The acquisition of English agreement/tense morphology and copula *be* by L1-Chinese-speaking learners

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Abstract

This paper investigates how L1-Chinese-speaking learners of English acquire three English morphemes – the third person singular *–s*, the regular past tense *–ed*, and the copula *be*. Chinese, unlike English, has no subject-verb agreement and tense marking at all. Nevertheless, the Chinese verb *shi* 'be' functions similarly to the English copula *be*. Hypotheses were made in accordance with Prévost & White (2000) Missing Surface Inflection Hypothesis (MSIH), predicting that participants would (i) sometimes produce non-finite forms to replace finite forms in verbal inflections (i.e., the third person singular *–s* and the regular past tense *–ed*), and (ii) perform better in copula *be* than in verbal inflections. The predictions were confirmed by the collected production data, suggesting that the omission of verbal inflections is due to problems with the realization of surface morphology, and the forms of copula *be* are acquired before the inflectional morphology on *in situ* thematic verbs.

Introduction

The issue of first language (L1) transfer to the second language (L2) has been broadly investigated in second language research. Chan (2004) indicates that language transfer – the influence from learners' L1 or prior linguistic knowledge – can be positive or negative based on the outcome of their L2 learning.

Many studies have shown that L2 learners tend to display optionality on inflectional morphology when this property is obligatory in the L2, but absent in the L1 (Dulay & Burt, 1974). Vainikka & Young-Scholten (1996: 13) state that 'optionality is the effect of competing grammars within the same individual: the grammar of an earlier stage competes with the grammar of a later stage, and signs of both stages can be observed in the data.' Many researchers have paid great efforts to examine whether this optional use of tense and agreement morphology is because of an impairment of the functional categories in the individual's L2 grammars, or whether, in fact, the features exist in their L2 grammars and the optional use of inflectional morphology is because of other reasons (Haznedar & Schwartz, 1997; Prévost & White, 2000). A number of researchers contend that the optional use of inflectional morphology by L2 learners is not due to a lack of functional categories related to tense and agreement in their L2 grammars, but instead claim that the phenomenon is due to the fact that L2 learners have difficulties in the realization of inflectional morphology in the L2 (Lardiere, 1998a, 1998b; Prévost & White, 2000).

The present study investigates the acquisition of three English morphemes – the third person singular –s, the regular past tense –ed, and the copula be – by L1-Chinese-speaking learners of English. It is known that Chinese has no tense and agreement marking at all (Li, 1990; Lardiere, 1998a, 1998b, 2003), whereas English does. This means that in Chinese no morphological variation of a verb is required under either different tense or different agreement contexts. Consider the examples below.

> (1) a. 3rd person singular –s
>   John <u>kan</u> dianshi
>   John watch   TV
>   'John watch<u>es</u> TV.'
>   b. Regular past tense –ed
>   John <u>kan</u>   dianshi
>   John watch   TV
>   'John watch<u>ed</u> TV.'

As seen in (1), no morphological inflection of the verb *kan* 'watch' is needed with respect to the subject-verb agreement. Also, no morphological inflection of the verb *kan* 'watch' is required when tense is different. By contrast, its equivalence in English requires morphological inflections on the verb *watch* with respect to different tense and subject-verb agreement. Therefore, if L1-Chinese-speaking learners of English show optionality in the acquisition of the third person singular –s and the regular past tense –ed, they may sometimes exhibit tense and agreement marking and sometimes ignore them in their L2 production.

For copula *be*, the Chinese verb *shi* 'be' functions in a similar way to the copula *be* in English (Chan, 2004; Lee & Huang, 2004), as shown in (2) below.

(2)　ta <u>shi</u> wode　hao　　pengyou
　　　he　is　my　　good　　friend
　　　'He is my good friend.'

In terms of what we have seen above, the research questions of the present study addressed are as follows:

(i)　How will the L1-Chinese-speaking learners of English perform the morphological inflections – the third person singular *–s* and the regular past tense *–ed* – when they are obligatory in English? Will they show difficulty in the realization of inflectional morphology with respect to the two morphemes?

