

# Clause-sensitivity of Inflectional Morphology in L2 English

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**Abstract:** The Interface Hypothesis (Sorace, 2000) developed in line with the Minimalist theory of grammar (Chomsky, 1995 et seq.) supports the view of L2 acquisition that syntactic properties are acquired early while the acquisition of interface properties is delayed. One of the interface properties is inflectional morphology on English verbs, which involves subject-verb agreement at the syntax-morphology interface. Previous studies have revealed that for learners of L2 English, acquiring third person singular *-s* is harder than regular past *-ed* due to the absence of meaningless morphemes in L1. However, one question has been disregarded: Where in a clause are these morphemes inserted more successfully? Given that subordinate clauses are more complex than main clauses, this study examines the clause-sensitivity of L2 inflectional morphology. 44 Japanese university students learning English as L2 were asked to complete a grammaticality judgment test and write an essay about a specified topic. The learners' inflection pattern was surveyed through the test scores and text analysis of the essays. Results show that *-s* tends to be omitted regardless of clause types, but *-ed* is omitted more frequently in complement clauses than main clauses. These are due to negative L1 transfer on L2 inflectional morphology and our findings imply the importance of clauses as meaningful units in L2 grammar instructions.

**Keywords:** Clause-sensitivity, Inflectional morphology, L2 grammar instructions, The Interface Hypothesis.

## 1. Introduction

This study aims to investigate how inflectional morphology in L2 English is acquired by L1-Japanese learners of English. Inflectional morphology means how to change verb forms properly in a given structural context. A simple example is a verb *was* as in “Mary was planning a party”, and here the form *was* reflects past tense and a singular subject. The strategy of inflectional morphology differs from language to language, and as we will see shortly; Chinese is remarkably different, and Japanese is somewhat different from English in inflectional morphology.

L2 inflectional morphology is investigated in light of a formal theory of language acquisition called the Interface Hypothesis. From this theoretical standpoint, Japanese learners of English are surveyed about their knowledge of verb forms and how well they can deal with inflectional morphology in writing in English. Crosslinguistic differences between Japanese and English and also the distinction/relation of main and non-main clauses are carefully taken into account in the data analysis

of the surveys. Clausehood has long been disregarded in the literature of L2 morphosyntax, but in this study, it is going to play a significant role to analyze L2 inflectional morphology in more detail.

This article is organized as follows. In the next section, we will outline the overview of the Interface Hypothesis and how crosslinguistic differences such as finiteness influence L2 inflectional morphology. Then, we address two research questions and explain the details of participants and surveys. After the survey results are summarized, we discuss the research questions. The final section is for conclusion.

## 2. Literature Review

### 2.1 The Interface Hypothesis

The Interface Hypothesis (Sorace, 2000, and her subsequent work; henceforth IH) argues that structures involving an interface between syntax and other domains such as semantics and pragmatics are harder to acquire than structures built purely in syntax. This perspective presupposes the model of linguistic knowledge in Figure 1, where the upper box stands for our knowledge of grammar, and the lower for non-linguistic information from contextual background. The white arrows refer to interfaces between inner modules of grammar, while the grey arrows refer to the interaction between the grammar and other domains of human cognition.

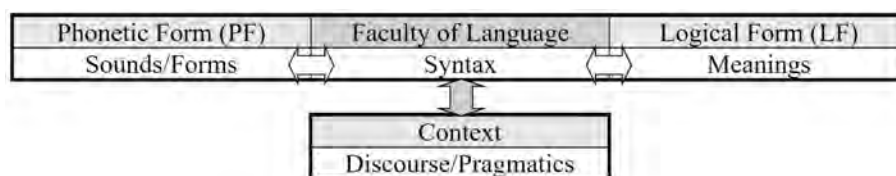


Fig. 1 A working model of grammar and its interfaces

The IH was put forward to account for the *nonconvergence* and *residual optionality* in L2 acquisition. In other words, it attempts to explain why even advanced learners can diverge in their end-state grammars and end up with persistent errors. One of such errors is the realization of subjects linked to the syntax-pragmatics interface. Haznedar (2010) reports that a Turkish-English bilingual child produced about ten times more overt subjects inappropriately than a monolingual Turkish child. The typical example was the frequent use of *ben* 'I', which is often omitted in Turkish since the referent is obvious from the context of speaker-hearer interactions.

