

Reactions to (In)felicitous Codeswitching: Heritage Speakers vs. L2 Learners

Kim Potowski and Mariška Bolyanatz
University of Illinois at Chicago

1. Introduction

Recent research has compared heritage speakers (HS) to second language (L2) learners on a number of traits. Heritage speakers, typically the children or grandchildren of immigrants, grow up with various degrees of exposure to Spanish in the home. Some are monolingual in Spanish until they enter school, constituting cases of what De Houwer (2007) calls “early second language acquisition.” Others hear both Spanish and English from birth and are considered examples of “bilingual first language acquisition” (De Houwer 2007). We refer synonymously to individuals in both of these situations who develop productive proficiency in Spanish as “heritage speakers” and as “native bilinguals.” In contrast, second language (L2) learners of Spanish typically begin their study of Spanish in high school or college and exhibit important linguistic differences from HS.

Linguistic work comparing HS and L2 learners has focused on their grammars (Montrul 2008), reactions to classroom instruction (Potowski, Jegerski & Morgan-Short 2009; Montrul & Bowles 2010), and language processing (Morgan-Short, Potowski & Bowden 2010). Given that codeswitching is an area that has received much research attention among native bilinguals (including Zentella 1997; Toribio 2001, 2004), researchers have begun comparing the codeswitching (CS¹) practices of HS and L2 learners (Liebscher & Dailey-O’Cain 2004; Potowski 2009). However, both of those studies examined classroom-based *production* of CS. The current study seeks to compare *reactions* to CS by HS and L2 learners – that is, whether they consider particular switches acceptable or not. This approach is similar to Montrul & Slabakova’s (2002) attempt to test the claim that Los Angeles bilinguals understood the semantic content of a particular verb form even if they did not always produce it in obligatory contexts (Silva-Corvalán 1994). That is, performance is not always indicative of underlying linguistic knowledge. In addition, examining reactions allows researchers to utilize items that violate switch point tendencies and which, therefore, would likely never be produced in natural CS. Thus, the overarching question of the present study is: Do HS and L2 learners exhibit similar sensitivity to syntactic well-formedness of CS?

2. Codeswitching

Codeswitching is the alternation between linguistic codes in the same conversational event. Among the most commonly cited structural² explanations of CS include Poplack (1980), Myers-Scotton (1997) and MacSwan (2005). All work on this topic agrees that CS is rule-governed behavior. Two principal descriptive divisions of CS are *intrasentential* – occurring within the boundary of a single sentence – and *intersentential*, meaning that one sentence is entirely in one language and the next sentence is in the other language.

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¹ We use the abbreviation “CS” to refer to “codeswitching,” “codeswitch” and “codeswitched”.

² Socially-motivated explanations are found in Zentella (1997), Toribio (2004) and Myers-Scotton (1993) among others.

The vast majority of work on CS has involved native bilinguals who acquire their languages naturalistically, typically in their families and communities. These are the same individuals defined as “heritage speakers” in other research. Explorations of the CS behavior of native bilinguals suggest that CS behavior is linked to proficiency in both languages. Poplack (1980) found a clear correlation between reported and observed bilingual ability and CS type: Bilinguals produced more intrasentential switches than speakers who were Spanish dominant (1980:255). McClure (1981) and Zentella (1997), too, found that children with stronger Spanish codeswitched differently than those with weak Spanish.

The fact that proficiency in the two languages has been linked with different CS production behavior gives rise to two separate empirical questions. The first deals with age of acquisition, and the second deals with production of vs. reactions to CS.

2.1. Age of acquisition

Do individuals who possess similar proficiency in their two languages, but who acquired them at different ages, exhibit different CS behavior? In the field of second language acquisition, this question of native vs. L2 systems is being explored extensively (for a summary, see Montrul 2008). Within this research paradigm, a variety of linguistic measures are given to English-speaking individuals who score similarly on a particular measure of Spanish proficiency, but the individuals belong to two different groups: Those who began acquiring Spanish natively in the home from birth (native bilinguals/heritage speakers), and those who began acquiring Spanish as young adults (L2 learners). These two groups, when matched for proficiency³, exhibit similar performance on some measures, but significantly different performance on other measures and structures. In general terms, when comparing these two groups, Montrul (2008) concludes that: (a) native bilinguals usually perform better on oral measures than written; (b) native bilinguals tend to display advantages in phonology, syntax, lexical-semantics and sentence processing, and (c) L2 learners have advantages in morphology when tasks are written and/or metalinguistic. These differences explained by the processes of Spanish acquisition of the two groups: heritage speakers acquire it orally and without instruction, while L2 learners acquire it in formal, text-based, metalinguistic classroom contexts.

Fewer studies have been done on the CS of L2 learners, very likely because most L2 learners do not engage in CS. CS is not taught in the classrooms where most L2 learners acquire Spanish, nor do they likely acquire this practice naturally during a period of study abroad. While it is certainly possible for an L2 learner of Spanish to codeswitch, not only would a high degree of Spanish proficiency be required (based on the work just reviewed) but also a social motivation would be required, such as spending a lot of time interacting with a native CS community. However, CS is typically considered stigmatized linguistic behavior, and many native bilinguals who CS deny that they do so and/or criticize themselves and others who CS. It is thus unlikely for the typical L2 learner of Spanish to engage in CS with native bilinguals.