(ii)　How will the L1-Chinese-speaking learners of English perform copula *be* in English? Will they transfer their L1 knowledge of the verb *shi* into the acquisition of the English copula *be*?

Previous research

Agreement

Lardiere (1998b) proposes that learners of a specific language (in L1 as well as L2 acquisition) have to acquire subject-verb agreement, for determining whether the agreement feature in that language is strong or weak. Three different hypotheses have been proposed with respect to this issue.

The first hypothesis assumes that the [±strong] feature determining verb-raising is associated with the morphological paradigm of verbs (Eubank, 1993/4; Eubank et al, 1997). Advocators of this view argue that learners have not acquired the L2 verbal agreement paradigm simply because they do not know whether the agreement feature of this language is strong or weak, i.e., they have an unspecified value for feature strength. Thus, learners are expected to display verb-raising optionally until they have acquired the strength feature of the language, enabling them to set the value of the agreement feature to [+] or [-]. In this sense, if L2 learners of English have not acquired the [-strong] setting of the agreement paradigm in English, i.e., affix *-s* is only available on 3rd person singular present-tense verbs, they will allow sentences with both raised and un-raised verbs even though raising is allowed in neither the L1 nor the L2. Only when L2 learners have acquired the third person singular *–s* affixation, the [-strong] agreement feature would prohibit the raising of thematic verbs.

The second hypothesis predicts that knowledge of the correlation between the strength feature and the morphological agreement paradigm is impaired in L2 learners (Beck, 1997). That is, even if the verbal morphology is finally acquired, optionality of

verb-raising is permanent in L2 learners' interlanguage grammar.

The third hypothesis proposes that knowledge of syntactic verb-raising is constrained by UG, but the development of verbal agreement affixation is independent (Gavruseva & Lardiere, 1996; Haznedar & Schwartz, 1997; Lardiere, 1998a, 1998b). In some cases (as in L1 acquisition), learning of the morphological paradigm related to subject-verb agreement may take longer to acquire. Schwartz & Sprouse (1996) and Lardiere & Schwartz (1997) indicate that knowledge of feature values and functional categories can be transferred from learners' L1. They also assert that L2 learners' knowledge of functional categories and features exceeds their production of verbal morphology. For example, Lardiere (1998b) interviewed an adult native speaker of Chinese, Patty, who had lived in the US for 18 years and whose L2 English grammar had reached its final state. The data came from three audio recordings of Patty who spent nearly nine years between the first and the third recordings in a total English immersion environment. Recall that Chinese has no subject-verb agreement marking at all. The results of Patty showed that the percentage of correct use in the agreement marking of the third person singular –s on thematic verbs was less than 5 %. Nevertheless, Patty showed a variety of syntactic phenomena on the surrounding verbs, such as 100 % of correct use of nominative case assignment and acknowledgement of a lack of verb-raising in English. This suggests that Patty had knowledge of functional categories (at an abstract level), but had problems in morphological mapping.

Tense

Hawkins (2000) proposes that the feature [±past] is not an intrinsic feature of Tense, since some languages have it and some do not, but the feature can be parameterised. Li (1990) indicates that Chinese, unlike English, has no [±past] feature in its morphology. Therefore, one may ask what it takes for L1-Chinese-speaking learners of English to acquire past tense in English. Hawkins (2000) explains that the acquisition can be obtained via parameter-(re)setting. Hawkins (2000) also asserts that if there is no [± past] feature in the L1, and the parameter value has not been reset in the L2, we should not expect to find verbal inflection for past tense in the L2. It suggests that a high rate of omission of past tense marking is expected for those learners whose L1 lacks the [±past] feature and the parameter has not been reset in the L2 acquisition.

In considering some of the factors that have been proposed to account for variability in past tense marking, Lardiere (2003) looked at what goes into the second language acquisition of past tense marking in English. To address a perspective of the feature [±past], Lardiere (2003) used the data from Patty (see Lardiere 1998a) to examine her inquiry. The results of Patty showed that there was a significant correlation between finiteness and pronominal case-marking. It means that Patty had native-like knowledge in finite and non-finite distinction in English; however, Patty had non-native-like morphological correlations of finiteness, especially lexical or thematic verbal affixation, in her L2 grammar. The overall percentage of past tense marking in Patty's three recordings was low, less than 35 % of correct use in the obligatory contexts. In spite of this, the result still suggests that Patty had knowledge of

the grammatical past tense marking. Nevertheless, Patty had problems with the realization of surface inflections, and thus, she sometimes had past tense morphology and sometimes omitted it. This finding supports Hawkins's claim that [±past] feature is not intrinsic, but can be parameterised.

