Principle C in L2 Acquisition: Reconstruction Effects

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1. Introduction

Principle C of the Binding Theory (Chomsky 1981) prohibits referential dependencies in cases where a pronoun c-commands its potential antecedent, i.e., the R-expression is structurally located within the scope of the pronoun.[1]

(1) a. While he$_i$ ate pizza, the Ninja Turtle$_i$ danced.
b. * He$_i$ danced while the Ninja Turtle$_i$ ate pizza. (Crain 2012: 128–29)

Both sentences in (1) are instances of backward anaphora, where the pronoun *he* precedes its intended antecedent *the Ninja Turtle*. In (1a), the pronoun does not c-command the name, and so the former can be referentially dependent on the latter, effecting a coreferential interpretation. By contrast, in (1b), *he* c-commands *the Ninja Turtle*, and this prohibits the pronoun from being anaphorically linked to the name, resulting in *he* necessarily having an antecedent other than *the Ninja Turtle*. The interpretation facts in (1) convincingly show that it is the hierarchical relation based on c-command between a pronoun and an antecedent that matters in coreference computation, not the linear order of the two constituents.

Principle C effects are observed not only in cases such as (1), where the c-command relation is easily calculated in the surface structure, but also in cases as in (2), where the relevant relation is opaque in the surface syntax.

(2) a. ?* Which picture of John$_i$ did he$_i$ like *t* ?
b. ?* Which claim that John$_i$ liked Mary did he$_i$ deny *t* ? (Lebeaux 2009: 44)

In (2), the pronoun *he* does not c-command its potential antecedent *John*, but it enters into a c-command relation with *John* at the trace/copy position indicated

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[1] Principle C is defined as follows: If α is an R-expression, interpret it as disjoint from every c-commanding phrase (Chomsky 1995: 100).

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by *t*, giving rise to Principle C effects. Given the disjoint interpretations in (2), one might assume that Principle C effects are always triggered at the original position of a moved element, but the situation is more complicated than it looks:

(3) a. [Which claim that John$_i$ made] was he$_i$ willing to discuss *t* ?
b. * He$_i$ was willing to discuss the claim that John$_i$ made.
(4) a. * It seems to him$_i$ that [the claim that John$_i$ was asleep] is correct.
b. [The claim that John$_i$ was asleep] seems to him$_i$ to *t* be correct.
(Chomsky 1995: 187)

Principle C effects are not observed when an adjunct clause (here, the relative clause) is pied-piped with a moved *wh*-phrase, as in (3a), or when a constituent containing an antecedent is A-moved, as in (4b). As indicated in (3b), *he* c-commands *John* at the original position of the *wh*-phrase in (3a), but coreference is permitted only in (3a), not (3b). On the other hand, the pronoun c-commands its intended antecedent *John* in (4a), but coreference becomes possible after the phrase containing *John* is raised to the subject position, as in (4b).

Viewed from the perspective of language acquisition, the puzzling facts about Principle C *reconstruction/connectivity effects*[2] illustrated above pose a serious learnability problem since relevant grammatical operations are far from apparent in the surface structure (i.e., they are 'invisible') and, moreover, reconstruction effects vary by syntactic construction. For example, there is an asymmetry in reconstruction between complements and adjuncts, as in (2a) and (3a), as well as between A'-movement and A-movement in reconstruction, as in (2b) and (4b). Nevertheless, recent research on first language (L1) acquisition has documented that despite the lack of direct evidence for reconstruction, young children reveal knowledge of reconstruction effects with respect to Principle C (e.g., Kiguchi & Thornton 2016; Leddon & Lidz 2006). Relevant to our study is the fact that *specificational pseudoclefts*, exemplified in (5), exhibit Principle C effects:

(5) a. * What he$_i$ is is fed up with Max$_i$. (Crain 2012: 115)
b. * What he$_i$ really missed was John$_i$'s dog. (Heycock & Kroch 2002: 119)

What is interesting here is that the pronoun does not c-command its intended antecedent in the surface structure, but coreference is nonetheless impossible.

