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Do Null Subjects Really Transfer?

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1. Introduction

Full transfer at the L2 initial state is a widely adopted hypothesis in generative L2 research (Bley-Vroman, 1990; Hawkins & Chan, 1997; Schwartz & Sprouse, 1996) that has received considerable support from empirical work investigating a wide variety of linguistic structures. One of the earliest phenomena taken to support the notion of full transfer is the null subject parameter (Chomsky, 1981; Rizzi, 1982). When tested with grammaticality judgment (GJ) tasks, adult Spanish-speaking learners of English were reported to accept approximately 30-40% of ungrammatical English sentences with null subjects (Davies, 1996; White, 1985; 1986). This acceptance declined with increasing English proficiency, consistent with an initial L1-setting of the parameter, followed by resetting during development. Moreover, White (1985; 1986) found that French-speaking learners of English accepted significantly fewer null-subject sentences than Spanish-speaking learners—a contrast which is predicted under a transfer account, as French is not a null-subject language.

However, a curious contrast emerges when we compare the results of GJ tasks to L2 production. While subjectless sentences are reported in the very earliest productions of child and adult [+prodrop] learners (Hilles, 1996; Phinney, 1987; Ruiz de Zarobe, 1998), the proportions are generally quite low. Furthermore, the status of even these early productions is not clearly established, as the amount of data is limited to the point of excluding quantitative analysis, and the relevant criteria used to identify null subject sentences have been questioned (Lakshmanan, 1989; 1994). Critically, however, null subjects in production seem to appear only at the very earliest stages of L2 development, yet learners well beyond the initial stages – who drop subjects in production very infrequently, if at all – continue to accept sentences with null subjects at rates substantially above zero. If acceptance of null subjects in GJ tasks is evidence of transfer, why do we not see the transferred L1 grammar reflected in both productive and receptive tasks?

Judy and Rothman (2010; Judy, 2011) recently argued that even advanced L1-Spanish learners of English show evidence of an underlying [+prodrop] interlanguage grammar. They suggest that (transferred) referential null subjects are eliminated from the interlanguage grammars of Spanish-speaking learners of English very early on, because learners recognize that the poor verbal morphology of English cannot satisfy the identification requirement (Rizzi, 1982). Expletive subjects, however, which are not subject to this condition, will persist into L2 development, thus reflecting an underlying [+prodrop] grammar in even advanced learners of English. Their account is based on two pieces of evidence: (i), a numerical – but not statistical – difference between native and non-native speakers in their acceptance of ungrammatical sentences with missing expletives (0.38/6 vs. 1.44/6), and (ii) a greater proportion of disjoint reference interpretations of pronouns in OPC (Overt Pronoun Constraint) contexts by non-native compared to native speakers (based on the assumption that the OPC is part of the prodrop parameter). The first appears consistent with earlier data from written composition (Phinney, 1987), which also indicate greater omission of expletive compared to referential subjects. As in Judy and Rothman's work, however, the difference was not statistically significant (see also Davies,

1996, who found no difference between referential and non-referential null subject sentences in a GJ task). The evidence from pronoun interpretation in OPC contexts, while interesting and worth pursuing in and of itself, appears less than conclusive with regard to the null subject parameter given that L2 learners provided more disjoint reference interpretations in non-OPC contexts as well, suggesting a mechanism unrelated to the OPC is at work in their non-native group. In light of these limitations, we remain skeptical that the findings presented by Judy and Rothman constitute conclusive evidence for a [+prodrop] grammar in advanced L2 learners.

The extent to which various aspects of an L1 [+prodrop] grammar transfer at the L2 initial state thus remains an issue for further investigation. Here, we will address a related question: why do learners beyond the initial state accept null-subject sentences on a GJ task at a point in development when they are no longer attested in their production? We see two logical possibilities. The first is that learners' interlanguage grammars allow both null and overt subject pronouns, but null subjects never 'surface' in production due to a strong preference for overt pronouns. When presented with a null subject directly, as in a GJ task, this preference may sometimes be overridden, leading to the observed 30-40% acceptances. This scenario makes a clear prediction: if referential null subjects can be licensed (and identified) at the level of grammatical representation, learners should be able to posit a referential null subject to interpret an utterance missing an overt subject as a declarative.

