



# Language Growth in English Monolingual and Spanish-English Bilingual Children from 2.5 to 5 Years

Erika Hoff, PhD, and Krystal M. Ribot, PhD

**Objective** To describe the trajectories of English and Spanish language growth in typically developing children from bilingual homes and compare those with the trajectories of English growth in children from monolingual homes, to assess effects of dual language exposure on language growth in typically developing children.

**Study design** Expressive vocabularies were assessed at 6-month intervals from age 30 to 60 months, in English for monolinguals and English and Spanish for bilinguals. Use of English and Spanish in the home was assessed via parental report.

**Results** Multilevel modeling, including parent education as a covariate, revealed that children from bilingual homes lagged 6 months to 1 year behind monolingual children in English vocabulary growth. The size of the lag was related to the relative amount of English use in the home, but the relation was not linear. Increments in English use conferred the greatest benefit most among homes with already high levels of English use. These homes also were likely to have 1 parent who was a native English speaker. Bilingual children showed stronger growth in English than in Spanish.

**Conclusions** Bilingual children can lag 6 months to 1 year behind monolingual children in normal English language development. Such lags may not necessarily signify clinically relevant delay if parents report that children also have skills in the home language. Shorter lags are associated with 2 correlated factors: more English exposure and more exposure from native English speakers. Early exposure to Spanish in the home does not guarantee acquisition of Spanish. (*J Pediatr* 2017;190:241-5).

Delayed language development is a warning sign for multiple developmental disorders, including autism spectrum disorder, intellectual disability, and specific language impairment. For the large number of children who are exposed to more than 1 language, delay can be difficult to identify because there is insufficient evidence of what is typical to serve as a reference. As a result, language impairment and, by implication other developmental disorders, are sometimes overidentified or underidentified in bilingual children.<sup>1</sup> Identification of clinically significant delay is complicated further by the fact that in the US, families of dual-language learners are more likely to be poor and to have relatively low levels of education,<sup>2</sup> and these factors also are associated with delayed language development.<sup>3</sup> The lack of information about normative bilingual development and the factors that shape it also limit pediatricians' knowledge about how to help bilingual families support their children's language development.

Some empirical studies have concluded there is no delay in language development associated with bilingualism.<sup>4-6</sup> If this were the case, then any delay in language development in a bilingual child should be interpreted as would the same delay in a monolingual child. However, early empirical findings were never an adequate basis for concluding that bilingually developing children should look like same-age monolingual children in their single-language skills. The assertions that bilingualism causes no delay were based on studies in which the sample sizes were so small that no statistical comparisons were made, or sufficiently small (numbers of 7 and 13) that the power to detect differences was low.<sup>4-6</sup> Those claims have been refuted by reanalyses<sup>5,7,8</sup> of the data in Pearson and Fernandez<sup>4</sup> and more recently by larger sample studies that have found that bilingual children, at least through 4 years of age, have smaller vocabularies and less-advanced grammatical skills than same-aged, monolingual children of similar socioeconomic status when comparison is made in terms of skill in only 1 language.<sup>8-15</sup> When it is possible to estimate children's total vocabulary, combined across languages, bilingual children equal or exceed the levels achieved by monolinguals.<sup>5,10,15,16</sup> Although the data now available make clear that in single-language comparisons young bilingually developing children's language skills are less advanced than the skills of their monolingual peers, many clinically relevant questions remain unaddressed. Studies have not described the trajectories of bilingual development among typically developing children from the preschool years past the age of 4 years. As a result, we do not know how big a lag is characteristic of typically developing bilingual children throughout the preschool period, and we do not know whether and when bilingually developing children catch up to their monolingual peers. There is good evidence that poor

From the Department of Psychology, Florida Atlantic University, Boca Raton, FL

Supported by the National Institutes of Health (NIH) (R01 HD068421). The authors declare no conflicts of interest.

0022-3476/\$ - see front matter. © 2017 Elsevier Inc. All rights reserved.

