Transfer in L2 and L3 Acquisition of Generic Interpretation

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1. Introduction: Cross-linguistic transfer

The role of transfer from the first language (L1) in second language (L2) acquisition is well-documented (Dechert & Raupach 1989; Ellis 2006; Gass & Selinker 1992; Odlin 1989; Schwartz & Sprouse 1996, among many others). Cross-linguistic transfer is also attested in third language (L3) acquisition. Unlike in L2-acquisition, however, transfer in L3-acquisition can have different sources. Transfer may occur only, or predominantly, from the L1 to the L3 (Bouvy 2000; Leung 2006). Alternatively, transfer may occur only, or predominantly, from the L2 to the L3 (Bardel and Falk 2007; Bohnacker 2006; Hammarberg 2001; Rothman and Cabrelli Amaro 2010). It is also possible that properties of both the L1 and the L2 transfer to the L3 (Flynn, Vinnitskaya and Foley 2004). And finally, it is possible that what matters is not order of acquisition, but rather, which language (the L1 or the L2) is structurally closer to, or perceived as being structurally close to, the L3 (de Angelis and Selinker 2001; Cenoz 2003; Foote 2009; Montrul, Dias and Santos 2011; Singleton and O’Laoire 2006).

Most prior studies of L3-acquisition have focused on the lexicon (Ringbom 2001; Singleton and O’Laoire 2006), morphosyntax (Leung 2006), or narrow syntax (Bardel and Falk 2007). The goal of our study is to examine what transfers in the L3-acquisition of a purely semantic phenomena: plural NP interpretation.

2. Background: Plural NPs and genericity

English, Spanish and Brazilian Portuguese (henceforth, BrP) instantiate three different options for how generic and kind readings can be expressed by plural NPs. While English expresses generic readings via bare (article-less)
plural NPs, Spanish does so using plural NPs with definite articles, and BrP allows both options.¹

In English, a bare plural such as *tigers has a generic/kind interpretation, so that (1a) expresses what tigers as a kind do. In contrast, (1b), with a definite plural, is a statement about a specific group of tigers in the context (e.g., the tigers already under discussion, the tigers being viewed in a cage at the zoo, etc.). Definite plurals in English lack generic readings, which are expressed by bare plurals. With kind predicates such as be extinct, or be common, the subject NP must have a kind interpretation (see Krifka et al. 1995); in English, bare plurals, but not definite plurals, can occur with kind predicates, as shown in (1c-d).

(1) a. Tigers eat meat.               [#specific, √generic]
b. The tigers eat meat.            [√specific, #generic]
c. Tigers are common in this part of the world.
d. The tigers are common in this part of the world.

The situation is reversed in Spanish. Bare plurals are (typically) ungrammatical in preverbal subject position, as shown in (2a); definite plurals can have both generic and specific readings, so that (2b) can be either a statement about tigers as a kind (equivalent to (1a)), or a statement about a specific group of tigers (equivalent to (1b)). This contrast is also observed with kind predicates: again, bare plurals are ungrammatical (2c), and definite plurals have kind readings available to them (2d). Spanish patterns with most other Romance languages, including French and Italian, in using definite rather than bare plurals for generic readings (Chierchia 1998; Longobardi 2001).

(2) a. *Tigres comen carne.
   tigers eat meat
b. Los tigres comen carne.          [√specific, √generic]
   the-pl tigers eat meat
   ‘The tigers eat meat.’ or ‘Tigers eat meat.’
c. *Tigres son comunes en esta parte del mundo.
   tigers are common in this part of the world
   ‘Tigers are common in this part of the world.’
d. Los tigres son comunes en esta parte del mundo.
   the-pl tigers are common in this part of the world
   ‘Tigers are common in this part of the world.’

BrP is different, in that it allows both bare and definite plurals can express generic readings: while (3a), with a bare plural, is a statement about tigers as a

¹. All three languages also express generic readings via definite and indefinite singular NPs (Krifka et al. 1995), and, in the case of BrP, bare singular NPs (Schmitt and Munn 1999, 2002). For the purposes of the present study, we focus on plural NPs only.
kind (just like (1a) in English), (3b), with a definite plural, can be a statement either about tigers as a kind, or about a specific group of tigers, just like (2b) in Spanish. With kind predicates, once again, both bare plurals and definite plurals are possible (3c-d) (Schmitt and Munn 1999, 2002).

