted in the first picture.

This issue is methodological and clearly highlights the difficulty of eliciting clear aspectual judgments even from native speakers. However, we believe that there is important theoretical issue that this variability also highlights. The variability between speakers shows that some speakers are more influenced than others by the particular context. There were native speakers who performed as predicted, evaluating the past progressive in accordance with its truth conditions, allowing it to refer to past incomplete

⁶⁰ Thanks to the audience at the Stony Brook Linguistics Colloquium for discussion of this point.

or complete events. Others were unwilling to refer to the event in a way that was less informative, for example using the past progressive sentence in isolation to describe a complete event without any mention of the eventual outcome of the event.

There is other evidence from this task that some native speakers abide by semantics more than others. As we mentioned, telic verbs in the simple past are considered to encode perfective aspect. Therefore, a sentence such as *Tom drank a glass of coke* or *Sam read a pile of books* should only be compatible with events where the entire glass of coke was finished and the entire pile of books was read. However, when judging the incomplete context with these sentences, native speakers differed in their judgments. Some abided by the strict telic interpretation and gave a score of a 1 to these sentences while others gave the sentences a 5. It is likely that the native speakers who allow these sentences with incomplete contexts are able to coerce a conative reading for these sentences, such as *Tom drank of the glass of coke*. This contrasts with the results for the achievement verbs where native speakers strongly rejected simple past sentences with incomplete contexts. Interestingly, the learners showed the same pattern of results.

The variability with the past progressive on the Grammaticality Judgment remains puzzling. There were native speakers who simply rejected sentences such as *My mother was returning home at 5:00 yesterday* and *Last week John was dying in the hospital*. As these sentences are well-formed, the native speaker behavior is puzzling. It is possible that if the learners had been provided with a short story context and then asked to judge the sentences, the results would have been different (cf. discussion in Schutze, 1996).

What is clear is that the appropriate use of the past progressive is somewhat controversial. It highlights the need for a better understanding of the form. What has

been said so far does little to acknowledge that something fundamental about the progressive changes when it is placed in the past. The semantics of the form does not provide us with an indication that something special should happen in the past (cf. Binnick, 1991). In Hornstein's (1977) treatment of the form, he proposed a rule of Past Progressive Interpretation that was additional to his standard Reichenbachian analysis. The rule said that in some instances the past progressive can mean "NP was supposed to V Z," (527). The additional rule shows the need to go beyond traditional semantic analyses to account for judgments of the past progressive.

It seems then that the appropriate use of the past progressive form is difficult to account for both theoretically and empirically. These facts call into question just how robust the input to L2 learners can actually be. At least in comparison to the present progressive and the simple past, the factors constraining appropriate use and interpretation of the past progressive seem more complex in that we have to take into account not only tense and aspect but also discourse considerations. It may be that these are the types of contexts are particularly susceptible to mapping problems for language learners.

4. Form before meaning

The last point that we will address is the relationship between knowledge of form and knowledge of meaning. In the Background section, we reviewed research that provided empirical evidence for Dittmar's (1981) observation that the acquisition of a morpheme and its meaning are not "indissolubly wedded." Early studies reported that the

forms included in this study appear quite early in learners' production. But the question is whether the appearance of a form indicates that the learner has also mastered the semantics of that form. Bardovi-Harlig and Bofman (1989) and Bardovi-Harlig (1992) found that learners made many more errors in the use of tense-aspect morphology than in form. In their investigation of learners' compositions and learners' responses in cloze passages they found that well-formed verb + morphology complexes often appeared in inappropriate contexts in. Klein (1993) also pointed to this disparity, concluding that "form precedes meaning" in the acquisition of morphology.

The two studies reported here also support that observation. On the grammaticality judgment task, we defined knowledge of *form* as the ability to identify ungrammatical instances of aspectual morphology. These ungrammatical contexts included both instances of ill-formed verb + morphology complexes (L2 English study only) and instances of tense morphology-adverb mismatches (both L2 English and L2 Japanese studies). Learners were quite accurate at rejecting these sentences. They demonstrated knowledge of what a possible verb + morphology complex looks like for forms that they were unable to interpret appropriately on the Story Compatibility task. Their performance shows that metalinguistic knowledge of inflectional morphology can be in place before the learners have acquired the knowledge of how to appropriately interpret aspectual morphology.

Montrul and Slabakova (2002) also investigated the relationship between domains of knowledge with respect to aspectual morphology, in their case, the relationship between knowledge of how to *use* aspectual forms in context and the knowledge of the semantics associated with those same forms. They found that the two develop

simultaneously: results pointed to a developmental correlation between knowledge of the how to use Preterite or Imperfect morphology in a sentential context and knowledge of the semantic interpretations of the forms. The present study reports the same close relationship between use in context and interpretation. We measured knowledge of appropriate use of morphology with the grammatical sentences on the Grammaticality Judgment task and measured knowledge of interpretation with the Story Compatibility task. In many cases, the same morphological contexts, such as the past progressive in English and *te-ita* in Japanese were difficult for the learners on both tasks.

In summary, these results provide further evidence for two developmental observations made previously in the literature: there is often a gap between knowledge of form and meaning but there is a very tight relationship between use and interpretation. We will address the form/meaning relationship first. It should be emphasized that the few researchers who have considered this relationship have often found evidence for this observation from the acquisition of semantically complex forms such as the imperfective forms in various languages. These forms are complex in that they denote a range of meanings and the meanings often arise out of contextual implicature and do not fall out directly from semantic truth conditions. Therefore these forms involve a very complex coordination of semantic and pragmatic knowledge, and therefore it is unsurprising that learners have not mastered the intricacies associated with the form. Learners may use the forms but only for restricted uses. As we mentioned, imperfectives are often used for backgrounding. Berman and Slobin (1994) argue that children acquiring English as a native language do not use the past progressive for this function proficiently until after the age of five. We would not expect the form-meaning disconnect with a form such as

the simple past. A learner who indicates that *she buyed a new car* has the form wrong but certainly has the target-like meaning in place. Bailey's (1987) study makes exactly this point. While the form of the past progressive is regular, the semantics is quite complex and for that reason we might expect the past to be used appropriately before the past progressive. This is indeed what Bailey finds. At this point it seems that the disconnect between form and meaning is a phenomenon that occurs when the form requires a complex integration of not only semantics but also pragmatic knowledge. Forms such as the past progressive and *te-ita* lack completion entailments, the interpretation must be derived from context. These are the types of contexts where we would expect this relationship to arise.

The tight relationship between appropriate use in context and interpretation of aspectual morphology is expected if the use of aspectual morphology is conceptualized as involving some kind of semantic computation and not simply mastery of inflectional paradigms.

5. Towards a comprehensive model of the L2 acquisition of aspect

In this last section we will synthesize our findings and consider what contribution the evidence we have presented makes towards our understanding of the acquisition of aspect and second language acquisition in general. At the most basic level we have found further support for the idea that learners begin to use morphological forms at stages in development that precede their acquisition on the semantics of those forms. Results of the grammaticality judgment task show that knowledge of form develops early. Learners

know what does and does not constitute a well-formed inflected verb. They also have no difficulty coming to acquire the properties of the form related to tense. The learners only begin to show evidence of difficulty when they are required to compute aspectual properties of a morphological form. The results of the Story Compatibility task show that this difficulty is not global. In the course of our discussion we have tried to argue that difficulty arises in cases of particularly complex computation and in areas where the input to the learner is not robust. We will very briefly summarize the areas in which the learners had difficulty and the areas in which they did not.

If we consider only the results for the simple past and the present progressive and *te-iru*, then our predictions were generally confirmed. We predicted in both studies that learners would perform well on the simple past, and in both studies they did. We predicted that the learners in both studies would have little difficulty with accomplishments under *te-iru* and *be+ing*, and in both studies the learners performed at the level of native speakers. With respect to the achievements, we predicted the learners in both studies would be strongly influenced by the semantic properties of the L1. We also predicted that learners at higher levels of proficiency would be more successful in overcoming transfer when their goal was to add an interpretation to their grammar than when their goal was to preempt an interpretation available in their native language.

The results of the L2 English were generally compatible with our predictions. With respect to adding an interpretation, it was clear that the advanced learners were successful while the lower level level learners still had difficulty. With respect to preempting an interpretation, as we predicted, there was evidence of difficulty even for

some of the most advanced learners. These results suggest that the learners are still influenced by native language properties at advanced levels.

The results of the L2 Japanese study are somewhat different. Almost all of the learners succeeded in acquiring the resultative interpretation, the context of adding. They also performed better than the L2 English learners on the goal of preempting. The evidence for difficulty in this context was evident mostly with learners in the Low group. Therefore, the learners in the Japanese group were in general more successful. They follow the general pattern of our predictions with respect to which contexts are more difficult but they also performed much better than we had expected.

The results of the past progressive and *te-ita*, on the other hand, challenge our predictions. Although these forms are known to be difficult developmentally we still maintained our prediction that if their equivalence between the native language and the target language, then acquisition should proceed with relative success. Therefore we predicted success with the accomplishments. However, the prediction was too strong because both in studies there were learners, particularly at lower levels of proficiency, who had difficulty interpreting these past imperfective forms with accomplishments.

The results of the achievements under the past progressive and *te-ita* challenge our predictions with respect to learnability. On the L2 English study, learners had difficulty accepting achievements under the past progressive to refer to incomplete events even though this was a context in which their goal was to add an interpretation. On the L2 Japanese study, learners had no difficulty preempting the L1 interpretation with achievements under *te-ita* although this was a context that was predicted to be especially difficult.

We proposed that the interpretation of the past progressive and *te-ita* is so difficult because it requires the integration of a complex array of semantic features including the telicity of the verb phrase, the aspectual properties of the progressive and the temporal properties of the past tense. We argued that some learners might go through a stage similar to children in these contexts at a point in development where they are still deciphering how particular semantic notions are mapped onto particular pieces of morphology. We have argued that these contexts may remain difficult due to the fact that the input is not robust. We do not claim that these contexts are not acquirable, simply that their complexity delays successful acquisition.

The evidence we have presented in this study brings us closer to an answer of *why* aspectual properties are difficult for learners to acquire. We have also tried to extend the point of focus beyond the issue of whether aspect is in principle acquirable or not. Coppiters (1987) claimed that second language learners simply could not acquire aspect to native-like levels. Montrul and Slabakova (2003) then showed us that there were in fact learners who are successful. We agree with Montrul and Slabakova that aspect is part of the linguistic system constrained by UG and that it is in fact acquirable by some second language learners. However, in this thesis we have also tried to take seriously those learners who are not successful and evaluate why for those learners particular aspectual forms remain difficult.

A natural place to look for the root of difficulty in second language acquisition is the native language. Therefore, as a first hypothesis we investigated the role of transfer. While we have presented evidence that argues that properties of the L1 are important, we have also showed that transfer can certainly not account for the whole range of our

findings. There were areas of equivalence between the native language and target language that remained difficult for some learners and there were areas of difference that seemed as if they were easy to acquire. We have argued that we can account for our findings if we take seriously to role of input and how issues of learnability interact with the learners' grammatical representation in the course of development. We have outlined a proposal for how we can begin understand areas of notorious complexity in second language acquisition. We hope that it can serve as a model for further investigation into the L2 acquisition of semantics in general.

APPENDIX A: L2 ENGLISH TABLES

Table A-1. L2 English: Means and standard deviations for simple past sentences with accomplishments in incomplete and complete contexts

Simple Past Context type	Low (n = 46)	Intermediate (n = 39)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Accomplishment</u>					
<u>Incomplete</u>					
M	3.19	2.78	3.22	2.90	2.42
SD	1.02	.92	1.33	1.60	.57
n	24	19	9	5	12
<u>Accomplishment</u>					
<u>Complete</u>					
M	4.53	4.45	4.56	5.0	4.91
SD	.52	.60	.47	.00	.17
n	22	20	7	4	11

Table A-2. L2 English: Means and standard deviations for simple past sentences with achievements in incomplete and complete contexts

Simple Past Context type	Low (n = 46)	Intermediate (n = 39)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Achievement</u>					
<u>Incomplete</u>					
M	1.88	1.67	1.34	1.95	1.84
SD	.64	.56	.50	.82	.66
n	22	20	7	4	11
<u>Achievement</u>					
<u>Complete</u>					
M	4.45	4.45	4.58	4.8	4.9
SD	.68	.63	.67	.33	.23
n	24	19	9	5	12

Table A-3. L2 English: Means and standard deviations for accomplishments in the present progressive with incomplete and complete contexts

Present Prog. Context type	Low (n = 46)	Intermediate (n = 39)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Accomplishment</u>					
<u>Incomplete</u>					
M	2.25	2.63	1.86	2.44	2.23
SD	1.21	.88	.81	.66	1.21
n	22	20	7	4	11
<u>Accomplishment</u>					
<u>Complete</u>					
M	4.47	3.93	4.34	4.7	4.85
SD	.46	.80	.70	.54	.23
n	24	19	9	5	12

Table A-4. L2 English: Means and standard deviations for achievements in the present progressive with incomplete and complete contexts

Present Prog. Context type	Low (n = 46)	Intermediate (n = 39)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Achievement</u>					
<u>Incomplete</u>					
M	3.08	2.89	4	4.25	4.1
SD	.57	.91	.72	.5	.46
n	24	19	9	5	12
<u>Achievement</u>					
<u>Complete</u>					
M	3.64	3.45	2.56	3.25	1.5
SD	.78	.69	.76	.79	.55
n	22	20	7	4	11

Table A-5. L2 English: Means and standard deviations for accomplishments in the past progressive with incomplete and complete contexts

Past Prog. Context type	Low (n = 46)	Intermediate (n = 39)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Accomplishment</u>					
<u>Incomplete</u>					
M	3.58	4.35	3.86	4.88	4.02
SD	.97	.92	1.02	.25	1.0
n	22	20	7	4	11
<u>Accomplishment</u>					
<u>Complete</u>					
M	4.58	3.90	4.0	4.60	4.44
SD	.62	1.28	1.12	.55	.93
n	24	19	9	5	12

Table A-6. L2 English: Means and standard deviations for achievements in the past progressive with incomplete and complete contexts

Past Prog. Context type	Low (n = 46)	Intermediate (n = 39)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Achievement</u>					
<u>Incomplete</u>					
M	2.37	2.46	3.0	3.45	4.21
SD	.58	.78	1.01	.69	.69
n	24	19	9	5	12
<u>Achievement</u>					
<u>Complete</u>					
M	3.56	3.94	3.0	4.7	3.51
SD	1.03	.88	1.11	.60	1.03
n	22	20	7	4	11

Table A-7. L2 English GJ: Means and standard deviations for filler sentences targeting word order

	Low (n = 45)	Intermediate (n = 38)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Grammatical</u>					
M	4.46	4.55	4.53	4.58	4.70
SD	.57	.61	.46	.35	.45
<u>Ungrammatical</u>					
M	2.53	2.40	2.28	2.83	1.89
SD	.81	.98	.81	.98	.69

Table A-8. L2 English GJ: Means and standard deviations for filler sentences targeting subject verb agreement

	Low (n = 45)	Intermediate (n = 38)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Grammatical</u>					
M	3.92	4.27	4.64	4.61	4.72
SD	.63	.54	.45	.53	.36
<u>Ungrammatical</u>					
M	3.10	2.57	1.80	1.39	1.59
SD	1.05	1.21	.82	.50	.52

Table A-9. L2 English GJ: Means and standard deviations for filler sentences targeting word order in verbal compounds

	Low (n = 45)	Intermediate (n = 38)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Ungrammatical:</u>					
<u>Inflection</u>					
M	3.90	4.00	4.43	4.75	4.79
SD	.67	.70	.76	.50	.37
<u>Ungrammatical:</u>					
<u>Tense</u>					
M	2.06	1.47	1.03	1.14	1.16
SD	.87	.52	.09	.33	.29

Table A-10. L2 English GJ: Means and standard deviations for ungrammatical sentences

