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Marianne Phinney

University of Puerto Rico at Mayaguez

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SUBJECTLESS SENTENCES IN THE ACQUISITION
OF SPANISH AND ENGLISH¹

MARIANNE PHINNEY

UNIVERSITY OF PUERTO RICO AT MAYAGUEZ

1.0 INTRODUCTION

Until recently, linguistic theory has considered English to be the primary language of analysis. This bias toward English is even more apparent in language acquisition, where studies of other languages are the exception rather than the rule. However, the need for cross-linguistic comparison has always been clear, and has achieved new prominence in more recent work (Chomsky 1981a, Kayne 1981 for example). This newer work suggests that English is in fact highly marked in certain respects, and that researchers in acquisition must look to other languages as well for evidence to support linguistic hypotheses.

One of the crucial revisions in the linguistic point of view has been with regard to pronominal subjects. When Perlmutter (1971) discussed the fact that Spanish, among other languages, does not require overt subjects, it was implied that this was an anomaly. The current view holds that languages like Spanish, far from being anomalous, constitute the unmarked case (Suñer 1982). Such languages have been called "pro-drop" languages or null-subject languages, and it has been argued that this

difference between Spanish and English can be attributed to a single parameter (Chomsky 1981b, Hymes 1983, Suñer 1982).

It seems to be unquestioned that the unmarked variant of the parameter is that which results in "pro-drop" languages like Spanish and Italian. Both Chomsky (1981) and Suñer (1982) have addressed this problem, Suñer with particular reference to Spanish. While their analyses differ in some respects, they both agree on the unmarked quality of PRO as a subject for languages like Spanish.

In this paper, I will be addressing the role of the null subject parameter in the acquisition process. First, I will briefly discuss both analyses from the point of view of acquisition. Second, I will discuss the kind of evidence that might be brought to bear on this question and review some of the published literature in this light. Finally, I will present the preliminary results from two projects being conducted in Puerto Rico, one a collection of spontaneous speech samples from Spanish speaking children and the other an experimental study conducted in English and Spanish.

2.0 THE NULL SUBJECT PARAMETER

2.1 Theoretical Approaches

Chomsky (1981b) states that the parameter consists of an option for a rule R which assigns INFL to VP; the rule may apply in the syntax, but the unmarked case is to apply in the PF component. If R applies in the syntax, then the subject position is un \bar{g} overned at S-structure, and will be PRO. Chomsky assumes that the preference for PRO in the subject position is strong, in accordance with the Avoid Pronoun strategy. He also assumes, following Taraldsen (1978), that the use of PRO is correlated with the richness of the inflectional system in some as yet unspecified way. Thus Spanish, which has an extensive and phonologically distinct inflectional system, tends to avoid pronominal subjects whenever possible.² English, with almost no inflections, requires pronominal subjects with tensed verbs.

The analysis of subjectless sentences in languages like Spanish and Italian has been under considerable discussion in the literature. Suñer (1982) agrees that the subject in sentences like (1) should be PRO.

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1. PRO habla ingles. "He (she) speaks English."

However, her analysis differs from Chomsky's with respect to sentences like (2), in which the subject appears postposed to the verb.

2. Corrió el gato. "The cat ran."

Chomsky argues that both (1) and (2) are instances of PRO subjects. He bases his argument on the claim that the antecedent (el gato in (2)) does not c-command the subject position, and therefore a trace in that position would not be properly bound. Suñer, on the other hand, argues that (1) and (2) are different constructions. She proposes that the subject position in (2) is filled by $[e]_{NP}$, and that it is bound not by the antecedent but by INFL. She argues that INFL (and by extension, AGREEMENT) has indexing properties in Spanish, and can properly bind the subject position. Therefore, the structure of (2) is as follows:

3. $[_{NP_{i,j}}^e]$ corrió_j el gato_i.

