ijbd

International Journal of Behavioral Development
2014, Vol. 38(4) 333–341

DOI: 10.1177/0165025414533225
ijbd.sagepub.com
SAGE

"¿Cómo estas?" "I'm good." Conversational code-switching is related to profiles of expressive and receptive proficiency in Spanish-English bilingual toddlers

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Abstract

Relations between bilingual children's patterns of conversational code-switching (responding to one language with another), the balance of their dual language input, and their expressive and receptive proficiency in two languages were examined in 115 2½-year-old simultaneous Spanish-English bilinguals in the U.S. Children were more likely to code-switch in response to Spanish than English. Children's expressive vocabulary scores were higher in English than in Spanish, while their English and Spanish receptive language scores were not different. Analyses of subgroups of children with different but consistent patterns of code-switching confirmed that children who code-switched to English showed greater English skills, specifically in the expressive domain. Children who did not code-switch were more balanced bilinguals in both expressive and receptive skills. Children with other code-switching patterns showed still different profiles of dual language expressive and receptive proficiency. These findings reveal that some, but not all, bilingual children show different profiles of expressive and receptive skill in their two languages and that these proficiency profiles are related to their language choices in conversation.

Keywords

bilingual profiles, code-switching, expressive vocabulary, language choice, language proficiency, receptive language

Parents of bilingual preschool children are often puzzled by what appears to be their children's choice to speak only one language in everyday interaction, although they understand two. Researchers have also described this phenomenon. For example, De Houwer (2007) cites several accounts of children in bilingual environments who speak only one language, "even with a parent who speaks another language to them" (p. 411), and Hurtado and Vega (2004) describe parents and children speaking to each other and understanding each other even though "the children may be speaking mostly in English, and the parents mostly in Spanish" (p. 148).

When children respond to one language using another, it is one form of code-switching. Code-switching is a ubiquitous feature of speech in bilingual communities, and code-switching by young bilingual children has been well documented (Genesee & Nicoladis, 2007). The question of when and why children code-switch is an active area of investigation. In this study, we focus on conversational code-switching in very young bilinguals. We ask first whether 2½-year-old Spanish-English bilingual children show asymmetries in their conversational code-switching—more frequently switching in one direction than the other, and we ask what might underlie any asymmetries observed.

Several candidate, but not mutually exclusive, explanations of asymmetries in code-switching can be found in the literature. One possibility is that asymmetries in language choice reflect differences between the languages in societal prestige or dominance. In the U.S., English is the language of the dominant culture and the more prestigious language (Eilers, Pearson, & Cobo-Lewis, 2006). Greene, Peña, & Bedore (2012) found that American Spanish-English bilingual 5-year-olds were more likely to switch to English when being tested in Spanish than they were to switch to Spanish when being tested in English, regardless of which language was their stronger language. Gutiérrez-Clellen and colleagues found that the examiner-elicited speech of 5-year-old Spanish-English bilingual children tested at their preschool Head Start sites more frequently contained code-switched utterances when elicitation was in Spanish than when it was in English (Gutiérrez-Clellen, Simon-Cereijido, & Leone, 2009). Gutiérrez-Clellen et al. (2009) suggested the children were aware that English was the language prescribed by the majority culture in the school environment.

Another possible explanation of asymmetries in code-switching is that children's choice of languages for speaking reflects what they hear in their immediate environments. In Hurtado and Vega's (2004) example, the parents who addressed their children in Spanish likely heard more Spanish than English in their daily lives, while the children who answered their parents in English likely heard more English than Spanish in theirs. Similarly, Pearson, Fernández, Lewedeg, and Oller (1997) reported anecdotally that the bilingual children in their study who received less than 20% of their input in one language were reluctant to interact in that language,

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despite demonstrating they had learned at least some vocabulary in that language.

A third possibility is that differences in children's proficiency in their two languages (i.e., their language dominance) contribute to asymmetries in code-switching. Children choose to speak the language they know better. Some findings do suggest that young bilinguals code-switch to compensate for gaps in their language knowledge (Greene et al., 2012). In addition, dominance or proficiency may interact with social prestige in influencing language choice. Gutiérrez-Clellen et al. (2009) found that while English-dominant bilinguals used English in their utterances when speaking Spanish more than they used Spanish in English utterances, Spanish-dominant bilinguals did not produce the opposite pattern.

There is a fourth possible account of code-switching that is suggested by the descriptive accounts of children's behavior in conversation. It may be that code-switching reflects dominance that is specific to expressive language skills. That is, the children's receptive abilities allow them to understand what is being said to them in both languages, but their expressive skills make it much easier to answer in one language than the other. Several studies of school-aged bilingual children have documented a receptive-expressive gap, in which the children's standard scores on receptive measures exceed their standard scores on expressive measures in one or both of their languages (Gibson, Oller, Jarmulowicz, & Ethington, 2012; Gibson, Peña, & Bedore, 2012). The extreme of such a gap between receptive and expressive abilities is what has been termed passive or receptive bilingualism: a pattern of bilingual proficiency in which bilinguals understand two languages but are able to speak only one (Hurtado & Vega, 2004; Valdés, 2001).

