

L2 Reconstruction Effects in Negated Disjunction under Pseudoclefts*

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1 Introduction

Languages differ as to how disjunction is interpreted in negated sentences (Szabolsci 2002). For example, English disjunction *or* is assigned a conjunctive reading in a negated sentence while the Japanese counterpart with *-ka* is not, as in (1):

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- (1) a. John does *not* speak German *or* French.
 b. John-wa doitugo-*ka* furansugo-o hanasa-*nai*.
 John-TOP German-or French-ACC speak-NEG
Lit. ‘John does not speak German or French.’

The statement in (1a) is true in a situation where John does not speak German AND John does not speak French, a reading with the conjunction of two negated propositions. In this case, negation takes scope over disjunction (NOT > OR). The conjunctive interpretation of disjunction in negated sentences conforms to one of de Morgan’s laws of propositional logic: $\neg(A \vee B) = \neg A \wedge \neg B$, where the symbols \neg , \vee and \wedge represent, respectively, negation, disjunction and conjunction.

Japanese differs from English in the way that disjunction *-ka* is interpreted under negation, as in (1b), it being the Japanese translation of (1a). In (1b), disjunction takes scope over negation (OR > NOT), so that the sentence means that John does not speak German OR John does not speak French, not both.

The surface order of negation and disjunction may appear to determine the scope interpretations in (1), such that a logical expression (*not*, *or*, *-ka*, *-nai*) that comes first in sentences takes scope over the one that comes later: In (1a) *not* precedes *or*, generating the scope interpretation of NOT > OR, while in (1b), by contrast, *-ka* precedes *-nai*, and the interpretation is OR > NOT. However, surface linearity cannot be the explanation; rather, it is the c-command relation between negation and disjunction that is determinative, as illustrated in (2):

- (2) a. The girl who stayed up late will *not* get a dime *or* a jewel.
 b. The girl who *didn’t* go to sleep will get a dime *or* a jewel.
 (Crain, Gardner, Gualmini & Rabbin 2002: 88)

The negator *not* precedes *or* in both sentences; but only in (2a) does the former c-command the latter, yielding a conjunctive interpretation: The girl who stayed up late will not get a dime AND the girl who stayed up late will not get a jewel. In (2b), *not* precedes but does not c-command *or*, resulting in a disjunctive reading: The girl who didn’t go to sleep will get a dime OR the girl who didn’t go to sleep will get a jewel.

Surface linearity among logical expressions, i.e., “isomorphism,” has also been called upon to explain first language (L1) development (Musolino 1998). This isomorphism account, however, fails in regard to children’s acquisition of Japanese, predicting that they will assign the disjunctive reading (OR > NOT) to negated disjunction sentences. Research by Goro and Akiba (2004) looking at interactions between disjunction and negation revealed that L1 Japanese-acquiring children,

unlike L1 Japanese adults, initially allow (virtually only) the conjunctive reading (NOT > OR).

As for second language (L2) acquisition, Grüter, Lieberman and Gualmini (2010) found evidence of initial L1 transfer in L1-Japanese L2 learners of English (JLEs): Unlike native English-speaking controls, they overwhelmingly had the disjunctive interpretation in English negated disjunction sentences. The question that arises is: Can more advanced JLEs routinely come to have (only) the conjunctive reading in English?

To that end, this JLE study examines reconstruction effects in the interpretations of negated disjunction in specificational pseudoclefts. Reconstruction effects exhibit a mismatch between the surface syntactic structure and the associated semantic interpretation, making them of key import to theorizing in both linguistics (Sportiche 2006) and language acquisition (Crain 2012). Reconstruction or connectivity effects refer to phenomena where a ‘displaced’ phrase in overt syntax is interpreted as if it were in its original base/merged position.¹ Specifically, this study asks whether JLEs can come to evince target reconstruction effects in inverted specificational pseudoclefts (e.g., Den Dikken, Meinunger & Wilder 2000), as in (3), where a *wh*-clause containing the negative quantificational expression *not* follows a DP object comprising two disjuncts:

(3) Sushi *or* pasta is what John did *not* order.

