

# Psychological Assessment

## **Measuring Variations in Bicultural Identity Across U.S. Ethnic and Generational Groups: Development and Validation of the Bicultural Identity Integration Scale–Version 2 (BIIS-2)**

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# Measuring Variations in Bicultural Identity Across U.S. Ethnic and Generational Groups: Development and Validation of the Bicultural Identity Integration Scale–Version 2 (BIIS-2)

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Bicultural Identity Integration (BII) is an individual difference construct that captures variations in the experience of biculturalism. Using multiple samples in a series of steps, we refined BII measurement and then tested the construct in a diverse sample of bicultural individuals. Specifically, we wrote new BII items based on qualitative data ( $n = 108$ ), examined the quality of the new measure using subject-matter experts ( $n = 23$ ) and bicultural individuals ( $n = 5$ ), and then collected validation data from bicultural college students ( $n = 1049$ ). We used exploratory factor analyses to select items and explore BIIS-2 structure with a random subset of the larger sample ( $n = 600$ ), confirmatory factor analyses to show that the factor structure fit the data well ( $n = 449$ ), and multigroup confirmatory factor analyses to demonstrate measurement invariance in two ethnic and two generational groups. Results showed that the Bicultural Identity Integration Scale–Version 2 (BIIS-2) yielded reliable and stable scores. The data also revealed interesting and important patterns of associations with theoretically relevant constructs: personality, acculturation, and psychological well-being. Additionally, structural equation models confirmed that in general, personality and acculturation variables influence individuals' experiences with their dual cultural identities, which in turn influence adjustment, but there were interesting and important generational differences in how these variables were related. These findings lend support for the validity of BIIS-2 score interpretations; add to our understanding of the sociocultural, personality, and adjustment correlates of the bicultural experience; and have important implications for understanding the well-being of bicultural individuals.

### **Public Significance Statement**

This study focuses on a fast-growing population: bicultural individuals, or those who have been extensively exposed to and have internalized two different cultures. Findings suggest that there are individual differences in how biculturals cognitively and affectively integrate their two cultural identities. These individual differences are predicted by personality and acculturation, and they in turn predict psychological adjustment, which provides researchers and practitioners with insights on the well-being of bicultural individuals.

**Keywords:** Bicultural Identity Integration, biculturalism, acculturative stress, personality, adjustment

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Globally, more than 244 million people (3.3% of the world's population) were international migrants in 2015, which is a 41% increase in international migration from 2000 (United Nations

Statistics Division, 2015). In the U.S. alone, demographers project that in less than 40 years, U.S.-born and foreign-born racial, ethnic, and/or cultural minorities will constitute more than half of the population (United States Census Bureau, 2009). In several U.S. states (i.e., California, Hawai'i, New Mexico, and Texas) and many large metropolitan areas (e.g., Chicago, New York, and Phoenix), this is already a demographic reality. Indeed, more and more individuals throughout the world are being extensively exposed to multiple cultures, due not only to migration, but also to factors such as globalization, the speed and ease of travel, and technological advances such as the Internet. Individuals who have been exposed to and have internalized more than one culture—such as their ethnic culture(s) and the dominant culture in the case of immigrants and their children—can be described as bicultural

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or multicultural (Hong, Morris, Chiu, & Benet-Martínez, 2000; Nguyen & Benet-Martínez, 2013). Clearly, biculturalism and multiculturalism are pervasive social phenomena, yet despite some early seminal work (e.g., LaFromboise, Coleman, & Gerton, 1993; Padilla, 1994; Szapocznik, Kurtines, & Fernandez, 1980), biculturalism studies did not appear consistently in mainstream psychological journals until the last decade (for a review, see Benet-Martínez & Hong, 2014). To facilitate research in this growing and important area, we present an expanded measure of individual differences in biculturalism, which we developed and validated in multiple steps using several samples of subject-matter experts and bicultural respondents.

## Biculturalism

Broadly speaking, “bicultural” individuals include immigrants and their children, refugees, ethnic minorities, sojourners, indigenous peoples, biracial individuals, international adoptees, individuals in intercultural relationships, and so on (Benet-Martínez & Hong, 2014). These individuals are undergoing acculturation, the process of adapting behaviorally and psychologically to a second culture (or in the case of those born into two cultures, learning and adapting to these two cultures). In this adaptation process, they must negotiate different sets of affective, behavioral, and cognitive expectations stemming from membership in two or more different cultural groups, and these adaptations may occur in multiple dimensions of life (e.g., behaviors, values, identities; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). In sum, individuals undergoing acculturation face two key issues: the extent to which they are motivated and/or allowed to (a) maintain their ethnic culture and (b) be involved in the dominant culture (Berry, Phinney, Sam, & Vedder, 2006).

The most widely accepted and empirically supported model of acculturation stems from John W. Berry’s work. In Berry’s model, there are four acculturation strategies that result from the negotiation of the above two acculturation issues: assimilation, separation, integration (sometimes called biculturalism), and marginalization. Those who do not want to or cannot maintain their ethnic culture and identity *but* seek involvement with the dominant culture are using the *assimilation* strategy. Conversely, individuals who seek to maintain their ethnic culture and identity *but* do not have a desire to or cannot engage with the dominant culture are using the *separation* strategy. Those who wish to or are allowed to maintain their ethnic culture while engaging with the dominant culture are using the *integration* strategy. Finally, when people have no preference or opportunity for maintaining their ethnic culture or for involvement with the dominant culture, they are using the *marginalization* strategy. Integration/biculturalism is the most widely endorsed acculturation strategy (Sam & Berry, 2010; Van Oudenhoven, Ward, & Masgoret, 2006) and also the most adaptive (Nguyen & Benet-Martínez, 2013).

## Individual Differences in Biculturalism: Bicultural Identity Integration

Despite the acknowledged importance of biculturalism and multiculturalism in contemporary life, there is relatively little research exploring individual differences within this group (i.e., differences

among biculturals in their experiences and identities; for a review see Cheng, Lee, Benet-Martínez, & Huynh, 2014). Bicultural individuals face the challenge of negotiating between multiple, and sometimes conflicting, cultural identities and value systems in their everyday lives. To fill this void, Benet-Martínez and colleagues proposed *Bicultural Identity Integration* (BII) as a theoretical framework for understanding variations in how bicultural individuals cognitively and affectively organize their cultural identities (Benet-Martínez & Haritatos, 2005; Benet-Martínez, Leu, Lee, & Morris, 2002). BII consists of two components (Benet-Martínez & Haritatos, 2005; Miramontez, Benet-Martínez, & Nguyen, 2008): *cultural blendedness versus compartmentalization* (formerly labeled blendedness vs. distance) and *cultural harmony versus conflict*. Cultural blendedness captures the degree of overlap versus dissociation perceived between the two cultural orientations (e.g., blendedness: “I feel part of a combined culture”; compartmentalization: “I keep Chinese and American cultures separate”). On the other hand, cultural harmony captures the degree of compatibility versus clash perceived between the two cultural orientations (e.g., harmony: “I don’t feel trapped between the Chinese and American cultures”; conflict: “I feel conflicted between the American and Chinese ways of doing things”).

**Measurement of BII.** Much of the early work on BII (e.g., Benet-Martínez et al., 2002; Benet-Martínez, Lee, & Leu, 2006) relied on a vignette-like instrument called the Bicultural Identity Integration Scale–Pilot Version or BIIS-P, which taps into perceived opposition and distance between cultural orientations (i.e., low BII) and is rated on an 8-point Likert-type scale (1 = *definitely not true*, 8 = *definitely true*).<sup>1</sup> Using the BIIS-P, Benet-Martínez et al. (2002) found that bicultural individuals high on BII responded to cultural cues in a congruent manner (e.g., made stronger external attributions to an ambiguous social event after being primed with Chinese cues, and stronger internal attributions to the same event after seeing American cues), whereas bicultural individuals low on BII responded to cultural cues in an incongruent manner (e.g., responded to Chinese cultural cues with internal attributions and to American cultural cues with external attributions). Other work relying on the BIIS-P showed associations between BII and having better psychological adjustment and more culturally diverse social networks (Chen, Benet-Martínez, & Bond, 2008; Mok, Morris, Benet-Martínez, & Karakitapoglu-Aygun, 2007).

The BIIS-P has the advantage of predicting relevant outcomes despite its brevity, yet this measure is limited in that it confounds the experiences of cultural blendedness and cultural harmony. Therefore, Benet-Martínez and Haritatos (2005) developed an initial multi-item instrument called Bicultural Identity Integration Scale–Version 1 (BIIS-1). The BIIS-1 is an eight-item measure with separate 4-item subscales tapping cultural blendedness and cultural harmony (see Table 2 in Benet-Martínez & Haritatos, 2005 for original items and factor structure). Although the internal consistency of the BIIS-1 scales is adequate considering its length (alphas for blendedness range between .62 and .72, and for har-

<sup>1</sup> The vignette read as follows: “I am a bicultural who keeps American and Chinese cultures separate and feels conflicted about these two cultures. I am simply a Chinese who lives in America (vs. a Chinese-American), and I feel as someone who is caught between two cultures.”

mony between .71 and .82; Benet-Martínez & Haritatos, 2005; Chen et al., 2008; Cheng, Lee, & Benet-Martínez, 2006; Miller, Kim, & Benet-Martínez, 2011; Miramontez et al., 2008; Zou, Morris, & Benet-Martínez, 2008), the reliability of scores yielded by this instrument is not ideal. In addition, the few items assessing each component of BII likely do not adequately cover all relevant content domains of BII.<sup>2</sup> Thus, we sought to improve BII measurement by developing and validating a longer instrument, the Bicultural Identity Integration Scale–Version 2 (BIIS-2), in the present study.

