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Understanding child bilingual acquisition using parent and teacher reports

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ABSTRACT
There is limited research regarding what levels of proficiency in each language should characterize the language behavior of bilingual children and the impact of language exposure or language use variables on bilingual performance. This study was designed to examine the extent to which years of exposure to a language(s), amount of language input at home and at school, and amount of exposure to reading and other literacy activities in a language(s) relate to observed bilingual performance in young children, as obtained from parent and teacher reports. A secondary goal was to determine the extent to which parents or teachers could assist in determining language status by examining relationships between their ratings of the child's use and proficiency in the two languages and the child's grammatical performance. Fifty-seven children and their families were sampled from second grade classes of a large school district serving primarily low-income families in southern California. Multiple regression analyses for each language indicated that amount of Spanish input at home was a significant predictor of grammatical performance in that language. These input effects did not hold for English. Although there were some crosslinguistic differences, parent and teacher ratings of use and proficiency correlated with the child's grammatical performance in the target language. The findings suggest that parent and teacher estimates may be useful to determine bilingual status.

Bilingual acquisition researchers and practitioners are frequently challenged by the difficulty in establishing uniform criteria for proficiency in a language. There is great variability in the concepts and definitions of bilingual behavior used by researchers across studies and in how bilingualism is measured or described. Valdés and Figueroa (1994) conceptualized bilingualism as knowledge of "more than one" language along a continuum of proficiencies. By their definition, if English and Spanish are the target languages, one might identify as bilingual children who are fluent in Spanish but have limited proficiency in

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English and children who are fluent in English but have limited proficiency in Spanish. In between these two extremes however, there is great individual variation in the performance of children in each language. Even bilingual children who appear fluent in the two languages show differences in performance across language tasks, contexts, and conditions. For example, they may be more proficient in one language for one task (e.g., reading) but not for another (e.g., listening comprehension). These differences within groups may result in conflicting findings across studies (for examples, Genesee, 1989).

There is limited research regarding what levels of proficiency in each language should be expected, and almost no information is available about the validity of current assessment procedures with these children. For years, educators and clinicians have typically relied on English proficiency tests to determine bilingual status and future language of instruction. However, children who appear proficient in English may not have attained high levels of English development due to normal individual differences in second language (L2) acquisition. As a result, differences in child L2 acquisition may be neglected, or in many cases, confused with language delays.

Early studies comparing the classificatory accuracy of popular tests of language proficiency such as the Bilingual Syntax Measure (Burt, Dulay, & Hernandez–Chavez, 1980), the Basic Inventory of Natural Language (Herbert, 1979), and the Language Assessment Scales (De Avila & Duncan, 1991) found that these tests classified a different proportion of language learners as non-English speaking, limited English speaking, and fluent English speaking (Ulibarri, Spencer, & Rivas, 1981). The tests placed the same students in different categories. In a more recent study, language proficiency tests, specifically, the IDEA Oral Language Proficiency Test (Ballard, Tighe, & Dalton, 1980), the Language Assessment Scales, and the Woodcock Language Proficiency Battery—Revised (Woodcock, 1991), were found to differ in the language aspects targeted (Schrank, Fletcher, & Guajardo Alvarado, 1996). Based on these differences, the same children might be categorized as having a different bilingual status, depending on the proficiency tests used, and children with language needs may be underidentified.

The degree of proficiency in a language may depend on the need for that language to be spoken (Grosjean, 1985; Baker, 1993). In fact, proponents of an English-only approach argue that a child's limited English proficiency attainments may be related to the use of two languages in classroom instruction, which is assumed to limit the amount of input in that language. If proficiency varies according to the amount of input across language contexts, both proficiency and use estimates may provide useful information to determine children's bilingual status and to guide educational decisions in clinical and school settings. Yet, there is no information on the extent to which these estimates relate to the bilingual performance of young children and no clear consensus regarding the role of age of first exposure to an L2 or the interaction between specific language learning conditions and children's bilingual proficiencies.

As a preliminary step, this study was designed to examine the extent to which years of exposure to a language(s), amount of language input at home and at school, and amount of exposure to reading and other literacy activities in a

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language(s), which was obtained from parent and teacher reports, related to observed bilingual performance in young children. A secondary goal was to determine the extent to which parents or teachers could assist in determining language status by examining relationships between their ratings of the child's use and proficiency in the two languages and the child's grammatical performance.