The second possibility is that the learners' grammars do not permit null subjects, and the acceptances observed in the GJ tasks have an extragrammatical cause. GJs have been argued to be affected by mechanisms other than grammatical representations, both in native speakers (Blackwell & Bates, 1995; Casasanto, Hofmeister & Sag, 2010) and adult L2 learners (McDonald 2000; 2006). This explanation leads to a different prediction than the first one: if the reason for L2 learners' persistent acceptance of null subjects on GJ tasks is not grammatical in nature, i.e., their grammar does not license (and identify) referential null subjects, they should perform like native English speakers and disallow a declarative interpretation of a null-subject sentence. In other words, they should interpret a string such as *play with blocks* as an imperative ('Please play with blocks!'), but never as a declarative (*'They play with blocks.'). In order to test these predictions, evidence from a task directly probing for null subjects in L2 learners' interlanguage grammars is necessary. Such evidence requires a *comprehension* task, which is precisely what the current study offers.

2. The study
2.1. Participants

Two groups took part in the study: 10 monolingual English-speakers, all of whom were UCLA undergraduates during the time of testing, and 17 adult learners of English (L1 Spanish) living in the LA area.[1] The adult L2 learners had diverse language profiles, with length of English exposure (in the United States) ranging from 0.5 to 11 years (*M* = 4.30, *SD* = 2.90) and age of arrival (AOA) in the United States ranging from 15 to 34 years (*M* = 25.10, *SD* = 5.70). The type of English exposure prior to arrival in the U.S. also varied greatly, from 1-2 hours per week of class instruction to frequent use with family. Nonetheless, all participants assessed their proficiency in Spanish to be greater than their proficiency in English, both in comprehension and production.

All L2 participants completed the Versant English Test, a commercially available assessment tool designed to measure language proficiency (Pearson, 2011). The test requires a 20-minute phone call with an automated speech-recognition system, during which test-takers are prompted to respond orally to a variety of tasks in English. Responses are analyzed automatically, yielding an overall score as well as four sub-scores: Sentence Mastery, Vocabulary, Fluency, and Pronunciation (for further detail on test characteristics, see Pearson, 2011). Unlike cloze tests, which are often used to gauge overall proficiency in research studies, the Versant English Test places more emphasis on oral language skills. Given the diverse language learning profiles of our participants, this was considered a more appropriate measure of overall proficiency here.

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[1] Data were collected from a total of 19 adult L2 participants. Data from two participants were excluded from final analysis: one because the participant was identified as a heritage speaker of Spanish rather than an adult L2 learner, and one because the participant did not pass the control conditions on one of the tasks (see section 3.2.2).

Participants' Versant scores range between 28-80 out of 80 (M = 51.7, SD = 15.4). These scores can be used to classify participants by proficiency levels corresponding to those established by the Common European Framework (CEFR; see Pearson, 2011). Table 1 provides a breakdown of L2 participants by these proficiency levels, together with general language background information.

Table 1. Participant language background information, by proficiency group.

Proficiency level	N	Average age of arrival (AOA) in the U.S.	Average length of English exposure in the U.S.
Basic User (A1, A2)	5	28.80	3.40
Independent User (B1, B2)	9	25.44	3.95
Proficient User (C1, C2)	3	17.67	7.00

Pearson correlations were computed to assess the relationship between Versant scores and L2 participants' language background, as measured by AOA and length of English exposure. A positive relation between Versant scores and length of exposure (r(15) = .50, p = .04) and a negative relation between Versant scores and AOA (r(15) = -.71, p = .001) indicate that longer residence in the U.S. and earlier age of arrival are both associated with higher English proficiency in this sample.