What is noteworthy here is that although *not* linearly follows and does not c-command *or* in surface syntax, (3) means that sushi is what John did not order AND pasta is what John did not order, viz. the conjunctive reading of disjunction. This reading is a manifestation of a reconstruction effect of the phrase *sushi or pasta* at a level of linguistic interpretation where *or* is c-commanded by *not*. If JLEs exhibit reconstruction effects with sentences like in (3), we are warranted to conclude that it is not simply the ‘visible’ strings of words that they use for interpretation, but rather they depend on computations calculated over abstract linguistic representations of a hierarchical nature. To the best of our knowledge, there is no previous L2 research that has sought to reveal L2 learners’ (L2ers’) complex linguistic knowledge via reconstruction effects with negated disjunction.

The remainder of this paper is organized as follows: In Section 2, we briefly review L1 and L2 research on the acquisition of simple negated disjunction. Section 3 is an overview of specificational pseudoclefts and

¹ Current syntactic accounts of reconstruction appeal to the copy theory of movement (Chomsky 1995), according to which a moved element leaves its copy, not its trace. Copies have the same features as the moved elements but without phonetic matrices. On this approach, reconstruction effects are derived through the copies without moving a dislocated element back to its pre-moved position.

reconstruction effects as well as the key L1 acquisition study on this topic that inspired our research. In Section 4, we describe our JLE study on negated disjunction under specificational pseudoclefts. Section 5 reports our results, and we conclude with a discussion of our findings in Section 6.

2 L1 and L2 acquisition of negated disjunction

Given the difference between English and Japanese in negated disjunction, the question arises as to how children acquire their respective properties of disjunction. In the case of English, Crain et al. (2002) reported that children, like adult native English speakers, have a conjunctive interpretation only in cases where *not* c-commands *or* (as in, e.g., (2a) vs. (2b)). As for Japanese, Goro and Akiba (2004) provided evidence that adult native speakers interpret (4) as meaning that “it was either the carrot or the pepper, not both, that the pig didn’t eat,” which we call the disjunctive “not-both” reading, whereas Japanese children around age 5 assign the conjunctive “neither” reading of disjunction to (4), which can be paraphrased as “the pig ate neither the carrot nor the pepper.”

- (4) Butasan-wa ninjin-ka piiman-o tabe-nakat-ta.
Pig-TOP carrot-or pepper-ACC eat-NEG-PST
Lit. ‘The pig didn’t eat the carrot or the pepper.’

According to Goro’s (2019) review of previous studies, children with cross-linguistically different L1s, such as Hungarian, Italian and Turkish, similarly start off interpreting disjunction under local negation conjunctively, contrary to the disjunctive interpretation assigned by adult native speakers of the languages. L1 acquisition studies on this topic thus far suggest that young children all behave like English-acquiring children in initially preferring the conjunctive interpretation of negated disjunction.

Building on Szabolcsi’s (2002) research that first pointed out the cross-linguistic variation in the semantics of negated disjunction, Goro (2007) proposed the “Disjunction Parameter,” in which disjunction is lexically parametrized: Disjunction is a positive polarity item (PPI) in some languages but not in others. Japanese disjunction *-ka* is a positive polarity item [+PPI], interpreted as being outside the scope of sentential negation, which generates the exclusive “not-both” reading ($\neg A \vee \neg B$). English disjunction *or*, by contrast, is not a positive polarity item [–PPI] and is interpreted as being inside the scope of sentential negation, yielding the inclusive “neither” reading ($\neg A \wedge \neg B$). It is important to note that the circumstances under which $\neg A \wedge \neg B$ is true form a subset of the ones under which $\neg A \vee \neg B$ is true. As such, L1 children would face a learnability problem if they initially selected the superset [+PPI] value of

the Disjunction Parameter when the target grammar actually has the subset [-PPI] value. This is because a disjunctive interpretation generated by the superset value cannot be falsified by direct positive evidence.

Such learnability considerations led Goro (2007) to hypothesize that L1 children acquiring any language initially adopt the subset [-PPI] value of the Disjunction Parameter. It is thus for this reason that L1 children acquiring Japanese start by interpreting disjunction *-ka* as having the value [-PPI], yielding the conjunctive interpretation (NOT > OR). Later they abandon the subset [-PPI] value for the superset [+PPI] value on the basis of positive evidence that disjunction *-ka* is a positive polarity item.

