NULL SUBJECTS USE BY ENGLISH AND SPANISH LEARNERS OFARABIC AS AN L2[1]

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1. Introduction

Within Principles and Parameters framework, the Pro-drop or Null Subject Parameter (NSP) has received some of the most extensive investigations in terms of parameter setting in both first (L1) and second (L2) language acquisition and as one of the cluster properties comprising the NSP. Most accounts have been based on the contingent relationship held between rich (overt) verbal inflections and the null subject phenomenon (i.e., in null subject languages, such as Spanish versus English). The phenomenon is exemplified in (1)-(3) below where (1), (2) and 3(a) are grammatical but 3(b) is not.

(1) ʔakal-naa (Arabic)
ate-1P
"We ate."

(2) Com-ímos (Spanish)
ate-1P
"We ate."

(3) a. We ate (English)
b.*Ate

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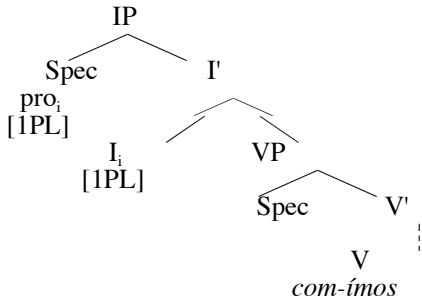
Various analyses posit that the null subject position (in finite clause) is occupied by a non-phonetically realized pronominal, small pro. The standard pre-minimalist analysis hinges on two basic assumptions, following Rizzi (1986): licensing and identifications of pro as illustrated in (4) below. Licensing of pro refers to the grammatical property that allows null subjects to occur in null subject languages as opposed to non-null subject languages. Presence of rich agreement morphology is generally but loosely assumed to be the licensing condition. Thus, in sentence (2) Spanish INFL is assumed to be morphologically rich enough (vs. English) to formally license pro (by assigning case to it) within a Spec-Head relation. Identification refers to recoverability of the content of pro usually from the inflectional features attached to the verb. It is formally identified by being coindexed with its head (INFL) and consequently sharing the AGR feature values of INFL.

(4)



To account for the distribution of null subjects in languages (such as Chinese and Japanese) that exhibit no morphological agreement and yet allow null subjects, pro is assumed to be identified (pragmatically) in the discourse within a topic chain, via availability of the closest antecedent in the discourse.[2]

[2]Cf. Jaeggli & Hyams (1988) and Jaeggli & Safir (1989) who propose the Morphological Uniformity Principle: null subjects are permissible only in languages that exhibit a morphologically uniform inflectional Paradigm P, where P in a Language L is morphologically uniform iff P has either only underived inflectional forms or only derived inflectional forms (1989:29-30). Accordingly, languages that exhibit an impoverished or mixed paradigm do not permit null subjects. It has been suggested that some languages (Persian and Wichita) have an impoverished agreement paradigm but allow null subjects (O'Grady 1997). There are also languages that have rich agreement (German and =Icelandic) but do not allow null subjects.

In what follows, I summarize the main cross-linguistics evidence and proposals with respect to NSP in L1 and L2 acquisition and report on a study conducted on adult English and Spanish speakers learning Arabic as an L2 and their interlanguage (IL) use of null subjects.

2. Null Subjects in L1 Acquisition

The single most important aspect that received attention in the literature is probably the notion of the setting of the NSP allowing null subjects. Chomsky's (1981) earlier (Government and Binding) assumption is that the parameter is initially unmarked and that the child will eventually set the parameter [+drop]/[+null] or [–drop]/[-null] depending on the grammar of L1. Additionally, the parameter is assumed to be associated with a cluster of properties (including: null subjects, subject-verb inversion and that-trace effect); the setting of any of these is assumed to trigger the automatic setting of the rest of the structures. The initial parameter setting and the clustering issue generated much debate in both L1 and L2 acquisition literature as we shall see below.

Rather than being unmarked à la Chomsky (1981), on Rizzi's (1986) account, an L1 is posited to be initially set at a [+drop] value and the child would have to reset the value of the parameter according to that of adult L1 grammar (see Hyams 1986, 1987). L1 acquisition data from both null subject and non-null subject languages showing prevalent production of null subject contexts would seem to be accounted for accordingly. Thus, in the L1 grammar of children acquiring null subject languages, pro would be initially licensed through INFL and identified through rich inflectional features. On the other hand, in the L1 grammar of children acquiring non-null subject languages, such as English, pro would be initially licensed through INFL and identified through discourse topic chain until the child figures out the impoverished inflectional paradigm and pro would then be blocked (e.g., Hyams 1994, Jaeggli & Hyams 1988).

However, such a proposal encounters two problems: 1) the findings that null subjects are more prevalent in Italian (a null subject language) L1 acquisition than English L1 acquisition and 2) the findings that more null subjects occur in child English with non-finite verbs than finite verbs.

Wexler (1994) proposes that instances of null subjects in non-null subject languages may be instances of big PRO rather than small pro.

The occurrence of PRO, according to Wexler, is due to the feature TENSE being underspecified in child's grammar. Wexler suggests that since, on one hand, adult English grammar allows PRO in infinitival embedded clauses, illustrated in (5) below, this may incidentally further explain away the asymmetrical frequency of null subjects with non-finite verbs (being higher) than that of null subjects with finite verbs.

(5) Sally wanted [PRO to go home]

On the other hand, in null subject languages such as Italian, pro is licensed by rich verbal inflection from early on, hence the relatively higher frequency of null subjects in Italian child acquisition than that of English child acquisition (see also Bromberg & Wexler 1995).

Similarly, early presence of null subjects in child speech is claimed to be related to syntactic development in L1 of what became known as the Truncation Hypothesis where children are initially assumed to have access to the lower (than TP) part of the tree only, triggering the production of root infinitives (Radford 1988, 1990; Rizzi 1993/1994). According to this proposal, finite inflection is claimed to correlate with development of CP projection (and disappearance of null subjects in a non-null subject language such as English) and non-finite inflection with IP projection.

Other proposals claimed that the null subject phenomenon is not related to the NSP but is rather related to a performance or processing deficit in child speech. For example, Bloom (1990) found a correlation between null subjects and VP length and that the longer the VP the more likely the subject to be dropped. Bloom (1990) also found that sentences produced by children with subjects were significantly shorter than sentences without subjects. Aronoff (2003) found a correlation between null subjects and null verbs both in children and adults, suggesting that null subject dropping in child language is due to processing limitations (see also Valian 1991).

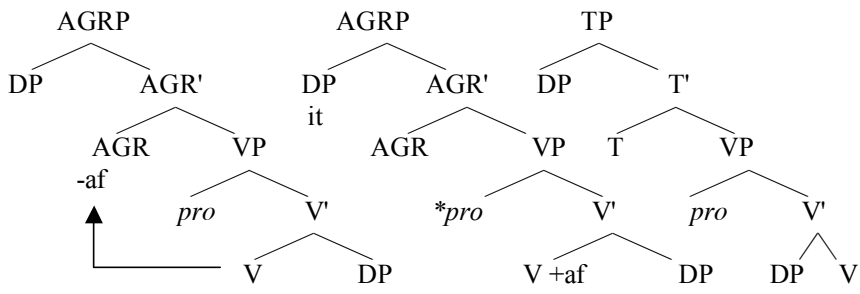
The proposal that has received perhaps the most attention is related to the general trend in the field of assuming a contingent relationship between development of inflectional morphology and syntactic development. Notwithstanding the various proposals and the mixed evidence, there is a considerable body of evidence that suggests the presence of a correlation between development of inflectional paradigm

and null subject phenomenon. Many studies reported findings that children set the NSP at the time they acquire agreement inflection features (e.g., Deprez & Pierece 1993, Lebeaux 1988, Rizzi 1998). Similarly, it has also been reported that English-speaking children produce null subjects in absence of agreement features (Roeper & Rohrbacher 2000).

