

MORPHOLOGICAL UNIFORMITY AND THE NULL SUBJECT PARAMETER IN ADULT SLA

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An area of keen interest in applying Chomsky's UG parameter-setting model to SLA has been the Pro-Drop or Null Subject Parameter (Cyrino, 1986; Hilles, 1986; Phinney, 1987; White, 1985, 1986). However, the nature of this parameter changes dramatically from the Jaeggli (1982) and Rizzi (1982) conception with Jaeggli and Safir's (1989) proposal linking uniform morphological agreement paradigms with null subjects. Data reported here show a number of L2 learners exhibit knowledge that English is morphologically nonuniform yet still accept English null subject sentences. This is inconsistent with the predictions of the Morphological Uniformity Hypothesis and renders uncertain its applicability to SLA. The results are considered in light of a number of possible positions that can be adopted when faced with data that disconfirm a hypothesis within the UG SLA research program; it is concluded that the Morphological Uniformity Hypothesis is disconfirmed and that any reformulation of the Null Subject Parameter must take these results into consideration.

For the past decade or so, the parameter-setting model of language acquisition developed under the influence of Chomsky's (1981a, 1981b) Principles and Parameters (P&P) model of grammar has gained influence among second language acquisition theorists. Part of its appeal has been its presentation as a theory able to explain certain mysteries of the acquisition of language. Another part of its appeal has been

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the possibilities it has created for SLA research and mainstream linguistic theory to interact in impressive ways.

First, P&P is a strongly deductive theory that provides a rich framework for hypothesis testing—a point made specifically by White (1992b) for SLA studies and by Newmeyer (1986) for general linguistic studies. More important, however, is the fact that SLA data take on a new and exciting role in hypothesis testing and theory construction within mainstream linguistic theory. Specifically, SLA studies provide an additional and potentially important data domain for testing and refining constructs of P&P. SLA data can provide counterevidence to certain hypotheses proposed within P&P theory by proving to be consistent only with grammars that are ruled out by particular P&P hypotheses. In such a case the SLA data may be used to refine, reformulate, or reconfigure such hypotheses. In this way, SLA data can be used in theory construction. Thus, SLA research can contribute directly to developments in mainstream linguistic theory, a point made by many, including Davies (1988), White (1992a), Gass (1993), and Foster-Cohen (1993). This is an especially exciting development for many researchers given the perceived hegemony of linguistics toward language teaching during the heyday of the Contrastive Analysis Hypothesis and the general lack of fruitful interaction between mainstream linguistics and second language studies during the late 1960s and much of the 1970s.

Thus, it is perceived that SLA studies can provide important information regarding the appropriate formulation of parameters of Universal Grammar (UG). The aim of the present study is to do just that. In particular, I wish to examine SLA data with respect to a particular aspect of the Null Subject Parameter (NSP), also known as the Pro-Drop Parameter. As reported in the next section, the history of SLA studies of this parameter spans the better part of a decade, and the goal here is not to focus on the structures encompassed by the parameter. Rather, I examine one aspect of the parameter, the licensing of null subjects as embodied in Jaeggli and Safir's (1989) Morphological Uniformity Hypothesis (MUH).

Then, I examine the NSP and the MUH and discuss the predictions they make with respect to L2 grammars given the assumption that interlanguages are natural languages and thus subject to UG principles. I then report on an experiment designed to test the predictions of the MUH, the results of which appear to disconfirm the hypothesis that the MUH is operational in L2 grammars. In the final section I discuss the various ways these disconfirming results can be interpreted.

THE NULL SUBJECT PARAMETER AND MORPHOLOGICAL UNIFORMITY

The Null Subject Parameter

The generative linguistics literature on the NSP is relatively vast, stretching back to observations made by Perlmutter (1971). The basic observation is that languages such as Spanish (1a) and Italian (1b) do not require overt pronominal subjects in tensed clauses:

- (1)a. *Voy al cine.*
b. *Vado al cinema.*
"I go to the movies."

Within the Government and Binding and P&P framework, two competing formulations of the NSP were presented in the early 1980s. The Jaeggli (1982) and Rizzi (1982) approach combines the possibility of a null subject in a tensed clause (1) with the admissibility of post-verbal subjects (2) and so-called "that-trace" violations (3):

- (2) *Verrà Gianni.*
"Gianni will come."
(3) *Chi credi che verrà?*
"Who do you think that will come?"

