Sluicing in the L2 English of L1 Japanese Speakers

Akari Ohba and Bonnie D. Schwartz

1. Introduction

In language acquisition research, it is controversial whether adult second language (L2) acquisition is constrained by the same cognitive systems as in child first language (L1) acquisition. Bley-Vroman (1990, 2009) argued that two crucial properties in child L1 acquisition, *Reliability* and *Convergence*, do not extend to adult L2 acquisition, and thus child L1 acquisition and adult L2 acquisition are fundamentally different:

(1) Reliability: Children always succeed at language learning.
Convergence: Children end up with systems that are so similar to those of others in the same speech community. (Bley-Vroman, 2009, p. 177)

According to his Fundamental Difference Hypothesis (FDH), child L1 acquisition is constrained by a domain-specific cognitive system (Universal Grammar, UG) and language-specific learning mechanisms, while adult L2 acquisition is effected by the L1 grammar and domain-general problem-solving mechanisms (Bley-Vroman, 1990, p. 14).

Schwartz (1990) observed that mere attainment differences between child L1 acquisition and adult L2 acquisition do not mean that adult L2 grammars, i.e., Interlanguage grammars, are necessarily qualitatively different from human language grammars. Furthermore, Schwartz & Sprouse (2000, 2013) have argued that to determine whether UG constrains adult L2 acquisition, it is crucial to investigate Poverty of the Stimulus (POS) problems. Specifically, they contended that if adult L2ers come to have linguistic knowledge which is underdetermined by (i) their L1 grammar, (ii) direct target language (TL) input, and (iii) classroom instruction, this would indicate that the source of the knowledge is UG.

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This study pursues this line of reasoning by probing the L2 acquisition of *sluicing*, a type of elided construction. The acquisition of elided constructions yields a particularly interesting POS problem because the internal structure of the elided sites is invisible. Specifically, this study asks whether L1-Japanese L2ers of English can come to have a grammaticality contrast in English sluicing constructions which is underdetermined by their L1 grammar (i.e., Japanese), direct TL input (i.e., English), and classroom instruction. Our results show that most of the L2ers are sensitive to the English grammaticality contrast. This target-like behavior is not expected if their procedure for language acquisition is limited to only their L1 grammar and problem-solving skills; such performance is instead consistent with the view that adult L2 acquisition is constrained by UG.

The paper is organized as follows: In Section 2 we first briefly present the sluicing contrasts between English and Japanese that are relevant for our study, after which we then outline the distinct syntactic analyses we adopt for each language. In Section 3, we describe our study and discuss the findings. Section 4 concludes the paper.

2. Sluicing constructions in English and Japanese

Sluicing is one type of elided construction in which a sentential portion is deleted and only a *wh*-phrase is retained, as shown in (2).

(2) He is writing something, but you can't imagine what.
(Ross, 1969, p. 252, (1c))

Japanese has a similar but non-exact counterpart (e.g., Fukaya & Hoji, 1999; Hiraiwa & Ishihara, 2012; Kizu, 2005; Kuwabara, 1996; Nishiyama, Whitman & Yi, 1996), which is illustrated in (3).

(3) Kare-ga nanika-o kai-teiru ga,
He-NOM something-ACC write-PROG but
anata-wa [nani(-o) (da) ka] souzou-deki-nai.
you-TOP what-ACC COP Q imagine-can-NEG
'He is writing something, but you can't imagine what.'

Here, as in English, a *wh*-phrase, *nani-o* 'what-ACC,' is retained, and some sentential portion is elided. In Japanese, the copula *da* is optional, whereas the question particle *ka* is obligatory. A case-marker/postposition on the *wh*-phrase is also optional; some have argued that sluicing without a case-marker/postposition has different characteristics (e.g., Fukaya & Hoji, 1999; Hiraiwa & Ishihara, 2012), but we focus on sluicing with a case-marker/postposition in what follows.

