Variable L2 Acquisition of Spanish Differential Object Marking by L1 English Speakers

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1. Introduction

In Spanish, some direct objects are preceded by the accusative case marker *a*, an example of the broader phenomenon known as Differential Object Marking (DOM). The realization of DOM in Spanish has been argued to be conditioned by a number of semantic features of the object, verb and subject. We present results from an experimental study of the L2 acquisition of Spanish DOM by L1 English speakers, arguing that our L2 results provide support for the Feature Reassembly Hypothesis (Lardiere 2008, 2009). The results of our L1 Spanish control group also suggest a reconsideration of standard accounts (e.g. Torrego 1998) of the semantic features influencing the realization of DOM in Spanish. The structure of the paper is as follows: Section 2 provides background on the phenomenon of DOM in Spanish and previous studies on its acquisition, Section 3 describes the methodology of the study, Section 4 gives results and discussion, and Section 5 concludes.

2. Background

In Spanish, the presence or absence of the case marker *a* before direct objects (DOM) is affected primarily by semantic properties of the object, but also by properties of the subject and verb. As traditionally described, objects which are both animate and specific are *a*-marked, as shown in (1).

(1)　　a. *Veo　　a　　María.*
　　　　　see-1SG DOM Mary
　　　　　'I see Mary.'
　　　　b. *Veo　　la　mesa.*

see-1SG the table
'I see the table.'

In (1a), the direct object, *María*, is both animate and specific, so it is *a*-marked. In (1b), the direct object is specific but not animate, so it is not *a*-marked. Similarly, animate but non-specific objects are generally not *a*-marked, as shown in (2).

(2) a. *Necesito a un asistente.*
     need-1SG DOM a assistant
     'I need a [specific] assistant.'
    b. *Necesito un asistente.*
     need-1SG a assistant
     'I need a [non-specific] assistant.'

However, Torrego (1998, 2002) notes that an animate but non-specific object can be *a*-marked if the subject is agentive, as shown in (3):

(3) *La enferma está llamando a una enfermera.*
    the sick.woman is calling DOM a nurse
    'The sick woman is calling for a nurse.'

In contrast to the traditional analysis, López (2012) claims that *a*-marking is obligatory with animate, specific objects, and possible (but not obligatory) with animate, non-specific objects. Under the traditional analysis, bare noun objects and objects of existential verbs are necessarily unmarked because they are non-specific. López agrees that bare noun objects and objects of existential verbs are unmarked in Spanish, but argues that the reason they are unmarked does not have to do with lack of specificity. López treats the *a* marker as the spellout of K in a KP, and thus only objects which are KPs can be *a*-marked; he treats bare nouns as NumPs, so they are not *a*-marked. For López, K is associated with a choice function which type-shifts the KP from <e,t> to <e>. He argues that the interpretation of existentials requires the existential pivot (i.e. the object) to be of type <e,t>, so they similarly cannot be *a*-marked.

Aktionsart properties of the verb have also been argued to influence *a*-marking. For example, von Heusinger and Kaiser (2007) argue that animate objects need not be specific in order to be *a*-marked if the verb is telic:

(4) *Juan halló (a) una niña en una canasta en su porche.*
    Juan found DOM a   baby in a   basket   on his porch
    'Juan found a baby in a basket on his porch.'

Other properties, such as the affectedness of the object (Torrego 1998) have also been argued to trigger the realization of DOM.

In contrast, our bilingual subjects' L1, English, does not have Differential Object Marking. Arguably, all of the semantic features mentioned above which influence DOM realization in Spanish are also instantiated in English, but not in those particular combinations and not associated with special morphology. In particular, the combination of animacy and specificity does not seem to be relevant for the realization of any English morphology. Therefore, the (L2) learners' task regarding Spanish DOM consists largely of associating the relevant set of semantic features with the realization of *a*-marking in Spanish.