Kiguchi and Thornton (2016) provided evidence that 4- to 5-year-old L1 children acquiring English interpret the pronoun (*he*) and the R-expression (*Max/John's*) in sentences like (5) as non-coreferential, suggesting they have knowledge of Principle C despite the lack of a c-command relation in surface syntax. The current second language (L2) study—inspired by Kiguchi and Thornton (2016)—examines whether the same holds for adult L2 learners. It is

[2] We use the terms "reconstruction effects" and "connectivity effects" interchangeably in this paper, with the meaning that a moved constituent is interpreted at a position different from its surface position as if it had not undergone movement or deletion.

worth noting that all previous work looking into L2 sensitivity to Principle C was restricted to cases where the c-command relation is present in the surface syntax (e.g., Diaconescu & Goodluck 2003); ours is thus the first study of its kind.[3]

The paper is organized as follows: Section 2 provides an overview of reconstruction effects in (specificational) pseudoclefts. In Section 3, we briefly review research on the L1 and L2 acquisition of reconstruction effects. Section 4 describes our study with L1-Japanese L2 learners of English, and Section 5 reports the results. Accounts of the latter are discussed in Section 6. Finally, we conclude with broader theoretical implications in Section 7.

2. Reconstruction effects in specificational pseudoclefts

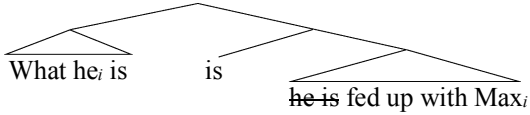
As previously mentioned in regard to (5), specificational pseudoclefts manifest reconstruction/connectivity effects, where a moved element is interpreted in its pre-moved position (e.g., Den Dikken**,** Meinunger & Wilder 2000). The pseudocleft in (6a) displays a Principle C connectivity effect in the sense that the pronoun is connected to its antecedent as in (6b):

(6) a. * What he$_i$ is is fed up with Max$_i$. (Crain 2012: 115)
b. * He$_i$ is fed up with Max$_i$.

The theoretical question at issue with pseudoclefts is how the apparent lack of the c-command relation between the pronoun and its potential antecedent in (6a) gives rise to Principle C effects in the derivation.

The structure of specificational pseudoclefts is still a matter of debate and has been analyzed, e.g., in terms of covert movement at logical form (LF) (Bošković 1997) and deletion at phonological form (PF) (Den Dikken 2006; Den Dikken et al. 2000). For expository purposes, we review the account of Den Dikken et al.; they propose an ellipsis approach to reconstruction effects in pseudoclefts, in which a post-copular constituent is a full finite IP with the presupposed constituent elided. They proposed that the sentence in (6a) has the structure in (7):

(7)



(adapted from Crain 2012: 116)

In this structure, although the pronoun does not c-command the R-expression in the surface structure, it does inside the elliptical IP, which yields Principle C

[3] Interestingly, L2 research on the Binding Theory has focused primarily on Principle A and Principle B (for a review, see White 2003). This may be due to the fact that since Principle C is considered to be a universal constraint, it is difficult to determine whether L2 Principle C effects stem from the L1 or not.

effects. This suggests that the c-command relation between the pronoun and the R-expression is interpreted not at the level of PF but rather at the reconstructed position (i.e., at the level of LF). If it were interpreted at the surface position, the sentence in (6a) should allow coreference, contrary to fact.

3. Principle C and reconstruction effects in L1 and L2 acquisition

Adopting the ellipsis approach, Kiguchi and Thornton (2016) investigated whether young children have an adult-like grammar of reconstruction despite the absence of direct evidence for coreferential relations (i.e., c-command) in the input. They tested target sentences like in (8), where coreference between the pronoun and the R-expression is disallowed:

(8) *What he$_i$ said was the blue pirate$_i$'s climbing was the best.

On the one hand, if children (or adults) allow a coreferential reading in the pseudocleft sentence in (8), interpreting the pronoun *he* as referring to *the blue pirate*, this means they do not reconstruct the R-expression. On the other hand, if they disallow the coreferential interpretation between the two, i.e., display reconstruction effects, this is evidence that they are adhering to Principle C.

