

North East Linguistics Society

Volume 29 *Proceedings of the North East Linguistic Society 29 -- Volume One: Papers from the Main Sessions*

Article 6

1999

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Recommended Citation

Duffield, Nigel and Matsuo, Ayumi (1999) "On the Acquisition of Ellipsis and Anaphora by First and Second Language Learners," *North East Linguistics Society*. Vol. 29 , Article 6.

Available at: <https://scholarworks.umass.edu/nels/vol29/iss1/6>

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On the Acquisition of Ellipsis and Anaphora by First and Second Language Learners

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In this study, we investigate L1 and L2 learners' knowledge of the contrast between two types of English anaphora: VP-Ellipsis vs. VP-Anaphora. Two methodologies are used in conjunction with a common set of stimuli: a Grammaticality Judgment task to assess young children's knowledge, and a Sentence Completion task for L2 learners and adult native-speaker controls. Both methodologies measure subjects' sensitivity to this contrast in three different structural conditions.

1. Theoretical Background

Various researchers—including Wasow (1972), Hankamer & Sag (1976), Sag & Hankamer (1984), Fiengo & May (1994)—argue that VP-ellipsis (VPE), or 'surface anaphora', is a fundamentally different operation from that of VP-anaphora (VPA) ('deep anaphora'). In particular, surface anaphors, but not deep anaphors, are claimed to be sensitive to a parallelism constraint, by which the ellipsis and its antecedent must share the same syntactic structure. Sag & Hankamer (1984) explain this difference in terms of levels of representation, claiming that surface anaphors are essentially syntactic in nature, whereas deep anaphors recover their antecedents from conceptual, rather than syntactic, representations.

The parallelism constraint on surface anaphors (VPE) is illustrated in at least two structural contrasts: in active vs. passive and verbal vs. nominal contexts, respectively. The sentences in (2) illustrate the VPE vs. VPA asymmetry in passive contexts; those in (4) show the same parallelism effect with nominal antecedents. The examples in (1) and (3) provide the corresponding (active/verbal) control contexts.

- (1) Active antecedent: Someone had to take out the garbage...
- a. ...but I didn't want to. (VPE)
 - b. ...but I didn't want to do it. (VPA)
- (2) Passive antecedent: The garbage had to be taken out...
- a. *...but I didn't want to. (VPE)
 - b. ...but I didn't want to do it. (VPA)

- (3) Verbal antecedent: John wanted someone to kiss him...
 a. ...but Mary didn't want to. (VPE)
 b. ...but Mary didn't want to do it. (VPA)
- (4) Nominal antecedent: John wanted a kiss...
 a. *...but Mary didn't want to. (VPE)
 b. ...but Mary didn't want to do it. (VPA)

In (3), there is a VP, kiss him, in the antecedent clause that can serve as a legitimate antecedent for VPE. Both VPE and VPA are possible. In (4), on the other hand, the antecedent clause involves a noun: a kiss. The VP-ellipsis in (4a) does not have a corresponding VP-antecedent so it is degraded. Since VPA only needs a pragmatically appropriate antecedent, (4b) is grammatical.

A further difference between VPA and VPE can be seen in the contrast between Antecedent Contained Deletion (ACD) sentences vs. simple conjoined clauses, illustrated below. Fiengo & May (1994) claim, following Wasow (1972), that in the case of VP-anaphora “do it lexically exhausts the VP, as opposed to ellipsis, in which there is lexically null structure. (247; 1994).” Since do it exhausts the VP, VPA is not permitted in contexts requiring variable or trace binding into the VP, such as in (5b), which involves a relative operator and (6b) involving a wh-trace. In these contexts, VPE is permitted, as shown by the (a) examples.

- (5) a. Max talked to everyone that Bill did \emptyset . (VPE)
 b. *Max talked to everyone that Bill did it. (VPA)
- (6) a. I know which book Mary read, and which book Bill didn't \emptyset . (VPE)
 b. *I know which book Mary read, and which book Bill didn't do it. (VPA)

In the experiments reported here, we tested whether L1 and L2 learners were sensitive to these three contrasts between VPE and VPA. Before presenting these experiments, it is necessary to discuss certain crosslinguistic differences between English, Japanese and Spanish.

