Effects of Verb Categories, Language Proficiency Level, and Textbook Roles on the Acquisition of Japanese Imperfective Aspect Marker *-te i ru*

Tewich Sawetaiyaram

National Institute of Development Administration, Thailand

ABSTRACT

This present study investigates how the three factors: (1) "Verb Categories" (progressive and resultative meaning); (2) "Japanese Language Proficiency Level" (advanced, intermediate, and basic level); and (3) "Textbook Roles" (lexical items in the form of the imperfective aspect marker which is used in textbooks and lexical items in the form of the imperfective aspect marker which does not appear in the textbook) affect the acquisition of the Japanese imperfective aspect marker (*-te i ru*). The researcher begins with a review of related literature. Data obtained from 44 participants through questionnaires with multiple choice test, are analyzed. Using decision tree analysis, the results show that, compared to resultative meaning the learners receive higher scores in term of progressive meaning from the Japanese imperfective aspect marker (*-te i ru*). This results supports the aspect hypothesis that learners begin to use *"-te i ru"* with activity verbs, thereby obtaining progressive meaning, and later extend the use to achievement verbs, thereby obtaining resultative meaning. In addition, the textbook does not play a role in giving progressive meaning and only plays a role in relation to resultative meaning. Learners find it is easier to answer *"-te i ru"* which appears in the textbook more than those which are not shown in the textbook. Moreover, the results show that advanced learners and intermediate learners can answer more correctly both meanings of Japanese imperfective aspect marker than basic learners. However, basic learners can receive satisfactory scores in terms of progressive meaning. This results supports the fact that the learning of the progressive meaning is easier than the learning of resultative meaning. This study offers readers a thorough understanding of the acquisition of Japanese imperfective aspect marker (*-te i ru*) and describes the evidence supporting the assertion that there are many factors which affect language learning.

Keywords: *Japanese imperfective aspect marker (-te i ru), verb categories, textbook roles, Japanese language proficiency level, decision tree*

I. INTRODUCTION

It has been observed that there is a universal tendency in the relationship between inherent lexical aspect of verbs and the acquisition of tense-aspect morphology. This relationship is known as the aspect hypothesis (Andersen & Shirai, 1994; Bardovi-Harlig, 1999, 2000). The aspect hypothesis predicts that learners use past tense and perfective aspect forms with punctual and telic verbs and progressive aspect forms with activity verbs at their early stages of acquisition. Andersen & Shirai (1996) explained that language learners initially acquire the prototypes for each aspectual morpheme and then extend it to less prototypical cases. However, several researchers have argued that there are other factors (such as L1 influence, input frequency, learning environment, and language proficiency level) contribute to the acquisition of the Japanese imperfective aspect marker (Ishida, 2004; Sheu, 1997; Shirai, 2004; Sugaya, 2003; Sugaya & Shirai, 2007).

To investigate the other factors which play a role in the acquisition of Japanese imperfective aspect marker (*-te i (ru)*), the researcher examines in this paper the three factors: (1) "Verb Categories" (progressive and resultative meaning); (2) "Japanese Language Proficiency Level" (advanced, intermediate, begin level); and (3) "Textbook Roles" (lexical items in the form of *-te i (ru)* which is used in the textbooks and lexical items in the form of *-te i (ru)* which does not appear in the textbooks) by using questionnaires.

II. THE ASPECT HYPOTHESIS

Vendler (1967) devided the inherent aspect of verbs into four categories: (1) state verb; (2) activity verb; (3) accomplishment verb; and (4) achievement verb. To briefly describe the four categories, the semantic features of inherent lexical aspect classes are presented in Table 1.

Table 1 – Semantic features of inherent lexical aspect classes

	State	Activity	Accom-plishment	Achieve-ment
Dynamic	-	+	+	+
Telic	-	-	+	+
Punctual	-	-	-	+

Note. from Andersen, 1991, p. 311.