Based on these observations, Speas (1994/2006) proposes one of the most widely cited analyses of null subjects for L1 within a Minimalist framework, following Chomsky (1993). The proposal is also based on the Economy of Projection Principle that Speas introduced to motivate her notion that functional projection can be generated only when needed. Speas proposes that languages that exhibit agreement features no matter how "residual" or impoverished (such as English) would project an AGRP projection for agreement features to be checked while in languages that lack agreement features altogether (such as Chinese and Japanese) there is no need for an AGRP within which the features can be checked. The latter have functional heads, such as TENSE and ASPECT but no AGR head. Thus, a projection must have a content (before Spellout) and an AGRP projection is needed for even a language with impoverished agreement so that AGR features must be checked in Spec-Head relation at LF (1994/2006:11). Accordingly, structures 6(a)-(c) are proposed (Speas 1994/2006:12).

As illustrated, an additional introduced parameter is that in strong (or rich) AGR languages (such as Italian type languages), the agreement affix is stored in the lexical representation and can be separated from the verb to be inserted in the head position of AGRP and in weak (or impoverished) agreement languages (such as English type languages), the morphemes do not have independent lexical entries and are base-generated on the verbal stem (i.e., part of the inflectional paradigm). Accordingly, a language permits null subjects if the agreement affix is base generated under AGR, but it does not if agreement affix is base generated on the verb. Additionally, in a non-null subject language (such as an English type language), Spec-AGRP must be filled (by a non-null content) prior to Spellout. (We shall return to this analysis in section 4.2.)

(6) a. Italian b. English c. Japanese



3. **Null Subjects in L2 Acquisition**

Three main questions have preoccupied second language researchers with respect to the null subject phenomenon: setting the NSP, its cluster properties, and access to UG.[3] White (1985, 1986) investigated adult French [-drop], Spanish [+drop] and Italian [+drop] speakers learning English [-drop] as an L2 cross-sectionally. On grammaticality judgment and production tasks, a marked difference in performance was found between the Spanish and Italian speakers on one hand and the French speakers, on the other. The former showed a tendency to accept (ungrammatical) null subject contexts more often than the latter did, suggesting a transfer effect from L1. White claimed that the value [-null] is the unmarked setting and would require negative evidence to detect, hence the Spanish participants did not acquire the form as easily as their French counterparts did. The results of the study also showed a proficiency effect, suggesting that the Spanish learners could reset the parameter of (their English) L2. However, the data produced mixed evidence with respect to parameter clustering effect. Both groups (the Italian/Spanish and the French groups) rejected sentences with subject-verb inversion errors but accepted sentences with that-trace sequences errors.

Hilles (1986) examined longitudinal data of a twelve-year-old

[3]There is a disagreement among researchers with respect to investigating parameter (re-)setting in L2 acquisition if the phenomenon in question turns out not to apply altogether in L1 acquisition as claimed by Beck (1998). Thus, it is possible to do so for some researchers (e.g., Beck 1998:29) but "implausible" for others (e.g., Sprouse 1998:62).

speaker of (Colombian) Spanish learning English in a naturalistic setting. Hilles found the subject's L2 grammar already set at a [+null] value (with a prevalence of null subject contexts), transferring the value from L1. The subject later reset the parameter to [-null] value. A correlation was found between the gradual adjustment to overt subject contexts with the production of (non-referential) expletive subjects and increase in production of modals, hence providing evidence for a clustering effect.

Phinney (1987) investigated use of subject pronouns and subject verb agreement. Phinney relied on production data of free composition of (beginning and intermediate) adult Spanish learners of English and adult English learners of Spanish as an L2. Subject-verb agreement production was found accurate in both groups although most instances involved 1st person singular. The findings showed evidence of L1 transfer in both groups and that it was easier for the English learners to drop subject pronouns than for their Spanish counterparts to insert pronouns. Accordingly, the data were interpreted to support the claim that the [+drop] value is the unmarked setting.

Liceras (1989) investigated the NSP and NSP clustering effect by examining the responses of adult English and French speakers learning Spanish as an L2 on grammaticality judgment tests. Liceras reported that both groups (including beginner level participants) accepted null subject tokens in Spanish as grammatical but had more difficulty with subject-verb inversion and that-trace. No L1 transfer effect was claimed. However, contrary to standard assumptions, Liceras claimed that the results are not against a clustering effect. Rather, the structures investigated are not as equally simple as null subjects; the latter seems to be a pre-requisite to the other structures in the cluster or that alternatively structures within the NSP cluster require individual triggers (see also Liceras 1988).

Tsimpli & Roussou (1991) investigated the NSP and NSP clustering effects in 13 adult Greek (+drop) learners of English who were at the intermediate (proficiency) level. The data, which comprised the participants' responses on grammaticality judgment tasks, revealed that the participants had far more problems with that-trace and subject verb inversion than they did with null subjects (suggesting no clustering effect). Tsimpli & Roussou claimed that their data suggest that L2ers transfer the value of their L1 to L2 but cannot reset the par-

ameter, because UG access in L2 is permanently impaired. L2ers are claimed rather to have access to non-parameterized UG principles.

Hilles (1991) examined naturalistic acquisition data of six Colombian Spanish speakers learning English as an L2. The subjects were two children, two adolescents, and two adults. The study examined the prediction made by the Morphological Uniformity Principle (see footnote 1 above). The study produced mixed evidence: out of the six subjects the data of only three (the two children and one of the two adolescents) showed a significant correlation between emergence of overt pronominal subjects and development of verbal inflection. Notwithstanding the nature of this mixed evidence (of a clustering effect), Hilles claimed that L2ers of the study had access to UG not through L1 but through a default [+null] value (set in L2) as that of a uniformly uninflected language (e.g., Chinese and Japanese).

Lakshmanan (1991) examined longitudinal data of three children learning English as an L2 (French, Colombian Spanish [+null], and Japanese [+null]). Lakshmanan, however, found no clustering effect and no correlation with respect to development of (English non-uniform/impoverished) verbal inflection and overt subjects use and concluded that the data are not in support of the Morphological Uniformity Hypothesis or direct UG access in child L2 acquisition. The Colombian child exhibited inconsistent use of verbal inflection but omitted subjects (including thematic referential subjects/pronouns). The French child exhibited inconsistent use of verbal inflection but omitted mainly expletive (non-referential) subjects. The Japanese child exhibited low verbal inflection use and produced no null subjects.

Davies (1996) also attempted to test the predictions made by the Morphological Uniformity Hypothesis on 48 adult speakers of null subject languages (Chinese, Japanese, Korean, Italian and Spanish) learning English as an L2 who were at three proficiency levels. The study produced mixed evidence. A number of the participants exhibited knowledge that English is a morphologically non-uniform language, yet they accepted (as grammatical) subjectless English sentences.