2.2. Stimuli and Procedure

All participants took part in three experimental tasks in the following order: an oral production task, a GJ task, and a comprehension task. This task order was chosen in an effort to prevent participants from ascertaining that the focus of the study was on subject omission.[2] As described above, the L2 learners additionally completed the Versant English Test before the three experimental tasks. Testing took place in one session lasting approximately one hour for monolingual English-speakers, and one and a half hours for L2 learners. Participants were given a brief break between each task.

2.2.1. Production task

In the production task, participants viewed a powerpoint presentation with 18 pictures showing a mother and daughter's morning routine. They were instructed to provide a brief, one to two sentence description of each picture. Before the task began, each subject was given the opportunity to choose names for the two characters. Recordings were transcribed and each sentence was coded for both presence versus absence of subjects, and subject type (full DP versus pronoun), if applicable. Only utterances where English requires a subject were included in the final analysis.

2.2.2. Grammaticality Judgment Task

The GJ task in the current study replicated the one used in White (1986) as closely as possible, with the exception of an additional 12 items following White's original 28 sentences. These items were included in order to increase the number of null-subject items being tested, but included distracter items as well.

The 40 total test items were an even distribution of grammatical and ungrammatical sentences. Of the ungrammatical items, 12 lacked subjects, and the other 8, as in White's original study, were split between sentences violating the *that*-trace effect, and sentences with post-verbal subjects, both of which are permissible in Spanish but not in English (see White, 1986, for examples).[3] The 12 null-

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[2] Each participant was queried following the final task, and with one exception, none identified the focus of the study.

[3] White's original rationale for including such items was that they were postulated to be linked to the null subject parameter (Jaeggli 1982; Rizzi 1982). We make no such theoretical stipulations, but include them for the sake of comparison to the original task.

subject items contained both matrix (N=5) and embedded (N=7) null subjects, as well as referential (N=10) and expletive (N=2) null subjects.

Sentences were recorded by the first author, a native English speaker, using neutral prosody for grammatical items, and superimposing comparable prosody on the ungrammatical items. Each sentence was embedded into a powerpoint presentation, and presented both visually and aurally. In accordance with White's (1986) original instructions, participants were asked to rate items as correct or incorrect, or to indicate that they were unsure. In cases where they indicated incorrect or unsure, they were asked to provide a correction for the sentence. Responses were not explicitly timed, but participants were instructed to answer quickly, and to not change their answers to previous items.

2.2.3. Comprehension Task

The comprehension task was adapted from a task originally developed by Orfitelli and Hyams (2012) to investigate whether young English-speaking children have a null subject grammar, using a modified version of the truth-value judgment (TVJ) paradigm (Crain & McKee, 1985). In a TVJ task, participants view a story and then listen to a sentence. The participant is asked to decide if the sentence is true or false, given the scenario presented in the story. In Orfitelli and Hyams' variant, the test sentences are not strictly 'true' or 'false' given the scenario. Rather, for reasons explained below, participants are asked whether the sentence 'matched' or 'did not match' the test story. While slightly different from the classic TVJ task, this variant still focuses on participants' *interpretation* of the sentence and story. Where a given interpretation is compatible with only one underlying syntactic structure, this provides an indirect way of assessing whether this particular structure is part of a learner's grammar.

In this task, participants saw four different stories that consisted of a pair of pictures depicting two sets of children. The first picture showed two older children named Mary and Billy (Figure 1, left), while the second picture showed two younger children named Emma and Ben (Figure 1, right). In the pictures, the older children were always shown engaged in a particular activity, such as drawing a picture or playing with blocks, while the younger children were shown in close proximity to the relevant items (e.g., paper and crayons or blocks) but *not* interacting with them. Participants were told that the four children have the same babysitter, and that while Mary and Billy are old enough to choose their own activities without permission, Emma and Ben had to wait for the babysitter to tell them to engage in the activity in question.

Figure 1. Visual stimuli from comprehension task: older children (left) who do what they want after school, and younger children (right) who must wait to be told what to do.

