

The investigation of the feature inheritance hypothesis in second language acquisition

In child first language (L1) acquisition, it is often observed that English children incorrectly produce *don't* even when the third person form *doesn't* is required as in (1) (Schütze, 2010).

- (1) a. *John don't play with it.
b. John doesn't play with it.

However, in interrogative sentences as in (2), the misuse of *Do* is found only in a few cases, and children correctly produce the third person form *Does* (Guasti & Rizzi, 2002).

- (2) a. *Do John play with it?
b. Does John play with it?

According to Sugisaki (2015), if we assume that the feature inheritance hypothesis proposed by Chomsky (2007, 2008) operates in the course of L1 acquisition, this asymmetry can be explained. Under the feature inheritance mechanism, ϕ -features such as tense and agreement are originally located in C(omplementizer), but they optionally percolate down to T(ense) in English as in (3).

- (3) [CP C [TP T [...]]]
{tense, agreement} \longleftarrow

When feature inheritance takes place in negative sentences, the agreement feature moves to T, and the correct form *doesn't* appears as in (1b). On the other hand, if the feature inheritance does not take place, the incorrect form *don't* shows up as in (1a) since the agreement feature does not exist in T in the grammar. In the case of interrogative sentences, the agreement feature is originally placed in C, and children produce the correct form *Does* irrespective of the application of feature inheritance.

This study applies the feature inheritance mechanism in second language acquisition (SLA) and investigates the acquisition of ϕ -features by Japanese learners of English (JLEs). Participants were 138 university students in Japan (Mean age 19:4), and they were divided into two proficiency groups (Low and High) based on the results of Oxford Quick Placement Test shown in Table 1. Twenty-eight participants whose scores were from 36 to 39 were excluded to indicate clear differences in English proficiencies. In the experiment, the participants were given specific contexts in Japanese and asked to orally produce English sentences, which fitted the contexts. Their production data were audio-recorded and later transcribed to analyze the use of interrogative and negative forms: the interrogative present form *DOES*, the interrogative past form *DID*, the negative present form *DOESN'T*, and the negative past form *DIDN'T*. Each type has three tokens.

The overall correct production data (Table 2) showed that JLEs had difficulty using the interrogative past form *DID*. Moreover, we analyzed individual data, where participants correctly produced all sentences in each type. The results revealed that 41 participants in the L group used the correct form *DOES*, but only 24 of them accurately created *DOESN'T* (Table 4). In the case of the past forms, 37 participants in the L group and 47 participants in the H group produced the correct form *DIDN'T*, but only 22 in the L group and 30 in the H group correctly used *DID* (Table 5).

We propose that the feature inheritance hypothesis does not play an important role in JLEs' grammar, JLEs do not inherit or acquire all ϕ -features in C in English, and the agreement feature is easier to be inherited or acquired than the tense feature.

Table 1. Participants' information

	Number (Age)	Score range	Mean score (SD)
L(ow)	50 (19:4)	14-35	28.5 (4.70)
H(igh)	51 (19:2)	40-50	43.2 (2.49)

Table 2: Overall correct production

	<i>Does</i>	<i>Did</i>	<i>Doesn't</i>	<i>Didn't</i>
L(ow)	86/100 (86%)	105/150 (70%)	110/150 (73%)	122/150 (81%)
H(igh)	101/102 (99%)	132/153 (86%)	148/153 (97%)	149/153 (97%)
Mean	187/202 (93%)	237/303 (78%)	258/303 (85%)	271/303 (89%)

Note: A certain amount of participants used *Can* instead of *Does*, so we excluded the sentence from the *Does* type.

Table 3: Correct production (doesn't and Does) Table 4: Correct production (Does and doesn't)

	<i>Doesn't</i>	<i>Does</i>
L(ow)	25/50 (50%)	24/25 (96%)
H(igh)	46/51 (90%)	45/46 (98%)

	<i>Does</i>	<i>Doesn't</i>
L(ow)	41/50 (82%)	24/41 (59%)
H(igh)	50/51 (98%)	45/50 (90%)

Table 5: Correct production (didn't and Did)

	<i>Didn't</i>	<i>Did</i>
L(ow)	37/50 (74%)	22/37 (59%)
H(igh)	47/51 (92%)	30/47 (64%)

Table 6: Correct production (Did and didn't)

	<i>Did</i>	<i>Didn't</i>
L(ow)	23/50 (46%)	22/23 (96%)
H(igh)	31/51 (61%)	29/31 (94%)

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