Vainikka & Young-Scholten (1994, 1996) examined cross-sectional data from 11 adult Turkish [+null] and six Korean [+null] learners of German [-null] as an L2. The findings revealed a correlation between the development of verbal inflection and overt subjects. Three patterns corresponding to three stages were identified: L2ers who supplied

pronominal subjects and verbal inflection at 50% (stage-1), L2ers who supplied pronominal subjects at 70% with inconsistent use of verbal inflection (stage-2), and L2ers who supplied subjects at more than 80% (stage-3) and supplied verbal agreement inflection at comparable high rates. Accordingly, Vainikka & Young-Scholten claimed no transfer of the L1 value [+null] takes place in L2. Rather, L2ers set their [-null] value at stage three when they have acquired verbal inflection.

Clahsen & Hong (1995) attempted to challenge Vainikka & Young-Scholten's (1994) findings by analyzing grammaticality reaction time responses of 33 adult Korean learners of German as an L2. At least, two general patterns emerged in the study: a group of 18 participants acquired only one of the two forms, while another 15 acquired both forms or none. Accordingly, the developmental paths of null subjects and subject-verb agreement were interpreted not to be related, suggesting that subject-verb agreement is not part of the cluster properties of NSP.

Al-Kasey & Pérez-Leroux (1998) examined whether L2ers can reset the NSP in L2 and whether there is a clustering effect of null (non-referential) expletives and null thematic (referential) subjects (or optional subject pronouns). They analyzed data generated via comprehension and production (written) tasks from 88 English learners of Spanish as an L2 at different proficiency levels. The main findings revealed a proficiency effect for the acquisition of both types of subjects, as the number of both types of null subjects increased with proficiency at about the same pace, suggesting an acquisition correlation, hence also a clustering effect. Accordingly, Al-Kasey & Pérez-Leroux claimed that their findings are in support of a UG access in L2 and that setting of parameters in L2 is also possible.

Liceras & Díaz (1998) examined production data of 18 adult English, French, English/French bilingual, Danish [-null], Swedish [-null] and Japanese speakers learning Spanish as an L2. The participants belonged to two cross-sectional levels: beginning and advanced. The data revealed ample production of null subject contexts and that the Japanese advanced participants did not exhibit substantial increase in null subject production as the other advanced participants did. Liceras et al. claimed that their data show that advanced subjects whose L1 incorporates abstract inflectional features tended to treat their production of null subjects in Spanish structurally while those whose

L1 does not do so tended to treat them pragmatically. Liceras & Díaz concluded that their study provides some evidence of L1 transfer.

Liceras et al. (1999) examined spontaneous production data of 18 adult Chinese, Korean, Japanese, English, French and German learners of Spanish as an L2 (at the "intermediate advanced" level). The findings revealed that all participants produced null subjects in matrix, embedded and conjoined clauses, with the Japanese participants producing slightly fewer subjectless clauses. Liceras et al. claim that the different L1 speakers resort to different UG-related, non-parametrized identification procedures through L1, hence allowing for L1 transfer. Null subjects are assumed to be licensed in Spec-VP by default in absence of abstract features determining the value of the null subjects. Thus, following Tsimpli & Roussou (1991), Liceras et al. claimed that re-setting the parameter is not possible in L2, but that L2ers can still have access to UG through L1.

To sum up the SLA research conducted with respect to the null subject phenomenon, the following general observations can be noted.

There does not seem to be a general agreement as to which value ([+null] versus [-null]) represents the unmarked setting. Tsimpli & Roussou (1991) argue that associating markedness with null subjects is "ad-hoc".

Studies produced mixed evidence with respect to clustering effects. This leads to at least three conclusions. First, evidence against clustering effects suggests that no resetting of the NSP takes place, hence no access to UG in L2. Second, the notion of clustering is applicable, but some structures within the cluster may be prerequisite to other structures or that structures within the clusters have individual triggers. On this account, no resetting of the NSP takes place in L2. Third, evidence for clustering effects suggests that resetting of the NSP is possible in L2, hence access to UG in L2 is also possible.

There is no agreement as to whether L2ers can reset the parameter in L2.

Studies produced mixed evidence with respect to the association between development of verbal inflection and null subjects.

Studies used different assessment measures, many of which relied on grammaticality judgment tasks. This methodology has been criticized for its many limitations (e.g., Ellis 1990, 1991; Lantolf 1990; Goss et al. 1994). In addition, different types of data are relied upon

(including longitudinal, cross-sectional, naturalistic and child L2 and adult L2) that may not allow for a straightforward comparison.

Studies generally show evidence that adult speakers of null subject and non-null subject languages learning a null subject language produce subjectless clauses from early on. Conversely, speakers of null subject and non-null subject languages learning a non-null subject language do supply overt subjects from early on.

Studies generally seem to provide evidence in support of L1 transfer. This comes from at least three main directions. First, speakers of null subject languages learning null subject languages produce null subject clauses and seem to adjust to the L2 system from early on. Second, speakers of null subject languages learning non-null subject languages (e.g., English and German), produce subjectless clauses even though they seem to adjust to the system of L2 from early on. Third, speakers of non-null subject languages learning non-null subject languages, noticeably reject more subjectless clauses than speakers of null subject languages learning non-null subject languages. Researchers who deny L1 transfer and relegate L2ers' early adjustment to other factors (such as the notion of non-parametrized UG related procedures) do not, in fact, provide empirical or clear evidence in ruling out L1 transfer (see also Sauter 2002).

Despite the fact that many studies have been conducted to investigate the null subject phenomenon in L2, using participants of many different L1s (including both null subject and non-null subject languages), an additional surprising observation is that the research mainly focused on three languages as L2s: English [-null], German [-null] and Spanish [+ null]. The study reported on below contributes to the debate by investigating a fourth language (Arabic) as an L2. In addition, the study relies on production data rather than grammaticality judgment tasks in assessing the participants' use of null subjects. The study focuses on three main issues: 1) use and distribution of null subjects in adult English and Spanish learners of Arabic as an L2, 2) L1 transfer and 3) the relationship between development of verbal inflection and null subjects. Investigating clustering effects is beyond the scope of this study.

4. **Methods**

4.1 *Participants*

Fifty-four Arabic L2ers, belonging to two different native language backgrounds, Spanish and American English, were invited to participate in the study in their home institutions. The participants were grouped according to their placement by their home institutions and according to length of exposure to Arabic as part of their academic programs. Table 1 summarizes the details of the participants.

	Length of Exposure	Credit Hours Enrolled in	M/F	Ages Range	Ages Means
English L1					
Group1 (n=9)	Year 1	6	4/5	18-21	19.22
Group2 (n=9)	Year 2	5	5/4	20-29	22.22
Group3 (n=9)	Year 3	4	6/3	22-34	29.11
Spanish L1					
Group1 (n=9)	Year 1	6	3/6	19-23	20.22
Group2 (n=9)	Year 2	6	2/7	19-26	21.55
Group3 (n=9)	Year 3	6	3/6	20-33	25.33
M/F= Total Males/Total Females					

Table 1. Participants

The participants selected had little or no exposure to Arabic prior to joining their academic institutions (in Spain and the U.S.) and are not heritage speakers who would speak Arabic occasionally or often at home. In particular, first-year students of both language groups had zero exposure and had made no trips to Arabic-speaking countries. A few participants from both language groups at other levels had traveled to Arabic-speaking countries for brief visits and did not stay for a significant period of time.

The participants of both L1 language groups received formal instruction in Arabic with focus on all grammatical forms from early on, although they used different textbooks. The L1 English group used Abboud et al. (1983, 1997) and the L1 Spanish group mainly used, though not exclusively, Alkhalifa (1999, 2002).

