

# On the Status of Tense and Aspect Morphology in Child Heritage Spanish: An Analysis of Accuracy Levels

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## 1. Introduction

Hispanics are the fastest growing minority group in the United States and are creating, in many parts of the country, large bilingual communities, especially among second-generation immigrants (Shin & Kominski, 2010). Those individuals who grew up in the United States but were raised speaking a minority language, specifically Spanish, at home are known as heritage speakers of Spanish (Valdés, 2001). Often these speakers acquire receptive or passive knowledge of the minority language with limited productive ability. They also have few opportunities to develop literacy or to be exposed to formal education in the minority language.

Despite the increasing presence of Spanish heritage speakers in the United States, the development of their two languages is not completely understood. For instance, within the field of generative linguistics, three processes are argued to influence heritage language acquisition with no clear consensus on which process may affect which structures. Some authors argue for incomplete acquisition of the minority language, which is an “outcome of language acquisition that is not complete or attrition in childhood. Incomplete L1 acquisition occurs when, for different reasons, some specific properties of the language do not have a chance to develop to age-appropriate levels of proficiency after intense exposure to the L2 begins.” (Montrul, 2002). However, others argue for L1 attrition, which is the complete and stable acquisition of a structure and its subsequent loss due to language reanalysis throughout the lifespan (Cuza, Pérez-Tattam, Barajas, Miller & Sadowski, 2013; Polinsky, 2011). When studying adults’ minority language use, differential outcomes could be due to either process. For this reason, determining which structures are never completely acquired and which structures are acquired but later lost is difficult without longitudinal or cross-sectional studies with children throughout the first stages of acquisition and exposure to English-language schooling. Apart from these two processes leading to competence divergence in the minority language, other researchers argue that, in fact, these children have a completely formed grammar, but that their grammar is different from monolingual speakers because they have acquired a contact variety of Spanish which is missing structures in the input they receive. This is known as the *Missing Input Competence Divergence Hypothesis* (Rothman, 2007). In order to understand how heritage speakers acquire the minority language, research must determine the relative importance of these three hypotheses and how they affect different grammatical categories.

We add to this current discussion by analyzing the production of past tense morphology of heritage speakers of different ages and their parents. When comparing the target production across different age groups, the data will shed light on whether, in this instance, the children undergo incomplete acquisition, L1 attrition or the acquisition of a contact variety with a different tense and aspect system. We implement controlled elicitation methodology to determine more precisely the

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acquisition order of different combinations of predicate type and situation type in child heritage Spanish (Crain & Thornton, 2008; Cuza & Strik, 2012). Previous research has used controlled elicitation in order to determine which structures cause adult heritage speakers the most difficulty (Cuza & Frank, 2011; Montrul, 2002; Silva-Corvalán, 1994, 2003), but research must also explore the process leading up to these adults' ultimate attainment.

Section 2 of this study will review the structures under analysis and their different manifestations in English and Spanish. Then, Section 3 will review previous literature whose results are relevant to the formation of this study's research questions and hypotheses. Section 4 will outline the study including a description of the participants and the methodology. Section 5 will include the results, which are discussed in Section 6.

## 2. Tense and aspect

Aspect differs from tense in that it concerns itself with the internal temporal composition of an event whereas tense concerns itself with the external temporal relation of an event to other events. Lexical aspect and four classes of verbs (states, activities, accomplishments, achievements) were proposed by Vendler (1967) with their classification based on durativity, dynamicity and telicity. While these classifications can be useful, they do not explain how some verbs can switch lexical class based on context or speaker viewpoint. As a solution, Comrie (1976) proposed a grammatical aspect determined by the speaker's viewpoint and the verbal morphology that they choose. This is still inadequate, though, as sometimes verbal morphology does not agree with the aspectual interpretation of the predicate. Compositional aspect (Verkuyl, 1972) aims to be the most complete account of the determination of aspect since it takes into consideration the verb, its nominal arguments and the syntactic relations between these.

This study focuses on aspectual interpretations in the past tense, so the discussion of aspectual differences between English and Spanish will be limited to this one area. The main aspectual difference between these two languages is one of grammatical aspect due to the fact that English does not differentiate between perfective and imperfective aspect in its past tense verbal morphology as Spanish does. Spanish contains two past tense verbal paradigms, which align with the perfective/imperfective distinction. Two identical predicates can be expressed as either perfective or imperfective based on the viewpoint of the speaker and their choice of verbal morphology, as represented in (1) and (2) below:

- (1) *Caminé por el parque.*  
'I walked-PRF around the park.'  
(2) *Caminaba por el parque.*  
'I walked-IMP around the park.'

As seen in the translations of (1) and (2), the simple past in English can be interpreted as [ $\pm$ perfective]. While the perfective interpretation can only be expressed with the past tense verbal morphology *-ed* in English, the imperfective aspectual value can be expressed using periphrastic expressions such as "used to" or "would":

- (3) I walked in the park.  
(4) I used to walk in the park.

Although overt verbal morphology is not used to make the aspectual distinction between these two sentences, native speakers do interpret an aspectual difference similar to that encoded in the Spanish preterite (perfective) and imperfect (imperfective).