Even though English and Japanese have similar sluicing counterparts, as in (2) and (3), these languages behave differently in cases of *multiple sluicing*, i.e., where two or more *wh*-phrases are retained. English normally does not allow multiple sluicing (e.g., Lasnik, 2014; Takahashi, 1994), as shown in (4).

(4) ?*Mary showed someone something, but I don't know exactly who what.
(the sentence and the judgment taken from Lasnik, 2014, p. 8, (37))

Japanese, by contrast, permits multiple sluicing (e.g., Hiraiwa & Ishihara, 2012; Nishigauchi, 1998; Takahashi, 1994; Takahashi & Lin, 2012), as shown in (5).

(5) Mary-ga dareka-ni nanika-o mise-ta ga,
Mary-NOM someone-DAT something-ACC show-PST but
watasi-wa [dare-ni nani-o (da) ka] sira-nai.
I-TOP who-DAT what-ACC COP Q know-NEG
'(intended) Mary showed someone something, but I don't know who what.'

The acceptability difference between English vs. Japanese multiple sluicing can be explained by different syntactic derivations in the two languages. Ross (1969) and Merchant (2001), among others, proposed that English sluicing is derived through TP deletion after *wh*-movement, as in (6).

(6) He is writing something, but you can't imagine [$_{CP}$ what$_i$ ~~[$_{TP}$ he is writing t$_i$]~~].

This analysis accounts for the unacceptability of multiple sluicing in English, as in (4), because English does not allow multiple *wh*-movement. (7) illustrates a syntactic derivation of (4) containing the disallowed multiple *wh*-movement.

(7) ?*Mary showed someone something,
but I don't know exactly [$_{CP}$ who$_i$ what$_j$ ~~[$_{TP}$ Mary showed t$_i$ t$_j$]~~].

As for Japanese sluicing, several researchers have proposed that it is derived from a cleft construction leaving a *wh*-phrase as a focus element (e.g., Fujiwara, 2020; Hiraiwa & Ishihara, 2012; Kizu, 2005; Kuwabara, 1996; Saito, 2004).[1] (8) illustrates such an analysis by Hiraiwa & Ishihara (2012) and Fujiwara (2020). In this structure, the *wh*-phrase constitutes a focus element in the cleft sentence, and the presuppositional clause (FinP/CP) headed by the topic marker *wa* is elided.

(8) Kare-ga nanika-o kai-teiru ga, anata-wa
He-NOM something-ACC write-PROG but you-TOP
[$_{TopP}$~~[$_{FinP}$[$_{TP}$ kare-ga t$_i$ kai-teiru] no]~~ wa [$_{ForceP}$[$_{FocP}$ nani$_i$-o (da)]
he-NOM write-PROG C TOP what-ACC COP
ka]] souzou-deki-nai.
Q imagine-can-NEG
'He is writing something, but you can't imagine what.'

[1] These papers argue for various analyses of Japanese cleft constructions from which sluicing is derived. Japanese sluicing has also been analyzed in different ways; Takahashi (1994), e.g., proposed that like in English, it is derived from *wh*-movement to Spec CP followed by TP deletion. We go no further into these different syntactic proposals here.

According to this account, Japanese allows multiple sluicing because multiple focus elements can appear in cleft sentences in Japanese. (9) provides the simplified structure for the multiple sluice in (5).

(9) Mary-ga dareka-ni nanika-o mise-ta ga, watasi-wa
Mary-NOM someone-DAT something-ACC show-PST but I-TOP
[~~[Mary-ga t_i t_j mise-ta no] wa~~ dare$_i$-ni nani$_j$-o (da) ka] sira-nai.
Mary-NOM show-PST C TOP who-DAT what-ACC COP Q know-NEG
'(intended) Mary showed someone something, but I don't know who what.'

So far we have seen that multiple sluicing is unacceptable in English but acceptable in Japanese. However, not all multiple sluicing is disallowed in English. Lasnik (2014) observed that acceptability upgrades when the second *wh*-phrase is an element which can undergo rightward focus movement, such as a PP as in (10) and a heavy DP as in (11).

