

## Chapter 10

### The development of tense and aspect morphology in child and adult heritage speakers

Alejandro Cuza\*, Rocío Pérez-Tattam\*\*, Elizabeth Barajas\*,  
Lauren Miller\*, & Claudia Sadowski\*  
Purdue University\* and Swansea University\*\*

This cross-sectional study examines the production of tense and aspect morphology in child and adult heritage Spanish, with the view of informing the development of pedagogical interventions in Spanish language for child and adult heritage Spanish speakers. We compare natural production data from Spanish/English bilingual speakers with monolingual children and adults matched by age. Results show a preference for the production of the preterite as opposed to the imperfect among the older bilingual children, compared to younger children and adults, suggesting L1 attrition in the life span. We argue that the overproduction of preterite tense might be due to semantic transfer from English and morphosemantic restructuring of the aspectual system. The imperfect tense remains underdeveloped across all age groups in the bilingual population, and competes with present tense in adulthood, suggesting incomplete development. Based on these results, we discuss important pedagogical implications for the teaching of aspectual distinctions in heritage Spanish. Finally, we conclude that both L1 attrition and incomplete acquisition play a fundamental role in heritage language development, depending on the type of linguistic knowledge, which has an impact on the Spanish language teaching practices to be adopted for child and adult heritage speakers.

#### 1. Introduction

A longstanding issue in linguistic research lies in determining the psycholinguistic nature of native and non-native grammars and whether adult learners can eventually develop a native-like system as children do (Johnson & Newport 1989; Schwartz & Sprouse 1996; White 2003). In the specific case of heritage language development, previous work has focused on examining the source of heritage speakers' competence outcome to understand where the difficulties lie, and how to best approach them from a pedagogical perspective (Cuza 2012; Cuza & Frank 2011; Montrul & Bowles 2010; Montrul 2002, 2011; Montrul & Perpiñán 2011; O'Grady, Kwak, Lee & Lee 2011; Polinsky 2008; 2011; Rothman 2007, 2008; Valdés 1997). Heritage speakers are second-generation

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Address of correspondence: Alejandro Cuza, Department of Spanish and Portuguese, School of Languages and Cultures, Purdue University. 640 Oval Drive, Stanley Coulter Hall, West Lafayette, IN, 47907; e-mail: acuza@purdue.edu.

immigrants who acquired their native/minority language at home or in another natural context where a majority language was spoken (Montrul 2008; Valdés 1997).

Montrul (2008), among others, argues that the morpho-syntactic difficulties heritage speakers often face are more likely the result of incomplete development during early childhood primarily due to reduced input and use of the heritage language (Montrul 2002, 2004). Other researchers disagree with the notion of incomplete development to account for the source of heritage speakers' competence (Rothman 2007; Polinsky 2011). Rothman (2007), for example, argues that the competence divergence between heritage speakers and monolingual speakers is the result of the complete acquisition of the contact variety to which the speakers are exposed, which may exclude specific linguistic structures from the input (*Missing-input Competence Divergence Hypothesis*). These two proposals contrast with a third possibility in the characterization of heritage speakers' competence, viewing their deficits as the L1 attrition of previously established properties during early childhood and the reanalysis of language over the life span (Cuza & Pérez-Tattam submitted; Polinsky 2011).

The goal of this study is to further examine this issue, with the view of informing the development of Spanish language teaching practices that are suitable for child and adult heritage speakers, particularly with regard the teaching of aspectual distinctions in Spanish. Specifically, we investigate and compare the extent to which simultaneous Spanish-English bilingual children from different age groups and adult heritage speakers show target production of preterite versus imperfect morphology in spontaneous production and, if not, whether their difficulties can be accounted for in terms of child L1 attrition in the life span or incomplete development during early childhood (Montrul 2002, 2004, 2011; Polinsky 2011; Silva-Corvalán 1994, 2003, forthcoming; Zentella 1997). If young Hispanic children show higher levels of target past tense morphology use than adult heritage speakers of similar sociocultural background, then the difficulties heritage speakers have cannot be accounted for in terms of incomplete development during early childhood. Rather, the difficulties might stem from the child L1 attrition of previously established linguistic norms (O'Grady et. al. 2011; Polinsky 2011; Silva-Corvalán 1991). The results of this analysis will allow us to suggest more effective and theoretically grounded classroom interventions in the teaching of tense and aspect morphology to Spanish heritage speakers, as well as advance previous research by disentangling the source of heritage speakers' difficulties (L1 attrition vs. Incomplete acquisition). By understanding the linguistic processes affecting heritage speakers grammar, and their subsequent impact on their heritage language development, we are in a better position to inform the development of more suitable pedagogical practices for these populations (Bowles, 2011).

In section two, we examine the main aspectual differences between English and Spanish. Section three discusses relevant research on the acquisition of tense and aspect morphology in Spanish among bilingual children, L2 learners of Spanish and Spanish heritage speakers. In section four, we present the study, followed by the results, discussion and pedagogical implications for heritage Spanish teaching. Section five presents the conclusions of the study.

## 2. Aspectual contrasts in English and Spanish

The literature distinguishes three main aspectual descriptions: grammatical aspect (Comrie 1976), lexical aspect (Vendler 1967) and compositional or VP aspect (Schmitt 1996; Verkuyl 1972). Grammatical aspect is represented by verbal inflections and periphrastic expressions, and is the most common aspectual description made in the literature (preterite vs. imperfect distinctions).

In Spanish, there is one specific form for each aspectual value in the past tense. Completed, one-time events are marked with the preterite (-ó) (1a), while habitual and repeated events in the past are marked with the imperfect (-ba, -ía) (2a). English differs in that completed events in the past with a specific beginning and end-point (punctual eventualities) are marked by the preterite (-ed) (1b), while habitual or continuous eventualities with no specific beginning or end-point are marked either by the preterite (2b) or by a periphrastic expression (*used to/would*) (2c):

- (1) a. *María comió manzanas.* (punctual event, preterite)  
 b. Mary ate apples.
- (2) a. *María comía manzanas.* (habitual event, imperfect)  
 b. Mary ate apples.  
 c. Mary used to eat apples.

The imperfect form in Spanish is also used to denote an event that was ongoing in the past when another event happened (3a). This aspectual value can also be represented with the past progressive (3b). In contrast with Spanish, English disallows the use of the preterite in these contexts (3c), and only allows the past progressive (3d):

- (3) a. *José cocinaba la cena cuando sonó el teléfono.*  
 b. *José **estaba cocinando** la cena cuando sonó el teléfono.*  
 c. \*Joseph cooked dinner when the phone rang.  
 d. Joseph *was cooking* dinner when the phone rang.

In contrast with grammatical aspect, and the usual perfective vs. imperfective distinction made in the literature, aspectual meanings are also provided by the lexical properties of the verb, crucially telicity (potential endpoints), durativity (duration of the event) and dynamicity (dynamic vs. non-dynamic events). This is known in the literature as lexical aspect or Aktionsart (Smith 1997; Vendler 1967). Vendler (1967) classifies verb types into four predicate types: *states*, *activities*, *accomplishments*, and *achievements*. States (*to be*, *to love*, *to feel*), and activities (*to run*, *to walk*, *to swim*) are durative as they can endure indefinitely or for a specific length of time. They are also atelic, as they have no intrinsic endpoint or internal structure (i.e., *Ramiro loves to cook*). States are also considered non-dynamic, in contrast with activities, which are both dynamic and durative (i.e., *John walked for two hours*). However, accomplishments (*to run a mile*, *to build a house*) and achievements (*to sink*, *to die*) are telic, as they have an intrinsic beginning and endpoint, they are dynamic. The difference between these two types of

predicates is that accomplishments describe a process leading to a result, and are therefore durative (i.e., *Mario built a boat*). Achievements, in contrast, are not durative; their endpoint occurs instantaneously with no time duration (i.e., *The boat sank*) (Labelle, Godard & Lonting 2002; Smith 1997).