Turning to PF (the syntax-morphology interface), Nakayama and Yoshimura (2015) discuss L2 acquisition of inflectional morphology by Japanese learners of English. They analyzed English essays written by two proficiency groups of the learners (HIGH and LOW) and found that their L2 suffered no serious L1 transfer of null subjects and objects, but it failed to insert inflectional morphemes such as the third person singular *-s* in PF. The results show that the rate of missing *-s* is significantly higher in the LOW group than the HIGH group while that of missing *-ed* and subjects is extremely low in both groups. These can be additional evidence in favor of the IH. Being able to realize overt subjects followed by past verbs suggests that building tensed clauses have been successfully acquired in syntax. The problem lies in PF, that is, how the verbs should be morphologically realized after the word order is set.

## 3. Finiteness Marking

Another decisive factor as to L2 acquisition of verb forms is *finiteness*. A verb is *finite* in English when its form is fixed for tense and it agrees with its subject. English differentiates finite and nonfinite verbs (e.g., *he eats* vs. *he likes eating*), but in contrast, some languages like Chinese do not. Tang (2020) focuses on this typological gap and reveals that the lack of finiteness in L1 influences Chinese learners' acquisition of verb forms in L2 English.

First, she compares how English and Chinese verbs appear as subjects, objects, and within complements or adverbials. For example, the purpose clause *to enter* in (1) is nonfinite, while the second

predicate *jin* ‘enter’ is followed by *le* in (2). Note that *le* marks the completion of an event, and unlike English, Chinese lacks inflectional markers for tense.

- (1) He bought a ticket *to enter* the theatre.
- (2) Ta mai piao *jin le* juyuan.  
he buy ticket enter PFT theatre

Then, Tang investigates the errors of verb forms found in the essays written by three proficiency groups (LOW, MID, and HIGH) of Chinese learners of English. One of noteworthy findings in the results is that the LOW group produced the errors of bare and wrongly inflected verbs in adverbial clauses, but the overinflection greatly decreased in the MID and HIGH groups’ misused forms. The similar patterns of verb forms in [2] and [3] evidence the learners’ direct L1 transfer of Chinese verbs into their morphosyntactic knowledge of L2 English.

- (3) \*Mary Hunter, the professor’s daughter, went to the hospital *saw* her friend that morning.

Tang’s study adopts a novel approach to L2 inflectional morphology in that the verb errors are examined not only in terms of finiteness, but also according to clause types (e.g., complement/adverbial clauses). Seen from this approach’s perspective, Nakayama and Yoshimura’s data can be reanalyzed as morphosyntactic errors in bi-clausal sentences. They include erroneous sentences such as “... when you *go* to NY from Tokyo, it *took* almost 30 days ...”, which consists of a main clause following a temporal clause (*when you \*go* ...) with the missing past inflection.

Japanese clearly distinguishes past and non-past suffixes (e.g., *tabe-ru* ‘eat’ vs. *tabe-ta* ‘ate’), but some types of complement/adverbial clauses do not allow past forms inside for structural reasons. Besides, similarly to Chinese, Japanese lacks inflectional morphemes for subject-verb agreement corresponding to *-s* in English. In addition, Japanese is similar to Turkish in the omission of subjects, unlike English. These L1 properties might trigger inflectional errors in L2 English following the same reasoning as the above Chinese-English negative transfer case.

## 4. Methods

### 4.1 Research Questions

We have seen in the previous section that grammatical phenomena at the interface are harder to acquire and L1 transfer of verb forms influences L2 morphosyntax. If these are on the right track, the same reasoning can apply to Japanese learners’ acquisition of inflectional morphology in L2 English. The contrast below illustrates the difference of subjects and verb forms between English and Japanese.

