

Metalinguistic Awareness in Monolingual and Bilingual Children and its Relationship to Receptive Vocabulary Scores and Performance on a Reading Readiness Test

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Literature Review

Metalinguistic awareness is the ability to attend to, and reflect upon, the properties of a language. Metalinguistic awareness is often assessed using tasks of phonological and syntactical awareness (see, e.g., Bialystok & Herman, 1999; Bowey, 1990; McGuinness, 2005, for reviews). Tests of phonological awareness usually require the analysis of sounds in words, whereas tests of syntactical awareness assess children's understanding of the form and grammar of utterances. Importantly, past research has shown that metalinguistic awareness is positively correlated with improved reading ability in young children (see, e.g., Castles & Coltheart, 2004; Ehri, Nunes, Stahl-Willos, 2001; Roth, Speece, Cooper & De LaPaz, 1996; Tunmer, 1989, for reviews).

Previous research has also shown that metalinguistic awareness may be enhanced in bilingual children, because learning two languages may require one to focus on the properties of both languages (e.g., Bruck & Genesee, 1995; Chen, Anderson, Li, Hao, Wu & Shu, 2004; Galambos & Goldin-Meadow, 1990). Indeed, even limited exposure to a second language has been found to result in a phonological advantage (Yelland, Pollard, & Mercuri, 1993). However, it may not be bilingualism per se, but the languages themselves that affect children's metalinguistic awareness, particularly in terms of syntactic awareness.

For example, in Urdu and Spanish all nouns belong to either a masculine or feminine gender, although not all are marked for gender. The fact that Spanish and Urdu designate nouns as masculine and feminine means that other parts of language are also affected. In contrast, in English most nouns are gender neutral. Additionally, English is classified as Subject-Verb-Object (SVO) language, whereas Spanish is classified as Verb-Object-Subject (VOS) or as Object-Verb-Subject (OVS) language. In contrast, Urdu is a Subject-Object-Verb (SOV) language. Other differences exist between the languages, including the representation of time.

In the present research, monolingual English-speaking children's syntactic awareness on a grammatical judgment task will be compared to the performance of bilingual Urdu-English and bilingual Spanish-English children. Due to the differences between English, Spanish, and Urdu, bilingual children learning these languages must keep these differences separate in order to use each language effectively. It is predicted that this will lead to earlier and improved syntactic ability in bilingual children.

Method

Participants. Ninety-eight 5- and 6- year olds from lower-middle to middle-class neighborhoods of Chicago, IL and its suburbs participated. Of these children, 23 were

monolingual English-speaking children, 48 were bilingual English-Urdu speaking children, and 27 were bilingual English-Spanish speaking children.

Materials & Procedure. Children's receptive vocabulary was measured by administration of the Peabody Picture Vocabulary Test-III (PPVT-III) in English and, if they were bilingual, in a translated version in Spanish or Urdu. Reading readiness was measured with the Test of Early Reading Ability- 3rd Edition (TERA-III), a measure of children's concepts about letters, words and language variables in English. Metalinguistic ability was measured with a syntactic awareness task that asked children to state (and explain) whether 30 sentences "sounded ok." Presented randomly, half were grammatically correct and half were not, and represented three grammatical properties: gender (*She is a good boy*), word order (*The boy the rice ate*), and time tense (*He was swimming tomorrow*). All monolingual children were tested on the English version of this task. Approximately half the bilingual children were tested in English and half were tested in a translated Urdu or Spanish version.

Results

Based on the results of a mixed-model ANOVA, it was found that all children high on PPVT-III score(s) were better at detecting *grammatically incorrect sentences* than their peers with lower PPVT-III scores (see Figure 1).

Additionally, bilinguals who were high on the English PPVT-III were significantly better at detecting *grammatically incorrect sentences* than bilinguals (and their monolingual peers) low on the English PPVT-III (see Figure 2). Bilingual children who had higher *combined* receptive vocabulary scores outperformed their less proficient bilingual peers on a syntactic awareness measure. Also found was that bilingual children were better than monolingual children at detecting grammatically incorrect sentences that presented an incorrect gender construction. No significant differences were found for word order or time tense.

PPVT-III English scores were positively correlated with children's ability to detect *grammatically incorrect sentences*. Bilingual children's ability to detect grammatically incorrect sentences in their Native Language was correlated with their receptive vocabulary measure in their Native Language, but not correlated with their English receptive vocabulary score. However, monolingual and bilingual children, overall, did about the same on the reading readiness test (TERA-III), see Table 1.

It was also found that bilingual children's ability to detect grammatically incorrect sentences in their Native Language was correlated with their receptive vocabulary measure in their Native Language, but was not correlated with their English receptive vocabulary score. Additionally, bilingual children were better than monolingual children at detecting grammatically incorrect *gender* sentences. Overall, however, all children were good at detecting grammatically *correct* sentences.