Other researchers propose that aspectual descriptions are best determined by the compositional relation between the verb and the other elements within the verbal phrase. This is known as compositional aspect (Schmitt 1996; Verkuyl 1972). For instance, following Vendler's (1967) categorization, the verb *to run* is considered as an activity, as in *John ran for hours* (atelic, no inherent endpoint). However, this aspectual class changes to an accomplishment (telic, inherent endpoint) in cases like *John ran five miles*. The direct object *five miles* switches the aspectual meaning of the clause. Thus, aspectual values do not seem to be determined by the inherent lexical meaning of verbs but by the combination of the verb with other elements in the phrase.

### 3. The bilingual acquisition of tense and aspect morphology in Spanish

By age 4;0, the production of aspectual morphology in Spanish is relatively stable in normally developing monolingual children (Hernández Pina, 1984; Pérez-Pereira, 1988; Pratt, McCurly & Grinstead 2009; Sebastián & Slobin 1994). In a cross-sectional study with 109 monolingual children from Spain (aged 3;0 to 6;0), Pérez-Pereira (1988) found clear patterns of imperfect tense morphology by age 4;0, with a 98% proportion of correct responses with real words for the imperfect and 74% for the preterite. The author argues that the lower proportion of target production with the preterite might stem from the use of verbs with irregular past tense marking such as *anduvo* "walked", *trajo* "brought", *condujo* "drove" and *durmió* "slept". These forms showed a tendency for regularization of the preterite (*andó*, "walked", *trayó*, "brought", *condució*, "drove", *dormió*, "slept"). The author concludes that the learning of irregular past tense forms continues past the age of 6;0, confirming previous research (Hernández Pina 1984).

In a more recent study with 23 monolingual speakers of Spanish aged 2;11 to 4;7, Grinstead, Pratt and McCurly (2009) examined the interpretation of future, present and past events via a picture matching task. Group results show a mean correct answer rate above chance (62%), with higher levels of accuracy of picture and verbal matching with the present tense pictures to present tense sentences, followed by past to past and finally future to future. The authors found that children are more successful matching past telic verbs (*dibujar un barco*, "draw a ship") than they are at matching past atelic verbs (*montar a caballo*, "ride a horse"). Although the children were able to comprehend tense separately from the lexical aspect, they were more successful when aspect and tense were combined.

In contrast to monolingual development, the target interpretation and production of verbal morphology in Spanish has been found to be challenging for bilingual children (Potowski 2005; Sánchez 2004; Silva-Corvalán 1994, 2003, forthcoming), adult L2 learners (Cuza 2008, 2010; Montrul & Slabakova 2002; Pérez-Leroux, Cuza, Majlanova

& Sánchez 2008; Salaberry 2002) and adult Spanish heritage speakers (Montrul 2002; Montrul & Perpiñán 2011). In the specific case of Spanish-English bilingual children, Silva-Corvalán (1994) found patterns of aspectual simplification evidenced in an overextension of the preterite form to contexts where the imperfect should be used. This crucially affected stative verbs in the preterite and achievement verbs in the imperfect. As in the case of L2 acquisition, it appears as if bilingual children are using the preterite past tense marking as a default strategy due to cross-linguistic influence from the English simple past (unmarked, default option).

Sánchez (2004) examined two story retelling tasks, one written and one oral, in 38 Spanish-Quechua bilingual children and 10 monolingual Spanish children from Peru. The author shows that transfer occurs cross-linguistically among categories that are present in both languages and that have some functions in common but not others. The categories under examination by Sánchez converge in that, in both languages, they express past tense. However, in Spanish these categories also mark aspect whereas in Quechua they mark evidentiality. Sánchez found strong evidence showing that, when speaking Spanish, Quechua speakers favor the imperfective tense more than monolinguals, which is interpreted as being more reportative. Similarly, the bilinguals used some attested verb forms when retelling stories in Quechua, where all verbs should normally be reportative, due to influence of aspectual marking in Spanish, although this occurred in only 6 instances.

Potowski (2005) tested the *Lexical Aspect Hypothesis* (Andersen 1986; Bardovi-Harlig 1995), which argues for a correlation between inherent lexical aspect and the aspectual inflectional marking on the verb. Preterite forms are argued to appear first with achievements predicates, then with accomplishments and finally with states and activities. Imperfect forms are argued to appear after preterite forms, first with stative verbs, then with activities and finally with accomplishments and achievements (Liskin-Gasparro 2000; Salaberry 1999, 2002; Shirai & Andersen 1995). Using a written retelling task and an oral narrative, Potowski examined the use of preterite vs. imperfect distinctions among L2 learners and simultaneous bilingual children from a dual-immersion school in Chicago. The author did not find support for the lexical aspect hypothesis since there were no group differences in aspectual marking selection across the different types of predicates. However, in general, the L1 Spanish speakers were more accurate than the simultaneous bilinguals who were more accurate than the L2 speakers.

Regarding English-speaking L2 learners of Spanish, previous research shows significant difficulties evidenced in an overextension of the preterite to contexts where the imperfect should be used. Following Giorgi & Pianesi's (1997) morphosyntactic approach, Montrul and colleagues argue that the difficulties with aspectual differences stem from the inability of L2 learners to completely acquire the [ $\pm$ perfective] functional aspectual features of the Spanish aspectual system, not instantiated in English (+perfective only). L2 learners are then unable to successfully associate the corresponding aspectual features with tense/aspect morphemes (Montrul 2002; Slabakova & Montrul 2002).

Other researchers follow De Swart's (1998) selectional view to aspectual differences among English-speaking L2 learners (Cuza 2010; Pérez-Leroux et al. 2008). De Swart's (1998) proposal is based on the notion that aspectual oppositions rely on the semantic-selectional features that tense heads are able to select. Within this theoretical framework, the difficulties L2 learners have are related to their inability to acquire the semantic patterns that tense heads select. This approach is optimal as it accounts for aspectual variation among languages with similar morphosyntactic patterns (i.e. Spanish and Portuguese). L2 learners may activate incorrect aspectual patterns due to the transfer of less complex L1 semantic patterns.

Montrul (2002) examined the interpretation and production of preterite versus imperfect distinctions among Spanish heritage speakers with different ages of onset of bilingualism. The author was particularly interested in whether the loss of aspectual morphology (morpho-phonological spell outs) also implied the attrition of the semantic features of functional categories, and how three groups of bilinguals diverged depending on the age of onset of their bilingualism. As predicted, the three groups of bilinguals diverged significantly from the monolingual controls, evidenced in an inaccurate production of aspectual morphology and in the neutralization of preterite vs. imperfect semantic distinctions. Age of onset of bilingualism was the most predictive factor, with the late bilinguals showing fewer deficits in their Spanish L1. The simultaneous bilinguals were less accurate with the use of the preterite with stative verbs (using the imperfect instead) and the early bilinguals overextended the imperfect to telic predicates where the preterite should have been used.