Following the presentation of one set of pictures, one of the two pictures disappeared, and participants saw a sentence, which was meant to be spoken by the children's babysitter. There were 24 total sentences, evenly divided into three conditions, given in (1)-(3). The scenarios are such that declarative sentences (1) only appropriately match the older children, who are (i) currently doing the activity in question and (ii) are old enough to have autonomy such that they are not supposed to be told what to do. The reverse is true of imperative sentences (2), which are only appropriate when paired with the younger children, since they are (i) not doing the activity in question and (ii) are waiting to be told what to do.

The mood-based contrast was explicitly explained to both native speaker and L2 participants, and it is also worth noting that it did not prove difficult for the majority of 2- to 4-year-old participants in Orfitelli and Hyams' study. Nonetheless, to ensure that participants understood the relevant link between the stories and the test sentences, the declarative and imperative sentence types were used as control conditions. In order for a participant's data to be included in the final analysis, they had to perform at above-chance levels in both conditions, which, based on a binomial distribution, requires them to answer at least 7 out of the 8 items correctly. As noted previously, only one participant's data was excluded for this reason.

Within the declarative and imperative conditions, items were further sub-divided into two different sentence types: habitual (1a) and progressive (1b) declaratives, and 'please' (2a) and vocative (2b) imperatives. The reason for this division comes from Orfitelli and Hyams' original study. The authors wished to avoid children using the word 'please' as the only indicator of an imperative, since it is not only a highly salient word for young children, but may even be overtly highlighted by parents as 'the way that you ask someone to do something.' While this is far less likely to be a concern with adult participants, the original items were retained to allow maximal comparison.

The null subject items (3) were the items of interest. In a non-null-subject grammar (e.g., English), this sentence may only be interpreted as an imperative, but in an null-subject grammar, it could be a declarative sentence. Indeed, this is the pattern found by Orfitelli and Hyams (2012) for 2- and 3-year old L1 English-acquiring children, who accept null-subject sentences both in imperative and declarative contexts, despite mastering the control conditions. The authors conclude that during this stage of development, L1 English-acquiring children have a grammar that allows null subjects.

(1) a. They always play with blocks.
    b. Now they are playing with blocks.
(2) a. Please play with blocks.
    b. Hey kids, play with blocks.
(3) Play with blocks.

Thus, if adult L2 learners of English transfer the grammar of their [+prodrop] L1, we expect them to incorrectly accept null-subject sentences in scenarios where the context calls for a declarative sentence (i.e., with the older children), in addition to those which call for imperatives (i.e., with the younger children). If the learners do not have a [+prodrop] grammar, however, we predict them to only allow an imperative interpretation for null-subject items, just like native English adults.

3. Results
3.1. Production task

Participants' descriptions of each picture were coded for the type of subject they contained: full DP, pronoun, or omission. Using the same criteria as in Orfitelli and Hyams (2012), only Obligatory Subject Contexts (OSCs), that is, clauses (either matrix or embedded) in which English requires a subject, were included. OSCs comprised on average 91.53% of the clauses produced by the L1 group ($SD = 5.19\%$), and 92.32% of those in the L2 group ($SD = 7.31\%$). Table 2 provides a summary of the different subject types used by participants in each group. The distribution of full DPs, overt pronouns and null subjects was very similar across the two groups. The majority of subjects in both groups consisted of full DPs, indicating that our task was only partially successful at creating contexts for subject pronominalization. Nevertheless, a substantial number of sentences with pronominal subjects were produced in both groups. In the L2 group, we counted a total of 98 sentences with overt subject pronouns, but only 4 with a missing subject (e.g., *Is broken*). These four sentences were produced by three different learners, all with 'independent user' proficiency according to the Versant English test. None of the 'beginner user' participants omitted any subjects in this task. We thus observe no systematic evidence of subject drop in production, even in early stages of L2 development.

Table 2. Subject types in elicited production.