There is a rich theoretical literature on Spanish DOM, but there are relatively few studies on its acquisition. In the realm of L1 acquisition, Rodríguez-Mondoñedo (2008) used data from the CHILDES corpus to study how children acquire DOM, finding that the acquisition of DOM by monolingual children is virtually errorless (although he considered only naturalistic production data that may not have instantiated all the contexts in which DOM would be possible). In the realm of acquisition by heritage speakers, there are several recent papers by Montrul and colleagues (Montrul and Bowles 2009, 2010, Montrul and Sánchez-Walker 2013) with the overall finding that heritage Spanish speakers (aged 18-30) raised in the United States display incomplete, probabilistic knowledge of DOM, in particular the animacy and specificity requirements on DOM. Guijarro-Fuentes, Pires and Nediger (to appear) compare monolingual Spanish teenagers with age-matched Spanish-English bilinguals, and find that both groups show delays in the acquisition of the syntactic-semantic properties of DOM.

The only studies we are aware of on the L2 acquisition of DOM as such are by Guijarro-Fuentes and colleagues. Guijarro-Fuentes and Marinis (2007) found that L1 English learners of Spanish of various proficiency levels performed at chance on an acceptability judgment task. Guijarro-Fuentes (2011, 2012) found similar results, but found that advanced learners did approach convergence with L1 speakers on some conditions. These studies considered the animacy and specificity requirements, telicity of the verb, and human vs. non-human subjects. The current study extends this line of research, but tests more fine-grained distinctions in the syntactic and semantic properties which influence DOM, to evaluate the hypothesis whether there are distinct effects of the different syntactic and semantic features determining DOM.

3. Methodology

The experimental study consisted of three main tasks: a grammaticality judgment task (GT), an elicited production task (EP), and a context-driven grammaticality judgment task (CMT). The survey also included cloze tests for English and Spanish proficiency and a language background questionnaire. The survey was carried out using the Qualtrics online survey software.

In the grammaticality judgment task, subjects were presented with a test sentence and asked to judge how natural it sounded on a 5-point Likert scale

ranging from "Extremely unnatural" to "Extremely natural." A sample stimulus, with added gloss, is presented in (5).

(5)   *Busco   un marinero que sepa   nadar.*
       seek-1SG a sailor   who know-3SG-SUBJ swim
       'I am looking for a sailor who knows how to swim.'
       1. Extremadamente no natural
       2. Un poco no natural
       3. Ni natural ni no natural
       4. Un poco natural
       5. Extremadamente natural

The context-driven grammaticality judgment task was similar, except that the sentence was presented in a context which was designed to favor a certain interpretation. Subjects were asked to judge how adequate the sentence was as a description of the situation, on a 5-point Likert scale ranging from "Completely inadequate" to "Completely adequate." An example of a context favoring a specific interpretation of the object is given in (6), with a translation in (7).

(6)   *Leonardo pierde a su hermana mayor, una monja, en una multitud en el centro comercial. Él le dice al guardia de seguridad, "Busco una monja."*
       1. Totalmente inadecuado
       2. Más o menos inadecuado
       3. Ni adecuado ni inadecuado
       4. Más o menos adecuado
       5. Totalmente adecuado

(7)   Leonardo loses his older sister, a nun, in a crowd in the mall. He tells the security guard, "I'm looking for a nun."

In the elicited production task, sentences were presented with test sentences that had a blank before the direct object; subjects were instructed to either fill in the blank with a single word of their choice, or leave it blank.

There were 8 conditions in which the semantic features of the stimuli were predicted to either force or disallow *a*-marking (see Table 1 below for which conditions were used in which tasks). In **Condition 1**, the object was [+animate, +specific], requiring *a*-marking. In **Condition 2**, the object was [+animate, -specific], forbidding *a*-marking (since the verb was atelic). These two conditions took advantage of the fact that, in referentially opaque contexts in Spanish, the specificity of a noun phrase with a relative clause can be varied by varying the mood of the relative clause, with an indicative relative clause resulting in a specific noun phrase and a subjunctive relative clause resulting in a non-specific noun phrase. The sentence in (5) is an example of an object which is non-specific due to a subjunctive relative clause (Condition 2). An example of

an object which is specific due to an indicative relative clause (Condition 1) is given in (8).