Hyams (1986) instead postulates that the key difference between languages that admit null subjects and those that do not resides in the treatment of auxiliary verbs as main verbs (as in Spanish and other pro-drop languages) or as distinct from main verbs (as in English and other non-pro-drop languages). In her so-called AG/PRO theory of null subjects, whether or not main verbs raise to receive inflection or have inflection lowered onto them is a key determinant, indicating whether or not in Hyams' terms "AG = PRO."¹

Despite some differences, these early formulations of the NSP focused on richly inflected languages such as the Romance languages and attributed the possibility of a null subject to rich verbal inflection, as in the Spanish and Italian examples in (1), in which first person singular specification is included in the tensed verbs *voy* and *vado* ("I go"). Completely ignored was the fact that "inflection-poor" languages such as Chinese and Japanese also allow null subjects, as the Chinese examples from Huang (1989) illustrate:

- (4)a. A: *Zhangsan kanjian Lisi le ma?*
Z see L ASP Q
"Did Zhangsan see Lisi?"
B: *(Ta) kanjian (ta) le.*
he see he ASP
"He saw him."
b. *Zhangsan shuo [e hen xihuan Lisi].*
Z say very like L
"Zhangsan said that he liked Lisi."

In (4a) the null subject is identified by the discourse topic and in (4b) the null subject is identified by a noun phrase in the higher sentence. The null subjects are not identified by rich agreement as in the Romance-type languages.²

A number of SLA studies of the NSP followed on the heels of the Government and Binding and P&P formulations of the NSP (Cyrino, 1986; Hilles, 1986, 1989, 1991; Lakshmanan, 1986, 1991, 1994; Lantolf, 1990; Liceras, 1989; Phinney, 1987; Platt, 1989; White, 1985, 1986). Interestingly, with the exception of Lakshmanan's and Platt's studies, no attempt is made to include learners whose L1 is "inflection poor." Results from these SLA studies have been mixed with respect to supporting one or

the other of the NSP formulations or finding firm empirical support for learner access to UG. However, as will become clear, these are not issues that the present study intends to address head-on.

Although it is fairly clear that inflection-poor null subject languages (NSLs) do not share certain crucial properties with richly inflected NSLs (properties crucial in either the Rizzi or Hyams account), there have been attempts to unify these two types of NSLs. The purpose here is not to attempt to identify the properties correctly packaged as the theoretical construct of the NSP, but rather to examine the attempt to unify the condition licensing null subjects in all languages—in particular, Jaeggli and Safir's (1989) Morphological Uniformity Hypothesis.

The Morphological Uniformity Hypothesis

Two crucial aspects of null subjects usually arise in analyses of the NSP: (i) licensing and (ii) identification. Identification refers to the grammatical mechanism for assigning reference to a null element. In the case of null subjects of tensed clauses, identification has largely been attributed either to the morphological information encoded on the verb (as in inflection-rich NSLs) or to discourse information (as in inflection-poor NSLs). Identification mechanisms are generally held to split the two types of NSLs.

Distinct from identification, licensing refers to the grammatical properties that a language must contain in order for null subjects of tensed clauses to be admissible. Jaeggli and Hyams (1988) and Jaeggli and Safir (1989) propose a single principle responsible for licensing null subjects in both types of NSLs. Specifically, they propose that the NSP is sensitive to the morphological paradigms of a language—what they refer to as morphological uniformity. Their Null Subject Parameter is given in (5):

- (5) Null Subject Parameter (Jaeggli & Safir, 1989, p. 29)

Null subjects are permitted in all and only languages with morphologically uniform paradigms.

The notion of morphological uniformity is defined in (6):

- (6) Morphological Uniformity (Jaeggli & Safir, 1989, p. 30)

An inflectional paradigm *P* in a language *L* is morphologically uniform iff *P* has either only underived inflectional forms or only derived inflectional forms.

Simply speaking, Spanish and Italian are uniform because all verbal paradigms have derived forms, whereas Chinese is uniform because all verbal paradigms have only underived forms. English, however, is morphologically mixed. That is, a few verbs, such as *be* and *have*, show some derived inflectional forms, whereas the majority of verbs show inflection only for the third person singular present tense form. Because English is morphologically mixed, according to (5) null subjects are not permitted. French provides an additional example of a morphologically mixed language and does not permit null subjects of tensed clauses.

Given the formulation in (5), morphological uniformity is a necessary but not sufficient condition for null subjects. It then follows that three basic language types are predicted to be possible:

- (a) a morphologically uniform language with null subjects (e.g., Spanish, Chinese),
- (b) a morphologically uniform language without null subjects (e.g., German),³ and
- (c) a morphologically mixed language with only overt subjects (e.g., English, French).

What is predicted not to exist is a language with mixed inflectional morphology that includes null subjects of tensed clauses. The following thus summarizes the typology predicted by Jaeggli and Safir's formulation:

- (7) Case 1: [+uniform], [+null subject]—Spanish, Chinese
- Case 2: [+uniform], [−null subject]—German
- Case 3: [−uniform], [−null subject]—English, French
- Case 4: [−uniform], [+null subject]—ruled out

In the following sections, I present data from an experiment that provide instantiations of Case 4 in some adult ESL learners.