	Full DP	Pronoun	Omitted (NS)
L1 group (n=10)	72.59% (SD=16.20%)	27.41% (*SD*=16.20)	0.0% (*SD*=0.0%)
L2 group (n=17)	77.88% (*SD*=9.45%)	21.50% (*SD*=9.83)	0.86% (*SD*=2.10)

3.2. Grammaticality Judgment Task

L2 learners accepted ungrammatical sentences without subjects at a mean rate of 41.5% (range = 0-100%), while not a single null-subject sentence was accepted by native English speakers. Further, the rate of null-subject acceptance correlated strongly (and negatively) with English proficiency as measured by the Versant English Test ($r(15)$= -.80, $p<.05$) (Figure 2).
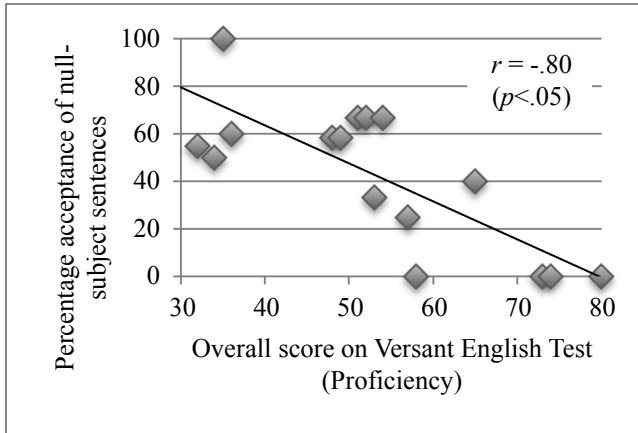

Figure 2. Relationship between English proficiency and acceptance of null subjects on the GJ task.

No difference in acceptance rates was observed for null subjects in matrix versus embedded clauses (36% vs. 39%), nor for expletive versus referential null subjects (33% vs. 35%). These results should be interpreted with caution, however, as the task was not designed to test these contrasts.

3.3. Comprehension Task

Table 3 shows results from the L2 learners by condition. As stipulated, all participants included in our final analysis performed at above chance levels on the four subtypes of control sentences (1)-(2). When examining the results of the null-subject condition (3), we can therefore be confident that these participants understood the task scenarios and had no difficulty exclusively associating declarative sentences with the pictures of the older children, and imperative sentences with the pictures of the younger children. Considering the data descriptively, we see that L2 learners as a group show high performance on this condition, consistently *rejecting* declarative interpretations of null-subject sentences and accepting only imperative interpretations. Individually, all L2 learners also performed at above chance levels on these items, based on a binomial distribution. A visual comparison of L2 learner versus native English-speaker performance on the null-subject condition is provided in Figure 3.

Table 3. Percent native-like responses from L2 learners, by condition

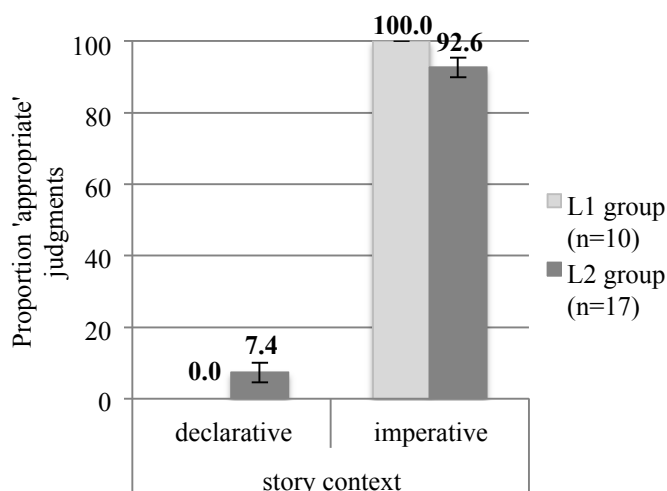|	1a	1b	2a	2b	3
Declarative context (older children)	97.1%	100.0%	97.1%	98.5%	93.0%
Imperative context (younger children)	100.0%	98.5%	100.0%	98.5%	92.5%

Figure 3. Percent null-subject items judged appropriate on the TVJ task, by context.