Grüter et al. (2010) extended the L1 acquisition research on the Disjunction Parameter to the L2 context, examining scope interpretations of disjunction under local sentential negation both by adult L1-English L2ers of Japanese (ELJs) and by adult JLEs. In general, the two groups demonstrated differential performance regarding their respective target interpretations. While ELJs acquired the target disjunctive interpretation of Japanese, all but four of the 32 JLEs had the non-target-like reading, adopting the disjunctive interpretation for English by a very wide margin.

Grüter et al. (2010) explained the asymmetry between the two L2 groups in terms of L1 transfer and L2 learnability. ELJs were able to discard their L1 subset [-PPI] value of the Disjunction Parameter in favor of the Japanese superset [+PPI] value on the basis of positive evidence. By contrast, for JLEs to acquire knowledge of the exclusively conjunctive interpretation, they have to retreat from their L1 superset [+PPI] value to the English subset [-PPI] value. Is negative evidence required for them to unlearn the interpretation from Japanese? It is extremely unlikely that JLEs produce English negated disjunction sentences that unambiguously have the disjunctive interpretation and then get corrected to the target conjunctive interpretation. Moreover, Grüter et al. determined, and Otsu and Sueoka (2019) recently confirmed, that the conjunctive interpretation of negated disjunction in English is not the subject of explicit instruction in the classroom; it is not even mentioned in English-language textbooks commonly used in Japan.² Consequently, it is doubtful that JLEs are given direct information that unambiguously indicates that English disjunction *or* under negation results in only a conjunctive “neither” reading. It should thus be very hard, if not impossible, for them to relinquish the “not-both” interpretation transferred to English negated disjunction sentences.

Whether *more advanced* JLEs can in fact systematically retreat to the target conjunctive reading remains unstudied. Grüter et al., moreover, focused on negated sentences like *John does not speak German or French*, where *not* precedes and c-commands *or* in the surface structure. The

²Grüter et al. (2010: 145) do note illustration in a preparation text for university entrance exams.

present study builds on that research and investigates scope interpretations of negated disjunction in inverted specificational pseudoclefts (introduced in (3)) such as *The crab or the fish is what he will not get*. Here, negation neither precedes nor c-commands disjunction in surface syntax but the conjunctive reading is certainly possible if not preferred (see below); this makes evident that it is not linear order but rather abstract hierarchical structure that matters in the interpretation of negated disjunction.

3 Specificational pseudoclefts and reconstruction effects

There are two types of specificational pseudoclefts, as in (5), where a *wh*-phrase can appear before or after a copula:

- (5) a. What John ordered was pasta.
 b. Pasta was what John ordered.

The *wh*-phrase in (5a) introduces the heading of a list, and the post-copular “counterweight” provides the listed item(s); in an inverted specificational pseudocleft as in (5b), the counterweight appears before the *wh*-phrase. Following Den Dikken et al. (2000), we call specificational pseudoclefts as in (5a) and (5b) Type A and Type B, respectively. Den Dikken et al. observed that the two have different syntactic and semantic properties. In particular, the Type B specificational pseudocleft has a narrower range of reconstruction effects and connectivity effects. For example, although binding connectivity is observed in both types, as in (6), the Type B one does not exhibit reconstruction effects, as exemplified in (7b):

- (6) a. What John_i is is important to himself_i.
 b. Important to himself_i is what John_i is.
 (7) a. ?What nobody bought was any wine.
 b. *Any wine was what nobody bought. (Den Dikken et al. 2000)

Crucial for our interests, the Type B specificational pseudocleft displays reconstruction effects with disjunction under negation, as in (3). Whether one adopts an LF reconstruction approach (Schlenker 2003) or a PF deletion approach (Den Dikken et al. 2000) to the syntactic derivation of Type B specificational pseudoclefts,³ the availability of a conjunctive reading in (3) suggests that disjunction is c-commanded by negation at an abstract linguistic level. Following Kiguchi and Thornton (2016), we will assume the LF reconstruction approach in this paper.

³ For example, Kiguchi and Thornton (2016) posit different derivations for Type A and Type B specificational pseudoclefts, while Crain (2012) assumes a uniform analysis of the two.