Hymes (1983) argues that the parameter hinges on whether AG can be $[\pm \text{pronominal}]$, following Rizzi (1982). If AG = PRO, then the subject position can be governed, and thus be "empty", containing a pronominal which is not realized phonetically (pro). The postposed subject case, following Chomsky (1981a), is analysed as the result of the application of rule R in the syntax. The postposed subject is governed and assigned nominative case by AG, in the V, and the subject position is filled by a phonologically null element coindexed with the post-posed subject; however, the coindexing cannot be the result of Move α , or again it will not be properly bound. So the coindexing must stem from some other process, not specified by Hymes.

While Hymes' analysis does not differ radically from Chomsky's, Suñer states the parameter as $[\pm \text{obligatory subject}]$ and argues that a corollary of it is that PRO can be governed in Spanish. This, of course, contradicts Chomsky's (1981) claim that PRO can never be governed. Thus Suñer's analysis differs from those of Chomsky and Hymes on one point in particular, the postposed subject sentences.

2.2 The Acquisition Problem

Despite the differences in the analysis of sentences like (2), these claims about the government of PRO could lead to an interesting avenue for the study of language acquisition.

There is no other way to interpret (2) because the verb correr is intransitive; thus el gato must be a postposed subject. However, the two analyses could lead to different possible acquisition strategies when the verb is transitive, as in (4).

4. Toca el gato. "(He/She) touches the cat."

El gato may be considered to be the object, in which case the structure of the sentence will be as in (5).³ It may also be a postposed subject, in which case Chomsky's analysis will give the structure in (6a) and Suñer's analysis the structure in (6b).

5. PRO_j toca_j el gato

6. a. PRO_j toca_j el gato_i
 b. [_{NP_{ij}} e] toca_j el gato_i

One very general hypothesis about the acquisition process that these analyses lead to concerns sentences which are possibly ambiguous, such as (5), and sentences like (7), where the noun phrase cannot possibly be interpreted as a post-posed subject because it does not agree with the verb.

7. Morden el gato. "(They) bite the cat."

If in fact PRO subjects are essentially the same in normal "empty subject" sentences and those with postposed subjects, one might expect a stage in which the sentences are treated similarly by children, i.e., both interpreted with empty subjects that are not anaphoric. If the subject positions are to be analysed differently, as Suñer claims, then we might expect to see different response patterns for the two sentence types.

However, the question of the acquisition of these constructions in Spanish alone is not as interesting as the role of the setting of the parameter itself, which is best examined cross-linguistically. The kind of evidence that would be needed to substantiate claims about marked and unmarked parameters is unfortunately extremely difficult to obtain. It is entirely possible that parameter setting takes place very early in the

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acquisition process, in which case it may not be accessible by experimental evidence, due to the age of the child. In other words, by the time the child is old enough to deal with an experimental situation, it is too late. If this is the case, spontaneous speech samples may be the only way to obtain such evidence. Unfortunately, the published data on such samples have not been analysed in such a way that this kind of evidence is easily obtainable.

The assumptions which have been made are the following: PRO is the unmarked case for subject, "if the inflectional system is rich enough." Does this mean that the child must learn the inflectional system of the language before the parameter is set? Or must she only recognize what type of system it is? The use of postposed subjects requires some special mechanism in Chomsky's analysis at this stage, whereas Suñer is proposing a more general principle. This implies that such a construction is somewhat marked and therefore postposed subjects should follow the use of non-anaphoric PRO in the acquisition sequence. Finally, in these constructions, English is a marked language and Spanish is the unmarked case. Therefore we might expect very young English speaking children to behave like Spanish speaking children and show a change in their utterances or responses as they mature and reset the parameter to its marked case.

It is this third prediction that is most interesting, and the most difficult to find evidence for. By the time a child is able to handle an experimental task, she has probably already reset the parameter; the problems and gaps inherent in transcript studies are well known. However, to consider this question, one must look at available speech samples for evidence of the use of subjects and verb morphology. That is, in trying to answer the first two questions, we may shed light on the third. The evidence from Spanish, while sparse, indicates that pronominal subjects are not used in the initial stages (Gonzalez 1978) and that most of the verb morphology is in place by age three (Gonzalez 1978, Cazden and Belendez 1980). There is some suggestion that for children, the third person singular ending may be the unmarked case; it comes in first and tends to be the tense used in error (Cazden and Belendez 1980, Kernan and Blount 1966).