- (4) When he saw the picture, he immediately recognized his old friend.
- (5) Syashin o miru to, kare wa sugu kyuyu ga wakatta  
picture ACC see when he TOP soon old.friend NOM recognized

In (4), the subject is repeated and the past form is used throughout the sentence, while the subject is omitted and the verb form is non-past in the adverbial clause in (5). Given these linguistic properties specific to Japanese, we address the following two research questions (RQs):

- RQ1: Is there any influence of subject omission and verb forms in L1 on Japanese learners’ acquisition of inflectional morphology in L2 English?
- RQ2: Do clause types such as main and subordinate clauses influence the types and frequency of errors of inflectional morphology in L2 English?

## 5. Participants

44 Japanese-speaking university students learning English as L2 participated in the survey (aged 19-22, M=19.79, SD=1.03). No participants had stayed overseas longer than one month. The survey was conducted in January 2021, when all the participants were enrolled in pre-intermediate (CEFR A2) English courses in the author's institution. They were placed in CEFR A2 based on the results of the Oxford Online Placement Test, a battery of English proficiency tests offered online. This proficiency level was chosen to ensure that the participants had not fully acquired the target L2 grammar, but they could read and understand the test sentences without much difficulty.

## 6. Tasks and Data Collection

To answer the research questions, untimed multiple-choice questions and an essay writing task were designed. The questions were prepared to grasp the learners' L2 knowledge of verb forms within different types of clauses. 15 randomized questions, including 10 fillers, were given to the participants. The understanding of English inflectional morphology was estimated based on the score of 5 intended questions. (6) is one of the questions, and it is intended to judge whether or not they know that a present-tense verb form agreed with the subject (i.e., *comes*, in this case) should be used in a future-oriented temporal clause beginning with *by the time*.

- (6) I will be back by the time my friend ----- to see me.  
comes / has come / will come / came

As for the writing task, the participants were asked to write about their own New Year's resolutions for the year 2021 in English. They were asked to finish writing in 15 minutes without using dictionaries. All the sentences were examined so that the errors of subjects and verb forms could be counted and sorted according to the error types and where in the sentence they appeared. One of the collected error samples is shown in (7), which was written by one of the participants to mean "When the Coronavirus pandemic ends, I want to communicate with people from abroad". The error type here is "missing -s", and it appears in an adverbial clause headed by *if*.

- (7) \*If the Coronavirus *finish*, I want to interact with foreigner.

In addition to "missing -s", other error types include "missing -ed (past tense)", "overinflection", and "missing subjects". The identified errors are further sorted according to the types of clauses where they appear: main clauses, complement clauses, and adverbial clauses.

## 7. Results

The 44 participants were asked to answer the multiple-choice questions planned to grasp their L2 knowledge of verb forms and subjects in various types of clauses. The distribution of their answers to each question is shown in Table 1.

**Table 1.** The results of multiple-choice questions

Question items	Correct	Incorrect-1	Incorrect-2	Incorrect-3
1. I will be back by the time my friend ----- to see me.	comes 77.3%	will come 10.1%	came 8.1%	has come 4.5%
2. The bishop ----- hands with the diplomat lives in Canterbury.	shaking 72.3%	shaken 14.7%	shake 12.6%	shook 0.0%

3. I am sure you will feel a lot better if ----- a good night's sleep.	you have 68.2%	you are going to have 18.2%	having 9.1%	you will have 4.5%
4. ----- at the station, I found the train had already left.	Arriving 59.1%	Arrived 27.3%	To arrive 13.6%	Arrive 0.0%
5. Edward says that he ----- the job offer if he were in my place.	would not accept 54.5%	would not be accepted 20.2%	will not accept 16.2%	will not have accepted 9.1%

The correct rates of Question 1 and 2 were higher than 70%, while those of Question 4 and 5 were lower than 60% with a variety of answer choices. As for Question 3, the correct rate was not so high as Question 1 or 2, but it should be noted that the answer without a subject *having* was chosen only by 9.1% of the participants.

