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Object drop in L2 Spanish, (complex) feature reassembly, and L1 pre-emption

Comparing English, Chinese, European and Brazilian Portuguese learners

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L2 learners from different L1s may differ in L2 development and ultimate attainment for the same target property. Examining object drop in L2 Spanish, we maintain that performances of distinct L1 groups (English, Chinese, Brazilian and European Portuguese) are not as contradictory as they first appear. We argue that L1 influences are sources of observed L2 behaviours, and suggest that feature reassembly (e.g. Lardiere 2009) and L1 pre-emption (e.g. Rothman & Iverson 2011, 2013; Trahey & White 1993) are not mutually exclusive; they may apply simultaneously and differentially depending on the L1/L2 pairs and target L2 property, creating distinct learning tasks for different L1s.

1. Introduction

In spite of the unsettled debate on how to characterize adult L2 acquisition, some empirical facts remain uncontested. Among them is the fact that adult learners frequently do not achieve a native-like mastery of the L2, at least in a holistic sense. This is not to say that the acquisition of new target L2 properties is impossible, as studies show L2 successes across various domains (for review, among others see Rothman 2008; Slabakova 2006, 2008; White 2003). Another observable fact of adult L2 learning is that the outcomes are highly variable, both across individuals for the same domain as well as across domains within the same individuals. In sum, adults typically do not show the consistency in developmental sequence or ultimate attainment that characterizes normal L1 acquisition. Given these observations, one conundrum L2 acquisitionists seek to address is determining the extent to which these observations should lead us to maintain that L2 acquisition is indeed fundamentally different from L1 acquisition or, conversely,

if it is reasonable to account for these differences without hypothesizing that the mechanisms responsible for successful acquisition in childhood are inaccessible to adults. Attempting to do so seems warranted in light of ample acquisition evidence that points to successful acquisition of subtleties of the L2 grammars that are not transferrable from previous L1 linguistic knowledge and are characterised by the same logical problem of acquisition as is the case for the L1 (i.e. so-called poverty of the stimuli and/or bankruptcy of the stimuli properties; for discussion see Rothman 2008; Schwartz 1998; Schwartz & Sprouse 2000).

At first glance, the claim that the process of language acquisition is fundamentally different for adults and children can explain the observed differences in a seemingly straightforward way (e.g. Bley-Vroman 1990, 2009; Clahsen & Hong 1995; Meisel 1997, 2011). Adults show high levels of variation and various degrees of divergence in production because L2 grammars are destined to be acquired via domain general learning mechanisms as opposed to domain specific ones in childhood. If adults do not have access to the same genetic linguistic endowment (i.e. universal grammar (UG)) that children do, then it is predicted that their mental representations of an L2 grammar will be different and, as a result, they will inevitably show this in their enactment of L2 use (empirical testing or otherwise). As alluded to above, however, such theories fail to account for instances of successful acquisition of highly nuanced properties of the L2 (e.g. Rothman & Iverson 2008; Schwartz & Song 2009; Slabakova & Montrul 2003; among many others). Since the goal of any comprehensive theory of L2 representation is to be able to account for as much of the available data as possible, it is reasonable to claim that adults must have access to at least some aspects of UG and that other variables must conspire to explain the general lack of L2 success.

2. Accounting for lack of success in L2 acquisition

Although it is not the case that L1 transfer alone could explain L1-L2 asymmetries, it is the case that L1 transfer can explain and even predict some developmental trends in L2 acquisition and failure in ultimate attainment. Successful acquisition of the L2 in a domain-by-domain sense is in principle possible, but not inevitably so, a claim first made in the UG framework by White (1989) and subsequently developed into the Full Transfer/Full Access (FT/FA) model of the initial state in line with its developmental predictions (Schwartz & Sprouse 1996). For example, if the transferred L1 value constitutes a superset to the target subset grammar, this L1 transfer as the initial hypothesis of each morpho-syntactic domain of the L2 might itself block parsing failures necessary for linguistic development that would otherwise obtain straightforwardly. Building on the seminal work of

Schwartz and Sprouse's FT/FA model, more recent work within generative SLA has acknowledged the limitations of assuming solely full transfer (e.g. Schwartz 2013) and has taken seriously the task of trying to articulate more precisely the dynamic nature of the causes behind protracted delays and failures in adult second language acquisition.

Herein, we focus on two of several efforts in the literature attempting to account for some L2 differences while at the same time problematizing simplistic notions of L1 transfer: (1) L1 pre-emption effects and (2) feature reassembly. Although initial L1 transfer does not always block new L2 acquisition given access to UG, it is also the case that new L2 syntactic acquisition does not always result in the exclusion of the L1 syntax from the L2 interlanguage once the target has been acquired. Trahey and White (1993) first labelled this as the L1 pre-emption effect, which results in non-target variation of a seemingly L1-constrained behaviour coexisting with L2 target behaviour precisely because the developing L2 grammar has multiple syntactic options. Environments which are ripe for pre-emption effects are ones in which L2 input can be parsed using the syntax of the L1, but where the L1/L2 interpretative (i.e. semantic or pragmatic) subtleties do not necessarily coincide.¹ In such an environment the L2 input provides positive evidence for the correct instantiation of a particular L2 property, but the parsing failures traditionally considered necessary for grammatical restructuring will not obtain. L2 learners may recognize that their L1 option is the unfavourable one (e.g. from a statistical or probabilistic standpoint) without ruling it out as ungrammatical or infelicitous, allowing it to surface in variation with the target form. The persistent difficulty of unlearning an L1 option in the absence of explicit evidence has been well documented (e.g. Gabriele 2009; Westergaard 2003), but has not been shown to be an unsurmountable problem in all situations (e.g. Slabakova 2006; Yuan 2001).