PREVIOUS CHILD LANGUAGE STUDIES USING QUESTIONNAIRES

Questionnaires have been used for the past 20 years with various age and language groups. Studies with monolingual children have indicated that they are valid tools to use for language screenings (Gilger, 1992; Squires, Bricker, & Potter, 1997), monitoring of language development in young children (Jackson–Maldonado, Thal, Marchman, Bates, & Gutiérrez–Clellen, 1993), and identification of child language impairment (Rescorla, 1993; Restrepo, 1998; Squires, 1996). Questionnaires have also been used to obtain specific language histories from culturally diverse families (Adler, 1991; Siren, 1995).

Parent and teacher reports can be reliable sources for obtaining L2 acquisition histories and language profiles because these informants have observed the child in a variety of linguistic contexts over long periods of time (Thordardottir & Weismer, 1996). Questionnaires avoid the need for lengthy test administration time and trained personnel, and therefore, they can be also cost effective. Using rating scales in conjunction with bilingual history questionnaires may be useful to profile information about a child's exposure to the language(s) and their language use (Valdés & Figueroa, 1994). However, ratings of language ability have been criticized for their potential lack of reliability across informants and there is limited research examining use of rating scales of language ability to describe children's language status or to predict actual language production in bilingual children.

METHOD

Parent and teacher questionnaires

Both parent and teacher questionnaires were adapted from Restrepo's (1988) research with Spanish-speaking children (see Appendix). The parent questionnaire was designed to determine the child's years of exposure to the language(s) with regard to the Spanish-speaking country of origin, language(s) spoken in the home, and language(s) spoken in other settings such as day care, preschool, and elementary school (see Appendix question 11), as well as to obtain a measure of language input at home (see Appendix question 12). Because bilinguals may not always be aware of the language being spoken, parents were asked to list all members of the household with whom the child had the opportunity to interact, indicate the number of hours that the child spent with each member, and report each person's language abilities (either Spanish only, English only, or both), based on Pearson, Fernandez, Lewedeg, and Oller's (1997) procedures. In the present study, the number of hours of exposure to each language was

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computed and then converted to percentages. Whenever input was reported in both languages, one-half of the time was allocated to English and one-half to Spanish.

In addition, parents were asked to rate the proficiency of each language spoken by each member of the household with whom the child had the opportunity to interact and the child's language proficiency and use, using a 5-point rating scale for each measure (0 = *no use or proficiency*, 4 = *use all the time and nativelike proficiency*). Finally, an estimate of the time spent in other language activities was obtained by asking the parent to estimate the number of hours per day the child participated in independent reading of books or magazines, using the computer for writing, watching television or movies, and participating in extracurricular activities.

The teacher questionnaire contained four questions to obtain an estimate of the child's language use and proficiency for each language using a 5-point rating scale for each measure (0 = *no use or proficiency*, 4 = *use all the time and nativelike proficiency*). In addition, teachers were asked to estimate the percentage of time that the child was exposed to each language as a measure of language input at school (see Appendix).

Participants

Fifty-seven children and their families were sampled from second grade classes of a large school district serving primarily low-income families in southern California. About 70% of the children participated in a free (50%) or reduced-fee (20%) lunch program based on their family income. There was also variability in parent education across participating families. Eleven families had fewer than 6 years of education. Twenty-six had between 7 and 12 years of education, and twenty families had more than 13 years. All participating children (except for one Puerto Rican child) were of Mexican American descent and, with the exception of one child, they were all born in the United States. The children (33 boys, 24 girls) ranged in age from 7.3 to 8.8 years with a mean age of 8.0 years. None of the participating children had a history of developmental delays, language delays, and/or significant health problems, based on school records.

In addition, a total of 23 teachers participated: 13 bilingual teachers and 10 monolingual (English only) teachers. The language environments of their classrooms varied. Twenty-two children were attending 6 Spanish classrooms with minimal emphasis on English, 20 were attending 7 bilingual classrooms with various levels of use for the two languages, and 15 children were attending 10 English-only classrooms.

Administration of questionnaires

All participating families were interviewed at either their home or at the child's school using the parent questionnaire. A bilingual interviewer interviewed parents in the language that they were most comfortable speaking. The interview was given in a face to face format, as suggested by Gilger (1992). The parent questionnaire took approximately 20 min to administer per family. During this

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time, parents had the opportunity to ask questions. A total of 23 teachers completed the teacher questionnaires. Five monolingual (English only) teachers were not able to evaluate their children's Spanish use and proficiency. The remaining teachers enlisted the help of their Spanish-speaking aides to determine the Spanish ratings.