**Correlates of BII.** Research on BII suggests that its two components, cultural harmony and cultural blendedness, are relatively independent and are associated with different personality, acculturation, contextual, and adjustment variables (for reviews see Benet-Martínez, 2012; Cheng et al., 2014; Huynh, Nguyen, & Benet-Martínez, 2011). Specifically, whereas cultural blendedness seems to capture the more cognitive and behavioral aspects of the bicultural experience, cultural harmony captures the affective component of managing two cultures. For instance, cultural blendedness is positively linked to the personality trait of openness to experience and with bicultural competence (particularly with regard to the mainstream culture), and negatively associated with the separation acculturation strategy, strains in the linguistic domain (e.g., being self-conscious about one's accent), and having culturally limited surroundings (Benet-Martínez & Haritatos, 2005; Miller et al., 2011). Cultural blendedness also predicts perceiving members of the ethnic and mainstream cultural in-groups as more similar to each other and to the self (Miramontez et al., 2008) and being more creative in contexts that activate both cultures (as opposed to just one or the other; Cheng, Sanchez-Burks, & Lee, 2008; Saad, Damian, Benet-Martínez, Moons, & Robins, 2013).

On the other hand, cultural harmony is positively linked to the personality trait of emotional stability and negatively to experiencing discrimination and strained intercultural relations (e.g., being told that one's behavior is too "American" or too "ethnic"; Benet-Martínez & Haritatos, 2005; Miller et al., 2011). Cultural harmony also is linked to fewer anxiety and depressive symptoms (Chen et al., 2008; Downie, Koestner, ElGeledi, & Cree, 2004; Miller et al., 2011) and fewer concerns about losing either cultural identity (Mok & Morris, 2013). In summary, cultural blendedness is particularly linked to cognitive and performance-related personal and contextual challenges (e.g., trait of openness, linguistic fluency, living in a culturally diverse enclave), whereas cultural harmony is linked to factors that are largely affect-relevant and intra- and interpersonal in nature (e.g., emotional stability, positive intercultural relations, lack of identity protection concerns). Research conducted with the BIIS-1 has significantly clarified the meaning and correlates of BII and improved its measurement; however, this 8-item measure often yields unimpressive reliability scores and does not adequately assess all relevant content domains of the harmony and blendedness subscales.

## Overview of Current Study

To address these issues, our primary goals were to refine and expand the measurement of BII and gather evidence of construct validity. Following standard procedures for a construct-based approach to psychological instrument development (Clark & Watson, 1995), there were three parts to the development and evaluation of

the BIIS-2: content domain and item generation, item evaluation and pilot testing, and then validation data collection.

**Item development.** First, we generated relevant content and items via qualitative methods (open-ended essays). Qualitative exploration of BII is helpful in the item generation process; it also helps to broaden, refine, or verify the existing view of BII (Crocker & Algina, 1986). As noted earlier, the current measure of BII (BIIS-1) has two dimensions, each with four items. The BIIS-1 has relatively low but acceptable score reliability, so using the Spearman-Brown reliability formula, we estimated that we should double the number of items (from 4 to 8 per dimension) to reach a desired internal consistency reliability level of at least .80 (Rosenthal & Rosnow, 1991, p. 48). These computations were done with the assumption that new items would be relevant to BII and would cover more content area based on qualitative data (see below), but they would not be repetitive of existing BIIS-1 items.

We recruited 108 bicultural college students to assist in content domain assessment and item pool generation (Table 1 shows participant characteristics for all phases of the study). Participants completed open-ended questions about their experiences as bicultural individuals. Based on these data, we generated 20 new items covering the existing BII dimensions.

In the next phase, subject-matter experts (SMEs; Crocker & Algina, 1986) evaluated the new item pool, and then the items were pilot tested using the think-aloud method (or retrospective verbal protocol; Sudman, Bradburn, & Schwarz, 1996) on a small sample of undergraduate students. Psychological scaling methods such as this allow SMEs to rate the items for their relevance to the construct being measured. We were interested in how each item was rated by all the raters, not in each rater's responses (i.e., the unit of analysis was the item, not the rater). In addition, pilot testing using the think-aloud method ensures that all items are clear and accurate before collecting validation data on the instrument. Such cognitive interviews have been used in developing and assessing self-report questionnaires to understand how respondents formulate answers and to illuminate problems inherent in the instrument. They also are helpful in examining whether the respondents' understanding of the items match the intention of the test developers (Sudman et al., 1996).

SMEs ( $n = 23$ ) were researchers whose areas of expertise include biculturalism, acculturation, identity, and/or cross-cultural or cultural psychology, who could rate accurately the relevance of each item to the construct and distinguish it from related but distinct constructs (e.g., ethnic identity). We modified the wording of some items according to SME suggestions and comments for use in pilot testing in the next phase. We also added some items based on SME suggestions (total number of items now = 32). Participants in the think-aloud pilot testing were bicultural undergraduate research assistants ( $n = 5$ ). All 32 old and new BII items were administered verbally to the participants. Using feedback from the think-aloud pilot tests, we revised the wording of some BII items. The majority of items were deemed clear and accurate,

<sup>2</sup> The low score reliabilities sometimes obtained with the BIIS-1 subscales may be explained by the ratio between content diversity (high) and subscale length (short, 4 items). When item content within a scale is heterogeneous and the scale is short, the mean inter-item correlation is significantly lowered, leading to a lower alpha (for a discussion of this psychometric issue, see John & Benet-Martínez, 2000).

Table 1  
Participant Demographic Characteristics for All Study Phases

Variable	Item Development	Item Evaluation	Pilot Testing	Validation
Sample size	108	23	5	1049
Percent female	56.70	73.91	100.00	59.70
Mean age	19.34	—	21.00	19.34
Age range (%)				
18 to 30 years	99.00	52.17	100.00	99.80
41 to 50 years	.00	8.70	.00	.20
51 to 60 years	.00	.00	.00	.00
61 years or older	.00	4.35	.00	.00
Ethnicity (%)				
African American	5.05	—	.00	4.67
Asian American	37.37	—	20.00	47.09
European American	3.03	—	20.00	2.96
Latino/a	52.53	—	20.00	26.69
Middle Eastern	—	—	20.00	4.00
Multi-racial/multi-ethnic	—	—	.00	13.35
Native American	.00	—	.00	.10
Other	5.05	—	20.00	1.14
Generation (%)				
First (average years in U.S.)	27.27 (14.34)	—	40.00 (4.5)	35.04 (10.57)
Second	60.61	—	60.00	56.56
Third	4.04	—	.00	4.05
Other	6.06	—	.00	4.35
Median annual household income (\$)	49,000	—	—	60,000
Education (%)				
Some college	100.00	.00	100.00	100.00
Freshmen	10.10	—	.00	30.08
Sophomores	44.44	—	.00	27.66
Juniors	27.27	—	20.00	20.30
Seniors	12.12	—	80.00	21.96
BA/BS/other 4-year degree	.00	26.09	.00	.00
MA/MS/other master's degree	.00	21.74	.00	.00
PhD/other doctoral degree	.00	52.17	.00	.00
Occupation (%)				
Graduate student	—	47.83	—	—
Post-doctoral fellow	—	8.70	—	—
Faculty	—	39.13	—	—
Other	—	4.35	—	—

Note. Some percentages across groups do not sum to 100% due to missing cases.

and they were not modified. Next, the final version of the BIIS-2 after SME ratings and pilot testing were administered to a large sample of bicultural undergraduate students. See supplemental materials for more details about all 3 preliminary phases described above.

**Validation and test-retest stability.** The purposes of this final phase of the study were to examine the measurement model for BII using exploratory and confirmatory techniques, examine score reliability and test-retest stability, and gather evidence of convergent and discriminant validity of BII scores. In addition, we tested structural equation models involving BII as further evidence of validity of score interpretations. To this end, we administered the BIIS-2 along with other measures to a large, ethnically diverse sample of bicultural individuals.

Based on previous research, we hypothesized that a two-factor model, with one factor for *harmony versus conflict* and one for *blendedness versus compartmentalization*, would best fit the data, and that the BIIS-2 would yield reliable and valid scores. We also hypothesized that, like in previous work with BII, cultural *blend- edness versus compartmentalization* would be linked to traditional

acculturation variables (more years in the U.S., higher English language proficiency and use, lower heritage language proficiency and use, stronger U.S. cultural identification, and weaker separation attitudes), greater openness to experience, and fewer acculturation stressors (fewer language barriers and more culturally diverse surroundings; Benet-Martínez & Haritatos, 2005; Miller et al., 2011). Similarly, we predicted that *cultural harmony versus conflict* would be related to lower neuroticism and fewer acculturation stressors (less perceived discrimination, better intercultural relations, fewer language barriers, and more culturally diverse surroundings; Benet-Martínez & Haritatos, 2005; Miller et al., 2011). Furthermore, we hypothesized that cultural harmony would be related to better adjustment (greater well-being, fewer psychological symptoms; Ward, 2008). Lastly, we expected cultural harmony to be positively related to ethnic identity affirmation (i.e., the *affective* aspect of ethnic identity, such as pride about group membership; Lin, 2008) but distinct from the other components of ethnic identity (exploration, resolution; Roberts et al., 1999; Umaña-Taylor, Yazedjian, & Bamaca-Gomez, 2004). This prediction is based on previous research showing an inverse association

Table 2  
 Factor Loadings for the Two-Factor Model of the Bicultural Identity Integration Scale–Version 2 (BIIS-2): Principal Axis Factoring, Promax Rotation

