

Developmental sequence study of the “Te-form”

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Abstract

The purpose of this study is to examine with different native speakers the acquisition of the Japanese verb te-form. Nagatomo (1997) proposed two phonological explanations: “1) partial assimilation rules are unmarked and their acquisition precedes that of marked complete assimilation rules. 2) the vowel /i/ epenthesis rule is unmarked and its acquisition precedes that of the consonant /k/ and /g/ elision rules” (Nagatomo, 1997, p. 8). In this paper, we will first overview previous studies of language acquisition in general and also acquisition sequence study of the verb te-form in particular. Then, we will discuss the present longitudinal study with 30 Chinese L1 learners of Japanese. The results from this study do not support Nagatomo’s explanation. He explained that the acquisition of partial assimilation rules precedes that of complete assimilation rules. The inherent phonological rules of the target language would apply learners with different L1, but the results from this study force the reconsideration of his explanation. The further study is necessary in order to determine what caused such disagreement, but some of the problems are clarified in the discussion.

1 Introduction

The process of language acquisition has been studied in two ways: the acquisition order and the developmental sequence of particular structures. According to Larsen-Freeman and Long (1991), “although ILs [interlanguages] are highly variable, they are also

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systematic. Documented acquisition orders and developmental sequences show a high degree of uniformity” (p. 88). As for the acquisition order, researchers such as Dulay and Burt (1974) looked at obligatory occasions of grammatical morphemes in English and found that there was a similar acquisition order of grammatical morphemes among learners from different L1 backgrounds. Researchers studying the developmental sequence of negation in English found that learners tend to go through the same interim stages as they acquire the target structure (Schumann, 1979; Stauble, 1984).

According to the Japanese acquisition studies by Kanagy (1991) and Shirahata (1993), different kinds of errors occur in the first and second language learning processes, and those errors appearing in the second language process are not necessarily due to the interference of the native language. In the case of the *te*-form formation, which is a kind of conjunctive form of Japanese verb, it has been observed that many errors occur in the L2, but scarcely any in the L1 child's acquisition process (Sakamoto, 1993 and Nagatomo, 1997 for L2, and Shirai and Komori, 1998 for L1). Only L2 learners seem to face difficulties in learning the *te*-form. This paper will first review these previous studies, then report the replicate study of Nagatomo (1997) with different L1 speakers of Chinese.

2 Previous studies of language acquisition

For the last thirty years, the study on language learning revealed the mechanism of language learning. One of the main focuses in the previous studies of language acquisition has been placed on the acquisition order and the developmental sequence. Studies of acquisition order were investigated earlier than those of developmental sequences.

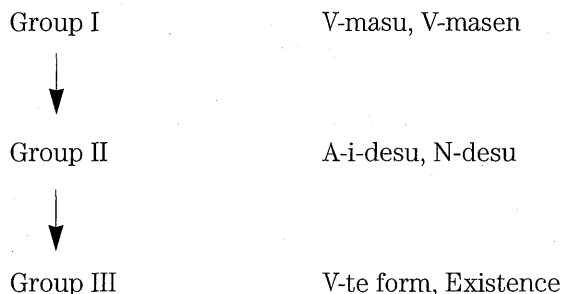
2.1 Acquisition Order

Here we will briefly review the L1 study of Brown (1973), the L2 study of Dulay and Burt (1974) and the Japanese L2 study by Banno and Komori (1989), all of which look at obligatory occasions as the measurement. The studies of language acquisition order first appeared in the field of the acquisition of English as a first language. Brown (1973), studying three unacquainted children once a week for over four years, found that those children acquired fourteen grammatical morphemes in a similar order. For example, the plural “-s” was acquired earlier than the third person singular “-s.” After Brown's acquisition order study of English as a first language, Dulay and Burt (1974), studying groups of children using the Bilingual Syntax Measure (BSM), reported that children acquiring English as a second language show a strikingly similar acquisition order of

English morphemes, regardless of their first languages. Soon, many other researchers, such as Larsen-Freeman (1975), Fathman (1975), Krashen, Houck, Giunchi, Bode, Birnbaum and Strei (1977), Meisel, Clahsen and Pienemann (1981), and Pienemann, Johnston and Brindley (1988) also studied acquisition order and found that there is a specific acquisition order in SLA¹⁾.

