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Bilingualism Reduces Native-Language Interference During Novel-Word Learning

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The goal of the present work was to examine the effects of bilingualism on adults' ability to resolve cross-linguistic inconsistencies in orthography-to-phonology mappings during novel-word learning. English monolinguals and English–Spanish bilinguals learned artificially constructed novel words that overlapped with English orthographically but diverged from English phonologically. Native-language orthographic information presented during learning interfered with encoding of novel words in monolinguals but not in bilinguals. In general, bilinguals outperformed monolinguals on the word-learning task. These findings indicate that knowledge of 2 languages facilitates word learning and shields English–Spanish bilinguals from interference associated with cross-linguistic inconsistencies in letter-to-phoneme mappings.

Keywords: word learning, bilingualism, interference

Learning a second language (L2) in adulthood can be difficult. Explanations for maturation effects in L2 acquisition vary from those that are biologically based (e.g., Hyltenstam & Abrahamsson, 2003; Weber-Fox & Neville, 2001) to those that are socially based (e.g., Bialystok, 1997; Bongaerts, Planken, & Schils, 1995). One explanation for adults' difficulty with acquiring an L2 is based on the idea that the native language (L1) interferes with acquisition of an L2 (e.g., Birdsong, 1999; MacWhinney, 2007). For instance, adults' difficulty with acquiring L2 phonology may be due to the fact that L1 phonological categories interfere with formation of L2 phonological categories, especially in situations where L1 and L2 phonemes differ in subtle ways (e.g., Flege, 1992, 1995). As a result, L1 phonological categories interfere with L2 production, and speech in L2 carries a trace of L1 accent.

Interference effects rooted in L1 letter-to-phoneme mappings have also been observed. For example, in previous work (Kaushanskaya & Marian, 2009) we showed that English-speaking adults found it difficult to acquire artificially constructed novel words that matched English in orthography but mismatched English in phonology (P O). The experiment simulated a number of real-life language-learning scenarios: For example, acquisition of French by native speakers of English involves mapping essentially the same letters (the Roman alphabet) to two different sets of phonemes (English and French). In Kaushanskaya and Marian (2009), monolingual participants found it more difficult to acquire P O novel words (e.g., a word / yf/ spelled TAGUF) than P O novel words (e.g., a word /t guf/ spelled TAGUF, where letter-to-phoneme mappings overlap with those of English). Learning P O words was especially difficult when orthographic information was presented to participants during the encoding process. That is, P O words learned through both hearing the word and seeing its orthographic shape (bimodal learning) were acquired less successfully than were P O words learned through hearing only (unimodal learning). These bimodal hindrance effects were ascribed to interference of L1 letter-to-phoneme mappings with novel-word learning.

Once literacy is acquired, letters and sounds become indelibly linked within the L1 system. When a person is reading, phonology associated with a written word's visual shape is activated automatically (e.g., Lovemann, van Hoff, & Gale, 2002; McClelland & Pring, 1991; Seidenberg & Tanenhaus, 1979). Similarly, when one is listening to speech, the orthographic shape associated with the auditory signal becomes activated (e.g., Chéreau, Caskell, & Dumay, 2007; Dijkstra, Roelofs, & Fiews, 1995; Jakimik, Cole, & Rudnicky, 1985; Slowiaczek, Soltano, Wieting, & Bishop, 2003; Ziegler & Ferrand, 1998). Thus, in L1, phonological information influences written word processing and orthographic information influences auditory word processing (e.g., Coltheart, Rastle, Perry, Langdon, & Ziegel, 2001; Grainger & Ferrand, 1994; Seidenberg & McClelland, 1989; Van Orden & Goldinger, 1994; Van Orden, Pennington, & Stone, 1990). In Kaushanskaya and Marian (2009), exposing English-speaking adults to the orthographic information associated with P O words served to introduce L1 orthography into the task. Because of automatic links between orthography and phonology within the L1 system, L1 orthography activated L1 phonology. However, the auditory input mapped onto non-L1 phonology (since the P O novel words were explicitly constructed to

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mismatch English in phonology). Activation of two mismatching phonological representations interfered with the learning process, and as a result, words learned bimodally (through hearing and seeing) were acquired less successfully than were words learned unimodally (through hearing only).