Item	Factor	
	Harmony	Blendedness
1. I find it easy to harmonize _____ and American cultures.	<b>.44</b>	–.20
2. I rarely feel conflicted about being bicultural.	<b>.60</b>	–.02
3. I find it easy to balance both _____ and American cultures.	<b>.60</b>	–.15
4. <i>I do not feel trapped between the _____ and American cultures.</i>	<b>.65</b>	.00
5. I feel torn between _____ and American cultures. (reverse-coded)	<b>.56</b>	.01
6. Being bicultural means having two cultural forces pulling on me at the same time. (reverse-coded)	<b>.66</b>	.10
7. I feel that my _____ and American cultures are incompatible. (reverse-coded)	<b>.56</b>	–.16
8. <i>I feel conflicted between the American and _____ ways of doing things.</i> (reverse-coded)	<b>.62</b>	.06
9. <i>I feel like someone moving between two cultures.</i> (reverse-coded)	<b>.70</b>	.13
10. <i>I feel caught between the _____ and American cultures.</i> (reverse-coded)	<b>.75</b>	.07
11. I cannot ignore the _____ or American side of me.	.07	<b>.57</b>
12. I feel _____ and American at the same time.	–.01	<b>.73</b>
13. I relate better to a combined _____-American culture than to _____ or American culture alone.	.12	<b>.69</b>
14. <i>I feel _____-American.</i>	.05	<b>.78</b>
15. <i>I feel part of a combined culture.</i>	.03	<b>.68</b>
16. I do not blend my _____ and American cultures. (reverse-coded)	–.16	<b>.49</b>
17. <i>I keep _____ and American cultures separate.</i> (reverse-coded)	–.20	<b>.43</b>

Note. *n* = 600 ethnically-diverse college students. Harmony = cultural harmony vs. conflict, Blendedness = cultural blendedness vs. compartmentalization. BIIS-1 items are in *italics*. Boldface indicates factor loadings > .30.

between the affective component of ethnic identity and identity conflict (Lin, 2008). Extending research on BII, we explored associations between the BII dimensions and physical health and healthy behaviors. We had no specific hypotheses about the health domain because previous research in this area has yielded mixed results (Nguyen & Benet-Martínez, 2013).

For the structural equation model, we hypothesized that the current model would largely replicate the model reported in Benet-Martínez and Haritatos (2005; see Figure 4). To expand on previous research on mostly first-generation individuals, we tested the moderating effect of generation status in the structural equation model. In addition, even though the links between BII and broader acculturation and ethnic identity variables (e.g., Ryder, Alden, & Paulhus, 2000) have not been examined previously, based on the findings that cultural blendedness is predicted by traditional acculturation variables, we hypothesized that ethnic identity (total score) and mainstream culture orientation would have positive paths to cultural blendedness. In addition, based on previous findings reporting an inverse association between the affective component of ethnic identity and identity conflict (Lin, 2008), we hypothesized that ethnic identity affirmation would have a positive path to cultural harmony. Furthermore, we hypothesized that cultural harmony, as well as lower neuroticism, would have a positive path to general well-being and negative paths to depression and anxiety (Ward, 2008). Finally, expanding on BII research, we tested paths from BII to physical health and healthy behaviors.

### Method

The study described below was approved by the Institutional Review Board of a large, public university on the West Coast of the U.S. In all parts of the study involving bicultural college students, potential respondents were recruited from the university for participation if they met two criteria: (a) They self-identified as

“bicultural” and (b) if they were born outside the U.S., they had lived in the country of birth *and* in the U.S. for at least 5 years each. The first criterion was used because we were interested in individual differences in bicultural identity negotiation within this group (as noted above), and the second criterion was used to ensure that participants have had sufficient time to familiarize themselves with and internalize both cultures (Benet-Martínez & Haritatos, 2005). In addition, we examined BII in ethnically diverse participant groups because we were interested in (a) how *all* individuals who have internalized two cultures organize and negotiate their dual identities, and (b) extending the findings of past studies on mostly Chinese Americans (see Benet-Martínez & Haritatos, 2005; Benet-Martínez et al., 2002; Hong et al., 2000) to bicultural individuals of diverse ethnic backgrounds.

### Participants and Procedure

Study participants (*n* = 1049) were bicultural individuals attending the same West Coast university as those students in the preliminary phases of our study. Sample demographic characteristics appear in Table 1. Approximately half (59.7%, *n* = 624) were women. The mean age of the sample was 19.3 years, and study participants were relatively evenly distributed across years in school. The majority were Latinos/as (26.7%, *n* = 280) or Asian Americans (47.1%, *n* = 494), and most were either first (35.4%, *n* = 363, mean years in the U.S. = 10.6) or second (56.6%, *n* = 586) generation Americans.

We recruited participants meeting study criteria via an online research management system for the psychology department subject pool. They completed paper-and-pencil versions of all the measures described below. The study took place in a classroom-like setting, and it lasted approximately 50–75 min. Participants completed the study individually or in groups of up to 10 people. A subset of respondents (*n* = 239) voluntarily returned to com-

plete the test–retest portion of the study between 5 and 10 days ( $M = 6.9$ ,  $SD = 0.9$  days) after the first session.

## Measures

Participants completed a questionnaire packet consisting of multiple measures. Of interest to this study were measures of acculturation, bicultural and ethnic identity, personality, psychological and physical well-being, and demographics.

### Acculturation measures.

**Cultural orientations.** The Vancouver Index of Acculturation (VIA; Ryder et al., 2000) consists of 20 items rated on a 9-point Likert-type scale (1 = *strongly disagree* to 9 = *strongly agree*). The VIA assesses the extent to which respondents participate in and identify with their *nondominant/heritage culture* (10 items) and the *dominant/mainstream culture* (10 items). The score for each VIA dimension is obtained by averaging responses; hence, scores range from 1 (low heritage or mainstream culture orientation) to 9 (high heritage or mainstream culture orientation).

**Cultural identification.** Participants rated two separate items assessing their strength of identification with U.S.-American culture and their heritage culture. Each item is rated on a 6-point Likert-type scale (1 = *very weak*, 6 = *very strong*). These items were used in previous BII studies (Benet-Martínez & Haritatos, 2005; Benet-Martínez et al., 2002) and were administered to supplement the VIA in the current study.

**Acculturation attitudes.** The Acculturation Attitudes Measure (Berry, Kim, Power, Young, & Bujaki, 1989) consists of 20 items rated on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). This is a measure of the four acculturation strategies (assimilation, integration/biculturalism, separation, and marginalization) measured across five life domains: *marriage*, *cultural traditions*, *language*, *social activities*, and *friends*. The score for each strategy is obtained by averaging responses; hence, scores range from 1 (low endorsement of a strategy) to 5 (high endorsement of a strategy).

**Acculturation stress.** The Riverside Acculturation Stress Inventory (RASI; Benet-Martínez & Haritatos, 2005; Miller et al., 2011) consists of 15 items rated on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). The RASI assesses acculturation-related challenges in five life domains: *language skills*, *work challenges*, *intercultural relations*, *discrimination*, and *cultural isolation*. The acculturation stress score for each life domain is obtained by averaging responses; hence, scores range from 1 (low acculturation stress in a domain) to 5 (high acculturation stress in a domain).

### Bicultural and ethnic identity measures.

**Bicultural Identity Integration Scale.** The Bicultural Identity Integration Scale–Version 2 (BIIS-2) is the measure to be validated, and it consists of 32 items that assess how bicultural individuals cognitively and affectively organize their two cultural identities. The scale taps *cultural blendedness versus compartmentalization* (13 items) and *cultural harmony versus conflict* (19 items). All items are rated on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). The score for each BII dimension is obtained by averaging responses; hence, scores range from 1 (low on BII dimension) to 5 (high on BII dimension).

**Multigroup Ethnic Identity Measure.** The Multigroup Ethnic Identity Measure (MEIM; Roberts et al., 1999) consists of 12 items

rated on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). The MEIM assesses two components of ethnic identity, *exploration* (exploration of and involvement in one's ethnic group) and *affirmation/belonging* (commitment and sense of belonging to an ethnic group, pride and positive feelings about the group). Scores for each MEIM dimension is obtained by averaging responses; hence, scores range from 1 (low exploration or affirmation/belonging) to 5 (high exploration or affirmation/belonging).

**Ethnic Identity Scale.** The Ethnic Identity Scale (EIS; Umaña-Taylor et al., 2004) consists of 17 items rated on a 4-point Likert-type scale (1 = *does not describe me at all* to 4 = *describes me very well*). The EIS assesses three components of ethnic identity: *exploration* (degree to which one has explored ethnicity), *resolution* (degree to which one has resolved what ethnicity means), and *affirmation* (positive or negative affect associated with that resolution). Scores for each EIS dimension is obtained by averaging responses; hence, scores range from 1 (low exploration, resolution, or affirmation) to 5 (high exploration, resolution, or affirmation). We administered both the EIS and MEIM-R, which measure different components of ethnic identity, to explore associations between BII and these various aspects of ethnic identity.

**Personality.** The Big Five Inventory (BFI; Benet-Martínez & John, 1998) contains 44 short phrases rated on a 5-point Likert-type scale (1 = *disagree strongly* to 5 = *agree strongly*). These items assess the most prototypical traits associated with the Big Five basic personality dimensions (John, 1990): *openness*, *conscientiousness*, *extraversion*, *agreeableness*, and *neuroticism*. The score for each trait is obtained by averaging responses; hence, scores range from 1 (low on a particular trait) to 5 (high on a particular trait).

### Psychological and physical well-being measures.

**Well-being.** The General Well-Being Schedule (GWBS; Dupuy, 1984; Fazio, 1977) consists of 18 items rated on a 6-point or 11-point Likert-type scale with varying response options, assessing perceived positive psychological adjustment during the previous 7 days, including the day of the study. A score for general well-being is obtained by summing responses, and scores range from 0 (lowest well-being) to 110 (highest well-being).