Copula *be*

Lee & Huang (2004) point out that in Standard Written Chinese the copula verb *shi* is similar to the copula *be* in English. Chan (2004) also indicates that when the Chinese verb *shi* is used as a linking verb between the subject and its complement, it functions similarly to the English copula *be*, as shown in (2) above. However, in contrast to the English copula *be*, the Chinese verb *shi* cannot coexist with auxiliary verbs, such as *should*, *will*, etc., as shown in (3) below.

> (3) a. ? ta jinggai shi han   lei
>   He should be very tired
>   'He should be very tired.'
>   b. *ta jiang shi chidao
>   he will be late
>   'He will be late.

Lee & Huang (2004) point out some differences between the Chinese verb *shi* and the English copula *be*. There are two main forms of the English verb *be*: (i) a copula form, and (ii) an auxiliary form. A copula form is a relational process; that is, a relation has been set up between the subject and its complement. The complement can be a noun phrase, an adjective phrase, or a prepositional phrase, as shown in (4) below cited from Lee & Huang (2004: 213).

> (4) a. be + noun phrase
>   John is *the boss*.
>   b. be + adjective phrase
>   The table is *big*.
>   c. be + prepositional phrase
>   The exam is *on Sunday*.

As to an auxiliary form, the verb *be* plays a role in the formation of passive voice, and of different tense and aspect, as shown in (5) below.

> (5) a. passive voice
>   John <u>was</u> hit.
>   b. tense
>   Mary <u>was</u> here yesterday.
>   c. aspect
>   Peter <u>is</u> getting better.

For the Chinese verb *shi*, Lee & Huang (2004) contend that there are two important ways that the Chinese verb *shi* differs from the English verb *be*. First the Chinese verb *shi* can only be used as a copula and a focus marker in an emphatic sentence, and cannot co-occur with other voice or tense and aspect markers. This means that the Chinese verb *shi* is parallel to the English verb *be* in copula form but not auxiliary form. Consider the examples in (6) below.

(6) a. passive voice
   ? ta shi bei laoshi   ma
   he is be teacher blame
   'He was blamed by the teacher.'

   b. aspect
   *ta shi yijin bei gaozi
   he is have be tell
   'He has been told.'

Second, as a copula, the Chinese verb *shi* can only link a noun phrase to indicate someone's profession or an identity, as shown in (7) below cited from Lee & Huang (2004: 213).

(7) a. profession
   wo shi yisheng
   I be doctor
   'I am a doctor.'
   b. identity
   zhe shi wode mama
   this is my mother
   'This is my mother.'

This suggests that the Chinese verb *shi* cannot be used to link predicative adjectives or prepositional phrases that English copula *be* can. Consider the examples in (8) below cited from Lee & Huang (2004: 214).

(8) a. adjective
   ?zhe zhang   zuozi shi da
   this CLASS table be big
   'This table is big.'
   b. preposition
   *ta shi zai fangjian
   he is in room
   'He is in the room.'

From the examples above, it appears that the Chinese verb *shi* is similar to the copula form of English verb *be*, especially the structure of *be + noun phrase*. Indeed, in terms of the findings in Lee & Huang (2004) which investigated the acquisition of the English verb *be* by L1-Chinese-speaking learners, the results showed that participants

performed best in *be + noun phrase* structure. Furthermore, the overall results revealed that the L1-Chinese-speaking learners of English performed well in copula *be*, with correct use 80 % of the time, whereas there was only 10 % correct use in the auxiliary *be*. Regardless of the auxiliary form of English verb *be*, in the present study, only the copula form of the verb *be* is examined.

