

THE PERCEPTIONS OF THE JAPANESE IMPERFECTIVE ASPECT MARKER –
TEIRU AMONG NATIVE SPEAKERS AND L2 LEARNERS OF JAPANESE

by

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THESIS ABSTRACT

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Title: The Perceptions of the Japanese Imperfective Aspect Marker *-teiru* among Native Speakers and L2 Learners of Japanese

The Japanese imperfective aspect marker *-teiru* is one of the most widely researched tense/aspect markers because of its multiple semantic functions. It has been claimed that the *-teiru* form can describe two main aspectual meanings, progressive and resultative, depending on the lexical aspect of the attached verb. The present study aims to empirically investigate native speakers' interpretations of the *-teiru* meaning with different verb and sentence types through a judgment test. It compares them with the predicted semantic categories from the previous studies, which based their conclusion upon introspective analysis, as well as perceptions of L2 Japanese learners. The results suggest that overall perceptual patterns are consistent with predicted descriptions but also that interpretations of the meaning are flexible to some extent. As for learners' perceptions, the results indicate that L2 learners develop progressive semantic processing in Japanese faster than resultative semantic processing in Japanese.

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CHAPTER I

INTRODUCTION

The concept of tense and aspect is one of the key components of languages and communication because time reference and temporality often need to be expressed correctly in order to understand and be understood by others. Aspect is one of the linguistic categories that express how a speaker views the temporality of a described situation. The acquisition of tense-aspect in first language (L1) as well as in the second language (L2) has been widely investigated and considered as an important research field (Brandovi-Harlig, 1999, 2000; Brown, 1973; Ramsay, 1990; Shirai, 1991, 1993; Weist 2002). Both L1 and L2 acquisition research, including the aspect theory (Anderson & Shirai, 1994; Smith 1997), emphasize a strong tendency that inherent lexical aspect of verbs are associated with tense-aspect morphology, a relationship formulated in the aspect hypothesis (Andersen & Shirai, 1994, 1996; Brandovi-Harlig, 1999, 2000; Robison, 1995; Shirai, 1998), that claims language learners are largely influenced by the lexical aspect of verbs when using tense-aspect markers in their language. The Japanese imperfective aspect marker *-teiru* is one of those widely researched aspect markers and has being argued that it can express both progressive and resultative meaning (Shirai, 1998). On one hand, the literatures maintain the strong association between the inherent aspect of the verb and the *-teiru* meaning. On the other hand, it has been also pointed out that the distinction between progressive and resultative is not clear-cut in some cases and contexts (Shirai, 2000); furthermore, all the previous studies based their arguments upon their introspective analysis.

The aim of the present study is thus two-fold. First, it empirically investigates the semantics of the Japanese imperfective aspect marker *-teiru* by examining the interpretation of the meaning of *-teiru* sentences by linguistically naïve Japanese speakers. The purpose of this analysis is to examine to what extent the language users' perceptions corresponds to the existing theories of this grammatical marker. Second, this study investigates the acquisition of the imperfective aspect maker by L2 learners in order to inform the theories of L2 acquisition of tense aspect system and compare them with previous works on L2 acquisition of *-teiru*. This chapter continues with discussions of the lexical aspect, the Japanese imperfective aspect marker *-teiru*, acquisition of *-teiru* by second language learners of Japanese, and research goals.

The Lexical Aspect

First of all, the categories of the inherent aspect of verbs should be described in order to understand that the inherent aspect plays a crucial role in the aspect hypothesis. Vendler (1967) categorized verbs into four classes based on the aspectual meaning inherent in their lexical information. Vendler's analysis, probably the most frequently used and accepted in the literature, classified verbs into four categories based on their inherent lexical aspects: state, activity, accomplishment, and achievement verbs. Figure 1 adopts the illustrations presented in Smith (1971) and Shirai (2012) to describe the Vendler's verb categories.

Table 1.1. Inherent lexical aspects.

Lexical Aspect	Graphic Representation	Examples	Semantic features
State	<hr/>	love, know	[-dynamic] [-telic] [-punctual]
Activity	~~~~~	run, walk, swim	[+dynamic] [-telic] [-punctual]
Accomplishment	~~~~~X	paint a picture, make a chair	[+dynamic] [+telic] [-punctual]
Achievement	X	fall, drop, die	[+dynamic] [+telic] [+punctual]

A state verb (e.g., love, know) is a verb that describes a continuous situation without any dynamic movements/actions and changes unless the situation is externally forced to change. It thus includes features of [-dynamic] (does not involve movements), [-telic](does not have a specific endpoint), and [-punctual](does not involve instant changes). An activity verb (e.g., run, walk) refers to a dynamic and durative situation where there is a potential terminal point of the action and is [+dynamic], [-telic], and [-punctual]. An accomplishment verb (e.g., paint a picture, make a chair) describes a situation in the same way as that of an activity verb but has a specific endpoint of the action described and thus includes [+dynamic], [+telic], and [-punctual]. An achievement verb (e.g. fall, die) is a verb that involves dynamic and instant changes and includes all the three semantic features, [+dynamic], [+telic], and [+punctual].

The four inherent lexical aspects of verbs described in Table 1, as mentioned previously, strongly interact with grammatical tense-aspect markers in a language and how L1 and L2 learners use the markers to express certain meanings (Comrie, 1976; Ryu & Shirai, 2014; Shirai, 2000; Smith, 1997; Sohn, 1995). In the following section, how

the inherent aspect of verbs interacts with the Japanese imperfective aspect marker *-teiru* is discussed.

The Japanese Imperfective Aspect Marker *-Teiru*

One of the most widely researched tense/aspect markers in Japanese is the imperfective aspect marker *-teiru*, which can express different meanings, depending on the lexical aspect of the verb to which it is attached. Imperfective aspect refers to a perspective that views a situation from within, meaning that it focuses on the temporality or duration of the situation, not regarding the beginning or ending point of the situation. In English, for example, the progressive marker “be *-ing*” can express the following meaning, depending on the inherent aspect of the verb to which it is attached:

Activity verbs: action in progress

- (1) He is running.
- (2) He is singing.

Accomplishment verbs: action in progress

- (3) He is making a chair.
- (4) He is running a mile.

Achievement verbs: process leading up to the endpoint

- (5) He is arriving at the airport.
- (6) He is leaving.

The interaction between the lexical aspect of the verb and grammatical aspect marking, shown above, can also be observed in Japanese. Japanese uses the *-teiru* form to express

imperfective meaning. As in English, activity and accomplishment verbs combined with *-teiru* typically denote a progressive meaning. However, the meaning of *V + -teiru* phrase is not completely the same as in English and is slightly different in other verb categories. Some scholars have claimed that, in addition to a progressive meaning, the *-teiru* marker can also denote a resultative (and perfect) meaning (Harasawa, 1994; Shirai, 2000), as described in the following:

Activity verbs: action in progress

(7)

Kare-wa	utat-te iru
He-TOP	sing-ASP-NPST
He is singing.	

Accomplishment verbs: action in progress/perfect

(8)

Kare-wa	isu-o	tukut-te iru
He-TOP	chair-ACC	make-ASP-NOST
He is making a chair.		

(9)

Kare-wa	isu-o	mittsu	tsukut-te iru
He-TOP	chair-ACC	three	make-ASP-NOST
He is making three chairs.			
Or			
He has made three chairs.			

Achievement verbs: resultative state

(10)

Kare-wa	shin-de iru
He-TOP	die-ASP-NPST
He is dead.	

State verbs:

(11)

Kare-wa	kanojo-o	shitteiru
He-TOP	her-OBJ	know-ASP-NPST
He knows her.		

As described above, both activity and accomplishment verbs denote progressive states when attached to *-teiru*. When verb types involve dynamic durative actions as in activity and accomplishment verbs, *V + -teiru* phrases express the on-going nature of the durative action. In addition to progressive meaning, accomplishment verbs can describe perfect states, as illustrated in (9). The difference between activity verbs and achievement verbs is that achievement verbs have a specific end point of the action described. Since achievement verbs have a specific end of the action, perfect sense can be expressed by specifying the completed action, as in “has made three chairs” in (9). Accomplishment verbs with *-teiru* thus can describe the perfect state in which the action has been done. Consequently, accomplishment verbs can have two different interpretations of the meaning when attached to *-teiru*. In (9), the action can be interpreted as the ongoing process of making a chair as the English translation “He is making three chairs” indicates and also as the resultant state after having made three chairs, “He has made three chairs.” In contrast to activity and accomplishment verbs, achievement verbs are punctual, meaning no duration exists in their actions. This characteristic makes those verbs distinguishable from activity and accomplishment verbs. By definition, achievement verbs have no inherent duration. Thus, instead of expressing on-going-ness of the action, they describe a state resulting from the action. This has been described as a resultative meaning. As described in (10), the verb *shinu* “to die” is an achievement verb that

expresses an instant change of the state and therefore denotes a resultative state when attached to *-teiru*. Unlike in English where the verb “die” can be progressive with the *-ing* marker, the verb *shinu* in Japanese cannot be progressive and only expresses resultative meaning with *-teiru*. In some instances, *-teiru* is combined with state verbs, as in (11). Some scholars have claimed that the meaning of *-teiru* with state verbs is rather ambiguous, but it can possibly be considered as resultative due to the fact that it involves change of state. State verbs with *-teiru* can be more complicatedly analyzed in details, but state verbs will not be discussed here as they were not included in the experiment of the present study.