Lardiere's (2009) discussion of feature reassembly, which has been of growing importance in the past few years, is also of particular interest given the research we will review in the remainder of this chapter. Feature re-assembly highlights the fact that new feature acquisition is not the only or even most important part of the L2 learning task, but rather acquisition proper is further complicated by the presence of the L1 due to the complexities of re-mapping procedures. Indeed, these are independent tasks. In the case where no new L2 features need to be acquired, the

1. With this understanding of pre-emption, L2 acquisition scenarios susceptible to the Subset Principle (Manzini & Wexler 1987) would serve as potential cases of a pre-emption problem. Distinct from the Subset Principle, however, pre-emption problems need not necessarily stem from contrasting L1/L2 settings of the same linguistic parameter.

relevant features must still be combined and mapped to the appropriate lexical items and learned to be used in felicitous discourse contexts. Considering that linguistic features may be instantiated overtly (i.e. morphologically) or not, and may be expressed syncretically (i.e. on one morpheme) or not, even acquiring or redeploying only a few L2 features necessitates that the L2 learner entertain a host of possibilities.

We will take the position that, depending on the L1-L2 language pairing, L1 pre-emption and feature reassembly – separately, or at times in combination with one another (and possibly other factors) – are in fact at the centre of an ultimate explanation for why L2 learners from various L1 backgrounds acquiring the same target properties may differ in developmental sequence and ultimate attainment. Bringing together previous data sets from four distinct L1 learner groups of L2 Spanish (English, Mandarin Chinese, Brazilian and European Portuguese) examining the acquisition of syntactic and semantic properties related to the licensing of Spanish object drop, we will try to offer a principled account of why these learners at comparable levels of Spanish proficiency display very different patterns of (successful) acquisition towards the target. We will suggest that a simple view of L1 transfer alone does not predictively capture these differences nor account for them, but rather a nuanced account that looks at the learning task from both a feature reassembly and an L1 pre-emption at the level of syntax does.

Looking at these L1s, acquiring Spanish is of particular interest for both the remit and scope of this book as well as general theoretical interest for reasons we have laid out above. While English does not have object drop, the other three L1s examined in this review do. As we will see, however, none of these languages has the semantic restrictions that Spanish imposes and thus all groups have to acquire the semantics. Two of the four, European Portuguese (EP) and Mandarin Chinese (MC), share with Spanish the same syntactic representation of dropped objects, whereas Brazilian Portuguese (BP) does not. One might suspect then that EP and MC should pattern together in L2 Spanish and perhaps be different than native BP speakers, who have a seemingly more complex learning task based on simple L1 transfer alone. Anticipating the results a bit, we will see that this is in fact not the case. In fact, the BP and EP learners will show successful acquisition of the semantics whereas MC learners do not. EP and BP will also show differences as well. We will show how framing the learning tasks in terms of not only L1 transfer, but also in terms of what features are available (or not) elsewhere in the respective L1s and the subsequent (re)assembly/(re)mapping tasks, as well as in terms of possible L1 pre-emption effects, combine to explain the whole of the data. Our attempt to do this is significant beyond explaining across Spanish L2 data sets; it is also an acknowledgement that we must account

for all data and not only the data sets that emerge from individual experimentation. After all, at the level of generative SLA theory we are interested in explaining L2 acquisition in general, not only the acquisition of X in language Y for L1 group Z. Of course, this is a statement that should not come as controversial; however, mired in individual projects, as we often are as researchers, this greater picture sometime eludes us.

3. Object expression in Spanish

Spanish employs a paradigm of object clitics for pronominal object expression. Accusative object clitics are inflected for person, number, and additionally for gender in the 3rd person. While not generally considered a true null object language, standard Spanish also allows for phonetically empty objects in certain circumstances (see Campos 1986; Sánchez 2004) based on definiteness and specificity.² Dropped objects are limited to indefinite referents, as seen in the question-answer pairs (1) vs. (2):

(1) Q: *¿Trajiste la cámara?*
brought-you the camera
'Did you bring the camera?'

A: *Sí, *(la) traje.*
yes, it brought-I
'Yes, I brought it.'

(2) Q: *¿Trajiste galletas?*
brought-you cookies
'Did you bring cookies?'

A: *Sí, (*las) traje.*
yes, it brought-I
'Yes, I brought them/some.'

(Bruhn de Garavito & Guijarro-Fuentes 2002, p. 60)

2. Definiteness and specificity are properties that refer to the state of knowledge of both the speaker and hearer, and to the saliency or noteworthiness of the entity (as determined by the speaker), respectively (see e.g. Ionin 2006). Briefly and informally, definite entities are those identifiable by or known to both the speaker and hearer, and specific entities are those which the speaker considers to have some noteworthy quality (regardless of the hearer's knowledge of this entity).

In (1), a definite, specific³ object may be replaced by an object clitic, but cannot be omitted in the answer. In contrast, as seen in (2), an indefinite, nonspecific object must be dropped in the response.⁴ Similarly, this alternation is seen in Clitic Left Dislocation and topicalization structures, as in (3) and (4) respectively:

- (3) *Estos zapatos, *(los) compré la semana pasada.*
 These shoes, them bought-I the week last
 ‘These shoes, I bought last week.’
- (4) *Café, (*lo) tomo todas las mañanas.*
 Coffee, (*it) drink-I every the mornings
 ‘Coffee, I drink every morning.’

(Cuza, Pérez-Leroux & Sánchez 2013, p. 97)

Campos (1986), following Huang’s (1984) analysis for Chinese and Raposo’s (1986) for European Portuguese, claimed that the dropped object in cases like (2) is an operator that has moved to the left periphery. By invoking movement, this claim makes further predictions that dropped objects in Spanish are subject to subjacency constraints. This is borne out in the data: while indefinite object clitics can be dropped in embedded clauses, as in (5a), they cannot be dropped from DP islands (5b), CP islands (5c), or adjunct islands (5d).