(10) ?Mary showed something to someone,
but I don't know exactly what **to whom**. (Lasnik, 2014, p. 8, (36))
(11) ?Some linguist criticized (yesterday) some paper about sluicing,
but I don't know which linguist **which paper about sluicing**.
(Lasnik, 2014, p. 9, (45b))

In order to explain the possibility of sentences like (10) and (11), Lasnik (2014) proposed that only the first *wh*-phrase undergoes *wh*-movement, while the second *wh*-phrase undergoes rightward focus movement. (12) illustrates the derivation of (10) (our experiment utilizes only the case where the second *wh*-phrase is a PP).

(12) Mary showed something to someone,
but I don't know exactly [$_{CP}$ what$_i$ ~~[$_{TP}$ Mary showed t_i t_j]~~ **to whom$_j$**].

Table 1 summarizes English multiple sluicing and Japanese multiple sluicing. We call English multiple sluicing which has a non-PP as its linearly second *wh*-phrase "bare multiple sluicing" and English multiple sluicing which has a PP as its linearly second *wh*-phrase "PP multiple sluicing."

Table 1: Summary of the multiple sluicing facts of English and Japanese

	Bare multiple sluicing	PP multiple sluicing
English	Unacceptable (e.g., *Mary showed someone something, but I don't know exactly [who what].)	Acceptable (e.g., ?Mary showed something to someone, but I don't know exactly [what to whom].)
Japanese	No grammaticality contrast	

This study investigates whether native Japanese speakers can come to know the English grammaticality contrast between (illicit) bare multiple sluicing and

(licit) PP multiple sluicing. This contrast constitutes a POS problem for L1-Japanese L2ers of English: It does not come from (i) the L1 grammar because there is no such grammaticality contrast in Japanese, (ii) TL input because native English speakers do not produce unacceptable bare sluicing sentences, or (iii) classroom instruction because it is extremely unlikely that L2ers are explicitly taught that bare multiple sluicing is unacceptable in English. Regarding the last point, we also found no related evidence in a widely-used English-instruction textbook in Japan, viz. *Maintop Sogo Eigo* (Ikuta, 2015).[2]

Hence, if native Japanese L2ers of English come to demonstrate this grammaticality contrast between (illicit) bare multiple sluicing and (licit) PP multiple sluicing—thereby overcoming the POS problem—this would support the claim that adult L2 acquisition is constrained by the same domain-specific cognitive system that constrains child L1 acquisition.

3. The present study

The research question of this study is the following: Do L1-Japanese L2ers of English come to know the grammaticality contrast in English multiple sluicing?

3.1. Method and Procedure

All participants completed three tasks (in this order). The background questionnaire asked about linguistic background, such as the age of English onset, other languages learned, etc. Next came the acceptability judgment task (see §3.3) which employed a 4-point Likert scale (and an "I don't know" option): "1" was labeled as "completely unacceptable," "2" as "somewhat unacceptable," "3" as "somewhat acceptable," and "4" as "completely acceptable." The final task was a Cloze test (Brown, 1980) as an independent measure of English proficiency.

3.2. Participants

Twenty-four L1-Japanese L2ers of English as a target group and 27 native speakers of English as a control group were tested. The L2ers were undergraduate students in Japan or at the University of Hawai'i at Mānoa (UHM). The native speakers of English were recruited on Amazon Mechanical Turk (and given ~$2.50) or were students at UHM. Two L2ers were excluded, one whose accuracy on filler sentences (see (15)–(19)) was less than 80% and one who rejected all sluicing in English, including acceptable simple sluicing (see (15)). Also excluded were five native English speakers, two whose filler-sentence accuracy was less than 80% and three who scored less than 10 on the Cloze test. Table 2 provides the background information on the remaining participants (22 in each group).

[2] There is as yet no corpus transcribing oral classroom instruction of English to native speakers of Japanese, and English textbooks are widely used to as a proxy for the kind and amount of English instruction given to them (p.c., Takayuki Kimura, 26 June 2020).