2. Language Differences

It is generally assumed that Japanese and Spanish do not permit VP-ellipsis.¹ This assumption is controversial, however, at least for Japanese. Otani & Whitman (1991), for example, claim that Japanese does have VP-ellipsis, while Hoji (1998) argues that the constructions in question are better analyzed as Null Object constructions (NOCs). Whichever analysis is correct, the Japanese construction corresponding to English VPE differs from its English counterpart in at least one respect, namely, that Japanese ‘ellipsis’ is compatible with either active or passive antecedents. This is illustrated in (7) and (8); compare (1) and (2) above:

- (7) dareka-ga gomi-o dasa-nakereba-naranakatta. (active antecedent)
 someone-nom garbage-acc take-out have-to-past
 ‘Someone had to take out the garbage...’
 a. demo watasi-wa dasi-taku-nakatta. (= VPE)
 but I-top take-out want not pst
 b. demo watasi-wa soo si-taku-nakatta. (VPA)
 but I-top so do-want-not pst

¹ For Lasnik (in press), VP-Ellipsis is directly tied to the absence of overt V-to-I raising; if this is the case, then Japanese and Spanish should not permit VPE.

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- (8) gomi-wa dasare-nakereba-naranakatta.... (passive antecedent)
 garbage-top take-out-pass have-to-past
 'The garbage had to be taken out...'
 a. ...demo watasi-wa dasi-taku-nakatta. (= VPE)
 but I-top take-out want not pst
 b. ??...demo watasi-wa soo si-taku-nakatta. (VPA)
 but I-top so do-want-not pst

Japanese also differs from English with respect to VP-anaphora: as the contrast between (7b) and (7b) shows, Japanese VPA is restricted to active contexts only. Japanese VPA is also excluded in nominal contexts.

As for Spanish, the standard assumption is that there is no VP-Ellipsis. However, the closest corresponding construction found in Spanish—Null Complement Anaphora (NCA)—is subject to the same parallelism constraints as English VPE. Spanish does have VPA, but the construction is excluded in nominal contexts (though, unlike Japanese, Spanish VPA is compatible with passive antecedents.) Spanish NCA and VPA are illustrated in (9)-(11):

- (9) Alguién tiene que sacar la basura... (active antecedent)
 someone have that take-out the garbage
 'Someone has to take out the garbage.'
 a. ...pero yo no quiero. (NCA)
 but I neg want
 b. ...pero yo no quiero hacerlo. (VPA)
 but I neg want do-it
- (10) La basura tiene que sacarse... (medio-passive antecedent)
 The garbage have that take-out
 'The garbage has to be taken out.'
 a. *...pero yo no quiero. (NCA)
 but I neg want
 b. ...pero yo no quiero hacerlo. (VPA)
 but I neg want do-it
- (11) Juan quería un beso... (nominal antecedent)
 John wanted a kiss
 'John wanted a kiss...'
 a. *...pero Maria no quería. (NCA)
 but Mary not want-to
 b. *...pero Maria no quería hacerlo. (VPA)
 but Mary not want to do it

The chart below summarizes the relevant crosslinguistic differences. (At this point, we remain agnostic as to whether or not Japanese has VP-ellipsis: the tick marks here indicate acceptability of the corresponding Japanese construction in these contexts.)

Language	VP-Ellipsis			
	Active	Passive	Verbal	Nominal
English	√	*	√	*
Japanese	√	√	√	*
Spanish	√(NCA)	*(NCA)	√(NCA)	*(NCA)
	VP-Anaphora			
English	√	√	√	√
Japanese	√	??	√	??
Spanish	√	√	√	*

The experiments reported here test subjects' knowledge of the constraints on VPE and VPA in adult English. The main goal of the L1 experiment was to determine whether young children are sensitive to the same structural constraints as adults, and to explain any systematic discrepancies in performance between the two groups, if such discrepancies were found. This also applied in the case of second language learners. In addition, however, we were interested in whether L2 learners' behavior would contrast with that of native-speakers as a function of properties of their respective L1s and/or their proficiency level. As has just been discussed, neither Spanish nor Japanese exhibit exactly the same constraints with respect to anaphoric expressions as are found in English. Therefore, if these L2 learners show the same sensitivity to the English VPE vs. VPA contrast as English native-speakers, this sensitivity must have been acquired, rather than transferred. If, on the other hand, L2 learners' performance varies as a function of the properties of the respective first languages, this would be suggestive of an analysis in terms of full L1 transfer; see, for example, Schwartz & Sprouse (1994).