(8)   *Necesitan a   una enfermera que pasa   la mañana con*
       need-3PL DOM a   nurse   who pass-3SG-IND the morning with
       ellos.
       them
       'They need a [specific] nurse who will spend the morning with them.'

In **Condition 3**, the object was [+animate, +specific] as well as [+topic], requiring *a*-marking. The stimuli in this condition used the clitic left-dislocation construction, in which a left-dislocated object is doubled by a clitic, which has been argued to force a specific reading of the topicalized object (Borgonovo et al. 2006). This condition was included because it has been argued that apparent specificity effects in DOM are actually a reflex of topicality effects (Leonetti 2004, 2008). Condition 3 thus provides a contrast to Condition 1, in which the object is specific but not topicalized. A sample stimulus is given in (9).

(9)   *A   muchos estudiantes, ya   los conocía.*
       DOM many   students   already CL know-1SG-IMP
       'Many students, I already knew.'

In **Condition 4** the object was [+animate, -specific], forbidding *a*-marking. The non-specificity was forced by using bare noun objects, which are obligatorily non-specific in Spanish. In **Condition 5** the object was similarly [+animate, -specific]. In this case, the non-specificity was forced by the use of an existential construction. Examples are given in (10) and (11), respectively.

(10)   *Necesitan camarero.*
       need-3PL waiter
       'They need a [non-specific] waiter.'

(11)   *Hay   niños   en el parque.*
       There-are children in the park
       'There are children in the park.'

In **Condition 6**, the object was [-animate, +specific], forbidding *a*-marking, as in (12).

(12)   *Busco   una casa que   tiene tres pisos*.
       seek-1sg a   house which has   three floors
       'I am looking for a house with three floors'

In **Condition 7**, the object was [+animate, +specific], requiring *a*-marking. In this case, the object was definite, and thus necessarily specific. An example is given in (13).

(13) *Necesito a   la enfermera estadounidense.*
       need-1SG DOM the nurse   American
       'I need the American nurse.'

In **Condition 8**, the object was [+animate, -specific], but the subject was agentive, given the verb choice, thus allowing for *a*-marking, as in (3). Table 1 summarizes the relevant features involved in each condition, and which of the three tasks each condition was used in.

Condition	Features	*A*-marking?	Tasks
1	[+animate, +specific, -definite]	Yes	GT, EP, CMT
2	[+animate, -specific]	No	GT, EP, CMT
3	[+animate, +specific, -definite, +topic]	Yes	GT, CMT
4	[+animate, -specific]	No	GT, EP
5	[+animate, -specific]	No	GT, EP
6	[-animate, +specific, -definite]	No	GT, CMT
7	[+animate,+specific, +definite]	Yes	GT, EP, CMT
8	[+animate, -specific]; [+agent] subject	Yes	GT, EP

Table 1: Summary of Experimental Conditions

In each task, subjects were presented with 6 sentences from each condition used in the task: 3 with *a*-marking, and 3 without. Within each task, stimuli were presented in random order, interspersed with unrelated distractor sentences.

The subjects consisted of a control group of native Spanish speakers living in Spain (n=71) and an experimental group of native English speakers who are advanced L2 learners of Spanish living in Spain (n=30). The experimental group was not subdivided by proficiency level, since all but one subject scored at least 40 out of 50 on the cloze test for Spanish proficiency, so the experimental group was uniformly advanced. The L2 subjects had a mean age of 37.3, with a range of 23-65. Their mean length of exposure to Spanish was 19.5 years, with a range of 5-47 years, and their mean age of onset of exposure to Spanish was 17.7, with a range of 9-45.

