

# The Interplay Between Bicultural Blending and Dual Language Acquisition

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## Abstract

Bilingual individuals acquire their two languages either simultaneously or sequentially, which relates to how these languages are stored and represented in the brain. Because language is used to transmit culture, bilinguals' mode of dual language acquisition may also relate to different perceptions of the corresponding two cultures as blended and fused versus separate and compartmentalized. With a sample of English–Spanish bilingual Mexican Americans ( $N = 149$ ), we found that compound bilinguals (simultaneous dual language acquisition) blended their two cultures to a greater extent than coordinate bilinguals (sequential dual language acquisition), and this finding remained even after controlling for generation status. Our study highlights the interplay of language and culture, particularly the importance of the process of cultural learning and language acquisition to the bicultural experience.

## Keywords

bilingualism, dual language acquisition, biculturalism, blendedness, acculturation

Previous research studies, although diverse in their approaches and outcomes, have clearly indicated a relationship between language and culture (e.g., Hill & Mannheim, 1992; Ji, Zhang, & Nisbett, 2004), including language as one of the most important and frequently used means of conveying and internalizing culture. Drawing from this, it is plausible that if bilingual individuals learn two languages at the same time, then they might understand and perceive their two cultures as blended and fused. Conversely, if bilingual individuals learn their two languages separately (one before the other), then they might view their two cultures as separate and compartmentalized. The degree to which these individuals blend their cultures has implications for their biculturalism and the benefits or struggles they may experience in living with two cultures. In this study, we compared different modes of dual language acquisition (compound vs. coordinate bilingualism) on bicultural blending.

Research in neuroscience and cognitive psychology has focused on how bilingual individuals' two languages are represented in the brain and whether separate or overlapping cortical areas are used to process the two languages; however, these studies have yielded mixed findings. Some found that bilingual processing occurs in partially non-overlapping areas for each language (e.g., Abutalebi, Cappa, & Perani, 2001; Ojemann & Whitaker, 1978), whereas others found activation in overlapping areas of the brain (e.g., Hernández, Martínez, & Kohnert, 2000).

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Different modes of dual language acquisition may explain the above inconsistency (Hernández, 2009; Kim, Relkin, Lee, & Hirsch, 1997). Bilingual individuals can be categorized based on the order and context in which they have learned their two languages, with *compound* (early or simultaneous) *bilinguals* acquiring both languages simultaneously and in the same contexts, and *coordinate* (late or sequential) *bilinguals* learning one language first and then the other, each in different settings (Ervin & Osgood, 1954; Lambert, 1981; McLaughlin, 1981). Due to differences in the sequence and context of dual language acquisition, these two groups are also dissimilar in that compound bilinguals have a unified language system and coordinate bilinguals have separate language systems (Ervin & Osgood, 1954). In fact, the two languages have overlapping centers of activation in Broca's area for compound bilinguals but distinct centers of activation in Broca's area for coordinate bilinguals (Kim et al., 1997).

Because compound and coordinate bilinguals differ in the order and context in which they learn their two languages and in the storage and cortical activation of their two language systems, they might also differ in how they view their corresponding two cultures: as an overlapping and fused dual culture (i.e., emergent third culture; for example, Chicano or hyphenated Mexican American culture) versus as two distinct and compartmentalized cultures (e.g., Mexican culture and American culture). This phenomenon of bicultural blending has been termed hybridity (Hermans & Kempen, 1998), fusion (LaFromboise, Coleman, & Gerton, 1993), and blendedness (Benet-Martínez & Haritatos, 2005; Phinney & Devich-Navarro, 1997).

Language acquisition and bicultural blending are most likely intertwined. Language is a critical element of ethnic identity (Laroche, Kim, Hui, & Tomiuk, 1998; Noels, Pon, & Clement, 1996; Phinney, 1990) and a fundamental component of acculturation (Kang, 2006; Tsai, Ying, & Lee, 2000). Moreover, bilingual bicultural individuals' cultural learning (including bicultural blending) might be influenced by language because learning a language usually accompanies learning the associated culture and vice versa (Chater & Christiansen, 2010; Hill & Mannheim, 1992; Ji et al., 2004; Kodish, 2004; Sherzer, 1987). Given the interrelatedness of language learning and cultural learning, bilingual individuals deserve more attention regarding how they organize their dual cultures.

Research on bicultural blending found that it is associated with generation status, such that first-generation biculturals blend their cultures to a lesser degree than second-generation biculturals (Benet-Martínez, Haritatos, & Santana, 2014). However, these generational differences in bicultural blending may be due to differences in the process of cultural learning, and specifically language acquisition. First-generation biculturals learn one culture and language first (i.e., their heritage culture and language while in their native country) and then the other (the dominant culture and language in the host country); therefore, their organization of these two cultures becomes compartmentalized and situation-specific. In comparison, second- and later-generation ethnic minorities may be reared with both cultures and languages at the same time; therefore, the structure and experience of their cultures may be more blended. Given these previous findings on language representation and bicultural blending, we tested the following hypotheses:

**Hypothesis 1:** Compound bilinguals are more likely to blend their cultures than coordinate bilinguals.

**Hypothesis 2:** Mode of dual language acquisition predicts bicultural blending even after controlling for generation status.