THE MORPHOLOGICAL UNIFORMITY HYPOTHESIS AND SLA

The question of interest is the relationship of Jaeggli and Safir's MUH and the developing grammars of learners of a second language. In order for this to be an interesting question, one crucial assumption must be made explicit: If the P&P model is to provide any insights for SLA, it is necessary to assume that learner grammars (interlanguages) adhere to UG principles. Considering a broad range of SLA research, this may be a controversial assumption to make and it perhaps belongs in the realm of hypothesis open to empirical falsification.⁴ However, within the paradigm of UG SLA research, this is a foundational (though frequently unstated) assumption; it is indeed a necessary assumption if the model is to hold any value for SLA research. This assumption has, in fact, been argued for explicitly on empirical grounds by Finer and Broselow (1986) and in principle by Lust (1988).⁵ Hyams (1986), among others, makes the same assumption explicit in work on first language acquisition.

This assumption, together with the MUH, leads to the prediction that there should exist no learner grammars that contain a nonuniform verbal inflectional paradigm *P* in an interlanguage *L* and admit null subjects. That is, we should not find Case 4 under (7). A potential testing ground for this prediction exists in learners of English as a second language. L2 learners of English make errors in both crucial areas, verb agreement morphology and omission of subjects. Therefore, the experiment reported in the following section was designed to collect data that would reveal ESL learners' comparative knowledge of verb agreement and of the relative obligatoriness of subjects in tensed clauses.

One further point should be made explicit before proceeding. Inasmuch as UG is assumed to hold for second language grammars, individual results are as important as group results. That is, a single learner's grammar should conform to UG principles: To the extent that it does not, the relevant UG principle(s) is called into question by the individual's disconfirming data.

Table 1. Distribution of subjects by level and L1

L1	Level		
	Low Intermediate	High Intermediate	Advanced
Chinese	1	1	1
Italian	1	0	0
Japanese	14	10	8
Korean	0	3	3
Spanish	4	1	1

THE EXPERIMENT

As just laid out, the goal of the experiment was to collect data bearing on the question of the viability of the MUH as a universal constraint on the developing grammars of ESL learners. In this section, I detail the experiment and present results.

Subjects and Method

Data bearing on verb agreement and null subjects were collected by administering a grammaticality judgment task to 48 subjects enrolled in the Iowa Intensive English Program, a university-level academic preparation program. Subjects' L1s included Chinese, Italian, Japanese, Korean, and Spanish, all NSLs; however, as Table 1 clearly indicates, the majority of subjects were native speakers of Japanese. Subjects came from the top three of four levels of the program. Placement in these levels is determined by an in-house instrument that includes multiple-choice tests of reading, listening, and grammar, a writing sample, and a short oral interview. The distribution of subjects by their L1 and level is given in Table 1.

Subjects were given a written copy of 38 English sentences for which they were to provide grammaticality judgments. Each sentence was preceded by an additional sentence that was provided to establish some limited discourse context for the target sentence. The intent was to make plausible the possibility of null subjects that could be identified through discourse (as has been proposed by Huang [1989] for Chinese). Subjects were instructed to mark on the questionnaire whether they judged each target sentence "correct," "incorrect," or "don't know." Additionally, subjects were asked to repair sentences they judged "incorrect" in order to give some indication of the reason for their judgment. Such a procedure has been widely used (as in White, 1985).

Of the 38 target sentences, 8 contained referential null subjects of tensed clauses, 4 contained nonreferential null subjects of tensed clauses, and 8 contained errors in verb agreement. The remaining sentences were distractors, of which 10 were grammatical and 8 ungrammatical. The focus was on ungrammaticality inasmuch as Felix (1988) has provided some evidence that nonnative speakers are better at judging the ungrammaticality of sentences than the grammaticality of sentences. The questionnaire also contained two training items (sentences A and B in the Appendix) that the subjects attempted and discussed with the experimenter prior to

beginning the 38 target sentences. This was done to ensure familiarity with and understanding of the task. Subjects were then given up to 40 minutes to complete the questionnaire, although most finished in under 30 minutes. For the most part, subjects appeared to have had little problem with the task; 45 usable questionnaires were collected.

The Test Sentences

As already stated, the questionnaire included three types of target test sentences designed to elicit information relevant to the issue of null subjects and verb agreement. I give a brief sample here. See the Appendix for the complete elicitation instrument.

Two types of null subject sentences are included. The first type contains null referential subjects. The relevant items from the questionnaire are 1, 6, 7, 10, 26, 30, 33, and 38. Five of the items are examples of null referential subjects in main clauses, as in item 1, repeated below; items 7, 30, and 38 contain null referential subjects in embedded clauses, as in item 30. The target sentence is marked by >.