We employed two different methodologies to investigate these questions: a Grammaticality Judgment task for the child language experiment, and a computer-based Sentence Completion task for the adult controls and second language learners. These experiments are discussed in more detail in the following sections. A general point to keep in mind is that we used the same stimuli in both cases: the target sentences presented to the children in the first experiment formed a proper subset of the sentences presented to the adult subjects in the sentence completion task.

3. First Language Experiment

To investigate whether young children correctly distinguish between VPE and VPA in the three contexts discussed above, we used a version of the Grammaticality Judgment task, originally due to de Villiers & de Villiers (1974), extended and developed in McDaniel & Cairns (1996), and Hiramatsu & Lillo-Martin (1997).

3.1. Methodology

The version of this task developed by Hiramatsu & Lillo-Martin (1997) features a hand puppet called Lulu, who is manipulated by one of the experimenters. Lulu comes from the Moon, and reports on scenarios acted out by the other experimenter. Lulu talks "Moon Talk", which is different from "Earth Talk" in several respects: in Moon Talk, words are frequently metathesized, and the word-order differs from that of English, sometimes in subtle ways, sometimes more dramatically: see below. Lulu (and the other experimenter) tell the child that she wants to learn "Earth Talk". Hiramatsu & Lillo-Martin introduce the reward/punishment part of the Truth Value Judgment task (Crain & McKee (1985) into the grammaticality judgment task: the child is encouraged to reward Lulu by feeding her a doughnut if she talks "Earth Talk", that is, if Lulu's utterance is grammatical,

and to punish Lulu, by feeding her a slice of watermelon, if Lulu talks Moon Talk instead; that is, if Lulu's utterance is ungrammatical. (Ostensibly, watermelon is supposed to make Lulu smarter!). In this way, acceptability judgments can be elicited from young children without requiring explicit metalinguistic abilities.

3.2. Subjects

The experiment, which was carried out over two testing sessions, was conducted from May to June 1998 at the Child Development Laboratories at the University of Connecticut. Fourteen of the sixteen children who participated in the experiment attended the Child Development Laboratories; the other two were children of a faculty member at the University of Connecticut. They ranged in age from 3;9 to 6;7. Of these sixteen children, four were excluded from the study due to their performance in training sessions. We will present the results from the remaining 12 children, who ranged in age from 3;11 to 6;7 with a mean age of 5;08.² The children were tested in a testing room near their classroom. We conducted two training sessions (the number of sessions that each child participated in varied based on their readiness to attend the task) plus two test sessions. Each session lasted no more than thirty minutes and was audio-taped for transcription purposes.

3.3. Training sessions

Following Hiramatsu & Lillo-Martin (1997), we used the moon fish named "Lulu". We conducted the first training session with sixteen children; two children did not need any training, as they were already familiar with the task from previous experiments. The first training session involved five test sentences (three ungrammatical and two grammatical sentences). First, we introduced Lulu to the children and told them that Lulu talks "Moon Talk": Lulu demonstrated this by producing utterances such as "I came from moon the". Lulu's mistakes involved incorrect word order, as well as morpheme reversals such as "nut-dough" (for doughnut). We asked the children to reward or punish Lulu with a doughnut or watermelon, respectively, according to how she reported on the scenarios acted out by the other experimenter. A sample protocol of the training sessions is given in (12) below. This introductory part was repeated in the beginning of each session. Children were deemed to have passed the training session if they correctly rejected all three ungrammatical sentences and accepted at least one of the two grammatical sentences (80% accuracy). Three children were excluded at this stage. We then conducted a second training session with five of remaining eleven children—although some of these had performed with better than 80% accuracy in the first session they appeared less confident, so we decided to train them one more time. Following the second training session, one other child was excluded because she showed a strong 'yes'-bias: the remaining twelve children were then tested in the main experiment.

² Given the comparatively low number of children in this round of testing, these results allow only tentative conclusions: we hope that these conclusions will be supported, as more results are obtained.