A logistic regression was conducted, using accuracy as the binomial dependent variable (success was defined as a native-like (imperative) interpretation for a null-subject item). Subject was a random effect, and English proficiency level was the fixed effect, with participants binned into four groups: the three proficiency groups as defined by the Versant test (see 2.1 above), and native English speakers. Based on this analysis, proficiency group is not a significant predictor of performance ($p = .86$). Unlike the findings for the GJ task, an increase of English proficiency is not associated with an increase in performance on the null-subject condition of the comprehension task, even when the least proficient L2 group (basic user) is compared to native English speakers ($p = .96$).[4]

4. Discussion

The aim of the present study was to investigate whether L2 learners of English whose first language is Spanish have a syntactic representation in their interlanguage that accommodates referential null subjects. To accomplish this, we used a modified version of the TVJ paradigm to test whether they could derive a declarative interpretation from an English sentence lacking a subject. We found that, like native English-speaking adults (but unlike young L1 English-acquiring children), the only interpretation L2 learners permitted was an imperative one, indicating that these learners were not drawing on a [+prodrop] grammar. Consistent with this, almost no sentences with missing subjects were recorded in the production task. In stark contrast, the same participants accepted sentences without subjects in a GJ task at a mean rate of 41%, thus closely replicating the findings from the Spanish-speaking learners in White (1986). These findings support the contrast previously observed *across* studies with findings from *within* a single learner group: learners who (sometimes) accept null subjects on a GJ task show no evidence of a [+prodrop] grammar when a more ecologically valid task (i.e., a task that more closely approximates language use under non-experimental conditions) is used to probe for the availability of (referential) null subjects.

In the introduction, we outlined two possible explanations for the discrepancy between acceptance of null subjects on GJ tasks and the absence of null subjects in the production of learners at the same developmental stage. The findings from our comprehension task speak directly to these accounts: if acceptance of null subjects in GJ tasks is due to an underlying grammar that permits both null and overt subjects (yet strongly favors overt subjects, hence very few or no null subjects are produced), learners should be able to posit a referential null subject to derive a declarative interpretation for a string like *play with blocks*. Such interpretations were almost categorically absent in our L2 group,

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[4] Model run in R using the *lmer* function of the lme4 package. The *p*-values were obtained using the *pvals.fnc* function with 10,000 simulations (Baayen, Davidson, & Bates, 2008). A larger model, identical to the previous one excepting the inclusion of item as an additional random effect, was compared with the previous one using R's *ANOVA* function. This change did not significantly alter the model fit, showing that there is no item effect.

thus providing evidence against this scenario, and consequently against an underlying [+prodrop] grammar. Instead, the findings reported here are more consistent with the alternative scenario, namely that learners' (occasional) acceptance of null subjects is not licensed by a [+prodrop] interlanguage grammar, but rather that this phenomenon has an extragrammatical cause. The question that remains is what this cause may be.

Previous work has shown that extragrammatical factors such as general processing limitations can impact L2 grammaticality judgments. McDonald (2006), for example, provides direct evidence for significant correlations between L2 learners' performance on a GJ task and processing measures. Moreover, native speakers under processing strain showed slower response times in providing GJs on the same sentence types that were most difficult for L2 learners, in some instances even providing non-native responses (Blackwell & Bates, 1995; Hopp, 2010). No such contingencies are known for *comprehension*-based (offline) receptive measures, such as sentence-picture matching or TVJ tasks. Our findings are consistent with an explanation in terms of general processing limitations: early L2 learners sometimes accept null-subject sentences due to the increased demands associated with GJ tasks, an effect which diminishes as proficiency and resource allocation skills increase. By contrast, learners' performance on our offline comprehension task, where task demands are less taxing, is similar to that of native speakers from the earliest stages of learning.