(8) Null Referential Subjects (+RefNS)

1. The doctor is not in the office.
> Is at the hospital today.
30. John will not be in class today.
> He said that had a doctor's appointment.

I refer to the missing subjects in the two examples in (8) as referential null subjects (+RefNS) because the missing element has semantic content.

Referential null subjects contrast with nonreferential null subjects. Nonreferential subjects are pleonastic pronouns, such as *there* and the *it* of meteorological and exaposition constructions, which have no semantic reference. Nonreferential null subjects (−RefNS) are included in items 15, 20, 25, and 35 in the elicitation instrument as (9) illustrates:

(9) Null Nonreferential Subjects (−RefNS)

20. Mary was not in class today.
> Seems that she was sick.
25. The farmers are happy now.
> Rained three times last week.

Distinguishing referential and nonreferential null subjects for the purposes of this study is important for two reasons. First, it has been proposed by a number of researchers that the crucial data (also known as the trigger experience) for setting the NSP to [−*pro*-drop] in a language such as English is the recognition of the obligatoriness of overt nonreferential subjects in tensed clauses (e.g., Hyams, 1986). Second, as is widely recognized, English nonreferential subjects especially can be

Table 2. Proficiency level and item ANOVA

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
All items	4.069	2.000	2.035	3.18	.052
Null subject items	2.664	2.000	1.332	2.800	.073
Verb agreement items	0.162	2.000	0.081	1.49	.237

feliciously omitted in casual conversation. Therefore, it is entirely possible that nonnative speakers will treat them differently from referential null subjects.

Finally, eight items (3, 12, 16, 21, 22, 29, 32, 36) contain errors in verb agreement. Illustrative examples follow:

(10) Verb Agreement (VAg)

3. Mark is a very good athlete.
 > Every day after class, he go jogging.
21. I'm leaving now.
 > I hopes you have a nice weekend.

Naturally, given the restricted verb agreement morphology of English, the examples focus on present tense items and the verb *have*.

RESULTS

There was an overall success rate of 66% on the 12 null subject sentences, 68% for the 8 referential null subject sentences, and 63% on the 4 nonreferential null subject sentences. The success rate was 74% on the verb agreement items.

Rank ordering of the items revealed no interesting regularities with respect to embedded versus nonembedded ungrammaticalities or referential versus nonreferential null subject ungrammaticalities or among first person, third person singular, and third person plural agreement morphology. The relationship between language proficiency and task performance was examined with analysis of variance techniques. In this analysis, differences between the means of subjects at three proficiency levels were evaluated for statistical significance. As might be expected, subjects in more advanced classes generally outperformed others, but there are individual exceptions and some task differences. Although proficiency level (as measured by class level) is significantly related to overall task performance, $F = 3.18$, $p = .052$, and the relationship between proficiency and performance on the null subject items approaches statistical significance, $F = 2.80$, $p = .073$, proficiency level and performance on the verb agreement items are clearly not significantly related, $F = 1.49$, $p = .237$. These results are summarized in Table 2. These results provide the first indication that perhaps verb agreement morphology is not the trigger for recognition of the obligatory nature of subject pronouns in English.

Contradicting this supposition is the fact that score on verb agreement items is correlated with score on null subject items, $r = .387$, $p = .0085$. However, although

this is clearly a statistically significant correlation, an important question arises. Does a correlation coefficient at this level constitute sufficient support for a hypothesis that assumes that there should be no other contributing factors? A coefficient of .387 means that only 15% of the variance in one variable (the verb agreement variable) is explained by the variance in the other variable (the null subject variable). This is not very good for prediction purposes given that the MUH hinges on the relationship of the two. Under the MUH recognition of nonuniform verb agreement morphology is necessary and sufficient for determining that null subjects are banned. Therefore, one might reasonably expect a much more robust correlation.

It is also instructive to examine individual results. Given the nature of the P&P theory, individual interlanguage grammars should conform to universal principles. That is, within this paradigm, individuals constitute important evidence for hypothesis testing. With this in mind, I now examine how individual results square with the predictions of the MUH.

Complete raw scores for referential null subject sentences, nonreferential null subject sentences, and verb agreement sentences for all 45 subjects are given in Tables 3–8. The figures in Tables 3–8 indicate the number of appropriate judgments, X , as against the number of unambiguous judgments, Y , for each of the relevant categories, presented as X/Y . In cases in which a particular item could not be scored with certainty, it was discarded. Therefore, at times the Y figure is less than 8 for +RefNS and VAg or less than 4 for –RefNS.⁶

Given the relatively high percentages of correct responses in all relevant categories, it is obvious that at least 24 of the subjects have a firm grasp of English verb agreement and the requirement that all tensed clauses have overt subjects. That is, these subjects' scores for +RefS, –RefS, and VAg are all in the 75–100% range. This is indicated in the scores of many subjects provided in Table 3. Two subjects scored very low on both the null subject items and the verb agreement items. Their raw scores are presented in Table 4. Yet another group of subjects scored well on the null subject sentences but did not achieve a score better than 50% correct on the verb agreement sentences. Only four subjects clearly belong in this group. Their scores are given in Table 5.