As mentioned, the inherent aspect of the verb seems to interact with the meaning of *-teiru*; however, the inherent aspect of the verb alone does not seem to determine the semantics of the *-teiru* form in some conditions. For instance, Shirai (2000) provided claims that the same exact verb can be interpreted as accomplishment or achievement, depending on how one sees the situation denoted by the verb.

(12) Open a box → Open by pushing a button → Achievement

(13) Open a box → Open a carefully wrapped box → Accomplishment
(Shirai, 2000)

As described in (12) and (13), the same verb, “open,” can be construed as achievement when one perceives the action as instant, or accomplishment when one perceives the action as durative. The important point here is that these kinds of interpretative variations can be applied in Japanese as well since it is not that language-specific semantics are being interpreted differently but that how the action itself proceeds in reality is interpreted differently. In other words, the interpretation of the situation is

contextually determined and depends on other lexical cues that create specific contexts in any languages.

Furthermore, in some conditions, activity verbs can be construed as perfect sense when attached with the *-teiru* form.

(14)

Kare-wa	kyo	sudeni	oyoi-de iru
He-TOP	today	already	swim-ASP-NPST
He has already swum today.			

(15)

Kare-wa	sanjikan-mae-kara	hashit-te iru
He-TOP	three:hours-before-since	run-ASP-NPST
He has been running since three hours ago.		

(Shirai, 2000)

In (14), the meaning of *-teiru* is not progressive here, even though the verb, “swim,” here is an activity verb because the word, “already,” implies that the action is completed.

Therefore, depending on lexical cues, such as “already,” the meaning of *-teiru* can vary, regardless of which type of verb it is attached to. In other words, some lexical cues, such as an adverb, can create enough contexts to render different meanings of *-teiru* from the meaning solely interpreted based on the inherent aspect of the verb. However, as described in (15), *-teiru* can also still express progressive meaning with perfect sense.

The sentence in (15) describes a past situation, “running,” that still continues to the current moment. Thus, in this particular case, the *-teiru* form can describe both progressive and perfect sense at the same time, which, again, suggests that the meaning of *-teiru* depends on the context of the sentence.

In addition, several verb-specific problematic cases that allow multi-interpretations of the aspect of the verb have been closely discussed and analyzed in Shirai's (2000) paper. One of the examples is a verb, *neru* "sleep," which is often considered to be an activity verb but can also be perceived as an achievement verb from a different point of view. When the verb is attached with *-teiru*, it can express a progressive meaning as an ongoing sleeping action, but it can also express resultative meanings if one considers the state as a result of "falling asleep." Therefore, depending on how one perceives the inherent aspect of the verb, the meaning that the *-teiru* form will express varies, and a certain ambiguity in boundaries between the verb categories and interpretations of the meaning exists.

Hence, what the previous literature implied is the fact that the semantics of the *-teiru* form and the interpretation of the meaning of a verb + *-teiru* form are not deterministic but rather dependent on how one perceives the situation that verb(s) and other lexical items in the sentence describe. In other words, the meaning of the Japanese imperfective aspect marker *-teiru* is, to some extent, determined by one's individual perception/interpretation; however, no studies that focus on empirically examining native speakers' perceptions directly have been conducted. The issue here is that all the previous studies on the V + *-teiru* meaning based their conclusions upon researchers' own introspective analysis and interpretations, despite the fact that the meaning of *-teiru* to some extent depends on one's individual perspectives on how to look at the situation. The present study was thus conducted in order to closely examine how linguistically naïve Japanese language users perceived the meaning of *-teiru* in different conditions.

If the description provided in the previous literatures always holds true, the following relationship between the inherent aspect of verbs and meaning of the *-teiru* form would always be expected.

Table 1.2. Predicted categories of *-teiru* meanings.

Verb Type	Meaning in a <i>-teiru</i> form
Activity verbs	Progressive
Accomplishment verbs	Progressive / Resultative (perfect)
Achievement verbs	Resultative

Some linguists (Fujii, 1966; Kudo, 1989) have distinguished perfect from resultative by claiming that the resultative use of *-teiru* emphasizes the resultative state only whereas perfect use of *-teiru* focuses the past action and its current relevance. However, perfect meaning is considered as a resultative meaning in the present study since some other have claimed that perfect meaning is rather extended and driven from resultative meaning and basically expresses the same state resulting from the past action, which distinction is highly improbable to be theoretically proven (Bybee et al, 1994; Shirai, 2000).

Acquisition of *-Teiru* by Second Language Learners of Japanese

After the studies that focused on the L1 acquisition of tense-aspect expanded, L2 acquisition of the same field has also received much attention and developed over the last decades. Needless to say, the acquisition of *-teiru*, which can be contracted to the form, *-teru*, frequently in speech (Kijelmer, 1997), is one of the tense-aspect forms that have been extensively researched.

Shirai and Kurono (1998) took up the *-teiru* form as an important aspect marker in the process of L2 acquisition and investigated learners of Japanese to examine the applicability of the Aspect Hypothesis(AH) that predicts developmental patterns of tense-

aspect acquisition in L1 and L2. The AH argues that “first and second language learners will initially be influenced by the inherent semantics aspect of verbs or predicates in the acquisition of tense and aspect markers associated with or affixed to these verbs” (Andersen & Shirai, 1994: p. 133). Furthermore, one of the principles of the AH is that “in those languages that have progressive aspect, progressive marking begins with activity verbs, then extends to accomplishment and achievement verbs” (Anderson & Shirai, 1996: p. 553). The AH thus predicts that learners will first acquire the progressive meaning of *-teiru* and strongly associate that with activity verbs in Japanese second language acquisition. Shirai and Kurono’s (1998) study suggested that, in spite of the typological differences from European languages, which are used as the basis in the AH, the learners showed developmental patterns in tense-aspect acquisition that the theory would predict. In earlier studies, the AH had typically been tested with European languages. Shirai and Kurono (1998) showed that the same expected pattern was observed in Japanese. They investigated the difficulty in acquiring the *-teiru* form in resultative meanings in their study that spanned 6 months to examine the acquisition pattern of *-teiru*. They found that the learner’s grammaticality judgment scores did not improve for the resultative use of *-teiru* (30% in the end which is below chance level) over the 6 months whereas their accuracy for progressive judgment improved from 55% to 69%. According to their study, one can conclude that learners of Japanese face more difficulties with perceiving meanings expressed by the *-teiru* form when attached to achievement verbs (resultative) than to activity verbs (progressive). Li and Shirai (2000) also reviewed existing studies on the acquisition of *-teiru* and concluded that learners of

Japanese find it relatively easier to use the *-teiru* form in progressive meanings with activity verbs than in resultative meanings with achievement verbs.

The previous studies have also indicated that learners of Japanese who are learning/acquiring the *-teiru* form are influenced by multiple factors, such as their first language (L1) influence and effects of input distribution (of the *-teiru* form and its different functions) order. First, Shirai (2012) pointed out that some of the previous studies only investigated those learners whose L1 also had a progressive marker, such as Korean, Chinese, or English. This learner L1 knowledge could have contributed to the ease of acquiring the *-teiru* form in progressive meanings over resultative meanings. When those learners whose L1 has a progressive marker acquire the *-teiru* form, the expectation is that they will associate the form with the progressive marker in their L1 and that way they more easily map the progressive meaning with the form in Japanese. In a case of those learners whose L1 does not have a progressive marker, one can predict that they have to create a new form-meaning mapping system for the *-teiru* form to be acquired, which can make the acquisition process more difficult than for those learners with the previous knowledge with progressive markers and meanings. Sugaya and Shirai (2007), therefore, examined and compared two different L1 groups, L1 English group (+progressive) and L1 German and Slavic groups (-progressive), in terms of *-teiru* acquisition by employing the oral picture description task and the written grammaticality judgment task. The results of the study indicated that both groups, regardless of their L1, found progressive easier than resultative meanings in the written grammaticality judgment task. However, a difference existed in the oral picture description task. For those participants with higher proficiency in Japanese, both groups found progressive

easier than resultative meanings, but for those with lower proficiency, no difference in accuracy rates existed between progressive and resultative meanings in the oral picture description task. Therefore, their study suggested that learner's L1 can influence the difficulty of acquiring resultative meanings of the *-teiru* form in early stages of the acquisition on at least oral tasks but that, regardless of learner's L1, progressive is rather inherently easier to process as both input and output than resultative meanings after a certain proficiency is reached.