Kiguchi and Thornton found that like L1-English adults, 4-year-old L1-English children disallowed the coreferential reading in sentences such as in (8), where the c-command relation between a pronoun and an R-expression is not apparent (i.e., is 'invisible') in surface syntax. This suggests that the children in the study respected Principle C as a result of reconstruction; this in turn indicates that they make use of abstract syntactic structure, i.e., they do not simply rely on linear, surface word strings in their linguistic input when acquiring how to build syntactic structures as well as how to interpret them.

Only a few L2 studies have examined sensitivity to Principle C. Diaconescu and Goodluck (2003), for instance, reported that advanced L2 learners show native-like knowledge of Principle C. Studies such as this tested sentence types where the c-command relation is preserved (i.e., 'visible') in surface syntax (as in (1b)). To our knowledge, no L2 research on Principle C effects has been conducted in the context of reconstruction. Whether L2 learners (can come to) exhibit reconstruction effects like those discussed above (thereby demonstrating adherence to Principle C), despite the lack of direct evidence in surface syntax, remains to be studied.

4. The study

The current study investigated whether adult L1-Japanese L2 learners of English (JLEs) manifest reconstruction effects in specificational pseudoclefts, where Principle C's c-command requirement between a pronoun and an R-expression is not preserved in surface syntax.

4.1. Participants

Nineteen JLEs and 12 native English speakers as a control group (ENCs), recruited in Japan and the U.S., participated in the research. Table 1 provides their language background information and their scores on an independent measure of English proficiency, a Cloze test (Brown 1980). In addition, at the time of testing, the JLEs ranged in age from 20 to 45 (M = 31; SD = 6.18) and the ENCs from 20 to 61 (M = 34; SD = 11.74).

Table 1. Participants' background information and proficiency

Group	*n*	Age of onset to English exposure			Years of residence in the U.S.			Cloze test score (Max = 50)		
		M	Range	*SD*	*M*	Range	*SD*	*M*	Range	*SD*
JLEs	19	11	8–13	1.6	5	0–19	5.0	36.9	20–45	5.9
ENCs	12	—	—	—	—	—	—	43.8	32–50	5.0

Although the proficiency of the JLEs is relatively high, an independent samples t-test showed that the mean Cloze test scores of the two groups are significantly different ($t(29) = -2.97$, $p < .001$).

4.2. Procedure

All three experimental tasks were conducted online, in writing, using Google Forms. After filling out the consent form, participants completed the main experiment, a written truth-value judgment task (TVJT; Crain & McKee 1985). The TVJT was in the "prediction mode," where two cartoon characters, Winnie the Pooh and Piglet, played a guessing game; together they were presented with a short story accompanied by pictures, and at the second picture, Pooh made a guess (i.e., made a prediction) about what would happen later in the story. At the end of the story, Piglet reviewed the guess that Pooh had made, and participants were asked to judge whether the guess had been right or wrong (for details, see §4.3). The TVJT was followed by a language background questionnaire; the English Cloze test (Brown 1980) came last. The entire testing session took 30–45 minutes.

4.3. Materials

There were two critical conditions in the TVJT, each of which had five tokens. The first was the *what* (pseudocleft) condition, as in (9a), where the test sentences were all pseudoclefts and a pronoun appeared in the *what*-clause. The second condition was the w*hile* (adverbial) condition, as in (9b), where the test sentences all had a pronoun embedded in an adverbial *while*-clause. Note that in both conditions, the pronoun linearly precedes the R-expression.

(9) a. * What *he*$_i$ will eat is *Tigger*$_i$*'s* oranges.
b. While *he*$_i$ is studying, *Tigger*$_i$ will eat oranges.