(12) Sample Protocol: Cookie Monster Loses his Voice

Cookie Monster goes to the mountains to practice singing. When he is in the mountains he shouts, and a few second later his voice comes back. <<Hello, Hello>> he says, <<Hello, Hello>> the voice comes back. He does this so many times that he loses his voice. <<Hello>> he whispers, but no <<Hello>> comes back. Cookie Monster is very sad, because now he has no voice, and no echo. Just then, a duck comes by and says to Cookie Monster <<What's up? You're usually so loud and cheerful.>> <<I know>> croaks CM <<but today I was shouting so much I lost my voice. Now I can only whisper.>> <<Don't worry>> said the duck <<I have two bottles of medicine for people who have lost their voice; the green bottle is a very good medicine, but it is made just for ducks. So you might start to quack like me if you take this one. I also have a purple bottle: I don't think this is as strong, but it is made for other people.>> Cookie Monster thought about this for a little while and then whispered, <<I think I will have the purple medicine, because I want to get better, but I don't want to sound like a duck>>.

Lulu: I can say something about this. "The Cookie Monster lost his voice and the duck gave him medicine." (Grammatical)

Lulu: I can say something else. "He not wanted to take the green medicine for ducks." (Ungrammatical).

3.4. Test sessions

The main experiment involved a total of forty-eight sentences (excluding distractor sentences): there were four stories for each pair of structural antecedent contexts (active vs. passive, verbal vs. nominal, conjoined vs. ACD), with each story having either a VPE or VPA completion sentence. Each child, tested across two sessions, received two sentences from each group of stories, one grammatical and one ungrammatical sentence, giving a total of twelve test sentences per child. There were also a number of grammatical and ungrammatical distractor sentences in each session. No child heard the same story twice. Examples of the sentences presented to the children are given in (13).

	Ellipsis Type	Expected Response
(13) Antecedent Context 1: Active vs. Passive		
Someone had to take out the garbage but the boy dinosaur didn't want to.	VPE	√
Someone had to take out the garbage but the boy dinosaur didn't want to do it.	VPA	√
The garbage had to be taken out but the boy dinosaur didn't want to.	VPE	*
The garbage had to be taken out but the boy dinosaur didn't want to do it.	VPA	√
Antecedent Context 2: Verbal vs. Nominal		
Cookie Monster was lonely and wanted someone to kiss him but Big Bird was not able to.	VPE	√
Cookie Monster was lonely and wanted someone to kiss him but Big Bird was not able to do it.	VPA	√
Cookie Monster was lonely and he wanted a kiss but Big Bird was not able to.	VPE	*
Cookie Monster was lonely and he wanted a kiss but Big Bird was not able to do it.	VPA	√

Antecedent Context 3: Conjoined vs. ACD	Ellipsis Type	Expected Response
The horses ate some delicious vegetables and the cows did too.	VPE	√
The horses ate some delicious vegetables and the cows did so too.	VPA	√
The horses ate the same vegetables that the cows did.	VPE	√
The horses ate the same vegetables that the cows did so.	VPA	*
Filler Items		
The penguin not wanted cherries.	—	*
The penguin didn't want cherries.	—	√

4. Second Language Experiment

4.1. Subjects

The L2 experiment was conducted at McGill University and the University of Connecticut. To date, we have tested 15 native speakers of English, 18 native speakers of Japanese, and 10 native speakers of Spanish, all full-time students at one of the two institutions. It is important to bear in mind that although we observed certain differences in proficiency level among our subjects, we do not yet have enough subjects to permit further subdivision into distinct proficiency levels.

4.2. L2 Methodology

To investigate adult controls and second language learners' knowledge of the VPE vs. VPA contrast, we used a different methodology, namely, the Sentence Completion task. This task was first used to investigate knowledge of anaphora and ellipsis in a series of experiments reported in Tanenhaus & Carlson (1990), henceforth T&C. Part of this project, then, is an attempt to replicate those earlier experiments. In this task, subjects are presented visually with short stories consisting of two sentences: a context sentence and a following target sentence. Subjects first read the context sentence, and press a button when they have understood it. At this point the first sentence is removed from the screen, and the target sentence is presented in its place. Subjects are then asked to decide, by pressing one of two response buttons, whether or not the target sentence is a 'sensible completion' of the story. Subjects are encouraged to respond as quickly and accurately as possible. The structure of context sentence is manipulated to provide either a parallel (active/verbal/conjoined) or non-parallel (passive/nominal/ACD) antecedent for the target sentence, either VPE or VPA. The examples in (14) illustrate one such contrast, here, between verbal vs. nominal antecedents:

(14)	First (Context) Sentence	Second (Target) Sentence	Type
	It always annoys Sally when anyone mentions her sister's name...	...but Tom did anyway, out of spite.	VPE
	It always annoys Sally when anyone mentions her sister's name...	...but Tom did it anyway, out of spite.	VPA
	The mere mention of her sister's name annoys Sally...	...but Tom did anyway, out of spite.	VPE
	The mere mention of her sister's name annoys Sally...	...but Tom did anyway, out of spite.	VPA

All of the subject groups were first presented with the same set of children's stories (12 test sentences per subject + fillers). Subsequently, the adult controls and L2 learners were presented with a set of 'adult stories', which replicated the Tanenhaus & Carlson stimuli (40 sentences per subject + filler items). There were four sentences (across four conditions) for each structural context in the L1 part of the experiment, and 40 sentences (in four conditions) in the T&C replication (20 active vs. passive and 20 verbal vs. nominal pairs). The L2 subjects reported no difficulty with the task.³

5. Results

The adult and L2 subjects' responses yield 2 types of data: a categorical acceptability judgment, and a reaction time (in msec), this being the time taken to judge the target sentence, measured from the onset of that target. In this paper, we report only the judgment data from our experiment, which are most directly comparable to the children's responses. The following tables and charts indicate the percentage of acceptances for VPE and VPA for each subject group, contrasting parallel vs. non-parallel antecedents. Note that these tables represent acceptance rates for all of the relevant stimuli presented to the adult subjects; the table in the Appendix provides the acceptance judgments for the L1 stimuli alone.

5.1 Children's Responses

We discuss the children's results first, comparing these with the adult controls' judgments of the same stimuli. Results of a subject ANOVA indicate clearly that adults and children behave in the same way overall. Furthermore, planned comparisons show that both children and adults respect the parallelism constraint on VPE, rejecting target sentence pairs with non-parallel (passive and nominal) antecedents significantly more often than the corresponding parallel antecedents. While it is true that the children tended to be more accepting of non-parallel antecedents than adults, there is no interaction between subject group—i.e. age—and structural parallelism. Children and adults also behave similarly in rejecting VPA in ACD contexts, although here too adults' behavior is somewhat sharper.⁴

Statistically, then, in all of the relevant test conditions five year-olds are as discriminating as 25 year-olds when it comes to rejecting inappropriate antecedents.

4.3.2. L2 Learners' Responses

The same cannot be said for L2 learners, however, whose results are considerably more difficult to interpret. Part of this difficulty is no doubt due to the comparatively low number of subjects and to the wide range of proficiency in English, which resulted in high inter-subject variance. On the one hand, preliminary analysis suggests that we succeeded with the native-speaker controls in replicating T&C's results. Native speakers correctly distinguished their acceptances in active vs. passive contexts in VPE ($F_{1}=27.19$, $p<.00001$) and in verbal vs. nominal contexts in VPE ($F_{1}=12.21$, $p=.0013$). Second, all subjects (both L1 and L2 learners) correctly distinguished their acceptances in VPA vs. VPE types. Item Anovas show the difference to be significant for native controls: ($F_{2}=72.499$, $p<.00001$), for Japanese: ($F_{2}=15.53$, $p=.0023$) and for Spanish: ($F_{2}=58.606$, $p<.00001$). This suggests that both native speakers and L2 learners are in fact sensitive to the distinction between deep and surface anaphors.

³ The complete stimulus set, including filler items, is available from the first author upon request.

⁴ It is noteworthy that the children's weaker result with respect to VPA is due in part to an incorrect rejection of VPA in acceptable (conjoined) contexts; our children appeared to disprefer "do so" in all contexts.