Thus, prior work suggests that L1 letter-to-phoneme mappings interfere with acquisition of an L2 that diverges from the L1 in letter-to-phoneme mappings. The goal of the present work was to examine whether bilingualism modulates L1 interference during acquisition of novel words in L2. Prior research indicates that bilingualism facilitates word learning (Papagno & Vallar, 1995; Van Hell & Mahn, 1997). We were interested in whether experience with two languages that diverge in letter-to-phoneme mappings influences the extent to which L1 letter-to-phoneme mappings interfere with novel-word learning. Therefore, we tested English–Spanish bilinguals on their ability to learn novel words that diverged from English in phonology yet matched English in orthography (P O). Since English and Spanish share the Roman alphabet but diverge in phonological inventories, English–Spanish bilinguals have experienced divergent letter-to-phoneme mappings when acquiring Spanish.

Because we were interested in the effects of bilingualism on word learning and not in the effects of phonological familiarity, the non-English phonemes used to construct P O novel words were not part of the Spanish phonemic inventory. Two alternative hypotheses regarding the effects of knowing Spanish on learning novel P O words were considered. First, it was possible that both phonological inventories (English and Spanish) associated with a single orthographic system (the Roman alphabet) would interfere with acquisition of novel words that diverged from English in letter-to-phoneme mappings. The result would be that English–Spanish bilinguals would show larger interference effects than would monolinguals on the word-learning task. Second, it was possible that experience with mapping the same orthographic information (the Roman alphabet) onto two divergent phonological systems (English and Spanish) would shield English–Spanish bilinguals from interference effects associated with L1 letter-to-phoneme mappings. The result would be that English–Spanish bilinguals would show smaller interference effects than would monolinguals on the word-learning task. The present study was designed to test these two competing hypotheses.

Method

Design

The study followed a four-way mixed design with group (bilinguals vs. monolinguals) as the between-subjects independent variable and learning modality (hearing only vs. hearing and seeing), testing method (production vs. recognition), and testing session (immediate vs. delayed) as within-subjects independent variables. *Recognition accuracy* (defined as proportion accuracy in selecting the appropriate response out of five offered) and *production accuracy* (defined as proportion accuracy in producing the appropriate English translation) were the two dependent variables.

Participants

Forty-eight participants were recruited for the study: 24 English–Spanish bilinguals and 24 English-speaking monolinguals. Both bilingual and monolingual participants were undergraduate and graduate Northwestern University students at the time of the study. Participant characteristics are presented in Table 1. The groups were comparable in age and education levels. In order to ensure high and equal levels of L1 knowledge in both groups, we administered receptive (Peabody Picture Vocabulary Test III; Dunn & Dunn, 1997) and expressive (Expressive Vocabulary Test; Williams, 1997) vocabulary tests, as well as a reading fluency test (Woodcock–Johnson III Tests of Achievement; Woodcock, McGrew, & Mather, 2001) to all participants. Because word-learning ability has been shown to correlate with phonological working-memory capacity (e.g., Gupta, 2003), participants completed the digit-span subtest of the Comprehensive Test of Phonological Processing (CTOPP; Wagner, Torgesen, & Rashotte, 1999). Comparisons revealed that the two groups performed similarly on all measures.

The English–Spanish bilingual group consisted of native speakers of English who acquired Spanish early in life. Bilinguals were administered the Language Experience and Proficiency Questionnaire (Marian, Blumenfeld, & Kaushanskaya, 2007) in order to obtain self-ratings of Spanish proficiency. On the basis of self-reports, bilinguals spoke and read Spanish with a high degree of proficiency. The language history and proficiency characteristics of the bilingual group are presented in Table 1.