Liebscher & Dailey-O’Cain (2004) sought to understand whether advanced L2 learners engage in CS, and whether they do so in similar ways to native bilinguals. They studied the classroom linguistic production of advanced German L2 learners in a content-based college course about linguistics. They found that the CS produced by these students served not only participant-related functions, such as when speakers did not know how to say something in German, but also served discourse-related functions that “contextualize[d] the interactional meaning of their utterances” by indicating changes in their orientation toward the interaction and toward each other. Thus, the authors contend that these learners CS in similar ways to native bilinguals.

One challenge inherent in this kind of research is the difficulty in assigning motives to CS. How do we know for sure when a speaker is seeking to attract attention, set off a metalinguistic comment,

³ Typically a version of the *Diploma de Español como Lengua Extranjera* (DELE) is used to measure Spanish proficiency (see Montrul 2008). The DELE tests vocabulary and morphology. Given that Polinsky (1997) found a correlation between lexical and grammatical proficiency among heritage Russian speakers, it may be true that similar scores on the DELE represent similar proficiency on particular areas of language as measured by particular tasks. But when groups of individuals supposedly matched for proficiency perform differently on a linguistic task, it is valid to question whether they were in fact matched for proficiency more globally.

exercise agency, or simply accesses one word more quickly than another? This problem plagues analyses of CS among L2 speakers as well as native bilinguals (Zentella 1997) and makes it difficult to compare naturalistic CS behavior reliably. Stronger support for Liebscher & Dailey-O’Cain’s (2004) claim that L2 adults CS in similar ways to native bilingual adults would consist of comparisons of larger corpora in a variety of naturalistic contexts evidencing similar lexical, semantic, and syntactic traits of CS as that found among native bilinguals.

A similar question is whether HS and L2 children CS in comparable ways. Some studies suggest that children’s code-switching patterns change over time, with early code-switching consisting mainly of lexical items and later code-switching consisting of longer constituents (McClure 1981; Meisel 1994; Zentella 1997; Wei & Hua 2006). Indeed, Zentella (1997) found that older children manipulate their linguistic codes for a wider variety of stylistic purposes and situational demands than younger children. Patterns were related to age and to English proficiency, which in turn were related to each other: The younger children were Spanish-dominant, and the older children were English-dominant. Similarly to McClure (1981), Zentella (1997) posited that it is the greater English proficiency of older children that is responsible for their different code-switching behavior, although there were also some identifiable personal preferences among the children. In general, the younger children’s CS was dominated by lexical gaps and translations, while the older girls’ CS consisted predominately of realigning the conversation through narratives and shifting roles.

Reyes (2004) and Wei & Hua (2006) had similar findings. Reyes (2004) studied the CS forms and functions of two groups of Spanish-dominant students at age 7 and 10. Studying only switches consisting of more than one word, she found that the 10-year-olds code-switched more frequently, and for a wider range of functions, than did the 7-year-olds, which she argues is indicative of a developmental trait. That is, similar to Zentella’s (1997) findings, as children’s English (and hence their bilingual communicative competence) got stronger, they more frequently used CS as a strategy to meet their conversational goals (2004:93). Wei & Hua (2006) found that Chinese-speaking children living in England began incorporating single English lexical items – all of which were content morphemes – by age 3;3. Six months later, however, not only were the children much more reluctant to speak Chinese, their CS consisted mostly of English EL islands. The authors argue that this qualitative change in CS, while indicative of growth in English proficiency, may also be the first sign of L1 attrition (2006:79).

Although McClure (1981), Zentella (1997), Reyes (2004) and Wei & Hua (2006) suggest a developmental pattern of CS, Cantone (2007) argues that child CS can be analyzed in the same way as adult CS, because the quantity of mixing among children depends on an individual choice, not on language development, language dominance, or other factors. Note that Zentella (1997) did find individual preferences for CS among the five children she studied, although the overall patterns in her data did prompt her to suggest an age-based difference. Thus, the current preponderance of evidence supports a developmental pattern of CS that is dependent on age as well as proficiency in the two languages.

The only study to date comparing the CS of native bilingual vs. L2 children is Potowski (2009). She analyzed 12 ½ hours of naturalistic classroom speech produced by four ten-year-olds (two HS and two L2) in a fifth grade dual immersion classroom. In this school, both HS and L2 students had been receiving their instruction in Spanish from 50% to 80% of the school day. Both groups of students produced almost identical numbers of English lexemes inserted into a Spanish base and Spanish lexemes inserted into an English base. However, the HS used almost twice as many English islands⁴ inserted into a Spanish (27 times) base than did the L2 students (17 times), which the author attributed to the HS’ higher Spanish proficiency and their interactions with native bilingual codeswitchers. As suggested by Zentella (1997), children who are more proficient in both languages take more risks when code-switching and switch larger constituents of speech. EL islands are syntactically more complex than single lexemes – which are typically lone nouns – and therefore require a higher level of bilingual proficiency to switch without violating the rules of either grammar. Even though some of the L2 students received similar ratings as the HS on overall Spanish proficiency, other measures

⁴ An island is a switched portion of language longer than a single lexeme that conforms internally to the specifications of the language it is in (Myers-Scotton 1993).

including tense, mood and aspect and written production (Potowski 2007) as well as these CS findings suggest that the HS in fact possessed stronger Spanish systems.