The published evidence from English is not as clear. Brown (1973) discusses several published transcript studies; however, in many cases the crucial data are not discussed. In his analysis of Adam, Eve, and Sarah, he notes that pronoun usage will not be discussed for Stage

I, beyond noting that the children used both subject and object pronouns. The conditions governing that usage are not available.

The data on sentence constructions and verb morphology is more detailed. McNeill (1966) indicates that V N constructions were three times more common in his corpus than N V constructions, and Brown (1973) notes that the Agent (subject position) is the most frequently omitted constituent in Stage I. The data on the acquisition of verb morphology indicates that the third person singular and the past tense are acquired somewhat later for English children than for Spanish children; various studies provide ages from 3,0 to 3,8. deVilliers and deVilliers (1973) study of grammatical morphemes ranked those two morphemes as being acquired fairly late in the sequence.

Hymes (1983) discusses the available evidence from English and Italian in some detail with respect to the AG/PRO parameter she proposes. It is clear that at the early stages in the acquisition of English, something very like the "pro-drop" parameter is operating, and she cites some evidence for a shift from subjectless sentences to the use of subjects somewhere between ages 2 and 3, before the onset of the verbal morphology. It would seem that in fact Spanish children acquire their far more systematic inflectional system earlier than do English children, and that subject pronouns are rare in early speech.⁴ English children, on the other hand, seem to acquire their somewhat irregular, or marked, inflectional system at a later age, and also have some preference for subjectless sentences in the early stages. These facts tend to support the hypothesis that the unmarked case is for PRO subjects, and that resetting the parameter takes some time.

3.0 ANALYSIS OF SPANISH SPEECH SAMPLE

During the past six months, spontaneous speech samples have been collected from three Spanish-speaking children in the Mayaguez area, one two years, one three, and one four. Preliminary analysis indicates that for the youngest child, 90% of the inflected verbs are without overt subjects. Approximately 50% of the verbs were inflected in the third person (singular); the rest were almost evenly divided between first and second person, with first predominating slightly. However, some subjects are used at all ages which do not seem to fall under the categories of emphasis or disambiguation, suggesting that there may be other discourse conditions

on the use of pronominal subjects.

The youngest child, Jenny, was age 2,4 when she began to be observed. During the first month (3 sessions), she produced examples of present and simple past tenses, as well as imperatives. The use of postposed subjects was rare; only one possible example was found, and the context of the discussion is unclear, making the interpretation of the sentence difficult. Examples of Jenny's utterances are given in (8).

- | | | |
|----|--------------------|------------------------------|
| 8. | Yo...voy aqui. | "I'm coming here." |
| | Se cabó [Se acabó] | "It's finished, All gone." |
| | Me dame. | "Gimme." |
| | Tu rompiste. | "You broke [it]." |
| | No noela [novela] | "No soap-opera." |
| | Cubra esa. | "Cover that." |
| | Me busca bebe. (?) | "The baby's looking for me." |

The older child, Janice, was 3,7 when the project began. A highly verbal child, Janice showed evidence of having acquired the full morphological agreement system for present, past, future, and present progressive, both formal (Usted) and informal (Tu) imperatives, and irregular verbs. While pronominal subjects were not used for the most part, she did use subjects in some utterances. Like Jenny, Janice produced very few postposed subjects (examples are given in (9)).

- | | | |
|----|--------------------------------------------|-----------------------|
| 9. | Usted come esta manzanita. | |
| | "You (fml) eat this apple." | |
| | Mira, no tiene nada ni pulgas. | |
| | "Look, you don't have anything but fleas." | |
| | Mami, yo quería ponerlo pero | |
| | yo quería escuchar un momentito. | |
| | "Mami, I want to put it on but I want | |
| | to listen a minute." | |
| | Ten cuidao [cuidado] | "Be careful." |
| | Ya empezo la comida. | "Now I begin dinner." |

In other words, the spontaneous speech of children learning Spanish as a first language supports the claim of PRO being unmarked in the subject position. The available evidence also suggests that at the earliest stages, spontaneous speech samples of children learning English reflect this unmarked case. The change to the more marked setting of English may coincide with the acquisition of verbal inflections, which would be somewhere between 2,6 and 3,6.