One suggestion for why receptive skills might exceed expressive skills in one or both of bilinguals' languages is that the diminished input that bilinguals experience in each of their languages, relative to monolinguals, results in difficulties in lexical access, even when the lexical knowledge is there (Yan & Nicoladis, 2009, and references therein). The argument is that understanding words requires only a representation of word meanings, while producing words also requires a motoric representation, and it takes more experience hearing and/or using a language to acquire the motoric representation. Relatedly, Bates (1993) has made the point that a rough representation of word form might be adequate to support comprehension but not adequate to support production of a word form that is comprehensible to others. The argument that comprehension somehow is easier or requires less input is consistent with the well-established finding in monolingual development that comprehension precedes production (e.g., Bates, Bretherton, & Snyder, 1988; Benedict, 1979; Fenson et al., 1994). It is also consistent with the finding among children from language minority homes in the U.S. that the common pattern of transition from heritage language dominance to English dominance in middle childhood occurs earlier in comprehension than in production (Kohnert & Bates, 2002).

It has additionally been suggested that the causal link between language choice and language skill operates in the opposite direction as well. Among pre-kindergarten and kindergarten bilingual children, Bohman, Bedore, Peña, Mendez-Perez, and Gillam (2010) found that children's use of each language was an additional predictor of their language skill beyond the effects of input, and they hypothesized that using a language "forces the learner to process the language in a way that only hearing it . . . does not" (p. 10). If speaking a language requires more or deeper processing than understanding a language, then language use may be a source, rather than a consequence, of asymmetries between bilingual children's expressive and receptive skills in their two languages.

The literatures that describe conversational code-switching and bilingual profiles of expressive and receptive skills are small and based on studies of children 5 years and older. Thus, we do not know when these phenomena emerge or the circumstances that create them. In the present study, we investigate patterns of bilingual preschool children's language choice in conversation and their correlates as one approach to addressing the broader aim of understanding the heterogeneous nature of early bilingual proficiency (McCardle & Hoff, 2006). Inspired by parents' anecdotal accounts of conversational intransigence in their bilingual toddlers, we look for evidence of asymmetries in young bilingual children's conversational code-switching and for evidence of a relation between children's conversational code-switching behavior and profiles of expressive and receptive dual language skills. We ask whether children are more likely to code-switch when addressed in English or in Spanish, and we ask whether any differences observed in children's code-switching in response to English and Spanish correspond to differences in (1) their relative exposure to English and Spanish, (2) their relative skill in English and Spanish, or (3) specifically, their relative expressive, but not receptive, skill in each language.

Method

Participants

The participants were 115 2½-year-old Spanish-English bilingual children (53 boys, 62 girls, M age = 30.44 months, $SD = 0.38$). Participants were selected from a larger study and met the following criteria: (1) the children had been exposed to Spanish and English from birth, and the less frequently heard language constituted at least 10% of their input (one child's input included 3% exposure to a third language in the home); and (2) the children were willing and sufficiently proficient to be tested in English and in Spanish. An additional 5 children who met these criteria were excluded because they scored more than three standard deviations above or below the mean on one of the language measures.

All families were residents of South Florida, in the U.S., and all children were born in the U.S. All children were full term and healthy at birth, with normal hearing. All children were screened for evidence of communicative delay at 30 months. Participants were recruited through advertisements in local magazines and at programs for parents with young children, as well as through word of mouth. Consistent with the heterogeneity of the U.S. bilingual population, parents' language backgrounds varied: 79.1% of mothers and 70.4% of fathers considered themselves bilingual in English and Spanish. Characteristics of the sample are further described in Tables 1 and 2.

Procedure and instruments

The children's primary caregivers were interviewed, and the children's English and Spanish skills were assessed in three sessions. The first session included the caregiver interview, conducted by a fully bilingual researcher in the language of the caregiver's choice. The caregivers included 103 mothers, 6 fathers, 1 grandmother, 1 other caregiver, and in 4 cases both parents were interviewed together. The second and third sessions included administration of assessments in English and in Spanish to the child, with the order of languages counterbalanced across participants.

Table 1. Child characteristics.