More recently, Montrul and Perpiñán (2011) tested 60 adult heritage speakers of Spanish, 60 adult L2 learners of Spanish and 23 monolinguals to measure knowledge of preterite/imperfect and subjunctive/indicative. The study found that heritage speakers, although more accurate in early-acquired structures like tense and aspect, do not have an advantage over L2 learners in mood, a category acquired later in development. The task type also had significant group effect, giving L2 learners an advantage in tasks that involve more metalinguistic declarative knowledge (i.e., fill in the blank task) and heritage speakers an advantage in more 'intuitive' tasks (i.e., grammaticality judgment task).

### *3.1. Developmental implications for child and adult heritage Spanish*

The acquisition of aspectual morphology among child and adult heritage speakers of Spanish is a challenging process where different linguistic and psycholinguistic dimensions play a role (Silva-Corvalán, forthcoming). These include reduced input and use of the first language (coupled with age-related developmental issues) and semantic transfer from the dominant language (English). First, young children from Hispanic backgrounds living in an English dominant context have limited input and use of their mother tongue outside the home environment (Montrul 2008; Pérez-Leroux, Cuza & Thomas 2011). This is particularly the case after immersion in the public school system

begins. Immersion in an English-only school system and the related development of English-only peer relationships, make it challenging for young children to continue developing and maintaining their L1 (Jia 1998), specifically age-appropriate lexical categories (verbs and nouns) and their syntactic relations. Second, English differs from Spanish in that the preterite form does not select for any specific aspectual description, but is rather neutral. Within De Swart's (1998) selectional approach, the past tense head in English selects both perfective and imperfective eventualities (*John baked a cake* and *John baked cakes*). This may lead to a higher preference for the use of the preterite tense, compared to monolingual speakers. The preterite may be taken as the preferred aspectual marker due to cross-linguistic influence from English, where there is no imperfect morphology. The bilingual speakers may therefore overextend the preterite to contexts where the imperfect should be used, as documented in previous research with Spanish-English bilingual children and adults (Cuza 2008, 2010; Montrul 2002; Silva-Corvalán 1994). It is also possible that bilingual children and adults may use non-target verbal forms as an avoidance strategy. For instance, they may use the present tense instead of the past tense due to their lack of acquisition or L1 attrition of past tense forms (Laleko 2010). This is particularly so, given that the present tense also selects imperfective eventualities.

We would like to propose that reduced input and use of Spanish during early childhood and L2 lexical transfer may lead to the child L1 attrition or incomplete development of the semantic meaning of verbs, which may cause difficulties in the target selection of past tense aspectual morphology. That is, we view the acquisition of tense/aspect morphology in bilingual children as intrinsically linked to the lexical/semantic development of tense heads. Once a child has acquired verb meaning, and its corresponding argument/event structure, it is easier for the child to select the appropriate aspectual value in the past tense (preterite vs. imperfect). Until then, the bilingual speaker may either select non-target aspectual descriptions (preterite vs. imperfect or vice versa) due to underspecification of the aspectual selectional properties of tense heads or simply show a marked preference for the use of the preterite (default aspectual marker) with a consequent underproduction of imperfect forms. In the specific case of Spanish, bilingual speakers may also overuse the present tense as a type of avoidance strategy for the imperfect tense. Given that the present tense in Spanish (1) can be used to report a past event (reportive speech), (2) describes imperfective eventuality types, and (3) is less marked than imperfective aspectual morphology (Silva-Corvalán, forthcoming), its use might become a preferred communicative strategy in child and adult Spanish-English bilinguals together with preterite forms. This bilingual behavior might diverge from monolingual speakers who we predict will show a more balanced production of temporal morphology (preterite, imperfect and present tense).

Finally, we predict cross-linguistic influence from English to increase as Spanish children get older and become more dominant in English (Cuza & Strik 2012; Silva-Corvalán 2003). We propose a bilingual continuum, along the lines of Silva-Corvalán (1994), which starts during early childhood and continues to develop or under-develop during the life span of the bilingual speaker according to the specific input conditions to which the bilingual speaker is exposed. If difficulties with tense and aspect result from

child L1 attrition during early childhood and increased L2 dominance (causing a diminished exposure to and contact with the L1 as a result of increased use of L2), we expect younger children to show better patterns of aspectual production than their older counterparts who are in most scenarios more L2 dominant.

## 4. The study

### 4.1. Participants

We discuss semi-spontaneous data from thirty-six (n=36) participants: 13 simultaneous Spanish-English bilingual children, 11 adult heritage speakers of Spanish, 9 monolingual Spanish children and 3 adult monolinguals. Parents of bilingual children and the adult heritage speakers completed a language history questionnaire which elicited information on place of birth, level of education, linguistic proficiency in each language and patterns of language use at home, school, work and social situations. Parents also completed a child history questionnaire which elicited information on home language practices and child language dominance. The adult heritage speakers also completed an independent proficiency test (adapted version of the *Diploma de Español como Lengua Extranjera*, DELE). Unlike much of the existing research on heritage language learning, this study focuses on child heritage speakers of Spanish as well as adults, allowing a direct comparison between aspectual marking strategies used by children vs. adults, and includes a monolingual baseline to look at the effect of reduced input in Spanish on the patterns of aspectual marking of heritage speakers.

The group of bilingual children (n=13) was divided into two groups according to their age at time of testing: younger bilingual children (n=7, age range 5;0-7;4; mean, 6;6) and older bilingual children (n=6, age range 8;1-9;11; mean, 8;6). All children were born and raised in the United States, except one who immigrated at the age of 3. In terms of language dominance, parents reported 72% (5/7) of the younger children to be *very fluent* or *completely fluent* in Spanish, while the remaining 28% (2/7) were reported to be *somewhat fluent*. Regarding fluency in English, 57% (4/7) were reported to be *very fluent* or *completely fluent* while 43% (3/7) were reported to be *somewhat fluent*. In contrast with the younger children, parents reported 83% (5/6) of the older children to be *somewhat fluent* in Spanish and only 17% (1/6) was considered to be *very fluent*. Regarding their dominance in English, 100% (6/6) of the older children were reported to be *completely fluent* in English. As expected, older children were reported to be more dominant in English than in Spanish in contrast with the younger children. All of the parents were born and raised in Mexico and had resided in the United States for an average of 11 years (range 6-19 years). Their proficiency in English was reported to be basic, and most families came from low socio-economic background. Spanish was the language of the home and their children were all enrolled in English-only schools in the American Midwest (Indiana).

The adult heritage speakers' group was formed of eleven (n=11) US born heritage speakers enrolled at a large research university in the American Midwest. Their average age at time of testing was 18 years old (range, 18-23) and 73% (8/11) of them came from families with Mexican heritage. Their language of instruction in primary and high school was English. Six of the participants (55%) reported speaking only Spanish at home in childhood and five (45%) reported speaking both English and Spanish. In terms of language use, participants reported speaking English or mostly English at school and work. At home, 36% reported speaking Spanish or mostly Spanish, 36% reported speaking both, and the rest reported speaking mostly English (18%) or a little more English (9%). In social situations, 64% reported speaking mostly English and 27% reported speaking both.

Following previous research with adult L2 learners and Spanish heritage speakers (Cuza 2012; Montrul & Slabakova 2003), an adapted version of the *Diploma de Español como Lengua Segunda* (DELE) and a multiple choice vocabulary section adapted from an MLA test were used as an independent proficiency measure in Spanish. Four of the participants were classified as advanced learners (mean score, 42/50), six as intermediate learners (mean score, 34/50) and one as low proficiency learner (mean score, 28/50).