<https://doi.org/10.1016/j.jpeds.2017.06.071>

English language skills at kindergarten entry predict school difficulty through the eighth grade and probably beyond.<sup>17</sup>

We thus identified 112 children from Spanish-English bilingual homes and 39 from monolingual English homes and longitudinally assessed vocabulary growth at 6-month intervals from the age of 30-60 months. We describe the bilingual children's trajectories of English and Spanish growth as a function of their relative exposure to each language at home, adjusting for their parents' levels of education, and compare these trajectories with those of children from monolingual English speaking homes.

## Methods

The participants were 112 children living in Spanish-speaking homes (56 girls, 56 boys) and 39 English monolingual children (20 girls, 19 boys). The inclusion criteria for all children were that they were full term and healthy at birth, had normal hearing based on parental report of otoacoustic emissions testing at birth, and showed no sign of communicative delay at 30 months based on parental report. Additional inclusion criteria for the children from Spanish-speaking homes were that at least 1 parent was born in a Spanish-speaking country, that the children had been exposed to Spanish and English from birth, and that the less-frequently heard language constituted at least 10% of the children's home language exposure. Detailed demographic information about the participants is presented in [Table I](#) (available at [www.jpeds.com](http://www.jpeds.com)).

Participants were recruited through advertisements in local, free English and Spanish language magazines aimed at parents of young children, through flyers, and through word of mouth. Information about language use in the home was collected via interviews with each child's primary caregiver. Children's language skills were assessed at the ages of 30, 36, 42, 48, 54, and 60 months as part of a larger study of bilingual development.<sup>18,19</sup> The attrition rate for the larger study during the period from 30 to 60 months was 17.5%. There were additional missing data for some participants at each assessment point. Exact mean age and sample size at each assessment point are presented in [Table II](#) (available at [www.jpeds.com](http://www.jpeds.com)). The interview and assessments took place in the participants' homes or in a laboratory playroom, depending on the participants' preference. Approximately 85% of interviews and assessments were conducted in the participants' homes. The protocol was approved by the Florida Atlantic University institutional review board. Written informed consent, with consent forms available in English and Spanish, was obtained from parents and assent was obtained from the children before participation.

At each age, the monolingual children were administered the Expressive One-Word Picture Vocabulary Test (EOWPVT)<sup>20</sup> in English. The bilingual children were administered the EOWPVT—Spanish-Bilingual Edition<sup>21</sup> in Spanish and in English, on different days in counterbalanced order, to obtain expressive vocabulary scores in each language. In the age range used in the present study, the items in the bilingual version of the EOWPVT are no different from those in the monolingual version. We analyzed the children's raw scores in English

and in Spanish. Norms for bilingual children are available only for a conceptual administration of the test, in which children are permitted to provide a label in either of their languages. We used the test, as have others,<sup>22</sup> to obtain separate estimates of children's English and Spanish vocabulary knowledge.

## Predictors

The primary caregiver reported each parent's highest attained level of education, and parents' levels were averaged. Less than high school degree was counted as 10 years, high school degree as 12, a 2-year associate degree as 14, 4-year college degree as 16, and all advanced degrees as 18 years.

Each child's primary caregiver estimated the child's relative amount exposure to English and Spanish in the home at each assessment point. Mean percentages of exposure to English at each age are presented in [Table II](#). Previous research suggests that such measures are reliable and are strongly related to diary-based measures of language use and to bilingual children's language skill.<sup>10,23</sup> For children living in 2 households, a weighted average of the percentage of English heard in each home was calculated.

## Statistical Analyses

Preliminary analyses of the relation of sex to children's vocabulary scores revealed no significant differences on any measure at any age, and thus sex was not included in further analyses. Separate longitudinal multilevel analyses were conducted to describe language trajectories and influences on individual differences in those trajectories for English, using all participants, and for Spanish, using only the bilingual participants. In both analyses, parental education was included as a continuous variable and time invariant covariate, and English exposure was entered as a continuous variable and time-varying covariate. The quadratic effects of age and English exposure, along with any possible predictor interactions, were added to models independently. The  $\chi^2$  difference tests of the  $-2 \log$  likelihood model fit index were calculated to determine which models best fit the data. The models were computed via maximum likelihood estimation and unstructured covariance structures. All models were run in SPSS Statistics, Version 22.0, software (IBM Corp, Armonk, New York).<sup>24</sup>

## Results

Means and SDs of the observed English- and Spanish-expressive vocabulary scores at each age are presented in [Table III](#). The 2 final models that provided the best fit to the data are presented in [Table IV](#).