In Spanish the imperfect morphology can also have an ongoing interpretation in the past that is impossible in English (#Mary washed-IMP the dishes). In English, the past progressive construction with the auxiliary "to be + *ing*" must be used:

- (5) *María lavaba los platos.*  
'Mary was washing the dishes.'

The *-ed* form in English is not normally interpreted as ongoing. Therefore, the most common option available to English speakers is the “to be + *ing*” construction. This construction is also allowed in Spanish and is just as acceptable as the imperfective morphology.

- (6) *María lavaba los platos.*  
 ‘#Mary washed-IMP the dishes.’
- (7) *María estaba lavando los platos.*  
 ‘Mary was-IMP washing the dishes.’

In this case, Spanish has two options; the continuous interpretation in Spanish can be expressed by either the imperfect verbal morphology or the periphrastic construction. A continuous interpretation is that of an ongoing action that is interrupted by another action as illustrated in the following examples:

- (8) *Estudiaba cuando María llegó.*  
 ‘I studied-IMP when Maria arrived.’
- (9) *Estaba estudiando cuando María llegó.*  
 ‘I was-IMP studying when Maria arrived.’

Again, in English, the “to be + *ing*” construction is used.

- (10) I was studying when María arrived.

Therefore, the past progressive has two interpretations in both English and Spanish: continuous and ongoing. The difference is that Spanish has an alternative in the imperfective verbal morphology for these two interpretations. The most important aspectual differences between Spanish and English are outlined below.

1. The differentiation between habitual and perfective events with the preterite and imperfective morphology in Spanish, which can both be expressed with *-ed* in English.
2. English can express habitual actions in the past with periphrastic expressions such as “used to” or “would” that do not exist in Spanish.
3. English has the option of the progressive construction to express continuous and ongoing interpretations, whereas Spanish has two options: the progressive construction and the imperfect verbal paradigm.

### 3. The bilingual acquisition of tense and aspect

Monolingual acquisition of tense and aspect is fairly quick (stable by age 4;0) (Pérez-Pereira, 1989; Sebastián & Slobin, 1991) and typically follows a predictable pattern (Andersen, 1986). However, as is the case with many aspects of language, the acquisition of tense and aspect by other populations is not as straightforward or successful. This section will review some of the different factors that affect child bilinguals and L2 learners such as age of onset of acquisition, reduced input, reduced output, and cross-linguistic transfer.

Tense and aspect verbal morphology has proved difficult for bilinguals who showed in Silva-Corvalán’s (1994) canonical work that these speakers had totally readjusted their aspectual systems and may not have been marking for aspect at all. While Rothman (2007) cautions us against attributing bilingual variation to incomplete acquisition or attrition when, in fact, it may be due to the acquisition of a contact variety as is the case with heritage speakers of Brazilian Portuguese, there is some reason to believe that Spanish-English bilinguals in the US do not perfectly reproduce the input they have received in tense and aspect morphology (Cuza, 2008, 2010b; Cuza et al., 2013; Montrul, 2008; Polinsky, 2011). Montrul (2002) argues that the earlier a bilingual begins the acquisition of English, the more incomplete acquisition he or she will suffer due to reduced input in Spanish (p. 61). Similarly, those structures acquired later in monolingual acquisition are most likely to remain indeterminate in child bilingual grammars. Polinsky (2011), however, argues for a role for L1 attrition based on data with relative clause word order in adult bilinguals, which could not be attributed to transfer from English. Since studies on adults cannot accurately predict what will happen during childhood, later studies examined younger bilingual children. For example, Cuza et al. (2013) unites

these approaches and finds a role for both incomplete acquisition with the imperfect and L1 attrition with the preterite showing that each structure in a bilingual grammar can undergo different processes. While it seems that all of these factors may play a role in determining the state of bilingual grammars, it is not yet completely clear which processes play a role at what point in the lifespan and with which structure nor how teachers can best aid bilingual children with the acquisition and maintenance of their two languages. Answers to these questions could also shed light onto L2 acquisition as well since L2 learners may suffer from similar transfer effects.

Research on the L2 acquisition of tense and aspect is plentiful and has revealed difficulties such as the use of a default past tense marker similar to the *-ed* of English with an increased reliance on lexical and grammatical aspect as proficiency increases (Salaberry, 1999, 2003; Salaberry & Shirai, 2002). Another difficulty for L2 learners is aspectual coercion, or the ability to accept sentences in which grammatical aspect and eventuality description do not match (Montrul, 2002; Slabakova & Montrul, 2003). These same difficulties have also been found in speakers suffering L1 attrition (Cuza, 2008, 2010b) suggesting a role for cross-linguistic transfer, a factor affecting both populations. Finally, It has been shown that one morpheme and its semantic properties may be acquired while another remains indeterminate (Pérez-Leroux, Cuza, Majzlanova & Sánchez-Naranjo, 2008) and that morphology may be mastered while learners still struggle with semantic properties (Slabakova & Montrul, 2003).