Table 1
Means (SEs) for Monolingual and Bilingual Participant Demographic Data

Demographics	Monolinguals	English–Spanish bilinguals	F^a	p
Age in years	21.57 (0.57)	20.83 (0.63)	0.77	.39
Education in years	15.46 (0.44)	14.74 (0.49)	1.19	.28
PPVT-III as a percentile	85.48 (3.31)	84.81 (3.64)	0.02	.89
EVT as a percentile	90.34 (4.51)	81.66 (4.96)	1.67	.20
Reading fluency as a percentile	85.39 (5.55)	77.36 (5.07)	1.14	.29
Digit span	77.48 (4.19)	74.95 (4.61)	0.17	.69
L2 acquisition age in years		5.44 (1.13)		
Percentage (out of 100%) of daily exposure to L2		11.79 (2.90)		
Self-rated L2 speaking proficiency on a scale of 0–10		7.39 (0.22)		
Self-rated L2 reading proficiency on a scale of 0–10		7.44 (0.25)		

Note. PPVT-III Peabody Picture Vocabulary Test III; EVT Expressive Vocabulary Test; L2 second language.
[a] *df*s 1, 47.

Materials

The phonological inventory used in Kaushanskaya and Marian (2009) was also used in the present work. Four non-English and non-Spanish phonemes—the two vowels / / and /y/ and the two consonants / / and / /—were used to construct phonologically unfamiliar novel words. Neither the English nor the Spanish phonemic inventory possesses a central unrounded tense vowel / /, and the vowel space occupied by the vowel / / is vacant for both languages. Likewise, neither the English nor the Spanish phonemic inventory includes the front rounded tense vowel /y/ (although both languages include a tense vowel /i/). For consonants, neither English nor Spanish includes an alveolar retroflex stop / / in its phonemic inventory, but both incorporate the dental and/or the alveolar stop /t/. Similarly, neither English nor Spanish includes the uvular fricative / /, but both have the velar stop /k/ and the velar fricative /x/. (While in Castilian Spanish there is an allophonic variation where the velar /x/ becomes uvular in front of /u/ [Martínez-Celdrán, Fernández-Planas, & Carrera-Sabaté, 2003], participants in the current study spoke Latin American Spanish and therefore had no experience with the uvular / /). Given that the phonemes that would qualify as phonologically similar to those used in the novel words are the same for both English and Spanish, it is likely that similar patterns of perceptual substitution (if it were to occur) would be obtained for monolingual speakers of English and for bilingual speakers of English and Spanish.

Because a phonetic inventory consisting entirely of unfamiliar phonemes would not be learnable, the four non-English phonemes were supplemented by four English phonemes: the two vowels / / and // and the two consonants /f/ and /n/. The resulting artificial phonetic inventory consisted of eight sounds, half of which were phonemically unfamiliar. The phonemes were paired with their corresponding English letters in the following way: / /-A, //-E, /f/-F, and /n/-N (where sounds and letters corresponded to the English mappings) and / /-I, /y/-U, / /-T, and / /-G (where letter–sound mappings diverged from those of English). The letter-to-phoneme mappings in the artificially constructed language also diverged from those of Spanish.

Forty-eight monosyllabic and disyllabic nonwords were constructed using this phonetic inventory (see the Appendix). Nonwords were recorded by a male native speaker of English. Each nonword was paired with its English translation. All English translations referred to concrete, imageable objects with frequent English names. For example, the novel word / en/-GATEN was paired with the English word *cloud*. The 48 nonword/translation pairs were split into two lists of 24. The two lists of nonwords were matched for length, syllabic structure, and orthographic characteristics (calculated according to Duyck, Desmet, Verbeke, & Brysbaert, 2004), including number of orthographic neighbors and bigram frequency. The two lists of English words were matched on length, frequency, concreteness, imageability, and familiarity. None of the nonwords were similar to their English or Spanish translations in either phonology or orthography. The lists were counterbalanced across participants, so that half of the participants in each of the two groups learned List 1 by hearing only (and List 2 by hearing and seeing), and half of the participants learned List 1 by hearing and seeing (and List 2 by hearing only).