In addition, six (educated) native speakers of Arabic were invited to participate as a control group. The native speakers were from different Arabic-speaking countries (including Egypt, Jordan, Palestine, Syria,

and Tunisia) with an age range of 25-37 and means of 32. They were all graduate students pursuing different programs at a U.S. university, including bio-chemistry, computer science, education, geology, industrial engineering and mathematics.

4.2 *Target forms*

The focus of the present study with respect to the NSP is on the canonical feature of the parameter, empty/null subjects. The investigation is restricted to analyzing use and acquisition of null subjects in matrix sentences/clauses. In addition, to make the comparison across all three proficiency levels possible (and the forms accessible to all participants, especially those in the beginner groups), the investigation is restricted to 3rd person singular masculine and feminine contexts. Sentences (7)-(9) below are examples of null subject contexts in the target (Arabic) L2 language, null subject and non-null subject contexts in the L1 backgrounds (Spanish and English) of the participants.

(7) a. ʔakal-at (Arabic)
ate-3SF
"She ate."
b. hiya ʔakal-at
she ate-3SF
"She ate."
c. ʔakala
ate.3SM
"He ate."
d. huwa ʔakala
he ate.3SM
"He ate."

(8) a. Com-ió (Spanish)
ate-3S
"S/he ate."
b. Ella com-ió
she ate-3S
"She ate."
c. Él com-ió
he ate-3S
"He ate."

(9) a. *Ate (English)
b. He ate.
c. She ate.

The examples above illustrate that while Arabic and Spanish are null subject languages, English is a non-null subject language.

In this paper, I follow the standard Minimalist assumption of attributing parametric variation to strength of functional features. On this account, due to their rich verbal agreement features, both Arabic and Spanish are analyzed with the functional feature strength set to [+strong] while the functional feature strength in English is set to [-strong]. Accordingly, the typological constellation of the target and source languages of the participants reveals the pairings in (10)-(11):

(10) English participants who are speakers of a [-null] and [-strong] L1, learning a [+null] and [+strong] L2
(11) Spanish participants who are speakers of a [+null] and [+strong] L1, learning a [+null] and [+ strong] L2.

For an analysis, I adopt here, rather loosely, Speas' (1994/2006) formulation of null subject and non-null subject clause structure illustrated in 6 (section 2) above, with Arabic and Spanish belonging to the Italian-type languages allowing null subjects. Although Chomsky (1995) abandoned Pollock's (1989) Split-INFL hypothesis in favor of a single TP projection, it may be more plausible to maintain an independent AGRP projection as in Speas (1994/2006). This seems to have support on independent grounds from L1 acquisition data where in German L1 (e.g., Poeppel & Wexler 1993, Clahsen et al. 1994, Meisel 1994) and French L1 (e.g., Pierce 1992, Déprez & Pierce 1993) children acquire the Tense properties (finite and nonfinite) before age 2 whereas they acquire subject verb agreement between the ages of 2 and 3, indicating that these children initially project a "more basic" TP phrase before they do the "more complex" AGRP projection (Griffin 2003:20).[4]

[4]Griffin (2003) claims further that adopting Speas' analysis additionally allows simplification in the theory and provides independent support for Hornstein's =(1999) claim that PRO subjects and the theory of control may be eliminated and subsumed under trace theory.

However, I depart from Speas' distinction of the two types of verbal affixes: in null subject languages verbal affixes are base generated in the head position of AGRP (as each agreement morpheme have its own independent lexical entry) and in non-null subject languages verbal affixes do not have independent lexical entries and are base generated on the verbal stem (i.e., part of the inflectional paradigm). Verbal affixes in Arabic are not quite separable from the stem due to its circumfixal nature. Therefore, I assume here that the verbal affixes are base generated on the verb stem (see also Benmamoun 2000, Shlonsky 1997; cf. Fassi Fehri 1993) but that the verb and pro raise within an AGRP projection for feature checking. I assume, however, following Speas, that in English (as a non-null subject language) Spec-AGRP must be filled (by a non-null content) prior to Spellout. I leave aside the notion of the exact licensing condition for null subjects (responsible for the distinction between null subject and non-null subject languages) as no syntactic analysis to date seems to reconcile the counter examples (see footnote 2) unless we propose that such a condition may lie outside the realm of syntax (see Cole 2000 for such a proposal).

4.3. *Research questions*

The present study attempts to address the following questions. Do Arabic L2ers, who are speakers of null subject and non-null subject languages (such as Spanish and English, respectively), manage to re/set the value of NSP in their L2 correctly and at what stage? Do such L2ers exhibit L1 transfer in their IL systems? Is there any relationship between the development of null subjects parameter and development of verbal agreement inflection?

4.4 *Data collection and coding*

Data collection aimed at eliciting semi-spontaneous production data of the target forms from the L1 English, L1 Spanish and the control participants. Elicitation took place in one-on-one interview sessions, one interview per participant (30-45 minutes). Elicitation consisted of four narrative tasks (see below). The data were transcribed and coded. Certain items were not coded. These included hesitations and self-corrections except the last attempt. In addition, a small number of null verb contexts were produced by both L1 English and L1 Spanish

participants where a pronominal subject was produced (without a verb) followed by a long pause or a verbal noun. These tokens were too few and were not included in the analysis. In coding subject-verb agreement tokens, agreement was determined by considering the verbal form and whether it is inflected properly, not by identifying first the subject then the verb it agrees with. This is significant, since the verb may agree with a discourse referent subject and the L2er participants may be mindlessly producing the wrong subject, especially when the subjects used are the pronouns hiya "she" and huwa "he" which are close in their pronunciation (see also Poeppel & Wexler 1993, Prévost & White 2000; Cf. Meisel 1991).

4.4.1 *Narrative tasks*

Four narrative tasks were used for the purpose of elicitation: two in the past tense and two in the present tense divided equally between a female and male character. The two narratives in the past tense were each on a female and a male character. The participants were requested to narrate the planned vacation activities (on a calendar) carried out by each character during their vacation (which each took the previous month for a period of 10 days) day by day. As a distracter, the participants were asked to figure out and to comment on whether or not the male and female characters made a compatible couple based on what they did in their vacation. The two narratives in the present tense were also each about a female and male character. The participants were requested to describe the daily routines of each of the characters at different times of the day. The participants were asked to figure out where the character was from based on his/her routine activities—as a distracter. The two sets of narratives (the past vs. the present) were not presented sequentially. Rather, the past set was presented towards the middle of the interview and the present towards the end, with tasks of other (unrelated) structures used in the beginning of the first and second half of the interview, serving as distracters.

The purpose of each of the four tasks was to observe how the participants described the first event as well the subsequent events in each narrative. In Arabic and Spanish, one would expect normally only the first event to be described with a verb with an optional overt pronominal or lexical subject (depending on the participants' assumption of shared knowledge with the interviewer about the

character in question), whereas all subsequent events need not be described with an overtly expressed subject. This is not what one would expect in English where both the first verb as well as all subsequent verbs must occur with an overt subject. Thus, in English a past narrative would proceed as follows: "On Thursday, the man/he traveled to Alaska; on Friday he drank coffee; on Thursday he went to the Zoo," and so on.