Different explanations have been proposed to account for these difficulties. Some argue that the task of the L2 learner is one of parameter switching (Montrul, 2002; Slabakova & Montrul 2003) and that L2 learners can successfully switch their parameters to arrive at target like production and interpretation of tense and aspect. According to this viewpoint, difficulties with aspectual coercion may remain due to the fact that this is a pragmatic ability not encoded in a speaker's innate grammar and requires much more processing energy. An alternative explanation is that which argues for a selectional approach to the acquisition of tense and aspect (Pérez-Leroux et al., 2008). Following De Swart's (1998) proposal, this approach defines the L2 learner's task as one of acquiring the selectional properties of tense heads. The learner must learn the eventuality descriptions that each morpheme can select, and this process, unlike that proposed by a featural approach to tense and aspect, can occur one morpheme at a time. It, therefore, seems that this approach is the most likely description of L2 acquisition due to data showing that one morpheme can be acquired while the other remains indeterminate (Pérez-Leroux et al., 2008). In addition, research shows that morphologically similar languages like Spanish and Portuguese do not necessarily share the same semantic interpretations (Schmitt, 1996). Therefore, L2 learner difficulties with tense and aspect can be attributed to transfer of the selectional properties of tense heads (Cuza, 2010a; Pérez-Leroux et al., 2008).

Recently, research with other grammatical categories (Alarcón, 2011; Lardiere, 2008) has also proposed that L2 learners' difficulties may be due to problems mapping function to form rather than any type of impairment or failure to acquire features of the L2. This hypothesis is very interesting and may be an additional factor affecting L2 learners apart from cross-linguistic transfer and may eventually explain differences between heritage speaker and L2 grammars.

In summary, the literature shows similar difficulties with tense and aspect among child bilinguals and L2 learners that differ from monolingual production and interpretation in several ways. Both groups seem to show simplification of the aspectual system and use of a default past tense marker, the preterite, due to transfer of the simple past tense *-ed* in English. This leads to the use of preterite verbal morphology in characterizing situations. Additionally, aspectual coercion is a difficult area for both groups as well (Cuza, 2008, 2010a, 2010b; Slabakova & Montrul, 2003). An acceptable description of the acquisition of tense and aspect must explain why these two populations suffer similar problems and why both groups differ from monolingual learners. Many explanations have been proposed such as reduced input, incomplete acquisition, L1 attrition, cross-linguistic transfer and the *Missing-input Competence Divergence Hypothesis* with none able to explain all the difficulties faced by these populations on its own.

The present study adds to this discussion by studying young bilingual children's knowledge of tense and aspect in Spanish, which has only been done in one study (Cuza et al., 2013) and will test their knowledge with a controlled production task in order to determine whether these are true difficulties or avoidance strategies, and, if they are problems of representation, in which contexts they occur. This study will also shed light on whether bilingual variation in the children is due to exposure to a contact variety in the parental input, or processes taking place within the individual. Based on gaps in previous research, this study aims to address the following research questions and hypotheses:

RQ1) Will bilinguals have difficulty producing correct preterite and imperfect morphology with any combinations of predicate and situation type? If so, which?

- H1. Bilingual children will incorrectly extend the use of the preterite morphology to habitual actions (characterizing situations) in the past where the imperfect morphology would be grammatically correct due to transfer from the English simple past *-ed*.  
 H2. Bilingual children will use the past progressive structure more than the parental control group when describing progressive events in the past due to influence from English having only the past progressive as a possibility.

RQ2) Do bilingual children produce different forms than their parents or replicate the parental input?

- H3. Bilingual children will not replicate parental input of tense and aspect morphology, which will be target due to the parents' limited knowledge of English.

RQ3) Do any difficulties become more pronounced with age (Cuza & Pérez-Tattam, 2012)?

- H4. Older participants will exhibit more problems (e.g. use of preterite as default, use of past progressive) due to transfer as their exposure to English increases.

## 4. The study

### 4.1. Participants

The participants in this study were fourteen ( $n=14$ ) Spanish-English simultaneous bilingual children and five ( $n=5$ ) first generation parents of these children. Participants were recruited through word of mouth and one parent meeting held at a local elementary school as part of a larger study (Cuza, Chen, Miller & Pasquarella, in progress). All parents filled out a language history questionnaire about themselves and one for the child (Pérez-Leroux, Cuza & Thomas, 2011).

All child participants were born in the United States and are considered simultaneous bilinguals due to their exposure to English through the television, caregivers and siblings before the age of 3;0 (Meisel, 2001). All parents are Spanish native speakers born in Mexico with the exception of one parent who was born in Texas. The 14 child participants were divided into 3 groups based on their age at the time of testing. Group 1 (YGR) contained 4 children ( $n=4$ ) aged 6;3 to 6;9 ( $M= 6;6$ ;  $SD= 0.217$ ); Group 2 (MID) consisted of 5 children ( $n=5$ ) aged 7;5 to 8;7 ( $M= 7;10$ ;  $SD= 0.407$ ); Group 3 (OLD) consisted of 5 children ( $n=5$ ) aged 9;1 to 10;10 ( $M= 9;8$ ;  $SD= 0.74$ ). These data are summarized in Table 1.