Banno and Komori (1989) studied twenty-two students who were studying Japanese as a second language at a university using the same method used by Dulay and Burt (1974). They reported a similar pattern of acquisition order among students of Japanese as a second language regardless of their L1 language backgrounds of Tagalog, Portuguese, Norwegian, English, Italian, Greek, Burmese, Arabic, Indonesian, Malay, Thai, Czech and Bengali. According to the Japanese acquisition order hierarchy found by Banno and Komori (1989), “V-masu” and “V-masen” are acquired first, while “te-form” and existence (*arimasu* and *imasu*) are acquired last, as shown in Table 1.

Table 1 Acquisition hierarchy of some base Japanese structures (Banno and Komori, 1989, p. 71)



Also, Banno and Komori (1989) concluded that the acquisition order they found and the order in which the morphemes were taught in the class were not the same.

2.2 Developmental Sequence within a Structure

Learners do not suddenly change from the state of non-acquisition to the state of acquisition, but rather they pass through a series of stages in acquiring a structure. Zobl (1985, cited in Lightbown and Spada, 1990) observed a developmental sequence of the possessive determiners by French learners of English. He found that there are five stages, from stage 1 which is described as “the use of definite articles rather than possessive

determiners,” to stage 5 which is “the correctly differentiated use of possessive determiners with all types of nouns, including those with natural gender” (Lightbown and Spada, 1990, p. 441).

Stauble (1984) discusses developmental sequence of English negation. The study shows that learners with different L1 backgrounds pass through four stages: 1) external, 2) internal (pre-verbal), 3) auxiliary + negative, and 4) analyzed “don’t” (Stauble, 1984). Eckman, Bell and Nelson (1988) discuss relative clause acquisition for English as a second language, reporting that subject-relative clause, object-relative clause and preposition object-relative clause are sequentially acquired in this order. Developmental sequence researchers have shown that learners acquire individual morphemes gradually and systematically (Schumann, 1979).

3 Developmental Sequence of Japanese Morpheme Te-form

In this section, a close examination of developmental sequence study of Japanese te-form will be discussed. The te-form is a kind of conjunctive verb form. This form is widely used with combination with phrases such as *te-kudasai*, *te-aru*, *te-shimau*, and *te-moii* as it is shown in the example sentences below:

- 1) *Takusan tabe-te kudasai.*
a lot eat CONT please
‘Please eat a lot.’
- 2) *Shukudai ga dashite arimasu.*
homework SUBJ assigned has been
‘Homework has been assigned.’
- 3) *Zenbu non-de shimai mashi-ta.*
all drink CONT finish-ASP POL past
‘I have drunk it all.’
- 4) *Kae-ttemo ii desu ka.*
go CONC good COP:POL Q
‘May I go home?’²⁾

The learners need to be able to use this conjugational verb form “te” from the beginning level.

3.1 Previous Studies on the Te-form

While Sakamoto (1993) reports that errors in the te-form are often found in the natural data on L2 learners, Shirai and Komori (1998) report that very few errors are found in the data on L1 children. This implies that there must be some L2 specific factors working in the L2 acquisition of the te-form.

The te-form is a type of *renyoukei* (conjunctive form) of Japanese verbs which is used with the *setuzoku-joshi* (connective particle) “te.” It is one of the most important morphemes to learn for the elementary learners of Japanese, because the te-form is used to connect sentences such as the request form (*te-kudasai*), and the progressive form (*te-iru*) and also it is sometimes used as a sentence final form (Hasegawa, 1996). In addition, the conjugation rule of the te-form applies to the formation of the past tense ta-form. Thus, the te-form is one of the fundamental structures of Japanese language.

As for Japanese developmental sequence studies, Sakamoto (1993) and Nagatomo (1997) examined the L2 learners’ formation of the te-form. Sakamoto (1993) conducted a cross-sectional study of 82 native speakers of English studying Japanese as a second language. Sakamoto used a written test in which learners were given both final (dictionary) form and masu-form (conjugational form) of each verb and asked to answer the corresponding te-form. He discovered that there was a significant difference in errors of the te-form formation among students of proficiency levels of low intermediate, intermediate, low advanced and advanced. He proposed three stages of developmental sequence in the te-form formation, found in Table 2.