Ten monolingual speakers of English and 10 English–Spanish bilinguals were piloted at the beginning of the study in order to confirm that novel words were dissimilar from both English and Spanish words. Participants recruited for the pilot study were different from the participants who were recruited for the word-learning experiment but represented the same population (i.e., English–Spanish bilinguals were native speakers of English who spoke Spanish with a high degree of proficiency). Pilot participants rated all 48 stimuli on their similarity to English and Spanish. Participants listened to each novel word and rated it on a Likert scale, where 1 corresponded to "does not sound like a possible English (or Spanish) word" and 7 corresponded to "sounds like a possible English (or Spanish) word." Novel words were rated low in terms of similarity to either English or Spanish. Analyses revealed comparable ratings for the likelihood of the nonwords sounding English (M 2.78, SE 0.14) versus sounding Spanish (M 2.82, SE 0.13), p .37. Moreover, perceptual similarity ratings were comparable across the two lists (List 1: M 2.99, SE 0.17; List 2: M 2.71, SE 0.17), p .24, and there was no interaction between language (English vs. Spanish) and list (1 vs. 2), p .85, suggesting that the two lists did not differ from each other with respect to sounding English versus Spanish.

Procedure

Vocabulary learning. In the hearing-only phase, participants heard the novel word and saw its written English translation on the right side of the computer screen. In the hearing-and-seeing phase, participants heard the novel word while the written form of the novel word was shown on the left side of the computer screen and the English translation was shown on the right side of the computer screen. Participants were instructed to repeat the novel word and its English translation out loud three times. Each pair was presented twice during the learning phase.

Vocabulary testing. Participants' memory was tested using production and recognition tasks immediately after learning and after a 1-week delay. During production, participants heard the novel word and pronounced its English translation into a microphone. During recognition, participants heard novel words over headphones and chose the correct English translations from five alternatives listed on the computer screen. Retention was tested in the hearing-only modality, so that differences in performance during testing could be attributed to modality at encoding.

For 3 participants (2 monolinguals and 1 bilingual), the microphone malfunctioned during the recording session, and as a result, production data were lost for 1 participant during immediate testing and for 3 participants during delayed testing. In addition, 1 monolingual and 1 bilingual participant did not complete the long-term recognition testing.

Analyses

Proportion-correct data were analyzed using a 2 2 2 2 analysis of variance (ANOVA), with learning modality (hearing only vs. hearing and seeing), session (immediate vs. delayed) and testing method (production vs. recognition) as within-subjects variables, and group (bilingual vs. monolingual) as a between-subjects variable.

Results

A 2 2 2 2 ANOVA revealed higher accuracy rates in English–Spanish bilinguals (M 0.52, SE 0.03) than in monolinguals (M 0.42, SE 0.03), $F_1(1, 43)$ 7.08, ^2_p .14, p .05; F_2 (1, 46) 18.86, ^2_p .29, p .001. Participants performed better on unimodally learned words (M 0.47, SE 0.02) than on bimodally learned words (M 0.45, SE 0.02), F_1 (1, 43) 6.50, ^2_p .13, p .05; $F_2(1, 46)$ 4.56, ^2_p .09, p .05. Accuracy rates were higher during immediate testing (M 0.55, SE 0.03) than during delayed testing (M 0.39, SE 0.02), $F_1(1, 43)$ 103.15, ^2_p .71, p .01; $F_2(1, 46)$ 418.38, ^2_p .90, p .01. In addition, participants were more accurate during recognition testing (M 0.67, SE 0.02) than during production testing (M 0.26, SE 0.02), $F_1(1, 43)$ 1224.19, ^2_p .97, p .01; $F_2(1, 46)$ 727.60, ^2_p .94, p .01.

The effect of group interacted with the effect of modality, F_1(1, 43) 5.87, MSE 0.02, ^2_p .12, p .05; $F_2(1, 46)$ 3.90, MSE 0.02, ^2_p .08, p .05, and with the effect of testing session, $F_1(1, 43)$ 4.56, MSE 0.01, ^2_p .10, p .05; F_2(1, 46) 23.39, MSE 0.01, ^2_p .34, p .01. Follow-up independent-samples t tests across groups were conducted on each performance measure to examine between-group differences in word learning. The results, presented in Table 2, indicate that bilinguals outperformed monolinguals on all performance measures pertaining to words learned bimodally. For words learned unimodally, bilinguals outperformed monolinguals during immediate testing but not during delayed testing.