Table 1. Participants' background information

Group	Age Range	Mean Age	Standard Deviation	n	Male	Female
YGR	6;3-6;9	6;6	0.22	4	2	2
MID	7;5-8;7	7;10	0.4	5	2	3
OLD	9;1-10;10	9;8	0.74	5	2	3

The baseline group (PAR) consisted of 5 parents ( $n=5$ ) all born in Mexico with lengths of residence (LOR) ranging from 10 to 17 ( $M= 12.5$  years). These parents participated in the study in two ways. First, their responses were analyzed as target or not, to determine whether they produced a contact variety of Spanish with a different tense and aspect system. Second, they served as a comparison group to determine where these children were having difficulties replicating the input. The parents were included in the study because children can only completely acquire the dialect to which they are exposed. Therefore, the natural comparison for target-like achievement would be their parents, even if they speak a contact variety.<sup>1</sup>

Results from parental reports show that children are fairly evenly bilingual with a mean ranking of 2.6/4 for English proficiency and 2.4/4 for Spanish. Bilingual fluency analyses were conducted following previous research (Pérez-Leroux et al., 2011). Despite being fairly balanced, we do see a shift in dominance. Based on parental reports, YGR is Spanish dominant (Eng: 1.8; Span: 3.3), while MID (Eng: 2.8; Span: 2.2) and OLD (Eng: 3; Spanish: 1.9) are English dominant.

<sup>1</sup> Non-target responses were those in which the participant used any morpheme other than the imperfect with characterizing situations and the preterite with episodic situations. For the purpose of this study, we consider target levels of accuracy to be 85% following previous research with Spanish heritage speakers (Cuza, 2012).

The five parents who participated in the elicited production task were all Spanish dominant with an average self-ranking of proficiency of 1.5 out of 4 in English and 4 out of 4 in Spanish. Three had completed primary education and two had completed secondary education, with all education having taken place in Mexico. Three of these parents were female and two were male.

#### 4.2. Materials and procedures

All 14 of the child participants and the 6 parents completed an elicited production task in addition to the language history questionnaires.<sup>2</sup> The elicited production task contained tokens for 9 different experimental conditions. These conditions are the combination of every predicate type (stative, activity, accomplishment, achievement) with each situation type (characterizing vs. episodic) plus the continuous past. The characterizing/episodic distinction has been made in previous research that also shows that all combinations of predicate and situation type are possible in Spanish (Cuza, 2008, 2010a). The conditions are summarized in Table 2.

Table 2. Summary of conditions tested

Predicate type	Characterizing	Episodic
State	<i>De niña, Dora tenía un perrito.</i> 'As a little girl, Dora had a dog.'	<i>Ayer, Dora prefirió la azul.</i> 'Yesterday, Dora preferred the blue one.'
Activity	<i>De niña, Dora visitaba a su abuela.</i> 'As a little girl, Dora visited her grandmother.'	<i>Ayer, Dora bailó.</i> 'Yesterday, Dora danced.'
Accomplishment	<i>De niña, Dora tomaba dos vasos de leche todos los días.</i> 'As a little girl, Dora drank two glasses of milk every day.'	<i>Ayer, Dora se lavó las manos.</i> 'Yesterday, Dora washed her hands.'
Achievement	<i>Antes, Dora siempre llegaba tarde a la clase.</i> 'Before, Dora always arrived late to class.'	<i>Empezó a llover.</i> 'It started to rain.'

In addition to each combination of predicate and situation type, a ninth condition, the past progressive, which requires the imperfect was also tested. Each condition was presented in 5 tokens creating a total of 45 total test items.

Participants were presented with 4 practice items, two of which required the imperfect and two of which required the preterite. Four randomized versions of the PowerPoint presentation were used to avoid order effects. Tokens were presented orally and visually through text and photos on the PowerPoint presentation although reading ability was not a requisite skill to complete the task. Participants were presented with a one-sentence preamble describing what Dora normally does or what Dora does nowadays and a photo illustrating this. The end of the preamble would end with either "but not yesterday" or "but not as a little girl". Then, when the preamble and the first photo disappeared, a new photo appeared with a prompt that asked 'Yesterday, what?' or 'As a little girl, what?' The participant used the photo to respond to what Dora did yesterday or as a little girl. *Ayer* or 'Yesterday' was used for all episodic situation types and *De pequeña* ('As a little girl'), *de niña* ('As a little girl') and *antes, Dora siempre...* ('Before, Dora always...') were used for characterizing situation types. The past continuous was prompted with *Ayer, mientras Dora...* (Yesterday, while Dora...). The animation then showed some action interrupting a past continuous action. An example of a preamble and expected response are included here.

<sup>2</sup> The data from one adult participant was not included in the statistical analysis because her responses differed drastically from the other parents in that she produced only the imperfect morphology regardless of the context. Such an outlier would have skewed the data and, therefore, was not included in subsequent analyses.