Regardless of exactly how one wishes to interpret these results, it seems clear that if these results reflect the grammatical constructs of these L2 learners of English, the L2 English grammars that one would construct for each of the subjects would be consistent with the predictions of the MUH. The group in Table 3 has essentially mastered English verb agreement and the fact that subjects are obligatory. The two subjects in Table 4 have mastered neither; however, there is no contradiction to the MUH inherent in this. Finally, the group in Table 5 has mastered the obligatory subject condition of English grammar but has not mastered English verb agreement. It is thus impossible to say with much certainty whether or not they recognize the fact that English has nonuniform inflectional morphology. However, as already laid out in the discussion of the typology predicted by Jaeggli and Safir's theory (7), languages with obligatory subjects are always consistent with the MUH, being examples of either Case 2 (uniform morphological paradigms) or Case 3 (nonuniform morphological paradigms).

Table 3. Subjects with nearly perfect NS and VAggr scores

Subject	+ RefNS	– RefNS	VAggr	Level
1	7/8	4/4	6/8	Low intermediate
3	7/7	3/4	6/8	Low intermediate
4	6/6	3/4	8/8	Low intermediate
5	6/8	3/4	6/8	Low intermediate
6	6/6	4/4	7/8	Low intermediate
8	8/8	4/4	7/7	Low intermediate
16	8/8	4/4	6/8	Low intermediate
20	8/8	4/4	6/7	High intermediate
21	7/8	4/4	8/8	High intermediate
23	6/7	4/4	7/8	High intermediate
24	6/7	2/4	5/8	High intermediate
25	7/7	3/3	6/8	High intermediate
26	7/7	4/4	7/8	High intermediate
29	7/8	3/4	7/8	High intermediate
30	7/8	4/4	8/8	High intermediate
33	8/8	4/4	7/8	Advanced
34	8/8	2/3	7/8	Advanced
36	7/7	3/4	8/8	Advanced
38	6/8	4/4	7/8	Advanced
39	7/8	3/3	5/7	Advanced
40	7/8	4/4	8/8	Advanced
42	7/7	4/4	7/8	Advanced
43	7/8	4/4	7/8	Advanced
45	8/8	3/4	8/8	Advanced

Table 4. Subjects with very low NS and VAggr scores

Subject	+ RefNS	– RefNS	VAggr	Level
2	0/8	0/4	0/8	Low intermediate
37	2/7	2/8	2/8	Advanced

Table 5. Subjects with nearly perfect NS and 50% or less VAggr scores

Subject	+ RefNS	– RefNS	VAggr	Level
7	7/8	3/4	2/8	Low intermediate
18	8/8	4/4	4/8	Low intermediate
22	6/7	3/4	2/8	High intermediate
44	7/8	2/3	3/8	Advanced

Table 6. Subjects with low NS and nearly perfect VAggr scores

Subject	+ RefNS	– RefNS	VAggr	Level
9	2/7	1/4	7/8	Low intermediate
12	0/8	0/4	6/8	Low intermediate
13	0/6	0/3	6/7	Low intermediate
41	3/8	0/4	8/8	Advanced

Table 7. Subjects with 50% NS and nearly perfect VAggr scores

Subject	+ RefNS	– RefNS	VAggr	Level
15	3/7	1/4	6/8	Low intermediate
27	3/8	2/4	7/8	High intermediate
31	2/7	3/4	6/8	High intermediate
32	3/7	2/4	6/8	High intermediate
35	5/8	0/3	7/8	Advanced

Table 8. Subjects with low NS and 50% VAggr scores

Subject	+ RefNS	– RefNS	VAggr	Level
10	1/8	0/1	5/8	Low intermediate
11	0/8	0/4	4/8	Low intermediate
14	2/8	0/4	5/8	Low intermediate
17	2/7	1/4	4/8	Low intermediate
19	2/6	1/4	5/7	Low intermediate
28	3/7	1/4	4/8	High intermediate

Three further patterns of results emerged that prove more unexpected given the predictions of the theory. First, a number of subjects had relatively high scores on the verb agreement test sentences, 75% or better correct, yet scored very poorly on the null subject test sentences, accepting as grammatical either all or a significant majority of the tensed sentences with null subjects. These results are given in Table 6.