Table 2 Sakamoto’s (1993) sequence of the te-form

Stages of acquisition	Verb types
Group I:	-su, -tu, -mu, -bu
↓	
Group II:	-iru, -eru, -(w)u, -ru
↓	
Group III:	-gu, -ku ³⁾

Since verb types of “-su,” “-tu,” “-mu” and “-bu” had the least errors in te-form formation, he concluded that these are the easiest types, whereas verbs which are in “-gu” and “-ku” types had most errors and they are considered the most difficult verb types.

Nagatomo (1997) conducted a six-month longitudinal study of nine participants who are also native speakers of English learning Japanese. He found that there were three stages of developmental sequence for the te-form which were quite similar to the ones proposed by Sakamoto (1993). In Nagatomo's study, 35 verbs (both regular and irregular) were used to investigate the te-form formation both in written and spoken forms using the similar elicitation method to Sakamoto's. Nagatomo's data collection started immediately after the introduction of the te-form in class and continued once a month for six months. Nagatomo's results of the developmental sequence of the ten types are shown below ⁴⁾ :

Table 3 Nagatomo's (1997) sequence

Stages of acquisition	Verb types	Ratio of correct answer (%)
Group I	-mu	84.6
	-eru	83.3
↓	-su	79.6
	-tu	76.5
	-bu	75.9
	-iru	72.8
Group II	-ru	63.6
↓	-(w)u	63.6
Group III	gu	55.6
	-ku	50.6 ⁵⁾

Nagatomo explained that his result supported Sakamoto's results. As shown in Table 3, “-gu” and “-ku” verbs had the most errors and they are considered to be the most difficult ones to acquire. Nagatomo discussed the developmental sequence of the te-form formation using the concept of phonological difficulties. According to his assumption, verbs which end with “-gu” and “-ku” are the most difficult because the conjugation rules

involves vowel insertion and consonant deletion, whereas verbs which end with “-mu” and “-bu” are easier because the rule required is only partial assimilation. Nagatomo believes that the phonological difficulties are due to the markedness. He argued two points: “1) partial assimilation rules are unmarked and their acquisition precedes that of marked complete assimilation rules. 2) the vowel /i/ epenthesis rule is unmarked and its acquisition precedes that of the consonant /k/ and /g/ elision rules” (Nagatomo, 1997, p. 8). For example, according to this rule, the te-form formation of verbs such as “yomu” (to read) in the “-mu” type which involves partial assimilation for the te-form “yonda” is acquired earlier than that of verbs such as “toru” (to take) in the “-ru” type which involves complete assimilation for “totte.” Also, the formation of verbs such as “kasu” (to lend) in the “-su” type which involves adding vowel /i/ for the te-form “kasite” is acquired earlier than that of verbs such as “kaku” (to write) in the “-ku” type or “nugu” (to undress) in the “-gu” type which involves both adding vowel /i/ and deleting consonant /k/ or /g/ for “kaite” or “nuide,” respectively.

4 The present study

In order to see if Nagatomo’s two points of argument applies not only to English L1 learners but to other L1 learners as well, we designed a study using the similar longitudinal study as Nagatomo (1997) with Chinese native speakers who are studying Japanese as a second language.

4.1 Method

We conducted a four-month longitudinal study of thirty Chinese participants who were studying Japanese as a second language, replicating the same elicitation method which was used by Nagatomo (1997). Fifty-six verbs including the 36 verbs which had been tested in the Nagatomo’s study. Both written and spoken data were collected from each participant. As for the written data, each participant was given a written list of all 56 verbs with both final forms and masu-forms and directed to write down the “te-form” for each verb. As for the spoken data, each participant was interviewed by one of the researchers. Given both final forms and masu-forms for each verb orally, participants were asked to answer the corresponding “te-form” of each verb. All the interviews were recorded and transcribed afterwards for analysis.