- (11) Preamble: *Normalmente, Dora toca el piano pero ayer no.*  
 ‘Normally, Dora plays the piano but not yesterday.’  
 Prompt: *Ayer, ¿qué?*  
 ‘Yesterday, what?’  
 Expected Response: *Ayer, Dora tocó la guitarra.*  
 ‘Yesterday, Dora played-PRET the guitar.’

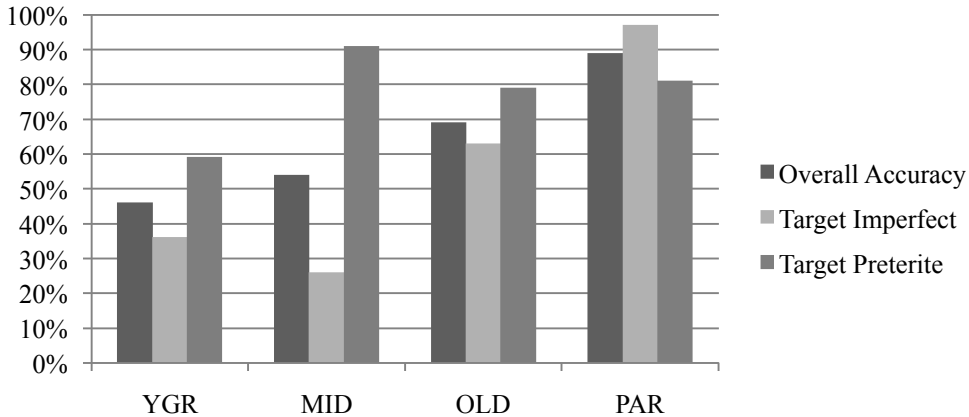
All participants were digitally recorded and responses were later coded for morpheme production and as either target or non-target by the investigators. Non-target responses were those in which the participant used any morpheme other than the imperfect with characterizing situations and the preterite with episodic situations. Non-target responses were also coded for the type of non-target response (preterite for imperfect, imperfect for preterite, present for preterite or present for imperfect). Length of the test session varied but did not last longer than 20 minutes for any participant.

If our participants show transfer from the majority language, English, results would be expected to show difficulties with the characterizing situation type which requires imperfect morphology since English only has one past tense morpheme which is perfective results would also show that the simpler system of English transfers onto the system with more options, Spanish. If difficulties become more pronounced as children age, variance can be attributed to greater transfer caused by increased exposure to English. If, however, these problems become less as a child ages, they may, in fact, have been due to reduced input in the heritage language leading to a prolonged acquisition schedule. Difficulties with irregular verbs, although not specifically controlled for in this study, would also support a role for reduced input rather than solely transfer. If results show both greater difficulties from transfer, such as the overextension of the preterite with age and difficulties with irregular verbs, reduced input and transfer may play a role in child heritage language development.

## 5. Results

Results showed that overall target production increased as children age. For instance, YGR showed an overall accuracy rate of 46%, MID improved to 54% and, finally, OLD was the most accurate with 69% target production. Although OLD is the most accurate, they are still less so than PAR who are 89% target. Most errors from PAR come from the use of the imperfect with the stative episodic conditions that are generally accepted by native speakers especially when the context is not obvious (e.g. *quiso caramelos* vs. *quería caramelos* ‘She wanted-PRET candies’ vs. ‘She wanted-IMP candies’). These numbers, however, only tell part of the story. If we look closer at the proportion of target production with each morpheme, we see an interesting process. YGR shows a low proportion of target production with both morphemes, the imperfect at 36% target production and the preterite at 59% target production. MID then shows a drastic increase in target production of the preterite (to 91%) and a decrease in target production of the imperfect (to 26%). Finally, OLD shows a higher accuracy rate overall (69%) which is caused by an increase in target production of the imperfect (63%). Interestingly, we see a decrease in target preterite production dropping from 91% in MID to 79% in OLD. PAR shows a high accuracy rate for both morphemes (97% and 81%). These results are summarized in Figure 1.

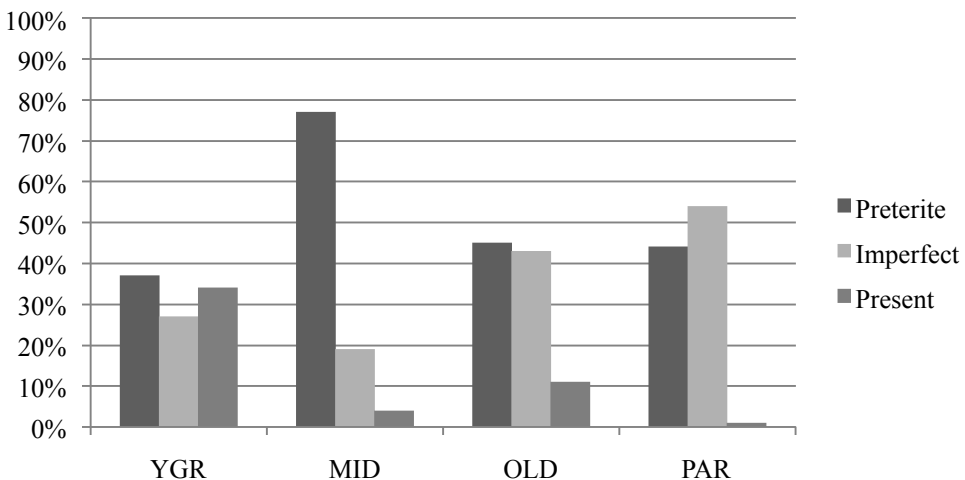
Figure 1. Proportion of target morpheme production by group