## Method

Although we collected data from 339 Mexican American undergraduate students who self-identified as bilingual in English and Spanish, we only used data from the 149 participants who met the criteria to be considered bilingual as defined in this study: (a) self-reported

above-average fluency in both English and Spanish, and (b) a passing score on a Spanish reading comprehension test adapted from the California Subject Examinations for Teachers. The sample was 69.80% female with ages ranging from 17 to 26 years ( $M = 18.79$ ,  $SD = 1.24$ ). In accordance with previous research on Mexican Americans (Portes & MacLeod, 1999), we categorized participants as first-generation (arrived in the United States after the age of 12—during or after adolescence;  $n = 2$ ), 1.5-generation (arrived in the United States after the age of 5—the typical age at which formal education begins—but at or before the age of 12;  $n = 10$ ), and later-generation participants (born in the United States or arrived at or before the age of 5;  $n = 136$ ); one participant did not report her country of birth. However, due to the small number of 1.5- and first-generation participants, we collapsed these two categories into a single “first-generation” category for analyses reported below.

Participants completed the four-item bicultural blendedness scale (Benet-Martínez & Haritatos, 2005;  $\alpha = .69$ ) and a demographic survey. According to this scale, bicultural blending is conceptualized as the degree of overlap versus dissociation perceived between dual cultural orientations (Benet-Martínez, Leu, Lee, & Morris, 2002). Sample items are “I feel part of a combined culture” and “I keep Mexican and American cultures separate” (reverse-scored). Items were rated on a five-point Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*), with a higher score indicating more bicultural blending. The demographic survey included questions about participants’ gender, age, country of birth, age of arrival to the United States (if applicable), and socioeconomic status (SES). Participants also reported whether they learned English first, Spanish first, or both languages at the same time, and the age(s) at which they learned each language. In addition, they indicated where they learned each language: mostly at home, mostly at school, or equally at home and at school.

## Results

The sequence of dual language acquisition varied across participants, with 20.81% of the sample learning English and Spanish at the same time, 0.67% learning English before Spanish, and the rest learning Spanish before English. The majority of participants (81.08%) learned Spanish at home, whereas the remainder learned it both at home and at school. As for English, 77.03% learned it at school, 5.41% learned it at home, and 17.57% learned it both at home and at school. Because only 8.11% of the sample learned English and Spanish in the same setting (i.e., both languages at home or both languages at school), we did not use context to categorize participants as compound versus coordinate bilinguals. Instead, we used only time to categorize participants: Compound bilinguals learned English and Spanish simultaneously, whereas coordinate bilinguals learned English and Spanish sequentially.

Supporting our hypothesis, we found that compound bilinguals ( $M = 4.20$ ,  $SD = 0.64$ ) blended their two cultures to a significantly and moderately greater extent than coordinate bilinguals ( $M = 3.71$ ,  $SD = 0.91$ ),  $t(65.54) = 3.44$ ,  $p = .001$ ,  $r = .39$ . As further support for this hypothesis, the difference in the ages of learning English and Spanish significantly predicted bicultural blending ( $\beta = -.30$ ),  $t(142) = 3.80$ ,  $p = .0002$ , such that participants with a smaller age gap in dual language acquisition perceived greater overlap between their two cultures.

In addition, supporting previous research (Benet-Martínez et al., 2014), we found a significant small-to-medium effect of generation status, with first-generation bilinguals ( $M = 3.21$ ,  $SD = 1.00$ ) blending their cultures to a lesser extent than did later-generation bilinguals ( $M = 3.87$ ,  $SD = 0.85$ ),  $t(146) = 2.55$ ,  $p = .01$ ,  $r = .21$ . Furthermore, we compared bilingual type and generation status as predictors of bicultural blending, given that first-generation participants were likely to be coordinate bilinguals, and compound bilinguals were likely to be non-immigrant and to have lived in a Mexican American setting. Therefore, our most important finding is that despite the overlap between bilingual type and generation status, type of bilingual (compound vs.

coordinate;  $\beta = .20$ ,  $t(145) = 2.43$ ,  $p = .02$ , was a significant predictor of bicultural blending even after controlling for generation status ( $\beta = .18$ ,  $t(145) = 2.19$ ,  $p = .03$ ;  $\Delta R^2 = .04$ ,  $F(1, 145) = 5.89$ ,  $p = .02$ ).

Finally, we explored SES as a potential third variable explaining the relationship between type of bilingual and bicultural blending. It is possible that participants from higher SES families had the opportunity to learn two languages at the same time and to live in an environment that promoted the blending of two cultures. However, our data suggested that this is not the case. SES was associated with neither bilingual type ( $r = .02$ ,  $p = .88$ ) nor bicultural blending ( $r = .02$ ,  $p = .87$ ).