The monolingual group was comprised of 12 monolingual speakers of Spanish: 9 children and 3 adults. The monolingual child group was divided into two groups according to their age: younger monolingual children (n=5, mean age 5;00) and older monolingual children (n=4, mean age 9;00). All the monolinguals were born and raised in Spain in a strictly one-language environment.

#### 4.2. Task and coding

Following previous research (Liskin-Gasparro 2000; Silva-Corvalán 1994, forthcoming), the bilingual children and adult heritage speakers completed a semi-spontaneous oral production task (narrative). Our goal was to analyze the overall patterns of occurrence of preterite versus imperfect forms (i.e., overuse or underuse of forms). This methodology is advantageous as it allows us to focus on the overall patterns of language use, rather than in specific errors, and to observe performance differences between heritage and monolingual grammars that are not necessarily ungrammatical or manifested in production errors. This is particularly relevant to aspectual distinctions, where there is a very fine line between what is ungrammatical or not. Another advantage is that it enables the elicitation of certain forms (preterite, imperfect) within a naturalistic setting (telling a story) without the need of the artificial scenario of an experimental setting. Given that the data collection took place in the United States, we were not able to implement the elicited production task on monolingual Spanish speakers. Instead, we selected 12 narratives by monolingual speakers matched by age from the CHILDES database (Spanish-Sebastián Corpus).

The bilingual children and adult heritage speakers were asked to narrate the fictional story *Little Red Riding Hood* in the past tense on the basis of wordless images from the

story. The participants were asked to retell the story using the expression *había una vez* “once upon a time”. The narratives were transcribed using the CHILDES transcription system. As to the monolingual speakers’ narratives, these were elicited using Mercer Mayer’s wordless frog story picture book, entitled *Frog, where are you?* The book tells a story without words in 24 pictures (for more information on this work, its rationale, and the various data analysis procedures, see Berman & Slobin 1994). The procedure was similar to ours in that the monolingual children and adults were explicitly oriented to the book as presenting a “story”. Specifically, they were asked to look through the entire book, and then to tell the story again, while looking at the pictures. However, the interviewer avoided prompts that would lead to a particular choice of verb tense or aspectual marking.

The aim of this analysis was to compare the levels of preterite and imperfect in bilinguals compared to monolingual speakers of Spanish. All sentences containing inflected and non-inflected verbs were extracted and coded for tense (preterite, imperfect, present, present perfect, past perfect, present progressive, past progressive, future, etc.), and grammatical aspect (perfective or imperfective).<sup>1</sup> We limited our analysis to sentences used in the narratives (*Little Red Riding Hood* in the case of the bilinguals, and *Frog, where are you?* in the case of the monolinguals), excluding any other forms of interaction with the interviewer. We analyzed a total of 1,422 utterances for use of tense and use of perfective vs. imperfective (bilingual children,  $N=264$ ; bilingual adults,  $N=409$ ; monolingual children,  $N=465$ ; monolingual adults,  $N=284$ ). We compared bilingual children with monolingual children, bilingual adults with monolingual adults, and compared the different age groups (younger children, older children, adults) within the two language groups.

### 4.3. Results

#### 4.3.1. Tense

We compared use of tense in child bilinguals (all ages) in relation to child monolinguals. That is, the proportion of preterite, imperfect, present perfect, past perfect, present progressive, past progressive, present and other (i.e., future, conditional, subjunctive forms and non-inflected forms such as the infinitive or the gerund) present in the analyzed utterances. We found that both the child monolinguals and the child bilinguals showed a higher proportion of preterite forms (38.92%, and 40.53% respectively) compared to the imperfect tense (15.48% and 13.26%). Both groups also showed a high proportion of present tense use (30.97%, and 27.27%). These results are represented in Figure 1 and Table 1 below:

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<sup>1</sup> A preliminary analysis on the use of the preterite and the imperfect per predicate type showed a preference for the use of the preterite with telic predicates among the bilingual speakers. However, the production of the imperfect was very limited and thus we limit our discussion to the overall proportion of tense (preterite, imperfect, present) and grammatical aspect (perfective, imperfective) found among bilingual and monolingual groups.

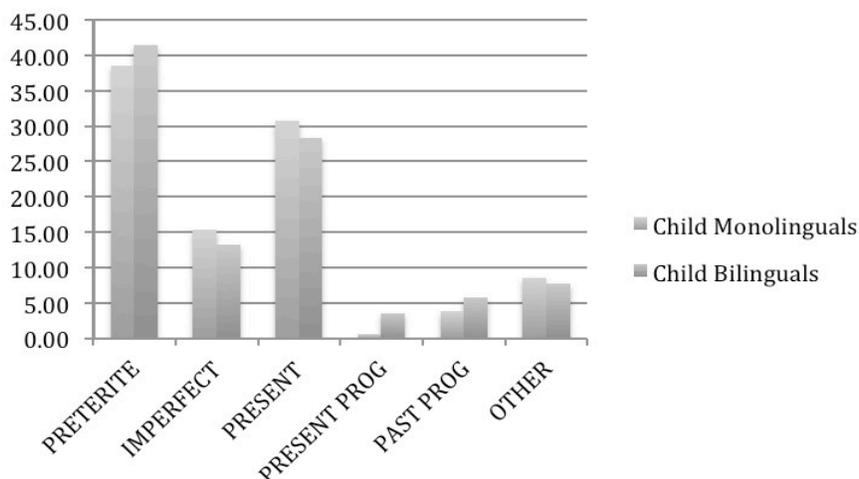


Figure 1: Proportion of grammatical tense produced by monolingual and bilingual children.

Table 1: Raw numbers and proportions of grammatical tense produced by monolingual and bilingual children.

	CHILD MONOLINGUALS		CHILD BILINGUALS	
	N	%	N	%
PRETERITE	181	38.92	107	40.53
IMPERFECT	72	15.48	35	13.26
PRESENT	144	30.97	73	27.27
PAST PROG	18	3.87	15	5.68
PRES PROG	3	0.65	9	3.41
OTHER	47	10.11	26	9.85
<b>TOTAL</b>	<b>465</b>	<b>100</b>	<b>264</b>	<b>100</b>

The differences in the proportion of preterite, imperfect and present found in the narratives were significant for child bilinguals [ $\chi^2(2, N = 214) = 36.35, p = .000$ ] and child monolinguals [ $\chi^2(2, N = 397) = 46.43, p = .000$ ]. The differences between child bilinguals and child monolinguals were significant for the preterite [ $\chi^2(1, N = 288) = 19.01, p = .000$ ], the imperfect [ $\chi^2(1, N = 107) = 12.79, p = .001$ ] and the present [ $\chi^2(1, N = 216) = 24.00, p = .000$ ].