For English-expressive vocabulary as the outcome, including monolingual and bilingual children in the analysis, there was a significant positive linear effect of parent education ( $P = .019$ ). Child age had a significant positive linear effect ( $P < .001$ ) and negative quadratic effect ( $P = .001$ ), indicating that children's scores grew at a decreasing rate over time. The effect of English exposure was a positive quadratic effect ( $P < .001$ ), indicating that increases in English exposure at the higher range of exposure resulted in greater benefit to the chil-

**Table III.** Observed means (and SD) for English and Spanish expressive vocabulary raw scores, as measured by the EOWPVT (n = 151)

Groups	Child's age, mo					
	30	36	42	48	54	60
Monolingual children						
English vocabulary						
Mean	26.72	39.58	49.15	58.29	65.27	73.45
(SD)	(9.16)	(10.59)	(10.87)	(13.10)	(14.51)	(10.63)
n	36	36	33	31	30	29
Bilingual children						
English vocabulary						
Mean	9.61	19.10	28.14	35.60	44.32	51.76
(SD)	(9.89)	(13.63)	(14.15)	(13.21)	(12.30)	(11.29)
n	110	62	78	88	99	107
Spanish vocabulary						
Mean	4.94	9.61	12.85	13.68	15.22	17.09
(SD)	(7.40)	(10.51)	(12.77)	(13.38)	(14.88)	(16.29)
n	112	66	82	92	101	105

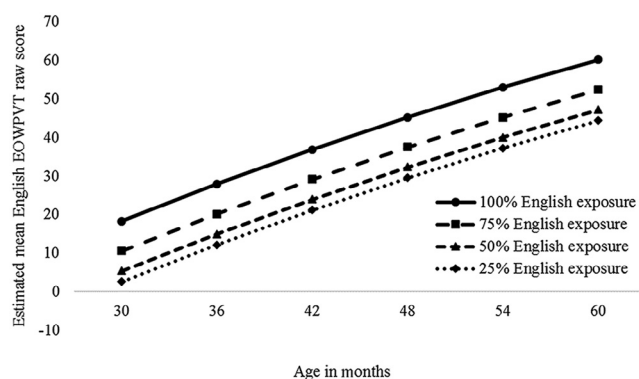
dren's English growth than equal increases in exposure at the lower portion of the range. Estimated growth curves for English-expressive vocabulary at different levels of English exposure are plotted in **Figure 1**. In this plot, effects of parents' education are adjusted statistically. The effect of age is seen in the slopes of the lines. In the statistical analyses, amount of exposure was entered as a continuous variable. In **Figure 1**, estimated slopes are plotted for illustrative purposes for the values of 25%, 50%, 75%, and 100% exposure to English. The quadratic effect of amount of exposure is seen in the size of spaces between the lines, where, for example, the difference in English vocabulary score associated with the difference between 75% and 100% exposure to English is greater than the difference in score associated with the difference between 25% and 50% exposure to English.

**Table IV.** Estimates of fixed effects (and SEs) for expressive vocabulary, as measured by the EOWPVT, in English monolingual and Spanish-English bilingual children\*