Twenty percent of all questionnaires were independently rescored by a second bilingual research assistant. Item by item reliability checks yielded above 90% agreement between the two judges.

Language testing procedures

In order to obtain a measure of the child's language skills, children were asked to provide one or more spontaneous narrative samples using a wordless picture book. For English, the storybook selected was "Frog, where are you?" (Mayer, 1969), and for Spanish, "Frog goes to dinner" (Mayer, 1974). Previous crosslinguistic and developmental research using these stories indicated that they are developmentally and culturally appropriate (Berman & Slobin, 1987; Gutiérrez–Clellen & Hoffstetter, 1994). Both stories were equivalent in length and narrative complexity.

Children's language skills were sampled in one or both languages, depending on whether the child appeared to have minimal fluency in that language. This approach was followed to minimize frustration (i.e., to avoid testing a child in a language they could not comprehend or speak). Thus, each child was tested in either Spanish or English or both if the specific language met the following criteria:

1. a minimum of 3 years of exposure to the target language since birth,
2. a minimum of 20% of time exposed to the target language,
3. a minimum parent rating of 3 for language use in the target language,
4. a minimum parent rating of 3 for language proficiency in the target language,
5. a minimum of 2.5 hr of reading a week in the target language at home,
6. a minimum teacher rating of 3 for language use in the target language, and
7. a minimum teacher rating of 3 for language proficiency in the target language.

The criteria above were based on previous bilingual studies. The cutoff for years of exposure was set at 3, based on Cummins' findings that it takes approximately 3–4 years to achieve basic social language competencies in a language (Cummins, 1984). The minimum percentage of language input at home was set at 20% based on previous studies suggesting that a child may need at least 20% of exposure to a language in order to produce utterances in that language spontaneously (Pearson et al., 1997; Schiff & Ventry, 1976). Schiff and Ventry (1976) reported that hearing children of deaf parents who spent 10 hr a week with hearing adults were able to develop age appropriate English skills. Thus, a minimum of 10 hr per week (equivalent to 20% of the time) was assumed to be necessary to develop linguistic skills in each language.

A conservative rating of 3 for language use (i.e., child uses the indicated language sometimes, hears it most of the time) and proficiency (i.e., good profi-

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Table 1. *Number of children per language group (English fluent, Spanish fluent, bilingual fluent) by type of classroom linguistic environment*

	Spanish					
Children	0%	20%	40%	60%	80%	Total
English fluent	8	2	0	0	1	11
Spanish fluent	1	0	3	3	5	12
Bilingual fluent	6	1	3	8	16	34

ciency with some grammatical errors, some social and academic vocabulary, understands most of what is said) was selected to reflect the fact that children who are proficient in a language, may not use it in certain contexts (e.g., English in school, Spanish at home; English for academic discourse, Spanish for conversational discourse). Furthermore, because these children were readers and had assigned homework of 30 min of independent (silent) reading each weekday, it was also important to consider those and other language learning contexts as well. Thus, the criteria for minimal fluency in a language required a minimum of 2.5 hr of reading in the target language(s) a week. Although the criteria for testing the children in two languages appeared to work for most of the children, six children who met the criteria for testing in the two languages did not produce a narrative in one of the languages.

There were a total of 11 children in the English-only group (i.e., children with limited Spanish exposure), 12 children in the Spanish-only group (i.e., children with limited English exposure), and 34 children in the bilingual group (i.e., children with apparent fluency in the two languages). Table 1 summarizes classroom characteristics for the three groups. All English-speaking classrooms had Spanish-speaking aides and Spanish resources made available to them; however, the amount of time an aide may be present, if at all, varied per day, based on individual child needs as determined by the curriculum and teacher opinion. Children in the Spanish-fluent group received English language development instruction and had Spanish-speaking teacher aides and materials. However, as described in Table 1, the amount of time the child was exposed to the languages varied across teachers. Within the bilingual group, there were 24 bilingual children who were considered simultaneous bilinguals because they were exposed to English before 1 year of age.

Children were tested at their school by bilingual graduate assistants. Children in the bilingual group provided a narrative in each of the languages on two different days. Two bilingual examiners were used, one for each language. During the testing, the child was addressed in only the target language. The order of the language of testing was counterbalanced across children. Each child examined the book first, and then told the story to the investigator while looking at the pictures. To maximize performance, the examiner did not look at the pictures while the child was telling the story. All narratives were recorded using a tabletop flat microphone (Sound Grabber from Crown International).