- (5) Q: ¿Juan trajo cerveza a la fiesta?
 ‘Did Juan bring beer to the party?’
- a. A: *Su novia me dijo que *(la) trajo.*
 ‘His girlfriend told me that he brought (some).’
- b. A: *Existe el rumor de que *(la) trajo.*
 ‘There exists the rumor that he brought (some).’
- c. A: *Que *(la) trajo es obvio.*
 ‘That he brought (some) is obvious.’
- d. A: *Sí, todos nos emborrachamos porque *(la) trajo.*
 ‘Yes, we all got drunk because he brought (some).’

(adapted from Campos 1986, p. 355)

So, in addition to the semantic restriction on definiteness, the realization of dropped objects in Spanish also depends on the syntactic environment. In general,

3. In addition to definiteness, dropped objects in Spanish also depend on the specificity of the referent, and are limited to nonspecific objects. A full treatment of specificity, including the distinction between [–definite, +specific] vs. [–definite, –specific] objects, will not be given here because it is not relevant for the studies under discussion. While these studies did take specificity into account in their respective designs, it was not a variable under examination.

4. In contrast to Campos’ (1986) claims, the clitic in examples like (2) is optionally available to some speakers. We note this here, but as the consequences are minimal for the studies we detail, we continue to assume Campos’ analysis and intuitions.

for native-like knowledge of dropped objects, learners of Spanish must associate the object clitic with the definiteness of the referent, learn that only indefinite objects may be dropped (the semantic restriction), and learn that dropped objects are a result of movement in the grammar, and subject to subjacency (the syntactic restriction).

4. Acquisition of object drop in L2 Spanish by speakers of various L1s

4.1 L1 English: Bruhn de Garavito & Guijarro-Fuentes (2002)

Bruhn de Garavito and Guijarro-Fuentes (2002) examined the acquisition of dropped objects by L1 English learners of L2 Spanish (as well as L1 European Portuguese learners of L2 Spanish, discussed below). English is distinct from Spanish in that it does not have object clitics and does not allow indefinite object drop. English learners of L2 Spanish must develop a representation of the Spanish clitic paradigm in addition to learning the semantic and syntactic restrictions on dropped objects.

Participants in this study were 18 L1 English speakers at an intermediate level of L2 Spanish. They completed a scalar grammaticality judgment task that examined knowledge of both the syntactic and semantic restrictions of object drop in Spanish. Items were presented in question-answer pairs, similar to (1) and (2) above, and participants were asked to rate the answer in light of the question on a scale from 1 (ungrammatical) to 5 (grammatical). Items varied based on definiteness of the referent, presence of the clitic, and syntactic structure of the answer to be judged (here, we refer to structures that are not potential syntactic islands as “simple syntax”). There were nine item types, seen in Table 1:

Table 1. Item types in Bruhn de Garavito and Guijarro-Fuentes (2002) and their grammaticality in Spanish

Item type	Referent	Structure	Clitic	Grammaticality
1	Definite	Simple	Overt	√
2	Definite	Simple	Null	*
3	Indefinite	Simple	Null	√
4	Definite	Complex DP	Overt	√
5	Indefinite	Complex DP	Null	*
6	Definite	Embedded CP	Null	√
7	Indefinite	Sentential CP	Null	*
8	Definite	Adjunct	Overt	√
9	Indefinite	Adjunct	Null	*

Post-hoc tests following up a significant ANOVA revealed that the L1 English learners distinguished significantly between grammatical and ungrammatical items. Furthermore, for cases of simple syntax, they rated cases of grammatical object drop significantly higher than cases of ungrammatical object drop. For the various island constraints, the learners made a significant distinction between grammatical and ungrammatical items testing the Complex DP and Sentential CP constraint, but not for those items testing for knowledge of object drop in adjuncts.

The authors argue that, on the whole, L1 English learners were successful in acquiring knowledge of object drop, as they reliably distinguished between dropping definite and indefinite objects, as well as showed sensitivity to subjacency constraints. However, this claim had to be reconciled with the empirical performance of these learners with respect to the constraint on extraction out of adjuncts – a condition in which they should have, but did not, distinguish between grammatical and ungrammatical items. The authors offer some tentative explanations, appealing to the fact that these are only intermediate learners, and speculating that adjuncts may be more difficult to process than arguments (represented by the other two island types).

4.2 L1 European Portuguese: Bruhn de Garavito & Guijarro-Fuentes (2002)

In the same study described in the previous section, Bruhn de Garavito and Guijarro-Fuentes also tested L1 European Portuguese learners of L2 Spanish. Similar to Spanish, European Portuguese has object clitics marked for person, number and gender (in the 3rd person). However, unlike Spanish, European Portuguese allows for definite null objects, as seen in (6):

- (6) *A Joana viu Ø na TV ontem.*
 The Joana saw Ø on TV yesterday
 'Joana saw them/him/her/it on TV yesterday.' (Raposo 1986, p. 373)

While the semantic restriction on dropped objects differs from Spanish, the syntactic restrictions are the same. Dropped objects are subject to subjacency constraints, and European Portuguese examples analogous to the Spanish examples in (5b–d) would be ungrammatical. Because dropped objects show the same restrictions on movement as those in Spanish, they are claimed to have the same underlying syntactic representation (Raposo 1986). Given that L1 European Portuguese learners of Spanish already have knowledge of clitics and the syntactic representation of dropped objects, and assuming L1 transfer (in the vein of Schwartz & Sprouse 1996), the learning task for these learners would consist only of narrowing the licit semantic space, limiting dropped objects to exclusively those with indefinite antecedents.

The European Portuguese group ($N = 11$) in this study were at an advanced level of Spanish, and, as may be expected, fared even better than the English natives. Unsurprisingly, the European Portuguese group respected all of the syntactic restrictions, which are the same in their L1, and correctly and significantly distinguished between grammatical and ungrammatical items testing for knowledge of the Complex DP, Sentential CP and adjunct constraints. Additionally, they showed knowledge of the semantic constraint, rating indefinite dropped objects significantly higher than definite dropped objects. The authors note that this is an important and perhaps unexpected result, as it required that the European Portuguese learners constrained their grammar from a superset (allowing dropping of both definite and indefinite objects) to a subset (allowing only indefinites). This result is contrary to the claims of the Subset Principle, which predicts that such constriction should be impossible because the superset grammar can always accommodate the subset grammar, and with only positive evidence from the input, the parsing failures necessary for grammatical restructuring will not occur. In light of these data, however, we must consider that, at least for the semantic portion of this property, learners are sensitive to some other characteristic of the input.