While three year olds will submit to testing, two year olds are not so reliable. Therefore, in order to collect experimental data on some of these constructions, it was decided to test three and four year olds.

4.0 EXPERIMENTAL DATA

4.1 Procedure

In order to gain experimental comprehension data on subjectless sentences, an experimental study, modeled after Bates and MacWhinney (1980) was designed. Bates and MacWhinney used combinations of NVN structures with mismatched agreement, and asked second language learners of English to interpret them. The results indicated that second language learners tended to follow comprehension strategies based on their native language. Italian speakers paid more attention to the agreement than the word order, while English native speakers observed the word order primarily and ignored agreement.

SENT. TYPES

1.	NVN +AGR	La vaca besa los perros. The cow kisses the dogs.
2.	NVN -AGR	*Los perros besa la vaca. *The dogs kisses the cow.
3.	Vi N +AGR	Duerme el mono. Sleeps the monkey.
4.	Vi N -AGR	*Brincan el mono. *Jump the monkey.
5.	Vt N +AGR	Toca el caballo. (*Touch the horse.
6.	Vt N -AGR	Golpea los cerdos. (*Hits the pigs.
7.	Vt aN +AGR	Golpean a los caballos. (They hit the horses.)

Table 1. Sample sentence types, English and Spanish

The sentences used in the present study are shown in Table 1. The sentences are of two types, NVN and VN. In the NVN sentences, the verb can agree in number with either N1 or N2. In the VN sentences, the verb may or

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may not agree with the noun; the verb may also be transitive or intransitive. Two of the sentences are ungrammatical in Spanish; three are ungrammatical in English and two others are potentially ungrammatical, depending on whether the imperative interpretation is available (i.e., if the verb is "plural", without the -s form).

The subjects were 20 Spanish-speaking children and 20 English-speaking children ages 3-4, from three day care centers in Mayaguez and Aguadilla, Puerto Rico. Each child was tested individually. The subjects were shown a group of toy animals and asked to name them. The test sentences were read by a native speaker, and the child was asked to act out the sentence using the animal. If the child asked which animal to use (in VN sentences particularly), s/he was told to use whichever animal s/he wished. The responses were scored according to the animal the child used as the agent of the verb.

Four tokens of each sentence type were used, for a total of twenty-eight test sentences in Spanish and twenty-four in English (Type 7 was not used in English). The sentences were randomized and a different presentation order used with each child.

Sentence types 1 and 2 were designed following Bates and MacWhinney (1980) to test sensitivity to different strategies of interpretation. If Spanish children are more sensitive to agreement phenomena than to word order, then Type 2 sentences should elicit interpretations in which the second noun is the subject. If word order is a stronger consideration, as it should be in English, then there would be no difference between 1 and 2.

Sentence types 3 and 4 are cases in which the noun must be treated as a postposed subject because the verb is intransitive. However, in 4, the verb and noun do not agree. Again, sensitivity to agreement should elicit a difference in response, even if only hesitation or confusion.

Sentence types 5 and 6 also can be interpreted as postposed subjects. However, type 5 is ambiguous between the empty subject reading and the postposed subject, while 6 can only be interpreted as an empty subject. English children should show no difference in response. If postposed subjects and empty "pro" sentences are similar in structure, both 5 and 6 should elicit empty subject responses (X as subject). If, as Suñer (1982) claims, they are different constructions, then 5 and 6 should show different responses, particularly if the post-posed subject is somewhat marked.

Sentence type 7 is a check against sensitivity to the personal a construction. Although the verb agrees with the following noun, the a marks the noun as an object. The only possible interpretation is the empty subject reading. If the children are sensitive to the personal a, and allow its use for animals, one would expect a difference between types 5 and 7, with 7 showing more empty subject interpretations.

English children would be expected to rely more on word order than on agreement. Since the only allowable empty subject is you, as imperative, that interpretation (child as subject) may be more common. Younger children may in fact allow empty subject readings, but this response should disappear with the older children.