Another case to consider is comprised of those subjects who scored approximately 50% on the null subject sentences and yet scored well on the verb agreement sentences, again 75% or better correct (see Table 7).

A final pattern shows some similarities to the pattern in Table 6. In this pattern of responses, subjects had the same general score on the null subject sentences but scored in the 50% range for the verb agreement sentences. Typical of this group are the results in Table 8.

Although the patterns noted in Tables 6–8 are categorized roughly at best and are certainly open to alternative categorizations, it is not the particular categorizations that are necessarily of interest here. Rather, what is more important is how to interpret any one subject's pattern of response in light of the notion that morphologi-

cal uniformity is a necessary condition for the licensing of null subjects of tensed clauses in natural language.

Of particular importance is how we choose to interpret the verb agreement scores. It seems clear in the patterns in Table 6 and Table 7 that scores of 6/8 to 8/8 indicate that the subjects generally have a grasp of the limited system of English inflectional verbal morphology.⁷ Presumably this should mean that these subjects have learner grammars with nonuniform inflectional patterns, indicating that their variety of English is a morphologically mixed language. Thus, given the statement of the Null Subject Parameter in (5), the English interlanguage grammars of these subjects should not license null subjects in tensed clauses. However, in the case of the subjects exemplified in Table 6, it is clear that null subjects are not recognized as being ungrammatical in English. For the subjects in Table 7, the situation is a little less clear. These subjects recognize at least in part the ungrammaticality of null subjects in tensed sentences, yet they still accept null subjects in over 50% of the test sentences. Presuming that UG principles including the MUH are governing these learners' acquisition of English and the intermediate grammars with which they operate, these results are unexpected. Both these patterns of response fit Case 4 in (7)—the case predicted by the MUH not to exist.

Turning to the pattern evinced in Table 8, we confront a similar issue. Here it is apparent that the subjects have a less firm grasp of the inflectional paradigms of English verbs: The scores on the verb morphology sentences are generally in the 50% range. It is important to note, however, that the subjects have some productive control of English verb agreement because in order to be credited with a correct response it is necessary to at least attempt an appropriate repair of the ungrammaticality of the test sentence. It is reasonable to interpret the roughly 50% score as indicating some awareness on the part of the learner that English is a morphologically mixed or nonuniform language despite the fact that the full paradigm has not yet been acquired. However, the subjects whose responses fall in this category almost uniformly accept as grammatical English sentences with null subjects in tensed clauses. If we assume that these learners are aware that English is a morphologically mixed language and are struggling to fully control the system, these results once more may be interpreted as instantiating Case 4 in (7), a result that is inconsistent with the formulation of the Null Subject Parameter in (5).

DISCUSSION

We now face the task of interpreting these results. Taken at face value, the results indicate that the MUH cannot hold for all L2 grammars. This follows from the results of subjects who controlled English inflectional paradigms but still accepted a majority of the English sentences with null subjects.⁸ Such a conclusion is consistent with results from some other studies and is contradicted by yet others. Additional support for such a conclusion is available from two other studies. Lyons (1989), who conducted a similar experiment, reports no significant correlation between her subjects' knowledge of English verb agreement and the admissibility of null subjects in English as displayed on both a grammaticality judgment task and a cloze procedure. Platt

(1989) reports experimental results indicating that some Spanish L1 learners of English recognized the nonuniformity of English inflectional verb paradigms but still exhibited problems with null subjects of tensed clauses. Conversely, Hilles (1989) reports longitudinal data that she claims provides strong evidence for the MUH. However, Lakshmanan (1994), in considering some of the same data as Hilles as well as two additional subjects, reports that only one subject has a grammar even weakly consistent with the MUH and three subjects' grammars provide counterevidence to this principle. Thus, the results reported here add to the body of evidence relevant to assessing the application of the MUH to second language acquisition.

CONCLUSION

There is, of course, a range of conclusions we might draw in interpreting the results of the current study. Gass (1993) establishes an excellent framework within which to consider experimental results that contradict theoretical predictions. I consider the current study within this framework.

First, one can assume that the theory is correct. That is, we can assume in this case that Jaeggli and Safir's theory of the Null Subject Parameter (4) that incorporates the MUH (5) is correct. If we then also assume the results of the study provide a valid indication of the subjects' L2 English grammars, we must conclude that these subjects, and by inference all L2 learners, do not have access to UG in learning a second language. This position, of course, essentially contradicts the entire UG SLA program and, for proponents of that program, is definitely a conclusion to be avoided.

Second, one can claim that there are methodological problems that contaminate the results and render the data invalid. The present study could conceivably fall prey to two such concerns.