4. Results and discussion

For both grammaticality judgment tasks, subjects' responses were coded as follows: for sentences which were grammatical, a response of 4 or 5 on the Likert scale was counted as correct, while a response of 1-3 was counted as incorrect. For sentences which were ungrammatical, a response of 1 or 2 on the Likert scale was counted as correct, while a response of 3-5 was counted as incorrect. Note that a response of 3 was counted as incorrect in both cases based on an assumption that if a subject judged a sentence as (3), neither natural nor unnatural, they would not have strongly acquired the property triggering DOM in the test item. . Each subject's accuracy on each condition was then calculated as a percentage of total questions in each condition for each task. For the elicited production task, subjects' responses were coded as follows: for sentences which were grammatical, a response of *a* was counted as correct, while any other response was counted as incorrect. For sentences which were ungrammatical, any response other than *a* was counted as correct, while a response of *a* was counted as incorrect.

For each condition and task pairing, Table 2 gives the mean accuracy for the L1 and L2 groups. Pairings in which the difference is significant or approaching significance are bolded.

Condition	GT		EP		CMT	
	L1 mean acc.	**L2 mean acc.**	**L1 mean acc.**	**L2 mean acc.**	**L1 mean acc.**	**L2 mean acc.**
1 (+a)	**0.52**	**0.37**	**0.59**	**0.37**	0.60	0.50
2 (-a)	0.33	0.52	0.61	0.68	0.45	0.37
3 (+a)	**0.14**	**0.47**	-	-	**0.52**	**0.40**
4 (-a)	0.48	0.45	0.89	0.87	-	-
5 (-a)	0.84	0.82	0.99	1.00	-	-
6 (-a)	0.77	0.72	-	-	0.77	0.66
7 (+a)	**0.84**	**0.66**	**0.95**	**0.61**	**0.75**	**0.52**
8 (+a)	0.69	0.61	**0.96**	**0.70**	-	-

Table 2: Mean accuracy by condition and task

According to U-tests (with Bonferroni correction), L2 subjects were significantly less accurate (or approaching significance) than L1 subjects on the following conditions:

- GT: Conditions 1 ($p < .0005$), 7 ($p = .005$)
- EP: Conditions 1 ($p < .001$), 7 ($p < .001$), 8 ($p < .005$)
- CMT: Conditions 3 ($p < .01$), 7 ($p < .001$)

In addition, L2 subjects were significantly *more* accurate than L1 subjects in the GT on Condition 3 ($p < .001$.

One pattern which emerges is that L2 subjects are only significantly less accurate than L1 subjects on conditions which are [+a], suggesting a general tendency to avoid *a*-marking, which is plausibly an L1 interference effect. However, L2 subjects generally pattern with L1 subjects in terms of between-condition comparisons, even with conditions where L1 behavior is not categorical. For example, both groups were significantly more accurate on Condition 7 than on Condition 1 in all tasks (except the CMT for L2 subjects; p < .005 in all other cases). Both conditions involve [+animate, +specific] objects, but differ in how specificity is realized − in Condition 1, it is realized by the indicative mood in the relative clause, while in Condition 7, it is realized with a definite DP object. This suggests that, for both groups, definiteness is a stronger marker of specificity than the mood of the relative clause. This may be because definiteness is a property of the DP itself, so it doesn't need to be inferred from the broader syntactic context (i.e. the mood of the relative clause). These results are similar to those found by Borgonovo, Bruhn de Garavito and Prévost (2014), who find variability in both native speakers and L2 learners in a study of mood selection in relative clauses.

The overall pattern, then, is that L2 subjects behave similarly to L1 subjects in terms of what semantic features trigger *a*-marking most strongly, although they also have an overall lower rate of *a*-marking than L1 subjects.

These results are consistent with the Feature Reassembly Hypothesis (Lardiere 2008, 2009). The Feature Reassembly Hypothesis builds on the idea that the L1 acquisition task consists of selecting from the inventory of possible features, given that any particular language makes use of a subset of those features. However, languages differ not only in which subset of features they select, but how those features are configured, particularly on functional categories. The L2 acquisition task, then, consists largely of reconfiguring the features of the L1 to reach the L2 configuration. Choi and Lardiere (2006) give the example of question features in English and Korean. They assume that English and Korean both select [Q] and [wh] features (which are perhaps universally selected) but configure them differently: the [wh] feature is assembled with the *wh*-word in English but with a null operator in Spec, C in Korean, and the [Q] feature is on C in English, but on a morphological particle inflected on the verb in Korean. According to the Feature Reassembly Hypothesis, the acquisition task for an English-speaking learner of Korean consists in part of reassembling the [Q] and [wh] features to their configuration in Korean. The Feature Reassembly Hypothesis predicts that phenomena involving complex feature bundles which are not instantiated in the L1 should be difficult to acquire, as Choi and Lardiere argue in the case of English-Korean *wh*-questions.