Figure 1. Mean Proportion Correct on Grammatically Correct and Incorrect Sentences by PPVT Combined Scores (English and Urdu/Spanish PPVT)

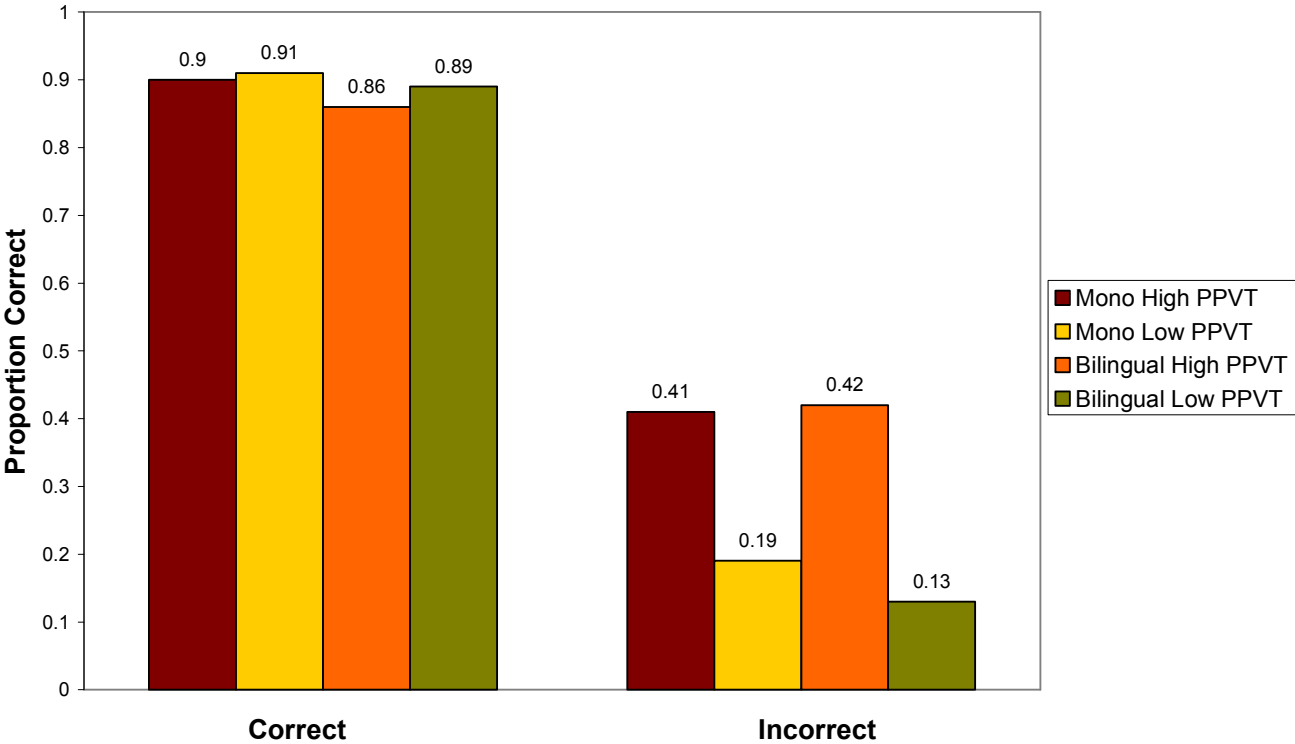


Figure 2. Mean Proportion Correct for Bilinguals on Grammatically Correct and Incorrect Sentences by PPVT English Scores