Kiguchi and Thornton (2016) tested L1 English-acquiring children’s interpretations of negated disjunction in Type B pseudoclefts, e.g., (8a), by way of a truth-value judgment task (TVJT; Crain & Thornton 1998). They adopted the analysis of Heycock and Kroch (2002) that the counterweight *a piece of coral or a plant* is reconstructed at LF, putting it back within the scope of the negative subject *nobody*, as illustrated in the structure in (8b):

- (8) a. A piece of coral or a plant is what nobody brought back.
 b. [A piece of coral or a plant] is what nobody brought back [~~a piece of coral or a plant~~]. (Reconstruction at LF)

Despite the lack of direct evidence of reconstruction, the 4- to 5-year-old children consistently took the conjunctive interpretation, as did the adult L1-English controls; this suggests that children have adult-like knowledge of abstract syntactic structure where reconstruction effects are observed.

4 The study

The present study—spurred by the Kiguchi and Thornton (2016) L1 acquisition study—investigated JLEs’ interpretations of English negated disjunction in Type B pseudoclefts. Our research questions asked: (i) Can adult JLEs regularly come to switch (from the disjunctive “not-both” interpretation of Japanese) to the conjunctive “neither” interpretation in simple English negated disjunction sentences? (ii) If so, can they manifest reconstruction effects in negated disjunction under inverted pseudoclefts, where the relevant c-command relation is ‘invisible’ in surface syntax?

4.1 Participants

A total of 32 adult JLEs and a control group of 12 adult native English speakers (ENCs), recruited in Japan and the U.S., participated in the study; 11 JLEs were excluded from analysis due to performance on screening items (see §4.3; for exclusion criteria, see §5.1). Table 1 provides the participants’ 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 ($M = 31$, $SD = 6.31$) and the ENCs from 20 to 61 ($M = 34$, $SD = 11.74$).

Group	<i>n</i>	Age of onset			Years of residence in the U.S.			Cloze test score (Max = 50)		
		Mean	Range	<i>SD</i>	Mean	Range	<i>SD</i>	Mean	Range	<i>SD</i>
JLEs	21	11	8–13	1.6	5	0–19	5.0	39.0	20–45	5.5
ENCs	12	–	–	–	–	–	–	43.8	32–50	5.0

Table 1. Participants’ background information after exclusions

Although the proficiency of the JLEs as a group is relatively high, an independent samples *t*-test showed that the mean scores of the two groups are significantly different ($t(32) = 2.65, p < .01$).

4.2 Procedure

All the experimental tasks were conducted fully online, in writing, using Google Forms. After filling out the consent forms, participants completed the main task, a written TVJT devised in the “prediction mode.” Participants were shown five pictures for each story in which two cartoon characters, Winnie the Pooh and Piglet, were playing a guessing game; at the second picture, Pooh made a guess (in a speech bubble) about what would happen later in the story, e.g., “Tigger will get the shell, but the crab or the fish is what he will not get.” After watching what actually transpired in the story, Piglet reviewed (at the fifth picture) the guess that Pooh had made earlier, after which participants were asked to judge whether Pooh’s guess was right or wrong. The main reason for choosing the prediction mode of the TVJT was to make the use of disjunction in the sentences felicitous because disjunction is typically utilized when the speaker/writer is uncertain about which of the two disjuncts takes/took place (e.g., Tieu, Yatsushiro, Cremers, Romoli, Sauerland & Chemla 2017). The TVJT was followed by a language background questionnaire; the last task was the English Cloze test (Brown 1980). The entire experimental session took 30–45 minutes.

4.3 Materials

Our experiment employed a TVJT to test availability of the conjunctive “neither” interpretation of negated disjunction in inverted specificational pseudoclefts. The rationale behind focusing on the conjunctive reading of negated disjunction in this type of sentence is that it is taken to be a consequence of reconstruction of the phrase containing the disjuncts.

The TVJT had a total of six critical target items involving negated disjunction in a Type B pseudocleft; each sentence occurred in two conditions: a *true* condition ($k = 3$), where the conjunctive interpretation is true, and a *false* condition ($k = 3$), where such an interpretation is false. Each item in the TVJT, including the fillers and screening items, consists of a 5-picture short story. At Picture 1, Piglet introduces, by way of a speech bubble, the story’s characters and objects. For example, one of the Picture 1 contexts that Piglet introduced to the participants is as in (9):

- (9) “Tigger was on a boat with Donald Duck and they saw a shell, a crab and a fish in the water. Since Donald Duck couldn’t swim, he asked Tigger to show him how to get them. ‘Pooh, can you guess what will happen next?’”