(3) a. Tigres comem carne.  [#specific, \(\neg\)generic]  
   tigers eat meat  
   ‘Tigres eat meat.’

   b. Os tigres comem carne.  [\(\sqrt{\text{specific}}, \sqrt{\text{generic}}\]  
   the-pl tigers eat meat  
   ‘The tigers eat meat.’ or ‘Tigers eat meat.’

   c. Tigres são comuns nesta região do mundo.  
   tigers are common in-this region of-the world  
   ‘Tigers are common in this part of the world.’

   d. Os tigres são comuns nesta região do mundo.  
   the-pl tigers are common in-this region of-the world  
   ‘Tigers are common in this part of the world.’

On the semantic account of Dayal (2004) (which builds on Chierchia 1998), definite articles in English and Spanish lexicalize different concepts: while English definite articles lexicalize true definiteness only, definite articles in Spanish, French and Italian lexicalize kind-reference as well as definiteness. With kind predicates such as *be common*, only the kind-reference reading is possible, hence the impossibility of definite plurals with kind predicates in English, as in (1d). (For alternative syntactic accounts of the English/Romance difference, see Vergnaud and Zubizarreta 1992, Longobardi 2001).

In the case of BrP, Schmitt and Munn (1999, 2002) have argued (contra Müller 2002) that both bare and definite plurals can be kind-denoting. In Dayal’s (2004) framework, this means that definite articles in BrP lexicalize both definiteness and kind-reference, but while definiteness marking is obligatory with true definites, it is optional with kind-reference; this is why bare plurals in BrP, as in (3a) can have generic/kind readings but not true definite/specific readings, whereas definite plurals, as in (3b), can have both.

3. Genericity in L2 and L3 acquisition

In prior work, we have found that L1-transfer is attested in the L2-acquisition of plural NP interpretation of both English and Spanish. L1-Spanish L2-English learners (initially) incorrectly allow generic readings of English definite plurals (Ionin and Montrul 2010), whereas L1-English L2-Spanish learners (initially) disallow generic readings of Spanish definite plurals (Montrul and Ionin in press). Transfer effects have also been found in the L2-acquisition of bare plural interpretation in L2-English and L2-Italian (Slabakova 2006).
At the same time, nothing is known about plural NP interpretation in the acquisition of BrP, and to what extent it is influenced by cross-linguistic transfer. In the U.S., learners of BrP are typically learning the language as an L3, not as an L2, due to prior knowledge of English and a Romance language, most commonly Spanish (cf. Montrul et al. 2011). In the present paper, we ask the following research question: What transfers in the L3-acquisition of plural NP interpretation by L1-English L2-Spanish L3-BrP learners?

As discussed in the previous section, BrP combines the properties of English and Spanish. In the learners’ L1 (English), bare plurals can be generic, while definite plurals cannot; in the learners L2 (Spanish), definite plurals can be generic, while bare plurals cannot; and in the learners L3 (BrP), both bare and definite plurals can be generic.

Suppose that transfer in L3-BrP takes place from the L1 (English) alone. In that case, transfer would mean that in these learners’ Interlanguage grammar, BrP definite articles lexicalize definiteness without kind-reference. The learners should correctly allow bare plurals with generic/kind readings in BrP, but should incorrectly disallow definite plurals with generic/kind readings. Overcoming L1-influence would mean learning that, in fact, BrP (optionally) lexicalizes kind-reference on the definite article, so that definite as well as bare plurals are allowed with generic/kind readings.

Suppose, instead, that transfer in L3-BrP takes place from the L2 (Spanish) alone. In that case, transfer would mean that for these learners, BrP definite articles lexicalize both definiteness and kind-reference, and the definite article is obligatory in both cases (as it is in Spanish). The learners would then incorrectly disallow bare plurals in BrP with generic/kind readings, while correctly allowing definite plurals to have these readings. Overcoming L2-influence would mean learning that BrP definite articles lexicalize kind-reference only optionally, so that bare plurals can also express generic/kind readings.