Follow-up paired-samples t tests within each group were conducted on each performance measure to examine L1 interference effects during word learning in bilinguals and in monolinguals (see Figure 1). Monolinguals demonstrated higher accuracy rates on words learned unimodally than on words learned bimodally on three out of four performance measures (immediate recognition testing, immediate production testing, and delayed production testing). These analyses were significant by subjects and by items (all p values .01). Modality differences were not significant for delayed recognition testing. Therefore, interference experienced by monolingual participants in the bimodal learning condition was stronger at immediate testing than at delayed testing. Unlike monolinguals, bilinguals demonstrated comparable accuracy rates for words learned bimodally and words learned unimodally across all four performance measures.

In order to ensure that accuracy differences between bilingual and monolingual participants were not due to strategic allocation of more testing time by bilingual participants, we also collected reaction time (RT) data on all recognition testing measures. A multivariate ANOVA was used to analyze RT data for each of the four testing measures (immediate recognition of unimodally learned words; immediate recognition of bimodally learned words; delayed recognition of unimodally learned words; and delayed recognition of bimodally learned words). Results suggest that there were no significant differences between bilingual versus monolingual RTs across the testing measures, $F(4, 41)$ 1.07, p .38, and none of the individual comparisons yielded a significant difference (all p values 0.1). This lack of RT differences between groups suggests that the bilingual advantage observed in the accuracy data is not due to a speed/accuracy trade-off.

We also ensured that differences in performance observed for bilinguals and monolinguals were not the result of bilinguals' ignoring the visual information presented during the hearing-and-seeing trials. After participants finished the hearing-and-seeing learning phase and completed the auditory recognition test, they were presented with written novel words and were asked to match them to one of five English translations. Accuracy data on the written recognition measure were submitted to a one-way ANOVA with group as the independent variable. Results revealed that bilingual participants were more accurate (M 0.71, SE 0.05) than monolingual participants (M 0.63, SE 0.05) at recognizing visually presented novel words, although this difference did not reach significance (p .22). This indicates that bilingual participants were paying attention to the visual forms of the novel words during the hearing-and-seeing learning phase.

Discussion

The objective of this study was to examine whether bilingualism modulates L1 interference effects during acquisition of novel words in L2. Results indicate that experience with Spanish facilitated novel-word learning. This advantage was observed immediately after learning and maintained long-term. These findings replicate previous work (e.g., Papagno & Vallar, 1995; Van Hell & Mahn, 1997) and suggest that bilingualism facilitates subsequent language learning. Results also indicate that experience with Spanish (a P O language in relation to English) reduces interference effects associated with L1 letter-to-phoneme mappings.

Table 2
Results of Independent-Sample t Tests Comparing Bilinguals and Monolinguals on Word-Learning Performance

	df		t_1/t_2		*MSE*		^2_p	
Testing type	By subject	By item	By subject	By item	By subject	By item	By subject	By item
Immediate testing								
Hearing-only production	45	46	2.08	3.29	0.06	0.04	.09	.19
Hearing-only recognition	46	46	1.59	2.64	0.05	0.03	.03	.13
Hearing-and-seeing production	45	46	4.14	5.65	0.05	0.04	.26	.41
Hearing-and-seeing recognition	46	46	4.26	5.44	0.05	0.03	.25	.39
Delayed testing								
Hearing-only production	43	46	1.32	1.40	0.04	0.04	.04	.04
Hearing-only recognition	44	46	1.21	1.71	0.06	0.04	.03	.06
Hearing-and-seeing production	43	46	2.32	2.37	0.04	0.04	.11	.11
Hearing-and-seeing recognition	44	46	1.96	2.30	0.05	0.04	.09	.10

p .05. p .01.