4.2 Results and discussions

The results from the present study are shown in Table 4. The first table is the average of both written and spoken data. As you notice, there are significant differences between the written and spoken data ($t(26) = .0001$, $p < .05$). The difference between the written data and the spoken data is the way participants answered. We have used the same procedure in collecting both written and spoken data, by giving the final form and masu-form for each verb, and asking participants to answer the corresponding te-form. In the case of written data, participants were asked to write down the answer on the paper, while in the case of spoken data, participants answered orally. Verbs such as -su, -tu, -bu, -ru, -(w)u, and -gu showed higher percentage of correct answers in written data than spoken data. One of the reasons why there is such difference between the two data may be found in the case of written data, where participants were given a longer time to think of the corresponding te-form for each verb. The different kinds of knowledge have been discussed in Faerch & Kasper (1984). In the writing process, they might use the declarative knowledge of te-form formation rules. In the case of spoken data, however, participants were asked to answer immediately and they had no time to think. In this process, they could use only their automated procedural knowledge of te-form formation rules. In other words, participants could answer some corresponding te-form correctly in written data, but they might make mistakes in spoken data if the forms were stored only as declarative knowledge. The difference of the written and spoken data would indicate that the participants were using different knowledge and it is important to analyze the data separately, although the previous study by Nagatomo (1997) does not distinguish the two and for the sake of comparison, we will only focus on the average score for the analysis. Comparing the present study to the Nagatomo's sequence shown in Table 3, there are both similarities and differences. The average ratios of correct answers of the present study are much higher than Nagatomo's ratios, and they are difficult to see groups which verbs cluster together because each scores are too close together except for -iru (73.2%) and -gu (68.9%). Among the three stages of acquisition by Nagatomo (1997), the second groups of verbs (-ru and -wu) and the third (-gu and -ku) seem to be acquired by the learners earlier than some of the first groups of verbs (-su, -tu, -mu, -eru) in the present study as well. However, there are some verbs such as -bu and -iru which learners in the present study did not do as well compared to Nagatomo's study. Especially the verb type -iru was actually the second most difficult verbs for the learners in the present study.

Table 4 Acquisition sequence of the te-form by the Chinese L1 speakers

Average of both written and spoken data

Sequence	Verb type	Ratio of correct answer (%)
1	-eru	94.0
2	-mu	92.4
3	-su	91.9
4	-tu	87.2
5	-ku	86.8
6	-bu	85.8
7	-(w)u	85.7
8	-ru	83.9
9	-iru	73.2
10	-gu	68.9

Written elicitation data

Sequence	Verb type	Ratio of correct answer (%)
1	-su	97.0
2	-tu	96.0
3	-mu	95.9
4	-eru	95.7
5	-(w)u	95.6
6	-ru	94.9
7	-bu	94.4
8	-ku	92.4
9	-gu	81.7
10	-iru	73.3

Spoken elicitation data

Sequence	Verb type	Ratio of correct answer (%)
1	-eru	92.3
2	-mu	88.9
3	-su	86.7
4	-ku	81.1
5	-tu	77.9
6	-bu	77.1
7	-(w)u	75.8
8	-iru	73.1
9	-ru	72.9
10	-gu	56.1

Our results violate Nagatomo's explanation, especially his first argument of "partial assimilation rules are unmarked and their acquisition precedes that of marked complete assimilation rules," because of -bu and -iru. The conjugation rule of te-form formation of verb type -bu involves only partial assimilation, and the rule of -iru requires no assimilation. As for the errors relating to -iru and -ru type verbs are mainly differentiating 1-dan from 5-dan verbs. Confusion of distinguishing the two kinds of verbs may be one of the reasons why participants produced more incorrect forms. In Japanese, there are regular verbs which are classified as 1-dan (one-row) and 5-dan (five-row) verbs. These names derived from the conjugation patterns which have either 1-dan or 5-dan, as shown below (Vance, 1987):⁶⁾

Verb forms	1-dan verb	5-dan verb
Indefinite	tabenai	toranai
Conjugational (1) or masu-form	tabemasu	torimasu
Conjugational (2) or te-form	tabete	totte
Final	taberu	toru
Hypothetical	tabereba	toreba
Volitional	tabeyoo	toroo

For 1-dan verb *taberu*, it is clear that the stem form before suffix such as -nai, -masu and -te does not change and has the same form (*tabe-*) throughout the conjugation, whereas for 5-dan verb *toru*, it changes the vowel right before the suffix from -a to -o such as tora- and tori- in *toranai* and *torimasu*.