Each item in the TVJT, including the fillers (see below), consisted of a 5-picture short story. For the critical items, a single story was used twice, once in the w*hat* (pseudocleft) condition and again in the w*hile* (adverbial) condition. At Picture 1 (Figure 1a), Piglet introduced the story's characters and objects in a speech bubble. In Picture 2 (Figure 1b), Pooh made his guess (also in a speech bubble) about what would happen; this prediction constituted the target sentence (e.g., either (9a) or (9b)).

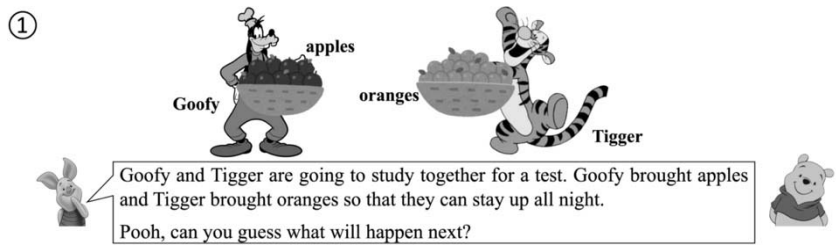


Figure 1a. Sample of Picture 1, the introduction scene.

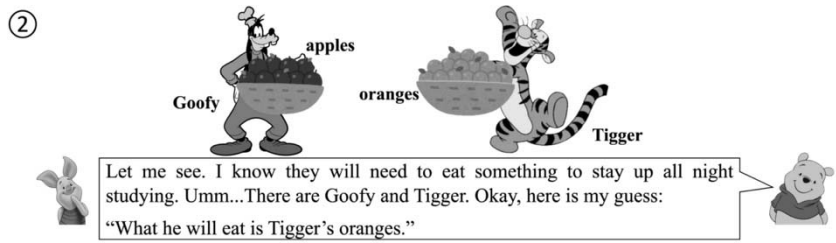


Figure 1b. Sample of Picture 2, Pooh's guessing scene.

The story continued with Piglet describing, in the third picture (Figure 1c),[4] something that might happen and, in the fourth picture (Figure 1d), what actually happened:

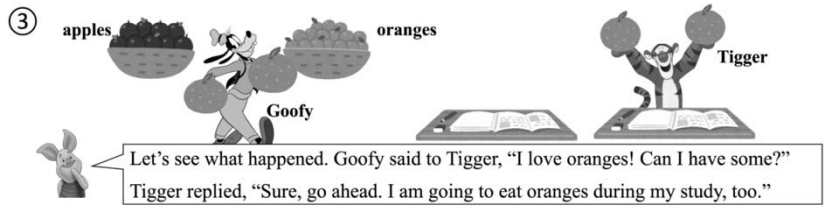


Figure 1c. Sample of Picture 3, what might happen.

[4] Note that the purpose of Picture 3 and its accompanying text is to satisfy "plausible dissent," a required design feature of TVJTs.

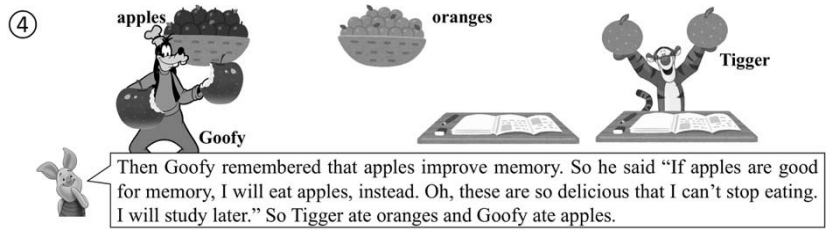


Figure 1d. Sample of Picture 4, what actually happened.