A state verb is [-dynamic] as well as [-telic] and [-punctual] (e.g., *to love*, *to see*, *to know*). Other classes of verbs are all [+dynamic]. Whereas an activity verb is [-telic], [-punctual] (e.g., *to sing, to eat, to run*), an accomplishment verb is [+telic], [-punctual] (e.g., *to eat an apple*, *to build a house, to run a mile*). An achievement verb is [+dynamic] as well as [+telic] and [+punctual] (e.g., *to die*, *to put on*, *to recognize*).

Many studies on the tense-aspect in first and second language acquisition of Indo-European languages observed that children and second language learners use tense-aspect markers selectively according to the inherent lexical aspect. The hypothesis which is based on this observed phenomenon has been derived from the aspect hypothesis (Andersen & Shirai, 1994) as follows:

1. Learners use (perfective) past marking on achievement and accomplishment verbs, eventually extending use to activity and state verbs.

2. In languages that encode the perfective and imperfective distinction morphologically, imperfective past appears later than perfective past, and imperfective past marking begins with stative and activity (i.e., atelic) verbs, then extends to accomplishment and achievement (i.e., telic) verbs.

3. In languages that have a progressive aspect, use of progressive marking begins with activity verbs and then extends to accomplishment and achievement verbs.

4. Learners do not incorrectly attach progressive marking to stative verbs.

Andersen & Shirai (1996) attempted to explain the predictions of the aspect hypothesis by using the prototype hypothesis. This hypothesis proposed that language learners begin to use a form for expressing the most prototypical meaning and gradually extend its use to less prototypical meaning. With regard to the third aspect hypothesis, use of progressive marking begins with activity verbs and then extends to accomplishment and achievement verbs. This means that learners map an aspect marker with activity verbs and extend it to the other verb types.

In accordance with Sugaya & Shirai(2007), this study focuses on the acquisition of progressive marking as the evidence for the acquisition order for the spread of past making from telic verbs is more robust. However, as will be discussed in the next section, Japanese imperfective aspect marker *-te i (ru)* is different from Indo-European languages in terms of the resultative meaning (Ishida, 2004). According to Ishida (2004), the third aspect hypothesis should be modified before using it.

III. THE JAPANESE IMPERFECTIVE ASPECT MARKER

The Japanese imperfective aspect marker is *-te i (ru)*. It is composed of a verb in the *-te* form and a verb of exis-

tence *i (ru)*. The meaning can be categorized into four distinct definitions: the *progressive*, the *resultative*, the *habitual*, and the *perfect*. Examples of each definition denoted by *-te i (ru)* are presented below.

Table 2 – Japanese Imperfective marker with *-te i (ru)*

Meaning	Example
Progressive	(1)Minna wa tabe-*te-i-ru*.
	"All(of them) are eating."
Resultative	(2)Kajuaru-na fuku o ki-*te-i-masu*.
	" (I am) in casual clothes."
Habitual	(3)Ima dorama o benkyooshi-*te-i-masu*.
	" (We are) studying dramas these days."
Perfect	(4)Senmon wa sudeni kime-*te-i-ru*.
	" (I) have already decided on my major."

Note. Examples from Ishida, 2004, p. 313.

In example (1), *-te i (ru)* is used to denote the action of eating now but in example (2), *-te i (ru)* is used to describe a continuative state that resulted from the action of putting clothes on. In example (3), *-te i (ru)* is used to indicate that the action of studying dramas in the class are repeated actions. In example (4), *-te i (ru)* is used to reveal that the speaker has made the decision about a major at an earlier point in time. The decision about the major has some relevance to the courses that he or she has been taking since then.

However, in Japanese, progressive meaning is obtained with [+dynamic] and [-punctual] verbs, which included activity verbs such as *tabe-(ru)* (to eat), and accomplishment verbs such as *ringo o tabe-(ru)* (to eat an apple). Furthermore, the Japanese imperfective aspect marker *-te i (ru)* does not allow for progressive meaning when it is attached to achievement verbs. For example, when *-te i (ru)* is attached to an achievement verb, *shin(-u)* (to die), it is interpreted to be in the state of being dead as a result of dying.