It should be noted that since some of the sentences are ungrammatical, there may be some problems in terms of strange interpretations. The context of the sentences is not that of normal discourse, and since the use or non-use of subject pronouns in Spanish is at least partially conditioned by discourse factors, even Spanish children might show some confusion.

4.2 Results

The overall results for all sentence types, by age and language, are shown in Table 2. The table shows the percentage of responses which used the first noun (N1) as the subject of the verb.

		Sentence Type						
		I	II	III	IV	V	VI	VII
Span.	3	96	91	88	91	65	61	41
	4	97	89	98	95	80	63	65
Engl.	3	90	90	99	95	29	7	-
	4	95	98	93	88	25	26	-

Table 2. % of N1 as Subject Responses

A multivariate analysis of variance using age, language and sentence type as independent variables indicated that there was a significant interaction between language and sentence types 5 and 6, $F(6,31) =$

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27.42, $p < .001$ for type 5 and $F(6,31) = 62.50$, $p < .001$ for type 6. Language was also a significant factor by itself, $F(6,31) = 12.23$, $p < .001$. Age was not significant, $F(6,31) = .82$, $p > .05$, although the interaction of sentence type 6 and age approached significance, $F(6,31) = 3.54$, $p = .068$.

For sentence types 1 and 2, there is a slight but insignificant decrease in the N1 responses in Spanish, primarily for the older children. However, they seem to be patterning with the English children in observing word order over agreement. There is also no difference between sentence types 3 and 4, the intransitive V N cases, for either the English or the Spanish cases, although a few of the older children did question type 4 sentences.

In sentence types 5 and 6, the transitive V N cases, there are both age differences and language differences. For the Spanish children, there is a significant difference between the three and four year olds on type 5 sentences ($t(18) = 4.84$, $p < .001$). The Spanish children clearly allow far more cases of postposed subjects than do the English children, indicating that English children will indeed follow word order. Although the three year old Spanish children do not make a clear distinction between types 5 and 6, the four year olds do, allowing more post-posed subject interpretations with 5 than with 6 ($t(18) = 4.79$, $p < .001$). English children show a decided avoidance for the postposed subject reading.

The case of sentence type 7, the personal a sentences, presents a curiosity. It appears as though the three year olds show some sensitivity to the a; the number of N1 responses is less than for type 5 or 6. However, the four year olds do not show a difference. Five of the ten three year olds were very consistent in treating a N as an object; the other five were less consistent or treated it as a postposed subject. It may be that use of the a varies with different dialects, and so the responses are not consistent across the group.

The breakdown of response types to sentence types 5 and 6 are shown in Tables 3 and 4 respectively. N1 means that the overt noun was used as the subject. X indicates that the child took another animal as the subject (the empty pronominal reading). Child indicates that the child performed the action, treating the sentence as an imperative.

	Subject of Verb			
	N1	X	Child	
Spanish	58	20	0	78
English	21	40	19	80
	79	60	19	158

Table 3. Responses to Sentence Type 5

As is clear from the table, Spanish children did not use the imperative reading at all for type 5 sentences. The primary interpretation was that of postposed subject, with some empty subject readings. However, the English children preferred either the empty subject reading or the imperative interpretation, which was grammatical for half of the sentences. A chi-square test showed the distribution to be significant at the .05 level ($\chi^2 = 6.85$, $df = 2$).

	Subject of Verb			
	N1	X	Child	
Spanish	50	18	7	75
English	13	51	16	80
	63	69	23	155

Table 4. Responses to Sentence Type 6

The Spanish children still do not use the imperative interpretation to any great degree for sentence type 6, although there are fewer N1 interpretations, primarily for the older children (see Table 2). The English children show fewer N1 interpretations, but the difference from sentence type 5 is not significant. A chi-square showed this distribution to be significant at the .001 level ($\chi^2 = 9.61$, $df = 2$).