One of possible problems that arises from the discussion above concerning the three studies (Sakamoto, 1993; Nagatomo, 1997 and this study) on the te-form is the elicitation method. All of the three studies used basically the same method; they provide both final and masu-forms of each verb and ask the participants to answer with the corresponding te-form. However, the results of the present study did not show the same sequence of acquisition. The only difference between this study and the other studies is the L1 language of their participants. That is, the participants for the studies in Sakamoto (1993) and Nagatomo (1997) are native speakers of English, while the ones in this study are native speakers of Chinese.

If Nagatomo's (1997) explanation based on the phonological difficulties of the target language is true, a study with participants of different first languages such as Chinese and English should produce similar results. However, the results were not the same. This leads us to believe that there must be some other factors which effect the developmental sequences.

In the present study, Chinese speakers had many errors related to *sokuonbinka* (assimilation). In verb types such as -tu, -(w)u, and -ru, sound change or assimilation occurs in the process of adding the “te” and forming the “te-form.” It is called *sokuonbinka* and through the analysis of our data, it seems to have affected the research results. In other words, learners have to know whether the verbs are 5-dan verbs or 1-dan verbs in order to conjugate the corresponding te-form in terms of adding an extra [t] sound or not. For example, verbs types “-tu,” “-ru,” and “-(w)u” require *sokuonbinka* in the te-form formation. The te-form of “katu” (to win) is “katte,” but not “katite” or “kate.” The te-form of “kaeru” (to return) is “kaette,” but not “kaete.” The te-form of “au” (to meet) is “atte” but not “ate.” One of the reasons why those errors are seen in this study seems to be because there is no actual phonetic [t] sound, and students have to pause for one mora there, instead of pronouncing the last sound of the verb stem. The crucial point of *sokuonbinka* is that the difficulty is not the sound change itself but the knowledge of when to do the assimilation and when not to. These errors may suggest that the Chinese speakers have some difficulties of *sokuonbinka*, because Chinese is a tonal language, whereas Japanese is a pitch accent language with a concept of mora that is perceived as having equal length of time. This assumption, however, needs to be tested empirically in

order to draw any conclusions.

5 Conclusion

In this paper, we reported the replicating study of Nagatomo (1997) with different L1 speakers of Chinese after reviewing the background studies of language acquisition. We have discussed the difference observed between the two elicitation methods: the written and the spoken data. The analysis of these data seems to indicate that the participants were using different knowledge and the difference which was not discussed in the previous study should be taken in consideration. Comparing the present study with Nagatomo's (1997), we found both similarities and differences in the acquisition sequence of the te-form. The sequences of the two studies were not identical. The main differences were in the verb types of -iru and -bu, which were categorized in the easiest group to acquire in Nagatomo (1997), whereas in our study -iru was one of the most difficult ones to acquire and -bu was as difficult as -tu, -ku, -(w)u, and -ru. Our results suggested that confusion of 1-dan and 5-dan verbs may be involved. Also, *sokuonbinka* (assimilation) rule may be the source of difficulties which Chinese L1 speakers face. The further study is necessary in order to determine the acquisition of the te-form and analyze the factors deciding the sequence of the te-form.

- 1) Pienemann, Johnston and Brindley (1988) also proposed the Teachability Hypothesis, claiming that "instruction can improve acquisition. . . , if the interlanguage development fulfills the requirements for such an influence." (Pienemann, 1984, p. 206). Pienemann's claim is important for its constructive and direct pedagogical implications, which previous researchers such as Dulay and Burt did not emphasize.
- 2) List of abbreviations (Clancy, 1985):
 - CONT continuative
 - COP copula
 - POL polite
 - SUBJ subject
- 3) Sakamoto (1993) did not include "-nu" type, "iku" and irregular verbs "suru" and "kuru" in his study.
- 4) In order to compare the three studies, Sakamoto (1993), Nagatomo (1997) and the present study, we only discuss ten types of verbs common to these studies in this paper.

- 5) Nagatomo's (1997) study as well as the present study included irregular verbs ("suru" and "kuru"), exceptions ("iku") and also "sinu" (which belongs to "-nu" type). These are not included in Sakamoto (1993), because they only have one type or exceptions. For my analysis in this paper, those four verbs are not included.
- 6) Including the te-form, there are six rows rather than five.

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