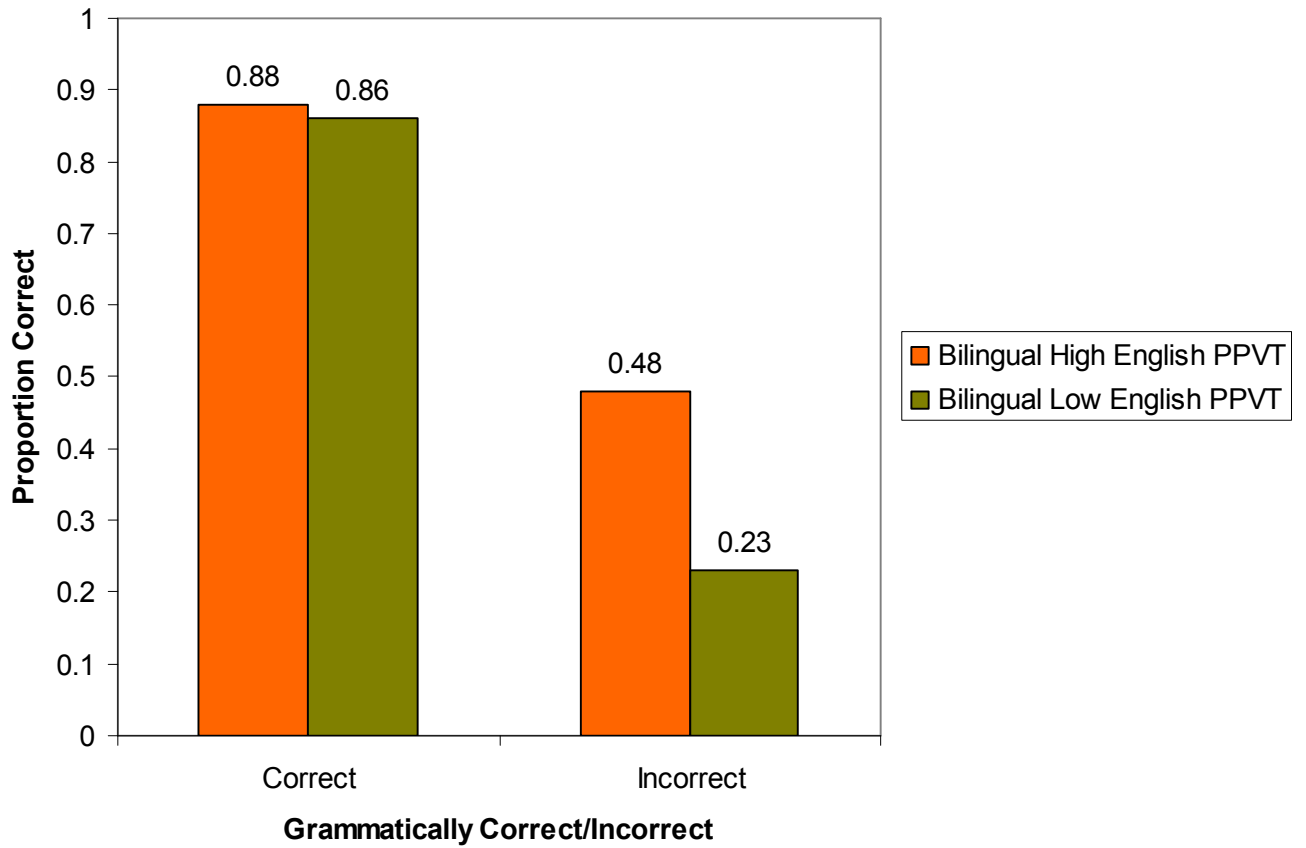


Table 1
Relationship Between Measures for Monolingual and Bilingual Children on the TERA-III

	Detect Correct Sentences r value	Detect Incorrect Sentences r value	PPVT English r value	PPVT Urdu or Spanish r value	TERA-III Reading Means (SDs)
<u>TERA-III</u>					
Monolingual	.30	.71**	.81**	-----	.24 (.11)
Bilingual-Spanish	.28	.59**	.76**	.35	.22 (.13)
Bilingual-Urdu	.30	.68**	.72**	.41**	.28 (.09)

Note. ** Correlation is significant at the .01 level (2-tailed). R-values collapsed across bilingual groups (groups tested in English or Native Language).

Discussion

Past research has shown that Spanish-English bilinguals (Galambos & Goldin-Meadow, 1990) and Swedish-English bilinguals (Cromdal, 1999) who were more proficient on a receptive vocabulary measure outperformed their less proficient peers on syntactic awareness measures. Similar results were found in the present research with Spanish-English and Urdu-English bilinguals, as well as monolingual English-speaking children. That is, the more proficient children were on a receptive vocabulary measure the better their performance was on a syntactic awareness measure. It was also found that bilingual children who had higher *combined* receptive vocabulary scores outperformed their less proficient bilingual peers on a syntactic awareness measure. It should be noted, however, that this was true only when assessing children's ability to detect grammatically *incorrect* sentences, as all children exhibited ceiling effects in detecting grammatically *correct* sentences.

Additionally, it should be noted that children's ability to detect grammatically incorrect sentences was correlated with their receptive vocabulary measure but only when their receptive vocabulary was tested in the same language as the syntactic awareness measure. That is, bilingual children's ability to detect grammatically incorrect sentences in their Native Language was correlated with their receptive vocabulary measure in their Native Language, but was not correlated with their English receptive vocabulary score. Thus, higher receptive vocabulary scores in English do not necessary translate to higher syntactic awareness scores in other languages. Likewise, bilingual children's reading readiness (English) test performance was related to their receptive vocabulary scores in English but not correlated with their receptive vocabulary scores in their Native Language.

Differences between languages may also affect children's syntactic awareness performance, as bilingual children were better than monolingual children at detecting grammatically incorrect sentences that presented an incorrect gender construction. This may be due to the heavier gender representation in Urdu and Spanish than in English, or it may be due to bilingual children need to keep separate two languages that differ greatly in gender representation. Future research is needed to tease apart these possibilities.

Although these results suggest a strong relationship between receptive vocabulary skill and children's performance on a syntactic awareness measure, some have suggested that, alone, the PPVT may not be a sufficient measure of language proficiency (Umbel, Pearson, Fernandez, & Oller, 1992), and others have suggested that assessing Native languages by translating the PPVT without standardized norms is problematic (Abudarham, 1997). Additionally, future research may best be served with a range of syntactic awareness measures, including the grammaticality judgment tasks and oral cloze tasks that require children to fill in missing words in incomplete sentences as well as unscramble sentences.

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