4.3 L1 Brazilian Portuguese: Rothman & Iverson (2013)

Rothman and Iverson (2013) tested L1 Brazilian Portuguese learners of L2 Spanish. While Brazilian Portuguese (BP) has a full paradigm of accusative clitics like those in Spanish, it is distinct from Spanish with respect to dropped objects. First, there is no restriction on definiteness,⁵ as seen in question-answer pairs (7) vs. (8):

- (7) *A Carmen trouxe o sorvete ao jantar?*
 The Carmen brought-3.SG the ice cream to-the dinner?
 'Did Carmen bring ice cream to the dinner?'

A1: *#Ela o trouxe, sim.* A2: *Ø Trouxe, sim.*
 She it brought-3.SG, yes. Ø brought-3.SG, yes.
 'Yes, she brought it.' 'Yes, she brought (it).'

- (8) *O Pablo serviu cerveja na festa?*
 the Pablo serve-3.SG beer in-the party
 'Did Pablo serve beer at the party?'

5. We note here that we are restricting our discussion to inanimate objects. Animate objects are subject to different constraints (see Bianchi & Figueiredo 1993; Schwenter 2006 for details). Experimental tasks used by Bruhn de Garavito & Guijarro-Fuentes and Rothman & Iverson consisted of only inanimate objects.

A1: # <i>Ele a serviu,</i>	<i>sim</i>	A2: Ø <i>Serviu,</i>	<i>sim.</i>
He it served-3.SG, yes.		Ø served-3.SG, yes.	
‘Yes, he served it.’		‘Yes, he served (it).’	

(Rothman & Iverson 2013, p. 596)

Whether the antecedent is definite (7) or indefinite (8), the object clitic can be omitted (the A2 responses). Additionally, the subadjacency effects seen in Spanish are not present in BP, seen in (9):

- (9) Q: *Carlos trouxe vinho para a festa?*
 ‘Did Carlos bring beer to the party?’
- a. A: *A sua namorada disse que (#o) trouxe.*
 ‘His girlfriend said that he brought (some).’
- b. A: *Não conheço a pessoa que (#o) trouxe.*
 ‘I don’t know the person that brought (it).’
- c. A: *Que (#o) trouxe é claro.*
 ‘That he brought (some) is obvious.’
- d. A: *Sim, todos nós ficamos bêbados porque (#o) trouxe.*
 ‘Yes, we all got drunk because he brought (some).’

(adapted from Rothman & Iverson 2013, p. 597)

In contrast to Spanish, objects can be omitted in DP islands (9b), CP islands (9c), and adjunct islands (9d). Farrell (1990) observed that because these examples lack subadjacency effects, syntactic movement must not be involved in the derivation of omitted objects in BP, and claimed that they are true null objects (i.e. *pro*). This syntactic representation of null objects in BP and its counterpart in Spanish and European Portuguese offer a plausible explanation of the asymmetry seen in the distribution of object omission in these languages.

The distinct representation of null objects in BP also makes the learning task distinct from the L1s already examined. BP learners of Spanish already have knowledge of a comparable clitic paradigm. But, for successful representation of dropped objects in Spanish, they must both acquire a new syntactic representation (Huang’s (1984) operator variable, instead of *pro*) and also restrict the availability of dropped objects to only those with indefinite antecedents. In light of the European Portuguese data from Bruhn de Garavito and Guijarro-Fuentes (2002), Rothman and Iverson hypothesized that the semantic constraint may be independent of the syntax, and predicted that BP learners of Spanish will successfully acquire the restriction. These same learners, however, were expected to experience (perhaps insurmountable) difficulty with converging on the correct syntactic representation.

Rothman and Iverson (2013) adapted the methodology of Bruhn de Garavito and Guijarro-Fuentes, expanding it to more thoroughly examine the potential

acquisition of the definiteness restriction. The participants, L1 BP learners of L2 Spanish ($N = 25$), completed a scalar grammaticality judgment task in which they were presented a question-answer pair and asked to rate the answer on a scale from 1 (totally unnatural) to 5 (totally natural). Target test items were constructed on the basis of definiteness of the antecedent, presence of the clitic, and syntactic environment (simple, DP island, CP island, and adjunct island), for a total of 15 item types, seen in Table 2 below:

Table 2. Item types in Rothman and Iverson (2013) and their grammaticality in Spanish

Item type	Referent	Structure	Clitic	Grammaticality
1	Definite	Simple	Overt	√
2	Definite	Simple	Null	*
3	Indefinite	Simple	Null	√
4	Definite	Complex DP	Overt	√
5	Definite	Complex DP	Null	*
6	Indefinite	Complex DP	Overt	√
7	Indefinite	Complex DP	Null	*
8	Definite	Sentential CP	Overt	√
9	Definite	Sentential CP	Null	*
10	Indefinite	Sentential CP	Overt	√
11	Indefinite	Sentential CP	Null	*
12	Definite	Adjunct	Overt	√
13	Definite	Adjunct	Null	*
14	Indefinite	Adjunct	Overt	√
15	Indefinite	Adjunct	Null	*

For simple syntactic structures, BP learners showed sensitivity to definiteness, rating the grammatical items (realization of a definite object clitic and omission of an indefinite object) significantly higher than the ungrammatical item (omission of a definite object). They were less successful with items testing the syntactic restriction in various island types. They did rate indefinite dropped objects in complex DPs significantly lower than indefinite dropped objects in simple syntactic environments, but made no distinction between those in simple clauses and those in sentential CP and adjunct islands. They did, however, continue to respect the definiteness constraint in these more complex syntactic environments. While they tended to reject any dropped object in complex DP islands, dropped definite objects in these contexts were rated significantly lower than dropped indefinite objects. In the other two contexts, sentential CP and adjunct islands, dropped

definite objects were similarly rejected, but dropped indefinite objects were rated as acceptable.