Table 2: Background information on the participants

	Age of English onset		Cloze Proficiency Score (Brown, 1980; Max: 50)	
	Mean	Range	Mean	Range
Japanese L2ers of English (n = 22)	9.15 (*SD*: 3.81)	2−13	31.67 (*SD*: 7.97)	14−47
English native speakers (n = 22)	NA	NA	42.49 (*SD*: 4.72)	30−49

3.3. Materials in the acceptability judgment task (AJT)

The AJT comprised ten critical sentences and 40 filler/screening sentences (henceforth "filler sentences"). There are two types of critical sentences, each with five tokens: bare multiple sluicing and PP multiple sluicing, as exemplified in, respectively, (13) and (14). In order to create minimal pairs of the two types, we used verbs which enter into the dative alternation (*give*, *mail*, *read*, *send*, *show*).

(13) **Bare multiple sluicing** (k = 5)
?*John gave someone something, but I don't know who what.
(14) **PP multiple sluicing** (k = 5)
?John gave something to someone, but I don't know what to whom.

There were five types of filler sentences. The first type is simple sluicing, consisting of ten acceptable items and ten unacceptable items, as in (15).

(15) **Filler 1: Simple sluicing** (k = 20; 10 acceptable, 10 unacceptable)
John gave Mary something, but I don't know [what / *who].

The acceptability of simple sluicing is based on whether or not the *wh*-phrase has an appropriate antecedent in the first clause. For instance, (15) is acceptable with *what* but not with *who* because the indefinite DP *something* is inanimate.

Another type of filler sentence, dubbed *who or what* sluicing, retains multiple *wh*-phrases, as illustrated in (16).

(16) **Filler 2: *Who or what* sluicing** (k = 5; all acceptable)
John gave someone something, but I don't know [who or what].

According to Citko & Gračanin-Yuksek (2020), this type of sluicing involves two coordinated CPs, and each *wh*-phrase (*who* and *what*) undergoes *wh*-movement from its own CP, followed by deletion of each TP; thus, *who or what* sluicing does not involve illicit multiple *wh*-fronting in the same CP and is expected to be acceptable (see their study for details).

The remaining filler items are conjoined sentences without ellipsis (17), simple transitive sentences (18), and ditransitive sentences (19).

(17) **Filler 3: Conjoined sentences without ellipsis** (*k* = 5; 2 acceptable)
   a. John gave Ashley cookies, and Bill gave Mary candies.
   b. *John gave Ashley to cookies, and Bill gave Mary to candies.
(18) **Filler 4: Simple transitive sentences** (*k* = 5; 2 acceptable)
   a. John washed the car.
   b. *John the car washed.
(19) **Filler 5: Simple ditransitive sentences** (*k* = 5; 3 acceptable)
   a. John gave Mary cookies.
   b. *John gave Mary to cookies.

3.4. Results
3.4.1. Results on filler items

We start with fillers. Figure 1 presents percent acceptance of each type by *Target Answer* (acceptable; unacceptable) and by *Group* (L2ers; native speakers).

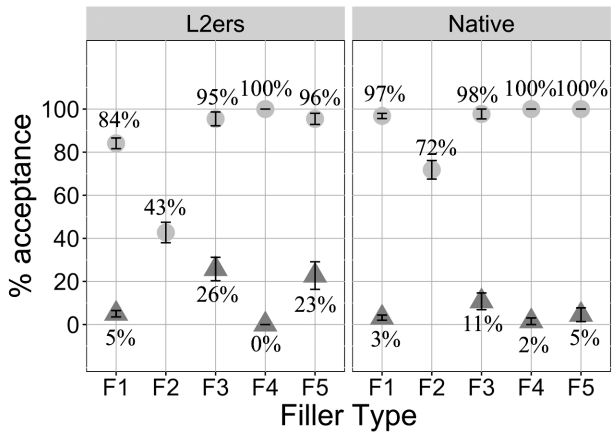

Figure 1: Mean % acceptance of filler items by *Target Answer* and *Group*.
Notes. Circles indicate acceptable items; triangles indicate unacceptable items. F1 = Simple sluicing (15); F2 = *Who or what* sluicing (16); F3 = Conjoined sentences without ellipsis (17); F4 = transitive sentences (18); F5 = ditransitive sentences (19). The error bars show standard errors of the mean.