2.2. *Production of vs. reactions to CS*

The observation that levels of proficiency in two languages is linked with different CS *production* behavior leads to a related question: Are *reactions* to CS also correlated with proficiency? Another relevant question is, Do native bilinguals and L2 learners, independently of proficiency, react to CS differently?

Shifting from production data to reaction data allows us to move beyond the findings of Liebscher & Dailey-O’Cain (2004) and of Potowski (2009). As pointed out by Anderson (2006:46), naturalistic corpora are useful sources of CS data, but they are inadequate in determining what kinds of CS are **not** possible. Thus, different methodologies are necessary to answer these two questions, including grammaticality judgments and matched guise⁵. Toribio (2001) utilized a combination of grammaticality judgments, oral production, and written production with native bilinguals. She found that participants had greater difficulties reading fairy tale texts that contained ill-formed CS, producing more hesitations, false starts, and breakdowns. They also rated these texts as more difficult to read and understand. Thus, these native bilinguals were “able to rely on unconscious linguistic knowledge in distinguishing between permissible and unacceptable codeswitched forms” (405).

The final study to be reviewed here is Anderson (2006). He sought to determine whether proficiency of L2 Spanish speakers was correlated with their attitudes towards and evaluations of grammatical and ungrammatical CS. This is theoretically similar to Zentella’s (1997) and to Toribio’s (2001) work correlating proficiency with CS, but instead of production of CS, Anderson (2006) examined attitudes toward the (un)grammaticality of CS. 274 college student participants heard a total of four fairy tales. Two stories were considered familiar (*Cinderella* and *Snow White*) and the other two were considered unfamiliar (*The City Mouse and The Country Squirrel* and *The Beggar Prince*). One of each kind of story contained grammatical CS, and the other contained ungrammatical CS. After listening to the four stories, participants took a 16-item matched-guise survey eliciting their attitudes toward the narrators of the grammatical and ungrammatical stories.

Anderson (2006) found that participants evaluated the narrators who produced grammatical CS more positively than the speakers who produced ungrammatical CS. They also rated narrators of less familiar stories less positively than narrators of familiar stories, regardless of whether the switches were grammatical or ungrammatical. Anderson posited that this was due to attention rates: participants paid little attention to the stories they already knew, but they had to pay more attention to the unfamiliar stories, thereby also paying closer attention to their grammaticality. Finally, Anderson found a correlation between self-reported level of proficiency and acceptability of CS. Both proficiency groups evaluated the grammatical CS narrators positively, but unlike what was found by Toribio (2001), the more proficient group continued to judge the ungrammatical narrators favorably (Anderson 2006:144).

Interestingly, 14 heritage speakers had participated in a pilot of Anderson’s (2006) experiment, and 20 of them in the actual study. In the pilot data, Anderson found that HS’ judgments of felicitousness of CS did not differ from those of the L2 learners, so he did not separate them for analysis in the actual study. This echoes the findings of Liebscher & Dailey-O’Cain (2004) that L2 adults produce CS in similar ways to native bilingual adults. Yet recall the findings of Potowski (2009) that native bilingual children produced CS differently than L2 children, and the work of Montrul (2008) showing that HS and L2 learners matched for proficiency can still show significantly different behavior on linguistic tasks. These findings suggest that there is still reason to believe that differences do exist in the way native bilinguals and L2 learners both produce and evaluate CS.

The present study replicates Anderson (2006) but with two key changes. First, we tested a much larger number of native bilinguals, expecting that a larger sample size would be more reliable. Second, we sought responses to the texts themselves (in addition to the narrators) as well as to particular switch

⁵ This is why the CS used in such experiments, including the present study, are often contrived and not representative of CS practices as they are deployed in the community.

points of infelicitous CS. Note that Anderson (2006) uses the terms “(un)grammatical” and “(in)felicitous” synonymously. We prefer the terms “(in)felicitous” because all grammatical constraints that have been proposed for CS have encountered counterexamples (Thomason 2001). Thus, certain switches may be infelicitous (uncommon, often avoided) but not necessarily ungrammatical.

2.3. Research questions and hypotheses

Our research questions and hypotheses were as follows.

Research question 1: Do heritage speakers of Spanish show different reactions to oral CS narratives compared to L2 learners? We hypothesize that HS will accept felicitous CS at a higher rate and reject infelicitous CS at a higher rate, while L2 learners will show ratings more in the middle for both kinds of CS.

Research question 2: Does familiarity with a story have an effect on CS ratings, and if so, is the effect similar for HS & L2 learners? Based on Anderson (2006), we hypothesize that familiar stories will elicit higher acceptability ratings regardless of their felicitousness. We have no reason to expect that HS and L2 will exhibit different behavior on this variable.

Research question 3: Do HS & L2 learners respond in the same ways to particular CS switch points? No research to date has examined reactions to different switch points, so we tentatively offer a similar hypothesis as in research question 1: HS will react to particular switch points differently than L2 learners.