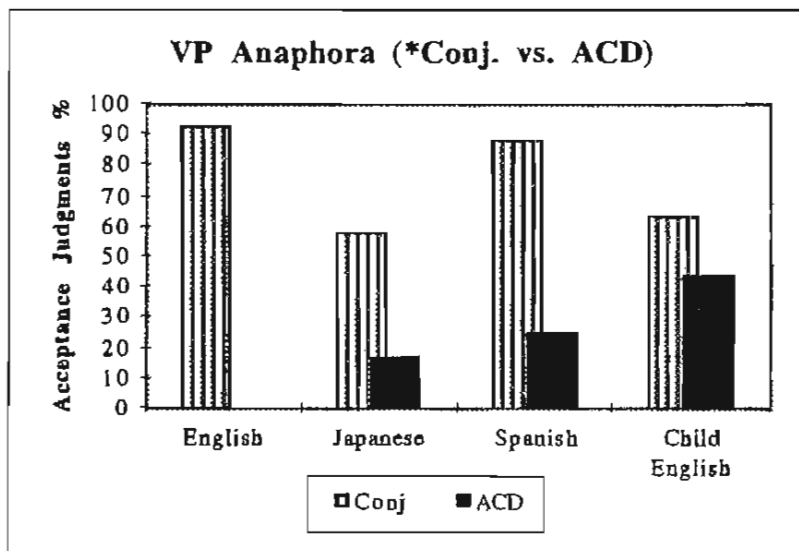
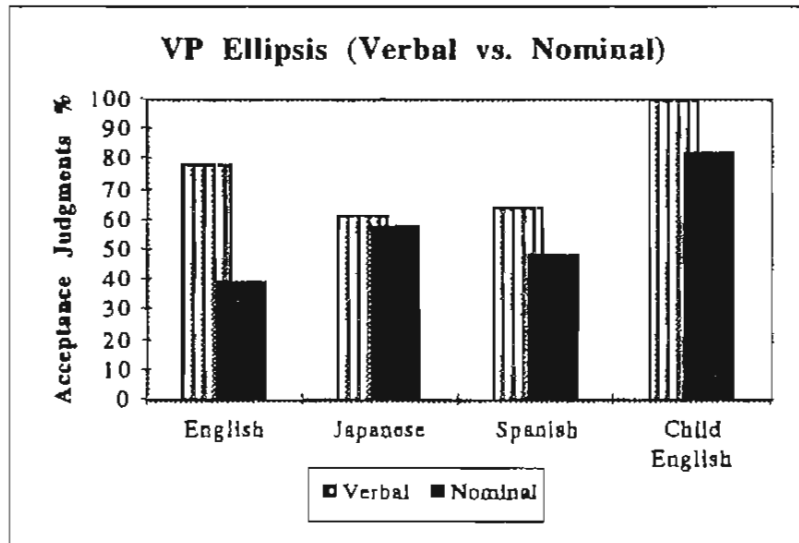
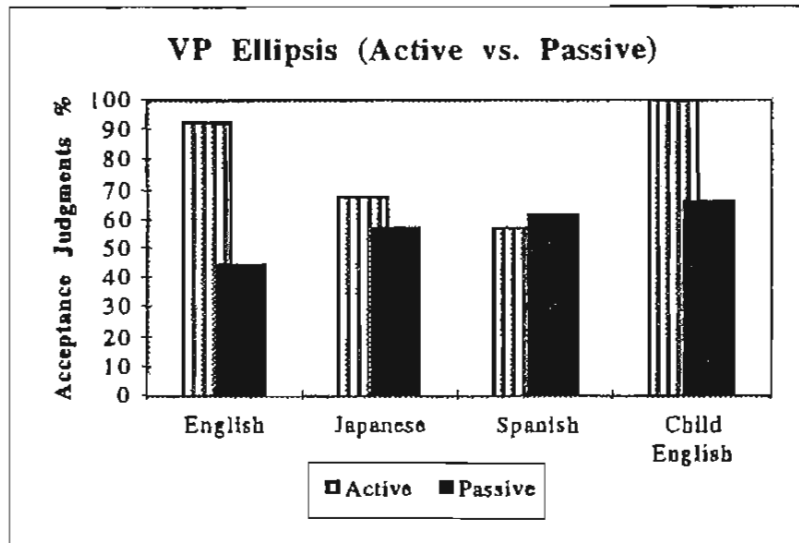
On the other hand, when we consider the L2 learners' responses within particular conditions, planned comparisons reveal important differences between native speakers and the different L2 groups. In this paper, we will concentrate on two important points of divergence: first, the behavior of Spanish L2 learners in active/passive contexts with VPE; second, the behavior of Japanese in active/passive contexts with VPA.