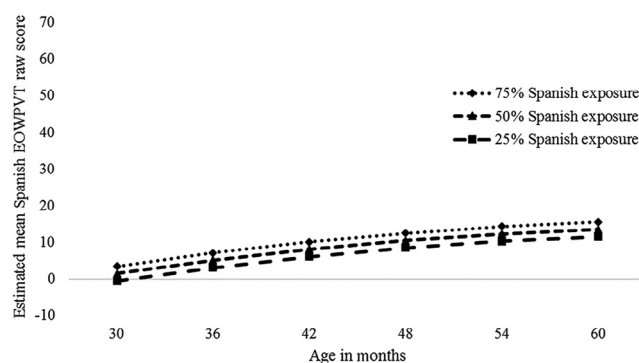
Predictor	$\gamma$	SE	P
English expressive vocabulary model (n = 151)			
Intercept	2.34	2.67	.381
Parental education	1.06	0.45	.019
Child age	9.92	0.49	<.001
English exposure	-0.04	0.06	.497
Child age <sup>2</sup>	-0.31	0.09	.001
English exposure <sup>2</sup>	0.002	0.00	<.001
Spanish expressive vocabulary model (n = 112)			
Intercept	-2.53	2.20	.252
Parental education	0.67	0.39	.086
Child age	3.91	0.43	<.001
Spanish exposure	0.08	0.02	<.001
Child age <sup>2</sup>	-0.30	0.07	<.001
Model fit indices			
English model	-2LL	AIC	df
	5063.92	5083.92	8
Spanish model	3603.55	3621.55	7

-2LL, -2 log likelihood; AIC, Akaike information criterion; df, Degrees of freedom.

\*All effects of final models reported are based on raw scores. Parental education was centered on 10 years of education (ie, less than high school degree = 0); age 0 = 30 months; 0% exposure = no English or Spanish exposure in the home.

**Figure 1.** Estimated trajectories of English vocabulary growth from 30 to 60 months at different levels of English exposure, controlling for parent education (n = 151). Estimated scores were based on the following formula:  $EOWPVT\_English_{it} = 2.34 + 9.92(Age) + -0.04(English\ exposure) + -0.31(Age)^2 + 0.002(English\ exposure)^2$ .

For Spanish vocabulary as the outcome, including only the bilingual children in the analysis, the effect of parental education was marginally significant ( $P = .086$ ). Child age had a significant positive linear effect ( $P < .001$ ) and also a significant negative quadratic effect, indicating that children's scores grew at a decreasing rate over time. The effect of Spanish exposure was a positive linear effect ( $P < .001$ ), with no significant quadratic effect. That is, the effect of differences in relative amount of Spanish exposure was constant across the full range of exposure. Estimated growth curves for Spanish-expressive vocabulary are plotted in **Figure 2** for the 25%, 50%, and 75% levels of Spanish exposure. As in **Figure 1**, effects of parental education are removed statistically, the slope of the lines is the effect of age, the spacing between the lines is the effect (linear in this case) of differing amounts of exposure to Spanish.

**Figure 2.** Estimated trajectories of Spanish vocabulary growth from 30 to 60 months at different levels of Spanish exposure, controlling for parent education (n = 112). Estimated scores were based on the following formula:  $EOWPVT\_Spanish_{it} = -2.53 + 3.91(Age) + 0.08(Spanish\ exposure) + 0.30(Age)^2$ .

The quantity of language exposure had a significant influence on the size of children's vocabularies across the age range from 30 to 60 months, with the result that the children with bilingual exposure lagged behind the monolingual children in expressive English vocabulary. This difference was statistically robust, even after we accounted for the effect of parental education. Individual differences in English and Spanish vocabulary among the bilingual children also were related to relative amounts of English and Spanish exposure. Across the full range of exposure, including the nearly 100% English exposure experienced by the monolingual children, the function that related exposure to English vocabulary score was quadratic, indicating that increases in English exposure had a greater effect at higher levels of English use. For Spanish, the effect of exposure on vocabulary score was linear.

### Correlates of English Home Use

To ask why increases in English exposure at the lower end of the range of exposure resulted in less benefit to children's English skills than equal increases in exposure at the higher range, we compared the bilingual children with English-dominant exposure (percentage of exposure in English between 70 and 90), balanced exposure (percentage of exposure in English between 40 and 60), and Spanish-dominant exposure (percentage of exposure in English between 10 and 30) in terms of a factor previously demonstrated to be related to the benefit of input to language growth, namely, that the input comes from a native speaker of English.<sup>9,18,23</sup>

The children were classified as having at least 1 native English-speaking parent (all of the monolingual children and 37 of 112 bilingual children) or having no native English-speaking parent (66 of the bilingual children). Nine children were not categorized or included in this analysis because they had a parent who was a native speaker of a language other than English or Spanish or, in 5 cases, 1 parent was a native Spanish-English bilingual. The percentage of children with 1 native English-speaking parent was 100% for the monolingual children (in fact, 89.7% had 2 native English-speaking parents). Among the bilinguals, the percentage of children with 1 native English-speaking parent was 78% for the English-dominant group, 46% for the balanced group, and 12.5% for the Spanish-dominant group,  $\chi^2(2) = 14.13, P < .001$ .