First, the data are derived solely from a grammaticality judgment task. One needs to use some caution in interpreting the results of grammaticality judgment or acceptability judgment tasks. When making delicate judgments, such a task can be difficult in one's first language. The task is yet more challenging in a second language. Such a task could lead a subject to adopt a translation strategy in evaluating test sentences. Alternatively, a subject may unwittingly formulate a hypothesis regarding a particular set of data in response to a metalinguistic task. In either case, the data derived may not accurately represent a particular subject's L2 grammar. There is, of course, a growing literature questioning the validity and reliability of grammaticality judgment tasks in SLA research (e.g., Davies & Kaplan, 1995; Ellis, 1990, 1991; Goss, Ying-Hua, & Lantolf, 1994; Lantolf, 1990). However, Liceras (1991), Gass (1994), and Munnich, Flynn, and Martohardjono (1994) argue for the use of grammaticality judgment tasks. Regardless of this controversy, a large subset of the research carried out within this theoretical paradigm has made liberal use of grammaticality judgment tasks in data collection. This is due in part to the relative ease of administering such tasks and the ability of the researcher to collect the precise data relevant for testing a particular hypothesis. It is also due in part to the reliance on grammatical intuition in studies in generative syntax and the compe-

tence/performance distinction. The important point here is that discounting the data collected on these grounds casts doubt on a significant portion of work done in the UG SLA paradigm.

Second, the subject sample is not representative. In the majority of disconfirming cases the subject's L1 is Japanese. One might try to attribute the inconsistent patterns to some L1 transfer effect or some aspect of English language training in Japan—for example, students are well drilled in irregular verb paradigms in English classes in Japan. L1 transfer effects might include transferring the sanctioning of null subjects. However, within the P&P model, L1 transfer is generally assumed to be manifested at the abstract parameter level, not at the level of surface phenomena (cf. Phinney, 1987; Schwartz, 1987; White, 1985, 1986, 1992b). Therefore, if the parameter setting is transferred and the MUH is correct, then the verbal paradigms should not be in place if null subjects are accepted. Further, UG applies to all grammars—if the data are reliable, the question of the subject pool may at times be less relevant in this research paradigm.

Finally, as discussed in the introduction, data inconsistent with the predictions of the theory could be interpreted as requiring adjustments to the theory; that is, SLA data can be viewed as relevant to theory construction. In this instance, some learners' grammars are not consistent with the MUH. The MUH must therefore be abandoned as part of UG. It is instead necessary to formulate a theory in which these data are not predicted to be impossible. This is the conclusion that I tentatively draw here. Although desirable, a stronger conclusion is unfortunately unwarranted on the basis of the results of this study.

The specific reformulation of the Null Subject Parameter that is required is beyond the scope of this paper. The appropriate move may be to recognize a basic difference between null subjects in inflection-rich languages and inflection-poor languages, as suggested by Lillo-Martin (1991) and Wang, Lillo-Martin, Best, and Levitt (1992). It is clear that identification mechanisms are different in the two types of NSLs and that other grammatical properties distinguish the two types of NSLs. If, on the basis of further and distinct work, a revision of the Null Subject Parameter emerges that separates the two types of NSLs and thus does not incorporate the MUH, the results of the present study can constitute evidence for such a revision.

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NOTES

1. For an updated operationalization of this view see Pollock's (1989) "exploded INFL" analysis of main verbs and auxiliaries in English and French.

2. Huang (1989) proposes a Generalized Control Rule intended to account for the distribution and interpretation of both null subjects and null objects. Borer (1989) also seeks to account for null subjects in terms of a general theory of control. Consideration of these proposals falls outside the scope of the present work.

3. It is widely conceded that German is not a null subject language. However, Perlmutter and Zaenen (1984) report that at least one dialect allows a null pleonastic pronoun in certain environments in the indefinite extraposition construction.

4. This issue is addressed in a series of papers including those by Bley-Vroman, Felix, and Ioup (1988), Clahsen and Muysken (1986, 1989), duPlessis, Solin, Travis, and White (1987), and Tomaselli and Schwartz (1990).

5. Gass and Ard (1980), Eckman (1984), and others have argued on empirical grounds that a mechanism of universal grammar, even if it is not Chomskyan UG, underlies L2 grammar, and Comrie (1984) has argued this from a purely theoretical perspective.

6. There were also 16 "don't know" responses (1.7% out of a possible 900 responses), which also affects the Y figure in Tables 4–10.

7. Some recent studies (e.g., Lakshmanan, 1994) use 80% as the criterion for acquisition of this type of grammatical structure, which is reminiscent of the criterion used by some in the morpheme studies of the 1970s. The difference between 75% and 80% does not seem significant here.

8. One might also include the subjects who scored 50% or better on the verb agreement sentences but still accepted a majority of the English sentences with null subjects (Table 8). However, it might be argued that 50% is too close to chance to provide reliable disconfirming evidence.