Ungrammatical sentence type	Low (n = 45)	Intermediate (n = 38)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Simple Past</u>					
<u>Accomplishment</u>					
M	2.31	2.24	1.97	1.50	1.29
SD	.61	.60	.44	.54	.34
<u>Simple Past</u>					
<u>Achievement</u>					
M	1.96	1.68	1.52	1.19	1.5
SD	.82	.60	.46	.39	.55
<u>Pres. Progressive</u>					
<u>Accomplishment</u>					
M	1.78	1.49	1.38	1.17	1.35
SD	.63	.54	.53	.28	.44
<u>Pres. Progressive</u>					
<u>Achievement</u>					
M	1.90	1.61	1.41	1.08	1.35
SD	.75	.55	.60	.25	.40
<u>Past Progressive</u>					
<u>Accomplishment</u>					
M	1.90	1.53	1.09	1.08	1.39
SD	.87	.68	.18	.18	.43
<u>Past Progressive</u>					
<u>Achievement</u>					
M	2.32	1.68	1.33	1.06	1.35
SD	.86	.62	.41	.11	.36

Table A-11. L2 English GJ: Means and standard deviations for ungrammatical sentences by type (inflection, tense)

Ungrammatical sentence type	Low (n = 45)	Intermediate (n = 38)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Simple Past</u>					
<u>Inflection</u>					
M	2.49	2.32	2.13	1.61	1.50
SD	.78	.65	.69	.64	.56
<u>Simple Past</u>					
<u>Tense</u>					
M	1.78	1.60	1.36	1.08	1.30
SD	.63	.78	.42	.18	.38
<u>Pres. Progressive</u>					
<u>Inflection</u>					
M	2.04	1.78	1.58	1.08	1.37
SD	.86	.74	.86	.25	.55
<u>Pres. Progressive</u>					
<u>Tense</u>					
M	1.64	1.31	1.20	1.17	1.32
SD	.61	.45	.41	.28	.40
<u>Past Progressive</u>					
<u>Inflection</u>					
M	2.40	1.84	1.14	1.11	1.25
SD	1.05	.92	.30	.25	.35
<u>Past Progressive</u>					
<u>Tense</u>					
M	1.83	1.38	1.28	1.02	1.49
SD	.84	.55	.47	.08	.47

Table A-12. L2 English GJ: Means and standard deviations for grammatical sentences

Grammatical sentence type	Low (n = 45)	Intermediate (n = 38)	High (n = 16)	Near-native (n = 9)	Native speaker (n = 23)
<u>Simple Past</u>					
<u>Accomplishment</u>					
M	4.14	4.30	4.47	4.36	4.66
SD	.77	.64	.48	.50	.37
<u>Simple Past</u>					
<u>Achievement</u>					
M	4.13	4.55	4.82	4.86	4.81
SD	.81	.43	.25	.33	.30
<u>Pres. Progressive</u>					
<u>Accomplishment</u>					
M	3.39	3.51	3.86	4.69	4.84
SD	.75	.81	.77	.33	.26
<u>Pres. Progressive</u>					
<u>Achievement</u>					
M	3.44	3.45	3.81	4.22	4.57
SD	.79	.95	.70	.64	.45
<u>Past Progressive</u>					
<u>Accomplishment</u>					
M	3.63	3.56	3.71	4.58	4.32
SD	.85	1.05	1.07	.65	.66
<u>Past Progressive</u>					
<u>Achievement</u>					
M	2.98	2.65	2.28	3.52	3.58
SD	.90	.92	.95	1.45	1.16

APPENDIX B: L2 JAPANESE TABLES

Table B-1. L2 Japanese: Means and standard deviations for simple past sentences with accomplishment verbs in incomplete and complete contexts

Simple Past Context type	Low (n = 16)	High (n = 17)	Native speaker (n = 31)
<u>Accomplishment</u>			
<u>Incomplete</u>			
M	3.04	2.48	3.16
SD	.99	.70	1.3
n	7	10	16
<u>Accomplishment</u>			
<u>Complete</u>			
M	4.17	4.64	5
SD	.56	.38	.00
n	9	7	15

Table B-2. L2 Japanese: Means and standard deviations for simple past sentences with achievement verbs in incomplete and complete contexts

Simple Past Context type	Low (n = 16)	High (n = 17)	Native speaker (n = 31)
<u>Achievement</u>			
<u>Incomplete</u>			
M	2.44	1.75	1.5
SD	1.05	.65	.44
n	9	7	15
<u>Achievement</u>			
<u>Complete</u>			
M	4.11	4.53	4.83
SD	.63	.46	.25
n	7	10	16

Table B-3. L2 Japanese: Means and standard deviations for accomplishment verbs under *te-iru* with incomplete and complete contexts

Te-iru Context type	Low (n = 16)	High (n = 17)	Native speaker (n = 31)
<u>Accomplishment</u>			
<u>Incomplete</u>			
M	3.68	4.23	4.64
SD	.76	.62	.49
n	7	10	16
<u>Accomplishment</u>			
<u>Complete</u>			
M	2.42	2.04	2.53
SD	1.03	1.06	1.08
n	9	7	15

Table B-4. L2 Japanese: Means and standard deviations for achievement verbs under *te-iru* with incomplete and complete contexts

Te-iru Context type	Low (n = 16)	High (n = 17)	Native speaker (n = 31)
<u>Achievement</u>			
<u>Incomplete</u>			
M	3.28	2.04	1.35
SD	.81	1.06	.52
n	9	7	15
<u>Achievement</u>			
<u>Complete</u>			
M	4.39	3.93	4.84
SD	.56	.91	.29
n	7	10	16

Table B-5. L2 Japanese: Means and standard deviations for accomplishment verbs under *te-ita* with incomplete and complete contexts

Te-ita Context type	Low (n = 16)	High (n = 17)	Native speaker (n = 31)
<u>Accomplishment</u>			
<u>Incomplete</u>			
M	3.17	3.32	4.22
SD	1.06	.81	1.18
n	9	7	15
<u>Accomplishment</u>			
<u>Complete</u>			
M	4.21	4.60	4.83
SD	.49	.36	.35
n	7	10	16

Table B-6. L2 Japanese: Means and standard deviations for achievement verbs under *te-ita* with incomplete and complete contexts

Te-ita Context type	Low (n = 16)	High (n = 17)	Native speaker (n = 31)
<u>Achievement</u>			
<u>Incomplete</u>			
M	2.50	2.02	1.28
SD	.92	.68	.36
n	7	20	16
<u>Achievement</u>			
<u>Complete</u>			
M	3.75	4.07	4.17
SD	.99	.97	.69
n	9	7	15

Table B-7. L2 Japanese GJ: Means and standard deviations for filler sentences targeting word order

	Low (n = 14)	High (n = 14)	Japanese Native (n = 31)
<u>Grammatical</u>			
M	4.09	4.34	4.85
SD	.41	.59	.34
<u>Ungrammatical</u>			
M	1.61	2.00	2.07
SD	.56	.84	.93

Table B-8. L2 Japanese GJ: Means and standard deviations for filler sentences targeting possessive particle

	Low (n = 14)	High (n = 14)	Japanese Native (n = 31)
<u>Grammatical</u>			
M	3.71	3.81	4.89
SD	.53	.68	.26
<u>Ungrammatical</u>			
M	3.41	2.57	1.58
SD	.76	.90	.56

Table B-9. L2 Japanese GJ: Means and standard deviations for filler sentences targeting word order in verbal compounds

	Low (n = 14)	High (n = 14)	Japanese Native (n = 31)
<u>Grammatical</u>			
M	3.63	3.68	4.70
SD	.66	.82	.36
<u>Ungrammatical</u>			
M	3.54	2.32	1.39
SD	.55	.75	.49

Table B-10. L2 Japanese GJ: Means and standard deviations for ungrammatical sentences

Ungrammatical sentence type	Low (n = 14)	High (n = 14)	Japanese Native (n = 31)
<u>Simple Past</u>			
<u>Accomplishment</u>			
M	2.95	2.70	1.52
SD	.92	.93	.49
<u>Simple Past</u>			
<u>Achievement</u>			
M	2.62	2.70	1.61
SD	.74	.99	.49
<u>Te-iru</u>			
<u>Accomplishment</u>			
M	2.27	2.05	1.60
SD	.61	.74	.64
<u>Te-iru</u>			
<u>Achievement</u>			
M	1.77	1.88	1.40
SD	.58	.76	.43
<u>Te-ita</u>			
<u>Accomplishment</u>			
M	2.91	2.41	1.73
SD	.96	.84	.51
<u>Te-ita</u>			
<u>Achievement</u>			
M	2.64	2.41	1.54
SD	1.13	1.00	.47

Table B-11. L2 Japanese GJ: Means and standard deviations for grammatical sentences

Grammatical sentence type	Low (n = 14)	High (n = 14)	Japanese Native (n = 31)
<u>Simple Past</u>			
<u>Accomplishment</u>			
M	3.64	4.09	4.89
SD	.68	.52	.24
<u>Simple Past</u>			
<u>Achievement</u>			
M	3.77	4.32	4.85
SD	.51	.58	.40
<u>Te-iru</u>			
<u>Accomplishment</u>			
M	3.86	3.77	4.36
SD	.70	.70	.61
<u>Te-iru</u>			
<u>Achievement</u>			
M	3.68	4.09	4.40
SD	.42	.60	.60
<u>Te-ita</u>			
<u>Accomplishment</u>			
M	3.41	3.79	4.48
SD	.50	.31	.53
<u>Te-ita</u>			
<u>Achievement</u>			
M	3.79	3.88	4.35
SD	.54	.72	.49

APPENDIX C: L2 ENGLISH MATERIALS

Appendix C: Near-native Interview

Hi, My name is _____. And you are _____?

Nice to meet you. Thank you for coming today. In this short interview I am going to ask you some questions and I will also ask you to talk about some pictures.

I am going to record this interview. But you should know that anything you say will be used only for research purposes. Do you have any questions before we begin?

Part I

First I am going to ask you some questions about yourself.

- Where are you from?
- And now you are living in _____?
- What do you like about _____ (place they are living)?
- Do you live in a house or an apartment? What is it like?
- Tell me something about your neighborhood.
- Do you have a regular pattern to your day? What usually happens?
- What do you usually do on the weekend?
- What did you do last weekend?
- Are you student?
- If yes, what are you studying and what do you like about your school?
- If no, what was the last school you attended? What did you like about school?
- How do you think you will use English/Japanese in the future?
- Do you speak other languages?
- What types of books do you like to read?

Part II

Next I am going to give you a list of topics. You should choose one topic. I am going to ask you to speak for one full minute on that topic. Here is the list. Look it over and then let me know what topic you have selected.

Okay, thank you. You can begin now. I will let you know when to stop.

Topics: US

- Who do you think will win the election in November? Why?
- Do you think the U.S. will ever have a woman president? Why or why not?
- Do you think professional athletes should have to take drug tests?
- What do you think of how math and science is taught in American schools? Are there ways it could be improved?
- What do you think of foreign language education in the U.S.? Are there ways it could be improved?
- Do you think music should be available for free over the internet?
- Do you think a government should provide all of its citizens with health insurance?
- What do you think of American television? What type of programs would you like to see more of?

Part III Picture

Imagine that a busy international hotel is looking to hire more employees for the holiday season. Look at this picture and then tell me which job would be the hardest to do without training. Why would it be so difficult? Why would the other jobs be easier to do without training?

You should talk for 1-2 minutes.

Appendix C: Instructions for the Story Compatibility task

You will hear a short story and see two pictures on the screen. Listen carefully to the story and pay attention to the pictures. After each story, you will hear a sentence; the same sentence will also appear on the screen.

Your job is to decide whether you can say the sentence on the screen given what you saw in the pictures and heard in the story. The sentence that will appear on the screen is always a completely grammatical sentence. You are *not* being asked to judge whether the sentence is “grammatical” or “ungrammatical.” We want to know whether you can use this sentence to talk about the story that you heard. We will give practice examples below.

You should give your answer based **ONLY** on what you see in the pictures and hear in the story. You should NOT try to imagine what might happen or how the story might continue. You should pay attention to how the story ends. Then decide if you can say the sentence.

Do not think about whether the sentence on the screen is the *best* sentence for the story. Just decide whether you can say the sentence given the story.

Some of the stories on the test are very similar. Try not to think about other stories on the test. Focus only on the story you are listening to.

You will be asked to judge whether you can say the sentence on a scale of 1-5.

1	2	3	4	5
I <u>cannot</u> say this sentence given the story.		Maybe		I <u>can</u> say this sentence given the story.

The chart below outlines the 1-5 scale in detail:

1	I <u>definitely cannot</u> say this sentence in the context of this story.
2	I <u>cannot say this sentence</u> in the context of this story.
3	I <u>might be able to</u> say this sentence in the context of this story.
4	I <u>can say this sentence</u> in the context of this story.
5	I <u>definitely can say this sentence</u> in the context of this story.

You should circle the number on your answer sheet. You should circle only ONE number. Feel free to use the whole scale.

Before each new test item, the number of the test item will appear on the screen and you will hear a camera click.

Appendix C: L2 English Story Compatibility task stories

Accomplishments

(1a) Complete Story

Picture 1: Ken is an artist. At 12:00 he begins to paint a portrait of his family.

Picture 2: At 8:00 he gives the portrait to his mother for her birthday.

	English Native
Ken painted a portrait of his family.	5
Ken is painting a portrait of his family.	1
Ken was painting a portrait of his family.	5
Ken did not finish painting the portrait of his family yet.	1

(1b) Incomplete Story

Picture 1: Ken is an artist. At 12:00 he begins to paint a portrait of his family.

Picture 2: At 12:30 he paints his mother and father.

	English Native
Ken painted a portrait of his family.	1
Ken is painting a portrait of his family.	5
Ken was painting a portrait of his family.	5
Ken finished painting the portrait of his family already.	1

(2a) Complete Story

Picture 1: Mary is a writer. In January she begins to write a book on Japan.

Picture 2: In June she shows her friend a copy of the book.

	English Native
Mary wrote a book on Japan.	5
Mary is writing a book on Japan.	1
Mary was writing a book on Japan.	5
Mary did not finish writing the book on Japan yet.	1

(2b) Incomplete Story

Picture 1: Mary is a writer. In January she begins to write a book on Japan.

Picture 2: In March she writes the second chapter of the book.

	English Native
Mary wrote a book on Japan.	1
Mary is writing a book on Japan.	5
Mary was writing a book on Japan.	5
Mary finished writing the book on Japan already.	1

(3a) Complete Story

Picture 1: Sara loves the beach. At 1:00 she starts to build a sandcastle.

Picture 2: At 3:00 she shows the sandcastle to her friends.

	English Native
Sara built a sandcastle on the beach.	5
Sara is building a sandcastle on the beach.	1
Sara was building a sandcastle on the beach.	5
Sara did not finish building the sandcastle yet.	1

(3b) Incomplete Story

Picture 1: Sara loves the beach. At 1:00 she starts to build a sandcastle.

Picture 2: At 1:30 she builds the tower of the castle.

	English Native
Sara built a sandcastle on the beach.	1
Sara is building a sandcastle on the beach.	5
Sara was building a sandcastle on the beach.	5
Sara finished building the sandcastle already.	1

(4a) Complete Story

Picture 1: Sam needs to read a pile of books for his French class. On Monday he begins to read the first book.

Picture 2: On Friday he finishes the last book.

	English Native
Sam read a pile of books for his French class.	5
Sam is reading a pile of books for his French class.	1
Sam was reading a pile of books for his French class.	5
Sam did not finish reading the pile of books yet.	1

(4b) Incomplete Story

Picture 1: Sam needs to read a pile of books for his French class. On Monday he begins to read the first book.

Picture 2: On Tuesday he reads the fourth book.

	English Native
Sam read a pile of books for his French class.	1
Sam is reading a pile of books for his French class.	5
Sam was reading a pile of books for his French class.	5
Sam finished reading the pile of books already.	1

(5a) Complete Story

Picture 1: Dina eats lunch at 12:00. Today she starts to eat a bowl of ramen.

