Different but not at odds: Dialectical thinking moderates the association between bicultural compartmentalization and adjustment

Nathan Lieng [a,*], Richard Chang [b], Angela-MinhTu D. Nguyen [b,**], Que-Lam Huynh [a]

[a] *Department of Psychology, California State University, Northridge, CA, United States*
[b] *Department of Psychology, California State University, Fullerton, CA, United States*

A B S T R A C T

Extant research consistently demonstrates that bicultural harmony (or the perception that one's two cultures are compatible) is linked to better psychological adjustment, whereas bicultural compartmentalization (or the perception of separation between one's two cultures) is not. However, we question whether the compartmentalization-adjustment association is null for everyone, and specifically, whether high compartmentalization (i.e., low blendedness) is ever good for adjustment. To examine the boundary conditions of these previous findings, we proposed that dialectical thinking (or the tolerance for psychological contradictions) is a potential moderator of the compartmentalization-adjustment association. With data from 795 self-identified bicultural/multicultural individuals from a large U.S.-American university, we found a significant moderating effect of dialectical thinking on the compartmentalization-adjustment association, such that the null relationship between compartmentalization and adjustment was evident for only biculturals with low levels of dialectical thinking. Interestingly, for biculturals with high levels of dialectical thinking, compartmentalization significantly predicted higher psychological adjustment. In other words, for biculturals who tend to think dialectically, perceiving their cultural identities as more compartmentalized was linked to better psychological adjustment. These findings suggest that the association between compartmentalization and adjustment may depend on moderating factors, such as dialectical thinking. We discuss further theoretical implications and future possibilities in biculturalism research.

"I fully accepted that in the aftermath of the Vietnam war, the two countries are no longer separable for me. The ocean had become a nuisance in my imagination. California (where I spent the bulk of my American life) and Vietnam (my once lost homeland) had both deeply intertwined themselves, fusing, changing, melding, battling for my soul. They offer no final resolution.

One learns to see the many dimensions of the world simultaneously. One refuses the singular narrative, marrying instead ideas and languages, living with many reference points. To return, one goes forward. One marries opposed ideas and creates points of synthesis. One hears a new symphony over the cacophony. One commits all to memories. One is open to the flux, to change." – Andrew Lam (2018)

As a result of economic and political instability, and the developing hazard concerns over environmental and climate change, people worldwide continue to seek relocation and/or are involuntarily displaced from their home countries, like in the quote above by bicultural author, Andrew Lam (2018). The United States is by far the country with the largest migrant population (Pew Research Center, 2016). In 2018, the foreign-born (first-generation American) population accounted for 14.1% of the nation at 44.8 million people (Pew Research Center, 2020). Additionally, by 2018, U.S.-born children of migrants (second-generation Americans) comprised another 12.3 % of the nation's population (Pew Research Center, 2020). Demographers project that by 2050, migrants and their children will make up roughly 40 % of the U.S. population (Pew Research Center, 2008). Clearly, U.S.-born children and their migrant parents are an integral part of the nation and carry with them their unique cultural backgrounds (e.g., cuisine, language, customs, values, beliefs). They are tasked with acculturating into the dominant U.S.-American culture while also maintaining their ethnic or heritage cultures (Berry, 1997). However, as Lam describes in the introductory quote, negotiating two distinct cultural identities can be rather challenging. For example, in what context is it appropriate to combine the two cultural identities, and in what context is it better to separate them? Indeed, studies have found that stress associated with the acculturation process is linked with poorer psychological adjustment (Miller et al., 2011; Taušová et al., 2019; Torres, 2010). Given the rapid growth of migrant populations across the globe, it is imperative that researchers, practitioners, and policy makers continue to improve their understanding of the biculturalism process, including the variables associated with better adjustment for this population.

Individual differences in biculturalism

Bicultural individuals are those who have been exposed to *and* have internalized two cultures (Hong et al., 2000; Nguyen & Benet-Martínez, 2013). For example, Lao refugees and their U.S.-born children are both bicultural because of the interplay between their ethnic heritage culture and the dominant American culture; however, they may be bicultural in different ways. These individual differences within biculturalism can be understood using the framework of bicultural identity integration or BII (Benet-Martínez & Haritatos, 2005; Cheng et al., 2014; Huynh et al., 2018), which is comprised of two independent components: 1) harmony (vs. conflict) or the extent to which the cultures are perceived as compatible (vs. clashing), and 2) blendedness (vs. compartmentalization) or how much an individual combines (vs. separates) their two cultures.

Harmony (vs. conflict) is the BII component that explains how a bicultural individual feels about their cultural identities in terms of the perceived compatibility or clash between those two cultures (Benet-Martínez & Haritatos, 2005; Cheng et al., 2014; Huynh et al., 2018). It has shown consistent associations with lower acculturative stress factors, such as discrimination (Amini & Nguyen, 2021; Benet-Martínez & Haritatos, 2005; Huynh et al., 2018; Lin, 2008; Miller et al., 2011), language barriers (Benet-Martínez & Haritatos, 2005; Huynh et al., 2018; Lin, 2008; Miller et al., 2011), and troubled intercultural relations (Benet-Martínez & Haritatos, 2005; Huynh et al., 2018; Miller et al., 2011); lower depression and anxiety symptoms (Amini & Nguyen, 2021; Huynh et al., 2018; Miller et al., 2011; Schwartz et al., 2019; Tikhonov et al., 2019); and greater well-being (Huynh et al., 2018; Schwartz et al., 2019). Thus, it is clear that viewing one's cultural identities as compatible (i.e., having high levels of harmony) is associated with better psychological adjustment for bicultural individuals.