According to Ishida (2004), the prediction for the progressive marking formulated in the aspect hypothesis should be modified into a prediction as to how *-te i (ru)* is used to mark various meaning. The researcher in this study uses the modified prediction of Ishida (2004) which can be summarized as follows: Learners begin to use *-te i (ru)* with activity and accomplishment verbs, thereby obtaining progressive meaning, and later extend the use to achievement verbs, thereby obtaining resultative meaning.

IV. Japanese L2 Acquisition of -te i (ru)

Numerous studies of the acquisition of Japanese imperfective aspect marker (-*te i (ru)*) have been conducted. Most of these studies investigated L1 influence. The results show that learners whose L1 has a progressive marker, had more easily acquired the progressive use of -*te i (ru)* than the resultative use, whereas learners whose L1 has no progressive marker, used both meanings frequently early in the language learning process (Koyama, 1998; Sheu, 1997; Sugaya, 2003; Uozumi, 1998). Because the influence of L1 on the acquisition of Japanese imperfective aspect marker is more robust, this study will not focus on this point.

However, there are the other factors which also play a role on the acquisition of Japanese imperfective aspect marker (-*te i (ru)*) other than L1 influence. Sheu (1997) used manipulation test to assess 30 JFL and 30 JSL learners. Sheu (1997) found that JSL learners used both meanings correctly more so than JFL learners. Ishida (2004) analyzed conversational data from four learners of Japanese (English and Chinese) and reported higher accuracy for the resultative use over progressive use. Ishida (2004) suggested that this is attributed to instructional factors was because resultative meaning was taught before progressive meaning.

There are two studies: Kurono (1995), and Nishikawa (1998) that address the role of Japanese language proficiency level (Kurono, 1995) and textbook roles (Nishikawa, 1998) in the acquisition of the Japanese imperfective aspect marker -*te i (ru)*. Kurono (1995) analyzed longitudinal data from 14 learners by using grammaticality judgment. The data were collected on three separate occasions – approximately three, six, nine months after arrival in Japan. The results showed that the correct judgment of the resultative meaning did not improve over six months. This results revealed that although learner's Japanese proficiency is higher, they could not judge the resultative meaning well. Nishikawa (1998) investigated 14 Chinese, three English, one Korean, and one Spanish learner by using written verb form manipulation tasks and oral story recall tasks. The analysis of the data revealed that learners receive higher scores in terms of progressive meaning from the Japanese imperfective aspect marker -*te i (ru)*. When -*te i (ru)* was used with lexical items that appear less frequently in textbooks, the resultative use was particularly low in accuracy.

Although, there are the studies into the role of Japanese language proficiency level and textbook roles, the participants in these studies are too few in number to say that this is a factor which influences the acquisition of the Japanese imperfective aspect marker -*te i (ru)*. Furthermore, the participants in these studies are various L1 learners. These results might come from the influence of learners'L1. The question of what kind of factors affect the acquisition of the Japanese imperfective aspect marker -*te i (ru)* is still an open one. Therefore, this study examined the effect of Japanese language proficiency level and textbook roles on the acquisition of the Japanese imperfective aspect marker -*te i (ru)*.

V. Method

A. Informants

Sixty-two undergraduate students (47 females and 15 males) at the university in Bangkok, Thailand, all native speakers of Thai, participated in this study. Ages ranged from 19 years to 20 years and 9 months. No of the informants had lived in Japan and they had not studied Japanese before came to this university.

The data was collected when they were studying Japanese 2 in the second semester. They had only learned about the Japanese imperfective aspect marker –*te i (ru)* in the progressive and resultative meaning one month before and they had not been tested on either meaning of -*te i (ru)*. Participants were volunteers and each received a pen as compensation for their participation. The type of data to be collected and its use for this study were explained before the tests. Informants have been kept anonymous by the removal of identifying information.

To access the influence of learners' Japanese proficiency level, the researcher was given the student's mid-term test scores by their teacher. The researcher used mid-term scores to divide learners into different proficiency groups. The target knowledge of progressive and resultative score was not used as a grouping variable because it could affect the comparison. Out of a maximum of 35 points, the mid-term test scores for all participants had a mean of 27.56 with a standard deviation of 5.56. The students were divided into three groups. Advanced learners had a score of 33.12 or higher (mean (27.56) + standard deviation (5.56)). Basic learners had a score of 22 or lower (mean (27.56) - standard deviation (5.56)). Intermediate learners had a score of 25.56-29.56 (mean (27.56) $\pm$ 2). The learners who had a score outside this range were excluded from the participants. Finally, data of only 44 students (35 females and 9 males) was analyzed in this study.