Picture 4 was the crucial one, which in this case showed that Tigger ate his oranges at the same time he was studying, and Goofy ate his apples. Picture 5 reviewed the guess Pooh had made in Picture 2, as illustrated in Figure 1e:

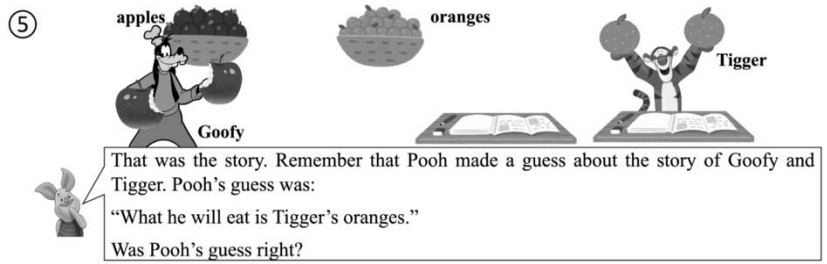


Figure 1e. Sample of Picture 5, the review of Pooh's guess (from Picture 2).

If participants show reconstruction effects in the *what* (pseudocleft) condition, as in (9a), the sentence will be judged as 'False' because Principle C rules out coreference between the pronoun *he* and the (reconstructed) R-expression *Tigger*. On the other hand, the coreferential reading is available in the *while* (adverbial) condition, as in (9b); Principle C is respected since *he* does not c-command *Tigger*, and thus the expected response is 'True.'

The experiment also had 13 filler items and three screening items. The latter were used to test whether the participants would respect Principle C in non-pseudocleft sentences, exemplified in (10); this particular screening sentence went with a story for which Figure 2 was the crucial fourth picture.

(10) *He$_i$ will be eating tomatoes while Sponge Bob$_i$ is studying.

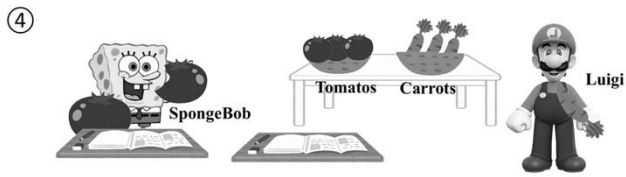


Figure 2. Sample of the crucial picture for screening items (here, for (10)).

Note that like with the two target conditions, the pronoun precedes its potential antecedent in the screening items. Participants needed to reject coreference in at least two of the three screening items (thereby demonstrating knowledge of Principle C) to be included in further analyses. All participants met this criterion.

In sum, despite the same linear order between pronoun and R-expression in the two target conditions, the syntactic relations are different. If JLEs are not sensitive to abstract syntactic structure and rely solely on that linear relation, they will not differentiate between them. On the other hand, if they do have knowledge of reconstruction and Principle C, they should reject coreference in the *what* (pseudocleft) condition but allow it in the *while* (adverbial) condition.

5. Results

Figure 3 displays the coreference acceptance rates for the two critical conditions in the TVJT by group. In the *what* (pseudocleft) condition, the mean acceptance was 1.7% (*SD* = 5.8) for ENCs and 4.2% (*SD* = 10.7) for JLEs. In the *while* (adverbial) condition, the mean acceptance was 86.7% (*SD* = 13.0) for ENCs and 72.6% (*SD* = 30.0) for JLEs.

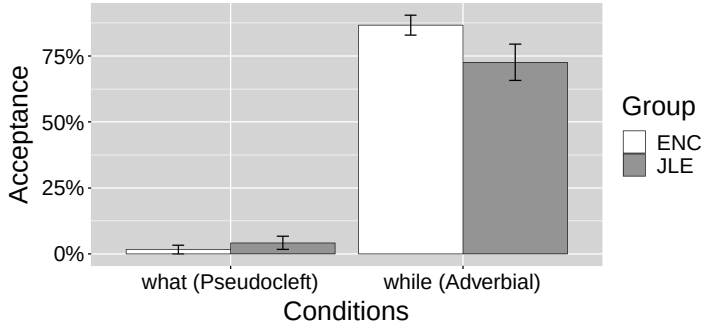


Figure 3. Mean proportion of coreference acceptance (*true* responses) in each TVJT condition. Error bars indicate standard errors of the means.

Table 2 reports the output of the mixed-effect logistic regression, constructed on the *Acceptance* ('*true*' responses) in the TVJT, with *Condition* (what vs. while) and *Group* (JLE vs. ENC) as fixed effects and with *Participant* as a random effect.