They were also asked to write essays in English in order to investigate how well verb forms and subjects could be produced in the essays. The percentages of 4 types of errors observed in total and in main, complement, and adverbial clauses are summarized in Table 2. There were 431 clauses in total, and 263 main clauses, 110 complement clauses, and 58 adverbial clauses were identified in the text of the essays. The percentages in Table 2 were calculated with the number of erroneous clauses divided by the total number of clauses. For example, 52 out of 263 main clauses had “missing -s” errors, which amounts to 19.7% in the cell A1 in Table 2.

**Table 2.** The error rates in the essays

	Total	A: Main	B: Complement	C: Adverbial
1. missing -s	19.0 %	19.7%	18.5%	17.2%
2. missing -ed	11.6 %	8.3%	20.3%	10.3%
3. overinflection	4.6%	4.5%	5.5%	3.4%
4. missing subjects	5.5%	0.0%	14.8%	13.7%

The overlaps of missing subjects and missing *-s/-ed* were observed in 5 complement clauses and 3 adverbial clauses, but not in main clauses. Such examples are like: “\*It was so hard that make in two days” (correctly, “It was so hard that we made it in two days”) and “\*When finish dancing together, we felt very happy” (“When we finished dancing together, we felt very happy”).

## 8. Discussion

### **RQ1: Is there any influence of subject omission and verb forms in L1 on Japanese learners' acquisition of inflectional morphology in L2 English?**

The 44 participants were asked to answer the multiple-choice questions planned to grasp their L2 knowledge of verb forms and subjects in various types of clauses. The distribution of their answers to each question is shown in Table 1. Question 3 in Table 1 will help us estimate the learners' L2 knowledge of subjects. Used as a conjunction, *if* must be followed by subjects plus finite verbs. Of all the four choices in Question 3, the incorrect *having* is the only subject-less choice, and it was chosen by only 9.1% of the learners. In addition, in Table 2 the total error rates of missing subjects and those found in main clauses are quite low. These suggest that the pre-intermediate learners in this study have already acquired overt realization of subjects quite well.

Some readers may notice a slight increase of missing subjects in complement and adverbial clauses in Table 2 (see the cells B4 and C4). This is due to only a couple of the learners' overuse of

subject omission, thus it does not make a significant difference showing a negative L1 transfer of subject omission.

The high correct rates of Question 1 and 2 in Table 1 show that the learners have almost acquired the distinction of finite and nonfinite verbs in L2 English. However, as is clear in Table 2, the error of missing *-s* is generally observed regardless of clause types. The error of missing *-ed* is observed less frequently than that of missing *-s*. These are the sign of L1 transfer, especially causing a negative transfer on the acquisition of *-s* inflectional morphemes. As briefly mentioned in Literature Review, Japanese has past tense morphemes, but unlike English (and similarly to Chinese), it lacks a subject-verb agreement morpheme. We agree with Nakayama and Yoshimura (2015) in this respect, who explain the relative difficulty of acquiring *-s* over *-ed* for learning a [number] feature in syntax and spelling it out with *-s* in PF. So, to sum up, our answer to RQ1 is “No” as to subject omission, and “Yes” as to inflectional morphology itself.

## **RQ2: Do clause types such as main and subordinate clauses influence the types and frequency of errors of inflectional morphology in L2 English?**

Although it seems that the basic structural format with subjects plus finite verbs has been almost acquired, the distribution of the learners’ answers to Question 4 and 5 implies that their understanding of complex clauses related to verb forms is not enough yet. For example, in Question 5, the blank must be filled with a conditional verb form (*would*, in this case) because the following *if* clause expresses an imaginary, counterfactual situation.