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Narrative analysis procedures

Narratives were transcribed word by word, and coded for the presence of grammatical errors in each language using the Systemic Analysis of Language Transcripts computer program (Miller & Chapman, 1985) by a bilingual research assistant. Lexical errors, phonological errors, or cohesion errors were not counted as grammatical errors. Spanish–English mixed utterances and utterances with unintelligible words were excluded from the analysis. For each narrative sample, the proportion of grammatical utterances was calculated as an external measure of proficiency in each language. This measure was selected for two reasons. First, it was assumed that first language (L1) learners at these ages are capable of producing utterances with minimal grammatical errors. Second, guidelines for identifying language impairment in bilingual children indicated that the proportion of grammatical utterances in children's spontaneous language samples (i.e., a cut-off criterion of more than 18% ungrammatical utterances) are valid and reliable estimates of language development in bilingual children (Gutiérrez–Clellen, Restrepo, Bedore, Peña, & Anderson, 2000).

Transcription reliability was obtained with two bilingual transcribers who independently transcribed and coded 20% of the audiotapes in each language. Word transcription reliability was 93% for English and 90% for Spanish. Grammatical code reliability was 92% for English and 90% for Spanish. Any discrepancies were resolved by consensus with a third bilingual transcriber.

To examine the extent to which exposure variables predicted children's grammatical performance in each language, a multiple regression on the proportion of grammatical *T* units was conducted using the following predictors:

1. the number of years exposed to the target language,
2. the proportion of time exposed to the target language at home,
3. the number of hours spent in reading and other literacy activities in the target language, and
4. the teacher's estimate of the proportion of time exposed to the target language at school.

The relationships between parent/teacher ratings (i.e., the parent's ratings of language use; the teacher's rating of language use; and the teacher's rating of proficiency) and the child's grammatical performance were investigated using correlational analyses for each language. The parent's ratings of the child's proficiency in both languages were not available for all speakers due to the parent's limited proficiency in that language. Thus, they were excluded from the analyses. The analyses for English were based on 45 English speakers. The analyses for Spanish were based on 46 Spanish speakers.

RESULTS

Table 2 shows means and standard deviations for all variables for the English and Spanish groups respectively. The data indicate within group variability for the various predictors. As a group, the Spanish speakers appeared to have rela-

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Table 2. *Means (standard deviations) of participants' characteristics by language group*

Characteristic	Spanish	English
Years of exposure to		
English	2.65 (1.35)	3.51 (1.78)
Spanish	4.82 (1.50)	4.04 (1.86)
Proportion of input at home		
English	0.33 (0.18)	0.44 (0.25)
Spanish	0.67 (0.18)	0.56 (0.25)
Hours of reading and other literacy activities		
English	14.32 (8.72)	19.46 (12.27)
Spanish	5.80 (5.47)	4.18 (5.38)
Parents' rating of		
English use	2.91 (1.22)	3.42 (0.96)
Spanish use	3.83 (0.57)	3.33 (1.04)
Teachers' rating of		
English use	2.63 (1.24)	3.27 (0.97)
Spanish use	3.29 (1.27)	2.49 (1.72)
English proficiency	2.80 (1.08)	3.26 (0.88)
Spanish proficiency	3.15 (1.39)	2.42 (1.82)
Proportion of input at school		
English	0.43 (0.28)	0.55 (0.34)
Spanish	0.56 (0.28)	0.45 (0.35)

Table 3. *Multiple regression of Spanish language usage on the proportion of Spanish grammatical utterances*

	Coefficient	*t* Value	*p* Value
Intercept	.60	9.59	<.0001
Years of exposure	.017	1.81	.07
Language input at home	.26	3.39	.0016
Hours of reading and other literacy activities	.001	.43	.66
Language input at school	−.01	−.39	.69
R	.59	5.62[a]	.0011
R^2	.29		

[a]Denotes F value.

tively less exposure to English than the English speakers. The English speakers appeared to have significant exposure to both languages. It was also interesting to note that, although both Spanish and English speakers had some exposure to Spanish reading or literacy activities, English was the predominant language used in these activities for both groups.

Our first question examined the relationship between the language exposure variables and children's grammatical performance. For Spanish, the language exposure variables combined accounted for 35% of the variance in grammatical utterances, F (7, 45) = 5.62, $p < .001$ (see Table 3). The percentage of exposure

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Table 4. *Multiple regression of English usage on the proportion of English grammatical utterances*

	Coefficient	*t* Value	*p* Value
Intercept	.79	14.46	<.0001
Years of exposure	.004	.25	.80
Language input at home	.11	1.06	.29
Hours of reading and other literacy activities	−.00001	−.08	.93
Language input at school	.07	.99	.32
R	.34	1.30[a]	.28
R^2	.11		

[a]Denotes *F* value.