In the case of DOM, while both animacy and specificity are arguably instantiated on objects in English, the combination of the two is not directly represented in English morphosyntax. According to the traditional description of DOM, then, the task for the learner involves associating the feature bundle [+animate, +specific] with the marker *a* in Spanish.

However, our results also suggest that the description of DOM is more complicated than traditional accounts would suggest (e.g. Torrego 1998, 2002). In particular, the feature bundle [+animate, +specific] does not seem to be fine-grained enough to capture the behavior of our L1 subjects. Comparing the results for Condition 7 to the results for Condition 1 and 2 indicates that definiteness is a much stronger predictor of *a*-marking than specificity alone, as encoded by the mood of the relative clause (a similar contrast is found between conditions 1 and 7 for L2 subjects). The results for Condition 3 are particularly striking, since L1 subjects had a mean accuracy of 0.14 in the grammaticality judgment task (which is also much lower than the L2 subjects). This strongly suggests that, for our L1 subjects, clitic left-dislocation disfavors *a*-marking, contrary to what has been claimed in the literature. A comparison of the results for Condition 5 and Condition 4 also suggests that the use of an existential construction is a stronger predictor of a lack of *a*-marking than the presence of a bare noun object, despite the fact that the object is necessarily non-specific in both cases. Taken together, these results suggest that a more fine-grained set of features is necessary to capture the realization of DOM among native speakers, which in turn makes the L2 acquisition task more difficult.

Note also that these results might provide some support for the analysis of López (2012), which diminishes the role of specificity. However, López still claims that [+animate, +specific] objects are obligatorily *a*-marked; given that our L1 subjects did not categorically mark the objects in Condition 1, which were [+animate, +specific], López's account cannot explain the full range of results.

Given the difficulty of the acquisition task, it is not surprising that L2 subjects have native-like behavior on [-a] conditions; in those cases, subjects who have not completed the necessary feature reassembly will still perform well, since there is no distinct morphology in Spanish in those conditions.

However, one unexpected result is that L2 subjects do relatively well on Condition 8, which involves features of both the object and the subject. This arguably involves a quite difficult reassembly task, yet there is no significant difference in accuracy between L1 and L2 subjects in the grammaticality judgment task (GT) for Condition 8. One possibility is that the results are influenced by a task effect – there is a significant difference between the two groups for this condition in the elicited production task (p < .005), although the accuracy results for the elicited production task are in general higher than for the other two tasks. An alternate possibility is that Condition 8 represents a separate phenomenon from DOM, related to Differential Subject Marking (see, for example, Malchukov 2008).

5. Conclusion

We presented a study of the L2 acquisition of Spanish Differential Object Marking by advanced L1 English learners. Our L2 results provide some support for the Feature Reassembly Hypothesis, since the conditions involving complex

feature bundles not instantiated in English morphosyntax presented more difficulty for the L2 subjects. However, although L2 subjects were less accurate than L1 subjects on many conditions, their overall pattern of results is very similar to L1 subjects in terms of between-subjects conditions, so they behave in a native-like manner in that sense. Our results suggest that traditional descriptions of DOM only in terms of animacy and specificity are not fine-grained enough, and that the manner in which specificity is encoded affects the realization of DOM, both regarding L1 and L2 competence. Future theoretical research on DOM should investigate whether it can be modeled using a more fine-grained set of semantic and syntactic features, given that the behavior of our native speakers is partially inconsistent with previous theoretical accounts of Spanish DOM.

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