With regard to the adult speakers, the bilinguals showed much higher production of preterite forms (34.23%), and reduced production of the imperfect (10.51%). This contrasts with the adult monolinguals, who showed a more balanced production of preterite (27.11%) and imperfect (22.89%) forms. These results are represented in Figure 2 and Table 2:

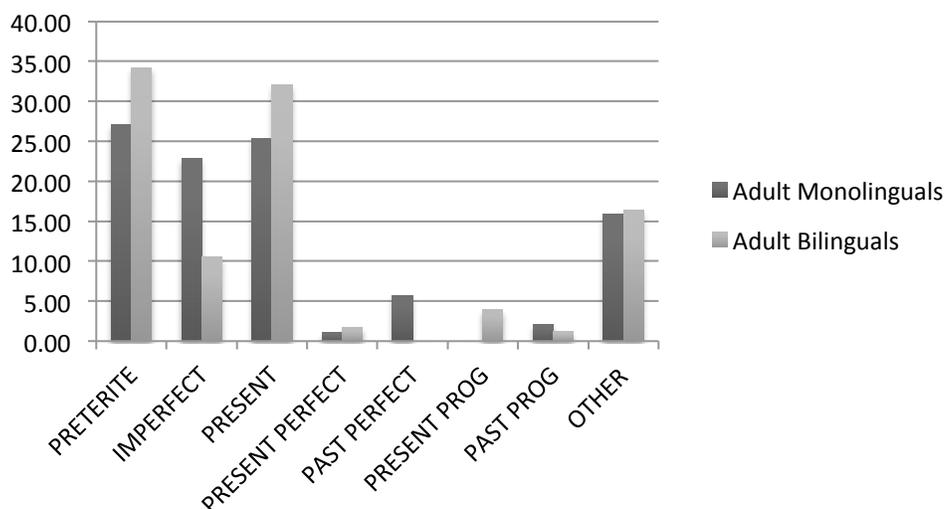


Figure 2: Proportion of grammatical tense produced by monolingual and bilingual adults.

Table 2: Raw numbers and proportion of grammatical tense produced by monolingual and bilingual adults.

	ADULT MONOLINGUALS		ADULT BILINGUALS	
	N	%	N	%
PRETERITE	77	27.11	140	34.23
IMPERFECT	65	22.89	43	10.51
PRESENT	72	25.35	131	32.03
PAST PROG	6	2.11	5	1.22
PRES PROG	0	0	16	3.91
OTHER	64	22.54	74	18.09
<b>TOTAL</b>	<b>284</b>	<b>100</b>	<b>409</b>	<b>100</b>

The differences in the production of preterite, imperfect and present found in the narratives were significant for adult bilinguals [ $\chi^2(2, N = 314) = 54.88, p = .000$ ], but not for adult monolinguals [ $\chi^2(2, N = 214) = 1.02, p = .601$ ]. The differences between adult bilinguals and adult monolinguals were significant for the preterite [ $\chi^2(1, N = 217) = 18.29, p = .000$ ], the imperfect [ $\chi^2(1, N = 108) = 4.48, p = .034$ ] and the present [ $\chi^2(1, N = 230) = 17.15, p = .000$ ].

Although our monolingual sample for both children and adults were speakers of Peninsular Spanish, which favors the use of the present perfect (*he ido* 'I have gone') over the use of the preterite (*fui* 'I went') in certain contexts, we found very few tokens of present perfect: three tokens in the monolingual adult data (e.g., *ha desaparecido* 'he/she disappeared') and eight tokens in the monolingual child data (e.g., *se ha escapado* 'he/she has escaped'). We also found some use of the present progressive in the data from the bilingual adults (3.91%), but none in the data from the monolingual adults.

We also compared use of tense by age group (younger children, older children, and adults). As expected, we found that the older bilingual children used a higher proportion of preterite forms than the younger bilingual children (48.08% vs. 29.63%), but the use of the imperfect remained relatively stable between the two groups (11.11% and 14.74%). The younger bilingual children used a higher proportion of present tense (38.89%) than the older bilingual children (19.23%). These results are represented in Figure 3 and Table 3:

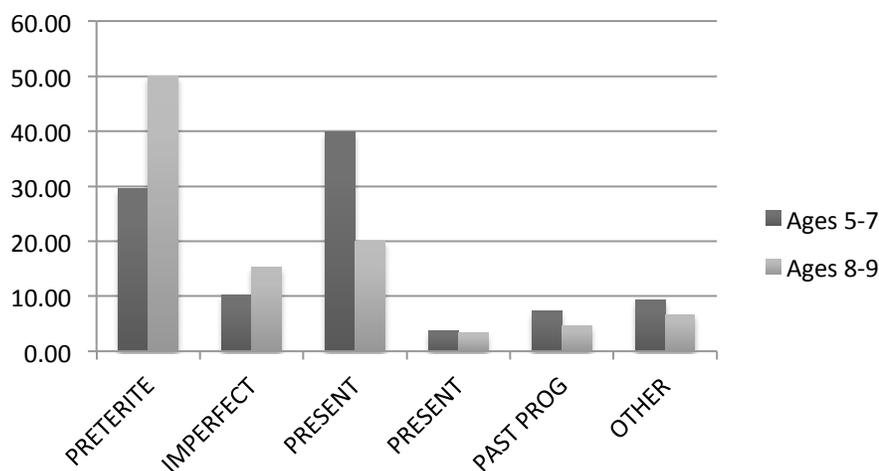


Figure 3: Proportion of grammatical tense use by younger and older bilingual children.

Table 3: Raw numbers and proportion of grammatical tense use by younger and older bilingual children.

	CHILD BILINGUALS (AGES 5-7)		CHILD BILINGUALS (AGES 8-9)	
	N	%	N	%
PRETERITE	32	29.63	75	48.08
IMPERFECT	12	11.11	23	14.74
PRESENT	42	38.89	30	19.23
PAST PROG	8	7.41	7	4.49
PRES PROG	4	3.70	5	3.21
OTHER	10	9.26	16	10.26
<b>TOTAL</b>	<b>108</b>	<b>100</b>	<b>156</b>	<b>100</b>

The differences in the production of preterite, imperfect and present found in the narratives were significant for younger bilingual children [ $\chi^2(2, N = 86) = 16.28, p = .000$ ] and older bilingual children [ $\chi^2(2, N = 128) = 37.33, p = .000$ ]. The differences between younger and older bilingual children were significant for the preterite [ $\chi^2(1, N = 107) =$

17.28,  $p = .000$ ] and the imperfect [ $\chi^2(1, N = 35) = 6.08, p = .014$ ], but not for the present [ $\chi^2(1, N = 72) = 2.00, p = .157$ ].<sup>2</sup>

Compared to the bilingual children (and particularly the older bilingual children), the proportion of preterite and imperfect decreases for the adult bilinguals (34.23% and 10.51%, respectively), whereas the proportion of present increases (32.03%) (as the use of the preterite decreases). This is represented in Figure 4 and Table 4:

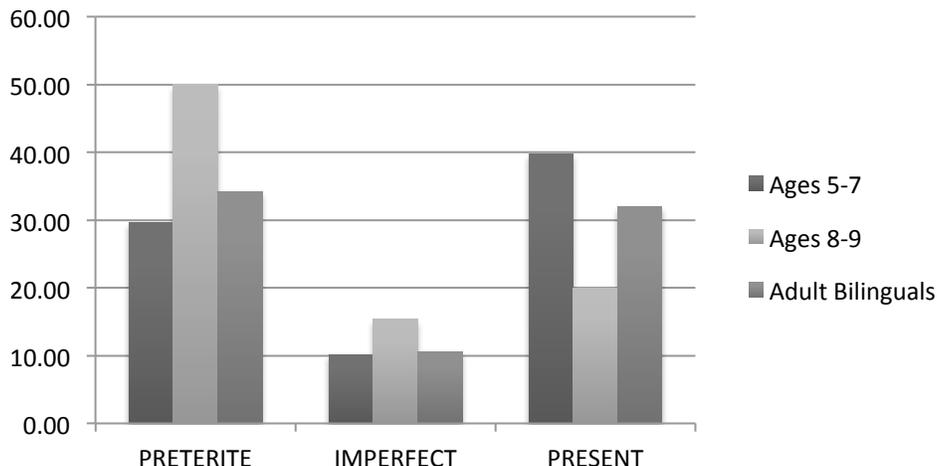


Figure 4: Proportion of preterite, imperfect and present tense use among younger, older and adult bilinguals.