Table 3 shows the number of participants, the mean, the standard deviations, and the range of scores for each of the groups.

Table 3 – Each group's scores

Group	Mean	Standard Deviations	Range
Advance ($n = 16$)	33.55	0.56	33.25-34.75
Intermediate ($n = 15$)	27.92	1.14	26.25-29.50
Basic ($n = 13$)	18.73	2.66	14.25-22.0

B.　Materials and Procedure

The data were collected in the classroom. The participants had multiple choice test and finally completed background questionnaires. The multiple choice test consisted of 28 items such as *-te i (ru)*, *-mae ni* (before doing something), *-te kara* (after doing something), *-te kudasai* (please do something), *-nakereba naranai* (have to do something), *-shimashou* (let's do something). Because the researcher focused on the results for *-te i (ru)*, only 16 items were analyzed. It was designed to assess learners' knowledge of finite verb forms *-ru* (nonpast), *-ta* (past), *-te i ru* (nonpast imperfective) and the other form one such as *-te kudasai* (please do something), *-nakereba naranai* (have to do something), *-shimashou* (let's do something).

The sentences were given in Japanese orthography only, after checking in learners' textbook that they had learned all of lexical items in the multiple choice test. Each item consisted of a dialogue with a verb phrase deleted; the learners were to choose appropriate forms from among four choices, as in this example:

1）佐藤：マリさんは、今どこですか。
　　アン：へやで音楽を＿＿＿＿＿。
　A．聞いています　　　B．聞きます
　C．聞きました　　　　D．聞いてください

1) Sato :　　mari san wa, ima doko desu ka?
　Ann :　　heya de ongaku o ＿＿＿＿.
A. kiiteimasu　　　　　B. kikimasu
C. kikimashita　　　　D.kiitekudasai

The context here is: Sato asks, "Where is Mari, now?" and Ann says, "She is listening the music at her room." The four choices are: A-non past progressive meaning, B-non past meaning, C-past meaning, D-please listen. Therefore, the correct answer is the non past progressive meaning.

2）マナ：田中さんは、独身ですか。
　　田中：いいえ。＿＿＿＿＿＿。
　A．結婚します　　　　B．結婚しました
　C．結婚しています　　D．結婚しません

2) Mana　:　　Tanaka san wa, dokushin desu ka?
　Tanaka :　　iie. ＿＿＿＿.
A. kekkon shimasu　　　　B. kekkon shimashita
C. kekkon shiteimasu　　　D.kekkon shimasen

The context here is: Mana asks, "Tanaka, are you single?" and Tanaka says, "No, I'm married." The four choices are: A-non past meaning, B-past meaning, C-non past resultative meaning, D-non past negative meaning. Therefore, the correct answer is the non past resultative meaning.

The multiple choice test was not timed. It took about 30 minutes on average. The researcher was present throughout the administration and told the participants to feel free to do it.

C.　Textbook

According to Nishikawa (1998), *-te i (ru)* is used with lexical items that appear less frequently in textbooks, the resultative use is particularly low in accuracy. In other words, if the textbook plays a role in the acquisition of the Japanese imperfective aspect marker *-te i (ru)*, learners may answer lexical items in the form of *-te i (ru)* which is used in the textbook more correctly than lexical items in the form of *-te i (ru)* which does not appear in the textbook. The textbook the participants used in their class is "Minna no Nihongo" (*Japanese for Everyone*). Because they had learnt up to lesson 20 of this textbook, the researcher only used lexical items which appear up to lesson 20 to test them.

For examining the textbook roles, the researcher first analyzed *-te i (ru)* that was used with lexical items in the form of *-te i (ru)* in "Minna no Nihongo". After that, the researcher divided them into progressive and resultative meaning and chose lexical items that were not used in the form of *-te i (ru)* in "Minna no Nihongo". Table 4 shows the lexical items used in the multiple choice test.