This figure shows that, overall, the L2ers and the native speakers performed as expected on fillers, by accepting possible sentences and rejecting impossible ones, except in the case of Filler 2 *who or what* sluicing. The L2ers tended to accept *who or what* sluicing less often (42.7%) than the native controls did (71.8%). Their high rejection rate may be due to the disjunctive reading in the Japanese counterpart, exemplified in (20), where *matawa* ('or') scopes over *-nai* ('not'). The disjunctive reading means that the speaker has doubts either about what John gave or about who John gave it to. But because speakers usually know what they

do know and what they don't know, the disjunctive reading is pragmatically odd. We thus speculate that L2ers who rejected Filler 2 *who or what* sluicing might have transferred the L1 Japanese analysis of negated disjunction to interpret it.

(20) John-wa dareka-ni nanika-o age-ta ga,
John-TOP someone-DAT something-ACC give-PST but
watasi-wa dare-ni matawa nani-o (da) ka wakara-nai.
I-TOP who-DAT or what-ACC COP Q know-NEG
'John gave someone something, but I don't know who or what.'

What is crucial in Figure 1 is that the L2ers, like the native controls, were sensitive to the contrast in Filler 1 simple sluicing: They tended to accept licit simple sluicing (84.0% acceptance) and reject illicit simple sluicing (5.0% acceptance).

3.4.2. Results on multiple sluicing conditions

We turn now to the critical conditions. Recall that in English, bare multiple sluicing is unacceptable but PP multiple sluicing is acceptable, whereas there is no such grammaticality contrast in Japanese.

Figure 2 shows percent acceptance of bare multiple sluicing ("Bare") and PP multiple sluicing ("PP") by *Group* (L2ers; native speakers). As seen in Figure 2, both groups tended to reject bare multiple sluicing but accept PP multiple sluicing.

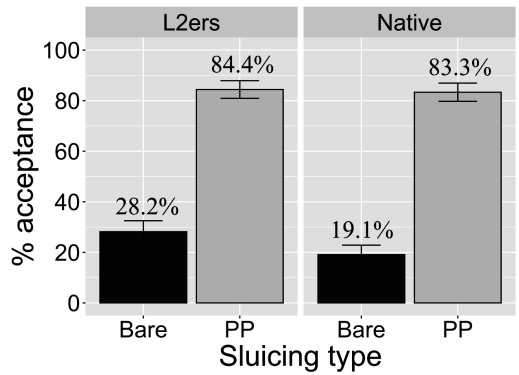

Figure 2: Mean % acceptance of multiple sluicing conditions by *Group*.
Notes. Error bars show the standard errors of the mean.

To test whether the L2ers as a group were as sensitive to the grammaticality contrast as the native controls were, the binary-coded acceptability judgments ("3" and "4" as acceptance; "1" and "2" as rejection) were fitted to a mixed-effects logistic regression model with *Acceptance* as a response variable and with *Group* (L2ers vs. native speakers) and *Multiple Sluicing Type* (bare multiple sluicing vs. PP multiple sluicing) as fixed effects. We added *Participant* and *Item* as random intercepts. Table 3 provides the results of this model.

Table 3: Results of the mixed-effects logistic regression on L2ers' and native speakers' judgments on bare vs. PP multiple sluicing

	Estimate (β)	Standard Error	p
(Intercept)	.50	.60	.40
Group	−.92	1.22	.44
Multiple Sluicing Type	7.14	1.00	< .001
Group * Multiple Sluicing Type	.02	1.41	.98

Note: Model: glmer(Acceptance ~ 1 + Group * Multiple sluicing type + (1 | Participant) + (1 | Item))

Our interest is whether there is an interaction between *Group* and *Multiple Sluicing Type* i.e., whether the acceptability gap between (illicit) bare multiple sluicing and (licit) PP multiple sluicing is significantly different between the L2ers and the native speakers. A significant interaction was not found by this model. One way to understand this result is that as groups, the L2ers and the native controls were similarly sensitive to the contrast between bare multiple sluicing and PP multiple sluicing, tending to reject the former but accept the latter.