Table 5. *Correlations between parent and teacher ratings of language use and proficiency and proportion of grammatical utterances for Spanish and English*

	Spanish			English		
Ratings	Correlation	*Z* Value	*p* Value	Correlation	*Z* Value	*p* Value
PRU	.75	6.45	<.0001	.32	2.18	.02
TRU	.17	1.15	.24	.61	4.68	<.0001
TRP	.35	2.41	.015	.44	3.12	.0018

Note: PRU, parent rating of use; TRU, teacher rating of use; TRP, teacher rating of proficiency.

to Spanish at home was significant, $p < .001$, and accounted for 26% of the variance in grammatical performance. For English, none of the exposure variables from the teacher or parent questionnaires were significant (see Table 4).

Our second question was to determine the extent to which parents or teachers could assist in determining child language status by examining relationships between their ratings of use and proficiency and the child's grammatical performance in the language(s). Table 5 shows the correlations between parent and teacher ratings and the child's use of grammatical utterances for Spanish and English. For Spanish there was a high correlation between the parent's rating of the child's use of Spanish and the child's use of Spanish grammatical utterances ($r = .75$, $z = 6.45$, $p < .0001$) and a moderate correlation between the teacher's rating of the child's Spanish proficiency and the child's use of grammatical Spanish ($r = .35$, $z = 2.41$, $p < .05$). For English, all three ratings had sizable correlations with the child's English performance: the parent's rating of the child's use of English ($r = .32$, $z = 2.18$, $p < .05$), the teacher's rating of the child's use of English ($r = .61$, $z = 4.68$, $p < .0001$), and the teacher's rating of the child's English proficiency, ($r = .44$, $z = 3.12$, $p < .005$).

Table 6 displays the proportion of grammatical utterances for all language groups. An inspection of the data suggests that on the average, the performance

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Table 6. *Proportion of grammatical sentences across language groups*

Group	*N*	*M*	*SD*
English			
English fluent	11	.96	.05
Bilingual fluent	34	.86	.15
Spanish			
Spanish fluent	12	.91	.06
Bilingual fluent	34	.85	.11

of the bilingual children in each language was commensurate with that of their peers for that language. An analysis of their performance in L1 and L2 also suggested individual differences in bilingual acquisition. A cluster analysis based on the proportion of grammatical utterances for the two languages was conducted to determine the number of bilingual subgroups or levels of bilingual development for the 34 bilingual children. The results are preliminary since the sample size was limited. There were 25 children who had high grammaticality in both languages (i.e., above 80% grammatical utterances). These children constituted a rather homogeneous group (group 1). Of the remaining children, there were 7 children for whom one of the two languages showed moderate grammaticality (between 80 and 60% grammatical utterances, group 2) and 2 children who had limited grammaticality in one of the languages (group 3).

DISCUSSION

The impact of the language exposure variables (i.e., number of years exposed to the target language, proportion of time exposed to the target language at home, number of hours spent in reading and other literacy activities in the target language, proportion of time exposed to the target language at school) depended on the language investigated. For Spanish, parent report of amount of language input was the only significant predictor of the children's grammatical performance in that language. There is evidence that within immigrant Mexican American families, maintenance of proficiency in Spanish is principally associated with input at home, rather than language choice outside the home (Hakuta & Pease–Alvarez, 1994). This research has shown that it is when parents choose English as the home language that children's Spanish proficiency over time may be reduced.

Since these effects were only applicable to Spanish, the findings do not support the general claim that there is a direct relationship between the amount of input in a language and the child's language ability. Proponents of an English-only approach in education with English learners in American schools assume that amount of input in the language may predict how well a child is able to benefit from instruction in that language (i.e., the "time-on-task" hypothesis; Porter, 1990; Rosenshine & Berliner, 1978). However, amount of input in English at home or at school did not relate to English grammatical performance in

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the present study. There were children who had no exposure to English at home, yet they had reached a high level of proficiency in English, evidently having learned English at school. Teachers' estimates of English input at school did not appear to be reliable predictors of the children's English performance either. There were 13 children who received 80% Spanish and 20% English input in their classrooms and nevertheless demonstrated a high percentage of grammatical utterances in English (i.e., above 80%).