At Picture 2, Pooh makes his guess (also in a speech bubble) about what will happen; this prediction constitutes the target sentence, e.g., as in (10):

- (10) Tigger will get the shell, but the crab or the fish is what he will not get.

Pictures 3 and 4 cover what actually happens in the story. In the *true* condition, Piglet narrates a story where the conjunctive interpretation of the target sentence is true; in regard to (10), Tigger got neither the crab nor the fish as in Figure 1a. In the *false* condition, Piglet narrates a story where the conjunctive interpretation of the target sentence is false; in regard to (10), Tigger got the crab but not the fish as in Figure 1b:



Figure 1a. Crucial picture in the TVJT corresponding to target sentence (10), in the *true* condition.



Figure 1b. Crucial picture in the TVJT corresponding to target sentence (10), in the *false* condition.

Finally, in Picture 5, Piglet reviews the guess Pooh had made in Picture 2.

In addition to 16 filler items, there were six screening items. All the screening items were simple negated disjunction sentences without pseudoclefts, such as in (11), to test whether participants had the conjunctive interpretation in sentences without reconstruction (i.e., where negation precedes and c-commands the disjuncts in surface syntax).

- (11) Snoopy will use the chopsticks, but he will not use the spoon or the fork.



Figure 2a. Crucial picture in the TVJT corresponding to screening sentence (11) in the *true* condition.

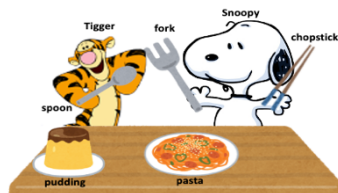


Figure 2b. Crucial picture in the TVJT corresponding to screening sentence (11) in the *false* condition.

Like the target sentences, each screening sentence occurred twice, once in a *true* condition ($k = 3$), where the conjunctive “neither” interpretation is true, and once in a *false* condition ($k = 3$), where the conjunctive interpretation is false.

Note that it was essential for us to assess (JLE) participants’ knowledge of simple negated disjunction. Without determining that they do have the conjunctive interpretation in this case, it would be pointless to test them on the conjunctive interpretation in the context of reconstruction effects in the target pseudocleft sentences.

5 Results

5.1 Screening items in the TVJT

Prior to analyzing the data in the critical items, we analyzed the six screening items (which, recall, were simple negated disjunction sentences such as in (11)). The ENC’s accepted the screening items in the *true* condition and rejected them in the *false* condition 100% of the time. The mean acceptance for JLEs was 75.0% ($SD = 43.5$) in the *true* condition and 27.0% ($SD = 44.7$) in the *false* condition. Analysis by individual revealed that 15 JLEs uniformly had the conjunctive reading (i.e., they accepted all items in the *true* condition and rejected all items in the *false* condition), which points to their successful acquisition of the target interpretation in English. On the other hand, there were four JLEs who almost never allowed this reading (only one out of six screening items), which indicates that they had not acquired the target scope interpretation of negated disjunction in English.

We ran a correlational analysis to examine whether JLEs’ performance on the screening items is a function of L2 proficiency, the latter as measured by the English Cloze test. The two conditions (*true* and *false*) were combined to calculate the proportion of interpretation accuracy (out of six) on screening items. A significant correlation (Pearson $r = .62$, $p < .001$) emerged, suggesting that the acquisition of the target conjunctive interpretation is related to L2 development. This finding also indicates that we succeeded in replicating an outcome in Grüter et al. (2010): a correlation between L2 accuracy and L2 proficiency.

The screening items were used to exclude from analysis of the critical items those participants who did not allow a conjunctive interpretation in simple negated disjunction. Participants needed to have at least two (of three) correct responses both on *true* screening items and on *false* screening items in order to be included. All 12 ENC’s met this criterion, but 11 (of 32) JLEs had to be excluded. Consequently, 21 JLEs and 12 ENC’s were retained for analysis of the critical items (see Table 1).

5.2 Critical items in the TVJT

Figure 3 displays the acceptance rate (*true* responses) in each critical condition by group.