3.4.3. Individual analyses of the L2 participants

Since the aggregated results might conceal variation among the L2ers, we subsequently conducted individual analyses. A second objective in doing this is to determine whether L2 performance on the critical conditions is a function of the independent proficiency measure (i.e., the Cloze test scores).

Figure 3 plots Cloze test scores (*x*-axis) against mean raw judgments (*y*-axis) on the two types of multiple sluicing for each individual L2 participant.

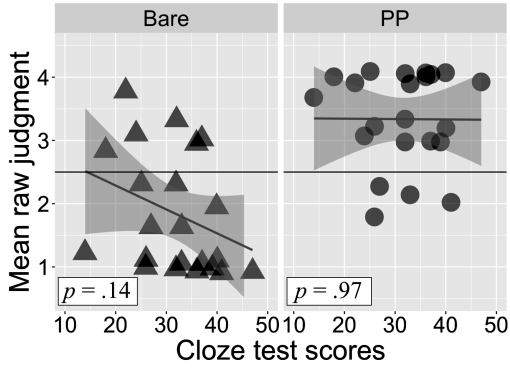

Figure 3: Relations by L2 participant between Cloze test score and mean raw judgments on bare multiple sluicing (left) and PP multiple sluicing (right). *Notes.* The shaded region indicates the 95% confidence interval. Overlapping points are jittered.

As seen in Figure 3, most of the L2ers tended to reject bare multiple sluicing but accept PP multiple sluicing. However, the left figure has six triangles above the median (2.5) and the right figure has four circles below the median; this means that six L2ers tended to incorrectly accept bare multiple sluicing and four L2ers tended to incorrectly reject PP multiple sluicing. Simple linear regression analyses revealed that the Cloze test score was not a significant predictor of the L2ers' mean raw judgment either for bare multiple sluicing (p = .14) or for PP multiple sluicing (p = .97). There is nevertheless a trend for scores on the Cloze test to be inversely related to rejection of bare multiple sluicing. Testing additional lower-proficiency L2ers should reveal this trend more clearly.

Looking further into the individual L2 data revealed three different patterns. The first group consists of L2ers who accepted both types of multiple sluicing (Japanese-like; n = 6), the second group consists of L2ers who rejected both types (Reject Both; n = 4), and the third group consists of L2ers who rejected bare multiple sluicing but accepted PP multiple sluicing (Target-like; n = 12). Table 4 summarizes the mean raw judgments and mean Cloze score by each L2 sub-group.

Table 4: Patterns of each L2 sub-group: Mean raw judgments in each multiple sluicing condition and mean Cloze score.

	*Bare multiple sluicing	PP multiple sluicing	Cloze score (Max: 50)
Japanese-like (n = 6)	3.16	3.66	28.16
Reject Both (n = 4)	1.30	2.05	31.75
Target-like (n = 12)	1.36	3.60	33.41

The L2 sub-group with the lowest mean Cloze score (28.16 out of 50) consistently accepted both types of multiple sluicing (the mean raw judgments of both bare multiple sluicing and PP multiple sluicing were above the median (2.5)). It might be the case that these L2ers accept both types of multiple sluicing by virtue of their L1 Japanese grammar not having the contrast.

However, this conclusion may be premature. It is possible that accepting multiple sluicing is just what L2ers of English typically do early on in their development, regardless of the L1 grammar (p.c., William O'Grady, 12 May 2020). In order to argue that the six Japanese L2ers in the lowest sub-group of the current study accepted bare multiple sluicing based on their L1 grammar, it is necessary to test whether comparably proficient L2ers whose L1 does ***not*** allow bare multiple sluicing accept/reject bare multiple sluicing in English. L1-Farsi L2ers of English would provide us with just such a test case. Farsi, like Japanese, is a *wh*-in-situ language, but, like English, does not allow multiple sluicing. Toosarvandani (2008) argues that the latter is ruled out because Farsi sluicing involves focus fronting of a *wh*-phrase, and Farsi does not allow multiple focus fronting. Testing whether L1-Farsi L2ers—whose English proficiency is comparable to that of our lowest L1-Japanese sub-group—accept/reject bare multiple sluicing in English would allow us to examine the effect of L1 transfer more precisely; our hypothesis would predict them to reject bare multiple sluicing.