	Percentage
Birth order	
Only child	36.5%
First born	8.7%
Later born	54.8%
Ethnicity	
African American	0.9%
Hispanic White	88.7%
Hispanic African	4.3%
European American	4.3%
Other	1.7%
Parents' language backgrounds	
2 native Spanish or native bilingual parents	57.4%
1 native Spanish, 1 native English parent	34.8%
Other	7.0%

Note. $N = 115$. For parents' language backgrounds, the category "Other" includes three participants with two parents native in English; four participants with one parent native in Spanish, one parent native in another language other than English or Spanish; and one participant with one native Spanish-English bilingual parent, one parent native in English and another language other than Spanish.

Table 2. Parent characteristics.

	Mothers	Fathers
Native languages		
English	16.5%	23.5%
Spanish	75.7%	63.5%
Bilingual	7.0%	8.7%
Other	0.9%	4.3%
Native country		
U.S.	27.8%	40.0%
Colombia	20.9%	11.3%
Peru	9.6%	5.2%
Venezuela	7.8%	4.3%
Cuba	5.2%	7.8%
Dominican Republic	4.3%	6.1%
Argentina	4.3%	7.0%
Puerto Rico	2.6%	1.7%
Other	17.5%	16.6%
Level of education		
Less than high school	1.7%	0.9%
High school degree	16.5%	25.2%
2-year degree	28.7%	27.0%
4-year degree	33.0%	33.0%
Advanced/graduate degree	20.0%	13.0%

Note. $N = 115$.

Measure of children's conversational code-switching. Two questions asked of the children's primary caregiver in interview were the basis of estimating children's tendency to code-switch when responding to English and Spanish. One was "If (child's name) is addressed in English, does he/she respond in English?" The options were *Always*; *Sometimes*; *No, responds in Spanish*; *Not usually, mixes*. The second was the same question asked about the child's responses when addressed in Spanish. Due to the low frequency of responses across the categories of *Sometimes*; *No, responds in [the other language]*; and *Not usually, mixes*; these latter three responses were combined yielding two categories of response: for English, *Always responds in English* and *Does not always respond in English*; and for Spanish, *Always responds in Spanish* and *Does not always respond in Spanish.*

Measure of language input. In the context of an extensive interview about language use in the home, primary caregivers were asked to estimate the percent of their child's language exposure that was in English and in Spanish. Where children lived in two households, estimates for each were obtained and combined taking account of the balance of time the child spent in each household. Previous research suggests such measures are reliable and are strongly related to diary-based measures of home language use (Hoff & Rumiche, 2012).

Measures of children's productive vocabulary. The *Expressive One-Word Picture Vocabulary Test (EOWPVT) Spanish-English Bilingual Edition* (Brownell, 2001) was administered to assess the children's expressive vocabulary in English and in Spanish. The test is designed for use with children from two years through adulthood. The standard administration procedure for the Spanish-English bilingual version is to allow the child to provide a label in either language, but we modified this procedure to allow only English labels in the English assessment and only Spanish labels in the Spanish assessment in order to obtain separate assessments of the children's English and Spanish vocabularies, as have others (Anthony, Solari, Williams, Schoger, & Zhang, 2009). We also modified the procedure to not require achieving a basal because we found that many of the children from bilingual environments missed items within the first eight items, but were able to continue successfully beyond those first items (Hoff & Rumiche, 2012). Thus, raw scores on the EOWPVT were the total number of pictures the child labeled correctly starting from the beginning of test until he or she missed six consecutive items.

Measures of children's receptive language. The auditory language comprehension subscales of the English (Zimmerman, Steiner, & Pond, 2002a) and Spanish (Zimmerman, Steiner, & Pond, 2002b) *Preschool Language Scale—Fourth Edition* (PLS-4) were also administered. The PLS-4 is a widely used instrument that assesses language skills in children from birth to 6 years and 11 months. The test, individually administered by trained examiners, includes a picture book and series of toys with which the experimenter presents tasks that assess skills in the areas of semantics, morphology, syntax, integrative language skills, and preliteracy skills. Raw scores potentially range from 0 to 62 in the English version and from 0 to 61 in the Spanish counterpart. Each additional task is more difficult than the previous one, and administration is stopped once the child makes seven consecutive mistakes.

Data analysis

We asked whether bilingual children at this age show asymmetries in conversational code-switching, consistently switching languages when addressed in one of their languages but not when addressed in the other. We then asked what might underlie this pattern in language choice. We pursued these questions in two sets of analyses: The first set of analyses asked if there was an average asymmetry in the conversational code-switching behavior of the full sample and whether any such asymmetry in language choice had parallels in asymmetries in the children's English and Spanish input, in their overall English and Spanish proficiency, or specifically in their English or Spanish expressive language proficiency. The second set

Table 3. Percentage of children who "Always" and "Not always" respond in the language of their interlocutor when addressed in English and Spanish.

	Language of child's response	
Language addressed to child	"Always" same	"Not always" same
English	45.2%	54.8%
Spanish	30.4%	69.6%

Note. $N = 115$.