Table 4 – The lexical items in the multiple choice test

Meaning	Appears in textbook in the form of *-te i (ru)*	Does not appear in textbook in the form of *-te i (ru)*
Progressive	*asobu* "to play" *hanasu* "to talk" *yomu* "to read" *ame ga furu* "to rain"	*utau* "to sing" *souji-suru* "to clean the room" *tetsudau* "to help" *kiku* "to listen"
Resultative	*shiru* "to come to know" *kekkon-suru* "to get married" *sumu* "to live" *motsu* "to have"	*iku* "to go" *tsukareru* "to get tired" *oboeru* "to memorize" *suwaru* "to sit"

Additionally, the researcher asked informants in the questionnaire about their experience of learning Japanese outside the university and the textbooks that they use to learn by self study. Because every learner answered that they learnt Japanese in their class only and they did not use any book to study Japanese further, the researcher

focused on the textbook roles by analyzing "Minna no Nihongo" (*Japanese for Everyone*) only.

D. Decision Tree Analysis

The data were analyzed using the decision tree analysis with the *Chi-squared automatic interaction detection* (CHAID) algorithm provided by SPSS Version 15.0, continuous variables. It determines the pair of categories for each independent variable (predictor) that is least significantly different with respect to the dependent variable. In the tree-growing process, each parent node splits into child nodes only if some significant interaction is found among independent variables. Every step for splitting nodes uses Bonferroni's adjusted *p* values to avoid Type I Error, i.e., the error of rejecting null hypothesis when it is actually true (Tamaoka & Ikeda, 2010).

The present study applied the decision tree technique to predict [use] or [not-use] of the Japanese imperfective aspect marker *-te i (ru)* by the three factors of verb categories (progressive and resultative meaning), Japanese language proficiency level (advance, intermediate, basic), and textbook roles (lexical items in the form of *-te i (ru)* which appear in the textbook and does not appear in the textbook).

According to Tamaoka & Ikeda (2010), the results of decision tree analysis are a hierarchy drawn in a dendrogram: stronger predictors go to the higher nodes while weaker predictors appear at the ends of the branches. Non-significant predictors are not included in the dendrogram. Branches grow when significant interactions are found in the data. Since the present study focused on the predictions of [use] or [not-use] of the Japanese imperfective aspect marker *-te i (ru)* by all three independent together, the decision tree analysis was highly appropriate for purpose and requirements entailed in this inquiry. Thus, the results of the decision tree analysis are reported and discussed in the following sections.

VI. RESULTS OF DECISION TREE

The results of the decision tree are depicted in the dendrogram of Figure 1, clearly showing a hierarchy of the influential strength of factors upon [use] or [not-use] of the Japanese imperfective aspect marker *-te i (ru)* in the descending order of verb categories, Japanese language proficiency level, and textbook roles. The following sections discuss each of these factors.

A. Factor of Verb Categories

The decision tree analysis indicates that the most dominant influential factor was identified as verb categories [χ^2 (1) = 52.581, *p* < .001]. Learners receive higher scores in terms of progressive meaning more than resultative meaning from the Japanese imperfective aspect marker (*–te i ru*).

B. Factor of Textbook Roles

Classification Trees (SPSS, 2006). The decision tree analysis attempts to select a useful subset of predictors from a larger set of variables. The technique automatically detects significant interaction effects among independent (predictor) variables, by repeating Chi-square tests at each step for categorical variable or *F* tests for

The decision tree analysis indicates that textbook was also identified as the influential factor in predicting [use] or [not-use] of the Japanese imperfective aspect marker *-te i (ru)*. As shown in the dendrogram, lexical items of the resultative meaning in the form of *-te i (ru)* which is used in the textbook more correctly than lexical items of the resultative meaning in the form of *-te i (ru)* which does not appear in the textbook [χ^2 (1) = 74.754, *p* < .001]. As the decision tree indicated, no matter whether the lexical items appear in the textbook or not, there is no significant difference between [use] or [not-use] of *-te i (ru)* in the progressive meaning.