## Discussion

In the present study, we investigated the relationship between different patterns of dual language acquisition and bicultural blending. As hypothesized, compound bilinguals who learned two languages simultaneously subscribe to a blend of their two cultures, whereas coordinate bilinguals who learned their languages sequentially subscribe to two separate and distinct cultures. One possible explanation is that learning one language before the other results in separate organization of the two language systems, and thus separate organization of the two corresponding cultures (Ervin & Osgood, 1954). However, simultaneous dual language acquisition results in the formation of a unified language system, and hence the merging of two associated cultures. This interpretation is congruent with neurological studies that demonstrated distinct foci of brain activation of two languages for coordinate bilinguals as opposed to overlapping activation of two languages for compound bilinguals (Kim et al., 1997). Nevertheless, future studies are required to examine the direct relationship between representations of languages (as distinct vs. overlapping) in concrete and observable cortical areas and representations of cultures (as distinct vs. overlapping) according to bilinguals' subjective perceptions of those cultures.

Our findings suggest that the order and context in which bilinguals first learn two languages are intimately related to how they later experience the corresponding two cultures. For example, a coordinate bilingual who learned Spanish first and English later may see herself as fragmented, with parts of herself that are distinctly Mexican and parts that are undeniably American. In comparison, a compound bilingual who learned English and Spanish at the same time may live life as a Chicano, whereby he endorses a mix of Mexican and American values and engages in a blend of Mexican and American practices. Furthermore, because higher bicultural blendedness has been found to relate to greater creativity (Cheng, Sanchez-Burks, & Lee, 2008), mode of dual language acquisition may indirectly relate to creativity via bicultural blending. Because compound bilinguals have a unified language system, overlapping centers of activation for their two languages, and a blend of cultures, they may have greater access to and perceive greater applicability of their two cultural knowledge systems, which are essential for creativity.

A strength of this study is that we controlled for possible confounding factors pertaining to language and culture: language proficiency, generation status, and SES. Methodologically, we controlled for language proficiency by using strict criteria for selecting bilingual participants, which ensures that participants are able to activate the cognitive and affective associations relevant to each language (Hong, Morris, Chiu, & Benet-Martínez, 2000). Statistically, we controlled for generation status and found that differences in bicultural blending between compound and coordinate bilinguals remained. Because we found null correlations between SES and bilingual type and bicultural blending, it is unlikely that SES accounts for the association between bilingual type and bicultural blending.

Despite these strengths, there are some notable limitations to our study. First, there were unequal numbers of compound and coordinate bilinguals. However, this did not seem to affect our findings. For example, the difference in bicultural blending between types of bilinguals

remained when we compared a random subset ( $n = 31$ ) of coordinate bilinguals ( $M = 3.56$ ,  $SD = 1.01$ ) with the 31 compound bilinguals in our sample,  $t(50.71) = 2.97$ ,  $p = .005$ ,  $r = .38$ . In addition, among later-generation participants only, compound bilinguals ( $M = 4.20$ ,  $SD = 0.64$ ) blended their two cultures to a significantly and moderately greater extent than coordinate bilinguals ( $M = 3.77$ ,  $SD = 0.88$ ),  $t(66.97) = 2.93$ ,  $p = .005$ ,  $r = .34$ . Furthermore, this uneven distribution of compound versus coordinate bilinguals is reflective and representative of the characteristics of the population of Mexican American bilinguals.

Second, although compound and coordinate bilinguals differ in both the time and context of language acquisition, we were able to categorize bilinguals based on only time. Future studies should be conducted with bilinguals who differ not only on simultaneous versus sequential language acquisition but also on the context in which those languages were learned. Third, our sample consisted of only Mexican American English–Spanish bilinguals; thus, future studies should examine whether these findings generalize to bilinguals from other ethnic and linguistic backgrounds. Finally, mode of dual language acquisition (compound vs. coordinate bilingualism) should be investigated as a moderator of existing psycholinguistic findings, such as bilinguals' experience of emotions in two languages (Caldwell-Harris & Ayçiçeği-Dinn, 2009) or the ways in which language shapes our idea of time (Boroditsky, Fuhrman, & McCormick, 2011).

In summary, language and culture are intertwined, such that the order in which two languages are learned is linked to whether the corresponding cultures are seen as distinct versus fused. More specifically, not only do compound bilinguals differ from coordinate bilinguals in that they have a unified (vs. separate) language system (Ervin & Osgood, 1954) and overlapping (vs. distinct) areas of neural activation for language (Kim et al., 1997), but they also blend (rather than compartmentalize) their two cultures. In other words, how a bilingual individual acquired two languages (simultaneously vs. sequentially) is associated with his or her bicultural experience, particularly bicultural blending, and may have implications for relevant characteristics, such as creativity.

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