Table 4. Means (and standard deviations) for percentage of English input for children who "Always" and "Not always" respond in the language of their interlocutor when addressed in English and Spanish.

	Language of child's response	
Language addressed to child	"Always" same	"Not always" same
English	55% (21%)	39% (21%)
Spanish	33% (18%)	52% (22%)

Note. $N = 115$.

of analyses identified four categories of children based on their code-switching behavior: children who switched to English when addressed in Spanish, but not vice versa; children who switched to Spanish when addressed in English, but not vice versa; children who did not code-switch in responding; and children who code-switched in both directions. We then compared these four groups in terms of their input, their overall English and Spanish proficiency, and specifically in their English and Spanish expressive and receptive proficiency.

In all analyses, when language skill is the dependent variable, we use raw scores. Standard scores for the single language administration of the EOWPVT do not exist. Standard scores for the PLS-4 do exist, but the reference groups used to norm the Spanish and English version are not necessarily comparable. In contrast, the tests themselves are comparable. For the EOWPVT, the items presented to be named are the same. For the PLS-4, the items are not identical but substantially overlap in content. Thus, raw scores provide a reasonable basis for comparing children's proficiency in English and Spanish. However, because the scales of the EOWPVT and PLS-4 are different, the tests do not provide a means of comparing expressive to receptive skills. Thus, we do not test for a receptive-expressive gap by directly comparing children's receptive and expressive scores within a language. Rather, we ask whether the difference between children's English and Spanish expressive skills is greater than the difference between their English and Spanish receptive skills. A gap that might contribute to conversational code-switching would take the form of a difference in expressive skill in favor of the language children use when they switch, in combination with a smaller or no gap between levels of receptive skill in the two languages.

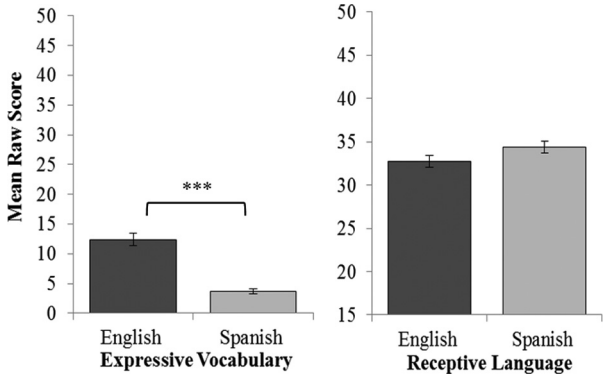

Figure 1. Mean expressive vocabulary and receptive language raw scores in English and Spanish ($N = 115$).
Note. ***$p < .001$, with Bonferroni correction for multiple comparisons. Error bars represent 1 SE of the mean.

Results

Conversational code-switching, input balance, and dual language expressive and receptive proficiency

Conversational code-switching. The percentage of children described by their caregivers as "Always" and "Not always" responding to English with English and to Spanish with Spanish are presented in Table 3. A greater percentage of children code-switched when responding to Spanish than code-switched when responding to English, $t(114) = 2.18$, $p = .032$ (2-tailed), $d = .31$.

Input balance. On average, the home language exposure of the children in this sample was 46.5% English ($SD = 22.68$) and 53.6% Spanish ($SD = 22.60$). Thus, the finding that more children code-switched to English when addressed in Spanish than vice versa did not reflect greater average exposure to English at home. However, other data suggest that even very young children in this community hear more English than Spanish outside the home (Place & Hoff, 2010), and the English dominance in the larger community may be an influence. A comparison of the children who sometimes code-switched to English in response to Spanish to those who always responded to Spanish in Spanish revealed that those who switched to English heard more English than those who did not, $t(113) = 4.50$, $p < .001$ (2-tailed), $d = .95$. Similarly, the children who sometimes code-switched to Spanish in response to English heard less English and more Spanish at home than those who reliably responded to English in English, $t(113) = 3.93$, $p < .001$ (2-tailed), $d = .74$. Thus, differences among children in their code-switching behavior were associated with differences in input balance. Those means are presented in Table 4.

Receptive and expressive language proficiency. To ask whether the greater frequency of Spanish to English conversational code-switching, compared to English to Spanish code-switching, was associated with greater English than Spanish proficiency, either overall or specifically in expressive language skill, the children's expressive and receptive language scores in English and Spanish were compared in a 2 (Language: English, Spanish) × 2 (Measure: Expressive, Receptive) repeated measures ANOVA. The means are plotted in Figure 1. There was a significant main effect of Language, $F(1, 114) = 15.80$, $p < .001$, $\eta^2 = .12$; on average, children's scores on tests of English were higher than their scores on tests of Spanish. There was a significant main effect of Measure, but this reflects differences in the scales of the two instruments and indicates nothing about differences in expressive versus receptive skills. There was also a significant Language × Measure interaction,

Table 5. Cross-tabulation of participants based on patterns of language use when addressed in English and Spanish.