4.5 *Results*

4.5.1 *Null subjects production*

Given the description of the four elicitation tasks above, one would expect each of the six native (control) speakers to produce contexts with overt subjects between 0-4 tokens, with one token for each task. The control participants produced tokens within the predicted range. All six native Arab speakers produced 11 contexts with overt subjects (4 pronominal and 7 lexical) and all except one occurred as a description of the first event of a narrative. Apart from one token, all contexts occurred with the overt subjects in a preverbal position. Only one control participant produced zero overt subject contexts. In addition, the control group occasionally produced (obligatory) overt pronominal subjects in lower or embedded clause with verbs such as *yabduu* "it seems", *kaʔanna* "looks like", *yumkin* "it is possible", and the complementizer *ʔanna* as illustrated in (12).

(12) ya-bduu ʔanna-hu šariba qahwa
3SM-seem that-he drank.3SM coffee
"It seems that he drank coffee."

The control participants produced a total of 24 such tokens in the middle of the narratives.

In comparison, the L1 English and L1 Spanish participants produced mainly null subject and overt subject contexts in matrix clauses. They also produced null subjects and overt lexical and pronominal subjects in conjoined contexts. Tokens of both contexts were collapsed together here. All overt subject contexts were produced with the subjects in a preverbal position. The vast majority of overt subjects produced were pronominal subjects. Of all non-native participants, only two Spanish participants (in Group 3) produced a

total of four contexts (with the complementizer *li?anna*) of overt pronominal subjects in embedded clause. All four tokens were correctly used with the obligatorily expressed pronominal subject on a par with those produced by the control group.

The data reveal that the L1 English participants generally produced noticeably more subjectless clauses than did their L1 Spanish counterparts. In particular, the L1 Spanish beginning participants (Group 1) produced a total of 55 null subject tokens, whereas their English counterparts (Group 1) produced as many as 280 tokens—a little over 5 times the number of their Spanish counterparts. Table 2 lists the distribution of null subjects use in the participants' IL systems.

	Null/All Subjects	%	Lexical/Pronominal Subjects
Controls (n=6)	264/275	96	7/4
Arabic L2			
(English L1)			
Group 1 (n=9)	280/314	89	9/25
Group 2 (n=9)	353/388	91	11/24
Group 3 (n=9)	303/385	79	18/64
Arabic L2			
(Spanish L1)			
Group 1 (n=9)	55/200	28	18/127
Group 2 (n=9)	156/256	61	10/90
Group 3 (n=9)	232/371	63	9/130

Table 2. Distribution of null subjects in the participants' IL systems

The distribution of the data presented in Table 2 can be illustrated more visually in Figure 1 via Boxplot (below). Thus, in addition to producing fewer null subjects than their L1 English counterparts, the L1 Spanish participants seem to exhibit a greater degree of variability in their production of null subjects as evident in the spread-out clustering of the medial (2^{nd} and 3^{rd}) quartiles. By contrast, the null subjects produced by the L1 English participants exhibit much less variability as evident in the clustering of their medial quartiles within the 80% range. The performance of the L1 English participants seems to resemble closely that of the control group whose medial quartiles cluster a little more consistently and higher within the 90 % range.

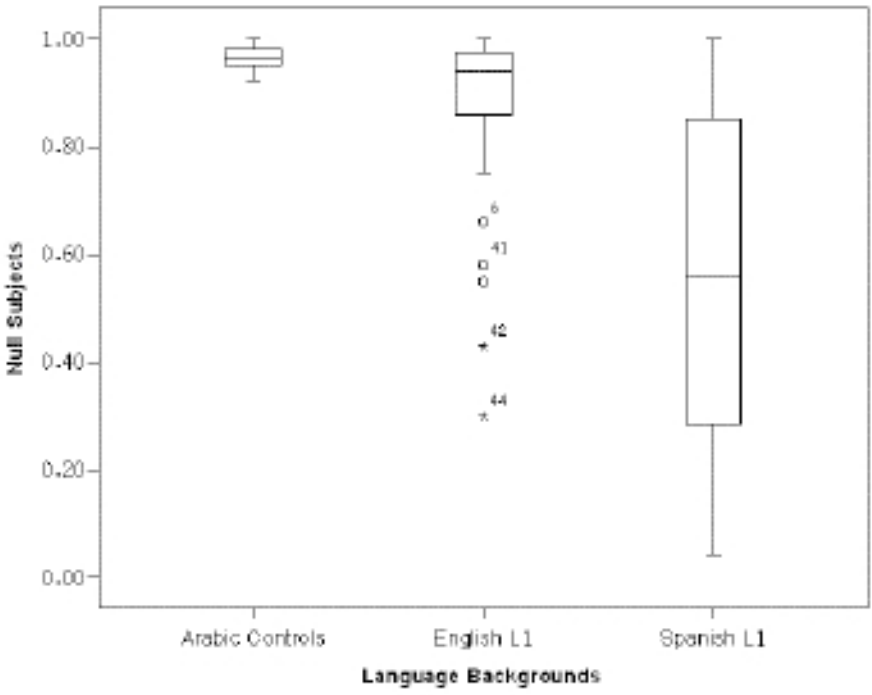


Figure 1.

One-way and two-way MANOVA tests revealed a significant effect for L1 backgrounds.[5] In particular, ANOVA follow-up tests to the MANOVA revealed a significant difference between the control group and L1 English participants, on one hand, and the L1 Spanish Participants on the other ($F(2,53) = 15.309$, $p<.001$) and no significant difference between the control group and the L1 English participants. A marginal significant effect for interaction between L1 and proficiency was also found ($F(2,53) = 2.674$, $p = .078$).

In other words, the L1 English participants dropped significantly more subjects than their Spanish counterparts did. Additionally, although the L1 Spanish participants seemed to start dropping subjects conservatively at the early stage of acquisition, in contrast to their English counterparts, they dropped more subjects as they progressed in

[5]Conducted with verbal agreement (see below) scores as another independent variable.

their Arabic L2 proficiency.

4.5.2. *Null subjects and verbal agreement*

When we examine development of verbal inflection with respect to production of null subjects, the data become more revealing of the participants' use of null subjects. Table 3 displays the distribution of correct rule application of verbal agreement in null and overt subject contexts.

	Correct Agreement (Null subjects)	Ratios %	Correct Agreement (Overt Subjects)	Ratios %
Controls (n=6)	264/264	100	11/11	100
Arabic L2 (English L1)				
Group 1 (n=9)	246/280	88	31/34	91
Group 2 (n=9)	283/353	80	24/35	68
Group 3 (n=9)	276/303	91	73/82	89
Arabic L2 (Spanish L1)				
Group 1 (n=9)	23/55	43	102/145	70
Group 2 (n=9)	111/156	71	68/100	67
Group 3 (n=9)	160/232	69	107/139	77

Table 3. Distribution of verbal agreement in the participants' IL systems

The distribution of the data presented in Table 3 can be illustrated more visually with respect to correct rule application of verbal agreement as in Figure 2. The L1 English groups overall produced far more subjectless sentences than they did sentences with overt (lexical and pronominal) with high ratios of correct subject-verb agreement (88%, 80% and 91%). The L1 Spanish groups exhibit a contrasting pattern. The beginning group (Group 1) produced far fewer sentences with null subjects than they did sentences with overt subjects and exhibited a low ratio of subject verb agreement in null subject contexts (43%). Unlike Group 1, the intermediate group (Group 2) produced about three times the number of null subject contexts (156) with a noticeably higher correct verbal agreement ratio (71%). The advanced group (Group 3), produced far more tokens of both null subjects and overt subjects than Groups 1-2 did (232 and 139, respectively) and

exhibited a higher correct subject verb agreement ratio than Group 1 did (69% and 77%, respectively).