C. Factor of Japanese Language Proficiency Level

The decision tree analysis show the interactive influences as shown in the dendrogram of Figure 1. Japanese language proficiency level was a significant influential factor for the use of progressive meaning [χ^2 (1) = 15.047, *p* < .001]. The results show that advanced learners and intermediate learners can answer more correctly than basic learners in progressive meaning. As the decision tree indicated, there was no difference in [use] or [not-use] of the Japanese imperfective aspect marker *-te i (ru)* toward advanced learners and intermediate learners. Thus, both advanced learners and intermediate learners were combined together in the decision tree (see Node # 3). Similarly, in the case of resultative meaning, Japanese proficiency level was also a significant influential factor for both lexical items which appear in textbook [χ^2 (1) = 11.176, *p* < .005] and lexical items which do not appear in textbook [χ^2 (1) = 8.508, *p* < .05].

VII. DISCUSSION

The present study examined the factors affecting the acquisition of the Japanese imperfective aspect marker (*-te i ru*). Data obtained from 44 participants through questionnaires with a multiple choice test were analyzed. Using decision tree analysis, the results show that, verb categories is the main factor that affect the acquisition of the Japanese imperfective aspect marker (*-te i ru*). Regardless of Japanese language proficiency level, all three groups can answer the question of progressive meaning more correctly than the question of resultative meaning. This result means learners begin to use -te i (ru) with activity verbs, thereby obtaining progressive meaning, and later extend the use to achievement verbs, thereby obtaining resultative meaning. This results supports the
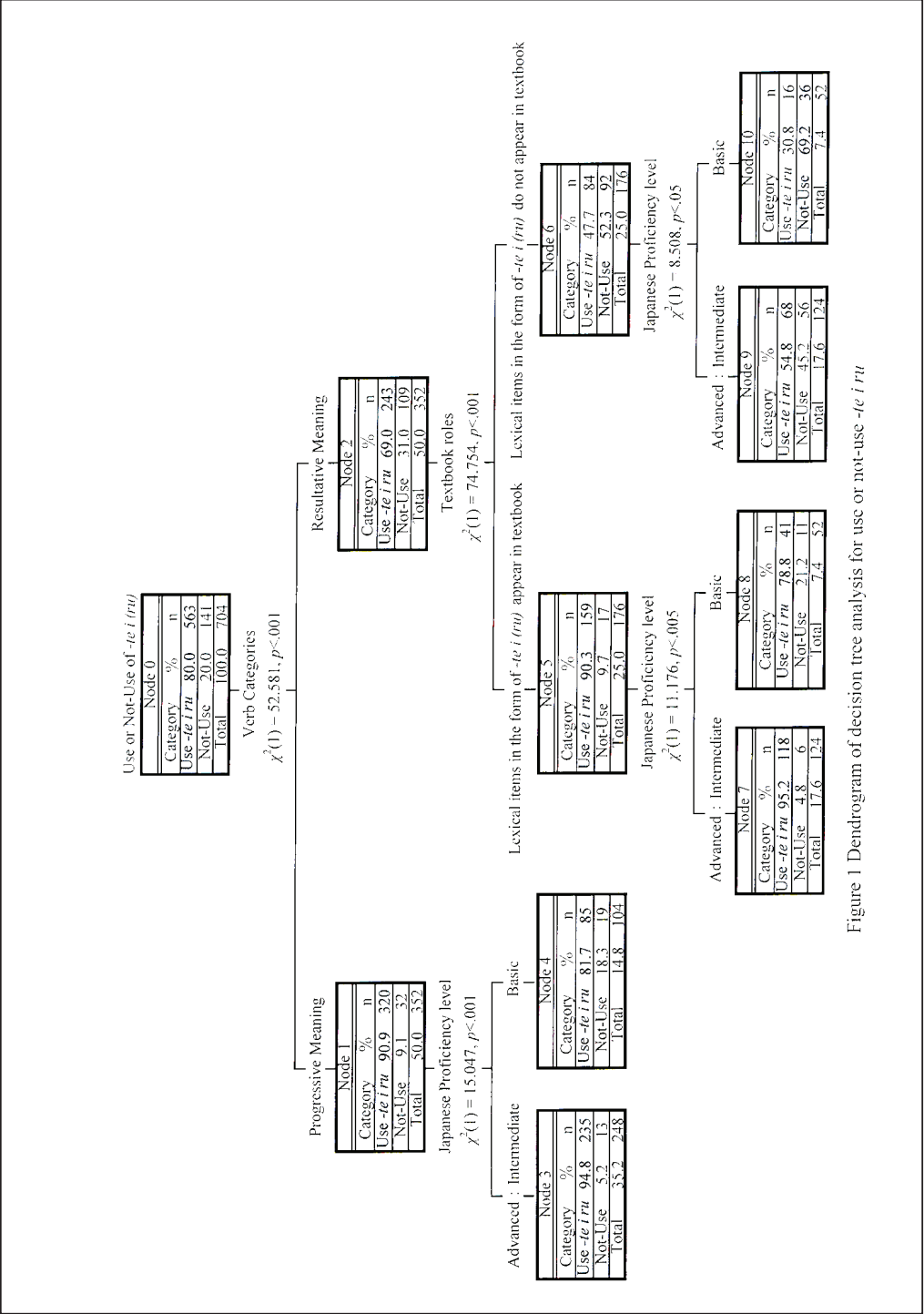
Figure 1 Dendrogram of decision tree analysis for use or not-use *-te i ru*