Percentage of each Sentence Type Judged Acceptable (Combined Data)

Active-*Passive		Ellipsis Type	
Language	Context	VPA	VPE
English	Active	96	92.5
	Passive	90	45
Japanese	Active	90	68
	Passive	71	57
Spanish	Active	94	57
	Passive	95	62
Child English	Active	100	100
	Passive	100	66

Verbal-*Nominal		Ellipsis Type	
Language	Context	VPA	VPE
English	Verbal	97	79
	Nominal	80	39
Japanese	Verbal	86	62
	Nominal	83	58
Spanish	Verbal	84	64
	Nominal	86	48
Child English	Verbal	100	100
	Nominal	100	82

Conjoined-*ACD		Ellipsis Type	
Language	Context	VPA	VPE
English	Conj	93	100
	ACD	0	100
Japanese	Conj	58	85
	ACD	17	100
Spanish	Conj	88	75
	ACD	25	88
Child English	Conj	63	86
	ACD	44	100



As just mentioned, English control subjects correctly rejected VPE sentences with non-parallel passive antecedents (92.5% vs 45%). However, L2 learners behaved quite differently: while the difference between the acceptances in the active vs. passive contexts approaches significance for the Japanese ($F(1)=2.37$, $p=.13242$), there was no significant difference whatsoever for the Spanish subjects ($F(1)=.032$, $p=.856$). It appears that Spanish learners rejected VPE sentences in all contexts, irrespective of parallelism; in fact, VPE sentences were actually rejected more often with active antecedents (57% acceptances) than in the non-parallel passive context (62% acceptances).

For the Japanese, the comparatively low acceptance of VP-Ellipsis appears to be due to three subjects who quite generally over-rejected VPE in all contexts: if these speakers are removed, the acceptance rate in active contexts goes up to from 68% to 87%, which is not significantly different from that of the English controls. By contrast, the rejection of VPE in active contexts by Spanish speakers is much more uniform across speakers.

The other crosslinguistic difference to be discussed here involves a contrast between acceptance of VP-anaphora in active vs. passive contexts, which is significant for the Japanese groups ($F(2)=12.21$, $p=.0013$), though not for the other two language groups. Recall that in Japanese VPA is degraded in passive contexts; cf. example (8b) above.

6. Discussion

Given the considerable differences of English proficiency among the L2 learners tested to date, any interpretation of these results remains highly speculative until we have enough subjects to classify within language groups according to proficiency level. However, if these preliminary findings are confirmed as more data becomes available, it suggests the following conclusions.

In general, it would appear that the L2 learners' first language (here, Japanese and Spanish) does influence acceptability judgments in the L2, insofar as the two language groups' behavior in specific conditions diverges significantly from that of native speakers, *and* from each other. On the other hand, the results that we have obtained do not suggest any simple interpretation in terms of L1 transfer.

This depends, of course, on how L1 transfer should be understood. If transfer implies that L2 learners cannot assign an analysis to a L2 construction that is not available in their first language, even if there exists a very similar construction (albeit subject to slightly different constraints) in that L1, then we can account for some of the results obtained thus far, though not for others. If, on the other hand, what is intended by transfer is that L2 learners analyze a given L2 construction in terms of the closest available construction in their L1, then a different set of results become more easily interpretable.

Let us consider the L2 Spanish results first. What is interesting about the Spanish speakers' results is that they rejected English VPE in both active and passive contexts. We could attribute this result to the fact that Spanish does not allow VPE; that is, we could adopt the first interpretation of transfer. The examples in (15) and (16) show that the direct translation equivalent of VPE is indeed ungrammatical:

- (15) Alguién tiene que sacar la basura. (active)
 someone have that take-out the garbage
 'Someone has to take out the garbage...'
 *...pero yo no hago.
 but I not do
 '...but I don't do'

- (16) La basura tiene que sacarse (passive)
 The garbage have that take-out
 'The garbage has to be taken out.'
 *...pero yo no hago.
 but I not do.
 '...but I don't do'

This result clearly suggests that Spanish speakers are not re-analyzing English VPE as instances of null complement anaphora (NCA), otherwise we would have expected to find a contrast between active and passive contexts.