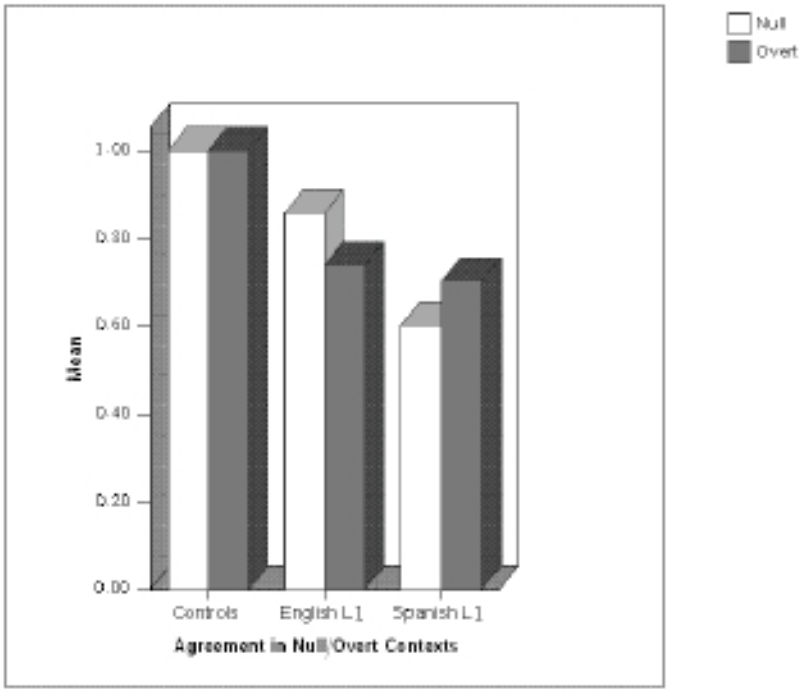


Figure 2.

As indicated above, one-way and two-way MANOVA tests revealed a significant effect for L1 backgrounds. In addition, ANOVA follow-up tests to the MANOVA revealed a significant difference between the control group and the L1 English participants on one hand and the L1 Spanish Participants on other with respect to correct verbal agreement in null subject contexts ($F(2,53) = 10.524$, $p<.001$). A near significant effect for interaction between L1 and proficiency with respect to correct verbal agreement in null subject contexts was also found ($F(2,53) = 3.212$, $p = .048$). No significant effect was found for verbal agreement in overt subject contexts.

To summarize the findings of the present study, the data reveal a close correlation between the production of subjectless clauses and subject verb agreement. Whereas the L1 English groups produced a

good number of subjectless sentences (280, 353 and 303) and from the beginning stage of L2 acquisition exhibited (through Group 1) a high rate of correct verbal agreement production (at 88%), the L1 Spanish groups produced a far fewer number of sentences with null subjects (55, 156 and 232) with much lower ratios of correct subject agreement, especially by Group 1 (at 43%). However, the L1 Spanish groups (2-3) exhibit an increase in both correct verbal agreement ratios and null subject production.

5. Discussion and Conclusion

To answer the research questions, perhaps the clearest evidence offered in the present study is that pertaining to the existence of a contingent relationship between the development null subjects and development of verbal agreement morphology. On one hand, we find that the L1 English participants produced a good number of null subjects from early on and with generally high correct subject-verb agreement ratios. The L1 Spanish participants, on the other hand, produced far fewer null subjects than their English counterparts, but with low ratios of correct subject verb agreement. This is most evident in the case of Group 1. By contrast, we find that the participants in higher proficiency levels (Groups 2-3) exhibit a noticeable increase in null subjects production but only as their accuracy of subject-verb agreement production increases at the same time. Thus, it may be safe to conclude, given the data of the present study, that there is a correlation between the development of null subjects and verbal agreement morphology in Arabic.

As for the question whether or not the participants of the study can re/set the parameter of their Arabic L2, the findings show that both L1 background participants seem to have managed to set the parameter value to [+null] and seem to have managed to adjust to the grammar of null subjects in Arabic. Surprisingly, the L1 English participants, who are speakers of a non-null subject language, seem to have more readily and more easily adjusted to the L2 system than their L1 Spanish counterparts, who are speakers of a null subject language.

The third question to do with the notion of L1 transfer should be addressed with caution here in part due to the fact that the data of the present study are cross-sectional and not longitudinal in nature. On one hand, no strong case of L1 transfer can be made with respect to the L1

English participants even though they did produce quite a number of clauses with subjects, since their production is characterized by prevalent use of null subject contexts from early on. The nature of their L1 [-null] is quite unlike the nature of their L2 production characterized as [+null]. Similarly no strong case for L1 transfer can be made for the L1 Spanish participants. The L1 Spanish participants produced subjectless sentences conservatively.

Notwithstanding the conclusions reached thus far, the question remains as to why the L1 Spanish participants took longer than their L1 English counterparts to set or adjust the parameter of the L2 value at [+null] even though their L1 value is [+null] and even though the value of the NSP of the L1 English participants is [-null]. Answering this intriguing question can perhaps at the same time address the question as to why the L1 Spanish participants exhibited L1 transfer rather conservatively.

From the data, it is evident that the L1 English participants were able from early on to figure out from input that Arabic allows null subjects. Indeed, null subject use is prevalent in the input (Abboud et al. 1983, 1997). The participants also seem to have established an association between verbal agreement and null subjects as evident in the correlation between their high scores on both null subjects and subject-verb agreement from an early stage of their Arabic L2 acquisition. Accordingly, all they have to do is pay attention to verbal inflection and simply drop the subject. Two additional factors may make this task easy for them. First, Arabic exhibits a functional projection similar to their own, albeit verb raising in Arabic occurs overtly rather than covertly (as in English) at LF. Second, subjects occur in a perceptually salient position within word order (see also Slobin 1973, Corder 1978). A similar observation related to the notion of salience and word order is reported in Alhawary (2005) where L1 English speakers learning Arabic as an L2 achieved a near perfect mastery of Arabic noun-adjective word order from the earliest stage of acquisition even though the order in their L1 is, in fact, the opposite: adjective-noun.

As for the L1 Spanish participants, we can at least speculate on two possibilities to help explain the conservative production of null subjects, particularly those at the beginner level (Group 1). One possibility is that the L1 Spanish participants may have used

(pronominal) subjects as a processing strategy to gain time to retrieve the verb form with the proper agreement inflections (see Liceras et al. 1997 for a similar explanation), hence their conservative dropping of subjects. However, a more plausible scenario is that it may be the case that the L1 Spanish participants figured out the null subject feature of Arabic and preferred not to drop the subjects, since they did not master Arabic verbal agreement and therefore wanted to ensure the recoverability of the content of subjects by simply not dropping them. This explanation remains sketchy, since null subjects investigated in this study include only third person singular masculine and feminine, both of which are not marked differently in Spanish. Future research should include other forms in the verbal agreement paradigm. Future research should also examine use of overt pronominal subjects in embedded clause. Additionally, since a period of three years of formal instruction, such as that of Group 3, is hardly sufficient to attain a near-native status, future research should include participants at higher advanced levels to examine the near-native status of NSP in such L2ers (see Sorace 2003).