## Discussion

This study of typically developing children from Spanish-English bilingual homes and from English monolingual homes in the US revealed that the children with bilingual exposure lagged behind the monolingual children by 6 months to 1 year in their acquisition of English-expressive vocabulary, with the size of the lag depending on how much of the children's language exposure was in English. This effect of dual language exposure is separate from any additional effect of low levels of parental education and poverty that affect many bilingual homes.

The relation between children's English exposure and their skill was a quadratic relation in which increments in expo-

sure conferred greater benefit to skill as the level of exposure increased. We suggest the reason for this relation is that in this sample, as is likely the case more generally, quantity of exposure was confounded with quality of exposure: when English is used more in the home it is because the parents are more proficient in English. Although we do not have direct measures of the parents' English proficiency, native speaker status serves as a good proxy. In almost all the monolingual English homes, both parents were native English speakers. In all the bilingual homes, at least 1 parent was a native Spanish speaker, but the likelihood that the other parent was a native English speaker was significantly greater in the English-dominant homes than in the balanced or Spanish-dominant homes. The linear effect of Spanish exposure is consistent with the finding from another study of this sample that virtually all the children's Spanish exposure came from native Spanish speakers.<sup>18</sup> Overall, expressive Spanish skills in these bilingual children were low and growing at a slower rate than English skills. This likely reflects that exposure to English was greater outside the home and also that the children chose to speak English more than they chose to speak Spanish. Language use has its own effects on language growth.<sup>25</sup>

The present analyses focus on only expressive vocabulary as an indicator of language skill, and only relative quantity of input and access to native speakers as predictors. We could not, nor did we try, to describe fully and account for the variance among bilingual children in their development of English and Spanish. The present sample includes children of immigrants from South America and the Caribbean living in South Florida. Although the cognitive processes underlying bilingual development should apply across populations, social and cultural influences may differ and we do not know how well these findings will generalize to other Spanish-speaking immigrant populations. The present study made use of a single measure of parent education—the mean of the highest level achieved by both parents. Other analyses have found that some of the effects of parent education on children's language growth are specific to the language in which that education was achieved (unpublished data, 2017). The present finding that parent education was a significant contributor to children's English skill but only a marginal contributor to children's Spanish skill is consistent with the fact that the majority of the parents (58%) achieved their highest level of education in the US. Despite these limitations, the present data show clearly that even with confounding effects of family education level controlled, the trajectories of typically developing monolingual and bilingual children differ. Within bilingual children, there are differences in language trajectories related to the relative amount of exposure to each language and, arguably to the percentage of exposure that comes from native speakers.

Pediatricians with bilingually developing patients face 2 dilemmas related to the children's language development. One is walking the fine line between over- and underidentifying a real language disorder. The findings of the present study suggest that delays of up to 6 months in the acquisition of English skills should not be cause for concern if parents report that the child



also has some skills in another language. However, bilingual children can have underlying disorders that manifest as language delays, and appropriate identification relies on gathering as much information as possible about children's progress in learning English as well as their home language. If delays in English are greater than 6 months or not accompanied by skills in the other language, then referral should be made to a speech-language pathologist with expertise in the assessment of bilingual children.