**Distress.** The Symptoms Checklist–Revised (SCL-90R; Derogatis & Lazarus, 1994) is a symptoms inventory that asks respondents to rate their level of distress during the previous 7 days, including the day of the study, on a 5-point Likert-type scale (0 = *not at all* to 4 = *extremely*). We administered the following subscales: *anxiety*, *depression*, and *hostility*. There are 29 items in total in these three subscales. A score for each symptoms subscale is obtained by averaging responses; hence, scores range from 1 (low anxiety, depression, or hostility) to 5 (high anxiety, depression, or hostility).

**Physical and mental health.** The Short Form–12 Health Survey (SF12-H; Ware, Kosinski, & Keller, 1996) consists of 12 items rated on Likert-type scales with varying response options. The SF12-H assesses physical and mental health over the course of the last month to a year. Higher scores indicate higher mental or physical health.

**Demographics.** The demographics questionnaire asked respondents for basic background information, including language use and ability (for English and one other language); sex; age; annual household income; ethnicity; country of birth for respon-

dent and respondent's parents; generation status; and years spent in the U.S. and in other countries.

### Analytic Plan

To summarize, the following analyses were conducted to test our hypotheses. First, to understand the factor structure of the BIIS-2, we conducted parallel analysis with 1,000 randomly generated data sets and, subsequently, exploratory principal axis factoring analysis with promax rotation using a randomly selected subset of 600 participants (note that the larger sample was split into two random subsets for exploratory and confirmatory factor analyses for cross-validation). To verify a two-factor structure for the BIIS-2, we conducted confirmatory factor analyses with robust weighted least squares estimation and categorical factor indicators using the remaining 449 participants, and examined measurement invariance of this structure based on ethnicity and generation status for the largest ethnic (Asian American and Latino/a) and generation (first- and second-generation) groups (as outlined by Millsap & Yun-Tein, 2004). Prior to testing measurement invariance, we conducted separate CFAs for each group to determine whether the two-factor model is acceptable in each group alone (i.e., established that the baseline model is similar across groups). If the two-factor model fit the data, then we consulted the test of configural equivalence (no equality constraints imposed on parameters, two-factor model tested within a multigroup framework) to determine whether the groups have identical factor structures (Model 1). If there was configural equivalence, then we consulted the test of metric equivalence (Model 2: factor loadings constrained, all other parameters freely estimated) to determine whether the groups have equivalent factor loadings. If there was metric equivalence, then we consulted the test of scalar equivalence (Model 3: thresholds also constrained) to determine whether the groups have equivalent thresholds.

For the confirmatory factor analyses, we examined the following fit indices: Comparative Fit Index (or CFI, with values greater than .95 indicating good fit; Hu & Bentler, 1999), Root Mean Square Error of Approximation (or RMSEA, with values less than .08 indicating good fit; MacCallum, Browne, & Sugawara, 1996), and Standardized Root Mean Residual (or SRMR, with values less than .08 indicating good fit; Hu & Bentler, 1999). We did not interpret the  $\chi^2$  goodness-of-fit statistic because it is easily influenced by sample size (Hu & Bentler, 1999). For the measurement invariance analyses, we consulted  $\Delta\chi^2$  (with nonsignificance indicating that the models compared are not different from each other) and the difference in comparative fit index (or  $\Delta$ CFI, with values  $< .01$  indicating that the models compared are not different from each other) at each sequential step of the process (i.e., as we increasingly constrained the measurement model from Model 1 to Model 3). Although a recent analysis suggested that  $\Delta\chi^2$  may be the best choice with robust weighted least squares estimation (Sass, Schmitt, & Marsh, 2014), these researchers also found limitations of all commonly used fit measures including  $\Delta\chi^2$ . Furthermore, they noted that the performance of fit indices for invariance tests with categorical data needs further study. Therefore, we present findings with both  $\Delta\chi^2$  and  $\Delta$ CFI in the results and tables presented below, as suggested by Hirschfeld and von Brachel (2014).

Second, to determine score reliability for the BIIS-2, we conducted internal consistency reliability analysis and test-retest stability analysis. Third, to gather evidence of the convergent and discriminant validity of BIIS-2 scores, we conducted correlation analysis between BIIS-2 and acculturation, bicultural and ethnic identity, personality, and adjustment variables. Fourth, to compare the nomological network of BII for first-versus second-generation participants, we conducted structural equation modeling with maximum likelihood estimation for multiple groups. For these analyses, we used the same fit indices that we used for the confirmatory factor analysis. All confirmatory and structural equation model analyses were conducted using *R* Version 3.3.3 software (R Core Team, 2017) and the *lavaan* (Rosseel, 2012) and *semTools* (sem Tools Contributors, 2016) packages.

## Results

### Factor Structure and Score Reliability

Using the dataset described above, we examined factor structure and score reliability of the BIIS-2 using exploratory and confirmatory methods. First, using a randomly selected subset of 600 participants, we conducted principal axis factoring analysis with promax rotation on the 32 BIIS-2 items. Parallel analysis based on 1,000 randomly generated data sets indicated a maximum of 3 factors (harmony, conflict, and blendedness); however, a two-factor solution made more sense than a three-factor solution (as conflict and harmony can be considered two subfactors of a higher-order dimension). Therefore, we requested and interpreted two factors: harmony (which included conflict items) and blendedness. These two factors had eigenvalues greater than 1.00 and accounted for 38.76% of the cumulative variance explained. We dropped items that had low factor loadings or loaded on both factors, but it was not reasonable (based on the BII conceptual framework) to put them on the higher loading factor.

Next, we conducted principal axis factor analysis with promax rotation on the 17 BIIS-2 items retained from the initial factor analysis. These two factors (*cultural harmony vs. conflict* and *cultural blendedness vs. compartmentalization*) accounted for 47.31% of the cumulative variance explained. The cultural harmony versus conflict factor included 10 items, and the cultural blendedness versus compartmentalization included 7 items. See Table 2 for the final BIIS-2 items and factor loadings.

Third, we tested the fit of this factor structure by conducting confirmatory factor analyses using data from the remaining 449 respondents. Although the CFI value is not ideal, both RMSEA and SRMR suggest that the two-factor model provided a good fit for the data: CFI = .850, RMSEA = .070 (90% CI [.062, .079]), SRMR = .072. See Figure 1 for the two-factor model and standardized parameter estimates. This theorized two-factor model [ $\chi^2(118) = 364.071, p < .0001$ ] fit the data significantly better than a one-factor model [ $\chi^2(119) = 744.589, p < .0001$ ]:  $\Delta\chi^2(1) = 380.518, p < .0001$ . In fact, the one-factor model fit the data poorly: CFI = .619, RMSEA = .112 (90% CI [.104, .120]); SRMR = .119. Therefore, the data suggest that BII comprises two related but still distinct components (cultural harmony vs. conflict and cultural blendedness vs. compartmentalization;  $r = .39$  between latent components;  $r = .30$  between scale scores) as suggested by Benet-Martínez and Haritatos (2005), and it is *not* a



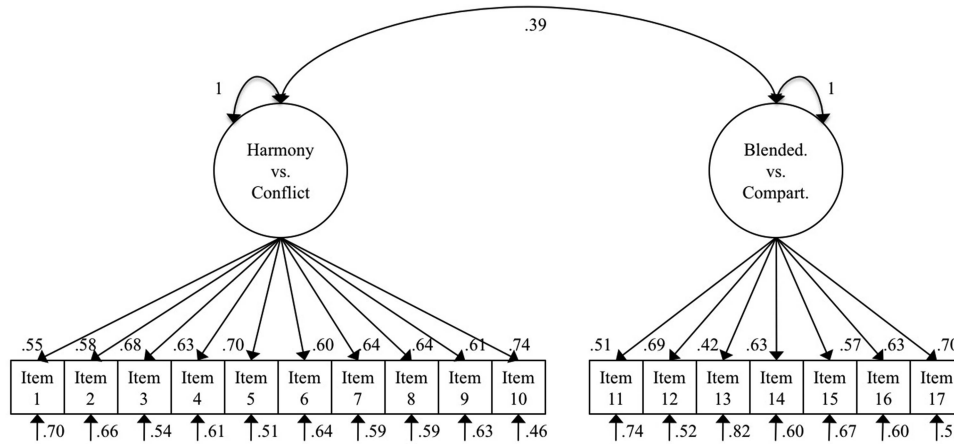


Figure 1. Theorized two-factor CFA model with standardized parameter estimates ( $n = 449$ ).

unitary construct as initially described in Benet-Martínez et al. (2002).

Fourth, we examined structure of the BIIS-2 across ethnic groups (Asian American and Latino/a participants) and generations (first- and second-generation participants). Before doing so, we compared these groups on all measured variables (see Table 3 for group means and difference tests by ethnicity and generation status). For both BIIS-2 subscales, Asian American, Latino/a, and multiracial/ethnic participants had higher scores than the other ethnic groups. African American and European American participants scored higher than Middle Eastern participants on harmony, and African American and Middle Eastern participants scored higher than European American participants on blendedness. Regarding generational status, second-generation participants had higher scores than first-generation participants on both harmony and blendedness. Next, we conducted separate, single-group CFAs for Asian Americans, Latino/as, first-generation participants, and second-generation participants. Overall fit statistics indicated fairly good model fit for the two-factor solution for these groups (see Table 5). Table 4 shows factor loadings by ethnic and generational groups from these analyses. Finally, we conducted tests of measurement invariance of this two-factor model across ethnic and generational groups (see Table 5). All  $\Delta CFI$  values (but only 1 of 4  $\Delta\chi^2$  values) shown in Table 5 indicated that there was measurement invariance across ethnic groups and generation groups: The BIIS-2 items loaded on the same number of factors for these groups (configural equivalence), had equal factor loadings (metric equivalence), and had equal thresholds (scalar equivalence). Thus, we *cautiously* conclude these BIIS-2 items operate similarly for Asian American and Latino/a participants and for first- and second-generation participants.