Rothman and Iverson claim that these results show robust knowledge of the semantic restriction, and, given a lack of comparable performance demonstrating knowledge of the syntactic restriction, suggest that the semantic and syntactic portions of this property can be acquired independently of each other. The results here also corroborate Bruhn de Garavito and Guijarro-Fuentes' conclusion that the definiteness constraint can be acquired even by those learners whose L1 instantiates a superset of this property (i.e. Brazilian and European Portuguese learners of Spanish).

The Brazilian Portuguese learners of Spanish performed asymmetrically with respect to the syntactic constraint on dropped objects. On the one hand, these learners correctly rejected any instances of object drop in DP islands; on the other, they allowed dropped indefinite objects in sentential CP and adjunct islands. Rothman and Iverson consider the possibility that these learners do have the correct, Spanish-like representation for dropped objects, as evidenced by their performance with DP islands, but that they continue to entertain the syntactic option from their L1, as evidence by their acceptance of certain dropped objects in island contexts. In short, they have failed to pre-empt their L1 grammar.

If it is the case that these learners have both Spanish-like and BP-like representations available for dropped objects, it must be explained why the target-like representation is only employed in DP island contexts. Rothman and Iverson suggest that perhaps this is due to the relative unacceptability of the different island types, with DP islands the least unacceptable of the three examined because it poses fewer obstacles for extraction (in the sense of the Barriers framework, Chomsky 1986). If the complexity of syntactic representations has any ramifications for language processing, this idea is compatible with the performance of the English learners from Bruhn de Garavito and Guijarro-Fuentes, who failed to show sensitivity to adjunct islands: the less complex the syntactic structure, the easier it is for developing learners to process it with their L2 grammar. In cases where the structure is more complex, learners may show indeterminacy (like the English group) or resort to a competing L1 option (like the Brazilian Portuguese Group).

4.4 L1 Chinese: Cuza, Pérez-Leroux & Sánchez (2013)

Cuza et al. (2013) studied the acquisition of dropped objects in L2 Spanish by speakers of L1 Chinese. Null objects in Chinese are not subject to the same restrictions found in Spanish, and definite null objects are licit, as in (10):

- (10) *Zhangsan_i shuo Lisi bu reshi Ø_{*ij}*
 Zhangsan say Lisi not know *ec*
 'Zhangsan said that Lisi doesn't know (him)?' (Huang 1984, p. 541)

Huang (1984) notes that the null object in Chinese examples like (10) cannot refer to the matrix subject (here, *Zhangsan*), but rather refers to some external individual. It can, however, be interpreted as coreferent with a topic DP, as in (11):

- (11) *Neige ren_p, Zhangsan shuo Lisi bu reshi Ø_i*
 That man Zhangsan say Lisi not know *ec*
 ‘That man, Zhangsan said that Lisi doesn’t know (him).’

(Huang 1984, p. 541)

Based on these observations, Huang (1984) proposed that null objects in Chinese can be analysed as a variable bound by a (null) topic. This, then, is similar to the case of Spanish (and indeed his analysis was the starting point for the analysis of dropped objects in Spanish), with the difference being that null objects are not restricted to indefinites in Chinese, similar to European Portuguese.

According to Cuza et al. the learning task of L1 Chinese learners of L2 Spanish is twofold. These learners must acquire the appropriate representation for accusative clitics, but must also learn the correct combination of features on these clitics (namely, [-definite, -specific]) that would allow for them to be realized as null elements. Leaving the syntactic representation of these Spanish clitics and null objects aside, Chinese learners of Spanish must restrict the semantic domain in which null objects are available from both definite and indefinite objects (their L1 setting) to exclusively indefinite objects (the target L2 setting).

The researchers surveyed four groups for their knowledge of clitics and null objects: a control group of (Peruvian) Spanish monolinguals ($N = 15$), simultaneous bilinguals of Spanish and Chinese ($N = 12$), L1 Chinese childhood immigrants to Peru ($N = 13$), and L1 Chinese adult immigrants to Peru ($N = 13$). It was expected that although the L2 learners of Spanish may produce and accept clitics, they would not have native-like knowledge of their alternation with the null object, and would continue to produce and accept null objects in contexts that are ungrammatical in Spanish. Furthermore, it was predicted that there may be some disparity between the three groups of bilinguals due to age-of-acquisition effects.

Participants completed four tasks: an elicited production task, a truth-value judgment task (TVJT), a sentence-completion task and an acceptability judgment task. Here we detail the acceptability judgment task, as it is the most comparable to the tasks used in the studies detailed above. This task tested for the acceptability of null and overt clitics in CLLD and topicalization structures. Participants were presented with a sentence and asked to judge it on a scale from 1 (odd) to 5 (fine). Three different contexts were examined: definite, specific antecedents; definite, nonspecific antecedents; and indefinite, nonspecific antecedents. For each context, half of the target sentences contained a clitic, while the other half did not, resulting in an equal number of grammatical and ungrammatical items. The only

contexts in which the clitic could be omitted were those in which the antecedent was indefinite and nonspecific.

We focus here on the results from the adult L1 Chinese learners of L2 Spanish for comparability with the other studies. On the acceptability judgment task these learners tended to accept all item types, with group average ratings greater than 4 out of 5. As expected, this group allowed for dropped objects in all contexts. Contrary to the predictions of the authors, however, the adult Chinese learners also accepted an object clitic in indefinite contexts. Results from other tasks were consistent with those of the acceptability judgment task. Adult learners reliably used null objects in favour of clitics in elicited production, did not have significantly different interpretations of null and overt clitics in the TVJT, and overwhelmingly employed null objects in favour of clitics in the sentence completion task.