Yet a third possibility is that transfer to the L3 will take place from both the L1 and the L2, as predicted under the Cumulative Enhancement Model of Flynn et al. (2004). Cumulative transfer would allow learners to combine the English and Spanish options: to allow BrP definite articles to lexicalize kind-reference, but only optionally. Cumulative transfer should therefore lead learners to allow both definite and bare plurals with generic/kind readings in BrP – precisely the target option. Even lowest-proficiency learners are then expected to be target-like, since they can take advantage of their knowledge of English and Spanish, leading them to allow generic/kind readings for BrP bare plurals (transfer from English) and definite plurals (transfer from Spanish).

Yet another possibility is that L3-BrP learners would transfer only from the language which they perceive to be more structurally similar to their L3 (cf. Kellerman 1979 on the role of psychotypology in transfer). Prior studies (Foote 2009; Montrul et al. 2011; Rothman 2011) suggest that L3-learners of a Romance language who speak English and another Romance language tend to
transfer primarily from Romance to Romance, rather than from English to Romance, regardless of whether English is their L1 and their L2. For example, Montrul et al. (2011), looking at the acquisition of clitics and object expression in BrP, found that both L1-English L2-Spanish L3-BrP learners, and L1-Spanish L2-English L3-BrP learners, transferred primarily from Spanish, and not from English. Montrul et al. argue that linguistic proximity between Spanish and BrP, as perceived by the learners, plays a role in the patterns of transfer. Rothman (2011) makes a similar claim.

If perceived structural proximity also plays a role in the domain of plural NP interpretation, then we expect the L1-English L2-Spanish L3-BrP learners to transfer from Spanish alone, disallowing bare plurals with generic readings, and allowing definite plurals with generic readings.

4. Methodology: English, Spanish and BrP studies

We examined plural NP interpretation using an Acceptability Judgment Task (AJT), which was translated into English, Spanish and BrP, and was identical in content and format across the languages. All of the learners also took a proficiency test (a cloze test + vocabulary test) in the target language, which was administered after the AJT. All tasks, as well as a language background questionnaire, were administered via a web-based survey tool.

4.1. Participants

The participants in the English study were 22 native English speakers, tested in Illinois, whose performance allows us to establish the baseline data for plural NP interpretation in English. The participants in the Spanish study were 16 native speakers of Spanish (ten tested in Argentina, and six in Illinois) and 31 L1-English classroom learners of L2-Spanish; they were divided into Low and High groups based on their Spanish proficiency test scores. The mean proficiency score was 52% correct in the Low group (range 30-64%) and 77% correct in the High group (range 66-88%).

The participants in the BrP study were 19 native BrP speakers, all tested in Brazil (all were college students or college graduates); and 16 classroom learners (both past and present) of BrP at the University of Illinois. As far as we were able to ascertain, materials used in the University of Illinois BrP program do not provide formal instruction about the expression of genericity in BrP. The 16 learners all spoke English as their first language, and reported having learned a Romance language in the classroom prior to studying BrP; for 15 of the 16 learners, the L2 was Spanish, and in the remaining case, it was French. For our purposes, French behaves just like Spanish, in that it requires definite plurals, and disallows bare plurals, for generic interpretation. The learners’ mean score on the BrP proficiency test was 69% correct (range 42-88%).
4.2. Acceptability judgment task (AJT)

The AJT consisted of 40 items, and each item was a story followed by five minimally different continuation sentences. Participants were asked to rate each sentence on a scale from 1 (unacceptable) to 4 (acceptable); they were instructed that the same score could be given to multiple continuations. There were 20 target items (5 categories of 4 items each) targeting NP interpretation, and 20 filler items targeting aspectual interpretation; items were randomized for order of presentation. We discuss only two of the test categories here: the Kind-reference category and Generic category. The remaining test categories tested non-generic NP uses as well as mass nouns.