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APPENDIX

ESL Study

Name _____ Native Language _____

Other Languages _____

Directions: If you think the sentence following the > sign is correct, please circle Correct. If you think the sentence is incorrect, please circle Incorrect and change it so that it is a correct sentence. If you have no idea, circle Don’t Know.

A. I am going to see a movie tonight.

> John really enjoyed it.

Correct Incorrect Don’t Know

B. Jane and Mary have finished their class presentations.

> They are very proud of himself.

Correct Incorrect Don’t Know

1. The doctor is not in the office.

> Is at the hospital today.

Correct Incorrect Don’t Know

2. I’m very tired today.

> I was up very late last night.

Correct Incorrect Don’t Know

3. Mark is a very good athlete.

> Every day after class, he go jogging.

Correct Incorrect Don’t Know

4. John does not want to watch that movie with us.

> He saw when he was in Chicago.

Correct Incorrect Don’t Know

5. Mary didn’t understand the problem.

> The teacher gave her some help.

Correct Incorrect Don’t Know

6. I found out when the airplane gets in.

> Arrives at 3 o’clock.

Correct Incorrect Don’t Know

7. The teacher asked if someone knew the answer.

> Mary said that did.

Correct Incorrect Don’t Know

8. The secretary is not in the office right now.

> She will be back at 1 o’clock.

Correct Incorrect Don’t Know

9. I think that is a very good book.

> I read on the airplane.

Correct Incorrect Don’t Know

10. Do you know how to get to Coralville?

> Yes, can get there on a blue bus.

Correct Incorrect Don’t Know

- | | |
|---|------------------------------------|
| 11. That new restaurant is really nice.
> Are you going to eat there? | Correct Incorrect Don't Know |
| 12. The book was recommended by my friend.
> It describe life in Iowa. | Correct Incorrect Don't Know |
| 13. John does not want a sandwich.
> He ate already. | Correct Incorrect Don't Know |
| 14. I'm going out for a while.
> I will be back at 1 o'clock. | Correct Incorrect Don't Know |
| 15. We didn't go to the beach yesterday.
> Rained all day long. | Correct Incorrect Don't Know |
| 16. John won't be in his office tomorrow.
> He have to go to Cedar Rapids. | Correct Incorrect Don't Know |
| 17. Professor Jones is busy right now.
> Do you want to wait in the office? | Correct Incorrect Don't Know |
| 18. Mark finally got that paper done.
> He finished last night. | Correct Incorrect Don't Know |
| 19. Mary told me about a new restaurant.
> She said that it is very good. | Correct Incorrect Don't Know |
| 20. Mary was not in class today.
> Seems that she was sick. | Correct Incorrect Don't Know |
| 21. I'm leaving now.
> I hopes you have a nice weekend. | Correct Incorrect Don't Know |
| 22. I think John is very smart.
> He usually know the right answer. | Correct Incorrect Don't Know |
| 23. Mary does not want any coffee.
> She drank at home this morning. | Correct Incorrect Don't Know |
| 24. Only five people were in class yesterday.
> The teacher seemed very unhappy. | Correct Incorrect Don't Know |
| 25. The farmers are happy now.
> Rained three times last week. | Correct Incorrect Don't Know |
| 26. Mary went to see the doctor yesterday.
> Gave her some medicine. | Correct Incorrect Don't Know |
| 27. Dan will not be home for dinner.
> He is studying to the library. | Correct Incorrect Don't Know |
| 28. Jane told me to meet her at the mall.
> However, she didn't show up. | Correct Incorrect Don't Know |

- | | |
|--|------------------------------------|
| 29. Let's ask John and Mary to come with us.
> They hasn't been to the art museum. | Correct Incorrect Don't Know |
| 30. John will not be in class today.
> He said that had a doctor's appointment. | Correct Incorrect Don't Know |
| 31. I did not do well on my last test.
> Do you think I need to study more? | Correct Incorrect Don't Know |
| 32. I want to go to Chicago this weekend.
> But I hasn't found a ride yet. | Correct Incorrect Don't Know |
| 33. Have your friends taken the TOEFL yet?
> No, haven't even started studying. | Correct Incorrect Don't Know |
| 34. Mary has been working very hard lately.
> Her boss should give to her a vacation. | Correct Incorrect Don't Know |
| 35. The students usually come to class on time.
> Happens that they are late today. | Correct Incorrect Don't Know |
| 36. The farmers are worried about their corn.
> It haven't rained for almost one month. | Correct Incorrect Don't Know |
| 37. Have you finished your paper?
> No, some books I need are missing. | Correct Incorrect Don't Know |
| 38. What time does the game begin?
> John said begins at 7 o'clock. | Correct Incorrect Don't Know |