The authors interpret these results as evidence that the adult L1 Chinese learners of L2 Spanish do not have full knowledge of object drop in Spanish. Specifically, they claim that these learners remain insensitive to the definiteness and specificity features required for successful knowledge of the alternation of null and overt object clitics. This is hypothesized to be a result of the transfer of the L1, which has fewer restrictions on null objects, at least in the semantic sense, and in which definiteness is not grammaticalized in a way similar to Spanish. As this experiment was not designed to test knowledge of the subjacency effects associated with dropped objects in Spanish, it cannot empirically address these learners' syntactic representations for this property.

5. Discussion

The three studies involving L2 Spanish learners from four different L1s detailed above investigated knowledge of object drop in L2 Spanish using comparable methodologies, but the L1(s) of the participants were distinct across studies. Bringing them together allows us to compare the participants from each language background, gauge their relative success, and speculate about the cause(s) of any asymmetries observed with respect to the properties associated with object drop in Spanish.

First, we will summarize the results from the empirical studies. Recall that these studies tested for at least one of two constraints associated with object drop, a semantic constraint and a syntactic constraint. Semantically, dropped objects in Spanish are restricted to indefinite non-specific objects. Syntactically, given that they are not an instantiation of the empty category *pro*, they show subjacency effects, and are ungrammatical in complex DP, sentential CP and adjunct islands. The results for each L1 group are summarized in Table 3:

Table 3. Results from each L1 Group

L1	Knowledge of restrictions?			
	Semantic	Complex DP	Sentential CP	Adjunct
English	Yes	Yes	Yes	No
EP	Yes	Yes	Yes	Yes
BP	Yes	Yes	No	No
Chinese	No	Not tested	Not tested	Not tested

The English, European Portuguese and Brazilian Portuguese groups all showed knowledge of the semantic restriction on definiteness, while the Chinese group did not. Which groups showed knowledge of the syntactic restrictions was less clear, perhaps due to the more fine-grained methodology used to test them. The European Portuguese group respected subadjacency constraints in all conditions, the English group did so with both Complex DP islands and Sentential CP islands (but not with adjunct islands), and the Brazilian Portuguese group did so with only Complex DP islands. Cuza et al. (2013) did not test for the syntactic restrictions, and therefore we can make no observations about the L1 Chinese learners. For our purposes of comparison, this is unfortunate. One could speculate that since Chinese and Spanish have the same syntactic instantiation (i.e. an operator), the group would show no problems with the syntax, akin to what was shown for the European Portuguese group, but this would need to be empirically confirmed.

Although each study does a good job at attempting to explain the performance of the group on which it focuses, the observable discrepancy across different L1s acquiring the same properties in L2 Spanish is worthy of consideration. L1 transfer seems a likely possibility to explain the differences, however, the question remains as to what exactly from the L1 influences the differences noted. Recall that knowledge of dropped objects in Spanish relies on a target-like representation of clitics, including the features necessary for agreement with an antecedent (person, number, gender, definiteness, specificity), in addition to the proper syntactic representation of dropped objects (i.e. an operator) and the associated semantic constraint on definiteness. With this in mind, similar or competing properties in the various L1s are obvious candidates for cross-linguistic influence. European Portuguese and Brazilian Portuguese both have accusative object clitics, which function like those in Spanish, while English and Chinese do not.⁶ English does

6. We do not ignore the fact that Brazilian Portuguese does not regularly use third person object clitics, although they have them (and these learners are competent speakers of the standard variety). We refer the interested reader to Rothman and Iverson (2013) for discussion.

not instantiate zero-objects, while the other three L1s do. However, in none of these languages do the zero-objects have the same distribution as they do in Spanish. In all three languages, they are not restricted to only indefinite antecedents, but also allow definite antecedents. Both Chinese and European Portuguese show subjacency effects (and thus are assumed to have the same syntactic representation as in Spanish), but Brazilian Portuguese does not.

In addition to these properties that seem straightforwardly related to Spanish clitics and dropped objects, we may also want to consider a property that is less directly related – the instantiation of definiteness in these languages. Definiteness can be defined as the property of being able to be identified by both the speaker and the hearer (e.g. Ionin, Ko & Wexler 2004). According to Lyons (1999), languages express this “identifiability” in a variety of ways. Spanish, English, European Portuguese and Brazilian Portuguese, which all have definite/indefinite article systems, serve as prototypical cases of languages in which definiteness has been grammaticalized. In languages like these, definiteness is obligatorily and unambiguously marked using unique functional morphology. Chinese, on the other hand, may be considered a language in which definiteness has not been grammaticalized and is expressed through more semantic or pragmatic means. Chinese indicates definiteness through (an interaction of) context, syntactic position or modification of the nominal with a classifier or plural morpheme (Cheng & Sybesma 1999). Furthermore, marking a noun as definite or indefinite is not obligatory, and certain marking strategies may not always result in unambiguity (for details and discussion, see Chen 2004). Having prior knowledge of a language in which definiteness is grammaticalized (in the sense of Lyons 1999) may serve as a catalyst in acquiring the semantic constraint on object drop in Spanish. We mention this in light of feature reassembly; that is, only in these languages does definiteness take the form a grammatical (syntactic) feature that is then available for repurposing (reassembly) in the L2.

A summary of the existence of relevant properties in the various L1s – grammatical definiteness, accusative object clitics, zero-objects and their syntactic type (Operator or *pro*), the restriction of zero-objects to indefinite antecedents, and subjacency effects associated with zero-objects – is given in Table 4 below:

Here, each language brings a unique array of linguistic properties to the table, and therefore the learning task for each group is slightly different. The European Portuguese group has the “simplest” task, having to only restrict the scope of dropped objects to indefinites. The Brazilian Portuguese group must also do this, as well as acquire a new syntactic representation for dropped object and additionally inhibit their L1 syntactic representation of truly null objects to show sensitivity to islands. The L1 English group must acquire clitics, and the appropriate syntactic representation and semantic constraints of dropped objects. The L1 Chinese have

Table 4. L1 Properties relevant for L2 Spanish

L1	L1 Properties				
	Grammatical definiteness	Clitics	Ø-Objects (Type)	[-definite] only	Subjacency
Span	Yes	Yes	Yes (Op)	Yes	Yes
Eng	Yes	No	No (n/a)	n/a	n/a
EP	Yes	Yes	Yes (Op)	No	Yes
BP	Yes	Yes	Yes (<i>pro</i>)	No	No
Ch	No	No	Yes (Op)	No	Yes

perhaps the greatest challenge: they must acquire the Spanish clitic system, restrict the semantic space in which dropped objects are available, and, if a grammaticalization of definiteness is necessary for the acquisition of object drop, they must also acquire this feature.