Each story in the test categories was followed by five different continuations, which were identical except for the form of the subject NP (and the corresponding agreement on the verb): the five forms of the subject NP were definite plural, bare plural, definite singular, indefinite singular, and bare singular. We discuss only definite plurals and bare plurals in the present paper, since this is an area in which English, Spanish and BrP all differ from one another, as discussed above. For native-speaker ratings of all five sentence types, in all three languages, see Ionin, Montrul and Santos (in press).

The Kind-reference category, exemplified in (4) through (6) for the three languages, tested NP interpretation in the context of kind predicates such as be common, be widespread and be extinct.2 The Generic category, exemplified in (7) through (9), tested NP interpretation in generic sentences (e.g., in this case, toy animals are described as generally being good children’s gifts). As discussed above, both kind-reference and generic contexts require bare plurals in English and definite plurals in Spanish, while allowing both plural NP types in BrP.

(4) Kind-reference category, English: I know that you like birds. Well, if you ever visit California, you’ll see lots of different kinds of birds there. For example...
   a. Pelicans are widespread on the California coast.
   b. The pelicans are widespread on the California coast.

(5) Kind-reference category, Spanish: Sé que te gustan los pájaros. Si visitas California vas a encontrar todo tipo de pájaros allí. Por ejemplo...
   a. Pelicanos son muy comunes en la costa de California.
   b. Los pelicanos son muy comunes en la costa de California.

2. The Spanish and BrP items are translations of the English items. Here, the (a) sentences contain bare plurals, and the (b) sentences contain definite plurals; the target sentences for each language are highlighted. In the actual test, there was no highlighting, and sentences after each story were randomized for order of presentation.
(6) *Kind-reference category, BrP:* Eu sei que você gosta de pássaros. Bom, se você for para a Califórnia alguma vez, você vai ver vários tipos de pássaros diferentes lá. Por exemplo…
   a. Pelicanos são encontrados em toda a costa da Califórnia.
   b. Os pelicanos são encontrados em toda a costa da Califórnia.

(7) *Generic category, English:* It’s my niece’s birthday this Saturday – she is going to be three years old. I’m not sure what to get her. Maybe I’ll just get her some toy, like a stuffed dog or bear. I can’t go wrong with that. We all know that…
   a. Toy animals are good children’s gifts.
   b. The toy animals are good children’s gifts.

(8) *Generic category, Spanish:* Este sábado es el cumpleaños de mi sobrina y cumple 3 años. No sé qué comprarle. A lo mejor le compro un juguete, como un osito de peluche o un perrito. Creo que eso le va a gustar. Todos sabemos que…
   a. Peluches son un buen regalo para niños.
   b. Los peluches son un buen regalo para niños.

(9) *Generic category, BrP:* Este sábado é o aniversário da minha sobrinha. Ela vai fazer três aninhos. Eu não sei muito bem o que dar para ela. Talvez eu compre um brinquedo, como um cachorrinho ou um ursinho de pelúcia. Acho que não dá para errar com um presente assim, pois como todos nós sabemos…
   b. Os bichinhos de brinquedo são bons presentes para criança.

5. Results
5.1. English and Spanish studies

Figure 1 displays the means and standard deviations of the ratings of bare and definite plural NPs in the English study (by native English speakers) and the Spanish study (by native Spanish speakers and L1-English L2-Spanish learners; for readability, a vertical line separates the results from the two languages). As expected, native English speakers tested in English rated bare plurals high and definite plurals low in both categories, whereas native Spanish speakers tested in Spanish did exactly the opposite. L2-Spanish learners were quite target-like, rating definite plurals well above bare plurals in both categories.

A two-way repeated-measures ANOVA on the English results yielded significant effect of NP type, with bare plurals rated above definite plurals (F(1,21)=206, p<.001) as well as a significant effect of category, with higher mean ratings in the Kind-reference than the Generic category (F(1,21)=12,
p<.01). There was also a significant NP by category interaction, due to the fact that the distinction between bare and definite plurals was stronger in the Generic than the Kind-reference category (F(1,21)=9.3, p<.01).