Picture 2: At 1:00 she throws out the empty bowl.

	English Native
Dina ate a bowl of ramen for lunch.	5
Dina is eating a bowl of ramen for lunch.	1
Dina was eating a bowl of ramen for lunch.	5
Dina did not finish eating the bowl of ramen yet.	1

(5b) Incomplete Story

Picture 1: Dina eats lunch at 12:00. She starts to eat a bowl of ramen.

Picture 2: At 12:15 she eats more ramen.

	English Native
Dina ate a bowl of ramen for lunch.	1
Dina is eating a bowl of ramen for lunch.	5
Dina was eating a bowl of ramen for lunch.	5
Dina finished eating the bowl of ramen already.	1

(6a) Complete Story

Picture 1: Mari likes to cook. At 3:00 she begins to make a cake for her friend.

Picture 2: At 5:00 she serves the cake to her friend.

	English Native
Mari made a cake for her friend.	5
Mari is making a cake for her friend.	1
Mari was making a cake for her friend.	5
Mari did not finish making the cake yet.	1

(6b) Incomplete Story

Picture 1: Mari likes to cook. At 3:00 she begins to make a cake for her friend.

Picture 2: At 3:30 she mixes the batter for the cake.

	English Native
Mari made a cake for her friend.	1
Mari is making a cake for her friend.	5
Mari was making a cake for her friend.	5
Mari finished making the cake already.	1

(7a) Complete Story

Picture 1: Tom loves soda. After school at 3:00 he starts to drink a glass of Coke.

Picture 2: At 3:30 he puts the empty glass in the sink.

	English Native
Tom drank a glass of Coke after school.	5
Tom is drinking a glass of Coke after school.	1
Tom was drinking a glass of Coke after school.	5
Tom did not finish drinking the glass of Coke yet.	1

(7b) Incomplete Story

Picture 1: Tom loves soda. At 3:00 he starts to drink a glass of Coke.

Picture 2: At 3:10 he drinks more Coke.

	English Native
Tom drank a glass of Coke after school.	1
Tom is drinking a glass of Coke after school.	5
Tom was drinking a glass of Coke after school.	5
Tom finished drinking the glass of Coke already.	1

(8a) Complete Story

Picture 1: Kate is busy tonight. At 8:00 she starts to wash the pile of dishes in the sink.

Picture 2: At 9:00 all the dishes are clean.

	English Native
Kate washed the pile of dishes in the sink.	5
Kate is washing the pile of dishes in the sink.	1
Kate was washing the pile of dishes in the sink.	5
Kate did not finish washing the pile of dishes yet.	1

(8b) Incomplete Story

Picture 1: Kate is busy tonight. At 8:00 she starts to wash the pile of dishes in the sink.

Picture 2: At 8:30 she washes more dishes.

	English Native
Kate washed the pile of dishes in the sink.	1
Kate is washing the pile of dishes in the sink.	5
Kate was washing the pile of dishes in the sink.	5
Kate finished washing the pile of dishes already..	1

Achievements

(9a) Complete Story

Picture 1: This is the plane to Tokyo. At 4:00 the plane is near the airport.

Picture 2: At 5:00 the passengers are at the airport.

	English Native
The plane arrived at the airport.	5
The plane is arriving at the airport.	1
The plane was arriving at the airport.	5
The plane is not at the airport yet.	1

(9b) Incomplete Story

Picture 1: This is the plane to Tokyo. At 4:00 the plane is near the airport.

Picture 2: There is a lot of wind. At 4:30 the plane is still in the air.

	English Native
The plane arrived at the airport.	1
The plane is arriving at the airport.	5
The plane was arriving at the airport.	5
The plane is at the airport already.	1

(10a) Complete Story

Picture 1: Vicky needs to buy food. At 3:00 Vicky leaves her house to go to the supermarket.

Picture 2: At 4:00 Vicky is in the supermarket.

	English Native
Vicky went to the supermarket.	5
Vicky is going to the supermarket.	1
Vicky was going to the supermarket.	5
Vicky is not in the supermarket yet.	1

(10b) Incomplete Story

Picture 1: Vicky needs to buy food. At 3:00 she leaves her house to go to the supermarket.

Picture 2: At 3:30 Vicky is one block from the supermarket.

	English Native
Vicky went to the supermarket.	1
Vicky is going to the supermarket.	5
Vicky was going to the supermarket.	5
Vicky is in the supermarket already.	1

(11a) Complete Story

Picture 1: Taro's small dog is very sick. On Monday the doctor says that the dog should stay in the hospital.

Picture 2: On Saturday the doctor says that the dog is dead.

	English Native
The small dog died in the hospital.	5
The small dog is dying in the hospital.	1
The small dog was dying in the hospital.	5
The small dog is not dead yet.	1

(11b) Incomplete Story

Picture 1: Taro's small dog is very sick. On Monday the doctor says that the dog should stay in the hospital.

Picture 2: On Thursday the doctor says that the dog might die. Taro is very worried.

	English Native
The small dog died in the hospital.	1
The small dog is dying in the hospital.	5
The small dog was dying in the hospital.	5
The small dog is dead already.	1

(12a) Complete Story

Picture 1: Karen owns the restaurant by the beach. At 8:00 in the morning she prepares to open the restaurant.

Picture 2: At 10:00 she serves the customers breakfast.

	English Native
The restaurant by the beach opened.	5
The restaurant by the beach is opening.	1
The restaurant by the beach was opening.	5
The restaurant by the beach is not open yet.	1

(12b) Incomplete Story

Picture 1: Karen owns the restaurant by the beach. At 8:00 in the morning she prepares to open the restaurant.

Picture 2: At 8:59 she is almost ready. The restaurant opens in one minute.

	English Native
The restaurant by the beach opened.	1
The restaurant by the beach is opening.	5
The restaurant by the beach was opening.	5
The restaurant by the beach is open already.	1

(13a) Complete Story

Picture 1: On Monday morning Taro is at the airport. Today Taro will go home to Japan.

Picture 2: On Tuesday Taro is in Japan with his parents.

	English Native
Taro returned to Japan.	5
Taro is returning to Japan.	1
Taro was returning to Japan.	5
Taro is not in Japan yet.	1

(13b) Incomplete Story

Picture 1: On Monday morning Taro is at the airport. Today Taro will go home to Japan.

Picture 2: It is one hour later. Taro sits in the airport and waits for his flight.

	English Native
Taro returned to Japan.	1
Taro is returning to Japan.	5
Taro was returning to Japan.	5
Taro is in Japan already.	1

(14a) Complete Story

Picture 1: Kate lives in Boston. At 12:00 gets on a train to visit my family in New York.

Picture 2: At 6:00 Kate is at my house in New York.

	English Native
Kate came to my house.	5
Kate is coming to my house.	1
Kate was coming to my house.	5
Kate is not at my house yet.	1

(14b) Incomplete Story

Picture 1: Kate lives in Boston. At 12:00 she gets on a train to visit my family in New York.

Picture 2: At 3:00 Kate is still on the train to New York.

	English Native
Kate came to my house.	1
Kate is coming to my house.	5
Kate was coming to my house.	5
Kate is at my house already.	1

(15a) Complete Story

Picture 1: John is at the library. At 2:00 he tells his friend that he will go home soon.

Picture 2: At 3:00 John waits for the bus outside of the library.

	English Native
John left the library.	5
John is leaving the library.	1
John was leaving the library.	5
John is still in the library.	1

(15b) Incomplete Story

Picture 1: John is at the library. At 2:00 he tells his friend that he will go home soon.

Picture 2: At 2:15 John says goodbye to his friend.

	English Native
John left the library.	1
John is leaving the library.	5
John was leaving the library.	5
John is at home already.	1

(16a) Complete Story

Picture 1: It is 8:58 at night. Mary wants to go shopping but the doors to the supermarket begin to close.

Picture 2: At 9:00 Mary goes home. She cannot go shopping tonight.

	English Native
The supermarket doors closed.	5
The supermarket doors are closing.	1
The supermarket doors were closing.	5
The supermarket doors are not closed yet.	1

(16b) Incomplete Story

Picture 1: It is 8:58 at night. Mary wants to go shopping but the doors to the supermarket begin to close.

Picture 2: At 8:59 Mary runs to the doors. The supermarket is still open.

	English Native
The supermarket doors closed.	1
The supermarket doors are closing.	5
The supermarket doors were closing.	5
The supermarket doors are closed already.	1

Distractor Stories

(17a)

Picture 1: Michael has three dogs.

Picture 2: Today he plays with the dogs in the park.

Michael was playing with cats in the park.	1
--	---

(17b)

Picture 1: Michael has three dogs.

Picture 2: Today he swims with the dogs in the pool.

Michael is in the pool with the dogs.	5
---------------------------------------	---

(18a)

Picture 1: On Sundays Karen and her family go to the beach.

Picture 2: Today Karen and her daughters play volleyball.

Karen was playing baseball on the beach.	1
--	---

(18b)

Picture1: On Sundays Karen and her family go to the beach.

Picture2: Today Karen and her daughters swim in the ocean.

Karen is at the beach with her family.	5
--	---

(19a)

Picture1: Steven works at bank.

Picture2: Today he works very hard on a report.

Steven was writing a report at the hospital.	1
--	---

(19b)

Picture1: Steven works at a bank.

Picture2: Today he talks to his friends on his phone all day.

Steven is at the bank today.	5
------------------------------	---

(20a)

Picture1: On Fridays Justin goes shopping with his girlfriend.

Picture2: Today Justin buys an expensive new jacket.

Justin was shopping with his brother.	1
---------------------------------------	---

(20b)

Picture1: On Fridays Justin goes shopping with his girlfriend.

Picture2: Today Justin buys a magazine at the bookstore.

Justin is at the bookstore with his girlfriend.	5
---	---

(21a)

Picture1: Jody is an art teacher in a junior high school.

Picture2: Today she teaches the class how to draw a portrait.

Jody was teaching math at the junior high school.	1
---	---

(21b)

Picture1: Jody is an art teacher in a junior high school.

Picture2: Today she teaches the class how to make pottery.

Jody is an art teacher at the junior high school.	5
---	---

(22a)

Picture1: David drinks wine every night with dinner.

Picture2: Tonight he drinks a red wine from Spain.

David was drinking beer with dinner.	1
--------------------------------------	---

(22b)

Picture1: David drinks wine every night with dinner.

Picture2: On Friday he drinks a white wine from South Africa.

David drinks wine with dinner.	5
--------------------------------	---

(23a)

Picture1: Amy has a little brother.

Picture2: On Saturday she watches a movie with her brother.

Amy was watching a movie with her sister.	1
---	---

(23b)

Picture 1: Amy has a little brother.

Picture 2: On Sunday she feeds the monkeys at the zoo with her brother.

Amy is at the zoo with her brother.	5
-------------------------------------	---

(24a)

Picture 1: Jen likes to cook Italian food.

Picture 2: Tonight she cooks pasta with mushrooms for her friends.

Jen was cooking French food for her friends.	1
--	---

(24b)

Picture 1: Jen likes to cook Italian food.

Picture 2: Tonight she cooks pork cutlets for her family.

Jen cooks Italian food for her family.	5
--	---

Appendix C: L2 English Grammaticality Judgment task instructions

On this test you will hear sentences in English. The same sentences will also appear on the screen. Please pay careful attention to these sentences. Your job is to decide whether the sentence on the screen is a good sentence in English or a bad sentence in English.

You will be asked to judge these sentences on a scale of 1-5. The chart below outlines the scale in detail:

1	This is <u>definitely</u> a bad sentence.
2	This is a <u>bad</u> sentence.
3	This <u>might</u> be a good sentence.
4	This is a <u>good</u> sentence.
5	This is <u>definitely</u> a good sentence.

You should circle your answers on the answer sheet. Feel free to use the whole scale.

Appendix C: L2 English Grammaticality Judgment task sentences

Sentence	Type	Verb type/ Filler type	G/U
Last week Robert cooked a steak on the barbecue.	Past	ACC	G
Last year the student painted the house on the corner.	Past	ACC	G
The chef wrote a book about sushi last month.	Past	ACC	G
Hannah read a book in the park yesterday.	Past	ACC	G
Next week my mother baked a pie for the school.	Past	ACC	U
Diana washed her car in the street tomorrow.	Past	ACC	U
Last week Steven eat a pizza at the restaurant.	Past	ACC	U
My friend draw a picture of Mt. Everest last year.	Past	ACC	U
Yesterday Bill arrived at the library at 4:00.	Past	ACH	G
Two years ago my friend returned to New York.	Past	ACH	G
Mike found his keys on the messy desk last week.	Past	ACH	G
My grandfather died in the hospital last year.	Past	ACH	G
Maria arrived at the school at 3:00 tomorrow.	Past	ACH	U
Tomorrow the library doors closed at 6:00.	Past	ACH	U
The doctor leave the hospital at 6:00 yesterday.	Past	ACH	U
Yesterday Sara notice a new student in her class.	Past	ACH	U
Last week my brother was building a house on the beach.	Past Prog.	ACC	G
Tom was drawing a picture of the mountains yesterday.	Past Prog.	ACC	G

Last month the artist was painting a picture of my house.	Past Prog.	ACC	G
Jane was writing a book about New York last month.	Past Prog.	ACC	G
Next week Tina was drinking a soda with her lunch.	Past Prog.	ACC	U
Next week the lawyer was running a marathon.	Past Prog.	ACC	U
Thomas was bake a cake for his friend yesterday.	Past Prog.	ACC	U
My sister was wash my car in the street yesterday.	Past Prog.	ACC	U
Yesterday at 6:00 Kim was arriving at the train station.	Past Prog.	ACH	G
The professor was leaving his office at 6:00 yesterday.	Past Prog.	ACH	G
My mother was returning home at 5:00 yesterday.	Past Prog.	ACH	G
Last week John was dying in the hospital.	Past Prog.	ACH	G
Tomorrow the lawyer was leaving the office at 8:00.	Past Prog.	ACH	U
Tomorrow Mari was coming to my house at 9:00.	Past Prog.	ACH	U
My girlfriend was return to Japan last week.	Past Prog.	ACH	U
Yesterday Dan was reach the peak of the mountain at 4:00.	Past Prog.	ACH	U
The professor is writing a book on Taiwan this month.	Present Prog.	ACC	G
Today Janet is singing a song in the school play.	Present Prog.	ACC	G
My mother is drinking a glass of wine right now.	Present Prog.	ACC	G
This week Mark is building a new desk for his son.	Present Prog.	ACC	G
The chef is making a new dessert yesterday.	Present Prog.	ACC	U
Last week Sam is running a marathon in Boston.	Present Prog.	ACC	U
Today John is draw a portrait of my family.	Present Prog.	ACC	U
My father is wash the dinner dishes right now.	Present Prog.	ACC	U
Sally is arriving in California next week.	Present Prog.	ACH	G
The doctor is returning to the hospital at 5:00.	Present Prog.	ACH	G
Today Sara is coming to my house for dinner.	Present Prog.	ACH	G
The car is stopping at the traffic light right now.	Present Prog.	ACH	G
Yesterday John is finding the keys to his car.	Present Prog.	ACH	U
The boss is leaving the office at 8:00 yesterday.	Present Prog.	ACH	U
Mari is return to Boston by plane today.	Present Prog.	ACH	U
Tomorrow the actress is come to New York.	Present Prog.	ACH	U
My grandmother always eats eggs for breakfast.	Filler	Word Order	G
Vicky usually goes shopping on Saturday.	Filler	Word Order	G
The teacher always drinks coffee before his class.	Filler	Word Order	G
Ken usually plays baseball after school every day.	Filler	Word Order	G
My brother washes always his car on Sunday.	Filler	Word Order	U
Jane walks usually to school in the morning.	Filler	Word Order	U
Brad watches always T.V. on Friday night.	Filler	Word Order	U
The athlete runs usually in the park by my house.	Filler	Word Order	U
The students play soccer during lunch at school.	Filler	S-V Agr	G