To conclude, the findings of the present study reveal that the production of null subjects already emerged in the L1 English participants' IL systems from the early beginning stage of acquisition. They seem to have already adjusted their IL systems to the grammar of L2 with null subjects and seem to have little difficulty with the structure even though their L1 does not allow null subjects. What is additionally noticeable is that the high ratios of null subjects production correlates with their high accuracy rates of subject-verb agreement. By contrast, surprisingly, null subjects did not emerge in all of the L1 Spanish participants' IL systems in the beginning level and produced a low number of subjectless sentences even though their L1 allows null subjects much like Arabic. One would expect that they would produce a higher number of clauses with null subjects, allowing for the role of L1 transfer in L2 acquisition, given both L1 and L2 exhibit the same phenomenon. However, as they progress in their Arabic L2 proficiency, they start (in the intermediate and advanced levels) to produce far more instances of subjectless sentences and only as their accuracy rates of subject verb agreement in null subject contexts increases. Accordingly, the data of both L1 background groups seem to indicate a close correlation between development of null subjects and development of

verbal agreement inflection. Both seem to be aware that when dropping null subjects they must ensure the recoverability of the content of the subjects; otherwise, they opt not to drop the subjects. This finding of a contingent relationship between the development of null subject and verbal inflection is similar to the observation reported in L1 (e.g., Deprez & Pierece 1993, Lebeaux 1988, Rizzi 1998, Roeper & Rohrbacher 2000) and L2 acquisition where the NSP can be reset (e.g., Vainikka & Young-Scholten 1994, 1996; Al-Kasey & Pérez-Leroux 1997).

REFERENCES

Abboud, Peter, Zaki N. Abdel-Malek, Najm A. Bezirgan, Wallace M. Erwin, Mounah A. Khouri, Ernest N. McCarus, Raji M. Rammuny & George N. Saad. 1983. *Elementary Modern Standard Arabic* vol. 1. Cambridge: Cambridge University Press.

Abboud, Peter, Aman Attieh, Ernest N. McCarus & Raji M. Rammuny. 1997. *Intermediate Modern Standard Arabic*. Ann Arbor, MI: Center for Middle Eastern & North African Studies, University of Michigan.

Alhawary, Mohammad T. 2005. "L2 Acquisition of Arabic Morphosyntactic Features: Temporary or permanent impairment". *Perspectives on Arabic Linguistics 17-18* ed. by Mohammad T. Alhawary & Elabbas Benmamoun, 273-312. Amsterdam & Philadelphia: John Benjamins.

Al-Kasey, Tamara & Ana Teresa Pérez-Leroux. 1998. "Second Language Acquisition of Spanish Null Subjects". *The Generative Study of Second Language Acquisition* ed. by Suzanne Flynn, Gita Martohardjono & Wayne O'Neil, 161-185. Mahwah, NJ: Erlbaum.

Alkhalifa, Waleed Saleh. 2002. *Curso Práctico de Lengua Árabe II*. Madrid: Editorial Ibersaf.

____. 1999. *Curso Práctico de Lengua Árabe I*. Madrid: Dar Alwah.

Aronoff, Justin M. 2003. "Null Subjects in Child Language: Evidence for a performance account". *Proceedings of the 22nd West Coast Conference on Formal Linguistics* ed. by Gina Garding & Mimu Tsujimura, 43-55. Somerville, MA: Cascadilla Press.

Beck, Maria-Luise. 1998. *Morphology and Its Interfaces in Second Language Knowledge*. Amsterdam & Philadelphia: John Benjamins.

Benmamoun, Elabbas. 2000. *The Feature Structure of Functional Categories*. New York & Oxford: Oxford University Press.

Bloom, Paul. 1990. "Subjectless Sentences in Child Language". *Linguistic Inquiry* 21.491-504.

Bromberg, Hilary Sara & Kenneth Wexler. 1995. "Null Subjects in Wh-Questions". *Papers on Language Processing and Acquisition* ed. by Carson T. Shütze, Jennifer B. Ganger & Kevin Broihier. MIT Working Papers in Linguistics 26.221-247.

Burmeister, Hartmut & Patricia L. Rounds. 1990. *Variability in Second Language Acquisition: Proceedings of the Tenth Meeting of the Second Language Research Forum*. Eugene: Department of Linguistics, University of Oregon.
Chomsky, Noam. 1995. "Categories and Transformations". *The Minimalist Program*, 219-394. Cambridge, MA: MIT Press.
____. 1993. "A Minimalist Program for Linguistic Theory". *The View from Building 20* ed. by Ken Hale & Samuel J. Keyser, 1-52. Cambridge, MA: MIT Press.
____. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
Clahsen, Harald & Upyong Hong. 1995. "Agreement and Null Subjects in German L2 Development: New evidence from reaction-time experiments". *Second Language Research* 11.5 7-87.
Clahsen, Harald, Martina Penke & Teresa Parodi 1994. "Functional Categories in Early Child Grammar". *Language Acquisition* 3.395-429.
Cole, Melvyn. 2000. *The Syntax, Morphology, and Semantic of Null Subjects*. Ph.D. dissertation, University of Manchester.
Corder, S. Pit. 1978. "Simple Codes and the Source of the Second Language Learner's Initial Heuristic Hypothesis". *Studies in Second Language Acquisition* 1:1.1-10.
Davies, William D. 1996. "Morphological Uniformity and the Null Subject Parameter in Adult SLA". *Studies in Second Language Acquisition* 18.475-493.
Deprez Viviane & Amy Pierece. 1993. "Negation and Functional Projections in Early Grammar". *Linguistic Inquiry* 24.25-67.
Ellis, Rod. 1991. "Grammaticality Judgments and Second Language Acquisition". *Studies in Second Language Acquisition* 13.161-186.
____. 1990. "Grammaticality and Judgments and Learner Variability". Burmeister & Rounds 1990. 25-60.
Eubank, Lynn. 1991. *Point–Counterpoint: Universal grammar in the second language*. Amsterdam & Philadelphia: John Benjamins.
Fassi Fehri, Abdelkader. 1993. *Issues in the Structure of Arabic Clauses and Words*. Dordrecht: Kluwer.
Goss, Nancy, Zhang Ying-Hua & James Lantolf. 1994. "Two Heads Better than One: Assessing mental activities in L2 grammatical judgments". *Research Methodology in Second Language Acquisition* ed. by Elaine E. Tarone, Susan M. Gass & Andrew D. Cohen, 263-286. Mahwah: Erlbaum.
Griffin, William Earl. 2003. "The Split-INFL Hypothesis and AgrsP in Universal Grammar". *The Role of Agreement in Natural Language/ Proceedings of the Fifth Annual Texas Linguistics Society* ed. by William Earl Griffin, 13-24. Texas Linguistics Forum 53 [http:uts.cc.utexas.edu~tls/2001tls/2001 proceeds.html]
Hilles, Sharon. 1991. "Access to Universal Grammar in Second Language Acquisition". Eubank 1991. 305-338.
____. 1986. "Interlanguage and the Pro-drop Parameter". *Second Language Research* 2.33-57.
Hoekstra, Teun & Bonnie D. Schwartz. 1994. *Language Acquisition Studies in Generative Grammar: Papers in Honor of Kenneth Wexler from the 1991 GLOW Workshops*. Amsterdam & Philadelphia: John Benjamins.
Hornstein, Norbert. 1999. "Movement and Control". *Linguistic Inquiry* 30.69-96.
Hyams, Nina. 1994. "VP Null Arguments and COMP Projections". Hoekstra &