Figure 1: Mean ratings of plural NPs in English and Spanish

A mixed repeated-measures ANOVA on the Spanish results (with group as the between-subjects variable) yielded a significant effect of NP type (F(1,44)=141, p<.001), with definite plurals rated higher than bare plurals. There was no significant effect of category (F(1,44)=3.0, p=.09), indicating that the Kind-reference and Generic categories were treated quite similarly. Group did not have a significant effect (F(2,44)=.91, p=.41), but group interacted significantly with category (F(2,44)=6.6, p<.01): while all three groups gave very similar ratings in the Generic category, the native Spanish speakers gave lower ratings to the Kind-reference category than did the two learner groups. There were no other significant interactions in the data, indicating that all three groups made similar distinctions between bare and definite plurals. This indicates that the learners had largely overcome transfer from English and recognized that Spanish requires definite plurals to express generic readings.

5.2. BrP study

Figure 2 presents the results from the BrP study. As predicted by Schmitt and Munn (1999, 2002), native BrP speakers found bare and definite plurals equally acceptable in both Kind-reference and Generic category. In contrast, the
L3-BrP learners exhibited a clear preference for definite plurals over bare plurals. A mixed repeated-measures ANOVA (with group as the between-subjects variable) yielded a significant effect of NP type (F(1,33)=9.7, p<.01), with definite plurals rated above bare plurals. There was no significant effect of category (F(1,33)<1), but category interacted with NP type (F(1,33)=16, p<.001), a result of the fact that the difference in ratings of bare and definite plurals was greater in the Kind-reference than the Generic category. Group had a significant effect (F(1,33)=27, p<.001), with the Native BrP group giving higher ratings than the learner group. Group interacted significantly with NP type, (F(1,33)=13, p<.01), a result of the fact that, as seen in Figure 2, native speakers gave essentially the same ratings to definite and bare plurals, whereas learners rated definite plurals significantly above bare plurals. There were no other significant interactions.

![Figure 2: Mean ratings of plural NPs in BrP](image)

Since group patterns can mask individual patterns, we asked to what extent individual participants accepted bare vs. definite plurals in Kind-reference and Generic contexts. Of the 16 learners, all but one gave high ratings (3.0 or above, on a scale from 1 to 4) to definite plurals in both categories, but only 6 learners gave high ratings (3.0 or above) for bare plurals in both categories (all 19 native speakers gave high ratings to both definite and bare plurals). Furthermore, there appeared to be some relationship between proficiency and ratings. Breaking the learners down into three roughly equal-sized groups based on their proficiency scores, we found that only one of the six lowest-proficiency learners rated bare plurals high, compared to two of five mid-proficiency learners, and three of the
five highest-proficiency learners. While these numbers are too small to draw meaningful conclusions, there is evidence that lowest-proficiency learners do not (as might be expected) transfer from their L1, English, in making judgments about BrP – if they did, we would expect high ratings of bare plurals at the lower proficiency levels. High ratings of bare plurals appear to be related to higher proficiency, as more proficient learners acquire enough information about BrP to know that it allows bare as well as definite plural generics. However, more research with larger samples is needed to establish this for certain.

5.3. Pilot data from L1-Spanish L2-English L3-BrP learners

To sum up, the performance of native speaker groups in all three languages tested is fully in line with the predictions in the literature: English speakers allow only bare plurals for generic/kind readings, Spanish speakers allow only definite plurals for generic/kind readings, and BrP speakers allow both.

Turning to learners, we see that the L2-Spanish learners were fully target-like: even the lower-proficiency learners correctly allowed only definite plurals for generic/kind readings. By implication, we can assume that the L1-English L2-Spanish L3-BrP learners in our study were aware of how genericity works in Spanish. In contrast, the learners of L3-BrP were not fully target-like: they allowed definite plurals for generic/kind readings, but they did not allow bare plurals for generic/kind readings (especially at the lower proficiency levels).