Let's examine the syntactic and semantic restrictions separately to see if there is any correlation between successful acquisition and the properties of the L1. Considering the semantic constraint first, we note that only the Chinese group was unable to acquire this; all other groups were successful. This asymmetry is paralleled with respect to the degree of grammaticalization of definiteness in the respective L1s: it is not grammaticalized in Chinese, while it is in the other languages. English, European Portuguese and Brazilian Portuguese, like Spanish, have determiner systems which differentiate forms based on definiteness. This observation may suggest, then, that knowledge of the determiner system and/or its relevant features may be a prerequisite for the acquisition of the semantic restrictions on object drop in Spanish. This is supported by observations in first language acquisition, which has shown that the acquisition of object clitics is delayed with respect to articles in languages that exhibit both (e.g. Hamann 2003; Kupisch & Müller 2009; Marinis 2003), and similarly for L2 (Dimitrakopoulou, Kalaitzidou, Roussou & Tsimpli 2004). If successful use of the object clitic system depends on knowledge of article systems (or definiteness grammaticalized elsewhere in the L1), and knowledge of null and overt object expression in Spanish depends on the acquisition of object clitics, then knowledge of dropped objects is indirectly dependent on the acquisition of articles. Lack of a grammaticalized notion of definiteness seems to put the L1 Chinese group at a disadvantage. This is particularly evident in comparison to the L1 English group, who have an article system similar to Spanish, but like the L1 Chinese group, lack clitics. In contrast to the Chinese group, the English group shows knowledge of the semantic restrictions of object drop.

The case of the Brazilian and European Portuguese groups is distinct from that of the Chinese and English groups, because both varieties of Portuguese instantiate object clitics, similar to Spanish. However, the task for all Portuguese learners with respect to the semantic component is to restrict the availability of the null variant of the object clitic to exclusively indefinites. Since their L1 grammars allow for definite and indefinite null objects, a superset of what the Spanish grammar allows, this would seem to impose a learnability problem on these groups. However, results from these learners show that this problem is not insurmountable.

Similar to the situation of the semantic constraint, there was also variable success in the acquisition of the syntactic constraint. We first note that the Chinese group studied in Cuza et al. (2013) was not tested for knowledge of subjacency restrictions, so here we could at best predict how this group might have performed on such a task and speculate why this performance would have been expected. For now, though, we leave such speculation aside and turn to the results that are available. The English, European and Brazilian Portuguese groups were examined in three different island conditions: complex DP, sentential CP and adjunct islands. The European Portuguese group were successful in all three conditions, and were the only group that performed like native Spanish speakers across the board. The English group was successful in two conditions (complex DP and sentential CP islands), and the Brazilian Portuguese group was successful in only the complex DP condition. It is interesting to note that both groups did not perform natively on adjunct islands, suggesting that there is something special about this condition.⁷

These asymmetric results may not be surprising given that the learning task with respect to the syntax of object drop in Spanish is distinct for the three groups. European Portuguese is hypothesized to have the same syntactic representation of object drop as Spanish, so it is perhaps expected that this group show knowledge of the property. Neither English nor Brazilian Portuguese have a Spanish-like representation of dropped objects, but differ crucially in that Brazilian Portuguese does instantiate what might be considered a competing form (i.e. null object *pro*). When confronted with dropped objects in Spanish linguistic input, English speakers have no recourse to systematically interpret them, resulting in a straightforward parsing failure and subsequent grammatical restructuring. Brazilian Portuguese speakers, however, can interpret all Spanish dropped objects with their L1 grammar without further development. In light of this contrast, the acquisition task of the English group is perhaps less complex. While both groups must acquire the proper syntactic representation of dropped objects, the Brazilian Portuguese group must additionally pre-empt the competing option from their L1 grammar.

7. See Rothman and Iverson (2013) for further explanation.

As Rothman and Iverson (2013) argue the Brazilian Portuguese performance with DP islands suggests that the Spanish syntax has been acquired, yet their performance in the other conditions also suggests that they do not apply it across all islands failing to pre-empt their L1 syntax in those contexts. This alone is sufficient to account for why the English group performs better than the Brazilian Portuguese group.

These results, considered as a whole, are problematic for the view that the acquisition of a second language grammar is the superficial transfer of the L1 grammar in addition to the application of general rules gleaned from frequency of particular constructions in the primary linguistic data. Both the Chinese and European Portuguese groups have L1 grammars that instantiate syntactic representations of dropped objects equivalent to what is found in Spanish, and likewise have L1 grammars that allow both definite and indefinite dropped objects (as does Brazilian Portuguese). In short, when considering only this property, the acquisition task appears to be the same. It could even be claimed that only the Chinese group in Cuza et al. (2013) was at an advantage, as they were residents in a Spanish-speaking country and had unrestricted access to abundant input that was both native and natural. As was seen though, with respect to the semantic constraint, the European Portuguese group (as well as the Brazilian Portuguese group) succeeded while the Chinese group did not. Furthermore, the English group, who were unaided by linguistic transfer, also outperformed the Chinese group. Appealing to L1 transfer for this domain alone, these discrepancies are not predicted, especially the difference between the European Portuguese and Chinese groups.