The L2 sub-group with a mean Cloze score in the middle (31.75) had four L2ers who rejected both types of multiple sluicing. We speculate that these L2ers have acquired that English sluicing involves *wh*-movement and does not allow multiple *wh*-movement, but they have not yet acquired the possibility of rightward movement of PP (and heavy DP). Without such rightward movement, both types of multiple sluicing are ruled out. Future research can assess this hypothesis by testing L2ers both on PP multiple sluicing and on non-elliptical sentences with rightward PP movement. The hypothesis predicts no L1-Japanese L2er of English will allow PP multiple sluicing without also allowing rightward PP movement.

The third L2 sub-group had the highest mean Cloze test score (33.41) and consisted of twelve L2ers who, like the native speakers, rejected bare multiple sluicing but accepted PP multiple sluicing. This result suggests that these L2ers have acquired the invisible internal structure of English sluicing (in which only a single instance of *wh*-movement is licensed) as well as the possibility of rightward PP movement (thereby permitting the generation of PP multiple sluices).

Some might object to this conclusion because multiple sluicing in Japanese is unacceptable unless at least the first *wh*-phrase has a case-marker/postposition (see Hiraiwa & Ishihara, 2012[3]), as shown in (21).

(21) John-ga dareka-ni nanika-o age-ta ga,
John-NOM someone-DAT something-ACC give-PST but
watasi-wa dare*(-ni) nani?(-o) (da) ka wakara-nai.
I-TOP who-DAT what-ACC COP Q know-NEG
'(intended) John gave someone something, but I don't know who or what.'

This is perhaps similar to English barring bare multiple sluicing (e.g., **who what*). It could therefore be the case that the L2ers (i) reject bare multiple sluicing in English based on the transfer of the impossibility of a Japanese multiple sluice with no case-marker/postposition between the two *wh*-phrases (e.g., (21)) and (ii) accept PP multiple sluicing in English based on L1 transfer of a multiple sluice with a case-marker/postposition between the two *wh*-phrases. If so, the L2 data indicating sensitivity to the grammaticality contrast in English multiple sluicing would not constitute evidence for their acquisition of the internal structure of English sluicing. (We thank both William O'Grady (p.c., 20 October 2021) and Koichi Otaki (p.c., 24 October 2021) for this alternative account.)

If this alternative account were on the right track, however, it would leave unexplained why some L2ers—namely, those in the sub-group with the ***lowest*** mean Cloze score—consistently accepted bare multiple sluicing in English. For this reason, we conclude that the sensitivity to the grammaticality contrast in English multiple sluicing displayed by the L2ers with the ***highest*** mean Cloze

[3] Hiraiwa & Ishihara (2012), advocates of the idea that Japanese sluicing is derived from a cleft construction, stated that "a multiple cleft requires all of the focused phrases to retain [c]ase-particles/postpositions" (p. 145) but that some speakers may omit accusative *-o* if it immediately precedes the copula in multiple clefts (p. 146).

score is not likely due to L1 transfer. Rather, it appears that the L2ers in this latter sub-group came to have the target-like contrast by acquiring the internal structure of English sluicing involving *wh*-movement, i.e., overcoming the POS problem.

Nevertheless, to eliminate L1 transfer as conceived above under the alternative account as the cause of the L2ers' target-like contrast in English, we will conduct a new study testing different types of multiple sluicing, one of which contains the adjunct *wh*-phrase *when*, as in (22).

(22) a. *John ate cake sometime somewhere, but I don't know when where.
b. *John ate something somewhere, but I don't know what where.