There may be two possible reasons for these differences across the languages. Although parent estimates of amount of language input was reliable for Spanish, parents who had limited or no English proficiency may have had difficulty determining input for English. Similarly, teachers may have had little idea about the amount of Spanish input at school. Differences across languages in correlations with exposure may also be related to methodological differences in how amount of input was calculated at home versus school. Estimates of language input at home were based on a detailed account of the number of hours the child had an opportunity to interact in that language with peers or adults during the week and weekends. In contrast, teachers were asked to provide a percentage of time of exposure to the language(s) across different contexts. Thus, future research using a more detailed survey of language input at school would be needed to replicate the exposure by language interactions found in the present study.

If the finding that exposure to English relates to grammatical performance in English is replicated, this has important implications. It would provide no support for the time-on-task hypothesis (at least when spontaneous measures of grammatical competence are used as indicators of language attainments) and no support for an English-only approach at school. The findings provide compelling evidence that bilingual children who have no English input at home can still reach appropriate English grammatical skills in a bilingual education context. The results are consistent with previous research with bilingual learners that the quantity of input in each language may not directly relate to the particular pattern or rate of cross-language grammatical development (Paradis & Genesee, 1996).

The years of exposure to the language was not a significant predictor of children's grammatical skills in that language, perhaps because all children had a minimum of three years of exposure to the language of testing. Future studies will be needed to determine if years of exposure have an effect on other areas of language using lexical or semantic processing measures. Those studies should also examine the effects of years of exposure across a wider age span and with larger samples.

Parent reports of the amount of time spent in reading and other language activities was not a significant predictor of children's grammatical skills in the target language in the present study. In contrast, previous research found significant correlations between frequency of reading to children and language outcomes (e.g., Bus, van Ijzendoorn, & Pellegrini, 1995; Scarborough & Dobrich, 1994). These discrepancies may be related to the fact that, in the current study, the time estimate was based on the number of hours spent in independent reading of books or magazines as well as various language contexts such as using the computer for writing, watching television or movies, and participating in

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extracurricular activities. Perhaps this category was too broad to relate to outcomes in the target language.

Teachers' ratings of proficiency significantly related to children's grammatical performance in both languages. The correlations were commensurate with those reported by Hakuta and Pease–Alvarez (1994) using child self-reported proficiency ratings (i.e., $r = .61$ for Spanish, $r = .46$ for English) and various measures of language performance with Mexican American speakers. Ratings of proficiency appeared to be less reliable than ratings of use, perhaps because estimates of proficiency may be influenced by the extent to which proficiency in the language is desirable (i.e., the social status of a given language; Hakuta & Pease–Alvarez, 1994). Variations in these estimates may be also related to differences in the "standard" or frame of reference (monolingual English speakers or English as L2 learners) used by the informant (for a discussion, see Baker, 1993). Some teachers may assume a monolingual standard, and as a result, they may underestimate language proficiency. Others may have lower expectations based on their experience with children with limited English proficiency and thus, they may overestimate the child's English. Similar issues may influence their Spanish proficiency ratings as well. Future research will be needed to examine the interrelationships between teacher's judgments of language proficiency and attitudinal variables.

Furthermore, it is also possible that the use of a minimum set of criteria for language testing reduced variability on both predictor and criterion variables, thus limiting the magnitude of these correlations. Thus, these results need to be replicated with other child groups, across a broader age span, and with a variety of language performance measures. The potential value of proficiency ratings for describing the bilingual status of young language learners should await the findings from additional research.

Based on the analysis of these children's spontaneous language, it is clear that there are significant individual differences in language attainments (at least for grammar) for children who are learning two languages. This variability is consistent with the conceptualization of bilingualism as a continuum of proficiencies in both languages. These results have significance for making educational and clinical decisions. Typically, children who are presumably bilingual are tested in English (the language of the dominant culture) yet this may not be the child's strongest language. Given the high correlations between parent estimates of Spanish input and use, and grammatical performance in that language, the questionnaires may be useful to prescribe testing in Spanish, even if there is evidence that the child speaks English.

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APPENDIX

PARENT QUESTIONNAIRE*

Child's name: _____ DOB: _____ Age of child: ___ Date: _____ Grade: ___
Name of informant: _____ Relationship to child: _____ ID#: _____
Lunch Program: Free Reduced Regular Home: Rent Own Requested Results: YES NO
Occupation: 1. _____ 2. _____
School: _____ Teacher: _____ Grade: _____ School Schedule: _____

Please list the members of the household, relation to child, their length of time in the United States, and their level of education/place:

Name	Relation to child	Time in United States	Level of education/place

Family's opinion if the child has speech or language problems

1. Do others find your child hard to understand due to pronunciation? YES NO
2. Are you worried about how your child talks? YES NO
3. In comparison with children of the same age, does your child have problems understanding questions? YES NO
   (*If YES ask to explain.*)

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APPENDIX (*cont.*)

History of speech and language problems in the family

Have any of the child's immediate family members *had* or *currently have* any of the following problems? If yes, give situation.