Kate goes to the train station at 8:00 every day.	Filler	S-V Agr	G
The teachers bring their lunch to school on Fridays.	Filler	S-V Agr	G
Tom wants to buy a new red sports car for his wife.	Filler	S-V Agr	G
The students plays baseball in the park near my house.	Filler	S-V Agr	U
Karen go to the supermarket every Saturday.	Filler	S-V Agr	U
The professors reads a new book every month.	Filler	S-V Agr	U
Sam want to study science at the university.	Filler	S-V Agr	U
Sally finished running in the park at 3:00.	Filler	compound	G
The teacher started reading the new book at 12:00.	Filler	compound	G
Tom finished doing his homework in the morning.	Filler	compound	G
The doctor started writing a report at 8:00.	Filler	compound	G
The nurse working started at 9:00 this morning.	Filler	compound	U
Michael reading finished the new magazine at 10:00.	Filler	compound	U
The athlete playing started baseball after school.	Filler	compound	U
Kim making finished the birthday cake last night.	Filler	compound	U

APPENDIX D: L2 JAPANESE MATERIALS

Appendix D: L2 Japanese Story Compatibility task stories

Accomplishments

(1a) Complete Story

Picture 1: ケン^がは画家^かです。12時にケン^はは家族^{かぞく}の絵^えを描き^か始め^{はじ}ます。

Picture 2: 8時に、ケン^はは、誕生^{たんじょうび}日^にプレゼント^をとしてお母^{かあ}さん^に絵^えを渡^{わた}します。

	Japanese native
ケン ^は は家族 ^{かぞく} の絵 ^え を描き ^か ました。	5
ケン ^は は家族 ^{かぞく} の絵 ^え を描き ^か ています。	1
ケン ^は は家族 ^{かぞく} の絵 ^え を描き ^か ていました。	5
ケン ^は は、家族 ^{かぞく} の絵 ^え を描き ^か 終え ^お ませんでした。	1
ケン ^は は、もう家族 ^{かぞく} の絵 ^え を描き ^か 終え ^お ました。	5

(1b) Incomplete Story

Picture 1: ケン^がは画家^かです。12時にケン^はは家族^{かぞく}の絵^えを描き^か始め^{はじ}ます。

Picture 2: 12時30分に、ケン^はは、お母^{かあ}さん^とお父^{とう}さんの絵^えを描き^か始め^{はじ}ます。

	Japanese native
ケン ^は は家族 ^{かぞく} の絵 ^え を描き ^か ました。	1
ケン ^は は家族 ^{かぞく} の絵 ^え を描き ^か ています。	5
ケン ^は は家族 ^{かぞく} の絵 ^え を描き ^か ていました。	5
ケン ^は は、家族 ^{かぞく} の絵 ^え を描き ^か 終え ^お ませんでした。	5
ケン ^は は、もう家族 ^{かぞく} の絵 ^え を描き ^か 終え ^お ました。	1

(2a) Complete Story

Picture 1: マリは作家です。1月に日本^{にほん}についての本^{ほん}を書き始め^かます。

Picture 2: 6月に、マリは、本^{ほん}を友達^{ともだち}に見^みせます。

	Japanese native
マリは、日本 ^{にほん} についての本 ^{ほん} を書き ^か ました。	5
マリは、日本 ^{にほん} についての本 ^{ほん} を書 ^か いています。	1
マリは、日本 ^{にほん} についての本 ^{ほん} を書 ^か いていました。	5
マリは、日本 ^{にほん} についての本 ^{ほん} を書 ^か き終 ^お えませんでした。	1
マリは、もう日本 ^{にほん} についての本 ^{ほん} を書 ^か き終 ^お えました。	5

(2b) Incomplete Story

Picture 1: マリは作家です。1月に日本^{にほん}についての本^{ほん}を書き始め^かます。

Picture 2: 3月に、マリは、本^{ほん}の第二^{だいにしやう}章^かを書^かき始め^{はじ}ます。

	Japanese native
マリは、日本 ^{にほん} についての本 ^{ほん} を書き ^か ました。	1
マリは、日本 ^{にほん} についての本 ^{ほん} を書 ^か いています。	5
マリは、日本 ^{にほん} についての本 ^{ほん} を書 ^か いていました。	5
マリは、日本 ^{にほん} についての本 ^{ほん} を書 ^か き終 ^お えませんでした。	5
マリは、もう日本 ^{にほん} についての本 ^{ほん} を書 ^か き終 ^お えました。	1

(3a) Complete Story

Picture 1: ミキはビーチが大好きです。1時に、ミキは砂の城を建て始めます。

Picture 2: 3時に、ミキは、友達に砂の城を見せます。

	Japanese native
ミキはビーチで砂の城を建てました。	5
ミキはビーチで砂の城を建てています。	1
ミキはビーチで砂の城を建てていました。	5
ミキはビーチで、砂の城を 建て終えませんでした。	1
ミキはビーチで、もう砂の城を建て終えました。	5

(3b) Incomplete Story

Picture 1: ミキはビーチが大好きです。1時に、ミキは砂の城を建て始めます。

Picture 2: 1時30分に、ミキは、城のタワーの部分を使っています。

	Japanese native
ミキはビーチで砂の城を建てました。	1
ミキはビーチで砂の城を建てています。	5
ミキはビーチで砂の城を建てていました。	5
ミキはビーチで、砂の城を 建て終えませんでした。	5
ミキはビーチで、もう砂の城を建て終えました。	1

(4a) Complete Story

Picture 1: サトシは、フランス文学の授業のために、山積みの本を読
まなければなりません。月曜日に、サトシは一冊目の本を読み始めます。

Picture 2: 金曜日に、サトシは最後の本を読み終わります。

	Japanese native
サトシは、授業のために山積みの本を よ 読みました。	5
サトシは、授業のために山積みの本を よ 読んでいます。	1
サトシは、授業のために山積みの本を よ 読んでいました。	5
サトシは、山積みの本を読み終わらせませんでした。	1
サトシは、授業のために、もう山積みの本を よ 読み終わりました。	5

(4b) Incomplete Story

Picture 1: サトシは、フランス文学の授業のために、山積みの本を読
まなければなりません。月曜日に、サトシは一冊目の本を読み始めます。

Picture 2: 火曜日に、サトシは四冊目の本を読みます。

	Japanese native
サトシは、授業のために山積みの本を よ 読みました。	1
サトシは、授業のために山積みの本を よ 読んでいます。	5
サトシは、授業のために山積みの本を よ 読んでいました。	5
サトシは、山積みの本を読み終わらせませんでした。	5
サトシは、授業のために、もう山積みの本を よ 読み終わりました。	1

(5a) Complete Story

Picture 1: ユキは12時に昼ごはんを食べます。一杯のラーメンを食べ始めます。

Picture 2: 1時に、ユキは空のどんぶりを捨てます。

	Japanese native
ユキは昼ごはん一杯のラーメンを食べました。	5
ユキは昼ごはん一杯のラーメンを食べています。	1
ユキは昼ごはん一杯のラーメンを食べていました。	5
ユキは昼ごはん、一杯のラーメンを食べ終えませんでした。	1
ユキは昼ごはん、もう、一杯のラーメンを食べ終えました。	5

(5b) Incomplete Story

Picture 1: ユキは12時に昼ごはんを食べます。一杯のラーメンを食べ始めます。

Picture 2: 12時15分です。ユキは、まだラーメンを食べます。

	Japanese native
ユキは昼ごはん一杯のラーメンを食べました。	1
ユキは昼ごはん一杯のラーメンを食べています。	5
ユキは昼ごはん一杯のラーメンを食べていました。	5
ユキは昼ごはん、一杯のラーメンを食べ終えませんでした。	5
ユキは昼ごはん、もう、一杯のラーメンを食べ終えました。	1

(6a) Complete Story

Picture 1: マリコは料理が好きです。3時に、マリコは、友達のためにケーキを作り始めます。

Picture 2: 5時に、マリコは、友達にケーキを出します。

	Japanese native
マリコは、友達のためにケーキを作りました。	5
マリコは、友達のためにケーキを作っています。	1
マリコは、友達のためにケーキを作っていました。	5
マリコは、ケーキを作り終えませんでした。	1
マリコは、友達のために、もうケーキを作り終えました。	5

(6b) Incomplete Story

Picture 1: マリコは料理が好きです。3時に、マリコは、友達のためにケーキを作り始めます。

Picture 2: 3時30分に、マリコは、ケーキの生地を混ぜます。

	Japanese native
マリコは、友達のためにケーキを作りました。	1
マリコは、友達のためにケーキを作っています。	5
マリコは、友達のためにケーキを作っていました。	5
マリコは、ケーキを作り終えませんでした。	5
マリコは、友達のために、もうケーキを作り終えました。	1

(7a) Complete Story

Picture 1: トモはコーラが好きです。3時に、学校が終わってから、コップ一杯のコーラを飲み始めます。

Picture 2: 3時30分に、トモは空のコップを流し台に置きます。

	Japanese native
トモは、学校が終わってから、コップ一杯のコーラを飲みました。	5
トモは、学校が終わってから、コップ一杯のコーラを飲んでいきます。	1
トモは、学校が終わってから、コップ一杯のコーラを飲んでいました。	5
トモは、学校が終わってから、コップ一杯のコーラを飲み終えませんでした。	1
トモは、学校が終わってから、もう、コップ一杯のコーラを飲み終えました。	5

(7b) Incomplete Story

Picture 1: トモはコーラが好きです。3時に、学校が終わってから、コップ一杯のコーラを飲み始めます。

Picture 2: 3時10分です。トモは、まだコーラを飲みます。

	Japanese native
トモは、学校が終わってから、コップ一杯のコーラを飲みました。	1
トモは、学校が終わってから、コップ一杯のコーラを飲んでいます。	5
トモは、学校が終わってから、コップ一杯のコーラを飲んでいました。	5
トモは、学校が終わってから、コップ一杯のコーラを飲み終えませんでした。	5
トモは、学校が終わってから、もう、コップ一杯のコーラを飲み終えました。	1

(8a) Complete Story

Picture 1: ^{こんばん} 今晚、^{いそが} ケイコは忙 ^じ しいです。8時に、ケイコは^{なが} 流 ^{だい} し台にある^{やまづ} 山積 ^{しよつき} みの^{あら} 食器 ^{あら} を洗 ^{はじ} い始め ^{はじ} ます。

Picture 2: 9時 ^じ です。食器 ^{しよつき} は全部 ^{ぜんぶ} きれ ^{きれ} いです。

	Japanese native
ケイコは、 ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} い始め ^{はじ} ました。	5
ケイコは、 ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} っています。	1
ケイコは、 ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} っていました。	5
ケイコは、 ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} い終 ^お えませ ^お ませんでした。	1
ケイコは、もう ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} い終 ^お えま ^お しました。	5

(8b) Incomplete Story

Picture 1: ^{こんばん} 今晚、^{いそが} ケイコは忙 ^じ しいです。8時に、ケイコは^{なが} 流 ^{だい} し台にある^{やまづ} 山積 ^{しよつき} みの^{あら} 食器 ^{あら} を洗 ^{はじ} い始め ^{はじ} ます。

Picture 2: 8時 ^じ 30分 ^{ぶん} です。ケイコは、まだ^{しよつき} 食器 ^{あら} を洗 ^{はじ} います。

	Japanese native
ケイコは、 ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} い始め ^{はじ} ました。	1
ケイコは、 ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} っています。	5
ケイコは、 ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} っていました。	5
ケイコは、 ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} い終 ^お えませ ^お ませんでした。	5
ケイコは、もう ^{なが} 流 ^{だい} し台にある ^{やまづ} 山積 ^{しよつき} みの ^{あら} 食器 ^{あら} を洗 ^{はじ} い終 ^お えま ^お しました。	1

Achievements

(9a) Complete Story

Picture 1: これは東京^{とうきょう}行きの飛行機^{ひこうき}です。今^{いま}、4時^じです。飛行機^{ひこうき}は空港^{くうこう}の
 近く^{ちか}です。

Picture 2: 5時^じです。乗客^{じょうきやく}は空港^{くうこう}にいます。

	Japanese native
ひこうき くうこう つ 飛行機は空港に着きました。	5
ひこうき くうこう つ 飛行機は空港に着いています。	5
ひこうき くうこう つ 飛行機は空港に着いていました。	5
ひこうき そら ひこうちゆう 飛行機はまだ空を飛行中です。	1

(9b) Incomplete Story

Picture 1: これは東京^{とうきょう}行きの飛行機^{ひこうき}です。今^{いま}、4時^じです。飛行機^{ひこうき}は空港^{くうこう}の
 近く^{ちか}です。

Picture 2: 風^{かぜ}が強い^{つよ}です。4時^じ30分^{ぶん}に飛行機^{ひこうき}はまだ空^{そら}を飛行中^{ひこうちゆう}です。

	Japanese native
ひこうき くうこう つ 飛行機は空港に着きました。	1
ひこうき くうこう つ 飛行機は空港に着いています。	1
ひこうき くうこう つ 飛行機は空港に着いていました。	1
ひこうき じょうきやく くうこう 飛行機の乗客は、空港にいます。	1

(10a) Complete Story

Picture 1: マキは、食べ物を買わなければなりません。3時に、マキは、スーパーマーケットに行くために家を出ます。

Picture 2: 4時です。マキはスーパーマーケットにいます。

	Japanese native
マキは、スーパーマーケットに行きました。	5
マキは、スーパーマーケットに行っています。	5
マキは、スーパーマーケットに行っていました。	5
マキは、まだスーパーマーケットに居ません。	1
マキは、もうスーパーマーケットに居ます。	5

(10b) Incomplete Story

Picture 1: マキは、食べ物を買わなければなりません。3時に、マキは、スーパーマーケットに行くために家を出ます。

Picture 2: 3時30分です。マキは、スーパーマーケットから1ブロック手前の所にいます。

	Japanese native
マキは、スーパーマーケットに行きました。	1
マキは、スーパーマーケットに行っています。	1
マキは、スーパーマーケットに行っていました。	1
マキは、まだスーパーマーケットに居ません。	5
マキは、もうスーパーマーケットに居ます。	1

(11a) Complete Story

Picture 1: タロウのちい いぬ びょうき小さな犬が病気です。月曜日に、犬は病院にと いしや い泊まらなければならないと医者が言います。

Picture 2: どようび いぬ いき土曜日に、犬は息をひきとります。

	Japanese native
<small>ちい いぬ びょういん し</small> 小さな犬は、病院で死にました。	5
<small>ちい いぬ びょういん し</small> 小さな犬は、病院で死んでいます。	5
<small>ちい いぬ びょういん し</small> 小さな犬は、病院で死んでいました。	5
<small>ちい いぬ ぐあい わる</small> 小さな犬は、とても具合が悪いです。	1

(11b) Incomplete Story

Picture 1: タロウのちい いぬ びょうき小さな犬が病気です。月曜日に、犬は病院にと いしや い泊まらなければならないと医者が言います。

Picture 2: もくようび いぬ し木曜日です。犬は死ぬかもしれないと医者が言います。タロウはしんぱい心配です。

	Japanese native
<small>ちい いぬ びょういん し</small> 小さな犬は、病院で死にました。	1
<small>ちい いぬ びょういん し</small> 小さな犬は、病院で死んでいます。	1
<small>ちい いぬ びょういん し</small> 小さな犬は、病院で死んでいました。	1
<small>ちい いぬ びょういん いき</small> 小さな犬は、病院で息をひきとりました。	1

(12a) Complete Story

Picture 1: ケイコは、ビーチの近くちかのレストランあのオーナーです。
朝8時あさ じにレストランを開ける準備じゅんびをします。

Picture 2: 10時じです。ケイコは、お客きやくに朝御飯あさごはんを出だします。

	Japanese native
ビーチの近く <small>ちか</small> のレストラン <small>あ</small> が開 <small>あ</small> きました。	5
ビーチの近く <small>ちか</small> のレストラン <small>あ</small> が開 <small>あ</small> いています。	5
ビーチの近く <small>ちか</small> のレストラン <small>あ</small> が開 <small>あ</small> いていました。	5
お客 <small>きやく</small> は、もう、レストラン <small>あ</small> にいます。	5