We also examined score reliability and test-retest stability for the BIIS-2. Both the cultural harmony versus conflict ( $\alpha = .86$ ) and cultural blendedness versus compartmentalization ( $\alpha = .81$ ) subscales yielded reliable scores. Both subscales also had good test-retest stability:  $r_{\text{harmony}} = .77$  and  $r_{\text{blendedness}} = .73$  ( $n = 239$ , range = 5 to 10 days after first session,  $M = 6.9$ ,  $SD = 0.9$  days).

## Convergent and Discriminant Validity of Scores

**Correlations.** We examined convergent and discriminant validity of scores by correlating BIIS-2 scores with acculturation, bicultural and ethnic identity, personality, and adjustment variables (see Table 6). A detailed discussion of all the significant correlations in each domain is beyond the scope of this article and would add redundancy because most of these associations are captured by the structural equation model we report later. However, some patterns are worth noting.<sup>3</sup>

As evidence of convergent validity of scores, cultural harmony had small to moderate positive associations with ethnic identity affirmation (as measured by both the MEIM and the EIS; Lin, 2008) and mental health (higher general well-being, lack of depressive symptoms; Ward, 2008), and moderate to high negative correlations with all the acculturation stressors and with neuroticism (Benet-Martínez & Haritatos, 2005; Miller et al., 2011). It also was negatively associated with anxiety and hostility, but only to a small degree. As evidence of discriminant validity of scores, cultural harmony had zero or weak associations with the personality traits of extraversion, agreeableness, openness, and conscientiousness (Benet-Martínez & Haritatos, 2005), and most traditional acculturation variables (e.g., years in the U.S., language proficiency, cultural identification, cultural orientation, acculturation attitudes; Benet-Martínez & Haritatos, 2005; Benet-Martínez et al., 2002; Miller et al., 2011). However, cultural harmony was unexpectedly related to a higher mainstream culture orientation (small to moderate magnitude). Overall, these findings provide evidence that cultural harmony involves affective elements of bicultural identity and is driven more strongly by contextual acculturative strains.

As evidence of convergent validity of scores, cultural blendedness had moderate correlations with variables denoting greater involvement with and competencies in American culture (e.g.,

<sup>3</sup> Due to the large sample size, which makes even very small correlations significant, we interpret correlations based on effect size rather than significance level. Correlations with at least a small to moderate effect ( $r_s \geq .120$ ) are interpreted as evidence of convergent validity, whereas  $r_s < .120$  are interpreted as evidence of discriminant validity.

Table 3  
Means and Difference Tests of Main Study Variables by Ethnicity and Generation

Measured variables	Scale range	Ethnicity						Generation Status	
		African American (n = 44)	Asian American (n = 459)	European American (n = 29)	Latino/a (n = 266)	Middle Eastern (n = 37)	Multi-racial/ethnic (n = 118)	First (n = 361)	Second (n = 583)
<b>Demographics/Acculturation</b>									
1. % female <sup>1</sup>	1-2	63.27 <sub>ab</sub>	50.92 <sub>a</sub>	64.52 <sub>ab</sub>	75.00 <sub>b</sub>	52.38 <sub>ab</sub>	62.14 <sub>ab</sub>	56.47	60.58
2. Age	open	19.18	19.38	19.26	19.25	19.62	19.29	19.75 <sub>e</sub>	19.09 <sub>f</sub>
3. Median income	open	62,500	70,000 <sub>a</sub>	75,000	40,000 <sub>b</sub>	77,500	70,000 <sub>a</sub>	50,000	60,000
4. Years in U.S. <sup>2</sup>	open	11.32	10.33	9.67	11.65	11.70	11.16	10.57	—
5. English proficiency/use	1-5	4.76 <sub>a</sub>	4.25 <sub>b</sub>	4.39 <sub>bc</sub>	4.41 <sub>c</sub>	4.33 <sub>bc</sub>	4.79 <sub>a</sub>	4.07 <sub>e</sub>	4.54 <sub>f</sub>
6. Other language proficiency/use	1-5	2.49 <sub>ab</sub>	2.98 <sub>a</sub>	2.76 <sub>ab</sub>	3.54 <sub>c</sub>	3.09 <sub>a</sub>	2.40 <sub>b</sub>	3.36 <sub>e</sub>	2.93 <sub>f</sub>
7. U.S/identification	1-6	5.05 <sub>ab</sub>	4.57 <sub>c</sub>	4.57 <sub>ac</sub>	4.62 <sub>ac</sub>	4.67 <sub>abc</sub>	5.15 <sub>b</sub>	4.25 <sub>e</sub>	4.85 <sub>f</sub>
8. Other identification	1-6	4.52 <sub>abcd</sub>	4.65 <sub>a</sub>	4.80 <sub>abcd</sub>	4.95 <sub>bc</sub>	5.08 <sub>c</sub>	4.29 <sub>d</sub>	4.84	4.71
10. Vancouver Index of Acculturation: heritage orientation	1-9	7.47 <sub>ab</sub>	7.16 <sub>a</sub>	7.28 <sub>ab</sub>	7.63 <sub>b</sub>	7.27 <sub>ab</sub>	6.86 <sub>a</sub>	7.37	7.29
11. Vancouver Index of Acculturation: mainstream orientation	1-9	6.93 <sub>ab</sub>	7.03 <sub>a</sub>	7.02 <sub>ab</sub>	7.36 <sub>b</sub>	6.88 <sub>ab</sub>	7.17 <sub>ab</sub>	6.95 <sub>e</sub>	7.24 <sub>f</sub>
<b>Bicultural Identity Integration</b>									
12. Harmony (vs. conflict)	1-5	3.51 <sub>ab</sub>	3.66 <sub>a</sub>	3.63 <sub>ab</sub>	3.69 <sub>a</sub>	3.18 <sub>b</sub>	3.65 <sub>a</sub>	3.57 <sub>e</sub>	3.67 <sub>f</sub>
13. Blendedness (vs. compartmentalization)	1-5	3.81 <sub>ab</sub>	4.00 <sub>a</sub>	3.49 <sub>b</sub>	4.11 <sub>a</sub>	3.80 <sub>ab</sub>	3.94 <sub>a</sub>	3.85 <sub>e</sub>	4.10 <sub>f</sub>
<b>Ethnic Identity</b>									
14. Multigroup Ethnic Identity Measure: ethnic identity (total)	1-5	4.17 <sub>a</sub>	3.86 <sub>b</sub>	4.01 <sub>abc</sub>	3.95 <sub>ab</sub>	3.88 <sub>abc</sub>	3.67 <sub>c</sub>	3.91	3.90
15. Multigroup Ethnic Identity Measure: exploration	1-5	3.98 <sub>a</sub>	3.54 <sub>b</sub>	3.54 <sub>ab</sub>	3.47 <sub>b</sub>	3.64 <sub>ab</sub>	3.38 <sub>b</sub>	3.53	3.55
16. Multigroup Ethnic Identity Measure: affirmation/belonging	1-5	4.31 <sub>ab</sub>	4.08 <sub>b</sub>	4.34 <sub>ab</sub>	4.29 <sub>a</sub>	4.06 <sub>abc</sub>	3.87 <sub>c</sub>	4.18	4.14
17. Ethnic Identity Scale: ethnic identity (total)	0-4	3.56 <sub>ab</sub>	3.37 <sub>a</sub>	3.45 <sub>ab</sub>	3.57 <sub>b</sub>	3.59 <sub>ab</sub>	3.37 <sub>a</sub>	3.46	3.47
18. Ethnic Identity Scale: exploration	0-4	3.37 <sub>ab</sub>	3.15 <sub>a</sub>	3.19 <sub>ab</sub>	3.36 <sub>b</sub>	3.43 <sub>ab</sub>	3.16 <sub>ab</sub>	3.23	3.27
19. Ethnic Identity Scale: affirmation	0-4	3.77 <sub>ab</sub>	3.70 <sub>a</sub>	3.82 <sub>ab</sub>	3.85 <sub>b</sub>	3.79 <sub>ab</sub>	3.68 <sub>ab</sub>	3.76	3.76
20. Ethnic Identity Scale: resolution	0-4	3.67 <sub>a</sub>	3.28 <sub>b</sub>	3.34 <sub>ab</sub>	3.53 <sub>a</sub>	3.55 <sub>ab</sub>	3.24 <sub>b</sub>	3.43	3.38
<b>Acculturation Attitudes</b>									
21. Assimilation	1-5	2.20 <sub>ab</sub>	2.31 <sub>a</sub>	2.46 <sub>a</sub>	2.00 <sub>b</sub>	2.15 <sub>ab</sub>	2.20 <sub>ab</sub>	2.24	2.17
22. Integration	1-5	3.89	4.03	4.01	4.14	3.95	3.99	4.04	4.07
23. Separation	1-5	2.52 <sub>ab</sub>	2.48 <sub>a</sub>	2.37 <sub>abc</sub>	2.24 <sub>b</sub>	2.44 <sub>ab</sub>	1.96 <sub>c</sub>	2.49 <sub>e</sub>	2.30 <sub>f</sub>
24. Marginalization	1-5	1.77 <sub>ab</sub>	1.85 <sub>a</sub>	1.77 <sub>ab</sub>	1.67 <sub>b</sub>	1.65 <sub>ab</sub>	1.82 <sub>ab</sub>	1.81	1.76
<b>Acculturation Stress</b>									
25. Language barriers	1-5	1.32 <sub>a</sub>	1.97 <sub>b</sub>	1.71 <sub>ab</sub>	1.57 <sub>a</sub>	1.64 <sub>ab</sub>	1.43 <sub>a</sub>	2.09 <sub>e</sub>	1.56 <sub>f</sub>
26. Discrimination/prejudice	1-5	3.27 <sub>ab</sub>	3.06 <sub>a</sub>	2.47 <sub>a</sub>	3.31 <sub>b</sub>	3.22 <sub>ab</sub>	3.14 <sub>ab</sub>	2.98 <sub>e</sub>	3.23 <sub>f</sub>
27. Intercultural relations	1-5	2.37	2.55	2.24	2.35	2.76	2.40	2.44	2.52
28. Cultural isolation	1-5	2.83 <sub>a</sub>	2.41 <sub>b</sub>	2.41 <sub>ab</sub>	2.55 <sub>ab</sub>	2.44 <sub>ab</sub>	2.54 <sub>ab</sub>	2.43	2.51
29. Work challenges	1-5	3.36 <sub>ac</sub>	3.25 <sub>a</sub>	2.29 <sub>b</sub>	3.26 <sub>ac</sub>	3.07 <sub>ac</sub>	2.93 <sub>c</sub>	3.25	3.18
<b>Personality</b>									
30. Extraversion	1-5	3.72 <sub>a</sub>	3.27 <sub>b</sub>	3.62 <sub>ab</sub>	3.43 <sub>a</sub>	3.67 <sub>a</sub>	3.47 <sub>ab</sub>	3.34	3.41
31. Agreeableness	1-5	4.00 <sub>abc</sub>	3.73 <sub>ac</sub>	4.01 <sub>abc</sub>	3.96 <sub>b</sub>	3.80 <sub>abc</sub>	3.77 <sub>c</sub>	3.80	3.84
32. Conscientiousness	1-5	3.85 <sub>a</sub>	3.19 <sub>b</sub>	3.49 <sub>abcd</sub>	3.67 <sub>ac</sub>	3.41 <sub>bcd</sub>	3.47 <sub>d</sub>	3.37	3.42
33. Neuroticism	1-5	2.53 <sub>a</sub>	2.97 <sub>b</sub>	2.88 <sub>ab</sub>	2.87 <sub>ab</sub>	2.93 <sub>ab</sub>	2.88 <sub>ab</sub>	2.89	2.91
34. Openness	1-5	3.87 <sub>ac</sub>	3.57 <sub>b</sub>	3.78 <sub>abc</sub>	3.69 <sub>a</sub>	3.71 <sub>abc</sub>	3.85 <sub>c</sub>	3.60 <sub>e</sub>	3.70 <sub>f</sub>
<b>Well-being</b>									
35. General well-being	0-110	76.59	72.83	74.40	74.01	74.70	73.26	74.13	73.14
36. Anxiety	0-4	.40	.66	.53	.62	.71	.63	.64	.63
37. Depression	0-4	.80	.93	.86	.86	.96	1.00	.90	.92
38. Hostility	0-4	.53	.60	.42	.58	.77	.68	.57	.62
<b>Physical Health</b>									
39. Physical health	7-31	25.67	25.95	27.25	26.61	24.40	25.72	26.43	25.98
40. Healthy behaviors	0-74	42.40	39.74	38.00	42.56	42.10	41.34	42.89 <sub>e</sub>	40.26 <sub>f</sub>