	Language	Siblings	Father	Mother	Aunt/Uncle	Cousins
4. Problems learning language	English	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
	Spanish	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
5. Problems expressing ideas with words	English	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
	Spanish	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
6. Problems understanding questions	English	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
	Spanish	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
7. Difficulties in school or learning	English	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
	Spanish	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
8. Problem learning to read	English	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
	Spanish	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
9. Hearing loss		Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
10. Speech and language therapy	English	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA
	Spanish	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA	Y N DK NA

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	Ages (years)	At Home	At School/Preschool/ Daycare		Dialect(s) Spoken
11. Language use					
	0–1	_____	+ _____	= Both, Spanish, English	We realize that people speak different types of Spanish, for example, Mexican Spanish, Cuban Spanish, Puerto Rican Spanish, Dominican Spanish, etc.
	1–2	_____	+ _____	= Both, Spanish, English	What would you call your type of Spanish? _____
	2–3	_____	+ _____	= Both, Spanish, English	What would you call your type of English? _____
	3–4	_____	+ _____	= Both, Spanish, English	
	4–5	_____	+ _____	= Both, Spanish, English	
	5–6	_____	+ _____	= Both, Spanish, English	
	6–7	_____	+ _____	= Both, Spanish, English	
	7–8	_____	+ _____	= Both, Spanish, English	

Total no. of years in Both ___ Spanish ___ English ___

Note: DK, don't know; NA, not applicable.

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APPENDIX (*cont.*)

12. Linguistic Profile of the Home

- Who does the child spend time with every week? (Fill in column D)
- Excluding the hours when the child is asleep or at school, how many hours during the work week does the child spend with each person? And how many times per week? (Fill in column A with hours per day and times per week)
- Excluding the hours when the child is asleep, how many hours during the weekend does the child spend with each person? And how many times on the weekend? (Fill in column B with hours per day and times per weekend)
- Which language does _____ speak to the child in? (Fill in column E. If both, is it mixed or separate?)
  S = Spanish; E = English; B = person speaks both, M = mixes the two languages within a conversation (e.g., "¿Quieres ice cream?), S = only speaks one language at a time (e.g., "¿Quieres helado? Do you want chocolate or vanilla?").
- Which language does the child respond in? (Fill in column F. If both, is it mixed or separate?)
- Now, I am going to ask you to rate each person on how well and how much they speak each language. Please listen carefully to the following descriptions, tell me to which one they belong. (Fill in columns G and H.)

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(A) Hours Mon.–Fri. (max. 12 hr/day for 5 days = 60 hr) Ex: 3 × 5 = 15	(B) Hours Sat. and Sun. (max. 17 hr/day for 2 days = 34 hr) Ex: 12 × 2 = 24	(C) Total No. of Hours with Each Person (step 1 = Col. A + B) Ex: 39 hr	(D) Person Ex: With Mom	Language		(G) Proficiency		(H) Use	
				(E) Spoken to Child Ex: B–M	(F) Child Responds to Ex: S	Spanish Ex: 4	English Ex: 3	Spanish Ex: 4	English Ex: 2
× =	× =								
× =	× =								
× =	× =								
× =	× =								
× =	× =								
× =	× =								
× =	× =								
× =	× =								
× =	× =								

Note: Ex, example.

To score this section:

- Get the total number of hours by adding columns A and B.
- Determine total number of hours in Spanish, English, or both (see column C).
- Transfer total number of "both" hours to summary chart and divide by 2 (step 1).
- Transfer total number of Spanish and English hours to summary chart.
- Add all Spanish hours together and all English hours together for a total number of hours in each language (steps 2 and 3).
- Add total number of Spanish hours and total number of English hours to get a total number of hours of language exposure (step 4).
- Divide the number of hours in each language by the total number of hours of input to obtain a percentage of language exposure in each language.