(12b) Incomplete Story

Picture 1: ケイコは、ビーチの近くちかのレストランあのオーナーです。
朝8時あさ じにレストランを開ける準備じゅんびをします。

Picture 2: 8時59分じ ふんです。レストランは、もう少しすこしで準備じゅんび
ができます。レストランは、あと1分ぶんで開あきます。

	Japanese native
ビーチの近く <small>ちか</small> のレストラン <small>あ</small> が開 <small>あ</small> きました。	1
ビーチの近く <small>ちか</small> のレストラン <small>あ</small> が開 <small>あ</small> いています。	1
ビーチの近く <small>ちか</small> のレストラン <small>あ</small> が開 <small>あ</small> いていました。	1
お客 <small>きやく</small> は、まだレストラン <small>あ</small> にいません。	1

(13a) Complete Story

Picture 1: 月曜日げつようびの朝あさ、タロウは空港くうこうにいます。タロウは、
日本にほんの家うちに帰かえります。

Picture 2: 火曜日かようびです。タロウは、両親りょうしんと一緒いっしょに日本にほんにいます。

	Japanese native
タロウは日本 <small>にほん</small> に帰 <small>かえ</small> りました。	5
タロウは日本 <small>にほん</small> に帰 <small>かえ</small> っています。	5
タロウは日本 <small>にほん</small> に帰 <small>かえ</small> っていました。	5
タロウは、まだ日本 <small>にほん</small> に居 <small>い</small> ません。	1
タロウは、もう日本 <small>にほん</small> に居 <small>い</small> ます。	5

(13b) Incomplete Story

Picture 1: 月曜日げつようびの朝あさ、タロウは空港くうこうにいます。タロウは、
日本にほんの家うちに帰かえります。

Picture 2: 1時間じかんご後ごです。タロウは、空港くうこうで飛行機ひこうきを待まちます。

	Japanese native
タロウは日本 <small>にほん</small> に帰 <small>かえ</small> りました。	1
タロウは日本 <small>にほん</small> に帰 <small>かえ</small> っています。	1
タロウは日本 <small>にほん</small> に帰 <small>かえ</small> っていました。	1
タロウは、まだ日本 <small>にほん</small> に居 <small>い</small> ません。	5
タロウは、もう日本 <small>にほん</small> に居 <small>い</small> ます。	1

(14a) Complete Story

Picture 1: ケイコはボストンにいます。12時に、ケイコはニューヨークにいる私^{わたし}の家族^{かぞく}に会うために電車^{でんしゃ}に乗ります。

Picture 2: 6時^じです。ケイコはニューヨークの私^{わたし}の家^{いえ}にいます。

	Japanese native
ケイコは、私 ^{わたし} の家 ^{いえ} にきました。	5
ケイコは、私 ^{わたし} の家 ^{いえ} に来ています。	5
ケイコは、私 ^{わたし} の家 ^{いえ} に来ていました。	5
ケイコは、まだ私 ^{わたし} の家 ^{いえ} に居ません。	1
ケイコは、もう私 ^{わたし} の家 ^{いえ} に居ます。	5

(14b) Incomplete Story

Picture 1: ケイコはボストンにいます。12時に、ケイコはニューヨークにいる私^{わたし}の家族^{かぞく}に会うために電車^{でんしゃ}に乗ります。

Picture 2: 3時^じです。ケイコは、まだニューヨーク行き^ゆの電車^{でんしゃ}の中^{なか}にいます。

	Japanese native
ケイコは、私 ^{わたし} の家 ^{いえ} にきました。	1
ケイコは、私 ^{わたし} の家 ^{いえ} に来ています。	1
ケイコは、私 ^{わたし} の家 ^{いえ} に来ていました。	1
ケイコは、まだ私 ^{わたし} の家 ^{いえ} に居ません。	5
ケイコは、もう私 ^{わたし} の家 ^{いえ} に居ます。	1

(15a) Complete Story

Picture 1: トモは図書館としょかんにいます。2時に、トモは友達ともだちに、
家いえに帰かえると言いいます。

Picture 2: 3時じです。トモは、図書館としょかんの外そとでバスを待まちます。

	Japanese native
トモは図書館 <small>としょかん</small> で出 <small>で</small> ました。	5
トモは図書館 <small>としょかん</small> で出 <small>で</small> ています。	5
トモは図書館 <small>としょかん</small> で出 <small>で</small> ていました。	5
トモは、バス停 <small>てい</small> に居 <small>い</small> ます。	5
トモは、もう家 <small>いえ</small> に居 <small>い</small> ます。	1

(15b) Incomplete Story

Picture 1: トモは図書館としょかんにいます。2時に、トモは友達ともだちに、
家いえに帰かえると言いいます。

Picture 2: 2時15分じ ふんに、トモは友達ともだちに「さようなら」と言いいます。

	Japanese native
トモは図書館 <small>としょかん</small> で出 <small>で</small> ました。	1
トモは図書館 <small>としょかん</small> で出 <small>で</small> ています。	1
トモは図書館 <small>としょかん</small> で出 <small>で</small> ていました。	1
トモは、バス停 <small>てい</small> に居 <small>い</small> ます。	1

(16a) Complete Story

Picture 1: 今、夜の8時58分です。マリは、買い物

をしようとしませんが、スーパーマーケットのドアが閉まり始めます。

Picture 2: 9時にマリは家に帰ります。今夜は買い物に行けません。

	Japanese native
スーパーマーケットのドアが閉まりました。	5
スーパーマーケットのドアが閉まっています。	5
スーパーマーケットのドアが閉まっていました。	5
マリは、スーパーマーケットで、 まだ買い物ができます。	1
マリは、スーパーマーケットで買い物できません。	5

(16b) Incomplete Story

Picture 1: 今、夜の8時58分です。マリは、買い物

をしようとしませんが、スーパーマーケットのドアが閉まり始めます。

Picture 2: 8時59分に、マリは、ドアに向かって

走ります。まだスーパーマーケットで買い物ができます。

	Japanese native
スーパーマーケットのドアが閉まりました。	1
スーパーマーケットのドアが閉まっています。	1
スーパーマーケットのドアが閉まっていました。	1
マリは、スーパーマーケットで、 まだ買い物ができます。	5
マリは、スーパーマーケットで買い物できません。	1

Distractors

(17a)

Picture 1: マコトの家には、3匹の犬がいます。

Picture 2: 今日、マコトは、公園で犬と遊びます。

マコトは、公園で、猫と遊んでいます。	1
マコトは、公園で犬と遊んでいます。	5

(17b)

Picture 1: マコトの家には、3匹の犬がいます。

Picture 2: 今日、マコトは、プールで犬と泳ぎます。

マコトは、犬と一緒にプールに居ます。	5
マコトは、プールで猫と泳いでいました。	1

(18a)

Picture 1: 日曜日に、カナコは、家族と一緒にビーチに行きます。

Picture 2: 今日、カナコと娘はバレーボールをします。

カナコは、ビーチで野球をしています。	1
カナコは、ビーチでバレーボールをしています。	5

(18b)

Picture 1: 日曜日に、カナコは、家族と一緒にビーチに行きます。

Picture 2: 今日、カナコと娘は海で泳ぎます。

カナコは、家族と一緒にビーチに居ます。	5
カナコは、夫と海で泳いでいます。	1

(19a)

Picture 1: タクヤは、銀行で働いています。

Picture 2: 今日、タクヤは、一生懸命レポートを書きます。

タクヤは、病院でレポートを書いています。	1
タクヤは、銀行でレポートを書いています。	5

(19b)

Picture 1: タクヤは、銀行で働いています。

Picture 2: 今日、タクヤは一日中、友達と電話で話します。

今日、タクヤは銀行に居ます。	5
タクヤは、電話でお母さんと話していました。	1

(20a)

Picture 1: 金曜日に、コウジは、ガールフレンドと買い物に行きます。

Picture 2: 今日、コウジは、高いジャケットを買います。

コウジは、弟と買い物をしています。	1
コウジは、ガールフレンドと買い物をしています。	5

(20b)

Picture 1: 金曜日に、コウジは、ガールフレンドと買い物に行きます。

Picture 2: 今日、コウジは、本屋で雑誌を買います。

コウジは、ガールフレンドと本屋に居ます。	5
コウジは、ガールフレンドにコンピューターを買っていました。	1

(21a)

Picture 1: アユミは、中学校の美術の先生です。

Picture 2: 今日、アユミは、生徒に絵の描き方を教えます。

アユミは、中学校で数学を教えています。	1
アユミは、中学校で美術を教えています。	5

(21b)

Picture 1: アユミは、^{ちゅうがっこう} 中学校の^{びじゆつ} 美術の^{せんせい} 先生です。Picture 2: 今日、^{きょう} アユミは、^{せいと} 生徒に^{とうき} 陶器の^{づく} 作り方を^{かた} 教えます。^{おし}

アユミは、 ^{ちゅうがっこう} 中学校の ^{びじゆつ} 美術の ^{せんせい} 先生です。	5
アユミは、ボーイフレンドに ^{とうき} 陶器の ^{づく} 作り方を ^{かた} 教えて ^{おし} いました。	1

(22a)

Picture 1: タカシは、^{まいばん} 毎晩、^{ばんごはん} 晩御飯と^{いっしょ} 一緒に^の ワインを^の 飲みます。Picture 2: ^{こんばん} 今晚、タカシは、^{あか} スペインの^の 赤ワインを^の 飲みます。

タカシは、 ^{ばんごはん} 晩御飯と ^{いっしょ} 一緒に ^の ビールを ^の 飲んで ^の います。	1
タカシは、 ^{ばんごはん} 晩御飯と ^{いっしょ} 一緒に ^{あか} 赤ワインを ^の 飲んで ^の います。	5

(22b)

Picture 1: タカシは、^{まいばん} 毎晩、^{ばんごはん} 晩御飯と^{いっしょ} 一緒に^の ワインを^の 飲みます。Picture 2: ^{きんようび} 金曜日に、タカシは、^{みなみ} 南^{しろ} アフリカの^の 白ワインを^の 飲みます。

タカシは、 ^{ばんごはん} 晩御飯と ^{いっしょ} 一緒に ^の ワインを ^の 飲みます。	5
タカシは、 ^{あさごはん} 朝御飯と ^{いっしょ} 一緒に ^の ワインを ^の 飲んで ^の いました。	1

(23a)

Picture 1: エミコには、^{おとうと} 弟が^の います。Picture 2: ^{どようび} 土曜日に、エミコは、^{おとうと} 弟と^{いっしょ} 一緒に^{えいが} 映画を^み 見ます。

エミコは、 ^{いもうと} 妹と ^{いっしょ} 一緒に ^{えいが} 映画を ^み 見えています。	1
エミコは、 ^{おとうと} 弟と ^{いっしょ} 一緒に ^{えいが} 映画を ^み 見えています。	5

(23b)

Picture 1: エミコには、^{おとうと}弟がいます。Picture 2: ^{にちようび}日曜日に、エミコは、^{おとうと}弟と^{いっしょ}一緒に^{どうぶつえん}動物園で^{さる}猿に^{えさ}餌をやります。

エミコは、 ^{おとうと} 弟と ^{いっしょ} 一緒に ^{どうぶつえん} 動物園に ^い 居ます。	5
エミコは、 ^{おとうと} 弟と ^{いっしょ} 一緒に ^{どうぶつえん} 動物園で ^{うま} 馬に ^{えさ} 餌をやっていました。	1

(24a)

Picture 1: ミナコは、^{りょうり}イタリア料理を^{つく}作るのが^す好きです。Picture 2: ^{こんばん}今晚、ミナコは、^{ともだち}友達のために、^{キノコ}キノコの^{つく}パスタを作ります。

ミナコは、 ^{ともだち} 友達のために、 ^{りょうり} フランス料理を ^{つく} 作っています。	1
ミナコは、 ^{ともだち} 友達のために、 ^{つく} パスタを作っています。	5

(24b)

Picture 1: ミナコは、^{りょうり}イタリア料理を^{つく}作るのが^す好きです。Picture 2: ^{こんばん}今晚、ミナコは、^{かぞく}家族のために、^{ポークカツレツ}ポークカツレツを^{つく}作ります。

ミナコは、 ^{かぞく} 家族のために、 ^{りょうり} イタリア料理を ^{つく} 作ります。	5
ミナコは、 ^{ともだち} 友達のために、 ^{りょうり} フランス料理を ^{つく} 作っていました。	1

Appendix D: L2 Japanese Grammaticality Judgment task sentences

Sentence	Type	Verb type/ Filler type	G/U
先週、タケシは、フライパンで肉 を焼きました。	Past	ACC	G
去年、学生は、家をペンキで塗(ぬ)りました。	Past	ACC	G
先月、シェフは、寿司についての本を書きました。	Past	ACC	G
昨日、ハナコは、公園で本を読みました。	Past	ACC	G
来週、お母さんは、学校でパイを焼きました。	Past	ACC	U
明日、ユミコは、青い車を洗いました。	Past	ACC	U
先週、タカシは、レストランでピザを食べます。	Past	ACC	U
去年、友達が、エベレスト山の絵を書きます。	Past	ACC	U
昨日、タロウは、4時に図書館に着きました。	Past	ACH	G
去年、友達が、ニューヨークに帰りました。	Past	ACH	G
先週、マコトは、机の中で鍵を見つけました。	Past	ACH	G
2年前、おじいさんが、病院で死にました。	Past	ACH	G
明日、マリコは、学校に3時に着きました。	Past	ACH	U
明日、デパートは、6時に閉まりました。	Past	ACH	U
昨日、先生は、6時に大学を出ます。	Past	ACH	U
昨日、マキは、クラスの新しい生徒に気づきます。	Past	ACH	U
先週、弟は、ビーチで家を建てていました。	te-ita	ACC	G
昨日、トモユキは、山の絵を描いていました。	te-ita	ACC	G
先月、画家が、私の家の絵を描いていました。	te-ita	ACC	G
昨日、マキは、先生に手紙を書いていました。	te-ita	ACC	G
来週、トモコは、家で、ジュースを飲んでいました。	te-ita	ACC	U

明日、お父さんは、マラソンを走っていました。	te-ita	ACC	U
昨日、トシオは友達にケーキを焼いています。	te-ita	ACC	U
昨日、弁護士が、赤い車を洗っています。	te-ita	ACC	U
昨日、6時に、キミコはフランスに着いていました。	te-ita	ACH	G
昨日、弟の友達が、家に来ていました。	te-ita	ACH	G
昨日、お母さんは家に帰っていました。	te-ita	ACH	G
先週、病院で、タロウが死んでいました。	te-ita	ACH	G
明日、8時に、弁護士はオフィスを出ていました。	te-ita	ACH	U
明日の午後、マリは私の家に来ていました。	te-ita	ACH	U
先週、私のガールフレンドは日本に帰ります。	te-ita	ACH	U
昨日、4時に、ダイスケは山の上に着きます。	te-ita	ACH	U
今月、マリは、ロシアについての本を書いています。	te-iru	ACC	G
今日、先生は学校で歌を歌っています。	te-iru	ACC	G
今、お母さんは一杯のワインを飲んでいます。	te-iru	ACC	G
今週、サチコは、新しい机を作っています。	te-iru	ACC	G
今、シェフは、レストランで、アイスクリームを作り。	te-iru	ACC	U
先週、マサはボストンでマラソンを走っています。	te-iru	ACC	U
今、タロウは、私の家で、犬の絵を描き。	te-iru	ACC	U
今、お父さんは、台所で、お皿を洗い。	te-iru	ACC	U
3時に、ミサコはカリフォルニアに着いています。	te-iru	ACH	G
10時30分に、医者は、病院を出ています。	te-iru	ACH	G
今日、ボーイフレンドが私の家に来ています。	te-iru	ACH	G
今、黒い車は信号で止まっています。	te-iru	ACH	G
10時30分に、タロウは、車の鍵を見つけ。	te-iru	ACH	U