A second dilemma concerns the advice that pediatricians should offer to parents of bilingually developing children to maximize the children's language-learning opportunities. The findings of the present study suggest parents who are not native speakers of English should be not be exhorted to speak English to their children but rather should be supported in interacting with their children in their stronger, more comfortable language. Just as pediatricians encourage English-speaking parents to read books and use rich turn-taking conversations with their monolingual children, they should offer the same powerful advice to parents speaking Spanish with their bilingual children. The well-known Reach Out and Read program, recognizing the importance of early language and literacy promotion for Latino families, has developed an initiative called *Leyendo Juntos* to serve the unique needs of this population. The delays in learning English that are to be expected in children who hear another language at home are a cause for concern, however, because these lags often persist up to the age of kindergarten entry and therefore have consequences for children's academic success.<sup>17</sup> The findings of the present study suggest that parents who are not native English speakers themselves might be advised to try to find opportunities for their children to be exposed to English from native or highly proficient nonnative English speakers. High-quality early care and education programs may be a source of supportive language exposure.<sup>26</sup> ■

*We thank Dr Mariana Glusman for comments on an earlier version of this manuscript.*

Submitted for publication Feb 22, 2017; last revision received Jun 7, 2017; accepted Jun 29, 2017

Reprint requests: Erika Hoff, PhD, Department of Psychology, Florida Atlantic University, 3200 College Ave, Davie, FL 33314. E-mail: [ehoff@fau.edu](mailto:ehoff@fau.edu)

## References

1. Bedore LM, Peña ED. Assessment of bilingual children for identification of language impairment: current findings and implications for practice. *Biling Educ Bilingual* 2008;11:1-29.
2. Haskins R, Greenberg M, Fremstad S. Federal policy for immigrant children: room for common ground? Washington (DC): Brookings Institution; 2004.
3. Hart B, Risley TR. Meaningful differences in the everyday experience of young American children. Baltimore (MD): Brookes; 1995.
4. Pearson BZ, Fernandez SC. Patterns of interaction in the lexical development in two languages of bilingual infants. *Lang Learn* 1994;44:617-53.
5. Pearson BZ, Fernandez SC, Oller DK. Lexical development in bilingual infants and toddlers: comparison to monolingual norms. *Lang Learn* 1993;43:93-120.
6. Petitto LA, Katerelos M, Levy BG, Gauna K, Tetrealt K, Ferraro V. Bilingual signed and spoken language acquisition from birth: implications for the mechanisms underlying early bilingual language acquisition. *J Child Lang* 2001;28:453-96.
7. Bialystok E. Bilingualism in development: language, literacy, and cognition. Cambridge (MA): Cambridge University Press; 2001.
8. Bialystok E, Feng X. Language proficiency and its implications for monolingual and bilingual children. In: Durgunoglu AY, Goldenberg C, eds. *Language and literacy development in bilingual settings*. 1st ed. New York (NY): The Guilford Press; 2011, p. 121-38.
9. Hoff E, Rumiche R, Burridge A, Ribot KM, Welsh SN. Expressive vocabulary development in children from bilingual and monolingual homes: a longitudinal study from two to four years. *Early Child Res Q* 2014;29:433-44.
10. Hoff E, Core C, Place S, Rumiche R, Señor M, Parra M. Dual language exposure and early bilingual development. *J Child Lang* 2012;39:1-27.
11. Marchman VA, Fernald A, Hurtado N. How vocabulary size in two languages relates to efficiency in spoken word recognition by young Spanish-English bilinguals. *J Child Lang* 2010;37:817-40.
12. Vagh SB, Pan BA, Mancilla-Martinez J. Measuring growth in bilingual and monolingual children's English productive vocabulary development: the utility of combining parent and teacher report. *Child Dev* 2009;80:1545-63.
13. Thordardottir E, Rothenberg A, Rivard M, Naves R. Bilingual assessment: can overall proficiency be estimated from separate measurement of two languages? *J Multilingual Commun Disord* 2006;4:1-21.
14. Hoff E. How social contexts support and shape language development. *Dev Rev* 2006;26:55-88.
15. Silvén M, Voeten M, Kouvo A, Lundén M. Speech perception and vocabulary growth: a longitudinal study of Finnish-Russian bilinguals and Finnish monolinguals from infancy to three years. *Int J Behav Dev* 2014;38:323-32.
16. Core C, Hoff E, Rumiche R, Señor M. Total and conceptual vocabulary in Spanish-English bilinguals from 22 to 30 months: implications for assessment. *J Speech Lang Hear Res* 2013;56:1637-49.
17. Kieffer MJ. Early oral language and later reading development in Spanish-speaking English language learners: evidence from a nine-year longitudinal study. *J Appl Dev Psychol* 2012;33:146-57.
18. Place S, Hoff E. Effects and noneffects of input in bilingual environments on dual language skills in 2 ½-year-olds. *Biling Lang Cogn* 2016;19:1023-41.
19. Ribot KM, Hoff E. "¿Cómo estás?" "I'm good." Conversational code-switching is related to profiles of expressive and receptive proficiency in Spanish-English bilingual toddlers. *Int J Behav Dev* 2014;38:333-41.
20. Brownell R. Expressive one-word picture vocabulary test: manual. Novato (CA): Academic Therapy Publications; 2000.
21. Brownell R. Expressive one-word picture vocabulary test. Spanish-English bilingual ed. Novato (CA): Academic Therapy Publications; 2001.
22. Anthony JL, Solari EJ, Williams JM, Schoger KD, Zhang Z, Branum-Martin L, et al. Development of bilingual phonological awareness in Spanish-speaking English language learners: the roles of vocabulary, letter knowledge, and prior phonological awareness. *Sci Stud Read* 2009;13:535-64.
23. Place S, Hoff E. Properties of dual language exposure that influence two-year-olds' bilingual proficiency. *Child Dev* 2011;82:1834-49.
24. IBM Corp. IBM SPSS statistics for Windows, version 22.0. Armonk (NY): IBM Corp; 2013. Released.
25. Ribot KM, Hoff E, Burridge A. Language use contributes to expressive language growth: evidence from bilingual children. *Child Dev* 2017;doi:10.1111/cdev.12770.
26. Burchinal M, Zaslow M, Tarullo L. Quality thresholds, features, and dosage in early care and education: secondary data analyses of child outcomes. *Monogr Soc Res Child Dev* 2016;81:1-128.