Another important factor that possibly affects the process of acquiring the *-teiru* form is how input is distributed to learners. Ishida (2004) investigated the accuracy of uses of *-teiru* in relation to how oral feedback can affect the acquisition process over time and found that the participants showed higher accuracy on resultative meanings than on progressive meanings (resultative > progressive > habitual > perfect). The finding from Ishida's study seems to contradict with the results from the previous studies; however, Shirai (2012) pointed out that this result might have been due to the fact that progressive meaning of the *-teiru* form was introduced six months after resultative meaning was introduced to those learners in their language program who participated in the study. Therefore, Ishida's study, in which all the participants' L1 (Chinese and English) had progressive markers, implied that *when* different meanings of *-teiru* are introduced in classroom can override the positive L1 transfer and/or the inherent easiness of progressive meaning on acquiring *-teiru* form. In other words, learners of Japanese can be largely influenced by which meaning is introduced first and which is introduced later in terms of the acquisition order or process.

Research Goals

The current study aimed to investigate the nature of *-teiru* meanings perceived by native speakers, by comparing their perceptions with the predicted categorization of the *-teiru* meanings that previous literature described. Furthermore, this study attempted to examine the acquisition of the *-teiru* form, by examining L2 learners' judgment in comparison to native speakers' judgment. The research questions were described in the following:

- (1) To what extent are the perceptions of native speakers of Japanese on the meaning of *-teiru* similar/different from the previous literature's descriptions, depending on inherent aspects of the verb, sentence types, or individual verbs?
- (2) To which meaning of the *-teiru* form, progressive or resultative meaning, do learners of Japanese in advanced levels show more similar/different perception patterns, when compared with those of native speakers?
- (3) How differently (in terms of the degree of the change in perceptions) do lexical cues/truncation that potentially create contexts in a sentence affect learners' perceptions, compared with native speakers'?

CHAPTER II

EXPERIMENTAL DESIGN

In the present study, a judgment test consisting of 54 stimulus sentences with *-teiru* form was conducted to investigate native speakers' judgment on the perceived meaning of *-teiru* and compare them with the predicted categorization of the *-teiru* meaning as well as L2 learners' judgment.

Methodology

Stimulus Construction

Stimulus sentences were constructed so that their verbs had one of the three lexical aspects: achievement, accomplishment, and activity. State verbs were excluded from the experiment because state verbs are semantically always attached with the *-teiru* form in Japanese (e.g., 知っている *shitteiru* “knowing,” 愛している *ashiteiru* “loving”) and do not express particular meanings when attached with *-teiru*. Each stimulus sentence, therefore, contained one of the three types of the verbs.

Six different verbs were selected for each of the lexical aspect category (See the whole list in Appendix A). The subject in the sentence was 彼 *kare* “he” in every single sentence. In addition, three types of the sentences were present with regards to the form of the verb. The first type was a plain sentence, in which the verb appeared in a regular *-teiru* form (S + V) (e.g. 彼は走っている *kare-wa hashit-TEIRU* “he is running”). The second type was almost the same as the plain sentence except that the *-teiru* form was truncated (S + truncated V) (e.g. 彼は走ってる *kare-wa hashit-TERU*). The reason for including this sentence type was that none of the previous studies had used the truncated form of *-teiru*, *-teru*, in their analysis or experiments. Another reason was that the

truncated form is more frequently used in spoken language. In order to estimate the frequency of the truncated version of the *-teiru* form and non-truncated versions in spoken Japanese, the number of *-teiru* and *-teru* were identified and counted in one of the episodes of a Japanese television drama, “HERO”(Puckett, 2014), as sample data for the frequency of truncation. In one episode (45 minutes), either *-teiru* or *-teru* was used in a total of 70 sentences. The *-teiru* form was used in 19 sentences (27%), and the truncated form *-teru* was used in 51 sentences (73%). The analysis indicates that the truncated version of *-teiru* is often the default in daily oral communication in Japanese. This frequency of truncation in speech has been observed in other languages as well (Kjellmer, 1998). Therefore, the study was designed with the assumption that the use of fully expanded form of the particular grammar in speech would create an emphasis on the meaning expressed through the grammar structure because the full form is rare and more noticeable in speech. Since the auditory experiment was employed for the present study, the truncated version as a sentence type was included in the experiment to see whether any difference would be present in the perceived meaning between the full form and the truncated form. The third type of sentence was the plain sentence with an adverb *すでに* *sudeni* “already” in the beginning of the sentence (“already” + S + V) (e.g. *すでに彼は走っている sudeni kare-wa hashit-TEIRU*). It is claimed that resultative state often co-occurs with the word “already” that creates a specific context and increases perfect sense (Shirai, 2000). The lexical cue “already” was therefore included as a sentence types in order to examine how the context created by the cue affects one’s interpretation of *-teiru* meaning. Thus, a total of 54 sentences (3 lexical aspects x 6 verbs x 3 sentence types) were created for the experiment.

Each sentence was orally recorded through a speech recording/ analyzing software, Praat, by the researcher. After recording each sentence, each sentence was saved as a separate file, and the file was used as stimulus for the experiment on Praat. Praat was set to present stimulus sentences in a random order in the experiment.

Participants

Twenty native speakers of Japanese and 15 learners of Japanese participated in this study. The native Japanese participants (10 female, 10 male; average age = 21.75, range from 19 to 29 years; average years of learning English = 9.45 years; average stay in the U.S. = 0.9 months, range from 0 years to 5 years) were undergraduate or graduate students at the time of testing, and participated voluntarily. Three of them were tested in Japan, and 17 were tested in the United States. The Japanese learners (10 female, 5 male; average age = 21.5, range from 18 to 28 years; average years of learning Japanese = 5.17 years; average stay in Japan = 0.2 months, range from 0 years to 1 years) were all students at the University of Oregon at the time of testing, and participated voluntarily as well. All the learners' first language was English, and they were learning or had learned Japanese as a second language. As for those L2 learners of Japanese, they all had learned the *-teiru* form previously in JPN 103. *Nakama*, the Japanese textbook used for the Japanese program at the University of Oregon, introduces resultative meaning of *-teiru* in chapter 10 and progressive meanings of the form in chapter 11. They did not receive any specific in-class instructions focusing on the *-teiru* form after the exposure in JPN103. Thus, which meaning of *-teiru* was firstly introduced as input was the same for all the learner participants.

Procedure

Each subject was asked for the participation in this study via email and met a researcher individually in a selected quiet room. The researcher explained the purpose of the present study to the subject, asked the subject to sign a consent form, and gave instructions that described what to do for the experiment. In addition, before participating in the experiment, all the subjects filled out background questionnaires regarding their demographic information and language-related experiences. In addition to the questionnaire, learners of Japanese were shown a list of vocabulary that appeared on the stimulus sentences to assure that they understood the words before the experiment. The vocabulary list was visible to the Japanese learners during the experiment.

Prior to the experiment, the participant first received an explanation and instructions of the task. In the instruction phrase, participants were shown two cards, A and B, each of which contained a sample sentence with the Japanese aspect marker – *teiru*. Card A had the sentence “ロボットが話している” “a robot is talking,” and card B had the sentence “パソコンが壊れている” “a laptop is broken.” Sentence A contained an activity verb (話す *hanasu* “talk”) with *-teiru* form that clearly denoted a progressive state of the verb. Sentence B contained an achievement verb (壊れる *kowareru* “break/be broken”) with *-teiru* form that clearly denoted a resultative state of the verb. For both sentences, a non-human subject was used so that the difference in the subjects in those sentences would not be a confounding factor. The participant was then asked whether she/he understood the difference in meanings that each *-teiru* form expressed when attached to the verb in the sentence. For those participants who seemed to not understand the semantic difference between the two choices or who did not

articulate enough to show their clear understanding to the researcher, additional explanation of the meaning of *-teiru* when attached to each verb was provided to assure their understanding of the difference. The explanations were “ongoing action” for choice A and “a state resulting from the action” for B. In order to minimize the experimenter bias and interference, the additional explanation was only given when participants did not show a clear understanding of the difference.