8時30分に、サラリーマンは、オフィスを出。	te-iru	ACH	U
マリは、飛行機で、もうカリフォルニアに帰り。	te-iru	ACH	U
4時30分に、女の方は、ニューヨークに来。	te-iru	ACH	U
おばあさんは、いつも朝御飯に卵を食べます。	Filler	Word Order	G
カズコは、たいてい土曜日に買い物に行きます。	Filler	Word Order	G
先生は、いつも授業の前にコーヒーを飲みます。	Filler	Word Order	G
ケンは、たいてい学校の後に野球をします。	Filler	Word Order	G
弟は、日曜日に、車を洗いますいつも。	Filler	Word Order	U
サトコは、朝、学校まで歩いて行きますたいてい。	Filler	Word Order	U
カズオは、金曜日の夜に、テレビを見ますいつも。	Filler	Word Order	U
運動選手は、公園で走りますたいてい。	Filler	Word Order	U
私の先生は、毎日、新聞を読みます。	Filler	Particle	G
トモのガールフレンドはとても日本語が上手です。	Filler	Particle	G
ミキは、私の車をいつも運転したがります。	Filler	Particle	G
サトシは、毎週、アメリカの映画を見に行きます。	Filler	Particle	G
ハナコは、毎朝、私お母さんと話します。	Filler	Particle	U
ダイスケは、いつも、先生パソコンを借ります。	Filler	Particle	U
私友達は、フランス料理が好きです。	Filler	Particle	U
先生赤い車はとても汚いです。	Filler	Particle	U
先生は、12時にマラソンを走り終えました。	Filler	compound	G
ユリコは、3時に新しい本を読み始めました。	Filler	compound	G
トモユキは、9時に、朝御飯を食べ終えました。	Filler	compound	G
医者は、8時にレポートを書き始めました。	Filler	compound	G
医者は、今朝9時30分に始め働きました。	Filler	compound	U

マサは、10時に新しい雑誌を始め読みました。	Filler	compound	U
運動選手は、学校で野球を始めました。	Filler	compound	U
キミコは、昨日の夜、ケーキを終わりました。	Filler	compound	U

BIBLIOGRAPHY

- Aksu, A. (1978). Aspect and modality in the child's acquisition of the Turkish past tense. Ph.D. dissertation, Department of Psychology, University of California, Berkeley.
- Aksu-Koç, A. (1988). *The Acquisition of Aspect and Modality*. Cambridge: Cambridge University Press.
- Andersen, R.W. (1986). El desarrollo de la morfología verbal en el español como segundo idioma. In Jürgen Meisel (Ed.), *Adquisición del Lenguaje – Acquisicao da Linguagem*. Frankfurt: Klaus-Dieter Verbuert Verlag.
- Andersen, R.W. (1989). La adquisición de la morfología verbal. *Linguistica* 1: 89-141.
- Andersen, R.W. (1991). Developmental sequences: The emergence of aspect marking in Second language acquisition. In T. Huebner & C.A. Ferguson (Eds.), *Crosscurrents in second language acquisition and linguistic theories* (pp. 305-324). Amsterdam: John Benjamins.
- Andersen, R.W. and Y. Shirai. (1994). Discourse motivations for some cognitive acquisition principles. *Studies in Second Language Acquisition* 16: 133-156.
- Andersen, R.W. and Y. Shirai. (1996). Primacy of aspect in first and second language Acquisition: The pidgin/Creole connection. In W.C. Ritchie & T.K. Bhatia (Eds.) *Handbook of second language acquisition* (pp. 527-570). San Diego, CA: Academic Press.
- Antinucci, F. and Miller, R. (1976). How Children Talk about What Happened. *Journal of Child Language* 3: 167-189.
- Bach, E. (1986). The algebra of events. *Linguistics and Philosophy* 9: 5-16.
- Bailey, N. (1987). *The importance of meaning over form in second language system building: an unresolved issue*. Ph.D. dissertation, CUNY Graduate Center.
- Bailey, N. (1989). Discourse conditioned tense variation. In M. R. Eisenstein (Ed.), *The dynamic interlanguage: Empirical studies in second language variation* (pp. 279-296). New York: Plenum.
- Bailey, N., C. Madden and S. Krashen. (1974). Is there a "natural sequence" in adult second language learning? *Language Learning* 21: 235-243.
- Bardovi-Harlig, K. (1992). The relationship between form and meaning: a cross-sectional study tense and aspect in the interlanguage of learners of English as a second language. *Applied Psycholinguistics* 13: 253-278.

- Bardovi-Harlig, K. (1994). Anecdote or Evidence? Evaluating support for hypotheses concerning the development of tense and aspect. In E. Tarone, S.M. Gass and A.D. Cohen (Eds.), *Research methodology in second language acquisition* (pp. 41-60). Hillsdale, NJ: Erlbaum.
- Bardovi-Harlig, K. (1995). The interaction of pedagogy and natural sequences in the acquisition of tense and aspect. In F. Eckman, D. Highland, P.W. Lee, J. Mileham, & R. Rutkowski Weber (Eds.), *Second Language Acquisition Theory and Pedagogy*. Hillsdale, N.J.: Lawrence Erlbaum.
- Bardovi-Harlig, K. (1998). Narrative structure and lexical aspect: Conspiring factors in second language acquisition of tense-aspect morphology. *Studies in Second Language Acquisition* 20: 471-508.
- Bardovi-Harlig, K. (1999). From morpheme studies to temporal semantics tense-aspect Research in SLA. *Studies in Second Language Acquisition* 21: 341-382.
- Bardovi-Harlig, K. (2000). *Tense and aspect in second language acquisition: Form, meaning and use*. Oxford: Blackwell.
- Bardovi-Harlig, K. (2002). Analyzing aspect. In Y. Shirai and R. Salaberry (eds.), *Tense-Aspect Morphology in L2 acquisition*. Amsterdam: John Benjamins.
- Bardovi-Harlig, K. & Bergstrom, A. (1996). The acquisition of tense and aspect in SLA and FLL: A study of learner narratives in English (SL) and French (FL). *Canadian Modern Language Review* 52: 308-330.
- Bardovi-Harlig, K. and Bofman, T. (1989). Attainment of syntactic and morphological accuracy by advanced language learners. *Studies in Second Language Acquisition* 11: 17-34.
- Bardovi-Harlig, K. and Reynolds, D.W. (1995). The role of lexical aspect in the acquisition of tense and aspect. *TESOL Quarterly* 29: 107-131.
- Bayley, R. (1991). *Variation theory and second language learning: linguistics and social constraints on interlanguage tense marking*. Ph.D. dissertation, Stanford University.
- Bayley, R. (1994). Interlanguage variation and the quantitative paradigm: Past tense marking in Chinese-English. In E. Tarone, S. Gass and A. Cohen (Eds.), *Research Methodology in Second-Language Acquisition*. Hillsdale, NJ: Lawrence Erlbaum.
- Beck, M.-L. (1997). Viruses, parasites and optionality in L2 performance. Paper presented at the Second Language Research Forum, Michigan State University.

- Beck, M.-L. (1998). L2 acquisition and obligatory head movement: English-speaking learners of German and the local impairment hypothesis. *Studies in Second Language Acquisition* 20: 311-348.
- Behrens, H. (1993). *Temporal reference in German child language.: Form and function of early verb use*. Doctoral dissertation, University of Amsterdam.
- Benua, L. and H. Borer. (1996). The passive/anti-passive alternation. Paper presented at GLOW, Athens, April 1996.
- Bergstrom, A. (1995). The expression of past temporal reference by English-speaking learners of French. Ph.D. Dissertation, Pennsylvania State University
- Berman, R. and Slobin, D. (1994). *Relating Events in Narrative: a Crosslinguistic Development Study*. New Jersey: Erlbaum.
- Berwick, R.C. (1985). *The acquisition of syntactic knowledge*. Cambridge, MA: MIT Press.
- Bickerton, D. (1981). *Roots of Language*. Ann Arbor, MI: Karoma Publishers.
- Bickerton, D. (1984). The language bioprogram hypothesis. *Behavioral and Brain Sciences* 7: 173-188.
- Binnick, R. I. (1991). *Time and the verb: A guide to tense and aspect*. New York: Oxford University Press.
- Birdsong, D. (1992). Ultimate attainment in second language acquisition. *Language* 68: 706-755.
- Bloom, L. and Harner, L. (1989). On the Developmental Contour of Child Language: A Reply to Smith and Weist. *Journal of Child Language* 16: 207-16.
- Bloom, L., Lifter, K. and Hafitz, J. (1980). Semantics of Verbs and the Development of Verb Inflection in Child Language. *Language* 56: 386-412.
- Borer, H. (1994). The projection of arguments. In E. Benedicto and J. Runner (Eds.), *Functional Projections, UMOP 17*. University of Massachusetts: GLSA.
- Borer, H. (2005). *Structuring Sense. Volume II: The Normal Course of Events*. Oxford: Oxford University Press.
- Broman-Olsen, M. (1997). *A semantic and pragmatic model of lexical and grammatical aspect*. New York: Garland.

- Broman-Olsen, M. and A. Weinberg. (1999). Innateness and the Acquisition of Grammatical Aspect via Lexical Aspect. *Proceedings of the 23rd Boston University Conference on Language Development (BUCLD)*. Somerville: Cascadilla Press.
- Bronckart, J.P. and Sinclair, H. (1973). Time, Tense and Aspect. *Cognition* 2: 107-130.
- Brown, R. (1973). *A First Language*. Cambridge: Harvard University Press.
- Brun, D. (1999). Temporal interpretation of root infinitives during the OI stage in Russian. *Proceedings of ConSOLE VII*, University of Bergen, Norway.
- Bybee, J., R. Perkins, and W. Pagliuca. (1994). *The Evolution of Grammar: Tense, Aspect, and Modality in the Languages of the World*. Chicago, IL: University of Chicago Press.
- Cardinaletti, A. and M. Starke. (1994). The typology of structural deficiency. On the three grammatical classes. *Working Papers in Linguistics* Vol. 4 (2). Centro Linguistico Interfacoltà, Università degli Studi di Venezia.
- Cadinero, T. (1995). Formal instruction from a processing perspective: An investigation into the Spanish past tense. *Modern Language Journal* 79: 179-193.
- Carroll, S. (1999a). Adults' sensitivity to different sorts of input. *Language Learning* 49(1): 37-92.
- Carroll, S. (1999b). Putting 'input' in its proper place. *Second Language Research* 15(4): 337-388.
- Carroll, S. (2001). *Input and Evidence: The Raw Material of Second Language Acquisition*. Amsterdam: John Benjamins
- Chierchia, G. (1998). Reference to kinds across languages. *Natural Language Semantics* 6: 339-405.
- Chierchia, G. and S. McConnell-Ginet. (2000). *Meaning and Grammar: An Introduction to Semantics*. Cambridge, MA: MIT Press.
- Chomsky, N. (1981). *Lectures on government and binding*. Dordrecht: Foris.
- Chomsky, N. (1986). *Knowledge of language: its nature, origin, and use*. New York: Praeger.
- Chomsky, N. (1995). *The minimalist program*. Cambridge, MA: MIT Press.

- Chung, S. and A. Timberlake. (1985). Tense, aspect and mood. In T. Schopen (Ed.), *Language Typology and Syntactic Description, Volume 3. Grammatical Categories and the Lexicon*. Cambridge, UK: Cambridge University Press.
- Clahsen, H. and P. Muysken. (1989). The UG paradox in L2 acquisition. *Second Language Research* 5: 1-29.
- Collins, L. (1997). *The development of tense and aspect*. Paper presented at the Second Language Research Forum, Michigan State University, East Lansing, MI.
- Comrie, B. (1976). *Aspect*. Cambridge: Cambridge University Press.
- Coppieters, R. (1987). Competence differences between native and near-native speakers. *Language* 63: 544-573.
- Crain, S. and C. McKee. (1986). Acquisition of structural restrictions on anaphora. *Proceedings of the North Eastern Linguistic Society* 16: 94-110.
- Cziko, G. and K. Koda. (1987). A Japanese child's use of stative and punctual verbs. *Journal of Child Language* 14: 99-111.
- Davidson, D. (1969). True to the Facts. In D. Davidson (Ed.), *Inquiries into Truth and Interpretation* (1984), (pp. 37-54). Oxford, UK: Oxford University Press.
- Delidaki, S. and S. Varlokosta. (2003). Testing the aspect-first hypothesis: a preliminary investigation into the comprehension of tense in child Greek. In D. Bittner and N. Gagarina (Eds.), *ZAS Papers in Linguistics 29, Acquisition of Aspect* (pp. 73-84). ZAS, Berlin.
- Demirdache, H. and M. Uribe-Etxebarria. (1997). The syntax of temporal relations: A uniform approach to tense and aspect. In E. Curtis, J. Lyle & G. Webster (Eds.), *Proceedings of the 16th West Coast Conference on Formal Linguistics* (pp. 145-159). CSLI Publications, Stanford, California.
- Demirdache, H. and M. Uribe-Etxebarria. (2000). The primitives of temporal relations. In R. Martin, D. Michaels & J. Uriagereka (Eds.), (pp. 157-186), *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*. Cambridge, MA: MIT Press.
- Depraetere, I. (1995). On the necessity of distinguishing between (un)boundedness and (a)telicity. *Linguistics and Philosophy* 18: 1-19.
- De Swart, H. (1998). Aspect shift and coercion. *Natural Language and Linguistic Theory* 16(2): 347-385.

- De Villiers, J. and de Villiers, P. (1973). A cross-sectional study of the acquisition of grammatical morphemes. *Journal of Psycholinguistic Research* 2: 267-278.
- Dietrich, R., W. Klein and C. Noyau. (1995). *The acquisition of temporality in a second language*. Amsterdam: John Benjamins.
- Dittmar, N. (1981). On the verbal organization of L2 tense marking in an elicited translation task by Spanish immigrants in Germany. *Studies in Second Language Acquisition* 3: 136-164.
- Dowty, D. (1972). *Studies in the Logic of Verb Aspect and Time Reference in English, (Studies in Linguistics)* Department of Linguistics, University of Texas, Austin.
- Dowty, D. (1979). *Word meaning and Montague grammar*. Dordrecht and Boston: D. Reidel Publishing Co.
- Dowty, D. (1991). Thematic proto-roles and argument selection. *Language* 67: 547-619.
- Dulay, H. and M. Burt. (1973). Should we teach children syntax? *Language Learning* 23: 245-258.
- Epstein, S., S. Flynn and G. Martohardjono. (1996). Second language acquisition: Theoretical and experimental issues in contemporary research. *Behavioral and Brain Sciences* 19: 677-714.
- Eubank, L. (1994). Optionality and the initial state in L2 development. In T. Hoekstra and B. Schwartz (Eds.), *Language Acquisition Studies in Generative Grammar* (pp. 369-388). Amsterdam: John Benjamins.
- Eubank, L. (1996). Negation in early German-English interlanguage: more valueless features in the L2 initial state. *Second Language Research* 12: 73-106.
- Filip, H. (2005) The Telicity Parameter Revisited. *Semantics and Linguistic Theory (SALT) XIV*. Ithaca: CLC Publications, Department of Linguistics, Cornell University.
- Frege, G. (1892). On Sense and Reference. In P. T. Leach and M. Black (Eds.), *Translations from the Philosophical Writings of Gottlob Frege* (1952), (pp. 56-78). Oxford, UK: Oxford University Press.
- Fujii, T. (1966). Dooshi + te iru no imi [The Meaning of V+te iru]. *Kokugo Kenkyuushitsu* 5, Tokyo University.
- Gabriele, A., G. Martohardjono and W. McClure. (2003). Why *dying* is just as difficult as *swimming* for Japanese learners of English. *ZAS Papers in Linguistics* 29: 85-104.