		Addressed in Spanish, responds in Spanish		
		"Always"	"Not always"	Total
Addressed in English, responds in English	"Always"	12 (10%)	40 (35%)	52
	"Not always"	23 (20%)	40 (35%)	63
	Total	35	80	115

Table 6. Means (and standard deviations) for percentage of English input for children in each code-switching group.

	Code-switching group			
	"Only Switch to English" ($n = 40$)	"Only Switch to Spanish" ($n = 23$)	"Never Switch" ($n = 12$)	"Switch to English and Spanish" ($n = 40$)
English input	59% (20%)	29% (15%)	41% (21%)	45% (22%)

$F(1, 114) = 116.61$, $p < .001$, $\eta^2 = .51$. Post-hoc paired-samples t-tests, with a Bonferroni correction for multiple comparisons (Bonferroni alpha = .025), revealed that the children had significantly higher expressive vocabularies in English ($M = 12.42$, $SD = 11.56$) than in Spanish ($M = 3.68$, $SD = 4.95$), $t(114) = 7.21$, $p < .001$ (2-tailed), $d = .98$. The difference between English and Spanish receptive language scores was in the opposite direction and not significant (Spanish, $M = 34.39$, $SD = 6.98$; English, $M = 32.77$, $SD = 7.26$), $t(114) = 2.10$, $p = .038$ (2-tailed), $d = .24$.

Individual patterns of code-switching and their correlates in input balance and expressive and receptive proficiency

To further pursue the questions of whether and why some bilingual children systematically code-switch more in one direction than another, the participants were categorized into four nonoverlapping groups based on whether they "Always" or "Not always" responded in the same language when addressed in English and in Spanish. The results are presented in Table 5. Some children always answered in the same language as their conversational partner—but these were the minority. Some children occasionally switched in both directions, answering Spanish with English and also answering English with Spanish. Two groups of children showed clear asymmetries in their conversational code-switching: one group reliably responded to English with English and also sometimes switched to English when addressed in Spanish; another group showed the opposite pattern, reliably responding to Spanish with Spanish and sometimes switching to Spanish when addressed in English. Fifty-five percent of the children demonstrated a code-switching asymmetry; 63% of these switched to English when addressed in Spanish while consistently answering English with English.

The relation of code-switching behavior to input balance. We asked whether these four groups with different code-switching patterns differed in the balance of English to Spanish in their home language exposure. The mean percent of home input that was in English is presented for each group in Table 6. A one-way ANOVA revealed a significant effect of Group on the balance of English to Spanish in children's home language exposure, $F(3, 111) = 11.74$, $p < .001$, $\eta^2 = .24$. Post-hoc t-tests using the Bonferroni correction for multiple comparisons indicated that the children who switched to English when addressed in Spanish, but not vice versa, experienced more English input at home compared to all other groups (Bonferroni alpha = .008, all ps < .008). The children who switched to Spanish when addressed in English, but not vice versa, experienced less English input (and more Spanish) at home compared to the group with the opposite pattern and compared to the children who code-switched in both directions (ps < .01). The children with no asymmetry in their code-switching behavior—those who switched in both directions and those who never switched—had the most balanced input and were not different from each other in percent of English in their home language exposure.

The relation of code-switching behavior to expressive and receptive proficiency. To ask whether these groups who differed in code-switching behavior differed in their English and/or Spanish expressive and/or receptive proficiency, a 3-way mixed ANOVA was conducted, with code-switching Group as the between-subjects variable and Language and Measure as within-subject variables. There was a significant main effect of Group, $F(3, 111) = 4.31$, $p = .006$, $\eta^2 = .10$. There was a significant main effect of Language, $F(1, 111) = 8.80$, $p = .004$, $\eta^2 = .07$; on average the children's total English scores summed across the two measures were higher than their total Spanish scores. There was a significant main effect of Measure, $F(1, 111) = 2636.20$, $p < .001$, $\eta^2 = .96$, indicating only that the scales of the two tests were different. In addition, all interaction effects were significant. There was a significant Group × Language interaction, $F(3,111) = 17.15$, $p < .001$, $\eta^2 = .32$; that is, across the measures of expressive and receptive skills combined, the children who responded to Spanish with English had higher English than Spanish scores, and the children who responded to English with Spanish had higher Spanish than English scores. The groups who switched in both directions and who never code-switched in conversation had more nearly balanced English and Spanish skills. There was a significant Group × Measure interaction, $F(3, 111) = 3.34$, $p = .022$, $\eta^2 = .08$; as can be seen in Figure 2, the groups with different code-switching patterns differed in expressive skills more than in receptive skills. There was a significant Language × Measure interaction, $F(1, 111) = 87.80$, $p < .001$, $\eta^2 = .44$; on average, English expressive vocabulary scores substantially exceeded Spanish expressive vocabulary scores ($t[114] = 7.21$, $p < .001$, Bonferroni alpha = .025), while English and Spanish receptive scores were similar (in fact, they differed nonsignificantly in the opposite direction).