The differences in overall accuracy are statistically significant ( $F(2,10)=4.388, p<.043$ ) between YGR and OLD ( $p<.04$ ) and between all groups and PAR (YGR,  $p<.001$ ; MID,  $p<.001$ ; OLD,  $p<.01$ ). OLD is more accurate than the other two groups of children but still does not quite reach the adult target level. With the imperfect, OLD is significantly more accurate than YGR ( $p<.02$ ) and MID ( $p<.001$ ) and PAR is significantly more accurate than all other groups (YGR,  $p<.001$ ; MID,  $p<.001$ ; OLD,  $p<.001$ ). Significant differences in accuracy of production of the preterite were found between YGR and MID ( $p<.001$ ) and YGR and PAR ( $p<.02$ ).

To determine whether MID's lower accuracy level with the preterite was caused by an overproduction of the preterite by this group, the proportion of production of each morpheme was analyzed. If MID is producing the preterite exclusively, their accuracy rate would be high when it is required but very low when the imperfect is required. The data supported the predictions, showing that MID uses the preterite morphology 77% of the time and the imperfect only 19%. This means that MID shows almost exclusive use of the preterite as a default pastness marker, which differs from YGR, which shows a fairly balanced use of the preterite (37%), imperfect (27%) and present (34%). MID also differs from OLD who shows 45% use of the preterite, 43% use of the imperfect and 11% use of the present. The control group of parents shows production of the preterite 44% of the time and the imperfect 54% of the time. This slight imbalance can be explained by recalling that the task had five more tokens requiring the imperfect than the preterite due to the inclusion of the past progressive condition. These results are summarized in Figure 2.

Figure 2. Production of preterite, imperfect and present divided by total tokens produced

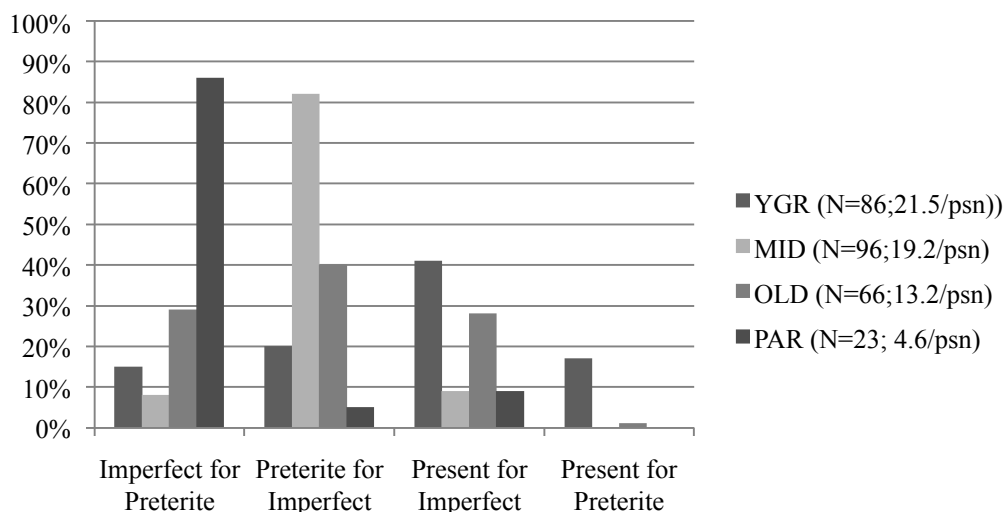




With the preterite, the differences between MID and all groups are significant (YGR,  $p < .001$ ; MID,  $p < .001$ ; PAR,  $p < .001$ ) but the differences between YGR, OLD and PAR are not. The differences in production of the imperfect were also found to be statistically significant but only between MID and PAR ( $p < .007$ ). With the production of the present, significant differences were found between YGR and all groups (MID,  $p < .004$ ; OLD,  $p < .03$ ; PAR,  $p < .002$ ). This means that YGR uses a significantly higher proportion of present tense than the other groups.

Non-target responses produced by each group were then analyzed by type. This analysis showed different main non-target response types for each group. YGR bilinguals often used the present tense to describe past events with 41% of their non-target responses due to using the present for the imperfect tense (\*Ayer, Dora juega al baloncesto \*‘Yesterday, Dora plays basketball’). The majority of MID’s errors do not come from overuse of the present but come from using the preterite in contexts where the imperfect is required (82%) (\*De pequeña, Dora siempre caminó a la escuela. \*‘As a little girl, Dora always walked-PRET to school’). The errors of the OLD bilinguals were more evenly spread. However, the most difficult non-target response for them to overcome is the use of the preterite for the imperfect. OLD bilingual children also showed some non-target responses in which they used the imperfect for the preterite (29%) (\*Ayer, Dora tenía cita con el dentista. \*‘Yesterday, Dora had-IMP a dentist appointment.’). Another important difference between YGR children and both MID and OLD children is that the two older groups almost never used the present tense in place of the preterite. It seems these older children have knowledge of the imperfectivity of the present tense and will only use it in place of another imperfective form. These data are summarized in Figure 3.