We now come back to the question of what transfers. The data suggest that the L3-BrP learners transfer the generic/kind readings of definite plurals from Spanish (the L2) to BrP (the L3), but do not transfer the generic/kind readings of bare plurals from English (the L1) to BrP (the L3). This finding is compatible with at least two different explanations. One possibility is that transfer occurs only from the L2, and not the L1 (perhaps because the L2 is more recently learned, or because the L2 and the L3 are learned in a similar classroom setting).

An alternative explanation is that transfer is from the language that is perceived by learners to be structurally closer to BrP, namely Spanish.

In order to tease apart these possibilities, we need data from L1-Spanish L2-English L3-BrP learners. If order of acquisition is the determining factor, then such learners should transfer from English rather than Spanish, and allow bare plurals (and not definite plurals) with generic/kind readings in BrP. If (perceived) structural proximity is the determining factor, then we should see transfer from Spanish, and not English, regardless of order of acquisition.

In order to address this issue, we have collected pilot data from four L1-Spanish L2-English L3-BrP learners. Of these, three are learners who grew up in Spanish-speaking country (Ecuador, Costa Rica, and Columbia), arrived in the U.S. as adults and became immersed in English in the U.S., reporting near-native English proficiency. The fourth is an early bilingual Spanish/English speaker, who was born in the U.S. to Spanish-speaking parents and learned
English at school. All four were enrolled in the same BrP program at the University of Illinois as the L1-English L2-Spanish L3-BrP learners, and scored in the 60-92% range on the BrP cloze proficiency test (mean: 75%), which is comparable to the performance of the L1-English L2-Spanish L3-BrP group.

The L1-Spanish group exhibited the same patterns on the BrP AJT as the L1-English group: they rejected bare plurals in both Kind-reference and Generic categories (mean ratings of 1.69 and 1.63, respectively), and accepted definite plurals in both categories (mean ratings of 3.81 and 3.88, respectively). The L1-Spanish L2-English L3-BrP learners were even more categorical than the L1-English L2-Spanish L3-BrP in rejecting BrP bare plurals with generic/kind readings. The comparison between the two L3-groups suggests that perceived structural proximity plays an important role in transfer: learners transferred from Spanish rather than from English, regardless of whether this was their L1 or their L2. While more data from L1-Spanish L2-English L3-BrP learners are needed, the current findings are fully consistent with Montrul et al.’s (2011) findings on clitics and object expression in L3-BrP: in that study, also, transfer was from Spanish and not from English, regardless of order of acquisition.

6. Conclusion and further questions

This study examined L3-acquisition in a previously unexplored semantic domain; the findings suggest that in determining the interpretation of plural NPs in their third language, learners draw primarily upon the language they perceive as structurally close to the L3, regardless of whether it is the L1 or the L2.

An interesting question is what would happen for L1-English L2-BrP learners who do not have knowledge of Spanish or any other Romance language besides BrP. For such learners, transfer can take place only from English, so we would expect these learners to allow bare plurals with generic/kind readings in BrP, unlike the L3-learners. If even L2-BrP learners disallow bare plurals with generic/kind readings, this would suggest that transfer is not the relevant factor. Rather, there may be some other factor responsible for the results, such as lower frequency of generic bare plurals than of generic definite plurals in the input, and/or instructional emphasis on definite plurals. In order to investigate this issue, follow-up work is underway to compare L2 and L3-learners of BrP.

Related to this issue, it is important to investigate the frequency of bare and definite plurals with generic/kind readings in the input that BrP learners receive. Another question for further study is what factors ultimately lead learners to become fully target-like in their interpretation of BrP bare plurals.

Finally, at a more conceptual level, there is the question of why perceived structural similarity appears to play a role in some studies but not others. On the one hand, work on the L3-acquisition of Romance languages (Foote 2009, Montrul et al. 2011, and the present study) has found that (perceived) structural proximity is more important than order of acquisition. On the other hand,
structural similarity has not been found to play a role in the L3-acquisition of verb syntax in Germanic languages (Bardel and Falk 2007; Bohnacker 2006). It is not clear whether the language combinations, phenomena under investigation, and/or data collection methodologies used are ultimately responsible for these differences. While the question of what transfers in L3-acquisition is still unresolved, we hope that the present study contributes data towards the answer.

References