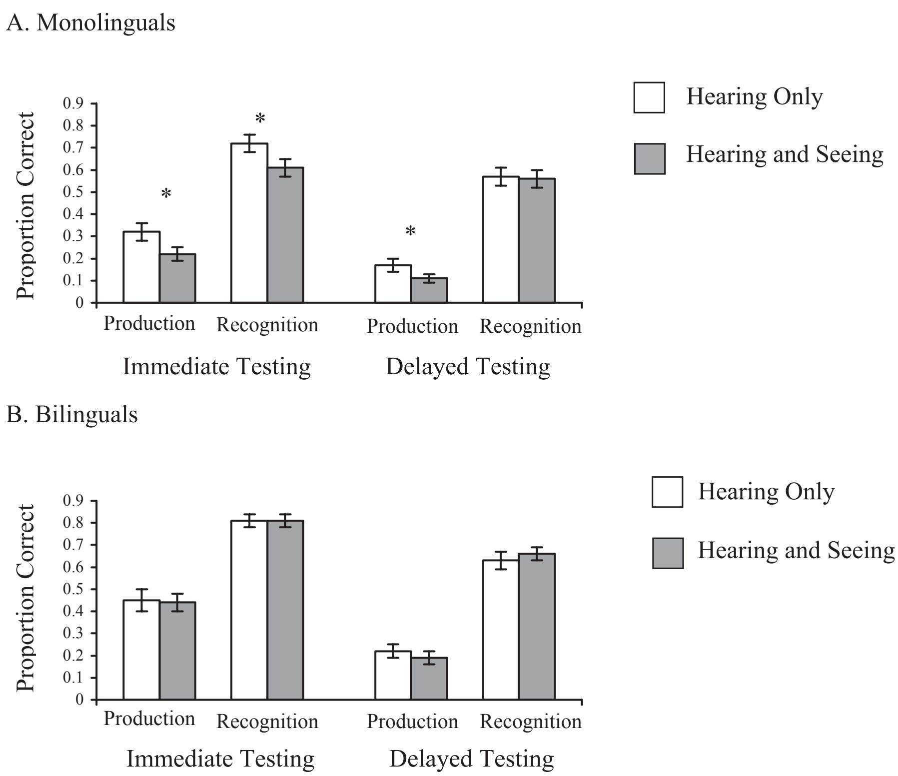

Figure 1. Performance on novel words learned bimodally versus unimodally by monolinguals (Panel A) versus bilinguals (Panel B). Error bars represent standard error values. Asterisks represent significant differences between accuracy rates for novel words learned through hearing only versus novel words learned through hearing and seeing at p .05.

The advantage experienced by English–Spanish bilinguals was found more reliably for novel words learned by hearing and seeing compared with words learned by hearing only. These findings suggest that the bilingual advantage was particularly robust for words learned bimodally—a condition that was especially difficult for the monolingual speakers of English. Bimodal presentation hindered retention of novel words in monolinguals but did not interfere with learning in bilinguals. In fact, English–Spanish bilinguals demonstrated nearly identical accuracy rates across the two learning modalities and during both immediate and delayed testing. These findings suggest that knowledge of English letter-to-phoneme mappings interfered with phonological encoding in monolinguals but did not interfere with phonological encoding in English–Spanish bilinguals.

During acquisition of Spanish, English–Spanish bilinguals have acquired a linguistic system that mismatches English in phonology but matches it in orthography. The mismatch between English and Spanish is similar to the mismatch between English and the novel vocabulary items in the present study. This similarity is structural and does not extend to the identity of the specific sounds. The finding that monolinguals but not English–Spanish bilinguals experienced interference from English letter-to-phoneme mappings during novel word learning indicates that experience with two divergent letter-to-phoneme mappings shields bilinguals from experiencing such interference in subsequent learning situations. It is also possible that bilinguals' performance on the word-learning task in the hearing-and-seeing condition may have been facilitated by their specific experience with Spanish, a language with transparent orthography. Because novel words in the current study were also transparent in letter-to-phoneme mappings (in that each letter mapped onto one sound), it is possible that the word-learning advantage observed for speakers of English and Spanish is the cumulative result of their experience with a transparent system, as well as a system that mismatches their L1 in letter-to-phoneme mappings. Our results are consistent with those of Erdener and Burnham (2005), who showed that speakers of Turkish (a transparent language) benefited from orthographic information when learning to pronounce novel words in Spanish (also a transparent language).

Differences between English–Spanish bilinguals and monolinguals are especially noteworthy because English letter-to-phoneme mappings are inconsistent, and English monolinguals have experience with mapping the same letter string onto more than one phonological representation. It is likely that both quantitative and qualitative disparities between English monolinguals and English–Spanish bilinguals contributed to bilinguals' performance in the current study. Quantitatively, English–Spanish bilinguals have to process orthographic input that activates not only all the possible English phonological mappings but also Spanish phonological mappings. Previous work suggests that within a proficient bilingual's lexical system, recognition of written (and auditory) input proceeds in parallel for the two languages. For instance, if orthographies of L1 and L2 overlap, written input in the L1 can activate phonological information in both the L1 and the L2 (e.g., Jared & Kroll, 2001; Kaushanskaya & Marian, 2007). Thus, English–Spanish bilinguals have more experience mapping orthography onto multiple phonological representations than do English monolinguals.