After the researcher confirmed that the participant understood the difference between the two sentences in terms of the use of the Japanese aspect marker *-teiru*, the participants were asked to begin the experiment. The participant sat in front of a laptop computer with headphones, and the Praat software delivered the stimulus sentences for the experiment.

At each trial, the participants heard a stimulus, and were asked to judge whether the use of the *-teiru* form in the stimulus was same or similar to either sample sentence A (progressive) or to sample sentence B (resultative) by clicking one of the two buttons on the screen corresponding to their response choice.

A total of 54 stimuli were randomly presented to the participants for each experiment session. The participants were allowed to replay each stimulus up to 5 times. In order to continuously remind the participants what the options were, the two cards were placed in front of them for the whole time during the experiment. The whole process took approximately 15 to 20 minutes per participant.

CHAPTER III

ANALYSIS OF PERCEPTIONAL DATA

Results

Firstly, percentages of progressive/resultative judgment of V + *-teiru* form for each of the test verb categories (activity, achievement, and accomplishment) were calculated for the three sentence types (plain, with “already,” and truncated) separately for each group of the participants (the native speaker group and the L2 Japanese learners group). A 3 x 3 x 2 (sentence types x verb types x groups) ANOVA with repeated measures on the first two factors was performed on the mean percent of resultative judgment in order to see the effect of the three factors. The test indicated significant main effects of sentence types and verb types, but not of group [sentence types: $F(2, 32) = 26.34, p < .001$; verb types: $F(2, 32) = 143.48, p < .001$; group: $F(1, 33) = 3.32, p = .078$]. Importantly, the test showed a significant three-way interaction (sentence type x verb type x group) [sentencetype*verbtype*group: $F(4, 30) = 4.09, p < .05$], which suggests that the effect of sentence type on resultative judgment differed across those three verb types and that the pattern of the effect was not consistent across the two groups. Given these results, further post-hoc tests were conducted using a paired-sample t-test in order to investigate (a) the effect of verb categories separately in the two groups in all the sentence types and (b) the effect of sentence types (plain vs with “already” and plain vs truncated) separately in the two groups for all the verb types. A two-way repeated measure ANOVA [sentence type (between-subject) x group (between-subject)] on each verb category was conducted to examine (c) the difference in the effect of sentence type between the two groups. In the following, results of the t-tests for native

speakers' judgment, results of a close analysis on native speakers' judgments on individual verbs, and comparisons of the results between native speakers' and L2 learners' judgments are presented.

Overall Native Speakers' Perceptions on V + -Teiru Meaning

Overall patterns of native speakers' judgments are shown in Table 3.1 and Figure 3.1. The paired-sample t-test examining the effect of verb categories for native speakers indicated a significant difference of resultative judgment between activity and achievement, activity and accomplishment, and achievement and accomplishment in all sentence types [$p < .001$ for all the pairs], except between achievement and accomplishment in sentences with "already" [$p = .108$]. The results thus indicate that native speakers' judgments were significantly different, depending on the verb type, and that in "already" sentences, achievement and accomplishment verbs behaved similarly, as shown in Figure 3.1.

As for the effect of sentence types for native speakers, the t-test showed a significant difference between plain sentence and "already" sentence in all the three verb types [activity: $p < .001$; achievement: $p < .05$; accomplishment: $p < .001$] but no significant difference between plain sentence and truncated sentence in any verb types. As also seen in Figure 3.1, the results suggest that more verbs were perceived as resultative for all the verb types in "already" sentences than in plain sentences.

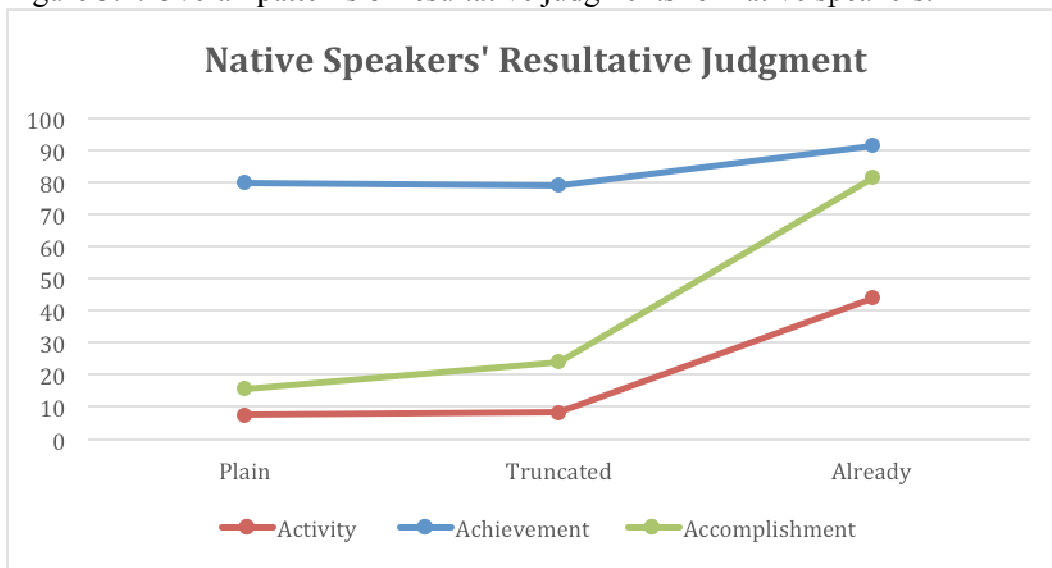
These results demonstrated that native speakers perceive V *-teiru* as having a resultative meaning most often when the verb was achievement and appeared in a sentence with "already." The results also clearly indicated that *-teiru* attached to activity verbs were perceived as progressive meaning most of the time in plain sentences. In

addition, native speakers' resultative responses on accomplishment verbs increased in the "already" sentence to the level in which no significant difference existed between accomplishment and achievement verbs. Truncation did not have any significant effects on resultative judgments overall for native speakers' judgment.

Table 3.1. Overall native speakers' perceptions.

NS's perception	plain		already		truncated	
	progressive	resultative	progressive	resultative	progressive	resultative
Activity	92.5%	7.5%	55.8%	44.2%	91.7%	8.3%
Achievement	20%	80%	8.3%	91.7%	20.8%	79.2%
Accomplishment	84.2%	15.8%	18.3%	81.7%	75.8%	24.2%

Figure 3.1. Overall patterns of resultative judgments for native speakers.



Native Speakers' Perceptions of Individual Verbs

In the previous section, the analysis indicated that overall perceptual patterns for native speakers were in general significantly different, depending on each verb category. In this section, a more close and rather qualitative analysis was conducted, focusing more on native speakers' perceptions of V + *-teiru* meaning for individual verbs in order to see

whether some room for interpretations that were deviant from the predicted categorization based on the lexical aspect of the verb was present. Table 3.2 indicates percentages of native speakers' progressive/resultative judgment of V + *-teiru* form for each individual verb in each sentence type. The more close analysis focused on the plain condition since it aims at examining the nature of interpretations in unbiased conditions.

As seen in Table 3.2, some noticeable differences were present in judgment within the same verb category. The table shows that the verbs "die" (100%), "fall" (80%), "marry" (95%) and "arrive" (100%) were perceived as resultative seemingly more than "sit" (55%) and "hide" (50%) for achievement verbs. Those two verbs, "sit" and "hide," thus seem to have received more progressive judgment from native speakers. This is noteworthy due to the fact that the previous literature predicted achievement verbs with *-teiru* would always be perceived as resultative. This finding that a progressive meaning was somehow elicited by native speakers needs some explanations other than the lexical-aspect-based theory because a progressive meaning is not allowed in achievement verbs in its semantic system based on the inherent aspect.

For accomplishment verbs, the verbs "put on socks" (50%) and "put a feather on the hat" (30%) seemed to be perceived as resultative more than "take off clothes" (10%), "break a watch" (5%), "bake bread" (0%), and "take a test" (0%). These results suggested that even though accomplishment verbs can be interpreted as either progressive or resultative, some accomplishment verbs led people to prefer one of the meanings to the other, and others resulted in both interpretations being interpreted rather equally.

As for activity verbs, the table shows that the verb "sleep" (45%) was perceived as resultative more than any other activity verbs (0%) in plain sentences. Considering the

fact that none of the other activity verbs received any resultative judgments, the finding suggests that “sleep” allowed native speakers to have multiple interpretations that could not be solely explained by its inherent aspect.