The study

The aim of the present study is to investigate how L1-Chinese-speaking learners of English acquire the three English morphemes – the third person singular *-s*, the regular past tense *-ed*, and the copula *be* – in their L2 learning. In order to examine the acquisition of the three English morphemes, the Missing Surface Inflection Hypothesis (MSIH) (Haznedar & Schwartz, 1997; Prévost & White, 2000) is adopted. The Missing Surface Inflection Hypothesis proposes that L2 learners have knowledge of functional categories and features in tense and agreement, but have problems in the realization of surface morphology. This suggests that the omission of verbal inflections is because of problems with the realization of surface morphology, but not due to the impairment of the features.

Prévost & White (2000) propose that L2 learners have acquired the features of terminal nodes in syntax (from their L1, UG, or the L2 input), but have not completely acquired the specified features of the related lexical items. Therefore, Prévost & White (2000) contend that non-finite forms are under-specified in L2 learners' grammar, whereas finite forms are specified. It appears that finite forms will occur only in finite positions; however, non-finite forms will occur sometimes in non-finite positions and sometimes in finite positions. As a consequence, L2 learners sometimes use non-finite forms to replace finite forms, resulting in displaying the verbal inflections optionally. This explains why L2 learners sometimes omit the verbal inflections and sometimes display them. Moreover, Ionin & Wexler (2002) assert that L2 learners associate morphological agreement with the verb-raising on *be* forms initially, so that L2 learners acquire the forms of *be* before the inflectional morphology of *in situ* thematic verbs.

Hypotheses

Hypotheses for the present study are illustrated as follows:

Hypothesis 1:   Assuming the Missing Surface Inflection Hypothesis, the L1-Chinese-speaking learners of English will show optionality in the acquisition of morphological inflections: they will sometimes produce non-finite forms to replace finite forms in the 3rd person singular *-s* and the regular past tense *-ed*.

Hypothesis 2:   Assuming the Missing Surface Inflection Hypothesis, the L1-Chinese-speaking learners of English will show the acquisition of English copula *be*. That is, they will perform better in copula

be than in 3rd person singular *-s* and regular past tense *-ed*. In other words, they will acquire the forms of *be* before the inflectional morphology of *in situ* thematic verbs.

Participants

20 L1-Chinese-speaking learners of English participated in the study. They were all school students in Taiwan, aged from 11 to 14. None of them went to a special ESL class or had a private English tutor. At the time of the test, participants had learned English for 4 years to at most 7 years, and none of them had ever lived in an English-speaking country.

Procedure

Odlin (2003) states that there are many different ways of data collection to examine the evidence of cross-linguistic influence, and speech samples provide useful data in examining the evidence of transfer. Therefore, in the present study, spontaneous production data were collected to examine the hypotheses. The data collection consisted of two parts: (i) 15 to 20 minutes interview, and (ii) a story telling task. Participants were tested individually at their homes or at schools. Before the test, instructions of the task were explained to each participant by the investigator and a short social talk was given to make participants feel comfortable but not nervous. Meanwhile, participants were encouraged to speak out as much as they could and were told not to worry about the grammars while speaking English during the task. Furthermore, translation was provided adequately when it was needed.

For the interview, each participant had a conversation with the investigator in English. Questions in the interview consisted of things in daily life, such as schools, friends, and places. After the interview, there was a 5-minute break before the story telling task. During the break, participants were asked whether or not they had heard the story - *The North Wind and The Sun*. If a participant had not heard of the story before, he or she was told the story by the investigator. To begin the story telling task, participants were asked to describe as much as they could in English from the pictures presented in the storybook. Time for the story telling task was about 10 minutes. Both interview and the story telling task were tape-recorded and transcribed later.

Results

Data of two participants were excluded from the analyses here. The two participants did not know the story *The North Wind and The Sun* before the test and were told about the story by the investigator, resulting in a different procedure from other participants. Therefore, only data of 18 participants were examined.

For the analyses, only the use of the three English morphemes – the 3rd person singular *-s*, the regular past tense *-ed*, and the copula *be* – in obligatory contexts was

examined. This is to say, the categories of irregular 3ʳᵈ person singular forms, such as *has*, and irregular past tense verbs, such as *went*, were not computed in the results. Moreover, each morpheme token was coded in terms of three types of performance, namely, correct use, omission, and inappropriate use.