Qualitatively, phonological activation in English monolinguals differs from that in English–Spanish bilinguals. While English monolinguals experience inconsistent letter-to-phoneme mappings, for them, the phonology activated via English orthography is always English. In English–Spanish bilinguals, the same orthographic input activates two phonological systems, which contain some highly discrepant phonemes. Prior studies indicate that learning new letter-to-phoneme mappings (in L2) changes the way L1 letters activate L1 phonemes (e.g., Dijkstra, Timmermans, & Schriefers, 2000; Jared & Kroll, 2001; Van Hell & Dijkstra, 2002). Therefore, moderating effects of bilingualism on L1 interference observed in the current study are likely rooted in reweighing of connections between English phonemes and English letters as a result of acquiring Spanish.

Experience with mapping the same orthography onto two divergent phonological systems may have modified the connectivity between English orthography and English phonology in English–Spanish bilinguals. This, in turn, may have resulted in less automatic co-activation of English phonology during visual word recognition in English, thus yielding smaller interference effects during bimodal processing of the novel P O words. Alternatively, English–Spanish bilinguals may have developed an efficient suppression mechanism that allows them to selectively inhibit English letter-to-phoneme mappings when processing Spanish and inhibit Spanish letter-to-phoneme mappings when processing English. By using this mechanism during learning of P O words, English–Spanish bilinguals may have been able to process bimodal input in a more efficient manner.

The finding that experience with Spanish enabled participants to process novel words that mismatched the L1 without incurring retention costs may suggest a specific modification of the language-learning mechanism as a result of bilingualism. Previous studies that have examined the effects of bilingualism on vocabulary acquisition link the bilingual-advantage effects to a more efficient phonological memory system (e.g., Papagno & Vallar, 1995). The current study indicates that bilingualism can also modulate the degree to which L1 interferes with acquisition of novel linguistic information. L1 interference is one of the factors that may make L2 acquisition more difficult for adults than for children (e.g., Birdsong, 1999; MacWhinney, 2007). Here, we show that bilingualism can mitigate these interference effects, thus facilitating bilinguals' ability to acquire new linguistic information in adulthood.

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Appendix

Nonword and English Word Pairings

List 1			List 2		
Nonword (phonology)	Nonword (spelling)	English translation	Nonword (phonology)	Nonword (spelling)	English translation
yf	TUF	Cube	f	GAF	Plum
f	GEF	Hockey	n f	NAF	Zipper
yf	IGUF	Boss	yf	UFAG	Cape
yn	EGUN	Lawn	y	AGUT	Rope
y	ETUG	Insect	fyn	EFUN	Sunset
y f	UTAF	Cigar	y	ITUG	Elbow
f	EFIT	Ocean		AGET	Sugar
yn	ITUN	Lawyer	yf	ATUF	Liquor
ynf	UNEF	Leg	n	IGAN	Sky
y	TUGI	Rain	f y	FAGU	Song
f	FIGA	Sunburn	n f	NAFI	Laundry
fyn	FUNA	Bucket	y	GUTA	Rocket
y	GITU	Hammer	fy	FUTA	Locker
f y	FITU	Cement	n	NEGI	Infant
f	FETI	Chicken	n	GENA	Stomach
fyn	GAFUN	Sign	f	GIFET	Park
n f	NIGAF	Envelope	yf	TAGUF	Magazine
yf	GITUF	Mouth	n y	NAGUT	Teeth
fyn	TAFUN	Morning	n f	NEGIF	College
n f	NAFIT	Book	yn	TAGUN	Road
nf	NEFAG	Beach	n y	NITUG	Coast
fy n	FUTIN	Storm	n	GATEN	Cloud
f n	FANET	Rose	f n	FITAN	Ship
ny	NUTIG	Flame	f n	FIGEN	Steam

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