These results, therefore, indicated that although the overall patterns were clearly divided into three categories based on the lexical aspect of the verb, there were also some verbs that behaved differently from others in the same lexical aspect type and allowed variation in interpretations.

Table 3.2. Native speakers’ perceptions for each individual verb.

NS’s perception	plain		already		truncated	
	progressive	resultative	progressive	resultative	progressive	resultative
Swim	100%	0%	50%	50%	100%	0%
Run	100%	0%	55%	45%	100%	0%
Sleep	55%	**45%	50%	50%	55%	45%
Study	100%	0%	45%	55%	95%	5%
Sing	100%	0%	65%	35%	100%	0%
Dance	100%	0%	70%	30%	100%	0%
Die	0%	**100%	0%	100%	0%	100%
Fall	20%	*80%	0%	100%	15%	85%
Marry	5%	*95%	10%	90%	10%	90%
Arrive	0%	**100%	0%	100%	0%	100%
Sit	45%	55%	5%	95%	45%	55%
Hide	50%	50%	35%	65%	55%	45%
Put on socks	50%	**50%	5%	95%	35%	65%
Put a feather	70%	**30%	15%	85%	60%	40%
Take off clothes	90%	10%	15%	85%	80%	20%
Break a watch	95%	5%	15%	85%	95%	5%
Bake bread	100%	0%	40%	60%	90%	10%
Take a test	100%	0%	20%	80%	95%	5%

* indicates that the verb elicited more resultative response than 1 or 2 other verbs

** indicates that the verb elicited more resultative responses than several other verbs

Differences Between Native Speakers' and L2 Learners' Perceptions

Overall patterns of L2 learners' judgments are shown in Table 3.3 and Figure 3.2. For L2 learners' perceptions, the paired-sample t-test examining the effect of verb types indicated a significant difference between activity and achievement, activity and accomplishment, and achievement and accomplishment in all sentence types [$p < .05$ for all the pairs]. The results thus suggest that the verb type in each sentence type significantly influenced the patterns of the resultative judgment for L2 learners as well. However, as also seen in Figure 3.3, an important difference was found between native speakers' and L2 learners' judgments: with native speakers, accomplishment verbs with *-teiru* and "already" behaved like achievement verbs; however, this pattern was not observed with L2 learners.

As for the effect of sentence types, the paired-sample t-test revealed a significant difference between plain sentence and "already" sentence for activity and accomplishment verbs [activity: $p < .05$; accomplishment: $p < .05$] but not for achievement verbs [$p = .087$] for L2 learners. No significant difference was present between plain sentences and truncated sentences for learners' judgments. Comparison between native speakers' and L2 learners' judgments (in Figure 3.3) imply that the presence of the lexical cue "already" elicited resultative interpretations of V + *-teiru* more often with activity and accomplishment verbs than with achievement verbs for native speakers and that the same pattern was found on L2 learners' judgment. In addition, the lexical cue "already" significantly increased resultative judgment on achievement verbs for native speakers but not for L2 learners.

The two-way repeated measure ANOVA indicated a significant interaction between the effect of sentence types (plain vs with “already”) and the group difference on accomplishment verbs [$p < .001$] but did not indicate any other significant interactions. This result thus suggests that the how much the resultative judgment on accomplishment verbs differed between plain sentences and “already” sentences was significantly different between native speakers and L2 learners, as it is also apparent in Figure 3.3. More specifically, the difference in resultative judgment on accomplishment verbs between the two sentence types for native speakers (65.9%) was significantly greater than the same difference for L2 learners (26.5%).

For direct comparisons between native speakers’ and learners’ resultative judgments, independent sample t-tests were performed on the mean percentage of resultative judgments in the all the sentence types for all the verb types separately in order to see whether differences between the two groups were statistically significant. The test revealed a significant difference between the two groups for achievement verbs in the plain sentences [$p < .001$] and “already” sentences [$p < .05$] but not for activity and accomplishment verbs. The results thus suggest that the achievement verbs received significantly more resultative judgments from native speakers than from L2 learners in those sentence types and that native speakers and L2 learners perceived activity and accomplishment verbs fairly similarly in all the sentence types.

Table 3.3. Overall L2 Japanese learners’ perceptions.

JL’s perception	plain		already		truncated	
	progressive	resultative	progressive	resultative	progressive	resultative
Activity	93.3%	6.7%	69.8%	30.2%	86.2%	13.8%
Achievement	38.8%	61.2%	17.7%	82.3%	37.8%	62.2%
Accomplishment	72.2%	27.8%	45.7%	54.3%	61.3%	38.7%

Figure 3.2. Overall patterns of resultative judgments for L2 learners.

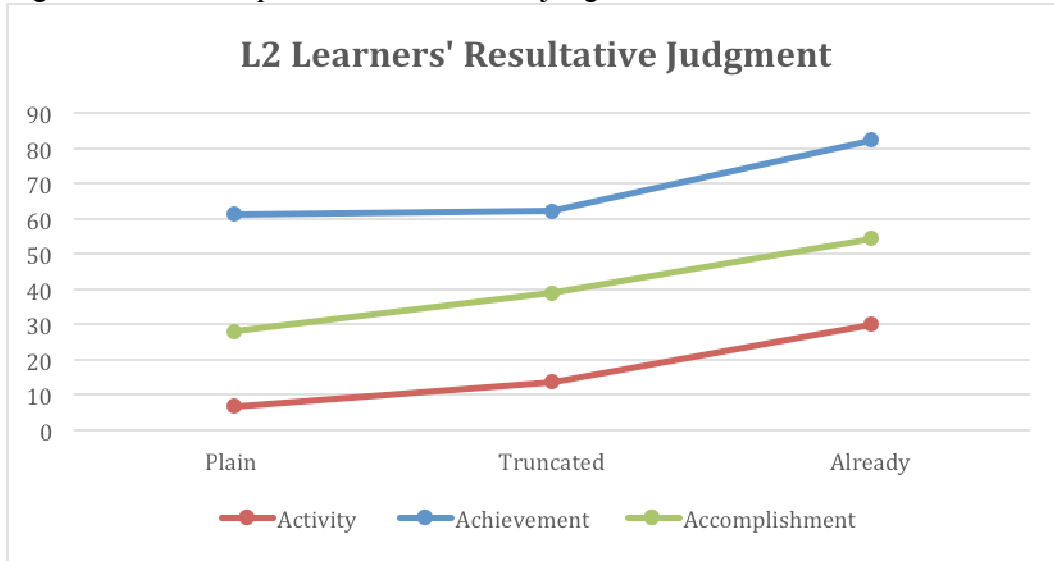
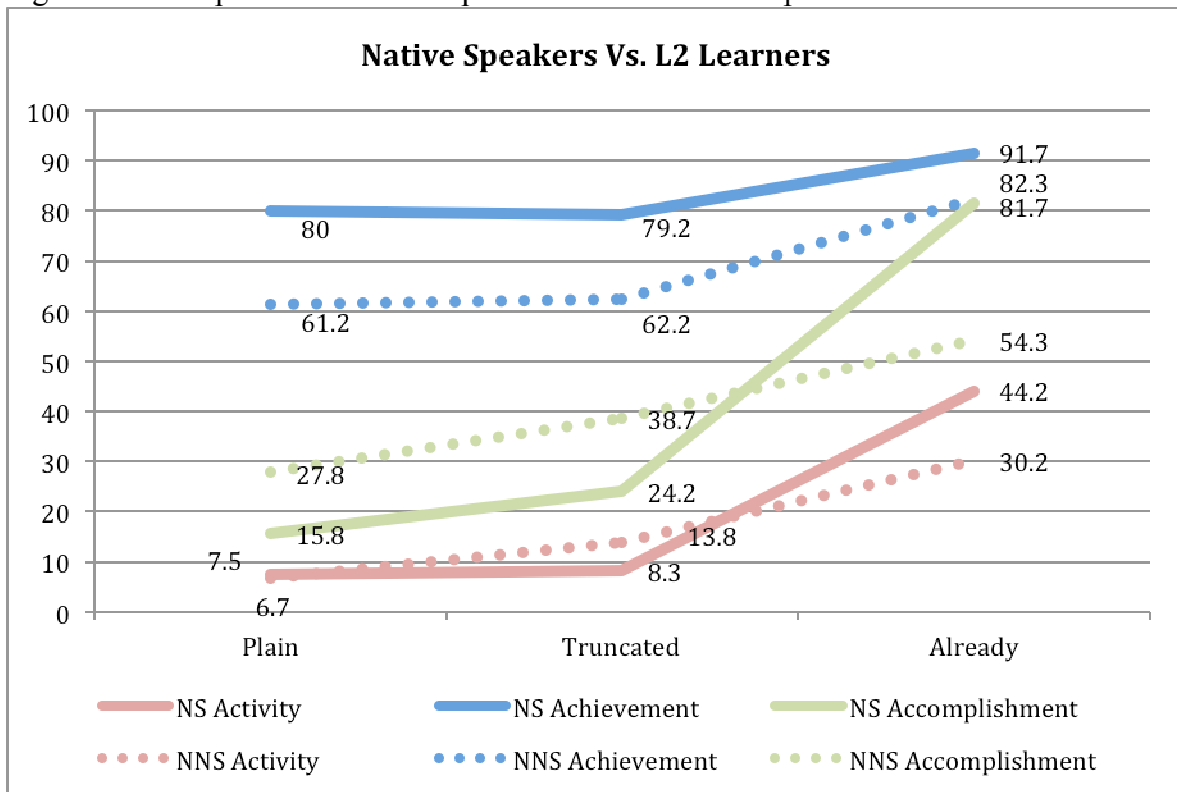


Figure 3.3. Comparisons of overall patterns between native speakers and L2 learners.