**Table I.** Participant characteristics (n = 151)

Characteristics	English monolingual (n = 39)	Bilingual (n = 112)
Child ethnicity		
European American	74.4%	2.7%
Hispanic White	10.3%	92.9%
African American	5.1%	0.0%
Hispanic black	0.0%	2.7%
Other	10.3%	1.8%
Parents' native languages		
1 parent native in Spanish or native bilingual, 1 parent native in English	7.7%	33.9%
2 parents native in Spanish or native bilinguals	0.0%	62.5%
2 parents native in English	89.7%	0.0%
Other	2.6%	3.6%
Mothers' native countries		
US	94.9%	14.3%
Colombia	0.0%	27.7%
Peru	0.0%	12.5%
Venezuela	0.0%	9.8%
Cuba	0.0%	8.9%
Argentina	0.0%	4.5%
Other	5.2%	22.3%
Fathers' native countries		
US	97.4%	28.6%
Colombia	2.6%	16.1%
Peru	0.0%	8.0%
Venezuela	0.0%	7.1%
Cuba	0.0%	10.7%
Argentina	0.0%	7.1%
Other	0.0%	22.4%
Parents' number of years of education, mean (SD)		
Maternal education	16.00 (1.79)	15.04 (1.97)
Paternal education	15.28 (1.98)	14.50 (2.19)
Average education of both parents	15.64 (1.53)	14.77 (1.78)

**Table II.** Mean (SD) percentage of home English exposure and sample size at each age (n = 151)

Groups	Child's age, mo					
	30	36	42	48	54	60
Monolingual						
Mean	99.42	99.34	99.27	98.66	99.13	99.42
(SD)	(1.89)	(1.47)	(2.02)	(2.45)	(2.30)	(1.46)
n	36	36	33	31	30	29
Bilingual						
Mean	41.08	39.14	41.60	43.52	43.79	48.61
(SD)	(22.57)	(26.22)	(25.19)	(26.22)	(25.28)	(25.76)
n	112	66	83	92	91	108