Table 2. Summary output of the model

	Estimate	SE	*z*	*P*(>|*z*|)	OR	95% CI
Intercept	–1.17	0.36	–3.22	< .001	0.31	0.13, 0.59
Condition	5.69	0.73	7.84	< .001	296.15	86.52, 1703.38
Group	–0.04	0.72	–0.05	0.96	0.96	0.24, 5.15
Condition × Group	–1.90	1.28	–1.49	0.14	0.15	0.01, 1.44

Note. glmer(Acceptance ~ 1 + Group*Condition + (1|participant); SE (standard errors); OR (odd ratio); CI (confidence intervals).

The results showed a main effect of *Condition* ($\beta = 5.69$, $z = 7.84$, $p < .001$) but not *Group* ($\beta = -.04$, $z = -.05$, $p = .96$) and no *Condition* × *Group* interaction ($\beta = -1.90$, $z = -1.49$, $p = .14$). These findings for the aggregated data reflect the fact that for both groups, the coreferential reading between the pronoun and potential antecedent was correctly disallowed in the *what* (pseudocleft) condition and correctly accepted in the *while* (adverbial) condition.

Subsequent analysis looked for correlations between accuracy on the TVJT and English Cloze test scores. For the ENCs, there was no significant correlation in either the *what* (pseudocleft) condition (Pearson $r = 0.074$, $p = 0.821$) or the *while* (adverbial) condition ($r = 0.353$, $p = 0.260$). As for the JLEs, whereas no significant correlation emerged in the *while* (adverbial) condition ($r = 0.263$, $p = 0.277$), their Cloze scores did significantly correlate with accuracy—see Figure 4—in the *what* (pseudocleft) condition ($r = 0.643$, $p = 0.003$).

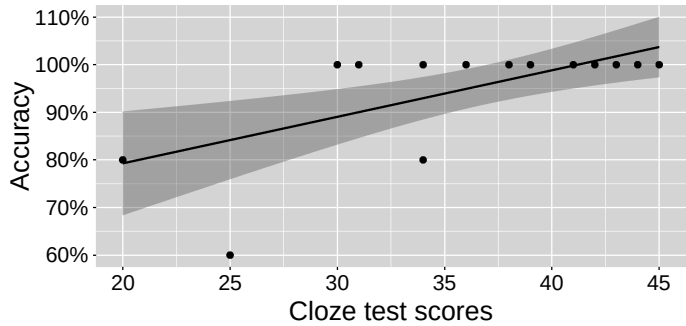


Figure 4. **Scatterplot of JLEs' individual Cloze test scores and accuracy in the *what* (pseudocleft) condition.**

This last correlational result suggests that acquisition of the target disjoint interpretation in the *what* (pseudocleft) condition, where only reconstruction creates the requisite c-command relation, is related to L2 proficiency.

6. Discussion

The present research investigated whether JLEs would evince reconstruction effects, respecting Principle C in pseudoclefts, where the c-command relation between a pronoun and its potential antecedent is not preserved in surface syntax. It is important to bear in mind that Principle C is a ***negative constraint*** (e.g., Crain 2012) in the sense that its purview is ***non-coreference*** in a certain environment. If there is no direct evidence to reveal that pairings of certain sentences and certain meanings are prohibited, then whatever underlies such knowledge, e.g., Principle C, is reasonably assumed to come from Universal Grammar (UG).

JLEs and ENCs rejected a coreferential reading between pronoun and R-expression in the *what* (pseudocleft) condition but accepted it in the *while* (adverbial) condition. These results argue for the claim that adult JLEs, like ENCs,

do not base their interpretation of sentences solely on surface syntactic patterns encountered in the input (e.g., linear order) but instead map to semantics from abstract representations falling within the hypothesis space defined by UG. Our findings indicate that these JLEs' knowledge of English incorporates the syntactic operations and calculus inherent to reconstruction, including Principle C.

One might wonder whether the JLEs' rejection of coreference in the *what* (pseudocleft) condition might derive from L1 transfer. While Principle C does operate in Japanese, in what follows we argue against the idea that transfer from Japanese can account for the L2 TVJT results.