NS = native speakers
 NNS = non-native speakers

Qualitative analysis was conducted also on individual verb comparisons in order to examine whether some noticeable differences were present between native speakers' perceptions and L2 Japanese learners' perceptions within the same verb category in the plain condition. Table 3.4 indicates progressive/resultative judgments on individual verbs for L2 learners. As the quantitative analysis indicated, the close analysis also revealed almost no individual verb differences between the two groups for activity verbs. Similar patterns were found for accomplishment verbs in plain condition. One item that seems to have received different resultative judgments from native speakers and L2 learners was "break a watch" [5% for native speakers; 40% for L2 learners]. In addition, every accomplishment verb got slightly more resultative judgments from L2 learners than from native speakers. As for achievement verbs, some noticeable differences in resultative judgment were found for verbs "die," "fall," "marry," and "arrive" between the two groups. Those verbs appeared to be noticeable since achievement verbs are supposed to always express resultative state with *-teiru* but received some progressive judgments from L2 learners.

Table 3.4. L2 Japanese learners' perceptions for each individual verb.

JL's perception	plain		already		truncated	
	progressive	resultative	progressive	resultative	progressive	resultative
Swim	100%	0%	80%	20%	87%	13%
Run	100%	0%	80%	20%	93%	7%
Sleep	60%	**40%	53%	47%	67%	33%
Study	100%	0%	80%	20%	73%	27%
Sing	100%	0%	73%	27%	100%	0%
Dance	100%	0%	53%	47%	87%	13%
Die	13%	**87%	13%	87%	27%	73%
Fall	40%	*60%	13%	87%	27%	73%
Marry	27%	**73%	7%	93%	33%	67%
Arrive	40%	*60%	13%	87%	33%	67%
Sit	53%	47%	27%	73%	47%	53%
Hide	60%	40%	33%	67%	60%	40%
Put on socks	47%	**53%	20%	80%	27%	73%
Put a feather	67%	*33%	40%	60%	47%	53%
Take off clothes	73%	*27%	33%	67%	80%	20%
Break a watch	60%	**40%	47%	53%	47%	53%
Bake bread	93%	7%	67%	33%	87%	13%
Take a test	93%	7%	67%	33%	80%	20%

* indicates that the verb elicited more resultative response than 1 or 2 other verbs

** indicates that the verb elicited more resultative responses than several other verbs

CHAPTER IV

GENERAL DISCUSSION

The present study investigated perceptions of the meaning of *-teiru* among native speakers of Japanese and compared them with the expected categories based on inherent aspects of the verb they were attached to and perceptions of L2 Japanese learners. The results showed that overall patterns of native speakers' judgment were consistent with the prediction from the previous studies, but the qualitative analysis also revealed some noteworthy individual verb differences (in section 4.1). The comparison between native speakers' and L2 learners' perceptions indicated significant differences in resultative judgment on achievement verbs, which is further discussed with possible explanations (in section 4.2). There was also a significant effect of the lexical cue word "already" on judgments of both groups but no significant effect of truncation identified (in section 4.3).

Discussion

Native Speakers' Perceptions and Their Consistency with Previous Studies

It is important to first point out the semantic complexity of the meaning of *-teiru* based on the results. On the one hand, the overall results showed a reliable association between the inherent aspect of the verb and the meaning of *-teiru*, as predicted from the previous studies (Shirai & Kurono, 1998; Shirai, 1998, 2000). On the other hand, however, the association is not an absolute or fixed bond that governs the semantics of *-teiru* but allows some room for interpretation variation, as it can be seen in the qualitative analysis and the effect of the lexical cue that can trigger an interpretation opposite to the more normative interpretation.

The results show that overall patterns in progressive/resultative judgment are consistent with what the previous studies would predict. Achievement verbs were judged as resultative the most often, whereas activity verbs were judged as significantly more progressive as their lexical aspect predicts its perceived meaning of *-teiru*. Accomplishment verbs received mixed judgments although the meaning of *-teiru* was biased more toward progressive meaning in the plain sentences.

However, more close analysis suggests that the progressive/resultative meanings that the lexical aspect of the verb predicts do not always match the perceived meaning in this study. For achievement verbs, two verbs were perceived very differently from others: “sit” and “hide”. Other achievement verbs, such as “die” and “arrive,” were always perceived as resultative as predicted, since both verbs only describe results of the action with *-teiru* and cannot express any ongoing action. Comparatively, nearly half of the native speakers perceived the meaning of *-teiru* with “sit” (45%) and “hide” (50%) as progressive. Theoretically speaking, both verbs, “sit” and “hide,” do not involve any duration and describe states resulting from the action of “sitting” or “hiding.” In other words, in Japanese, “sit” + *-teiru* should mean “being seated,” and “hide” + *-teiru* should mean “being hidden,” usually considered as resultative states. However, the results of the current study indicated that the meaning of those phrases was interpreted as progressive by half of the native speakers.

One way to interpret these results is that the semantic system of *-teiru* based on the lexical aspect of the verb is not an absolute rule but to some extent allows perceivers’ individual perspectives. Considering the case of “sit,” in order to perceive progressive meaning from “sit” with *-teiru*, one has to view ongoing-ness from the state described by

the verb. Since the action of “to sit” does not involve duration, the action itself cannot theoretically be progressive. Therefore, one must view the state of “being seated” as an “ongoing” state. In other words, the state of “being seated” can be perceived as being continuous and thus progressive. Furthermore, this perspective on how to interpret those achievement verbs cannot be applied to other more “conservative” achievement verbs, such as “die” and “arrive.” I propose here that a difference between those verbs that allow multiple interpretations and those verbs that do not lies in whether the state described by the verb with *-teiru* can be expressed with time duration or not. For instance, one could say “he is (has been) sitting for an hour” but not say “he is (has been) dead for an hour” in Japanese. The same hypothesis can be applied to “hide” and “arrive.” However, further investigation is necessary to examine whether the hypothesis can be applied to other achievement verbs.

Another possible explanation of native speaker’s behavior is bidirectional transfer from L2 to L1. Bidirectional transfer is a cross-linguistic phenomenon in which learners’ L2 influences their own L1 in the process of second language acquisition, including semantic extension (Cook, 2003; Pavlenko & Jarvis, 2002). Since the native Japanese participants in this study have studied English as a second language (for an average of 9.45 years), their English linguistic knowledge, perception, and mental representation are influencing them even when they are thinking in Japanese. In other words, the results may suggest that they transferred their L2 knowledge into L1 processing. Therefore, the fact that “sit” and “hide” can be progressive with a progressive marker *-ing* in English can explain their perceptual judgment of those verbs + *-teiru* in the experiment. More

research needs to be done before drawing any conclusions about why those native speakers showed such perceptions in those verbs.

Some perceptual differences were also present in accomplishment verbs. Overall pattern was that progressive judgment was rather a default for accomplishment verbs in the *-teiru* form. However, a close analysis revealed that verbs phrases, such as “put on socks” and “put a feather on the hat,” were more likely than others, such as “bake bread” and “take a test,” to be perceived as resultative. This perceptual difference within the same lexical aspect category might be due to differences in duration of the action described by each verb as Shirai (2000) claimed that “duration is a real constraint on the aspect meaning of *-teiru*. For instance, “put on socks” or “put a feather on the hat” can involve duration of the action of putting, but its duration is relatively short, which possibly can enable the perceived meaning to be both progressive and resultative. On the other hand, “bake bread” and “take a test” can take a longer duration for the action to be completed, which led the participants to choose a progressive meaning over a resultative meaning as the default meaning.