Figure 3. Type of non-target response as a percentage of total non-target responses



Significant differences in non-target responses of the type present for imperfect were found between YGR and MID ( $p < .03$ ). The proportion of errors coming from the use of the preterite for the imperfect is significantly higher significant in MID compared to all other groups (YGR,  $p < .001$ ; OLD,  $p < .001$ ; PAR,  $p < .001$ ) and between OLD and PAR ( $p < .007$ ) which means that although OLD overextends the preterite significantly less than MID, they are still not at target-like levels. The proportion of errors due to use of the imperfect for the preterite was shown to be significantly higher in PAR than in all other groups (YGR,  $p < .001$ ; MID,  $p < .001$ ; OLD,  $p < .001$ ) meaning that PAR had a significantly higher proportion of non-target responses of this type. This is due to their overall low number of errors and the fact that these few errors came from the previously mentioned instances when both preterite and imperfect may be acceptable with stative verbs if the context is not very explicit. Differences between YGR and all groups in terms of proportion of errors coming from the use of the present for the preterite are also statistically significant (MID,  $p < .002$ ; OLD,  $p < .003$ ; PAR,  $p < .005$ ).

The children’s production data also shows regularization of irregular past tense verbs, particularly with the preterite. For example, the children produced forms like *se ponió*, *se pusió*, *dorma*, *preferió*,

*dormió* and *hició*. These forms are not very common in the data but did occur in data from 8 of the 14 children (57%), with two from YGR, 4 from MID and 2 from OLD. None of these forms occurred in the control group. Although these forms did not occur in any of the parents who participated, they are not unusual in rural Mexican Spanish or monolingual Spanish development (Hernández Pina, 1984; Lipski, 2008).

In summary, our three age groups of children all have difficulty with certain uses of Spanish preterite and imperfect morphology, but the source of the difficulty was not the same. The youngest bilinguals showed a high proportion of present tense production when the past was required while the middle group of children showed a drastic overextension of the preterite to characterizing situations where the imperfect is required as predicted and the older children showed a recovery from this overextension although they are still not quite target-like. We did not find increased difficulties with age. These results, their possible causes and the implications will be discussed in the next section.

## 6. Discussion

The first research question this study asked was whether young Spanish/English bilinguals will have difficulties producing correct preterite and imperfect morphology with any combinations of predicate and situation type. Specifically, hypothesis 1, which stated that bilingual children would overextend the preterite morphology to contexts in which the imperfect is required, is partially supported by the data. Results show that the middle group of children produces the preterite 77% of the time and 82% of their errors come from the overextension of the preterite. The data for this group are significantly different from all the other groups, which means that the younger and older bilingual children are not overextending the preterite as drastically. While this is the case, the older group is still significantly different from the control group in terms of the proportion of the time they use the preterite. All child groups show significantly lower accuracy with characterizing situation types, which require the imperfect. While, not all groups show the same amount of overextension of the preterite as the middle group of children, all do seem to have more problems with the imperfect. For this reason, hypothesis 1 is partially supported.

In contrast to previous research (Silva-Corvalán, 2003), we did not see greater difficulty with the later L1 acquired combinations like stative episodic and characterizing achievement. In fact, predicate type played no role in determining the accuracy of the bilingual children. There were no significant differences for any of the groups when tokens were separated by predicate type. In contrast, we see significant differences for all groups when we separate the tokens by situation type. Therefore, errors are coming from conditions in which the situation type is characterizing and the imperfect is required. These children are not following the steps predicted by the *Aspect First Hypothesis* (Andersen, 1986) as monolingual Spanish children do.

These children's difficulties bare more resemblance to the process outlined by Salaberry (1999, 2003) and Salaberry & Shirai (2002) which states that L2 learners initially use the preterite as a default pastness marker with a later reliance on lexical aspect as proficiency increases. Our youngest bilinguals (YGR) show an incomplete mastery of the tense and aspect system with a substantial use of the present tense to denote past events (34%). Then, as dominance switches from Spanish with the youngest children to English in the middle group, we see a drastic transfer of the English past tense *-ed* to Spanish evidenced by the significantly higher production and overextension of the preterite. The older children overextend the preterite significantly less but still struggle as evidenced by their significantly different performance from the controls. The process seen here may be similar to that reported by Salaberry (1999, 2003) and Salaberry & Shirai (2002) with L2 learners. While, this study only examines tense and aspect and cannot conclude that young bilinguals undergo an acquisition process similar to L2 learners with other structures, it does seem to be the case with these children's past tense acquisition. These results suggest that, if a child does not receive enough input by the time a dominance shift occurs, some structures acquired after this shift may be acquired more like an L2 (Schlyter, 1993; Schlyter & Håkansson, 1994).