3. Methodology

3.1. Participants & materials

The participants were students at a large public urban Midwest university. A total of 606 responses were received, of which 439 were complete. Due to the linguistic diversity of the student body, a total of 123 of the L2 Spanish participants fell into the category of speakers of Languages Other Than English (LOTE). These participants, as native bilinguals of another language in addition to English, might have been code switchers themselves (albeit not in Spanish) and therefore may have different reactions to CS than the participants who grew up in monolingual households. For this reason, the LOTE participants were analyzed separately. Table 1 displays general characteristics of the participants.

Table 1. Participants

Group	<i>n</i>
HS	123
L2	193
LOTE	123

A total of 123 heritage speakers of Spanish (enrolled in a 3rd or 4th semester Spanish for HS course), 193 L2 learners of Spanish, and 123 LOTE speakers completed our survey. All were enrolled in 4th or 5th semester Spanish courses. Beyond these distinctions, we did not determine or differentiate level of proficiency in Spanish.

Participants heard two codeswitched fairy tales, one familiar (*Cinderella*) and one unfamiliar (*The City Mouse and the Country Squirrel*)⁶. The texts of the stories were taken directly from Anderson (2006) (Appendix 1). The same female read each of the texts in order to control for gender, accent and style. Participants were sent to a URL and all materials were delivered through Survey Monkey. Table

⁶ We do not have pre-experimental data indicating that one story was in fact more familiar to participants than the other. We followed Anderson’s (2006) methodology in assigning this variable. However, the results of different responses to CS in one story type vs. the other lend some reliability to the distinction.

2 provides a sample of each switch type, felicitous and infelicitous, from the different stories (taken from Anderson 2006).

Table 2. Examples of codeswitches

Type of story	Type of switch	
	Felicitous	Infelicitous
<i>Cinderella</i> (familiar)	“With all of the suffering, él también murió.”	“Her father had vuelto a casarse con una viuda que tenía dos hijas.”
<i>Mouse</i> (unfamiliar)	“Ya que hemos hecho un viaje tan largo, voy a ofrecerte something delicious to eat.”	“La ardilla no had anything else to offer his friend besides beans, nuts and bread.”

3.2. Procedure

Participants were first asked a series of background questions about course level, experience with Spanish (either spoken in the home or learned in school) and parents’ country of origin. These and other questions sought to confirm the HS, L2, or LOTE background of each student. They were then asked a series of questions about the act of CS itself, such as whether they had ever heard people CS and whether CS bothered them, and asked to select from a list of responses including “Totally disagree,” “Sort of disagree,” “Sort of agree” and “Totally agree.”

Next, participants were asked their gender, which was deemed a convenient way to separate them into Group 1 and Group 2. Group 1, the males, listened to *Cinderella* Infelicitous and *Mouse* Felicitous. Group 2, the females, listened to *Cinderella* Felicitous and *Mouse* Infelicitous (see Table 3). There were many more females enrolled in these courses, however, which led to unbalanced participant group sizes.

Table 3. Dyads of stories and participants

Group	Gender	Stories	<i>n</i>
1	M	<i>Cinderella</i> Infelicitous	Heritage =38
		<i>Mouse</i> Felicitous	L2 = 60
			LOTE =49
2	F	<i>Cinderella</i> Felicitous	Heritage =85
		<i>Mouse</i> Infelicitous	L2 =133
			LOTE =74

Both groups heard the felicitously switched story first⁷. After listening to the first story, the participants were asked to answer three initial questions (taken from Anderson 2006):

1. What do you think is this person’s stronger language, English or Spanish?
2. How easy was this story to understand? (Answers ranged from “very difficult to understand” to “very easy to understand”)
3. How well does this person express herself (Answers ranged from “very poorly” to “very well”)

⁷ Ideally, half of the participants in both groups would have heard the infelicitously switched story first to avoid priming effects. However, Survey Monkey was not capable of doing this.

The present study focuses on the ratings of actual codeswitched language and does not report this data. After listening to the first story and answering the 3 questions about the narrator, participants were asked to read⁸ and evaluate specific items from the story they had just heard. Nineteen different CS items were presented to Group 1, and fourteen items to Group 2. These items were evaluated on the following scale:

- 1= Definitely sounds bad. No one would say this.
 2=Sounds a bit odd. Probably not common to hear this.
 3=Mostly OK. Maybe someone would say this.
 4=Definitely OK. Sounds like something a person would say.

We decided to present the reading of samples from story 1 immediately after hearing story 1 so that the narrators' voice producing the CS might be fresher in participants' minds. Although reading CS samples from story 1 prior to listening to story 2 may have primed participants to be more attentive to CS while listening to story 2, we saw no significant differences between ratings of the two stories. The individually evaluated CS items represented examples of the seven different types of CS in the original texts, and are displayed in Table 4.