Of central interest was the significant three-way Group × Language × Measure interaction, $F(3, 111) = 7.39$, $p < .001$, $\eta^2 = .17$, indicating that the profile of dual language expressive and receptive skills differed among groups with different patterns of conversational code-switching behavior. Those data are graphed in Figure 2. This 3-way interaction was further explored with four two-way ANOVAs, asking separately for each group whether there was an effect of Language indicating stronger skills in one language than the other and whether there was a Measure × Language interaction indicating a difference in the gap between English and Spanish skills depending on whether expressive or receptive skills were assessed.

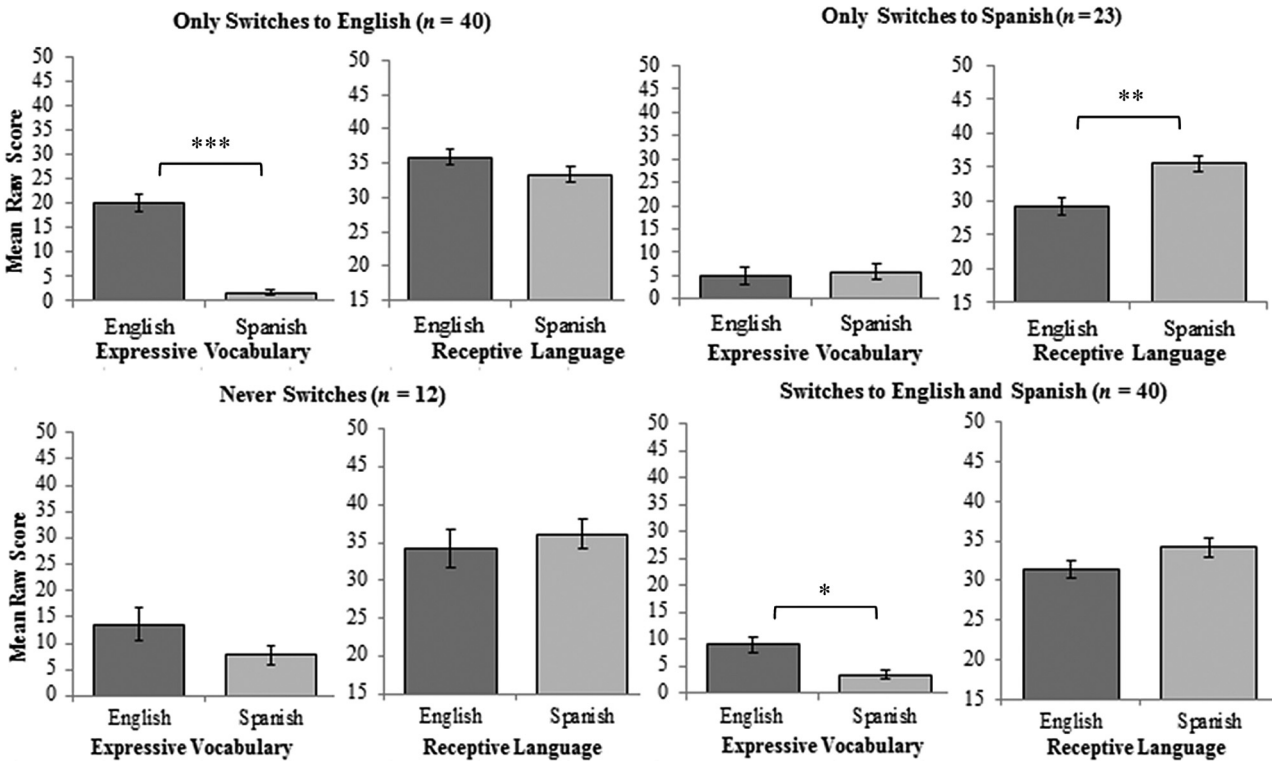

Figure 2. Mean expressive vocabulary and receptive language raw scores in English and Spanish for four groups differing in code-switching patterns
Note. ***$p < .001$, **$p < .01$, *$p < .05$, with Bonferroni correction for multiple comparisons. Error bars represent 1 SE of the mean.