Table 4: Raw numbers and proportion of preterite, imperfect and present tense use among younger, older and adult bilinguals.

	PRETERITE		IMPERFECT		PRESENT	
	N	%	N	%	N	%
AGES 5-7	32	29.63	12	11.11	42	38.89
AGES 8-9	75	48.08	23	14.74	30	19.23
ADULT BIL	140	34.23	43	10.51	131	32.03

The differences between adult and child bilinguals were significant for the preterite [ $\chi^2(2, N = 247) = 71.81, p = .000$ ], the imperfect [ $\chi^2(2, N = 78) = 19.00, p = .000$ ] and the present [ $\chi^2(2, N = 203) = 89.98, p = .000$ ].

With regard to the monolinguals, we found that the older children use a higher proportion of present tense than the younger children and the adult monolinguals (44.98% vs. 19.53% and 25.35%, respectively). The younger children use a higher

<sup>2</sup> We conducted a chi-square analysis to compare the production of tense and aspect in the different language and age groups. As a non-parametric test, it tends to overestimate differences and does not correct for type 1 errors. However, it is the appropriate test to examine nominal (categorical) variables and non-balanced/variable data.

proportion of preterite as opposed to the older children and the monolingual adults (44.53% vs. 32.06% and 27.11%, respectively). This is shown in Table 5:

	PRETERITE		IMPERFECT		PRESENT	
	N	%	N	%	N	%
AGES 5-7	114	44.53	45	17.58	50	19.53
AGES 8-9	67	32.06	27	12.92	94	44.98
ADULT MON	77	27.11	65	22.89	72	25.35

Table 5: Proportion of preterite, imperfect and present tense use among younger, older and adult monolinguals.

The differences in the production of preterite, imperfect and present in the narratives were significant for younger children [ $\chi^2(2, N = 209) = 42.50, p = .000$ ] and older children [ $\chi^2(2, N = 188) = 36.26, p = .000$ ]. The differences between the younger and older children were significant for the preterite [ $\chi^2(1, N = 181) = 12.20, p = .000$ ], the imperfect [ $\chi^2(1, N = 72) = 4.50, p = .034$ ] and the present [ $\chi^2(1, N = 144) = 13.44, p = .000$ ]. The differences between monolingual children and adults were significant for the preterite [ $\chi^2(2, N = 258) = 14.26, p = .001$ ], the imperfect [ $\chi^2(2, N = 137), p = .000$ ] and the present [ $\chi^2(2, N = 216) = 13.44, p = .001$ ].

#### 4.3.2. Grammatical aspect

We compared the use of perfective vs. imperfective forms in bilingual children as opposed to monolingual children (all ages) found in the analyzed utterances. Perfective forms include the preterite and the present perfect. Imperfective forms include the imperfect, the present progressive and the past progressive. Although the present tense is an imperfective form, we analyzed it separately because of the high proportion of present found in the narratives.

Bilingual and monolingual children use roughly the same proportion of perfective forms to imperfective forms (44.96% and 44.76% of perfective forms vs. 24.37% and 21.68% of imperfective forms respectively). In contrast, the use of perfective vs. imperfective forms in monolingual adults is somewhat more balanced than in bilingual adults (40.17% vs. 29.71% as opposed to 42.98% vs. 18.71%). In bilinguals, the proportion of perfective forms and imperfective forms decreases in adults, at the same time as the proportion of present tense increases (38.30% vs. 30.67%). In monolinguals, the proportion of perfective forms decreases in adults (40.17% vs. 44.76%), as the use of imperfective forms increases (29.71% vs. 21.68%). These results are represented in Table 6:

Table 6: Proportion of perfective and imperfective grammatical aspect among all groups.

	PERFECTIVE		IMPERFECTIVE		PRESENT	
	N	%	N	%	N	%
CHILD BIL	107	44.96	58	24.37	73	30.67
CHILD MON	192	44.76	93	21.68	144	33.57
ADULT BIL	147	42.98	64	18.71	131	38.30
ADULT MON	96	40.17	71	29.71	72	30.13

The differences in the production of perfective vs. imperfective forms used in the narratives were significant for bilingual children [ $\chi^2(1, N = 165) = 18.33, p = .000$ ], monolingual children [ $\chi^2(1, N = 284) = 35.21, p = .000$ ], bilingual adults [ $\chi^2(1, N = 211) = 32.65, p = .000$ ] and marginally significant for monolingual adults [ $\chi^2(1, N = 167) = 3.74, p = .053$ ]. The differences between child bilinguals and monolinguals were significant for perfective forms [ $\chi^2(1, N = 302) = 22.26, p = .000$ ] and imperfective forms [ $\chi^2(1, N = 147) = 9.31, p = .002$ ]. The differences between adult bilinguals and monolinguals were also significant for perfective forms [ $\chi^2(1, N = 243) = 10.70, p = .001$ ], but not for imperfective forms [ $\chi^2(1, N = 135) = .36, p = .547$ ].

We also compared the use of perfective vs. imperfective forms by age group (younger children, older children, adults). We observed that the proportion of perfective forms increases in the older bilingual children compared to the younger bilingual children (53.57% vs. 32.65%). This is probably related to the increased use of the preterite in the older children observed previously. The proportion of perfective forms decreases in the adult bilinguals (42.98%). This is probably related to the increased use of the present in the adults compared to the older children observed previously. The proportion of imperfective forms also decreases in the adult bilinguals. These results are represented in Figure 5 and Table 7:

Figure 5: Proportion of perfective and imperfective grammatical aspect among all groups

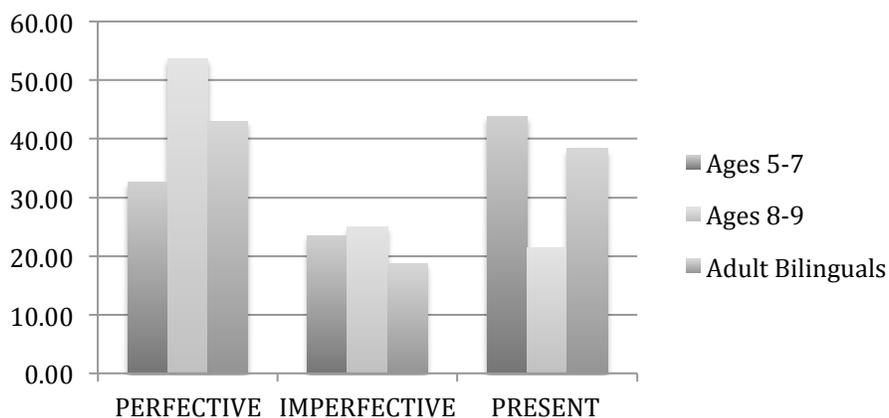


Table 7: Raw numbers and proportion of perfective and imperfective grammatical aspect among all groups.

	PERFECTIVE		IMPERFECTIVE		PRESENT	
	N	%	N	%	N	%
AGES 5-7	32	32.65	23	23.47	43	43.88
AGES 8-9	75	53.57	35	25.00	30	21.43
ADULT BIL	147	42.98	64	18.71	131	38.30

The differences between younger and older bilingual children were significant for perfective forms [ $\chi^2(1, N = 110) = 19.24, p = .000$ ] and not significant for imperfective forms [ $\chi^2(1, N = 55) = 1.47, p = .225$ ]. The differences between older bilingual children and adult bilinguals were also significant for perfective forms [ $\chi^2(1, N = 225) = 21.16, p = .000$ ] and for imperfective forms [ $\chi^2(2, N = 257) = 78.22, p = .000$ ].