Table 4. Examples and number of tokens of each type (type = switch point)

	Infelicitous				Felicitous		
	Aux+VP	NPPro+VP	Neg+VP	Det+N	V+DP	DP+VP	AdvP+S
Example	La ardilla de ciudad salió de la mansión que le había given such a fright and wished his friend a good life.	I want you to return with me to the city where I vivo y te enseñaré cómo es mi vida en la ciudad.	Vivía con sus feas hermanas tras que no wanted to do anything.	The young girl was left to share the casa con sus feas hermana stras.	Ya que hemos hecho un viaje tan largo, voy a ofrecerte something delicious to eat.	No se dieron cuenta de que un grupo de hombres y mujeres entered the room.	With all of the suffering, él también murió, dejando a su hija con la impertinente mujer.
Group 1: <i>n</i>	3	2	3	2	2	2	2
Group 2: <i>n</i>	4	2	2	3	1	1	1

Results were submitted to a multivariate GLM ANOVA, with language background (HS, L2 or LOTE) as the between-subjects factors and story type included as the within-subjects factor.

4. Results

Table 5 displays results by language group, familiarity of story and type of switches.

⁸ We will address later the inconsistency in having participants *hear* the story, but respond to individual instances of CS presented in writing.

Table 5. Means of acceptability for each language group

	Familiar: Cinderella		Unfamiliar: Mouse	
	Felicitous	Infelicitous	Felicitous	Infelicitous
Heritage	2.64	2.27	2.36	2.22
L2	2.63	2.20	2.50	2.30
LOTE	2.67	2.11	2.25	2.43
Overall	2.65	2.20	2.41	2.31

Descriptively, the overall highest rate of acceptance was given to the felicitously switched familiar story, and the lowest rating was given to infelicitously switched familiar story. That is, the familiar story received both the highest and the lowest overall ratings. On the unfamiliar story as well, the felicitous switches received higher ratings of acceptability than infelicitous switches.

A MANOVA analysis was conducted in order to compare felicitous and infelicitous switches across language groups and story types (familiar vs. unfamiliar). Our first hypothesis, that HS will accept felicitous CS at a higher rate than L2 and reject infelicitous CS at a higher rate than L2, would entail differential acceptance rates between heritage speakers and L2 learners of Spanish. Results of statistical analysis, however, revealed no main effect for language group.

Regarding our second hypothesis, that familiar stories will elicit higher acceptability ratings regardless of their felicitousness, we find an interaction between familiarity of the story and felicity, partially confirming our hypothesis. Significant main effects were found for story type on both the infelicitous ($F = 4.005, p < .05$) and felicitous ($F = 14.273, p < .05$) ratings. Follow-up pairwise comparisons revealed that for infelicitous switches, the unfamiliar story received significantly higher acceptance rates than did the familiar story ($p < .05$). Conversely, for felicitous switches, the familiar story received significantly higher acceptance rates than the unfamiliar story ($p < .05$).

Our third research question asked whether heritage speakers and L2 learners respond in similar ways to particular types of switches. Mean acceptability for infelicitous and felicitous switches are presented in Tables 6 and 7.

Table 6. Mean acceptability ratings, infelicitous switch points

	Aux + VP		NPro + VP		Neg + VP		Det + NP	
	Familiar	Unfamiliar	Familiar	Unfamiliar	Familiar	Unfamiliar	Familiar	Unfamiliar
	“La ardilla de la ciudad salió de la mansión que le había given such a fright.”		“As soon as they left their place of refuge, they oyeron el ladrido de un perro.”		“Su amigo no could believe that the squirrel would prefer the woods and fields.”		“When the house finally calmed down, the ardilla de ciudad salió de la mansión.”	
HS	2.16	2.14	2.26	2.14	2.03	2.06	2.67	2.57
L2	2.12	2.24	2.19	2.36	1.97	2.11	2.56	2.54
LOTE	2.04	2.32	2.15	2.50	2.01	2.27	2.27	2.69
Overall	2.11	2.23	2.20	2.32	1.99	2.14	2.51	2.60

Descriptively, the results are as follows. Infelicitous switches at the Negation + VP point show the lowest acceptability rating for all three language groups, and infelicitous switches at Det + NP show the highest acceptability ratings across all three groups. Results of the MANOVA indicate no main

effects for language background groups or story type. Thus, our third hypothesis that HS will react to particular switch points differently than L2 learners was not supported.

A significant interaction, however, was found between language group and story type for the Det + NP switches ($F(2, 439) = 3.726, p < .05$), indicating that the language groups responded differently to this type of switch depending on whether the story was familiar or unfamiliar. Whereas the HS and L2 language groups accepted more infelicitous Det + NP switches in the familiar story, the LOTE language group accepted more of these switches in the unfamiliar story.

Table 7. Mean acceptability ratings, felicitous switch points

	V + DP		DP + VP		AdvP + S	
	“The cruel stepmother told Cinderella that she had to stay home and sweep el suelo y preparar la cena.”		“Sin despedirse del príncipe, la joven ran from the great hall.”		“With all of the suffering, él también murió, dejando a su hija con la impertinente mujer.”	
	Familiar	Unfamiliar	Familiar	Unfamiliar	Familiar	Unfamiliar
HS	2.80	2.21	2.49	2.47	2.49	2.32
L2	2.71	2.51	2.58	2.53	2.61	2.44
LOTE	2.77	2.24	2.62	2.24	2.62	2.27
Overall	2.76	2.38	2.56	2.45	2.57	2.37

Felicitous switches within the familiar story always received higher acceptability ratings than felicitous switches in the unfamiliar story. Overall, the ratings of the felicitous V + DP switches showed the largest difference between the familiar and unfamiliar story. Results of the MANOVA show no main effect for language background group, in contrast with our third hypothesis. Main effects were found for story type (familiar or unfamiliar) for the V + DP switches ($F(1, 439) = 22.70, p < .05$) and AdvP+S ($F(1, 439) = 6.42, p < .05$). Follow up pairwise comparisons reveal that felicitous V + DP and AdvP + S switches in the familiar story received significantly higher acceptability ratings than the felicitous switches in the unfamiliar story.