For the group of children who sometimes switched to English in answering Spanish but reliably answered English with English, there was a significant main effect of Language, $F(1,39) = 79.37$, $p < .001$, $\eta^2 = .67$, with English scores exceeding Spanish scores; a significant main effect of Measure, $F(1,39) = 974.72$, $p < .001$, $\eta^2 = .96$; and a significant Language × Measure interaction, $F(1,39) = 80.26$, $p < .001$, $\eta^2 = .67$. Post-hoc comparisons revealed that these children's expressive skills in English were significantly better than their expressive skills in Spanish ($t[39] = 10.48$, $p < .001$, Bonferroni alpha = .006), while there was no significant difference between their English and Spanish receptive skills. For the group of children who sometimes answered English with Spanish but not vice versa, there was a significant main effect of Language ($F[1,22] = 4.87$, $p = .04$, $\eta^2 = .18$), with Spanish skills exceeding English skills; a significant effect of Measure, $F(1,22) = 960.06$, $p < .001$, $\eta^2 = .98$; and a significant Language × Measure interaction, $F(1,22) = 8.56$, $p = .008$, $\eta^2 = .28$. In this group, however, it was receptive skills that differed between languages, not expressive skills. These children had higher receptive scores in Spanish than in English ($t[22] = -3.99$, $p = .001$, Bonferroni alpha = .006), while not differing in their English and Spanish expressive vocabulary scores.

Among the children who code-switched in both directions, there was no main effect of Language, $F(1,39) < 1.0$; there was a main effect of Measure, $F(1,39) = 1302.25$, $p < .001$, $\eta^2 = .97$; and there was a significant Language × Measure interaction, $F(1,39) = 46.15$, $p < .001$, $\eta^2 = .54$. The nature of the interaction was that expressive vocabulary scores were higher in English than in Spanish ($t[39] = 3.40$, $p = .002$), while receptive language skills differed nonsignificantly in opposite direction. Last, the children who never code-switched showed a pattern of skills similar to those of the children who switched in both directions. There was no main effect of Language, $F(1,11) < 1.0$ and a significant main of effect of Measure, $F(1,11) = 239.12$, $p < .001$, $\eta^2 = .96$. There was also a significant Language × Measure interaction ($F[1,11] = 7.88$, $p < .001$, $\eta^2 = .42$), reflecting nonsignificantly higher English than Spanish expressive vocabulary scores and nonsignificantly higher Spanish than English receptive language scores.

Discussion

The aim of the present study was to investigate a phenomenon that occurs in bilingual households, which has frequently been described in anecdote, but which has not previously been the subject of systematic study. The phenomenon is that in which children appear to understand two languages but tend to speak in only one of them, even when addressed in the other. We explored this phenomenon among 2½-year-old children living in Spanish-English bilingual homes in South Florida, in the United States, asking whether such patterns of language use could be observed and whether children's choice to speak one language over the other coincided with differences between the languages in their prevalence in the children's input and/or in the children's expressive or receptive skills.

Do children show asymmetries in conversational code-switching?

We found evidence of conversational code-switching (i.e., answering one language with another) that occurred more in one direction

than the other. Spanish elicited code-switching from more children than English did. Some children code-switched in both directions, but among those children who only switched in one direction, nearly twice as many switched to English when addressed in Spanish as vice versa. This finding is consistent with other studies of Spanish-English bilingual children which find that children more frequently choose to speak English than Spanish (Oller & Eilers, 2002) and more frequently code-switch to English than to Spanish (Greene et al., 2012; Gutiérrez-Clellen et al., 2009).

Do code-switching asymmetries reflect input?

Some evidence from the present study suggests code-switching involves choosing to use the language that is dominant in input. Although language input in the children's homes was, on average, fairly balanced, these children lived in the U.S. Other data from this population suggest that even very young children—even in the bilingual community of South Florida—hear more English than Spanish outside the home (Place & Hoff, 2010). Furthermore, the two groups of children with different but consistent patterns of conversational code-switching did differ in input; each group was more exposed to the language they more frequently chose to use. The children who showed no asymmetry in code-switching had more balanced input.

Do code-switching patterns reflect a difference in expressive and receptive proficiency?

In the sample as a whole, expressive vocabulary scores were higher in English than in Spanish, while receptive language scores did not differ, consistent with the average pattern of more frequent code-switching to English. The present study is the first, to our knowledge, to document a profile of skills in preschool dual language learners in which the children show comparable levels of receptive skill in two languages while showing different levels of expressive skill, with stronger expressive skills in the language they seem to prefer to speak.