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APPENDIX (*cont.*)

Ex: 40 hr in Spanish; 100 hr in English; 50 hr in both/2 = 25 hr in Spanish and 25 hr in English
Total hours in Spanish = 40 + 25 = 65
Total hours in English = 100 + 25 = 125
Total hours = 65 + 125 = 190
65/190 = 34% Spanish exposure
125/190 = 66% English exposure

Total input hours per language

Step 1: Total hours in both ___ /2 = ____ hours in Spanish / ____ hours in English
Step 2: Total hours in Spanish ___ (+ hours in Spanish [from Step 1] ___) = Total no. of Spanish hours ___
Step 3: Total hours in English ___ (+ hours in English [from Step 1] ___) = Total no. of English hours ___
Step 4: Total no. of hours of input (add steps 2 and 3)___
Step 5: Total Spanish hours / Total no. of hours = % / % of hours in Spanish
Total English hours / Total no. of hours = % / % of hours in English
100% of language exposure

13. Reading and other literacy activities
"Now, I am going to tell you a list of activities that your child may or may not participate in. Please indicate with whom these activities occur, the language(s) that the child uses most of the time, and the approximate amount of time the child participates."

Activities	Language	Hours Per Day	Times Per Week	Total Hours
1. Reads books or magazines				
2. Writes with computer				
3. Watches TV or movies				
4. Extracurricular activities				

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Proficiency (how well one speaks each language)

The numbers are for the examiner's use only, each category will be read to the interviewee.

0 Cannot speak the indicated language, has a few words or phrases, cannot produce sentences (Expressive Language), only understands a few words (Receptive Language).

1 Cannot speak the indicated language, has a few words or phrases (Expressive Language), understands the general idea of what is being said (Receptive Language).

2 Limited proficiency with grammatical errors, limited vocabulary (Expressive Language), understands the general idea of what is being said (Receptive Language).

3 Good proficiency with some grammatical errors, some social and academic vocabulary (Expressive Language), understands most of what is said (Receptive Language).

4 Nativelike proficiency with few grammatical errors, good vocabulary (Expressive Language), understands most of what is said (Receptive Language).

DK Don't know

Use (how much one uses each language)

0 Never speaks the indicated language (Expressive Language), never hears it (Receptive Language).

1 Never speaks the indicated language (Expressive Language), hears it very little (Receptive Language).

2 Speaks the indicated language a little (Expressive Language), hears it sometimes (Receptive Language).

3 Speaks the indicated language sometimes (Expressive Language), hears it most of the time (Receptive Language).

4 Speaks the indicated language all of the time (Expressive Language), hears it all of the time (Receptive Language).

DK Don't know

TEACHER'S QUESTIONNAIRE*

Questionnaire for teachers about the child's language at school

Name of Child _____ School/grade _____
Age of Child _____ Teacher _____

Use refers to how much the child uses each language. Circle the appropriate rank for each language (Spanish and English) for all the questions.

0 Never uses the indicated language. Never hears it.
1 Never uses the indicated language. Hears it very little.
2 Uses the indicated language a little. Hears it sometimes.
3 Uses the indicated language sometimes. Hears it most of the time.
4 Uses the indicated language all of the time. Hears it all of the time.
DK Don't know

Use												
Questions	Spanish						English					
1. Speaks with you in class	DK	0	1	2	3	4	DK	0	1	2	3	4
2. Speaks with aides or other teachers	DK	0	1	2	3	4	DK	0	1	2	3	4
3. Speaks with classmates	DK	0	1	2	3	4	DK	0	1	2	3	4

Proficiency refers to how well the child speaks each language. Circle the appropriate rank for each language (Spanish and English).

0 Cannot speak the indicated language, has a few words or phrases, cannot produce sentences, only understands a few words.
1 Cannot speak the indicated language, has a few words or phrases, understands the general idea of what is being said.
2 Limited proficiency with grammatical errors, limited vocabulary, understands the general idea of what is being said.
3 Good proficiency with some grammatical errors, some social and academic vocabulary, understands most of what is said.
4 Nativelike proficiency with few grammatical errors, good vocabulary, understands most of what is said.
DK Don't know

Proficiency												
Questions	Spanish						English					
1. Speaks with you in class	DK	0	1	2	3	4	DK	0	1	2	3	4

Do you think the child has language problems? YES NO
Do you think the child has academic or learning problems? YES NO
Do you think the child has behavioral or social problems? YES NO
Do you think the child has physical problems? YES NO

On the continuum, circle the percentage of time that the child is exposed to each language at school:

English	100%	80%	60%	50%	40%	20%	0%
Spanish	0%	20%	40%	50%	60%	80%	100%

*Vera F. Gutierrez–Clellen holds the copyright to the Parent and Teacher's Questionnaires; copies are available from her at San Diego State University.

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