It is well known that Japanese overt 3sg "pronouns" *kare* 'he' and *kanozyo* 'she' behave differently from their English counterparts (e.g., Hoji 1991). For example, *kare/kanozyo* do not readily allow for a bound variable reading in (11a), unlike English pronouns, as in (11b):

(11) a. * Daremo$_i$-ga [kare$_i$-ga katu to] omot-teiru.
everyone-NOM he-NOM win COMP think-PROG
'Everyone$_i$ thinks that he$_{j/*i}$ will win.'
b. Everyone$_i$ thinks he$_i$ will win.

Hoji (1991) claims—based on Kuno's (1973) observation regarding the similarity between *kare/kanozyo* and *a*-type demonstratives such as *are/ano* 'that,'[5]—that *kare* and *kanozyo* are not pronouns but rather demonstratives.

Japanese overt "pronouns" also differ from English pronouns in regard to backward anaphora. Hinds (1978: 145) claims that "backward pronominalization using overt pronouns such as *kare* does not exist in Japanese." Kanzaki (1994) generally concurs, stating that the Japanese overt pronoun *kare* does not allow backward anaphora, as in (12a), but English pronouns do, as shown in (12b):[6]

(12) a. * Kare$_i$-ga ie-o deru maeni,
he-NOM home-ACC leave before
Mary-ga John$_i$-o sikat-ta.
Mary-NOM John-ACC scold-PST
'Before he$_i$ left home, Mary scolded John$_{j/*i}$.' (Kanzaki 1994: 116)
b. Before he$_i$ left home, Mary scolded John$_i$.

Kishimoto (2020), however, opines that backward pronominal anaphora as in (13a) sounds quite natural if it represents an answer to the question in (13b):

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[5] Japanese has three kinds of demonstratives: the *ko*-series, such as *kore* 'this one,' used when the referent is close to the speaker; the *a*-series, such as *are* 'that one there,' used when the referent is far from the speaker and the hearer; the *so*-series, such as *sore* 'that one,' used to refer to something closer to the hearer than to the speaker (Kuno 1973: 282). The *so*-series demonstratives can be bound by a quantificational expression (Hoji 1991).

[6] See Okuma (2015) for experimental data regarding the difficulty that native speakers of Japanese have with coreferential readings with *kare/kanozyo*.

(13) a. Kare$_i$-no tomodati-ga Ken$_i$-o home-ta.
he-GEN friend-NOM Ken-ACC praise-PST
'His$_i$ friend praised Ken$_i$.'
b. Dare-no tomodati-ga Ken-o home-ta no?
who-GEN friend-NOM Ken-ACC praise-PST Q
'Whose friend praised Ken?'

In this case, the referent of *Ken* is already established in the discourse, which suggests that *kare* in (13a) may be anaphoric to "Ken" in the discourse, not to the nominal *Ken* in the same sentence.

Whether Japanese overt 3sg "pronouns" are demonstratives (Hoji 1991), nouns (Kuroda 1965),[7] or epithets (Yashima 2015), it is safe to say that they are not true counterparts of English 3sg pronouns.

Most relevant to our concerns is the fact that the Japanese counterparts of the *what* (pseudocleft[8]) and *while* (adverbial) conditions both ***disallow*** coreference, as shown in (14):

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[7] See Kuroda (1965) for the claim that the null pronominal *pro* is the closest Japanese counterpart of English overt pronouns.

[8] Focus constructions in English, like clefts (ia) and pseudoclefts (ib), differ in terms of the order between the focus phrase and the presupposition phrase. The focus phrase appears after the copula in (ia) and before it in (ib):

(i) a. It is a book that John bought.
b. What John bought is a book.