Analyses of the subgroups of children with different, but consistent, patterns revealed other profiles of bilingual expressive and receptive skills that were masked by the average English expressive dominance. Among the subgroup of children who only switched to English and never switched to Spanish, the profile seen in the sample as a whole was present and more exaggerated. The gap between their English and Spanish expressive skills was large (more than 1.5 standard deviations), while their receptive language scores did not differ. In addition, their absolute level of Spanish expressive vocabulary was extremely low. This group of children showed a profile that could be described as passive bilingualism—able to understand two languages but able to speak only one. The subgroup who showed the opposite asymmetry—who switched to Spanish when addressed in English but not vice versa—did not show a complementary pattern of skills. To the contrary, they did not differ in English and Spanish expressive scores, and they had higher Spanish than English receptive scores. Thus, these children's language choice cannot be attributed to a limited expressive proficiency in one of their languages. The factors underlying this pattern of language use need further investigation. The two subgroups of children who showed no asymmetry in their conversational code-switching—either never code-switching or code-switching in both directions—showed less extreme profile effects.

Although the focus of this study was not on explaining the expressive-receptive gap, the findings of this study may have something to contribute to that growing literature. Currently, studies of the expressive-receptive gap in bilinguals report inconsistent findings regarding which of a bilingual's two languages shows the gap and under what circumstances a gap will appear (Gibson, Oller et al., 2012; Gibson, Peña et al., 2012). The relative amount of language exposure, whether the language is the minority or community language, and whether the language is the children's first or second language, have all been proposed as relevant factors. The present data suggest, first, that the expressive-receptive gap is characteristic of some bilinguals and not others. In addition, the present data suggest that the language that will show a gap between expressive and receptive skills is likely to be the language that is the minority language, the less frequently heard language, and, in particular, the less frequently used language.

Limitations

The focus of the present study was on input and proficiency as potential factors contributing to why bilingual children would choose to speak in one of their two languages. Other unmeasured factors are also likely to have an influence. The degree to which parents model code-switching in their own speech and the degree to which parents accept children's code-switched responses have been found to influence children's code-switching behavior (Comeau, Genesee, & Lapaquette, 2003; Lanza, 1992). Also, the ability of the children's interlocutors to understand both languages has been shown to influence even very young children's language choice (Nicoladis & Genesee, 1996), and it is likely that in these children's environments, many of the Spanish speakers they interacted with also understood English while fewer of the English speakers understood Spanish. It should be pointed out, however, that the conversational code-switching that parents reported in these children, and the anecdotes in the literature, include children code-switching to their interlocutors' less dominant language.

Another limitation of this study is that the measures of proficiency employed do not allow direct comparison of children's expressive and receptive skills in the same language. For this, it would be necessary to compare expressive and receptive skills directly using comparable instruments or to compare both to a common norm or a monolingual comparison group. Thus, we cannot directly ask whether there is a "gap" between children's expressive and receptive skills in either language, although we infer it when there is a difference in expressive skills in the presence of no difference in receptive skills. There are other instruments that are more nearly comparable than those employed in the present study (which was not designed explicitly for the present purpose), but the issue of the cross-linguistic equivalency of measures is a difficult one for bilingual research (Gibson, Oller et al., 2012; Hoff, 2013; Hoff & Rumiche, 2012).

Finally, this study was limited by the use of a measure of children's conversational code-switching that was obtained by caregiver report. We could only characterize children's behavior in very broad terms. Recordings of conversation that would allow calculation of the frequency of conversational code-switching in both directions would allow other investigations of correlates of code-switching. We would predict, for example, that the group of children who switch in both directions and who show larger English and Spanish expressive vocabularies would more frequently switch in the direction of using English.

Conclusions

Despite these limitations, the present study makes several contributions to the literature on early bilingual development. The present findings are the first evidence that at this very early stage of bilingual development and in the circumstance of dual language exposure from birth, bilingual children show patterns of dual language competency that cannot be fully described in terms of overall proficiency in each language. Rather, there are profiles of language proficiency, as has also been found for older bilingual children (Oller, Jarmulowicz, Pearson & Cobo-Lewis, 2010). Children may indeed understand a language in which they have limited expressive proficiency. The degree to which the observed profile of expressive and receptive competency reflects differential effects of language input and/or language use on acquisition in those domains needs to be addressed in future research.

In answer to the question with which we began—"Why do bilingual children sometimes choose to speak in only one of the two languages that they understand?"—the data support the conclusion that the choice to speak English when addressed in Spanish reflects greater expressive skills in English than Spanish (in fact, very low Spanish expressive skills), despite no difference in receptive skills. The children who answer in the same language they are addressed in have more balanced expressive skills. The unexplained exception to the pattern is in the group of children who code-switch only to Spanish. They are Spanish dominant in receptive skills, while showing no difference in expressive skills. Ultimately, more fine-grained measures of code-switching behavior and consideration of variables outside those in the present study may be needed to shed light on the factors underlying the multiple patterns of dual language use and multiple profiles of expressive and receptive dual language proficiency uncovered in the present study.

Funding

This research was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development [grant numbers HD060718 & HD068421].

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