With regard to the monolinguals, the proportion of perfective forms is greatest in the younger children (52.59%), whereas the proportion of imperfective forms is greatest in the adults (29.71%). The older children produce the highest proportion of present tense forms (47.72%). These results are represented in Table 8:

Table 8: Proportion of perfective and imperfective grammatical aspect among younger, older and adult monolinguals.

	PRETERITE		IMPERFECT		PRESENT	
	N	%	N	%	N	%
AGES 5-7	122	52.59	60	25.86	50	21.55
AGES 8-9	70	35.53	33	16.75	94	47.72
ADULT MON	96	40.17	71	29.71	72	30.13

The differences between younger and older monolingual children were significant for perfective forms [ $\chi^2(1, N = 192) = 14.08, p = .000$ ] and imperfective forms [ $\chi^2(1, N = 92) = 7.35, p = .007$ ]. The differences between monolingual children and adult monolinguals were significant for perfective forms [ $\chi^2(2, N = 288) = 14.08, p = .001$ ] and for imperfective forms [ $\chi^2(2, N = 163) = 13.89, p = .001$ ].

#### 4.3.3. Discussion

In terms of grammatical tense, our results demonstrate an increased production of the preterite tense among older bilingual children compared to younger children and adult bilinguals. This confirms our hypotheses. The older bilingual children use more instances of preterite forms than any other tense, followed by the use of present tense forms, which also confirms our expectations. The present tense was used in some occasions in contexts where the preterite or the imperfect tense is normally preferred in monolingual speakers, as shown below:

- (5) *Después, el lobo quería meterse en casa de la abuela... para comer el, ... el comida que #tiene (tenía, IMP) caperucita roja y se \*vistó (vistió) como el abuela y estaba esperando. El Caperucita Roja #viene (vino, PRET). #Toca (tocó, PRET) el puerta. Después el lobo #dice (dijo), ¿Qué tal? Y el Caperucita Roja #dice (le dijo) qué grande nariz, qué grande ojos, qué grande orejas y qué grande dientes y después el lobo #quiere (quería, IMP) comer comida que #tiene (tenía) El Caperucita Roja.*

“Then the wolf wanted to get inside the grandma’s house... to eat the,... the food that the Little Red Riding Hood *has* and dressed like the grandma and he was waiting. The Little Red Riding Hood *comes*. She *knocks* at the door. Then the wolf says, “How are you? And the Little Red Riding Hood says what a big nose, what big eyes, what big ears, what big teeth and then the wolf *wants* to eat the food that the Little Red Riding Hood *has*.” (ABA, M, 9;9)

This pattern of preterite and present tense use among the older children differed from the adult bilingual speakers, who use the preterite and the present tense almost equally. We did not find overgeneralization of the preterite form in contexts where the imperfect should have been used, in contrast with previous research (Montrul 2002; Silva-Corvalán 1994). The only errors found were related to incorrect tense conjugation, evidenced in a regularization of irregular past tense forms (e.g., *vinió* vs. *vino* “he/she came”), confirming previous research (Hernández Pina 1984), as well as the use of the present tense in contexts where the imperfect or preterite was preferred.

Regarding grammatical aspect, the older bilingual children show a high proportion of perfective forms, followed by a much lower production of the imperfect and even lower use of present tense forms. The adult bilinguals, on the other hand, showed a much lower production of perfective forms compared to the older children, a low use of imperfect forms, and higher production of present tense forms, forming a U-shape behavior.

We argue that the overuse of the preterite among older children stems from transfer of the aspectual selectional properties that tense heads are able to select in English. Given that the English preterite is selectionally neutral, selecting both perfective and imperfective eventualities, Spanish bilingual children and adults tend to select the preterite more often than the imperfective, rather than having a random behavior or selecting the imperfective form, which is not realized morphologically in English. The imperfect is also more semantically marked/complex than the preterite tense given its wider association in terms of temporal points of reference (Silva-Corvalán forthcoming).<sup>3</sup> Thus, it would be expected to be lost first in the bilingual continuum or incompletely acquired (Silva-Corvalán 1991, forthcoming).

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<sup>3</sup> Silva-Corvalán (forthcoming) considers the imperfect to have a level 3 of complexity, compared to the preterite, which has a level 1.

Our data also show a higher use of present tense forms among the adult bilinguals, compared to older bilingual children. It is possible that the adult bilinguals are using the present tense considerably more as a type of avoidance strategy. That is, the present tense appears to represent a competing form for the imperfect. This is consistent with previous research with heritage speakers and L2 learners where a less marked form (i.e., imperfect indicative, overt noun phrase) has been found to represent a competing form for more complex/marked options (imperfective subjunctive, object clitic) (Potowski, Jegerski & Morgan-Short 2009; Silva-Corvalán 1994; Sánchez & Al-Kasey 1999). The imperfect subjunctive occurs in subordinate clauses and are thus more complex to process than the simple present (Silva-Corvalán, forthcoming).

The adult bilinguals and the younger child bilinguals showed similar patterns of preterite and imperfect tense use (Figure 4). This suggests a possible regression process among the adult bilinguals back to early stages of bilingual development, corroborating previous research (Silva-Corvalán 2003). In contrast with the bilingual speakers, the monolinguals start out using more preterite and present tense forms but by the time they are adults the use of the preterite, the imperfect and the present becomes more or less balanced.

Although a longitudinal study is necessary to confirm a regression trend among the adult bilinguals due to L1 attrition vs. incomplete acquisition (see Silva-Corvalán 2003 and Potowski et al. 2009 for discussion), our cross-sectional data show that there is an increase in the use of the preterite during the ages of 8-9, compared to the younger children, but eventually the present tense starts to compete with the preterite in adulthood. This is not typical of the full-fledged temporal system characteristic of adult monolingual speakers, as our data also show (Figure 2), which suggests a case of L1 attrition rather than incomplete acquisition in the bilingual grammar of these speakers. This rationale, however, is not supported by the data in the case of the imperfect tense, which remains around the 10% range across all age groups. We found no significant development and later simplification of the imperfect form across the bilingual groups. This suggests incomplete development during early childhood, as has been previously argued by Montrul and colleagues. The end result, though, is a simplified temporal system, stemming from both L1 attrition and incomplete development. Rather than one process versus the other, our data show that both processes (L1 attrition and incomplete acquisition) can occur at the same time depending on the domain of linguistic knowledge.

To sum up, our results show that the process of tense and aspect development in heritage language learners of Spanish does not occur uniformly across the board but rather in a piece-meal fashion. Some properties will undergo L1 attrition (overuse of the preterite) (Polinsky 2011; Silva-Corvalán forthcoming) while more marked properties may indeed undergo incomplete development due to insufficient input to trigger the specification of relevant morpho-semantic properties (Montrul 2002, 2004). The development of tense and aspect morphology in the heritage grammar appears to take independent paths. The preterite tense initially assumes both selectional values (perfective and imperfective eventualities), but eventually adult learners start to realize

the presence of the imperfect form in the input. This causes them to rely more on the present tense, an imperfective tense by definition, as a type of an avoidance strategy (less marked form). Since the use of the present is pragmatically odd but not ungrammatical, we suspect that no explicit or implicit feedback is provided, and thus this form remains as an integral part of the bilingual aspectual system to denote past events. Laleko (2010) documents comparable patterns (preference for the perfective aspect and overuse of the present tense) in adult heritage speakers of Russian.