Note. Subscript letters a, b, c, and d indicate significant differences among ethnic groups ( $p < .05$ ) based on analyses of variance (ANOVAs) with post-hoc tests (Tukey if there was homogeneity of variance, Dunnett's T3 if there was no homogeneity of variance). Subscript letters e and f indicate significant differences between generations based on independent-samples  $t$  tests ( $p < .05$ ).

<sup>1</sup> Coded as 1 (male) and 2 (female). <sup>2</sup> Years in US is computed for first generation participants only.

Table 4  
Factor Loadings for Two-Factor Model of the Bicultural Identity Integration Scale--Version 2 (BIIS-2): Confirmatory Factor Analysis

Item	Asian Americans (n = 459)	Latino/as (n = 266)	First-Generation (n = 340)	Second-Generation (n = 544)
Cultural harmony vs. conflict				
1. I find it easy to harmonize _____ and American cultures.	.49	.55	.54	.53
2. I rarely feel conflicted about being bicultural.	.52	.68	.58	.64
3. I find it easy to balance both _____ and American cultures.	.65	.70	.65	.65
4. I do not feel trapped between the _____ and American cultures.	.66	.61	.63	.65
5. I feel torn between _____ and American cultures. (reverse-coded)	.62	.55	.63	.57
6. Being bicultural means having two cultural forces pulling on me at the same time. (reverse-coded)	.59	.59	.54	.67
7. I feel that my _____ and American cultures are incompatible. (reverse-coded)	.64	.48	.56	.61
8. I feel conflicted between the American and _____ ways of doing things. (reverse-coded)	.57	.64	.52	.63
9. I feel like someone moving between two cultures. (reverse-coded)	.57	.75	.54	.71
10. I feel caught between the _____ and American cultures. (reverse-coded)	.73	.70	.66	.73
Cultural blendedness vs. compartmentalization				
11. I cannot ignore the _____ or American side of me.	.61	.48	.47	.59
12. I feel _____ and American at the same time.	.72	.71	.68	.71
13. I relate better to a combined _____-American culture than to _____ or American culture alone.	.65	.65	.68	.60
14. I feel _____-American.	.78	.76	.83	.73
15. I feel part of a combined culture.	.63	.66	.71	.56
16. I do not blend my _____ and American cultures. (reverse-coded)	.49	.55	.53	.55
17. I keep _____ and American cultures separate. (reverse-coded)	.45	.51	.46	.50

years in the U.S., English language proficiency and use, U.S. cultural identification, mainstream culture orientation, and fewer language barriers in English), and small to moderate correlations with traditional acculturation variables (e.g., stronger integration attitudes and weaker separation attitudes; Benet-Martínez & Haritatos, 2005; Cheng et al., 2006; Miller et al., 2011). Cultural blendedness, like cultural harmony, also was correlated positively with ethnic affirmation (and notice that it also correlated weakly to moderately with ethnic exploration). Additionally, as expected, cultural blendedness related negatively to stresses in the linguistic domain, but had weaker than expected links with (low) cultural isolation and openness to experience (Benet-Martínez & Haritatos,

2005). Supporting our discriminant validity hypotheses, and unlike cultural harmony, cultural blendedness was weakly or not related at all to affective variables (e.g., general well-being, anxiety, depression, and hostility; Benet-Martínez & Haritatos, 2005) and contextual acculturation stressors (e.g., perceived discrimination, problematic intercultural relations, and work challenges; Benet-Martínez & Haritatos, 2005; Miller et al., 2011). This suggests that engagement with American culture and supporting an integrative acculturation strategy are important to forming a combined, blended bicultural identity, which in turn is not linked to either psychological adjustment variables or contextual pressures beyond the linguistic ones.

Table 5  
Tests of Measurement Invariance of BIIS-2 Across Ethnic Groups and Generations

Grouping	$\chi^2$	df	p	CFI	RMSEA [90% CI]	SRMR			
Ethnicity									
Asian American alone (n = 456)	318.453	118	<.0001	.877	.061 [.053, .069]	.064			
Latino alone (n = 265)	261.154	118	<.0001	.853	.068 [.057, .079]	.079			
Generation Status									
First-generation alone (n = 338)	286.638	118	<.0001	.855	.065 [.056, .075]	.073			
Second-generation alone (n = 540)	413.426	118	<.0001	.868	.068 [.061, .075]	.067			
		Ethnicity			Generation Status				
Model	$\chi^2$	df	p	CFI	$\chi^2$	df	p	CFI	
(M1) Configural invariance	479.81	236	<.0001	.871	581.12	236	<.0001	.868	
(M2) Metric (loadings) invariance	527.99	251	<.0001	.878	618.77	251	<.0001	.883	
(M3) Scalar (thresholds) invariance	558.66	266	<.0001	.870	638.52	266	<.0001	.880	
		$\Delta\chi^2$	$\Delta df$	p	$\Delta CFI$	$\Delta\chi^2$	$\Delta df$	p	$\Delta CFI$
Model 2 – Model 1		48.18	15	<.0001	.007	33.65	15	.0038	.001
Model 3 – Model 2		30.67	15	.001	.008	19.75	15	.1817	.004

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Table 6  
Pearson Correlation Coefficients Between BIIS-2 Subscales and Other Measures

Measure	BIIS-2 subscale	
	Harmony (vs. conflict)	Blendedness (vs. compartmentalization)
Acculturation		
Years in U.S. <sup>a</sup>	.11*	.19**
English proficiency/use	.19**	.24**
Other language proficiency/use	-.09**	-.03
U.S. identification	.17**	.26**
Other identification	-.0004	.10**
VIA heritage orientation	.09**	.24**
VIA mainstream orientation	.21**	.39**
Ethnic Identity		
MEIM ethnic identity (total)	.07*	.22**
MEIM exploration	-.10**	.15**
MEIM affirmation/belonging	.20**	.25**
EIS ethnic identity (total)	.12**	.28**
EIS exploration	-.01	.22**
EIS affirmation	.20**	.32**
EIS resolution	.15**	.12**
Acculturation Attitudes		
Assimilation	-.07*	-.20**
Integration	.05	.26**
Separation	-.16**	-.19**
Marginalization	-.10**	-.12**
Acculturation Stress		
Language barriers	-.24**	-.21**
Discrimination/prejudice	-.27**	.02
Intercultural relations	-.41**	-.09**
Cultural isolation	-.27**	-.12**
Work challenges	-.33**	-.01
Personality		
Extraversion	.11**	.13**
Agreeableness	.13**	.13**
Conscientiousness	.08*	.05
Neuroticism	-.22**	-.03
Openness	.04	.13**
Mental Health		
General well-being	.21**	.10**
Anxiety symptoms	-.16**	-.06*
Depression symptoms	-.23**	-.06*
Hostility symptoms	-.14**	-.04
Physical Health		
Physical health	.10	-.02
Healthy behaviors	-.01	-.09

Note. VIA = Vancouver Index of Acculturation; MEIM = Multigroup Ethnic Identity Measure; EIS = Ethnic Identity Scale. *N*s ranged from 1012 to 1041, with the following exceptions: (a) years in U.S. (*N* = 366) because it was computed for first-generation participants only, (b) U.S. identification (*N* = 942) and other identification (*N* = 972) because these were from the prescreen survey, (c) EIS (*N*s range from 616 to 624) because it was added to the survey packet after data collection had begun, and (d) physical and behavioral health (*N* = 235) because they were added to the survey packet toward the end of data collection.