In summary, whether a story was known had a greater effect on the acceptability ratings of code switching than did language background. The familiar, felicitously codeswitched story received the highest acceptability ratings, followed by the felicitously codeswitched unfamiliar story. The infelicitously codeswitched, unfamiliar story received the second-lowest rating, and the lowest ratings were assigned to the infelicitous familiar story. This hierarchy is displayed in Table 8, along with a comparison to the findings of Anderson (2006). Possible explanations for these differences are offered in the conclusions.

Table 8. Hierarchy of acceptability (most to least acceptable)

Present study	Anderson (2006)
Familiar, felicitous	Familiar, grammatical = Familiar, ungrammatical
Unfamiliar, felicitous	
Unfamiliar, infelicitous	Unfamiliar, grammatical
Familiar, infelicitous	Unfamiliar, ungrammatical

5. Conclusions

Answers to our three research questions were as follows:

1. Do heritage speakers of Spanish react differently to code switched fairy tales than L2 learners? No.
2. Does familiarity of story have an effect on ratings, and if so, is the effect similar for heritage speakers & L2 learners? Yes.
3. Do heritage speakers & L2 learners respond in the same ways to particular types of felicitous and infelicitous codeswitches? Yes.

Regarding questions #1 and #3, our results suggest that, despite beginning their acquisition of Spanish at a much later age, L2 learners can develop sensitivity to the felicitousness of CS, and respond similarly to CS overall as well as to specific switch points as do HS. This suggests that, like native bilinguals, L2 learners develop a syntactic sensitivity to CS points, at least in a controlled and written task. As noted by Toribio (2001), even bilinguals who do not normally engage in CS in their speech communities were able to offer accurate judgments on the well-formedness of switches. However, based on Potowski (2009), it is still an open question whether HS and L2 learners *produce* CS differently (Liebscher & Dailey-O’Cain 2004 notwithstanding).

Following up on research question #2, recall Anderson’s (2006) results, displayed in Table 8, in which familiarity with the story trumped “grammaticality” (Anderson’s terms) of CS. That is, narrators of familiar stories received higher ratings than those of unfamiliar stories, regardless of the “grammaticality” of CS. He posited that this difference might be due to attention factors: participants did not have to pay very much attention to familiar stories because they already knew the storyline. However, while listening to the unfamiliar story, participants had to pay more attention to figure out the storyline, and while doing so also paid more attention to the CS that took place. Thus, they were able to distinguish the grammaticality of CS, and rated the ungrammatical CS lower than the grammatical CS.

Unlike Anderson’s participants, in the present study, felicitousness of CS trumped familiarity of story. It is unclear why this is might be; the main difference in methodologies between the two studies is that Anderson’s (2006) participants rated the narrators of the stories, while our participants rated the actual stories themselves. In any case, with this condition in effect – felicitousness of CS trumping familiarity of story – why might already knowing the storyline result in significantly higher ratings for felicitous CS, but in significantly lower ratings for infelicitous CS? Table 9 offers possible motivations that might have been behind participants’ ratings.

Table 9. Hierarchy of acceptability (most to least) with possible motivations

Condition	Possible motivation
Familiar, felicitously codeswitched #1 <i>highest rating</i> = 2.65	“I know this story. The CS sounds OK.”
Unfamiliar, felicitously codeswitched #2 <i>highest rating</i> = 2.41; <i>significantly lower than #1.</i>	“I don’t know this story, but the CS sounds OK.”
Unfamiliar, infelicitously codeswitched #3 <i>highest rating</i> = 2.31	“I don’t know this story, and it sounds weird.”
Familiar, infelicitously codeswitched #4 <i>highest (i.e. lowest) rating</i> = 2.20; <i>significantly lower than #3.</i>	“I know this story, but it sounds weird.”

Focusing on infelicitous CS, as suggested by Table 9, it may be the case that hearing infelicitous CS in a story that participants know is more jarring to them than hearing infelicitous CS in a story that they do not know. In other words, when a story is unfamiliar, listeners may judge infelicitous CS less harshly because their attention is exhausted by trying to follow the storyline.

Several methodological limitations should be noted. Anderson (2006) piloted his investigation with a written form of the fairy tales, but presented them orally during his actual study. He made this change because of the:

“...limitation [of] on-line visual presentation of the materials, [in that] contact forms such as those at issue are context-bound, practiced by bilinguals for bilinguals, and they emerge in the articulation of discourse. Even bilinguals who regularly produce contact forms in their everyday, face-to-face linguistic interactions may not view them as valid in written documents. It is possible that the impersonal, asynchronous, printed presentation of bilingual texts may have provoked negative responses” (2000: 92).

It was with this in mind that we presented the stories in oral form; ideally we would have presented the follow-up specific switches orally as well. Future work should explore whether participants react differently when presented with switch types orally instead of in writing.