Table 1 below presents the raw numbers and percentages of the three types of performance in 3ʳᵈ person singular –*s* and regular past tense –*ed*.

Performance	3ʳᵈ person -*s*	Past tense -*ed*	Verbal inflections (-*s* + -*ed*)
Correct use	29/176 (17%)	2/37 (5%)	31/213 (15%)
Omission	138/176 (78%)	35/37 (95%)	173/213 (81%)
Inappropriate use	9/176 (5%)	0/37 (0%)	9/213 (4%)

Table 1 Raw Numbers and Percentages of Performances in 3ʳᵈ Person Singular -*s* and Regular Past Tense –*ed* (n=18)

In 3ʳᵈ person singular –*s*, Table 1 showed that there was 17% of correct use, while 78% of omission. For regular past tense –*ed*, Table 1 revealed that there was only 5% of correct use, but 95% of omission. Accordingly, we may conclude that participants frequently omitted the English verbal inflections in 3ʳᵈ person singular -*s* and regular past tense –*ed* in their L2 learning. Furthermore, there was 15% of correct use with regard to the verbal inflections (i.e., -*s* and -*ed*). This suggests that participants had knowledge of features in English tense and agreement to a certain level.

Turn now to the results of copula *be*. Table 2 below presents the raw numbers and percentages of the three types of performance in copula *be*.

Performance	Be + adj	Be + preposition	Be + noun	Overall use of copula *be*
Correct use	208/252 (82%)	9/12 (75%)	67/75 (88%)	284/339 (84%)
Omission	42/252 (17%)	3/12 (25%)	8/75 (12%)	53/339 (15%)
Inappropriate use	2/252 (1%)	0/12 (0%)	0/75 (0%)	2/339 (1%)

Table 2 Raw Numbers and Percentages of Performances in Copula *be* (n=18)

From Table 2, it is clear that the percentages of correct use were much higher than the percentages of omission in the three types of copula *be* structure. In *Be + adj*, there was 82% of correct use, while 17% of omission; in *Be + preposition*, there was 75% of correct use, while 25% of omission; in *Be + noun*, there was 88% of correct use, while 0% of omission. With regard to overall use of copula *be*, Table 2 revealed that there was 84% of correct use, while 15% of omission. A paired samples *t*-test was run for comparing the percentage of correct use and the percentage of omission. The result showed that there was a significant difference between correct use and omission ($p<.05$). It suggests that participants might have acquired the English copula *be* in their L2 learning.

Discussion

Odlin (2003) indicates that similarities between the previous acquired language(s) and the target language help learners in learning the target language; whereas, differences impede the acquisition. Moreover, Jarvis & Odlin (2000) state that cross-linguistic influence could involve either positive or negative transfer, and to have highly accurate morphological predictions will depend on how positive and negative transfer involved in the comprehension and production. In terms of the findings in the present study, the results are discussed based on three factors: (i) negative transfer, (ii) positive transfer, and (iii) other factors in second language acquisition.

Negative transfer

As demonstrated above, Chinese has no subject-verb agreement and tense marking at all, whereas English does. Hypothesis 1 predicts that the L1-Chinese-speaking learners of English will have L1 interference in the acquisition of English 3rd person singular -s and regular past tense -ed and show optionality in morphological inflections. The results shown in Table 1 above revealed that there was 15% of correct use in verbal inflections (-s + -ed), and 81% of omission. A paired samples t-test was run for comparing the two performances and the result showed that the difference between correct use and omission was significant (p<.05). Nevertheless, it is undeniable that participants had knowledge of features in English tense and agreement to a certain level. We may thus claim that participants had knowledge of the features, but had difficulties in the realization of surface inflections. As a result, they sometimes produced non-finite forms to replace finite forms in the 3rd person singular -s and the regular past tense –ed.

Recall the Missing Surface Inflection Hypothesis specified above, Prévost & White (2000) propose that L2 learners are (sometimes) unconscious that it is incorrect to use non-finite form in a finite position, because they have problems with the realization of using verbal inflections in their L2 grammar. Clearly, the finding of the present study is compatible with the hypothesis, and thus, Hypothesis 1 is supported by the data.