The results from the present study thus suggest that GJ tasks, while a potentially useful tool to assess purely structural knowledge with little or no interpretive consequences (e.g., subject-verb agreement), are not well suited to examine whether a learner's grammar contains syntactic representations allowing null subjects. Instead, GJ tasks on sentences with missing subjects appear to be influenced by factors beyond the grammar proper, although the specific nature of these extragrammatical factors is an issue that must remain for future work to pursue. Yet two predictions immediately follow from our account: (1) acceptance of null subjects in a GJ task should increase with increasing task demands, and (2) acceptance of null subjects should be independent of whether the learner's L1 allows null subjects. (1) could be tested straightforwardly by using a speeded GJ task. To the best of our knowledge, this has not been done in the context of null subjects. (2) could be tested by adding an additional learner group to the present study, namely one whose L1 does not allow null subjects (e.g., French) and whose proficiency is closely matched to the Spanish-speaking group. Such evidence would be particularly important in light of the fact that White (1986) reported significantly lower acceptance rates for null-subject sentences in a French-speaking learner group as compared to a Spanish one. While this evidence appears to contradict our account, it is not entirely clear how well the two learner groups in White's study were matched in terms of overall proficiency as well as length and nature of exposure to English, as no independent measures of these factors were included. For this reason, we plan to add a group of French-speaking learners, matched for proficiency using the Versant English Test, to allow for a better controlled comparison between learners of English with [+prodrop] and [-prodrop] L1s.

In the present study, we found no evidence of transfer of null subjects from L1 to L2. Yet while some of the learners in this study were more advanced than others, all of them were clearly beyond the L2 initial state. Thus our findings are consistent, in principle, with (at least) two alternative scenarios regarding null subjects in L2 development. One possibility is that *pro* does not undergo transfer at all, as suggested by Grüter and Crago (2012). This raises the question of why *pro* should escape transfer, when other syntactic properties do not. Currently, we can only offer the following speculation: while licensing and identification requirements on *pro* are part of the syntax, *pro* itself could possibly be considered a lexical item whose existence a learner must posit based on positive evidence. Lexical items are not expected to transfer, even under full transfer, and thus a learner would only posit *pro* in an L2 if presented with the appropriate data, such as sentences lacking expletive subjects, or finite declarative clauses without an overt subject. Such an explanation is similar to the 'triggering data' proposed by Hyams (1986) in relation to the development of prodrop grammars in L1 Italian children. Absent such evidence, learners would not assume *pro* in the L2, irrespective of its presence or absence in the L1.

An alternative possibility is that the property of prodrop does transfer, but that L2 learners quickly realize that it does not apply in English, an instance of Very Early Parameter Setting (or resetting)

(VEPS; Wexler, 1998). Very early parameter resetting has been argued to occur with other properties for which there is abundant positive evidence in the L2 input, such as basic word order, which has been observed to match the target L2 rapidly (Hulk, 1991). Existing – though sparse and not entirely conclusive (see above) – evidence of missing subjects in very early L2 production would be consistent with a VEPS explanation (Hilles, 1996; Phinney, 1987; Ruiz de Zarobe, 1998). At present, we can see no clear solution for distinguishing between these two scenarios on empirical grounds.

5. Conclusion

The goal of this study was to address the curious asymmetry between evidence from language production and GJs pertaining to null subjects in L2 English: whereas production data indicate very little subject drop by learners beyond the very initial stages of L2 development, learners at intermediate to advanced levels of proficiency continue to accept sentences with missing subjects on GJ tasks. Our results from a study with 17 Spanish-speaking learners of English confirm these findings: null subject sentences were accepted at a mean rate of 41% in a GJ task replicating that used by White (1986), yet next to none were produced in an elicitation task. Critically, in addition to the GJ and elicited production tasks, we presented the same learners with an interpretation task designed to probe for the availability of referential null subjects. Results from this interpretation task suggest that referential null subjects are not part of these learners' interlanguage grammars. These findings indicate that GJ tasks are not an optimal tool for assessing the syntactic representation of (null) subjects. The absence of any evidence of transfer of null subjects from L1 to L2 observed here raises further questions regarding the scope of 'full' transfer in L2 acquisition. While we cannot exclude that null subjects are resolved through very early parameter resetting, these findings are also consistent with an account that assumes that null subjects never transfer at all. What is clear is that in order to gain further insight into the nature of missing subjects in L2 interlanguage, we must look for evidence beyond grammaticality judgments and construct ecologically valid receptive tasks probing learners' comprehension at minimal task demands.

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