Both patterns of multiple sluicing (i.e., *when where* and *what where*) are unacceptable in English. Now, let us consider their Japanese counterparts in (23). The sentence in (23b) conforms to the pattern noted in the alternative account, having a postposition between the two *wh*-phrases (*doko-de nani-o* 'where-at what-ACC'), and, as expected, it is acceptable (and without the postposition between the two *wh*-phrases, it is unacceptable: **doko nani-o* 'where what-ACC).[4] Crucially, however, *itsu doko-de* 'when where-at' in (23a) is ***acceptable*** in Japanese, even though there is no postposition between the two *wh*-phrases.

(23) a. John-ga itsuka dokoka-de keeki-o tabe-ta ga,
John-NOM sometime somewhere-at cake-ACC eat-PST but
watasi-wa itsu doko-de (da) ka wakara-nai.
I-TOP when where-at COP Q know-NEG
b. John-ga dokoka-de nanika-o tabe-ta ga,
John-NOM somewhere-at something-ACC eat-PST but
watasi-wa doko*(-de) nani-o (da) ka wakara-nai.
I-TOP where-at what-ACC COP Q know-NEG

According to the alternative account, L1-Japanese L2ers are predicted to reject (22b)—because the Japanese counterpart of (22b), i.e., (23b), is unacceptable without a postposition between the two *wh*-phrases—but ***accept*** (22a)—because the Japanese counterpart of (22a), i.e., (23a), is acceptable without anything between the two *wh*-phrases. Hence, if L1-Japanese L2ers reject both (22a) and (22b), we can be confident that the reason they reject English bare multiple sluicing is not because of L1 transfer.

To summarize our analyses by individual, three different patterns of L2 performance emerged in the current experiment: Japanese-like, Reject Both, and Target-like. We hypothesize that these patterns represent the developmental path for English multiple sluicing on the part of L1-Japanese L2ers. The mean Cloze

[4] The same contrast obtains when *nani-o* 'what-ACC' is scrambled before *doko-de* 'where-at' (i.e., *nani-o doko-de* 'what-ACC where-at'), in which case the order is linearly the same as in the English sentence (22b): If the first *wh*-phrase (*nani-o*) does not bear a case-marker (**nani doko-de* 'what where-at), then multiple sluicing is again unacceptable.

test scores of these L2 sub-groups aligned accordingly in this order (28.16, 31.75, 33.41), although the differences among the mean Cloze scores of these sub-groups, as determined by a one-way ANOVA using L2 Cloze test scores as a response variable and L2 sub-group as a predictor variable, were not significant (p = .18). Our suspicion is that with additional lower proficiency L2ers, these differences would reach significance. But for now, this developmental hypothesis will have to await future testing.

4. Conclusion

This study examined whether L1-Japanese L2ers of English can come to know the internal structure of English sluicing. Because one of the only ways the structural differences between English sluicing and Japanese sluicing becomes manifest is in multiple sluicing, that was the focus: English sluicing involves *wh*-movement and does not allow multiple *wh*-movement, while Japanese sluicing involves a cleft construction and does allow multiple clefts. Specifically, the study tested whether L1-Japanese L2ers can come to have a grammaticality contrast in English multiple sluicing when the contrast does not exist in their L1. The aggregated results of the experiment revealed that like the native English controls, the L2ers were sensitive to the grammaticality contrast between (illicit) bare multiple sluicing and (licit) PP multiple sluicing; this finding was further bolstered by the analyses by individual which showed that in fact most of the L2 participants were sensitive to the contrast and, as argued above, were thus able to overcome the Poverty of the Stimulus problem.

Overall, this study is a first step in investigating whether L1-Japanese L2ers of English can come to know the internal structure of English sluicing which is underdetermined by the L1 grammar, direct TL input, and classroom instruction. Future extensions to this research, such as suggested in the discussion above, should be able to provide more decisive arguments for or against the hypothesis that the domain-specific cognitive system that constrains child language acquisition also constrains adult L2 acquisition in the invisible syntax of sluicing.

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