In addition to the low correct rates of Question 4 and 5 in Table 1, the error rates of missing *-ed* in Table 2 suggests the influence of clause types on appropriate verb forms. The results show that the error rates of missing *-ed* in complement clauses are significantly higher than main and adverbial clauses. (8) and (9) show some examples of the complement clauses with missing *-ed*.

- (8) \*I thought that I *want* to speak English well when I talked English with my friend.
- (9) \*Then I knew that they *are* going to held a recital next month.

English has an inflectional restriction called *sequence of tense*, which requires the tense of the verb forms in subordinate clauses to be modified according to the tense of main clauses. If this rule applies, *want* and *are* above must be changed into *wanted* and *were* to match past tense in the main clauses. Japanese does not have such tense restrictions between clauses, so in Japanese the sentences with unmodified embedded verbs such as “I thought that I *want* to ...” and “I knew that they *are* going to ...” are grammatically correct. Based on the findings so far, we argue that the crosslinguistic difference of the inflectional restriction between multiple clauses influences the pre-intermediate learners’ acquisition of inflectional morphology in L2 English.

Another consideration as to complement-taking verbs such as *think* and *know* should be noted before closing the discussion. According to a corpus-based survey by Goyak et al. (2021), a mental verb *know* appears most frequently among general verbs in 5000 English song lyrics released over 50 years. Interestingly, their data show that *know* in the lyrics often collocates with *I*, *you*, and *that*. This fact suggests that it tends to take clausal complements in a conversational discourse conveying emotions. We cannot explore if such contextual factors play any roles in the complementation within the scope of this paper, but it is worth pursuing as an interface phenomenon between syntax and discourse in L2.

## **9. Conclusion**

The present study explored L2 acquisition of inflectional morphology in English from a theoretical viewpoint of the Interface Hypothesis. Two surveys were conducted on the pre-intermediate learners of English to investigate their L2 knowledge of verb forms with particular attention to the crosslinguistic differences and clause types in Japanese and English. Based on the survey results, it was revealed that although L2 subjects suffered little L1 transfer, L2 inflectional morphology was greatly influenced by L1 morphosyntax.

The difficulty of acquiring *-s* seems to be attributed to the lack of such inflectional morphemes in L1 and the failure to insert them as morphological realization of syntactic features at PF. The errors of uninflected verbs for past tense were observed significantly more in complement clauses than in main clauses. This is arguably due to negative L1 transfer, namely the absence of “sequence of tense” between main and subordinate clauses in Japanese. Our findings suggest that for the pre-intermediate learners to become better in inflectional morphology in English, more attention should be paid to how main and non-main clauses are connected both morpho-syntactically and semantically.

## 10. Suggestions for Future Research

The participants for this study were all native speakers of Japanese whose proficiency level of English was pre-intermediate. To uncover the whole picture of the grammatical interface between inflectional morphology and clausal syntax in L2, our future research needs to compare the result from the current surveys targeting L1-Japanese/L2-intermediate English learners with the one from advanced learners (if possible, with the one from the learners with different L1 background as well). It is expected that among the advanced learners the overall accuracy rates of *-s* will improve and the past *-ed* morpheme can be used significantly more correctly within complement clauses.

Since it specifies the past time when a state or event takes place, the *-ed* morpheme obviously makes a semantic contribution to the interpretation of each clause at LF. A set of similar tense morphemes exist in the system of the participants’ L1 grammar (Japanese, in this study). However, unlike *-ed*, the English *-s* is vague in meaning and it must attach to a verb in order to meet a purely grammatical requirement (i.e., subject-verb agreement). There is another *-s* morpheme in English that denotes plurality, as in *car-s*, and such a morpheme does not exist in Japanese, either. The difference between the two kinds of *-s* morphemes is that the latter standing for plurality is clearer in meaning than the former. If semantic transparency is a key to the success of acquiring grammatical morphemes, the inference is that the inflectional *-s*, the plural *-s*, and the past *-ed* are identified in descending order of difficulty. A further study needs to be done to find out how semantics relates to morphosyntax in L2.

## 11. Acknowledgement

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