We must, then, resort to other explanations to account for the differing results across groups. Lardiere (2009) suggests that second language acquisition may be better conceptualized as a task that not only involves transfer of the first language grammar and the acquisition of new features, but also involves redeployment of features. Newly acquired and already extant features must be both bundled properly and mapped onto the L2 lexical items. Features may be bundled or organized differently in different languages, and furthermore certain features may be expressed morphosyntactically on a (dedicated) lexical item, or contextually (via varying syntactic position, prosody, etc.). Slabakova (2009) follows Ramchand and Svenonius (2008) to develop this point, claiming that not only does the second language learning task involve transfer, acquisition and redeployment of features, but also that there is a spectrum of difficulty of acquisition. Some properties may be harder to acquire than others because of the way they are expressed in the respective L1 and L2. An easy task is acquiring a property that is morphosyntactically expressed in both languages with the same bundling of features (i.e. with no feature reassembly required). More difficult is the acquisition of a property that is morphosyntactically realized in both the L1 and L2, but requires the reassembly

of features. Harder still is the acquisition of a property which is contextually expressed in the L1, but morphosyntactically expressed in the L2. Combining this with Lyons' (1999) idea that languages differ in how they mark definiteness, we may be able to paint a more satisfactory picture of the acquisition task and its relative difficulty for the learner groups examined here. To acquire object drop in Spanish, all groups must first acquire clitics and their associated features (e.g. definiteness and specificity). Both European and Brazilian Portuguese have clitics, while English and Chinese do not. In spite of the similarity in this respect between the English and Chinese groups, the Chinese group was the only group that was unsuccessful in showing knowledge of the semantic constraint on object drop in Spanish. The difference may be that Chinese learners are also the only group whose L1 does not have definite and indefinite articles – definiteness is not grammaticalized, and is expressed through more semantic or pragmatic means. This changes the relative difficulty of the acquisition task for the Chinese group as compared to the others whilst keeping in mind Slabakova's (2009) footnote to Lardiere's Feature Reassembly Hypothesis (2009). While the English group may have to re-map features such as definiteness from L1 morphemes to new morphemes (i.e. from definite articles to object clitics), the Chinese group must, minimally, map a contextually expressed feature onto a lexical item. This, as Slabakova (2009) claims, is a harder task, a claim which is consistent with the Chinese group's relatively poor performance when compared to speakers of other L1s.

Symmetry of morphologically realized features between the L1 and L2 cannot be the whole story, however; if it were, we would expect symmetrical performances from the non-Chinese groups, since all grammaticalize definiteness in their article systems. Symmetry is perhaps especially expected between the European and Brazilian Portuguese groups, who, in addition to definite and indefinite articles, instantiate object clitics and object drop in their respective L1s. The difference between these two groups is not at the semantic level – both allow definite and indefinite dropped objects, and both successfully acquire the correct Spanish constraint – but rather at the syntactic level. In this respect, European Portuguese speakers have nothing new to acquire, as their syntactic representation of dropped objects is what is found in Spanish. The Brazilian Portuguese speakers must acquire this representation, which is distinct from that of their L1. However, this cannot be the entire story either, because the English group, who similarly must acquire a representation for object drop that they do not have in their L1 grammar, perform better than the Brazilian Portuguese group on the experimental task. The difference between the English and Brazilian Portuguese groups is that while both groups must acquire a new syntactic representation, the Brazilian Portuguese group must additionally eliminate a competing L1 option, a problem of L1 pre-emption. Successful acquisition of an L2 property does not necessarily guarantee

that a comparable L1 property will no longer be entertained as a possibility in the L2 grammar, thus leading to apparent variation (Rothman & Iverson 2011, 2013; Trahey & White 1993). In the following section, we bring the discussion of these data sets to a larger level by addressing its implications for L2 theory more generally.

6. Conclusion

We have provided a macro-analysis that accounts for the whole of the existent data on the acquisition of object drop in L2 Spanish in an effort to address a greater concern of L2 theory, that of overall explanatory adequacy of the processes of acquisition and not just explaining individual data sets. As is traditional in generative approaches to L2 acquisition, we relied heavily on formal syntactic theory to find a basis for the specific explanation of the data for this domain. In this conclusion, we move beyond the explanation of these data sets by highlighting its implications for formal L2 theorizing, which we believe is especially relevant in light of the goal of the present volume which seeks to show how looking at the acquisition of the same L2 from the perspective of various L1s brings much to bear for general L2 theory. In the introduction, we took the position that the theoretical constructs of L1 pre-emption and feature reassembly are important, separately and in combination, for an ultimate explanation of seemingly disparate data sets across L2 studies and thus making strides towards the goal of greater explanatory adequacy in L2 theorizing. We started with the assumption, following others, that a simplistic view of L1 transfer alone is not able to account for all L2 facts. Alternatively, L1 influences at various levels as one variable (to be sure there are others, but we limited ourselves to this herein), when understood in contemporary formal linguistic terms that address its complexity in a sophisticated manner (e.g. Lardiere 2009), provide a tenable path for current generative SLA. Following Slabakova (2009), we contended that examining not only feature reassembly, but understanding that not all features are of equal complexity for the acquisition process (L1, L2 or other) also aids in further understanding differences across L1 groups of a similar L2. Bringing together previous data sets from four distinct L1 learner groups of L2 Spanish (English, Mandarin Chinese, Brazilian and European Portuguese) examining the acquisition of syntactic and semantic properties related to the licensing of object drop, we showed how considering L1 transfer in simplistic terms would not account for the data as a whole. However, coupling together notions of L1 pre-emption effects and a formulation of feature reassembly that considers both what is available (or not) from the L1 as well as how features are represented (grammaticalized or not), not only explain the data but at the same time paint a more

accurate picture of the dynamics of L2 acquisition and the detailed intricacies L2 acquisitionists must attend to when trying to explain L2 processes. We leave this epistemological exercise encouraged that greater, more generalizable explanatory adequacy in L2 acquisition will ultimately be possible as we come to approach the task of L2 theory with greater sophistication and armed with more detail oriented hypotheses that seek to understand things beyond the surface.

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