As for Japanese focus constructions, Hoji (1990) points out that there are two types of (pseudo-)clefts: with vs. without case-marked particles and postpositions in the focus position, as in respectively, (iia) and (iib):

(ii) a. John-ga kat-ta no wa hon-o da.
John-NOM buy-PST C TOP book-ACC COP
b. John-ga kat-ta no wa hon da.
John-NOM buy-PST C TOP book COP

It is not clear which type of (pseudo-)cleft in (ii) corresponds to the English pseudocleft (for different views on this issue, see Nakao & Yoshida 2005 and Mihara & Hiraiwa 2006). Of crucial import to our inquiry is the fact that binding connectivity effects are observed in both types in (ii), as illustrated in (iii):

(iii) John-ga kat-ta no wa zibun-zisin-no hon(-o) da.
John-NOM buy-PST C TOP self-self-GEN book(-ACC) COP
Lit. 'What John bought was self's book.' Or 'It was self's book that John bought.'

The complex reflexive *zibun-zisin* ('self-self'), like English reflexives (e.g., *himself/herself*), needs to be bound in its local domain, obeying Principle A. The fact that coreference is possible in (iii) thus indicates that Japanese (pseudo-)clefts evince connectivity effects.

(14) a. * Kare$_i$-ga taberu no wa Tigger$_i$-no orenzi-(o)-da.
he-NOM eat C TOP Tigger-GEN orange-(ACC)-COP
'What he$_i$ will eat is Tigger$_{j/*i}$'s oranges.'

b. * Kare$_i$-ga benkyosuru aida Tigger$_i$-wa orenzi-o taberu-darou.
he-NOM study while Tigger-TOP orange-ACC eat-will
'While he$_i$ is studying, Tigger$_{j/*i}$ will eat oranges.'

It therefore cannot be the case that L1 transfer of the Japanese ban on backward anaphora is what underlies the L2 TVJT results of our study. If it had been, the JLEs would have interpreted coreference as impossible in both the *what* (pseudocleft) condition and the *while* (adverbial) condition. Instead, the JLEs clearly distinguished the two conditions, rejecting coreference only in the *what* (pseudocleft) condition. In a nutshell, L1 transfer alone cannot be the explanation for our L2 results.[9] Rather, what our findings suggest is that JLEs have the knowledge that although a pronoun can precede its antecedent, a pronoun cannot c-command its antecedent. It is certainly possible for JLEs to encounter positive evidence that a pronoun can precede its antecedent on coreferential readings; but it is extremely unlikely that they receive negative evidence indicating that the coreferential reading is prohibited when a pronoun c-commands its antecedent.[10]

7. Conclusion

The current study examined whether adult L1-Japanese L2 learners of English would display reconstruction effects, adhering to Principle C in specificational pseudoclefts, where the abstract syntactic relation (c-command) between a pronoun and an R-expression is not apparent in surface syntax. Our results argue that JLEs do not base their interpretation of sentences solely on the surface linear order 'visible' in the input but instead map to semantics from the 'invisible' hierarchical representations falling within the hypothesis space defined by UG. Importantly, any L2 theory that does not attribute detailed abstract syntactic representations to the L2 learner—such as usage-based approaches (e.g., Ellis & Wulff 2015) and the Shallow Structure Hypothesis (Clahsen & Felser 2006)—would seem hard-pressed to capture the findings reported in this paper, since those theories do not assume anything like reconstruction, which requires an element to be interpreted at a position different from its surface position.

Interlanguage grammars, in short, are not guided merely by surface properties such as linearity but rather instantiate structure-dependent constraints such as

[9] Recall, moreover, that an L2 correlation between accuracy and proficiency emerged only in the *what* (pseudocleft) condition; yet an explanation rooted in L1 transfer of the backward-anaphora ban might expect the correlation to be in only the *while* (adverbial) condition, the one whose L1 interpretation, on this account, would have to be reversed.

[10] Even if, contrary to the assumptions in this paper, overt 3sg "pronouns" in Japanese and English behaved similarly regarding possible vs. impossible coreference, our principal conclusion would be the same: JLEs have knowledge of reconstruction and Principle C.

Principle C. Given that such dependence on hierarchical structure is at the core of human language grammars, our research provides evidence from reconstruction and Principle C that L2 grammars are governed by UG.

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