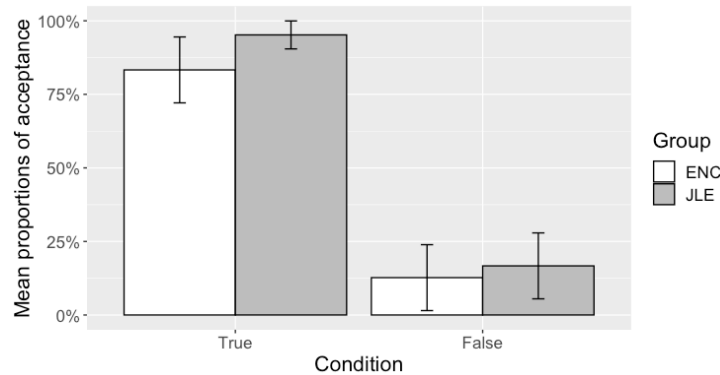


Figure 3. Mean proportion of acceptance (*true* responses) in the TVJT. *Note.* Error bars indicate standard errors of the mean.

In the *true* condition, where the conjunctive “neither” interpretation is true, the mean acceptance was 83.3% ($SD = 11.2$) for ENC and 95.2% ($SD = 21.8$) for JLEs. In the *false* condition, where the conjunctive interpretation is false, the mean acceptance was 12.7% ($SD = 38.9$) for ENC and 16.7% ($SD = 38.9$) for JLEs.

Table 2 reports the output of the mixed-effects logistic regression model which was constructed on *Acceptance* (*true* responses) in the critical items, with *Condition* (true vs. false) and *Group* (JLE vs. ENC) as fixed effects and with *Participant* and *Item* as random effects (glmer (Acceptance ~ Condition*Group + (1| Participant) + (1| Item))).

	β	SE	z	p	OR [95% CI]
Intercept	.27	.24	1.13	.259	1.31 [.82, 2.08]
Condition	4.07	.47	8.62	.000	58.62 [23.22, 147.97]
Group	.53	.47	1.13	.259	1.71 [.68, 4.31]
Condition × Group	1.70	.95	1.80	.071	5.50 [.86, 35.06]

Table 2. Summary output of the model

Note. Effect sizes for fixed effects are shown in the odds ratio (OR) alongside their 95% confidence intervals (CI).

The results show a significant main effect of *Condition* ($\beta = 4.07$, $SE = .47$, $p < .001$) but not *Group* ($\beta = .53$, $SE = .47$, $p = .259$), and there was also no *Condition* by *Group* interaction ($\beta = 1.70$, $SE = .95$, $p = .071$). The lack

of a significant interaction here suggests that the two groups performed similarly in the two critical conditions.

Analyses by individual were conducted on the critical items by looking for correlations; this time, no significant correlation between interpretation accuracy (out of six, i.e., three *true*, three *false*) and Cloze test score emerged for either the JLEs (Pearson $r = -.29$, $p = .20$) or the ENCAs ($r = -.40$, $p = .20$). (The absence of a significant correlation among the JLEs is unsurprising since those of lower English proficiency had already been excluded by our screening criterion—see §5.1).

6 Discussion

This experimental study probed reconstruction effects in the interpretation of negated disjunction in inverted specificational pseudoclefts on the part of advanced adult L1-Japanese L2ers of English. Their data show that they can systematically come to have the target property at issue, an interpretation of negated disjunction distinct from that of their L1.

We saw from the results on the screening items (see (11)) that advanced JLEs are able to acquire the conjunctive “neither” interpretation in simple English sentences with negated disjunction (this answers our first research question—see §4). The observed correlation between acceptance of the conjunctive reading and L2 proficiency is in keeping with the hypothesis (e.g., Schwartz & Sprouse 1996) that JLEs transfer their L1 grammar and start off by assigning the disjunctive “not-both” reading to negated disjunction in English. Indeed, the 11 lower-proficiency JLEs’ screening-item performance (which led to the exclusion of their data from further analysis) corroborates a key finding of Grüter et al. (2010). The results of the remaining 21 advanced JLEs indicate that they were able to revise their L1-based interpretation of negated disjunction, taking instead the conjunctive reading; this suggests a retreat/switch from the disjunctive interpretation of negated disjunction to the conjunctive interpretation of negated disjunction. The question that naturally ensues is *how* JLEs can overcome this learnability problem (see §2). As discussed earlier, it is very unlikely that JLEs encounter direct evidence for the exclusively conjunctive interpretation of English negated disjunction; it is also very unlikely they learn it from L2 instruction, since their English-language textbooks simply do not deal with the interpretation of disjunction under negation (e.g., Grüter et al. 2010; Otsu & Sueoka 2019—but see fn. 2).