As for activity verbs, native speakers’ perceptions were very consistent with the predicted category (100% in plain and truncated sentences), except for one verb “sleep.” The semantic complexity of the verb “sleep” has been already pointed out by Shirai (2000) introspectively, but the results of the present study have empirically confirmed the possible variety in its interpretations. Shirai mentioned that *Ne-teiru* (sleep + *-teiru*) can be progressive if it is interpreted as an action of “sleeping” and resultative if it is considered as a result of the action of “falling asleep.” Here again, Okuda’s (1978) claim that the verb attached to the *-teiru* form describes the action or state of the subject

can be applied. In the case of the verb “sleep,” because of its flexibility of interpretations, it can describe both the state of being asleep and action of being sleeping, which automatically leads to two interpretations of the meaning of *-teiru*, as shown in the collected data.

This semantic complexity and ambiguity of the verbs discussed above can be considered a minor issue, and as Shirai (2000) also claimed, the one instance cannot completely invalidate the basic principle of how the inherent lexical aspect determines the meaning of *-teiru*. However, this minor issue can be problematic and a factor that confounds the data from previous experimental studies investigating the L2 acquisition of *-teiru*. For instance, in the study by Sugaya and Shirai (2007), the accuracy rate of the use of the *-teiru* form for progressive and resultative meanings in oral description tasks was calculated and compared with each other. In Sugaya and Shirai’s study, however, the verb “sleep” with *-teiru* was counted as a progressive meaning, and the verb “sit” with *-teiru* was considered as a resultative meaning. The present study indicated that the meaning of *-teiru* with those verbs can be more flexible. This result further casts a question for the previous study that employed rather deterministic categorizations of the *-teiru* meaning because it is and should be a more complex task to determine what is an “accurate” use of *-teiru* form. The complexity of lexical semantics might not be a factor that completely negates the finding of the previous study. However, when considering the possible different interpretations of the meaning of *-teiru*, depending on an individual verb, it should be considered when constructing future experiments regarding L2 acquisition of *-teiru* in order to more precisely examine the process.

Perceptual Differences Between Native Speakers and Learners of Japanese

Comparisons of the overall progressive/resultative judgments between native speakers and learners clearly suggested a significant difference was present between the two groups for judgments on achievement verbs but not on activity and accomplishment verbs when examined solely in plain sentences. In the following section, the discussion focuses on how the results of the current study can be related to the previous studies (Shirai & Kuno, 1998; Shirai, 2012; Sugaya & Shirai, 2007) that suggested the resultative meaning is rather inherently more difficult to acquire by L2 Japanese learners than the progressive meaning.

What the results comparing the overall patterns between the two groups can show is that achievement verbs were judged as resultative significantly more by native speakers than by L2 learners. These results further imply that L2 learners have not yet developed native-like perceptions of *-teiru* meaning with achievement verbs. Considering the fact that achievement verbs should always be interpreted as resultative and not allow progressive interpretations, one can say that L2 learners failed to correctly interpret the meaning of *-teiru* with achievement verbs because they mistakenly judged some of the achievement verbs to be progressive.

When looking at perceptions for each individual verb, as can be seen in Table 3.2 and 3.4, depending on each individual verb, native speakers' perceptions and learners' perceptions are also different, especially in achievement verbs. For achievement verbs, perceptions of the meaning of *-teiru* were different between natives and learners, except for the verbs, "sit" and "hide." In those cases of achievement verbs, the verbs, such as "die" or "arrive," should not be semantically interpreted as progressive when attached

with *-teiru* in Japanese (and therefore indeed should never be interpreted as progressive by any native speakers of Japanese in this experiment), but some learners construed them as progressive. Those inappropriate interpretations could have been due to the fact that “die” and “arrive” can be attached with a progressive marker in English and that verbs with the English progressive marker denote a process leading up to the endpoint. Clearly some learners of Japanese inappropriately misconstrued the meaning and applied a progressive meaning of *-teiru* to those cases.

Almost no difference existed between natives’ and learners’ judgments in any of the 6 activity verbs. These results, therefore, indicate that learners of Japanese have developed native-like perceptions of the *-teiru* form for activity verbs (exactly the same perceptions to be more precise for the five activity verbs except the verb “sleep” in plain sentences). The normative meaning of activity verbs with *-teiru* is progressive, and it is confirmed by native speakers’ judgments that showed 100% progressive meaning for all the activity verbs (except “sleep”) in the plain sentence. L2 learners showed exactly the same judgments of activity verbs, which means they interpreted the meaning in the same way as native speakers. This result implies that the process of interpreting the *-teiru* meaning with activity verbs was very clear and straightforward for L2 learners.

When comparing the L2 learners’ judgments on activity verbs and achievement verbs, one can conclude the following. L2 learners failed to interpret the resultative meaning for achievement verbs when the resultative meaning was supposed to be elicited whereas they perfectly made progressive judgments on activity verbs when native speakers made the same judgments. This finding can lead to a further argument that learners seemed to have more difficulty in interpreting resultative meaning of *-teiru* than

the progressive meaning under conditions in which alternative interpretations should not be allowed or present in native speaker's judgment. This tendency found in both quantitative and qualitative analysis, though not completely directly, is consistent with the previous studies (Nishi & Shirai, 2007; Shirai & Kuno, 1998; Shirai, 2012; Sugaya & Shirai, 2007) that suggested that the progressive meaning of *-teiru* is easier for learners to process and acquire than the resultative meaning across their L1. The results of the present study also demonstrate that ease to process progressive meaning seemingly overrode the input delivery order effect on the acquisition of an understanding of *-teiru* among the participants since resultative meaning was first introduced prior to progressive meaning to those learners who participated in this study. In other words, even though learners were first exposed to resultative meaning (and possibly more input of achievement verbs that occur more frequently in Japanese in general) (Shirai, 2012), they seem to have acquired the progressive meaning of *-teiru* more quickly due to its inherent semantic simplicity as well as due to their L1 knowledge of the progressive marker and its function. However, the current study alone does not tell which factor, L1 transfer or inherent simplicity of progressive meaning, is a real determiner of their developmental patterns or which factor is more strongly affecting the process of acquisition of *-teiru* overall, which needs further investigation. It should be also noted that the current experiment did not examine the difficulty directly and that the measured perceptions did not completely indicate the ease/difficulty of the semantic acquisition. The argument discussed above is based on the results in this study that L2 learners seem to have developed native-like semantic processing for the progressive meaning but not yet for the resultative meaning.

As for accomplishment verbs, no statistical difference was found between native speakers' and L2 learners' judgments. The qualitative analysis also found almost no difference in judgments between the two groups in the verbs "put on socks" and "put a feather on the hat," but seemingly greater differences were found in the other four verbs. Judgments between the two groups were the most different in the perceptions on the verb "break a watch"; most of native speakers (95%) found a progressive meaning when it was attached to *-teiru* in a plain sentence whereas only 60% of native learners perceived it as progressive. The analysis suggests that, for native speakers, "break a watch" was considered as a dynamic action that involves duration and was thus perceived as progressive. One possible reason for some learners to perceive it as resultative is the fact that the verb *kowasu* "break (transitive)" in the stimulus sentence was semantically similar to the one *kowareru* "break (intransitive)" used in the resultative sentence as one of the sample sentences. Since the intransitive form can only denote a resultative state when with *-teiru*, it was possible that some learners might have found resultative meaning as a default for the verb *kowasu* as well. However, *kowasu* is an accomplishment verb and therefore could express both the progressive and the resultative, which makes precise identification of the reason why there were larger differences in perceptions on this verb difficult.

The Effects of the Lexical Cue and Truncation

The results of overall judgment patterns demonstrated that, in terms of sentence type, the lexical cue "already" clearly increased the likelihood of resultative judgment for activity and accomplishment verbs for both groups, compared to the resultative judgment in plain sentences in which those verbs were perceived as progressive meaning. This

finding suggests that the meaning of *-teiru* is not completely dependent on the lexical aspect of the verb it is attached to but is also largely influenced by the context of the sentence, which can be triggered by the lexical cues included in the sentence.