- Gabriele, A. and G. Martohardjono. (in press). Investigating the role of transfer in the L2 acquisition of aspect. Proceedings of GASLA 7. Cascadilla Web Proceedings Project.
- Gabriele, A. (in progress). The interpretation of bare nominals in L2 Japanese.
- Gavruseva, E. (2002). Is There Primacy of Aspect in Child L2 Acquisition? *Bilingualism: Language and Cognition* 5(2): 109-113.
- Gavruseva, E. (2003). Aktionsart, aspect, and the acquisition of finiteness in early child grammar *Linguistics* 41(4): 723-755.
- Giacalone-Ramat, A. (1995). Tense and aspect in learner Italian. In: Pier Marco Bertinetto, Valentina Bianchi, Osten Dahl and Mario Squartini (Eds.), *Temporal Reference, Aspect and Actionality 2: Typological Perspectives*. Torino: Rosenberg and Sellier.
- Giorgi, A. and F. Pianesi. (1997). *Tense and Aspect: From Semantics to Morphosyntax*. New York: Oxford University Press.
- Gleitman, L. and Wanner, E. (1982). Language Acquisition: the State of the State of the Art. In E. Wanner and L. Gleitman (Eds), *Language Acquisition: the State of the Art*. Cambridge: Cambridge University Press.
- Gregg, K. (1996). The logical and developmental problems of second language acquisition. In W. Ritchie and T. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 49-81). San Diego: Academic Press.
- Grimshaw, J. and V. Samek-Lodovici. (1998). Optimal subjects and subject universals. In P. Barbosa, D. Fox, P. Hangstrom, M. McGinnis, and D. Pesetsky (Eds.), *Is the Best Good Enough? Optimality and Competition in Syntax* (pp. 193-219). Cambridge, MA: MIT Press.
- Grondin, N. and L. White. (1996). Functional categories in child L2 acquisition of French. *Language Acquisition* 5:1-34.
- Hakuta, K. (1985). *Mirror of Language, The Debate on Bilingualism*. New York: Basic Books, Inc.
- Harley, B. (1989). Functional grammar in French immersion: A classroom experiment. *Applied Linguistics* 10: 331-359.
- Harner, L. (1981). Children Talk about the Time and Aspect of Actions. *Child Development* 52: 498-506.
- Hawkins, R. and Y.-H. Chan. (1997). The partial availabilily of Universal Grammar in

second language acquisition: the 'failed functional features hypothesis'. *Second Language Research* 13: 187-226.

- Haznedar, B. and B. Schwartz. (1997). Are there optional infinitives in child L2 acquisition? In E. Hughes, M. Hughes and A. Greenhill (Eds.), *Proceedings of the 21st Annual Boston University Conference on Language Development* (pp. 257-268). Somerville, MA: Cascadilla Press.
- Hirakawa, M. (2001). L2 Acquisition of Japanese Unaccusative verbs. *Studies in Second Language Acquisition* 23: 221-245.
- Hoekstra, T. and N. Hyams. (1998). Aspects of root infinitives. *Lingua* 106: 91-112.
- Hopp, H. (2005). Constraining second language word order optionality: scrambling in advanced English-German and Japanese-German interlanguage. *Second Language Research* 21: 34-71.
- Hornstein, N. (1977). Towards a Theory of Tense. *Linguistic Inquiry* 8: 521-557.
- Hornstein, N. and D. Lightfoot (Eds.) (1981). *Explanation in Linguistics: The logical problem of language acquisition*. London: Longman.
- Housen, A. (2002). The development of tense-aspect in English as a second language and the variable influence of inherent aspect. In M. Salaberry and Y. Shirai (Eds.), *Tense-aspect morphology in L2 acquisition*. Amsterdam: John Benjamins.
- Huddleston, R. (1970). Some observations on tense and deixis in English. *Language* 45: 777-806.
- Hyams, N. (2002). Clausal structure in early Greek: A reply to Varlokosta et al and a reanalysis. *The Linguistic Review* 19: 225-269.
- Hyams, N. (2005). Aspect matters. To appear in: K.U. Deen, J. Nomura, B. Schulz & B. Schwartz (Eds.), *Proceedings to the Inaugural Conference on Generative Approaches to Language Acquisition - North America (GALANA)*. Cambridge MA: UCONN/MIT Working Papers in Linguistics.
- Inagaki, S. (2001). Motion verbs with goal PPs in the L2 acquisition of English and Japanese. *Studies in Second Language Acquisition* 23: 153-170.
- Inagaki, S. (2002). Japanese learners' acquisition of English manner of motion verbs with locational/directional PPs. *Second Language Research* 18: 3-27.
- Ionin, T. (2003). *Article Semantics in Second Language Acquisition*. PhD thesis, Department of Brain and Cognitive Sciences, MIT.

- Ionin, T. and K. Wexler. (2002). Why is 'is' easier than '-s'? acquisition of tense/agreement morphology by child second language learners of English. *Second Language Research* 18: 3-27.
- Ionin, T., H. Ko and K. Wexler. (to appear). Article semantics in L2-acquisition: the role of specificity. To appear in *Language Acquisition*.
- Ishida, M. (2004). Effects of Recasts on the Acquisition of the Aspectual Form *-te i-(ru)* by Learners of Japanese as a Foreign Language. *Language Learning* 54: 311-394.
- Jacobsen, W. (1992). *The Transitive Structure of Events in Japanese*. Tokyo: Kuroshio.
- Juffs, A. (1996). *Learnability and the lexicon: theories and second language acquisition research*. Amsterdam: John Benjamins.
- Juffs, A. (2000). An overview of the second language acquisition of links between verb semantics and morpho-syntax. In J. Archibald (Ed.), *Second language acquisition and linguistic theory* (pp. 187-277). Oxford: Blackwell.
- Juffs, A. and M. Harrington. (1995). Parsing effects in second language sentence processing: subject and object asymmetries in wh-extraction. *Studies in Second Language Acquisition* 17: 483-516.
- Kageyama, T. (1996). *Dooshi Imiron*. Tokyo: Kuroshio.
- Katz, J. (1966). *The Philosophy of Language*. New York: Harper and Row.
- Katz, J. (1972). *Semantic Theory*. New York: Harper and Row.
- Katz, J. and J.A. Fodor. (1963). The structure of a semantic theory. *Language* 39: 170-210.
- Kazanina, N. and C. Phillips. (submitted). A Developmental Perspective on the Imperfective Paradox.
- Kenny, A. (1963). *Action, emotion, and will*. London: Routledge & Kegan Paul.
- Kindaichi, H. (1950). Kokugo Dooshi no Ichibunrui. *Gengo Kenkyuu* 15: 48-63.
- Klein, E. and G. Martohardjono. (1999). Investigating Second Language Grammars: Some Conceptual and Methodological Issues in Generative SLA Research. In Klein, E. and G. Martohardjono (Eds.), *The Development of Second Language Grammars: A Generative Approach* (pp. 3-34). Amsterdam: John Benjamins.
- Klein, W. (1994). *Time in language*. London: Routledge.

- Klein, W. (1995). A time relational analysis of Russian aspect. *Language* 68: 525-552.
- Kosłowska-Macgregor, M. (2002). *The state of near-native grammar: a study of aspect in L2 Polish*. PhD dissertation in Linguistics, McGill University.
- Koyama, S. (1998). Nihongo gakusyusya ni yoru tensu asupekuto no syuutoku [The acquisition of tense-aspect by learners of Japanese]. Paper presented at the 9th National Meeting of the Japanese Association of Second Language Acquisition, Nagoya University, December.
- Kratzer, A. (1996). Severing the external argument from the verb. In J. Rooryck and L. Zaring (Eds.), *Phrase structure and the Lexicon* (pp. 109-137). Dordrecht: Kluwer.
- Krifka, M. (1989). Nominal reference, temporal constitution and quantification in event semantics. In R. Bartsch, J. van Benthem and P. Boas (Eds.), *Semantics and Contextual Expressions* (pp. 75-115). Dordrecht: Foris.
- Krifka, M. (1992). Thematic relations as links between nominal reference and temporal constitution. In I. Sag and A. Szabolcsi (Eds.), *Lexical Matters*. Palo Alto: CSLI.
- Kuczaj, S. (1976). *-ing, -s, and -ed: A study of the acquisition of certain verb inflections*. Unpublished doctoral dissertation, University of Minnesota, Minneapolis.
- Kuczaj, S. (1978). Why do children fail to overgeneralize the progressive inflection? *Journal of Child Language* 5: 167-171.
- Kudo, M. (1995). *Asupekuto/tensu taikee to tekusuto: Gendai nihongo no zikan no hyoogen*. Tokyo: Hitsuji Shobo.
- Kumpf, L. (1984). Temporal systems and universality in interlanguage: A case study. In: F. Eckman, L. Bell and D. Nelson (Eds.), *Universals of Second Language Acquisition*. Rowley, MA: Newbury House.
- Kurono, A. (1994). *Nihongo gakusyusya ni okeru tensu asupekuto no syuutoku ni tuite* [A study of the acquisition of tense and aspect by learners of Japanese]. Master's thesis, Nagoya University.
- Kurono, A. (1995). Syokyuu nihongo gakusyusya ni okeru -teiru no syuutoku ni tuite [On the acquisition of -teiru by elementary learners of Japanese]. *Nihongo Kyoiku* [Journal of Japanese Language Teaching] 87: 153-164.
- Landman, F. (1992). The Progressive. *Natural Language Semantics* 1: 1-32.

- Lardiere, D. (1998a). Case and tense in a fossilized steady state. *Second Language Research* 14: 1-26.
- Lardiere, D. (1998b). Dissociating syntax from morphology in a divergent end-state grammar. *Second Language Research* 14: 359-375.
- Lardiere, D. (2000). Mapping features to forms in second language acquisition. In J. Archibald (Ed.), *Second Language Acquisition and Linguistic Theory* (pp. 102-129). Oxford: Blackwell.
- Leech, G.N. (1971). *Meaning and the English verb*. Harlow, Essex: Longman.
- Leeman, J., I. Artegoitia, B. Fridman and C. Doughty. (1995). Integrating attention to form with meaning: Focus on form in content-based Spanish instruction. In R. Schmidt (Ed.), *Attention and awareness in foreign language learning* (pp. 217-258). (Technical Report 9). Honolulu, HI: Second Language Teaching and Curriculum Center, University of Hawaii at Manoa.
- Li, P. (1990). Aspect and adtionsart in child Mandarin. PhD dissertation, Faculty of Letters, Leiden University, the Netherlands.
- Li, P. and M. Bowerman. (1998). The acquisition of lexical and grammatical aspect in Chinese. *First Language* 18: 311-350.
- Li, P. and Y. Shirai. (2000). *The acquisition of lexical and grammatical aspect*. Berlin: Mouton de Gruyter.
- Mazurkewich, I. (1984). Dative questions and markedness. In F. Eckman et al. (Eds.), *Universals of Second Language Acquisition*. MA: Newbury Publishers.
- McClure, W. (1993). A Semantic Parameter: The Progressive in Japanese and English. In S. Choi (Ed.), *Japanese/Korean Linguistics, vol. 3*. Stanford, CA: CSLI.
- McClure, W. (1994). Syntactic Projections of the Semantics of Aspect. Unpublished Ph.D. Thesis, Cornell University.
- McClure, W. (1995). *Syntactic projections of the semantics of aspect*. Tokyo: Hituzi Syobo.
- McClure, W. (2004). Japanese 'iru' is not a copula: consequences for the progressive. Paper presented at the Workshop in Altaic Formal Linguistics, Turkey.
- Meisel, J. M. (1991). Principles of universal grammar and strategies of language use: On some similarities and differences between first and second language acquisition. In L. Eubank (Ed.), *Point counterpoint: Universal grammar in the second language* (pp.231-276). Amsterdam: John Benjamins.

- Meisel, J. M. (1997). The acquisition of the syntax of negation in French and German: Contrasting first and second language development. *Second Language Research* 13(3): 227-263.
- Mittwoch, A. (1991). In Defense of Vendler's Achievements. *Belgian Journal of Linguistics* 6.
- Montague, R. (1973). The proper treatment of quantification in ordinary English. In J. Hintikka, J. Moravcsik, and P. Suppes (Eds.), *Approaches to Natural Language*. Dordrecht: D. Reidel.
- Montrul, S. and R. Slabakova. (2002). Acquiring morphosyntactic and semantic Properties of aspectual tenses in L2 Spanish. In A.T. Perez-Lerouz and J. Liceras (Eds.), *The acquisition of Spanish morphosyntax: the L1-L2 connection* (pp. 113-149). Dordrecht: Kluwer.
- Montrul, S. and R. Slabakova. (2003). Competence similarities between native and near-native speakers: An investigation of the preterite-imperfect contrast in Spanish. *Studies in Second Language Acquisition* 25: 351-398.
- Nishi, Y. (2003). The effect of form-focused instruction on the acquisition of te-iru in Japanese. ms., Cornell University.
- Nishi, Y. & Shirai, Y. (2000), December. Asupekutozi teiru no imi: kaiwa doopasu no Bunseki kara [The semantics of the aspectual marker *-teiru*: A conversational Corpus analysis]. Paper presented at the 2nd Symposium on Spoken Language, Tokyo Institute of Technology.
- Nishikawa, Y. (1998). *-teiru* no syuutoku yooiin ni kansuru kenkyuu [A study of factors that influence the acquisition of *-teiru*]. BA thesis, Department of Japanese Language Teaching, Hiroshima University, Japan.
- Okuda, Y. (1978). Asupekuto no kenkyuu o megutte (zyoo). *Kyooiku Kokugo* 53: 33-44.
- Ogihara, T. (1998). The ambiguity of the *-te iru* form in Japanese. *Journal of East Asian Linguistics* 7: 87-120.
- Ogihara, T. (1999). Tense and aspect. In N. Tsujimura (Ed.) *The Handbook of Japanese Linguistics* (pp. 321-348). Blackwell.
- Olsen, M. and A. Weinberg. (1999). Innateness and the acquisition of grammatical aspect via lexical aspect. *BUCLD 23*. Cascadilla Press, Somerville, MA
- Papp, S. (2000). Stable and developmental optionality in native and non-native Hungarian grammars. *Second Language Research* 16: 173-200.

- Parsons, T. (1990). *Events in the semantics of English: A study in subatomic semantics*. Cambridge, MA: MIT Press.
- Perlmutter, D. (1978). Impersonal passives and the unaccusative hypothesis. *Proceedings of the Fourth Annual Meeting of the Berkeley Linguistics Society*: 157-189. Berkeley, University of California.
- Pinker, S. (1984). *Language learnability and language development*. Cambridge, MA: Harvard University Press.
- Pinker, S. (1989). *Learnability and cognition: the acquisition of argument structure*. Cambridge, MA: MIT Press.
- Prévost, P. and White, L. (2000). Missing surface inflection or impairment in second language acquisition? Evidence from tense and agreement. *Second Language Research* 16.
- Quick, D. (1997). L1 influence and primacy of aspect in adult second language acquisition. MA thesis, Department of Linguistics, University of Pittsburgh.
- Ramchand, G. (1997). *Aspect and Predication*. Oxford: Oxford University Press.
- Reichenbach, H. (1947). *Elements of Symbolic Logic*. New York: Free Press.
- Rispoli, M. (1981). The emergence of verb and adjective tense-aspect inflections in Japanese. MA thesis, Department of Psychology, University of Pennsylvania.
- Rispoli, M and Bloom, L. (1985). Incomplete and continuing: Theoretical issues in the acquisition of tense and aspect. *Journal of Child Language* 12: 471-474.
- Ritter, E. and S.T. Rosen. (1998). Delimiting events in syntax. In M. Butt and W. Geuder (Eds.), *The Projection of Arguments*. Stanford: CSLI.
- Ritter, E. and S.T. Rosen. (1996). Strong and weak predicates: reducing the lexical burden. *Linguistic Analysis* 26: 1-34.
- Robison, R. (1990). The primacy of aspect: Aspectual marking in English interlanguage. *Studies in Second Language Acquisition* 12: 315-330.
- Robison, R. (1993). *Aspectual marking in English interlanguage: A cross-sectional study*. Unpublished doctoral dissertation, University of California, Los Angeles.
- Robison, R. (1995). The aspect hypothesis revisited: a cross-sectional study of tense and aspect marking in interlanguage. *Applied Linguistics* 16: 344-370.