fact that progressive meaning is generally easier than resultative meaning. But why is progressive meaning easier for learners? One possible reason is the effect of one-to-one principle (Andersen, 1984). This reason is also reported in Sugaya & Shirai (2007). One-to-one principle asserts that language learners prefer to map one meaning to one form. In Japanese, the resultative meaning can be shown in the other forms such as -ta or -te a ru, where as the progressive meaning can be shown in the form of -te i ru only. Thus, learners create a system so if they want to say the progressive meanin, they can use -te i ru only, but when they want to say the resultative meaning, they can use -ta or the other forms. This is the reason why learners can learn the progressive meaning easily.

In addition, this study elucidates the evidence for the textbook being the factor that affects the acquisition of the Japanese imperfective aspect marker (*-te i ru*) also. However, the textbook only plays a role in the answer to resultative meaning. Learners find it is easier to answer *"-te i ru"* which is shown in the textbook more than those which are not shown in the textbook. But why does the resultative meaning in the form of *-te i* (*ru*) which is used in textbook more correctly than lexical items of the resultative meaning in the form of *-te i (ru)* which does not appear in textbook? Almost all of the learners in the foreign language environment do not have an opportunity to communicate with Japanese native speakers. They take the input from textbook almost exclusively. It can be assumed that when they read the textbook, the sentence appearing frequently will affect them directly or indirectly. Thus, it can be assumed that the learners learn language in the same style as appears in their textbook.

Furthermore, a recommendation that can be made to other researchers is they should be circumspect when designing tests to measure learners' acquisition. If researchers use the lexical items which appear regularly in the textbook in such tests, the learners will receive higher scores more easily, although learners' proficiency may not reflect these scores.

Finally, the results of this study reveal that advanced learners and intermediate learners performed better than basic learners when answering about both Japanese imperfective aspect marker's meanings. However, although the learners' Japanese level is not advanced, they can receive good scores in terms of progressive meaning. This means the basic learners can map *-te i ru* to progressive meaning more easily. This results supports the fact that Japanese learners will first map *-te i ru* to progressive and before then mapping the resultative meaning.

VIII. Summary

In this study, this researcher has attempted to examine the factors which affect the acquisition of the Japanese imperfective aspect marker (- *te i ru*). Based on this study, the researcher can safely conclude that not only verb categories but the textbook might affect the acquisition of

the Japanese imperfective aspect marker (*-te i ru*). The researcher assumes that the one-to-one principle is key to the explanation of the acquisition of *-te i ru*. However, there are the other factors, such as input distribution (Ishida, 2004) and task type (Sugaya & Shirai, 2007) that should be taken into account.

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