4.3 Discussion

While the English children show strong evidence of an interpretation strategy based on word order rather than agreement, as expected, and also show a high percentage of empty subjects, the Spanish children seem

to show some contradictions. It is interesting to note that the empty subject response (X) was not a strong response in sentence types 5 and 6, where it might be expected. Indeed, the postposed subject interpretation was the most prominent, even when the agreement facts prohibited it for the adult grammar. Although there seems to be sensitivity to agreement at least some of the time, as with the four year olds in types 5 and 6, it is clear that they are ignoring the agreement facts in other cases (1 and 2). The high percentage of postposed subjects also contrasts with the lack of such sentences in the spontaneous speech samples.

It should be noted that the agreement in these sentences consisted solely of number agreement, not gender agreement. Komisarjevsky Tyler (1983) has suggested that gender agreement is acquired before number agreement for pronouns, and the same may be true for verbs. In her study, children were not able to make use of number information until age 5 or six, far older than the children tested here. If that is the case, then it is not surprising that agreement seems to be used only part of the time.

One possible explanation for the overwhelming bias in postposed subject interpretations may lie in the discourse rules for Spanish. While the referent for first and second person (informal) are readily recoverable from the verbal inflection, the referent for a third person verb is not unless there is a disambiguating context. The subject may be he, she, or you formal (usted). Native speaker intuitions suggest that empty subjects are only possible in the third person if the referent is clearly identifiable via the discourse or pragmatic context. The sentences used in this study were in isolation; therefore a third person arbitrary referent for the verb is difficult to determine. This might lead to treating the post verbal noun as subject regardless of the agreement. One anecdotal support for the suggestion is the fact that several children used the animal in the previous sentence for "X", forcing a discourse reading on the sentences. The next step is obvious: to investigate these types of sentences within various contexts to determine more exactly what the conditions on variation between PRO and postposed subjects are.

5.0 CONCLUSION

The data presented here, although they are preliminary, are suggestive. The spontaneous speech samples we have collected and those analysed by Hymes (1983) provide strong evidence for the unmarked setting of the "pro-drop" parameter being that empty subjects are allowed. The data do not provide strong evidence on the status of the postposed subject cases. The speech samples seem to indicate that children use postposed subjects rarely, if at all, at least at the ages of two to three. The experimental data seem contradictory in that the Spanish children seem to favor postposed subject interpretations. It was suggested that this may be due to the unusual nature of the sentences, which did not have a context, and the general requirement that empty subjects in Spanish are interpreted according to rules of discourse.

While the data do not decisive evidence on the analyses of empty subjects and postposed subjects, they do suggest that for children, the two constructions are not identical. If they were, we might expect more examples of postposed subjects in spontaneous speech, and a more even distribution of interpretations in the experimental data. Further study is needed to determine the pragmatic and discourse conditions underlying the use of these constructions in Spanish, and the interactions of these conditions with grammatical considerations such as agreement and the parameter governing empty subjects.

FOOTNOTES

1. I would like to acknowledge the invaluable assistance of Martha Elugardo, Lilliam Nunez, Kiera Segler, and Nancy Torres, who helped with the data collection and transcription. I would also like to thank Mi Escuelita Pre-School in Mayaguez, Susan's Day Care in Aguadilla, and the Child Care Center at the Coast Guard Base, Punta Borinquen, for their cooperation, and Francisco Betancourt for judgements and comments. All errors and omissions are the responsibility of the author.
2. It should be noted that although prescriptive Spanish grammars state that subject pronouns should be used only for emphasis or in case of ambiguity, there have been no studies investigating the actual discourse conditions of subject use. Francisco Betancourt suggested that pronominal subject usage seems to be higher in discourse than the grammatical prescriptions would suggest.
3. It should be noted that the personal *a*, which is used with object nouns who are persons in Spanish, would not be used with animals by adult speakers, according to my informants. However, it is not clear how sensitive children are to the personal *a* construction and how much it is generalizable to "personable" nouns such as animals. Perhaps relevant to this question is a bumper sticker seen in Aguadilla which said *Yo amo a mi Aries K*, "I love my Aries K," where a car is clearly seen as something "personable."
4. Hymes (1983) reports similar developmental patterns for Italian children.
5. Both age groups are included in this table. See Table 2 for an age breakdown.

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