\* *p* < .05. \*\* *p* < .01.

<sup>a</sup> Years in U.S. is computed for first-generation participants only.

Finally, both BII dimensions had negligible correlations with the physical health variables, suggesting that variations in bicultural identity structure as measured by the BIIS-2 are not relevant in understanding self-reported physical (vs. psychological) well-being. In summary, the above findings suggest that the BIIS-2 yields reliable and valid scores for this ethnically diverse sample of college students from different generation groups, and that cultural harmony and cultural blendedness are distinct components of BII with different nomological networks.

**Structural equation models.** As further evidence of validity of score interpretations and to streamline the network of associa-

tions discussed above, we conducted structural equation modeling with the hypothesized predictors and outcomes of BII (based on the model reported by Benet-Martínez and Haritatos [2005; see Figure 4] and on BII theory). We developed an initial model with mental and physical health predicted by both cultural harmony versus conflict and cultural blendedness versus compartmentalization, which in turn are predicted by proximal psychological factors (e.g., acculturation stress, traditional acculturation variables) and more distal or stable psychological variables (e.g., personality). Due to the large number of variables included in the initial model, we consulted the correlation table (available from the first author

upon request) to simplify and streamline the model [that is, only exogenous variables with at least small to moderate correlations (i.e.,  $r_s \geq .120$ ) to endogenous variables were included].

The structural equation model, conducted with the pooled data ( $n = 1049$ ), is shown in Figure 2 with standardized parameters. This model fit the data well: RMSEA = .058 (90% CI [.055, .062]); SRMR = .069. For reasons discussed earlier, we did not interpret chi-square:  $\chi^2[292] = 1,175.410, p < .0001$ . Furthermore, we did not interpret CFI (of .870) because it is an underestimation when the RMSEA of the null model is less than .158 (in our case, RMSEA = .154 and  $\chi^2_{null}[323] = 7,129.035, p < .0001$ ; Kenny, 2015).

**Structural equation model by generation status.**

Researchers have documented generational differences in acculturation (e.g., Padilla, 1994; Tsai, Ying, & Lee, 2000) and identity (e.g., Cuéllar, Nyberg, Maldonado, & Roberts, 1997; Wiley, Perkins, & Deaux, 2008), but the model reported by Benet-Martínez and Haritatos (2005) was based on first-generation bicultural individuals only. Therefore, we conducted multiple group analyses to compare the structural equation model for first-versus second-generation individuals to better understand BII for these groups. Specifically, we placed equality constraints on the structural model. This model fit the data well (RMSEA = .060 (90% CI [.056, .064]); SRMR = .073), and all paths were significant for

both groups, suggesting that there is no moderating effect of generation status on the structural model. (For reasons discussed earlier [e.g., RMSEA of null model = .155], we did not interpret other fit indices:  $\chi^2[597] = 1,459.578, p < .0001$ ; CFI = .863.) However, this constrained model was significantly different from the unconstrained model (RMSEA = .060 (90% CI [.056, .064]); SRMR = .071;  $\chi^2[584] = 1,436.972, p < .0001$ ; CFI = .865,  $\Delta\chi^2[13] = 22.606, p = .05$ ).

A comparison of the unconstrained models for first- and second-generation bicultural individuals indicated a couple meaningful differences. Whereas the discrimination domain of acculturation stress predicted lower harmony for second-generation bicultural individuals ( $\beta = -.19, p < .0001$ ), it was not predictive of harmony for first-generation bicultural individuals ( $\beta = -.04, p = .46$ ). In other words, associations between acculturation stress and BII vary by generation status. Furthermore, ethnic identity significantly predicted greater blendedness for second- ( $\beta = .25, p < .0001$ ) but not for first-generation bicultural individuals ( $\beta = .004, p = .95$ ). In other words, ethnic identity seems to play a role in BII for second-generation bicultural individuals, but it is less important to the cultural blendedness of first-generation bicultural individuals. Interestingly, neuroticism predicted lower harmony for first- ( $\beta = -.14, p = .02$ ) but not for second-generation bicultural individuals ( $\beta = -.08, p = .06$ ), and harmony predicted lower depressive symptoms for second- ( $\beta = -.19, p < .001$ ) but not for first-generation bicultural individuals ( $\beta = -.08, p = .16$ ). This suggests that harmony is associated with both greater positive adjustment and lower negative adjustment for second-generation bicultural individuals, but it is only associated with greater positive adjustment (i.e., general well-being) and not lower negative adjustment (i.e., depressive symptoms) for first-generation bicultural individuals.

**Discussion**

In the study reported above, we sought to refine the measurement of individual differences in Bicultural Identity Integration (BII) and gather evidence of construct validity of scores in ethnically diverse samples of different generation groups. In the first phase of our study, we examined open-ended responses about the overall bicultural experience, which were coded for BII themes of *cultural blendedness versus compartmentalization* and *cultural harmony versus conflict*. Using these qualitative data, we generated new BII items, and then asked subject matter experts (SMEs) to rate their relevance to BII in the next phase. Based on SME feedback, we revised the new BII items, and then pilot tested them using the think-aloud method on a small sample of bicultural students in the second phase of our study. These think-aloud tests were used to ensure that all items were clear and accurate before collecting validation data on the BIIS-2 in the main part of our study.

Based on exploratory factor analyses, we identified the final 17 items of the BIIS-2. These items comprised two factors, corresponding to hypothesized BII dimensions of *cultural blendedness versus compartmentalization* and *cultural harmony versus conflict*. Confirmatory factor analyses verified that BII is better described with these two factors than as a unitary construct. Furthermore, multigroup confirmatory factor analyses indicated that BII is operationalized similarly and that the measurement model seems to be consistent or invariant across two ethnic groups and two generation groups. In other words, we can be fairly confident that any

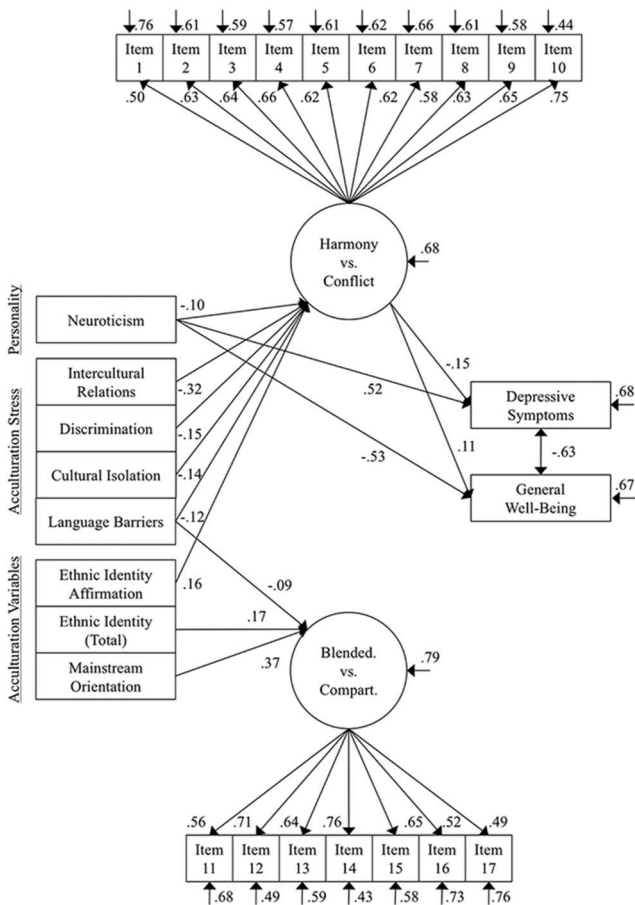


Figure 2. Structural equation model with standardized coefficients.

observed mean differences across ethnic and generation groups on the BIIS-2 can be interpreted as true group differences on cultural harmony versus conflict and cultural blendedness versus compartmentalization. For instance, second-generation respondents reported more perceived bicultural harmony and bicultural blendedness as compared to first-generation respondents.

With regard to the two dimensions of BII, both the cultural blendedness versus compartmentalization and cultural harmony versus conflict subscales yielded reliable and stable scores. Major findings from the BIIS-1 study (Benet-Martínez & Haritatos, 2005) were replicated in this study. BII cultural blendedness versus compartmentalization and cultural harmony versus conflict were associated with acculturation variables, acculturation stress, personality, and psychological adjustment in meaningful and generally expected ways. Specifically, lower acculturation stress, greater ethnic identity affirmation, and lower neuroticism predicted greater cultural harmony, which in turn predicted greater psychological adjustment, and a variety of acculturation variables predicted cultural blendedness. In addition, we extended previous work on BII by examining this construct in relation to ethnic identity, by using a full measure of acculturation to assess cultural orientations, by measuring psychological distress as well as well-being, and by examining physical health and health behaviors. Overall, these results provide evidence that we have developed a longer, more comprehensive measure of the two BII dimensions that yields more reliable scores. In addition, BII theory and its nomological network has been confirmed and expanded in samples of Asian Americans and Latinos and also for first- and second-generation bicultural individuals.