Hypothesis 2 stated that the bilingual children would show greater use of the *estar* progressive than their parents who are less exposed to English. This hypothesis was not supported by the data. There were no significant differences among the groups for use of the *estar* progressive in the past continuous contexts.

Since hypothesis 1 was partially supported and hypothesis 2 was not supported, a hypothesis of when transfer occurs in young child bilinguals must account for the presence of transfer in some cases but not in others. In this instance, we found transfer of the preterite morphology but not of the past progressive structure with *estar*. This may be due to the fact that the *estar* construction is more salient since it includes both a free morpheme whereas the preterite and imperfect morphology only consist of bound morphemes (e.g. *-ó*). It is possible that less salient structures will be more prone to suffer transfer effects than more salient structures.

RQ2 asked whether bilingual children produced different forms from their parents or whether they replicated the parental input. This question is important because it tells us whether the variation we seen in these bilingual children is due to language processes taking place in the individual or whether the children are simply acquiring a contact variety of Spanish with certain structures absent from the input (Rothman, 2007). Interviewing some of the parents of these children tells the researcher exactly what kind of input these children are receiving from their parents and other adults in the community. Since these children are not educated in Spanish, it can be assumed that the input they receive from adults in the community is the majority of their exposure. If all structures are present in this input, other explanations for bilingual children's difficulties must be discussed. Hypothesis 3 predicted that children would not replicate the parental input, which would be target. This hypothesis is supported based on the high overall accuracy of the parents (89%) and their target proportion in each morpheme produced. The children however showed significantly lower overall accuracy and stastically higher overextension of the preterite. Similarly, no evidence of over-regularization of irregular verbs was found in the parents? but was found in all of the child groups.

RQ3 asked whether any difficulties faced by young bilinguals became more pronounced with age and, therefore, exposure to the majority language (Cuza & Pérez-Tattam, 2012). Hypothesis 4 predicted that overextension of the preterite would become more prevalent with increased age and exposure to English. This hypothesis was not supported because the older children showed higher accuracy with the imperfect (63%) than the middle group (26%). Similarly, fewer of the older children's errors (40%) come from the overextension of the preterite to imperfective contexts (MID= 82%). It is important to recognize that the older bilingual children are still not quite target when compared to the control group of parents. However, these findings contradict previous research (Polinsky, 2011), which argues for a constant decline in proficiency in the minority language as age and exposure to English increase. In contrast, this study shows that, while the acquisition process may be protracted, it is not always characterized by constant attrition. Instead, these results suggest transfer of the majority-language system when dominance shift occurs, specifically in structures, which remain indeterminate in the L1. This transfer is slowly overcome in a process similar to that of L2 learners.

Future studies might benefit from examining other structures to determine whether they also undergo an acquisition process that appears similar to that of an L2 learner. Only when several studies on young bilinguals with controlled elicitation are performed, can the field come to valid conclusions as to the kind of acquisition processes that Spanish heritage speakers undergo in the United States. It is especially vital that many structures are tested with young children because English-language schooling begins around age 5, a time at which it appears that some L1 structures may be indeterminate while others are not.

It is possible that the present tense of the preamble may have prompted younger children with less metalinguistic knowledge to repeat the response in the same tense they just heard, leading to more instances of present tense use than required. Future research should test monolingual Spanish-speaking children of the same age to determine if the task is too metalinguistically challenging for young children or whether the bilinguals truly prefer to use the present to describe past events.

Finally, when considering these results, it is important to note that these children all took part in a larger study and received one hour of Spanish literacy instruction per week (Cuza, et al., in progress). This may affect how they perform with tense and aspect compared to child bilinguals schooled entirely in the majority language. It is not clear whether the intervention would change the overall differences between groups. While the instruction did not focus on grammar but rather vocabulary and phonological awareness, it is still important to consider the extra hour of Spanish exposure in an academic setting when interpreting the results.

Although some instances of over-regularization of verb morphology were found, the present study did not analyze the occurrence of over-regularization carefully enough in this population. Few tokens involved the use of irregular forms and these were not compared with other irregular forms of different

frequencies. Future studies must present more tokens of irregular verbs, which are separated into groups based on frequency in oral speech before any conclusions can be made as to the effect of age on this phenomenon.

Future research with young bilingual children must also aim to explain why transfer occurs in some cases but not in others as occurred with hypotheses 1 and 2 in the present study. It remains unclear what causes transfer to occur across a bilingual's two languages and why the effect of transfer changes over time. Since these bilingual children are part of a subcategory of bilinguals who have a minority language as their L1, more research specifically with this population must be performed to determine with what structures and at what age transfer occurs.

Finally, this study could be expanded with the addition of both an interpretation task. This would help determine whether these bilingual children have difficulties at the level of competence or only at the level of performance. If they do have target-like interpretation of acceptable uses of past tense morphology, their variance in production may be due to processing difficulties during oral production. If, however, the children show non-target levels of interpretation, then their underlying grammars may truly be different than those of monolingual Spanish speakers. The answers to these questions are essential to creating relevant and effective curricula for young Spanish-English bilingual children in the United States.

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