As seen in Table 3.1 and 3.2, native speakers perceived all the accomplishment and activity verbs (except the verb “sleep”) to be resultative significantly more in sentences with the cue word “already” than in the plain sentences. These results suggest that the lexical cue “already” created the specific context in which the action described by the verb was completed/done. Native speakers, therefore, interpreted the meaning of the *-teiru* not based on the inherent aspect of those accomplishment and activity verbs but on the context created by the cue “already.” While accomplishment verbs can be construed as either progressive or resultative, activity verbs are naturally perceived as progressive when attached to *-teiru* due to its durative dynamicity without a specific end point of the action. Contrary to the predicted interpretation, the results of the present study indicated that activity verbs can also denote resultative meaning when there is the lexical cue “already” is present with the *-teiru* form. Although, in the present study, perfect sense is considered as resultative meaning because perfect sense was claimed to be driven from resultative meaning and semantically difficult to be distinguished from each other (Bybee et al., 1994). However, when activity verbs were presented with *-teiru* and interpreted, the native speakers appeared to have some mixed interpretations of the meaning of *-teiru*.

(16)

Kare-wa	oyoi-de iru
He-TOP	swim-ASPT-NOST
He is swimming.	

(17)

Sudeni	Kare-wa	oyoi-de iru
already	he-TOP	swim-ASPT-NOST

He has swum already.
Or
He has already been (started) swimming.

As shown in (16), the meaning of *-teiru* is clearly progressive. In (17), however, there are two possible interpretations: “he had swum already” (as in “he has already swum this morning”), or “he has already been swimming” (as in “he has already started swimming”). In the first case, the meaning is rather resultative since the action is already completed whereas, in the second case, the meaning of *-teiru* is progressive (or perfect progressive) because the action is still ongoing.

A similar effect of the lexical cue on the perceived meaning of *-teiru* was found among learners of Japanese. For accomplishment verbs, like the native speakers, the learners were more likely to perceive the meaning of *-teiru* as resultative in the sentences with “already” than in the plain sentences, except for the case of the verb “break a watch.” In other words, the results indicated that the learners also read the context in which the action described by the verb was completed, which was created by the lexical cue “already.” However, the cue word did not make a significant perceptual difference on the verb “break a watch.” One of the possible explanations is that the meaning of *-teiru* with “break a watch” in the plain sentence was already perceived as resultative (47%), which mitigated the effect of the lexical cue and made the difference between the two types of the sentences less clear. As for activity verbs, significant differences between the sentences with “already” and the plain sentences were found only on the verbs “sing” and “dance” among learners of Japanese. A possible reason for the results is

that for the learners, the duration of the action of singing and dancing might have been perceived shorter than other verbs, such as “swim” or “run,” which made those verbs more likely to be perceived as resultative or perfect when attached to *-teiru*.

Significant differences also existed in the effect of the lexical cue between native speakers and learners of Japanese on interpreted meanings of several verbs, which are “break a watch,” “take a test,” and “study.” The results thus suggested that the lexical cue “already” made significantly more difference, compared with their perceptions in the plain sentence, on native speakers’ perceptions than learners’ perceptions with those verbs. In other words, the effect of the lexical cue was significantly greater for native speakers’ perceptions on certain verbs. In the sentence with the word “already,” native speakers perceived the meaning of *-teiru* with the verbs, “break a watch,” “take a test,” and “study,” as resultative significantly more than learner of Japanese in the same conditions. This finding implies that the native speakers were more likely than the learners to read the context, which is created by the word “already,” in which the action described by the verb was completed. However, the reason for the greater effect of the lexical cue on native speakers’ perceptions of those verbs remains ambiguous and needs further investigations.

As for the effect of truncation, no statistically significant effect was found in the current study. However, even though there was no significant effect of truncation on judgment of neither group, some noticeable patterns existed in which the truncation increased the likelihood of resultative judgment for all the verb types for both groups (except for native speakers’ judgment on achievement verbs). It is thus possible that the

effect of truncation might be more apparent if the future research includes more verb samples to identify subtle but significant effects of truncation.

Limitations

The first limitation of the present study was that the verbs selected for each lexical aspect were not randomly chosen but were the researcher's own selections. Even though the selection and categorization were based on the previous studies and their descriptions, since the selected verbs were chosen by the researcher, it would not be appropriate for this study to overgeneralize any individual verb differences of the meaning of *-teiru* to different verbs. Future research should include more different verbs in order to examine how the finding of this current research can be applied to other verbs. However, to point the focus of this current study was also analysis of participants' perceptions and on how interpretations of the *-teiru* meaning were consistent with the previous studies, and at the same time, how the interpretations can be more dynamic and context-specific than previously argued. In that sense, this study still provides some empirical evidence that supports previously proposed categorizations of *-teiru* meaning as well as brings up some semantic flexibility in the system.

Another possible limitation is that 17 out of 20 native speakers who participated in the current study were college students studying in the United States at the time of the experiment. Therefore, in order to more accurately assess the possibility of bidirectional transfer, using native speakers in Japan who are not exposed to an English-speaking environment would be necessary.

As for learners' perceptions, the groups of participants within the learners should have been divided based on their Japanese proficiency levels. It is highly possible that

the acquisition of *-teiru* differed within the group of the current learner participants, and their perceptual patterns could be different, depending on their developmental stages of Japanese language acquisition at the time of the research, which needs further investigation. In future research, how learners develop their understanding and acquisition of the *-teiru* form over a period of time or at the different developmental stages needs to be examined.

CHAPTER V

CONCLUSION

What became clear through the present study is that a strong association indeed exists between the inherent aspect of the verb and the meaning of *-teiru*, as argued in the previous literatures (Comrie, 1976; Ryu & Shirai, 2014; Shirai, 2000; Smith, 1997; Sohn, 1995; Vendler, 1967). The results of this study suggest that both native speakers and learners of Japanese perceived the meaning of *-teiru* significantly differently, depending on the verb type. That the lexical aspect of the verb is indeed a significant factor that determines the perceived meaning of *-teiru* form in Japanese is unarguable.

However, the present study also supports the idea that other factors are involved in determining the semantics of *-teiru*. Lexical cues, such as “already,” clearly made a difference in the participants’ judgments in this study, which implies that they also paid attention to the context of the sentence when processing the meaning of the *-teiru* form. Whether other lexical cues or time references can influence perceived meaning of *-teiru* is definitely a question for the future research.

Another important finding of this study was that some flexibility or ambiguity exists in interpretations of the lexical aspect of the verb, which results in multiple interpretations of *-teiru* meanings even within the same verb category. The findings of the present study suggest that how one perceives a situation, in terms of its dynamicity, telicity, punctuality, etc, described by a verb can vary to some extent in the Japanese language, as it can also vary, depending on languages. The fact that a verb that theoretically always expresses the resultative with *-teiru* could be interpreted as progressive by native speakers suggests the semantic system based on the lexical aspect

of the verb is not an absolute rule. Semantic interpretations of any verbs are to some extent flexible and dependent on each perceiver's perspectives. In addition, the fact that each language has slightly different aspectual systems means that cross-linguistic influences could also possibly occur in the mental representations of language system in language learners.

The comparison between perceptions of native speakers and those of L2 learners also revealed that they judged the meaning of *-teiru* differently, depending on the lexical aspect of the verb. The finding that the L2 learners showed the same perceptual patterns on activity verbs as native speakers but significantly different patterns on achievement verbs implies the ease for processing progressive meaning over resultative meaning. Further research is necessary to investigate what specifically affects the L2 acquisition process of the *-teiru* form and causes the difference shown in this current study.

Given that possibility of flexibility and dynamicity of language itself, the current study does not specify or argue what an "accurate" use of the *-teiru* form is. Surely a line exists between acceptable and inappropriate uses/interpretations of *-teiru*; however, some areas also can be ambiguous and allow multiple interpretations, depending on contexts. The researcher's hope was that the present study could support the idea of linguistic flexibility and dynamicity in the case of Japanese language through an investigation of the Japanese imperfective aspect marker *-teiru* and that it could confirm what previous studies have proposed while at the same time putting some new light on instances that the previous literature has paid less attention to in exchange for proposing more unifying theories.

APPENDIX

A List of Verbs Included in the Experiment

Activity	Achievement	Accomplishment
<i>hashiru</i> “to run”	<i>shinu</i> “to die”	<i>kutsushita-o haku</i> “to put on socks”
<i>oyogu</i> “to swim”	<i>taoreru</i> “to fall”	<i>hane-o tsukeru</i> “to put a feather (on the hat)”
<i>neru</i> “to sleep”	<i>kekconsuru</i> “to marry”	<i>fuku-o nugu</i> “to take off clothing”
<i>bennkyousuru</i> “to study”	<i>tsuku</i> “to arrive”	<i>tokei-o kowasu</i> “to break a watch”
<i>utau</i> “to sing”	<i>suwaru</i> “to sit”	<i>pan-o tsukuru</i> “to bake bread”
<i>odoru</i> “to dance”	<i>kakureru</i> “to hide”	<i>tesuto-o ukeru</i> “to take a test”

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