However, if this is the correct interpretation of the Spanish result and of transfer in general, then we should explain the Japanese result with respect to VP-anaphora—where Japanese learners (incorrectly) distinguish between English VPA with active vs. passive antecedents—as evidence that Japanese VPA is essentially the same construction as English VPA, albeit subject to a further restriction that excludes it from passive contexts. The alternative interpretation would be to suppose that Japanese VPA is formally distinct from, though similar to, English VPA, and that Japanese learners apply the constraints of this distinct L1 construction to the L2 data. Since this alternative explanation of the Japanese VPA result—consistent with the second interpretation of transfer—would obviously contradict our interpretation of the Spanish VPE data, we will adopt the former account.⁵

With this in mind, we turn briefly to perhaps the most complex result from the data obtained so far: namely, the behavior of Japanese subjects with respect to VP-Ellipsis in active vs. passive contexts. As mentioned above, when the results of three of the 15 Japanese subjects are excluded, Japanese speakers clearly distinguish between (correct) acceptance of VPE in active contexts vs. (correct) rejection of VPE in passive contexts, despite the fact that there appears to be no difference in the grammaticality of the corresponding constructions in Japanese; see (7a) and (8a) above.

Clearly, if Japanese learners did not have VPE, and if they were transferring the surface properties of the closest corresponding L1 construction—which Hoji (1998) and other have analyzed as a Null Object Construction (NOC)—then we would expect no difference in their acceptability judgments of English active and passive VPEs, contrary to what is found. This once again suggests that the first, rather than the second, notion of transfer is correct.

It is equally clear, however, that Japanese L2 learners are not behaving like the Spanish L2 learners in this context; if they were, we would expect uniform rejection of VPE. If these results prove to be reliable—after we have collected more data and controlled for proficiency level—then there appear to be only two ways to reconcile the discrepancy between the two language groups. The first solution is to claim that Japanese learners have simply acquired a contrast in their L2 that was not available in the L1. Although most current theories of second language acquisition would allow for this possibility, this solution appears less than satisfactory here, because it would explain neither why just this property is *acquired* by Japanese learners, when other properties are apparently *transferred*, nor why none of the Spanish learners acquired the same contrast.

The alternative solution is that Japanese does in fact have VPE, as has been claimed by some theoretical researchers, notably Otani & Whitman (1991). If this were the case, then the acceptability judgments of Japanese L2 learners for English VPE would be

⁵ Obviously, to maintain this position, it is necessary to provide an account (currently lacking) of why, if it is the same construction in both languages, VPA is restricted to active contexts in Japanese, though apparently not in English.

explained as a further instance of transfer, with the contrast with Spanish learners falling out quite directly.⁶

At this stage of our investigation, it is obviously premature to draw any theoretical conclusions from these results. Nevertheless, it is interesting to consider how such results from second language learners might in principle arbitrate between competing theoretical analyses.

7. Conclusion

In summary, we have obtained results that suggest that both children and L2 learners are sensitive to structural differences between two types of anaphoric expression in English: VP-Ellipsis and VP-anaphora. In spite of this overall sensitivity, however, there are important contrasts among the different groups of learners: by comparison with L2 learners, children are surprisingly good at this type of discrimination. In most cases, the discrepancy between L1 and L2 performance can be accounted for by considering properties of the relevant L1.

At this stage, we cannot discount the possibility that the inter-language contrasts apparently due to L1 transfer are in fact due to proficiency level. More detailed examination of our results—including the reaction time data that was also elicited from these subjects—is necessary to determine this more precisely.

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⁶ Of course, one would then need to explain why Japanese VPE displays no active vs. passive asymmetry. Further theoretical research is necessary here, in any case.

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Appendix: L1 Stimuli Alone

Active-*Passive		Ellipsis Type	
Language	Context	VPA	VPE
English	Active	100	93
	Passive	100	50
Japanese	Active	94	75
	Passive	75	62
Spanish	Active	100	50
	Passive	100	50
Child English	Active	100	100
	Passive	100	66
Verbal-*Nominal		Ellipsis Type	
Language	Context	VPA	VPE
English	Verbal	100	93
	Nominal	65	36
Japanese	Verbal	94	58
	Nominal	87	60
Spanish	Verbal	88	100
	Nominal	88	38
Child English	Verbal	100	100
	Nominal	100	82
Conjoined-*ACD		Ellipsis Type	
Language	Context	VPA	VPE
English	Conj	93	100
	ACD	0	100
Japanese	Conj	58	85
	ACD	17	100
Spanish	Conj	88	75
	ACD	25	88
Child English	Conj	63	86
	ACD	44	100

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