Additionally, more tokens of each switch type are needed in order to determine statistical difference in switch type across groups. Thus, future work should expand on Anderson’s (2006) texts by incorporating more tokens of each switch type. The Det + NP switch points in particular may be fruitful to examine in greater detail. It would also be fruitful to explore the relationship between acceptance rates of different CS types and how frequently those switch types appear in natural CS corpora.

Moreover, the dyads and then tokens that our participants received were based on their gender. Due to the different number and type of specific switch types, we were not able to compare the effects of gender on acceptability ratings. A future study could divide their groups differently, enabling an analysis based on participants’ gender.

Lastly, further investigation into this topic should differentiate participants based on an objective measure of Spanish proficiency. While placement in and movement through courses in the same program exerts some degree of control on students’ proficiency levels, an objective measure would ensure greater comparability (although see footnote #3 on the difficulty of extending claims of equal proficiency in one linguistic realm to other realms).

6. Appendix 1: Fairy tale texts

6.1. *Cinderella, Felicitous CS*

Había una vez una joven muy bella **whose mother had died when she was very young. Her father had remarried a widow** que tenía dos hijas. Dentro de poco, él se arrepentió de haberse casado con **such a cruel woman. With all of the suffering**, él también murió, dejando a su hija con la impertinente mujer. **The young girl was left to share the house with her ugly stepsisters** que no querían hacer nada. Todo el día la joven hacía los quehaceres de la casa y como sus vestidos estaban siempre tan manchados de ceniza, la gente **called her Cinderella**. Un día el Príncipe de aquel país anunció que iba a dar una fiesta **that would surpass them all. All the maidens in his kingdom would be invited. However, the cruel stepmother told Cinderella that she had to stay home and sweep** el suelo y preparar la cena para cuando volvieran ella y sus feas hijas. Llegó el día del baile y con celos ella vio **her stepsisters depart for the royal ball. Finally alone in the kitchen**, Cenicienta no pudo reprimir los sollozos. De repente, se le apareció su Hada Madrina. **With her angelic voice, the Fairy Godmother consoled the crying girl**. Después de descubrir el porqué de las lágrimas, el hada madrina la transformó en princesa con her magic wand. **She told the damsel that she too could go to the ball, but under one condition. When the Royal clock struck twelve**, tendría que regresar a casa sin falta. La llegada de Cenicienta al Palacio **caused a tremendous adulation**. Al entrar en la sala de baile, el Príncipe quedó tan encantado de su belleza que bailó con ella toda la noche. Sus hermanastras **didn’t recognize her and they wondered** quién era aquella joven. **Because Cinderella was enjoying the ball so much, she didn’t see what time it was. Suddenly, she heard** el reloj del Palacio dar las doce. Sin despedirse del príncipe, la joven **ran from the great hall. She descended the stairs with** tanta prisa que perdió una zapatilla **which the Prince picked up with a glimmer of hope in his eyes**. Para encontrar a la bella joven, el Príncipe ideó un plan. Él se casaría con la muchacha que podría calzar la zapatilla. Primero, enviaría a sus heraldos a recorrer todo el Reino en busca de **the owner of the slipper. All the damsels of the kingdom** se la probaron en vano, pues no había ni una a quien le quedara bien la zapatilla. Al final los heraldos del rey llegaron a casa de Cenicienta. Claro estaba que las hermanastras no calzarían **the slipper, but when Cinderella put it on, the messengers were shocked to see that it fit perfectly. And thus it happened that the Prince fell in love with** la hermosa joven y ellos vivieron muy felices.

6.2. *Cinderella, Infelicitous CS*

Había una vez una joven muy bella cuya madre había **died when she was very young**. **Her father had** vuelto a casarse con una viuda que tenía dos hijas. Dentro de poco, se arrepentió de haberse casado con una **cruel woman**. **With all of the suffering**, él también murió, dejando a su hija con la impertinente mujer. **The young girl was left to share the** casa con sus feas hermanastras que **no wanted to do anything**. **All day long the young maiden did all the chores and because her dress was always covered with cinder, the people called her Cinderella**. Un día el Príncipe de aquel país anunció que iba a dar un **party that would surpass them all**. **All the maidens in his kingdom would be** invitadas. Sin embargo, la cruel madrastra de Cenicienta le dijo que tendría que quedarse en casa a barrer el suelo y preparar la cena para cuando volvieran ella y sus feas hijas. Llegó el día del baile y con celos ella **watched her stepsisters depart for the royal ball**. **Finally alone in the kitchen**, Cenicienta no pudo reprimir los sollozos. De repente, se le apareció su Hada Madrina. **With her angelic voice, the Fairy Godmother consoled the crying girl**. Después de descubrir el porqué de las lágrimas, el hada madrina la transformó en princesa con su varita mágica. Ella **told the damsel that she too could go to the ball, but under one condition**. **When the Royal clock struck twelve**, tendría que regresar a casa sin falta. El **arrival of Cinderella to the Palace caused a tremendous adulation**. Al entrar en la sala de baile, el Príncipe quedó tan encantado de su belleza que bailó con ella toda la noche. Sus hermanastras **no recognized her and they wondered who the young maiden was**. Porque Cenicienta estaba disfrutando tanto del baile ella **no saw what time it was**. **Suddenly, she** oyó el reloj del Palacio dar las doce. Sin despedirse del príncipe, la maiden **ran from the great hall**. **She descended the stairs with so much haste that she lost a slipper which the Prince picked up with a glimmer of hope in his eyes**. Para encontrar a la bella joven, el Príncipe ideó un plan. Él **would marry the girl that could put on the slipper**. **First, he would** enviar a sus heraldos a recorrer todo el Reino en busca de la dueña de la zapatilla. Las doncellas del reino se lo probaron en vano, pues **no was even one who could get the slipper to fit**. **Finally the king's messengers arrived at Cinderella's house**. **It was very evident that the stepsisters could not** calzar la zapatilla, pero cuando Cenicienta se lo puso, los heraldos estaban **shocked to see that it fit perfectly**. **And thus it happened that the Prince fell in love with the beautiful maiden and they** vivieron muy felices.