To explain the results, it can be ascribed to the L1 interference. Odlin (1989) indicates that transfer is a phenomenon associated with language mixing in second language acquisition. There are two factors in language mixing: (i) the influence of learners' L1, and (ii) the influence of the two co-existing language knowledge. In the present study, participants might mix the two languages and have interference of their L1 knowledge with regard to tense and agreement features in their L2 acquisition. Therefore, the high omission of verbal inflections in English 3rd person singular –s and regular past tense –ed might be due to the negative transfer from their L1.

Positive transfer

As indicated in section 2.3, in Standard Written Chinese the copula verb *shi* is similar to

the copula *be* in English, especially in *be + noun phrase* structure. Hypothesis 2 predicts that the L1-Chinese-speaking learners of English will show the acquisition of English copula *be*, and perform better in copula *be* than in 3rd person singular *-s* and regular past tense *-ed*. The results in Table 2 above showed that there was 84% of correct use in copula *be*, while 15% of omission. A paired samples *t*-test was run for comparing the two performances and the result revealed that the difference between correct use and omission was significant (p<.05). It suggests that participants might have acquired copula *be* in English.

Jarvis (1998, 2000) proposes a feature of transfer called 'intra-group homogeneity' which indicates that language learners have the internal consistencies in their native language and interlanguage. Furthermore, Andersen (1983) proposes 'Transfer to Somewhere Principle' which claims that language learners make inter-language identifications. Identifications are something similar between the native language and the target language. In the present study, participants might consider English copula *be* as somewhere for transfer from their L1. That is, participants might make an inter-lingual identification between the category in their L1 and the category overlap in the L2. As a consequence, similarity may explain why participants performed better in English copula *be* and had acquired this English morpheme.

Ringbom (1992) indicates that learners take advantage of similarities between the language(s) that have been acquired previously and the target language while learning. Chan (2004) also points out that the more similarities the L1 and the target language have, the more possibility the L1 assists the language learning. Therefore, we may assume that the similarity between the Chinese verb *shi* and the English copula *be* provides an advantage for participants in learning the English copula *be*. The results in Table 2 above showed that participants performed well on copular *be*, especially in the form *be + noun*, with 88% of correct use. It suggests that participants took advantage of the similarity and had positive transfer from their L1 in the acquisition of English copula *be*.

Comparing the results in Table 1 with the results in Table 2 revealed that participants performed much better in copula *be* than in verbal inflections (i.e., the 3rd person singular *–s* and the regular past tense *–ed*). There was 84% of correct use in copula *be*, while only 15% of correct use in verbal inflections. A paired samples *t*-test was run to compare the two data sets and showed that the difference was significant (p<.05). In light of this, we may claim that participants acquired the forms of *be* before the inflectional morphology of *in situ* thematic verbs (i.e., the morphemes of 3rd person singular *-s* and regular past tense *–ed*). Accordingly, Hypothesis 2 is upheld by the data.

Other factors

Besides negative and positive transfer, other factors in second language acquisition are also considered to cause the results of the study. The factors, including individual factors and effect of phonetics, will be discussed in the following sections.

Individual factors

Kellerman (1977, 1978) states the importance of subjectivity in a judgment of cross-linguistic influence. Subjectivity is associated with language learners' background, such as age, literacy, social class, and motivation. Odlin (2003) also points out that much of so-called cross-linguistic influence relies on the individual judgments of language learners. It suggests that individual factors play a role in the results of an empirical study.

In the present study, the results shown in Table 1 above revealed that participants performed better in 3rd person singular –*s* than in regular past tense –*ed*, with 17% of correct use and 78% of omission for the former, while 5% of correct use and 95% of omission for the latter. Looking at the data at hand showed that participants 8, 9, 13 and 14 performed better than the rest of participants in 3rd person singular –*s*, with 27% of correct use for participants 8 and 9, 56% of correct use for participant 13, and 23% of correct use for participant 14. The performance of participants 13 and 14 may be ascribed to their English proficiency. Participants 13 and 14 had learned English for 6 and 7 years respectively at the time of the test, which was higher than the average 4.8 years of learning English in the present study. Therefore, they were assumed to be more proficient than the other participants. For Participants 8 and 9, they had learned English for 4 years; thus, their performance was less likely to be due to proficiency, but due to individual judgments.