The major findings of our study provide evidence that the two dimensions of BII are related but conceptually and psychometrically distinct, and this holds true across two ethnic groups and two generational groups. In other words, the feelings associated with being bicultural (cultural harmony vs. conflict) are relatively independent from the ways in which bicultural individuals perceive and organize their cultures (cultural blendedness vs. compartmentalization). For example, a bicultural individual may perceive conflict between her cultures and at the same time blend those cultures in her everyday life (e.g., Chicano culture is a unique blend of Mexican and American cultures, but this blend also might bring about awareness of important differences and clashes between these two cultures). Alternatively, another bicultural individual may perceive harmony and compatibility between his two cultures but keep them separated in everyday life, similarly to someone who separates his professional and parental identities without perceiving conflict between these identities.

The results also confirm that the two BII dimensions have different antecedents and consequences. The nomological network of cultural harmony versus conflict in this sample corroborates previous findings that this is the more affective dimension of bicultural identity negotiation, and it is driven more strongly by contextual pressures and affect-relevant personality traits (i.e., lower neuroticism). Individuals high on cultural harmony also tend to have stronger feelings of belonging and positive affect toward their ethnic groups, and perceive fewer stressors associated with the acculturation process. Not surprisingly, this affective dimension of BII is also associated with greater well-being and lower psychological distress. On the other hand, cultural blendedness versus compartmentalization seems to be the more performance-

related and cognitive aspect of bicultural identity negotiation based on its nomological network. Individuals high on cultural blendedness, regardless of their level of ethnic orientation, also tend to be more oriented toward and competent in the dominant culture: They have spent more time in the U.S. (if they are immigrants), have higher English proficiency and use the English language more often with fewer language barriers (although note that this was true for the entire sample but not when examined separately for first- and second-generation bicultural individuals), are more identified with American culture, and are more oriented toward American culture overall. These results thus suggest that higher exposure to and comfort with the English language and American culture facilitate the formation of a combined identity. Although individuals higher on blendedness tend to be those who, regardless of their degree of ethnic orientation, are also more "Americanized," it is worth noting that all participants in our studies self-identified as "bicultural," as evidenced in mean scores on cultural identification and cultural orientations (see Table 3). This speaks to our claim that BII is a meaningful individual difference construct that captures how bicultural individuals affectively and cognitively organize their dual identities.

According to structural equation model findings using data from the entire sample, when bicultural individuals do not experience acculturation-related strain in their environment (e.g., in their relations with others, due to their language skills), they also seem not to perceive identity-related cultural conflict within themselves. However, regardless of situational factors, there are individuals who are predisposed to perceive cultural conflict or are sensitive to these conflicts, due to their neurotic personality. The perception of cultural harmony versus conflict has important implications for bicultural individuals' mental health because it is linked to greater well-being and lower depression. In terms of cultural blendedness, our results support previous findings on the association between cultural blendedness and traditional acculturation variables (Benet-Martínez & Haritatos, 2005). Cultural blendedness is predicted by the strength of both ethnic identity and a mainstream culture orientation. To summarize, in addition to partially replicating Benet-Martínez and Haritatos's (2005) path model with a much larger and ethnically diverse sample, we have expanded on this model by showing the role of both ethnic identity and mainstream culture orientation in predicting BII, and the small but robust and unique role of cultural harmony versus conflict in predicting psychological well-being and fewer depressive symptoms, even after controlling for neuroticism.

Notably, we shed light on the dynamics of biculturalism for first-versus second-generation bicultural individuals by presenting multiple group analyses by generation status. Because second-generation individuals were reared in dominant mainstream society, biculturalism for this group is likely to be determined by identification with their heritage culture (Tsai et al., 2000). This difference in the mechanisms of biculturalism is reflected in the results of the multiple group analyses. For example, cultural blendedness is predicted by ethnic identity for second-generation bicultural individuals, but not for first-generation bicultural individuals. On the other hand, cultural harmony is predicted by neuroticism for first-generation bicultural individuals, but not for second-generation bicultural individuals. Furthermore, first- and second-generation bicultural individuals may experience different acculturation stressors (e.g., greater perceived discrimination for

second-generation individuals); therefore, it seems that different domains of acculturation stress predict BII for these two groups. Specifically for second- (but not for first-) generation bicultural individuals, discrimination predicts harmony, supporting the idea that second-generation individuals may be more aware of and sensitive to intergroup concerns such as race-based discrimination (Yoo, Gee, & Takeuchi, 2009).

### Limitations and Future Directions

There are several limitations in this project. First, concerns about sample diversity must be addressed. All of our samples (except for SMEs in a preliminary phase of item evaluation) lack diversity in terms of age and education. However, they were highly diverse in terms of ethnicity, especially in the large validation sample. Traditionally, construct validation studies are conducted with one homogenous sample, and then the factor structure and convergent and discriminant validity associations found with that sample are tested on another homogenous sample, and so on (Crocker & Algina, 1986). Consistent with this tradition, researchers and clinicians can be confident in the reliability and validity of scale scores when administering the BIIS-2 to college samples. However, they should be cautious about interpretations of scores for other age and education groups, without further validation. Future studies should be done with community samples to explore the generalizability of these findings to older and noncollege attending individuals, who are likely to experience different acculturation stressors and may have different acculturation attitudes, which may lead to different ways of negotiating two cultural identities. On the other end of the spectrum, the benefits of using an ethnically diverse sample outweighed the potential psychometric problems associated with it. This ethnically diverse sample of bicultural individuals allowed us to examine how a wide range of individuals who have internalized two cultures perceive, organize, and negotiate their dual identities. In addition, it allowed us to perform analyses separately for major ethnic and generation groups to examine possible group differences in the factor structure of the BIIS-2. In balancing these various concerns about sample diversity, we chose to study ethnically diverse bicultural college students as a preliminary step in advancing the measurement of bicultural identity negotiation.

Second, it is important to note that the processes proposed in Figure 2, like most psychological processes, occur over time and probably include bidirectional effects. The correlational and cross-sectional nature of our data limits our ability to be conclusive about the direction of effects in our model. It is possible that the direction of effects involved in negotiating bicultural identities may actually change over an individual's life course. For instance, it may be that, over time, once an individual's bicultural identity and personality become more stable in middle and late adulthood, variations in cultural harmony and blendedness may come to impact acculturation attitudes and behaviors and the experience of acculturation stress, instead of the other way around. The changing nature of the acculturation experience provides an ideal context for future longitudinal studies that could examine how variations in BII, acculturation (acculturation strategies and acculturation stress), and personality impact the links among these variables and their impact on adjustment outcomes at different times through life (see Fuligni, 2001; Knight et al., 2009; Matsunaga, Hecht, Elek, &

Ndiaye, 2010; Schwartz et al., 2015, for studies where acculturation is examined as a longitudinal trajectory of cultural adaptation and where multiple trajectories of cultural adaptation are identified). Such studies would also allow for an examination of BII among samples of biculturals younger and older than those in the current study.

### Implications

In terms of measurement and application, this longer BIIS-2 measure, which generates more reliable and valid scores, strikes a balance between comprehensively covering the content domain and being brief enough so that it is still practical and feasible to administer. Because most individuals undergoing acculturation use the integration/biculturalism strategy, whenever acculturation is measured, BII also should be measured to understand meaningful and consequential variations among bicultural individuals. Furthermore, researchers can use the BIIS-2 with confidence because it has demonstrated evidence of score reliability and validity of score interpretations for ethnically diverse bicultural college students. Finally, researchers can use the results in our studies to guide their own studies and to determine the expected BII structure and associations. Given the growing volume of research on this construct (1280 search results or "hits" in Google Scholar at the time of writing this article), we hope this more complete instrument that yields more reliable BII scores becomes a welcome assessment tool among researchers.

In terms of bicultural identity theory, the findings from our studies underscore the need for researchers to move beyond the four widely used acculturation strategies, as most individuals undergoing acculturation self-identify as bicultural or integrated. Within the diversity and variations among these bicultural individuals lies an interesting opportunity to understand the affective, behavioral, and cognitive implications of the acculturation process. In addition, our findings extend the BII framework in an ethnically diverse sample of different generational groups. Not only is the operationalization of BII similar across groups, there are other important similarities across groups that speak to the underlying acculturation process: personality and social situations (acculturation and acculturative stress variables) influence bicultural identity variations (BII), which in turn influences adjustment (well-being and distress). However, there also are notable group differences that speak to the power of personality as well as lived experiences: Acculturative stress influences psychological adjustment through the perception of cultural conflict for second-generation bicultural individuals, but for immigrants, adjustment is predicted solely by personality (i.e., neuroticism), not by acculturative stress or BII (although see Chen et al., 2008). Perhaps immigrants have, in addition to different acculturation pressures and affordances due to their migratory history, different personalities and motivations than other acculturating individuals (Boneva & Frieze, 2001), which in turn leads them to have different expectations than their American-born counterparts. These expectations may effectively buffer them from experiencing maladjustment when they encounter acculturative stress. Alternatively, unlike second-generation biculturals who more likely have early socialization on the task of managing two cultural orientations, first-generation biculturals may be more prone to ruminate over this process and internalize its possible challenges. In other words,

the early dual cultural socialization experiences of second-generation biculturals may play a protective role for them in the acculturation process. These interesting group differences should be tested in future research to further elucidate the processes and consequences of integrating cultural identities, so that we may gain a better understanding of what it means to be bicultural in today's increasingly interconnected world.

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