6.3. *The city mouse and the country squirrel ("Mouse"), Felicitous CS*

Había una vez un ratón de ciudad **who went to visit an old friend, a squirrel, who lived in the country**. La ardilla de campo era sencilla y bondadosa, y recibió con **excitement the arrival of the city mouse**. **The squirrel** no tenía nada más que frijoles, nueces, y pan para ofrecerle a su amigo, pero se lo ofreció con generosidad. **The city mouse, upon seeing this offering, made** una cara de desprecio ante la comida que le ofrecía su amigo. Sin consideración ninguna **the city mouse said to the squirrel**:—No comprendo cómo puedes aguantar **the backwardness of this country life**. **His friend couldn't believe that the squirrel would prefer the woods and fields to** las calles llenas de carretas y de gente. — **I want you to return with me to the city** donde vivo y te enseñaré cómo es mi vida en la ciudad. **No country squirrel could refuse the invitation and together the two friends** emprendieron el camino de vuelta a la ciudad esa misma tarde. Los amigos no pudieron creer lo tarde que era cuando entraron a la mansión **where the city mouse lived**. —Ya que hemos hecho un viaje tan largo, voy a ofrecerte **something delicious to eat**—**said the mouse**. **Guided by** el aroma de un succulento banquete, **the two friends went to the great dining room**. **On an enormous table located in the middle of** la habitación, encontraron los restos de una cena especial. Al instante, **they were eating** excelentes carnes, quesos selectos y sabrosas tartas. Pero mientras disfrutaban de las delicias, no se dieron cuenta de que un grupo de hombres y mujeres **entered the room**. **Terrified, the two friends** saltaron de la mesa y se precipitaron hacia el refugio más cercano. Llenos de miedo, se abrazaron fuertemente, hasta que no sentían **the presence of the humans**. **But as soon as they left their place of refuge, they heard the bark of a dog** que los condujo otra vez a su escondite. **When the house finally calmed down, the country squirrel** salió de la mansión **that had given him such a fright, and wishing his friend a good life, he said**: —**It might be that you have a fondness for** esta vida, pero yo prefiero nueces y frijoles en paz antes que pasteles y quesos con miedo.

6.4. *The city mouse and the country squirrel (“Mouse”), Infelicitous CS*

Había una vez un ratón de ciudad que fue a visitar a un **old friend, a squirrel, who lived in the country**. La ardilla de campo era sencilla y bondadosa, y recibió con emoción la llegada del ratón de ciudad. La ardilla **no had anything else to offer his friend besides beans, nuts and bread, but he** se lo ofreció con generosidad. **The city mouse, upon seeing this offering, made a** cara de desprecio ante la comida que le ofrecía su amigo. Sin consideración ninguna **the city mouse said to the squirrel** —No comprendo cómo puedes aguantar la simpleza de esta vida en el campo. Su amigo **no could believe that the squirrel would prefer the woods and fields to the** calles llenas de carretas y de gente. — **I want you to return with me to the city where I** vivo y te enseñaré cómo es mi vida en la ciudad. **No country squirrel could** rechazar tal invitación y juntos los dos amigos emprendieron el camino de vuelta a la ciudad esa misma tarde. Los amigos **no could believe how late it was when they entered the mansion where the city mouse lived**. —Ya que hemos **made such a long trip, I** voy a ofrecerte algo delicioso de comer, dijo el ratón. Guiados por el aroma de un succulento banquete, **the two friends went to the great dining room. On an enormous table located in the middle of the room they** encontraron los restos de una cena especial. Al instante, **they were** comiendo excelentes carnes, quesos selectos y sabrosas tartas. Pero mientras disfrutaban de las delicias, ellos **no realized that a group of men and women entered the room. Terrified, the** dos amigos saltaron de la mesa y se precipitaron hacia el refugio más cercano. Llenos de miedo, se abrazaron fuertemente, hasta que **no felt the presence of the humans. But as soon as they left their place of refuge, they** oyeron el ladrido de un perro que los condujo otra vez a su escondite. **When the house finally calmed down, the** ardilla de ciudad salió de la mansión que le había **given such a fright and wishing his friend a good life, he said. —It might** ser que tengas simpatía por esta vida, pero yo prefiero nueces y frijoles en paz que pasteles y quesos con miedo.

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