Effect of phonetics

The results shown in Table 1 above revealed that participants highly omitted the verbal inflections in English 3rd person singular –*s* and regular past tense –*ed*. Also, the omission of the regular past tense –*ed* was higher than the 3rd person singular –*s*, with 95% of omission in the former, and 78% of omission in the latter. One explanation for this result may be due to the effect of phonetics (since production data was used in the present study).

Fromkin & Rodman (1998) propose that the morpheme –*s* has three different phonetic forms, namely, [s], [z], and [əz]. Meanwhile, the morpheme of the regular past tense –*ed* also has three difference phonetic forms, namely, [t], [d], and [əd]. Roca & Johnson (1999) state that when [s] or [z] is pronounced, the blade or the tip of the tongue is placed close to the right out of which the top teeth grow. If the air is blown through the narrow rift between the blade of the tongue and the upper tooth ridge, a hissing sound is produced, which is [s]. If a vocal fold vibration is added in the same manner of the articulation of [s], a voiced sound [z] is made. Moreover, if the blade of the tongue is placed roughly in the same position as [s], interrupt the airflow by constricting the contact of tongue and teeth, the sound [t] is produced. If a vocal fold vibration is added in the same manner of articulation of [t], a voiced sound [d] is made. In this regard, the place of articulation of the consonants [s], [z], [t], and [d] is the same, classified as alveolar. However, the manners of articulation are different. The consonants [s] and [z] are defined as fricative, strident, and sibilant; while, [t] and [d] are defined as oral stop and obstruent. Fromkin & Rodman (1998) propose that all

sounds except stops and affricates are continuants, which are produced with continuous airflow through the mouth. As a result, [s] and [z] are continuants, while [t] and [d] are non-continuants. We may thus assume that [s] and [z] sounds of the final affix in the contexts are more likely to be kept in the production than [t] and [d] sounds.

Specifically, Bayley (1991, 1996) and Lardiere (1998a, 1998b) had the same findings as the present study. Bayley (1991, 1996) investigates the deletion of final [t] and [d] in native Chinese-speaking learners of English. Bayley (1991, 1996) discovered that the L1-Chinese-speaking learners of English tended to omit the final [t] and [d] sounds in the regular past tense *–ed* marking. Bayley concludes that the salience of a verb (regular and irregular verbs) and the effect of the phonological environment (the consonant obstruent, such as [t] and [d], is deleted more often than the others) played a key role in the deletion of the final consonant [t] and [d] by the native Chinese-speaking learners of English. In Lardiere (1998a, 1998b), the native speaker of Chinese, Patty, had higher omission in regular past tense *–ed* than 3rd person singular *–s*. Lardiere (2003) claims that the high omission of the regular past tense *–ed* was due to phonological reduction.

In terms of what we have seen above, we may conclude that the effect of phonetics [s], [z], [t], and [d] in English plays a role in the results that the regular past tense *–ed* was omitted more often than the 3rd person singular *–s*.

Conclusion

In terms of the Missing Surface Inflection Hypothesis (MSIH) (Haznedar & Schwartz, 1997; Prévost & White, 2000), this study investigated how L1-Chinese-speaking learners of English acquire the three English morphemes – the 3rd person singular *-s*, the regular past tense *-ed*, and the copula *be*. The results of the 3rd person singular *-s* and the regular past tense *–ed* showed that participants had knowledge of functional categories and features in tense and agreement, but had problems with the realization of surface morphology. The difficulty of the realization of surface morphology can be ascribed to the L1 interference. Furthermore, the better performance in 3rd person singular *–s* than regular past tense *–ed* may be due to the individual factors and the effect of phonetics in English. For copula *be*, the results showed that participants performed well on this morpheme, assuming that participants transferred their L1 knowledge of verb *shi* into the acquisition of English copula *be*. The fact that the better performance in copula *be* in comparison to inflectional morphology suggests that participants acquired the forms of *be* before the inflectional morphology of *in situ* thematic verbs.

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