- Robertson, D. and A. Sorace. (1999). Losing the V2 Constraint. In E. Klein and G. Martohardjono (Eds.), *The Development of Second Language Grammars: A Generative Approach* (pp. 317-361). Amsterdam: John Benjamins.
- Rohde, A. (1996). The aspect hypothesis and emergence of tense distinctions in naturalistic L2 acquisition. *Linguistics* 34: 1115-1137.
- Rohde, A. (2002). The Aspect Hypothesis in naturalistic L2 acquisition: What uninflected and non-target-like verb forms in early interlanguage tell us. In R. Salaberry & Y. Shirai (Eds.), *Tense-aspect morphology in L2 acquisition* (pp. 199-220). Amsterdam: John Benjamins.
- Rosch, E. (1973). On the internal structure of perceptual and semantic categories. In T. Moore (Ed.), *Cognitive Development and the Acquisition of Language*. New York: Academic Press.
- Rosch, E. (1978). Principles of categorization. In E. Rosch and B. Lloyd (Eds.), *Cognition and Categorization*. Hillsdale, NJ: Lawrence Erlbaum.
- Rosch, E. and C. Mervis. (1975). Family resemblances: Studies in the internal structure of categories. *Cognitive Psychology* 7: 573-605.
- Rosen, S.T. (1999). The syntactic representation of linguistic events. *GLOT International* 4: 3-11.
- Rothstein, S. (2004). *Structuring Events: a study in the semantics of aspect*. MA: Blackwell.
- Ryle, G. (1949). *The Concept of Mind*. London.
- Salaberry, R. (1997). *The development of past tense aspect among adult academic L2 learners*. Ph.D. dissertation, Cornell University.
- Salaberry, R. and Y. Shirai (Eds.). (2002). *Tense-aspect morphology in L2 acquisition*. Amsterdam: John Benjamins.
- Schutze, C. (1996). *The empirical base of linguistics: grammaticality judgments and linguistic methodology*. Chicago: University of Chicago Press.
- Schwartz, B. (1993). On explicit and negative data effecting and affecting competence and linguistic behavior. *Studies in Second Language Acquisition* 15: 147-163.
- Schwartz, B. and M. Gubala-Ryzak. (1992). Learnability and grammar reorganization in L2A: against negative evidence causing the unlearning of verb movement. *Second Language Research* 8: 1-38.

- Schwartz, B. and Sprouse, R. (1994). Word order and nominative case in non-native language acquisition: a longitudinal study of (L1 Turkish) German interlanguage. In T. Hoekstra and B. Schwartz (Eds.), *Language Acquisition Studies in Generative Grammar*. Amsterdam: John Benjamins.
- Schwartz, B. and Sprouse, R. (1996). L2 cognitive states and the Full Transfer/Full Access model. *Second Language Research* 12: 40-72.
- Sheu, S. (1997). Tyuu-zyookyuu taiwanzin nihongo gakusyuusya ni yoru *teiru* no syuutokuni kansuru oodan kenkyuu [A cross-sectional study of the acquisition of *-te iru* by intermediate and advanced Taiwanese learners of Japanese]. *Nihongo Kyooiku* [Journal of Japanese Language Teaching] 95: 37-48.
- Shibata, M. (1999). The use of Japanese tense-aspect morphology in L2 discourse narratives. *Acquisition of Japanese as a Second Language* 2: 68-102.
- Shibata, M. (2000). Function of tense-aspect morphemes in second language discourse. Unpublished Ph.D. dissertation, University of Arizona.
- Shirai, Y. (1991). Primacy of aspect in language acquisition: Simplified input and prototype. Unpublished doctoral dissertation, University of California, Los Angeles.
- Shirai, Y. (1993). Inherent aspect and the acquisition of tense/aspect morphology in Japanese. In H. Nakajima & Y. Otsu (Eds.), *Argument structure: Its syntax and acquisition* (pp. 185-211). Tokyo: Kaitakusha.
- Shirai, Y. (1995). Tense-aspect marking by L2 learners of Japanese. In D. MacLaughlin and S. McEwen (Eds.), *Proceedings of the 19th Annual Boston University Conference on Language Development, Vol. 2* (pp. 575-586). Somerville, MA: Cascadilla Press.
- Shirai, Y. (1998). Where the progressive and resultative meet: Imperfective aspect in Japanese, Korean, Chinese and English. *Studies in Language* 22: 661-692.
- Shirai, Y. (2000). The semantics of the Japanese imperfective *-teiru*. An integrative approach. *Journal of Pragmatics* 32: 327-361.
- Shirai, Y. (2002). The aspect hypothesis in SLA and the acquisition of Japanese. *Acquisition of Japanese as a Second Language* 5: 42-61.
- Shirai, Y. and Anderson, R. (1995). The Acquisition of Tense-Aspect Morphology: a Prototype Account. *Language* 71: 743-762.
- Shirai, Y. and Kurono, A. (1998). The acquisition of tense/aspect marking in Japanese as a second language. *Language Learning* 48: 245-279.

- Shirai, Y. and Y. Nishi. (2005). How what we mean impacts how we talk: The Japanese imperfective marker *te-iru* in conversation. In J. Frodesen and C. Holten (Eds.), *The Power of Context in Language Teaching and Learning* (pp. 39-48). Boston, MA: Heinle and Heinle.
- Slabakova, R. (1997). *Zero acquisition: second language acquisition of the parameter of aspect*. Ph.D. thesis. McGill University.
- Slabakova, R. (2001). *Telicity in the second language*. Amsterdam: John Benjamins.
- Slabakova, R. (2002). Recent research on the acquisition of aspect: an embarrassment of riches? *Second Language Research* 18: 172-188.
- Slabakova, R. (2004). L2A of a semantic parameter. Paper presented at GASLA 7. Indiana University.
- Slabakova, R. and S. Montrul. (2002). Aspectual tenses in Spanish L2 acquisition: a UG perspective. In Y. Shirai and R. Salaberry (Eds.), *Tense-Aspect Morphology in L2 acquisition*. Amsterdam: John Benjamins.
- Slobin, D. I. (1981). The origins of grammatical encoding of events. In W. Deutsch (Ed.), *The Child's Construction of Language*. London: Academic Press.
- Slobin, D. I. (1985). Crosslinguistic evidence for the Language-Making Capacity. In D.I. Slobin (Ed.), *The crosslinguistic study of language acquisition, Vol. 2: Theoretical issues* (pp. 1157-1249). Hillsdale, NJ: Laurence Erlbaum Associates.
- Smith, C. (1980). The Acquisition of Time Talk: Relations Between Child and Adult Grammars. *Journal of Child Language* 7: 263-278.
- Smith, C. (1991/7). *The parameter of aspect*. Dordrecht: Kluwer.
- Sorace, A. (1993). Incomplete and divergent representations of unaccusativity in non-native grammars of Italian. *Second Language Research* 9: 22-48.
- Sorace, A. (1995). Acquiring argument structures in a second language: the unaccusative/unergative distinction. In L. Eubank, L. Selinker and M. Sharwood-Smith (Eds.), *The current state of interlanguage* (pp. 153-175). Amsterdam: John Benjamins.
- Sorace, A. (1999). Initial states, end states, and residual optionality in L2 acquisition. Proceedings of the *Boston University Conference on Language Development*. Somerville, MA: Cascadilla Press.

- Sorace, A. (2000a). Differential effects of attrition in the L1 syntax of L2 near-native speakers. *Proceedings of the Boston University Conference on Language Development*. Somerville, MA: Cascadilla Press.
- Sorace, A. (2000b). Syntactic optionality in nonnative grammars. *Second Language Research* 16: 93-102.
- Sorace, A. (2000c). Gradients in auxiliary selection with intransitive verbs. *Language* 76: 859-890.
- Sorace, A. (2003). Near-nativeness. In C. Doughty and M. Long (Eds.), *The Handbook of Second Language Acquisition*. Oxford: Blackwell.
- Sorace, A. (in press). Selective optionality in language development. To appear in L. Cornips and K. Corrigan (Eds.), *Biolinguistic and sociolinguistic accounts of syntactic variation*. Amsterdam: John Benjamins.
- Stephany, U. (1981). Verbal grammar in Modern Greek early child language. In P. Dale and D. Ingram (Eds.), *Child language: An International Perspective*. Baltimore, MD: University Park Press.
- Sugaya, N. (2001). Nihongo gakusyuu-sya no asupekuto syuutoku ni kansuru zyuudan kenkyuu: -teiru o tyuusin ni [A longitudinal study on the acquisition of aspect by learners of Japanese: The case of -teiru]. MA thesis, Ochanomizu University.
- Sugaya, N. (2002). Nihongo no tensu-asupekuto shuutoku ni kansuru jirei kenkyuu: Shizen shuutoku o shite kita Ro/Ei/Futsu-go bogo washa o taishoo ni [Case studies on acquisition of Japanese tense and aspect: Focusing on uninstructed learners of Japanese whose native languages are Russian, English and French]. In *Possibilities and limitations of natural acquisition of Japanese as a second language* (Final Report for the Grant-in-Aid for Scientific Research, pp. 102-114). Japan: Ministry of Education, Culture, Sports, Science and Technology.
- Sugaya, N. (2003). Nihongo gakushuusha no asupekuto shuutoku ni kansuru juudan kenkyuu: 'Doosa no juzoku' to 'kekka no jootai' no teiru o chuushin ni [A longitudinal study on the acquisition of aspect by learners of Japanese: Focusing on the progressive and the resultative state uses of -teiru]. *Nihongo Kyoiku* [Journal of Japanese Language Teaching] 119: 65-74.
- Tarski, A. (1944). The semantic conception of truth. *Philosophy and Phenomenological Research* 4: 341-375.
- Tenny, C. (1987). Grammaticalizing Aspect and Affectedness. Ph.D. dissertation, MIT.
- Tenny, C. (1994). *Aspectual roles and the syntax-semantics interface*. Dordrecht: Kluwer.

- Torrence, H. and N. Hyams. (2004). On the role of aspect in determining finiteness and temporal interpretation in early grammar. *Proceedings of GALA 2003*.
- Trahey, M. (1996). Positive evidence in second language acquisition: some long term effects. *Second Language Research* 12: 111-139.
- Trahey, M. and L. White. (1993). Positive evidence and preemption in the second language classroom. *Studies in second language acquisition* 15: 181-204.
- Travis, L. (1991). Derived objects, inner aspect and the structure of VP. Talk given at NELS, University of Delaware.
- Travis, L. (1994). Event Phrase and a theory of functional categories. In P. Koskinen (Ed.), *Proceedings of the Canadian Linguistic Association Meeting at the University of Calgary, Toronto Working Papers in Linguistics*.
- Travis, L. (2000). Event structure in syntax. In C. Tenny and J. Pustejovsky (Eds.), *Events as grammatical objects* (pp. 145-185). Stanford: CSLI.
- Uesaka, M. (1996). The *te-i-ru* construction in Japanese: interaction between aspect and syntax. Unpublished MA thesis, McGill University.
- Uozumi, T. (1998). *Tuiseki tyoosa ni mirareru –teiru no syuutoku zyookyoo* [The acquisition of –teiru in the follow-up study]. Final report for the Grant-in-Aid for scientific research “Basic research on the development of speaking ability and environment of use in Japanese by researchers from overseas” (pp. 100-111). (PI: Akito Ozaki, Nagoya University).
- Valian, V. (1990). Null subjects: A problem for parameter-setting models of language acquisition. *Cognition* 35: 105-122.
- Valian, V. (in progress). Young Children’s Understanding of Present and Past Tense.
- Van Hout, A. (1996). Event semantics of verb frame alternations. A case study of Dutch and its acquisition. Ph.D. dissertation, Tilburg University.
- Van Hout, A. (1998). On the role of the direct object and particles in learning telicity in Dutch and English. In A. Greenhill (Ed.), *Proceedings of the 22nd Boston University Conference on Language Development*. Somerville, MA: Cascadilla Press.
- Varlokosta, S. (2002). On the semantic properties of non-finite clause in early child Greek. *Reading Working Papers in Linguistics* 6: 133–159.

- Van der Feest, S. and A. van Hout. (2002). Tense comprehension in Child Dutch. In B. Skarabela, S. Fish, & A.-H. Do (Eds.), *Proceedings of the 26th Annual Boston University Conference on Child Language Development* (pp. 734-745). Somerville, MA: Cascadilla Press.
- Van Hout, A. and B. Hollebrandse. (2001). On the acquisition of aspects in Italian. In A. Werle, J. Kim (Eds.), *Proceedings of SULA. The Semantics of Underrepresented Languages of the Americas. University of Massachusetts Occasional Papers in Linguistics*. Amherst, MA: GLSA.
- Vendler, Z. (1967). Verbs and times. In Z. Vendler (Ed.), *Linguistics in Philosophy*. Ithaca: Cornell University Press.
- Verkuyl, H. (1972). *On the compositional nature of the aspects*. Dordrecht: Kluwer.
- Verkuyl, H. (1993). *A theory of aspectuality: the interaction between temporal and atemporal structure*. Cambridge: Cambridge University Press.
- Verkuyl, H. (1999). *Aspectual Issues: Studies in time and quantity*. vol. 29. CSLI.
- Vinnitskaya, I. and K. Wexler. (2001). The role of pragmatics in the development of Russian aspect. *First Language* 21: 143-186.
- Wagner, L. (1997). Acquiring viewpoint aspect one level at a time. Institute for Research in Cognitive Science Report 97-01, University of Pennsylvania.
- Wagner, L. (2001). Aspectual influences on early tense comprehension. *Journal of Child Language* 28: 661-681.
- Wagner, L. (2002). Understanding completion entailments in the absence of agency cues. *Journal of Child Language* 29: 109-125.
- Weist, R. (2002). The first language acquisition of tense and aspect: A review. In M. Salaberry and Y. Shirai (Eds.), *Tense-aspect morphology in L2 acquisition*. Amsterdam: John Benjamins.
- Weist, R., H. Wysocka, K. Witkowska-Stadnik, E. Buczowska and E. Konieczna. (1984). The Defective Tense Hypothesis: On the Emergence of Tense and Aspect in Child Polish. *Journal of Child Language* 11: 347-374.
- Weist, R., H. Wysocka and P. Lyytinen. (1991). A cross-linguistic perspective on the development of temporal systems. *Journal of Child Language* 18: 67-92.
- Wexler, K. and P. Culicover. (1980). *Formal principles of language acquisition*. Cambridge, MA: MIT Press.

- White, L. (1987). Children's overgeneralization of the dative alternation. In K. Nelson and A. van Kleeck (Eds.), *Children's Language*, Vol. 6. Hillsdale, NJ: Erlbaum.
- White, L. (1990/91). The verb-movement parameter in second language acquisition. *Language Acquisition* 1: 337-60.
- White, L. (1992). On triggering data in L2 acquisition: a reply to Schwartz and Gubala-Ryzak. *Second Language Research* 8: 120-137.
- White, L. & Genesee, F. (1996). How native is near-native? The issue of ultimate attainment in adult second language acquisition. *Second Language Research* 12: 233-265.
- White, L. (2003). *Second Language Acquisition and Universal Grammar*. Cambridge: Cambridge University Press.
- Yoshikawa, T. (1973). Gendai Nihongo Dooshi-no Asupekuto-no Kenkyuu [A study of Aspect of Verbs in Modern Japanese] Reprinted in *Nihongo Dooshi-no Asupekuto* [Aspect of Japanese verbs]. H. Kindaichi (Ed.) Tokyo: Mugi Shoboo.