#### *4.3.4. Implications for heritage language teaching pedagogy*

Our results show differential outcomes in the development of aspectual distinctions in Spanish among young bilingual children and adult bilinguals. Bilingual children seem to prefer the preterite form while adult speakers show a preference for both the preterite and the present tense. In contrast with previous research documenting overextension of the preterite to imperfect contexts (Montrul 2002; Silva-Corvalán 1994), their use of preterite forms was contextually appropriate as represented in (5). Their difficulties were also related to a decreased production of the imperfect, which appears to be substituted by the present tense, especially among the adult heritage speakers.

These results suggest that the pedagogical emphasis should be placed on the teaching of imperfect forms from early on and on target form-meaning connections. This, however, must be conducted in a meaningful and age-appropriate way. In most Spanish heritage language textbooks, it is safe to say that preterite vs. imperfect distinctions are presented explicitly to the students (Marqués 2008). The preterite is often taught as the tense that refers to “completed events in the past” and the imperfect as the tense for “habitual events in the past”. This explanation is often followed by written exercises in the form of cloze tests where students must fill in blank spaces using the correct form. This type of pedagogy has proven to be ineffectual for L2 learners who, in most scenarios, fail to achieve native-like knowledge of aspectual distinctions, and is also quite ineffectual for heritage speakers.

Instead, interactive reading aloud practices of stories in Spanish (e.g., fairy tales in the case of child heritage language learners) might be an effective way to reinforce the use of the imperfect and its meaning both at home and in the school setting. Young children enjoy guided reading activities, and when done in small groups, this could be an effective input and output activity. Children can also be asked to retell the stories so they become aware of the different aspectual uses while they read aloud. Reading aloud practices, although an integral part of most literacy programs (Dreher 2003; Martin 1993) so far have not been consistently integrated into heritage language pedagogy. Some instructors may have the misconception that heritage speakers do not need oral practice in Spanish because they already speak the language, or that reading is not a skill that needs to be developed because they can transfer that skill from English. This misguided belief may lead some practitioners to prioritize writing proficiency and put less emphasis in the development of reading accuracy and fluency. Although this cannot be generalized across the board, the development of reading fluency, accuracy and comprehension needs to be integrated more consistently in

heritage language curricula, just like it is in elementary literacy instruction (Allington & Johnston, 2002).

Consistent and frequent reading lessons and reading aloud practices, together with effective focus-on-form techniques (Doughty & Williams 1998; Montrul & Bowles 2010; Potowski, et al. 2009) might help heritage speakers to draw their attention to the notorious Spanish *imperfecto* and help them perceive and manipulate aspectual distinctions more accurately. Following VanPatten's (2007) methodology, and specifically the *Processing Instruction Approach*, the readings should be structured so that they are exempt of any temporal adverbs (*siempre* "always", *normalmente*, "usually") so that the learners are forced to pay attention to the verbal ending rather than processing the meaning of the sentence via the lexical item or content word (*Lexical Preference Principle*, Lee & VanPatten 2003; VanPatten & Cadierno 1993). This, of course, must take place in a communicative, engaging and meaningful way, which is the challenge many practitioners still have in understanding and integrating reading practice into the heritage language classroom.

## 5. Conclusions

Finding the linguistic and psycholinguistic sources of heritage speakers' intuitions and whether their difficulties stem from incomplete development or the L1 attrition of previously learned properties is crucial to understanding how heritage speakers comprehend and manipulate their minority-language system (Cuza & Pérez-Tattam submitted; Montrul 2011; Polinsky 2011; Rothman 2007). This issue also has crucial implications for the type of pedagogical intervention heritage language instructors should implement. The process of re-activating previously learned properties is psycholinguistically different from the process of teaching specific form-meaning connections from scratch (Valdés 2005). This is particularly so when the pedagogical intervention is applied to young minority-language children from different linguistic, sociocultural and socioeconomic backgrounds.

The objective of this study was to inform the development of pedagogical interventions in Spanish language for child and adult heritage Spanish speakers by analyzing the development of tense/aspect morphology among young, older and adult Spanish-English bilingual speakers born and raised in the United States. Our research questions were: Do young and adult heritage speakers of Spanish born and raised in the US show accurate and consistent production of past tense aspectual morphology? If not, do their difficulties increase with age as heritage speakers leave the home environment and integrate into the dominant L2 context? Finally, we discussed implications of our results for heritage language pedagogy, and specifically the teaching of preterite vs. imperfect distinctions to Spanish heritage speakers.

The results of this cross-sectional study show difficulties exhibited by child and adult heritage speakers of Spanish in their production of past tense morphology. Older children showed elevated levels of preterite use, in contrast with their younger counterparts, while the adult learners demonstrated almost equal number of preterite

and present tense use. These results contrast with adult monolinguals who demonstrated a more balanced production of preterite, imperfect and present tense morphology. Although our data do not show overextension of the preterite to imperfect contexts, we did find use of the present tense among the bilingual speakers in contexts where the imperfect tense was more pragmatically felicitous and the preferred form among monolingual speakers of Spanish.

We have argued that the overproduction of the preterite tense stems from lexical (semantic) transfer from English, where the simple past selects both perfective and imperfective eventualities. There appears to be a morphosemantic restructuring in the child bilingual grammar, where one form assumes two aspectual values. In addition, we have argued that in the process of heritage language development, both L1 attrition and incomplete development play a fundamental role depending on the type of linguistic knowledge. We have observed an overuse of the preterite among the older children but this pattern decreases in adulthood, when the present tense becomes a competing form. This is, without a doubt, the result of L1 attrition during the life span, confirming recent research (Polinsky 2011; Silva-Corvalán 2003). However, we have also observed that this underdevelopment pattern does not affect the use of the imperfect, which remains in the 10% range across all age groups in the bilingual population. This indicates that the Spanish imperfect tense, and related semantic entailments remain incompletely acquired in the heritage language grammar and eventually yield their place to the competing present tense, also an imperfective form, during adulthood. As indicated by one of the reviewers, preferences in production are not a direct window into the speakers' knowledge of the relevant aspectual distinctions, and the results should be taken with caution. However, production data do give us an insight into developmental trends and differences across ages and language backgrounds.

Finally, we have suggested that, in the case of aspectual marking in Spanish, future pedagogical interventions with child and adult heritage speakers focus on the development of interactive reading aloud and retelling activities to draw the bilinguals' attention to target form-meaning connections, especially in relation to the *imperfecto*, to target decreased production of the imperfect (in children and adults) and substitution of the imperfect by the present (particularly in adults). Reading aloud activities are a crucial component of most L1 literacy programs, and should thus be integrated consistently into heritage language pedagogy at all levels of instruction.

This study adds to previous research by further examining current discussions on the source of heritage speakers' linguistic competence (incomplete acquisition vs. L1 attrition). It also contributes to previous research on the study of temporal morphology in child as well as adult heritage Spanish, an area of research still underexplored in these populations. We have also provided some suggestions based on linguistic research relative to pedagogical applications. This is important given the necessity to implement scientifically sounded curricula at both the elementary and university levels. Future research would benefit from a larger data set per age group, and from a long-term pedagogical intervention to validate the effects of interactive reading aloud activities in the specification of aspectual morphology in heritage Spanish.

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