One potential way for JLEs to overcome the learnability problem derives from the interplay between pragmatics—Grice’s (1975) Cooperative Principle (and in particular the Maxim of Quality)—and grammar, as put forward by Gualmini and Schwarz (2009) and picked up in Grüter et al. (2010). In brief, they propose that when the Interlanguage

grammar of an L2er assigns an interpretation to a target language sentence that is pragmatically infelicitous, this may become the evidence that pushes that L2er's grammar to re-evaluate that interpretation. For example, suppose there is a JLE whose Interlanguage grammar permits only the disjunctive interpretation in English negated disjunction; suppose further that this JLE hears the sentence "John does not speak German or French" but is well aware that the speaker of that utterance believes that John speaks neither of the languages. The JLE might find the uttered sentence infelicitous, in line with the Cooperative Principle, because an ostensibly more informative alternative, viz., "John speaks neither German nor French," is available.⁴ This inference of infelicity could then lead the JLE to a (subconscious) re-evaluation of the disjunctive interpretation assigned by the Interlanguage grammar (and ultimately perhaps to relinquishment of that reading in favor of the conjunctive reading—see Grüter et al. 2010: 147). Grüter et al. provided perhaps an even simpler example of how L2ers could use pragmatic knowledge to revise the relevant mapping from syntax to semantics in an Interlanguage grammar: A common sign in classrooms across the English-speaking world says "No food or drinks allowed"; the exclusively disjunctive interpretation that a non-advanced JLE has may well contradict what, based on prior experience, that JLE believes is more likely to be true, viz. that neither food nor drinks are allowed. Again, it is the JLE's inference of the infelicity of the disjunctive interpretation that could set in motion a revision of the Interlanguage grammar that instead engenders a conjunctive interpretation of negated disjunction. In sum, having these kinds of experiences with negated disjunction in various contexts could have provided the advanced JLEs in our study with pragmatically-propelled evidence of the inaccuracy of the disjunctive reading and led to (under Goro's 2007 approach) their resetting of the Disjunction Parameter to the English subset value, i.e., [-PPI].

The importance of this learnability issue notwithstanding, the primary focus of this study was our second research question: Can JLEs manifest reconstruction effects in negated disjunction under inverted pseudoclefts? Here, importantly, negation does not appear to precede or c-command disjunction in the surface structure. Indeed, one of the motivations for

⁴ From the perspective of (non-advanced) JLEs, the English sentence "John does not speak German and French" could also be an ostensibly more informative alternative, since although English native speakers can get the disjunctive interpretation (in which *not* scopes over *and*), the Japanese translation of this sentence, as in (i), generates a conjunctive interpretation (in which *-to* scopes over *-nai*); see Grüter et al. (2010) for relevant discussion:

- (i) John-wa doitugo-to furansugo-o hanasa-nai.
 John-TOP German-and French-ACC speak-NEG
Lit. 'John doesn't speak German and French.'

using this type of sentence is that the conjunctive “neither” reading can be derived only via reconstruction, an operation that is not ‘visible’ in the surface string of words. Our data show that advanced JLEs consistently took the conjunctive interpretation in Type B pseudoclefts containing negated disjunction, just like the native English controls did. Of critical import is the conclusion that this outcome implies, namely that JLEs make use of operations computed over abstract syntactic representations.

The advanced JLE results in this research constitute a demonstration of overcoming an L2 poverty-of-the-stimulus problem (e.g., Schwartz & Sprouse 2013). This finding cannot be explained (i) by the L1 grammar, since negated disjunction in Japanese has the disjunctive “not-both” interpretation, (ii) by L2 classroom instruction, since English-language textbooks for JLEs do not touch on the interpretation of disjunction under negation (much less in inverted specificational pseudoclefts), (iii) by English input, since it is implausible to assume that JLEs are exposed to direct evidence of the exclusively conjunctive meaning of negated disjunction (much less in inverted specificational pseudoclefts). This L2 poverty-of-the-stimulus study, in a nutshell, is thus the first (to begin) to show from reconstruction effects that UG constrains adult L2 acquisition.

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