Schwartz 1994. 21-55.
____. 1987. "The Theory of Parameters and Syntactic Development". Roeper & Williams. 1-22.
_____. 1986. *Language Acquisition and the Theory of Parameters*. Dordrecht: Reidel.
Jaeggli, Osvaldo & Kenneth Safir. 1989. "The Null Subject Parameter and Parametric Theory". *The Null Subject Parameter* ed. by Osvaldo Jaeggli & Nina Hyams, 1-44. Dordrecht: Kluwer.
Jaeggli, Osvaldo & Nina Hyams. 1988. "Morphological Uniformity and the Setting of the Null Subject Parameter". *Northeastern Linguistic Society* 18.238-252.
Lakshmanan, Usha. 1991. "Morphological Uniformity and Null Subjects in Child Second Language Acquisition". Eubank 1991. 389-410.
Lantolf, J. 1990. "Resetting the Null Subject Parameter in Second Language Acquisition". Burmeister & Rounds 1990. 429-452.
Lebeaux, David. 1988. *Language Acquisition and the Form of the Grammar*. Ph.D. dissertation, University of Massachusetts, Amherst.
Liceras, Juana M. 1989. "On Some Properties of the 'Pro-drop' Parameter: Looking for missing subjects in non-native Spanish". *Linguistic Perspectives on Second Language Acquisition* ed. by Susan M. Gass & Jacquelyn Schachter, 109-133. Cambridge: Cambridge University Press.
____. 1988. "Syntax and Stylistics: More on the pro-drop parameter". *Learnability and Second Languages* ed. by James Pankhurst, Michael Sharwood Smith & Paul Van Buren, 71-93. Dordrecht: Foris.
____, Denyse Maxwell, Biana Laguardia, Zara Fernández & Raquel Fernández. 1997. "A Longitudinal Study of Spanish Non-native Grammars: Beyond parameters". *Contemporary Perspectives on the Acquisition of Spanish*, Vol. 1: Developing grammars ed. by Ana Teresa Pérez-Leroux & William R. Glass, 99-132. Somerville: Cascadilla Press.
____, Lourdes Díaz & Denyse Maxwell. 1999. "Null Subjects in Non-native Grammars: The Spanish L2 of Chinese, English, French, German, Japanese and Korean speakers ". *The Development of Second Language Grammars* ed. by Elaine C. Klein & Gita Martohardjono, 109-146. Amsterdam & Philadelphia: John Benjamins.
____& Lourdes Díaz. 1998. "On the Nature of the Relationship between Morphology and Syntax: Inflectional typology, f-features and null/overt pronouns in Spanish interlanguage". Maria-Luise Beck 1998. 307-338.
Meisel, Jurgen M. 1994. "Getting FAT: Finiteness, agreement and tense in early grammars". *Bilingual First Language Acquisition: French and German grammatical development* ed. by Jurgen M. Meisel, 89-129. Amsterdam & Philadelphia: John Benjamins.
____. 1991. "Principles of Universal Grammar and Strategies of Language Use: On some similarities and differences between first and second language acquisition". Eubank 1991. 231-271.
O'Grady, William. 1997. *Syntactic Development*. Chicago, IL: University of Chicago Press.
Pierce, Amy E.1992. *Language Acquisition and Syntactic Theory: A comparative analysis of French and English child grammars*. Dordrecht: Kluwer.
Phinney, Marianne. 1987. "The Pro-drop Parameter in Second Language Acquisition". Roeper & Wlliams 1987. 221-238.
Poeppel, David & Kenneth Wexler. 1993. "The Full Competence Hypothesis of

Clause Structure in Early German". *Language* 69.1-33.
Pollock, Jean-Yves. 1989. "Verb Movement, Universal Grammar, and the Structure of IP". *Linguistic Inquiry* 20.365-424.
Prévost, Philippe & Lydia White. 2000. "Missing Surface Inflection or Impairment in Second Language Acquisition? Evidence from tense and agreement". *Second Language Research* 16:2.103-133.
Radford, Andrew. 1990. *Syntactic Theory and the Acquisition of English Syntax*. Oxford: Blackwell.
____. 1988. "Small Children's Small Clauses". *Transactions of the Philological Society* 86.1-43.
Rizzi, Luigi. 1998. "Remarks on Early Null Subjects". *Proceedings of the 22nd Annual Boston University Conference on Language Development* ed. by Annabel Greenhill, Mary Hughes, Heather Littlefield & Hugh Walsh, 14-38. Somerville, MA: Cascadilla Press.
____. 1993/1994. "Some Notes on Linguistic Theory and Language Development: The case of Root Infinitives". *Language Acquisition* 3:4.371-393.
____. 1986. "Null Objects in Italian and the Theory of Pro". *Linguistic Inquiry* 17.501-557.
Roeper, Thomas & Bernard Rohrbacher. 2000. "Null Subjects in Early Child Language and the Economy of Projection". *The Acquisition of Scrambling and Cliticization* ed. by Susan M. Powers & Camelia Haaman, 345-396. Dordrecht: Kluwer.
____ & Edwin Williams. 1987. *Parameter Setting*. Dordrecht: Reidel.
Sauter, Kim. 2002. *Transfer and Access to Universal Grammar in Adult Second Language Acquisition*. Ph.D. dissertation, University of Groningen.
Shlonsky, Ur. 1997. *Clause Structure and Word Order in Hebrew and Arabic*. New York & Oxford: Oxford University Press.
Slobin, Dan I. 1973. "Cognitive Prerequisites for the Development of Grammar". *Studies of Child Language Development* ed. by Charles A. Ferguson & Dan I. Slobin, 175-208. New York: Holt.
Sorace, Antonella. 2003. "Near-Nativeness". *The Handbook of Second Language Acquisition* ed. by Catherine J. Doughty & Michael H. Long, 130-151. Oxford: Blackwell.
Speas, Margaret. 1994/2006. "Economy, Agreement, and the Representation of Null Arguments". Ms. University of Massachusetts, Amherst. [Available at: http://www.umass.edu/linguist/people/faculty/speas/prodrop.pdf]
Agreement and Argument Structure ed. by Peter Ackema. To appear.
Sprouse, Rex A. 1998. "Some Notes on the Relationship Between Inflectional Morphology and Parameter Setting in First and Second Language Acquisition". *Morphology and Its Interfaces in Second Language Knowledge* ed. by Maria-Luise Beck, 41-67. Amsterdam & Philadelphia: John Benjamins.
Tsimpli, Ianthi-Maria & Anna Roussou. 1991. "Parameter-resetting in L2?". *UCL Working Papers in Linguistics* 3.149-170.
Vainikka, Anne, & Martha Young-Scholten. 1996. "Gradual Development of L2 Phrase Structure". *Second Language Research* 12.7-39.
____. 1994. "Direct Access to X'-theory: Evidence from Korean and Turkish Adults Learning German". Hoekstra & Schwartz 1994. 265-316.
Wexler, Kenneth. 1994. "Optional Infinitives, Head Movement and the Economy of Derivations". *Verb Movement* ed. by David Lightfoot & Norbert

Hornstein, 305-350. Cambridge, MA: Cambridge University Press.
White, Lydia. 1986. "Implications of Parametric Variation for Adult Second Language Acquisition: An investigation of the 'pro-drop' parameter". *Experimental Approaches to Second Language Acquisition* ed. by Vivian Cook, 55-72. Oxford: Pergamon.
____. 1985. "The Pro-drop Parameter in Adult Second Language Acquisition". *Language Learning* 35.47-62.