Blendedness (vs. compartmentalization) is the BII component that captures how a bicultural individual organizes or structures their cultural identities (i.e., the perceived distance or overlap between the internalized cultures; Benet-Martínez & Haritatos, 2005; Cheng et al., 2014; Huynh et al., 2018). As such, an individual can range on the spectrum of identifying with a combined culture (e.g., blendedness: "I feel Mexican and American at the same time") to identifying with two distinct cultures (e.g., compartmentalization: "I keep Mexican and American cultures separate"). Blendedness is associated with greater creativity (Cheng et al., 2008; Saad et al., 2013) and greater perceived overlap between oneself and one's in-group members (Miramontez et al., 2008). Additionally, higher blendedness is associated with being more accepting of others who are unlike oneself (Huff, Lee, & Hong, 2017), being able to relate more with majority-group members (Huff et al., 2020), and having social networks that are culturally diverse (Repke & Benet-Martínez, 2018). In a sample of Asian American undergraduate students, one's blendedness level predicted how one perceived other biculturals to organize their cultural identities (i.e., implicit biculturalism theories), such that those with a blended identity (i.e., high blendedness) thought others also mixed their cultural identities, whereas those with a compartmentalized identity (i.e., low blendedness) thought others also kept their cultural identities separated (Nguyen & Rule, 2020). However, blendedness was unrelated or weakly associated with psychological adjustment (Huynh et al., 2018; Miller et al., 2011; Tikhonov et al., 2019).

Despite heterogeneity in the biculturalism experience, little is known about moderating variables that might influence the relation between blendedness (vs. compartmentalization) and psychological adjustment. Biculturalism research has primarily framed blendedness as a necessity for successful bicultural integration (Amiot et al., 2007). This begs the question: Is compartmentalization ever psychologically adaptive or advantageous for one's well-being, perhaps for some people in some contexts? For example, for those who think dialectically (i.e., people who have high tolerance for inconsistencies or contradictions; Peng & Nisbett, 1999; Spencer-Rodgers et al., 2004), compartmentalizing their cultures may be a desirable choice with positive outcomes, such as better adjustment. It may be the case that integrating their ethnic and dominant culture without necessarily needing to combine them (i.e., via compartmentalization) is associated with better psychological adjustment for dialectical thinkers due to their ability to appreciate different perspectives. Therefore, the goal of the current study was to test the boundary conditions of the compartmentalization-adjustment

association by examining the potential moderating effect of dialectical thinking. Due to our focus on compartmentalization (vs. blendedness) in this paper, we will refer to low blendedness as compartmentalization hereafter.

Theoretical model

As mentioned above, extant research on BII consistently has found significant, positive, and small-moderate associations between bicultural harmony and psychological adjustment (Amini & Nguyen, 2021; Huynh et al., 2018; Miller et al., 2011; Schwartz et al., 2019; Tikhonov et al., 2019), but usually non-significant or very weak correlations between bicultural compartmentalization and psychological adjustment (Huynh et al., 2018; Miller et al., 2011; Tikhonov et al., 2019). For example, fluctuations in an alternating (compartmentalized) identity across time were not related to mental distress (Schwartz et al., 2019). Interestingly, in a small sample of 22 undergraduate students, compartmentalization was linked to lower well-being (as operationalized by narrative coherence; Yampolsky, Amiot, & de la Sablonnière, 2013). Thus, we postulate that moderating factors, such as dialectical thinking, can help elucidate these inconsistencies.

To do so, we draw upon conceptual work by Huynh et al. (2011). In their model regarding the development of an integrated bicultural identity, they proposed that compartmentalization (low blendedness) is associated with better psychological outcomes for some groups, whereas blendedness (low compartmentalization) is associated with better psychological outcomes for other groups. They proposed that the direction of the compartmentalization-adjustment association depends on the relative effectiveness of compartmentalization vs. blendedness as a strategy for integrating two cultural identities and resolving identity conflict. For instance, a Mexican American may experience identity conflict due to differences between the Mexican value of familism (high regard for the family unit; Valdivieso-Mora et al., 2016) and the U.S.-American value of individualism (emphasis on the self and one's autonomy). They can develop an integrated identity, resolve conflict, and be well-adjusted by either fusing parts of their Mexican and American identity together (i.e., blendedness) or by keeping their Mexican and American identities separate (i.e., compartmentalization). It is possible that dialectical thinkers belong to the latter group. Because they are used to dealing with change, transitions, and inconsistencies (Peng & Nisbett, 1999), compartmentalization may be an effective and viable strategy for them and thus, is associated with better adjustment for this group. It is perhaps this dialectical thinking to which Lam (2018) was alluding in the opening quote: "One marries opposed ideas […] One hears a new symphony over the cacophony."

The role of dialectical thinking

Dialectical thinking, or the tolerance or acceptance of psychological contradictions (e.g., good and evil, masculinity and femininity, yin and yang; Peng & Nisbett, 1999), is more prominent in East Asian cultures and differs from Western-style synthetic thinking (e.g., A is equal to A, but A cannot be equal to B). Dialectical thinking contains three defining principles (Peng & Nisbett, 1999): 1) the principle of change, where everything is constantly changing, 2) the principle of contradiction, where reality is full of contradictions that exist in harmony, and 3) the principle of holism, where everything is connected to each other and to a whole. For example, dialectical thinkers (Chinese international students) were more likely to compromise or see a middle ground when presented with two different sides of an argument than White American students (Peng & Nisbett, 1999; Spencer-Rodgers et al., 2004). However, we should note that one style of thinking is not preferred over the other; each style of thinking can have its own strengths and weaknesses (Peng & Nisbett, 1999; Spencer-Rodgers et al., 2004).

In Western psychology, a consistent self-concept (i.e., a consistent personal identity across contexts) is considered a crucial aspect of psychological adjustment (Erikson, 1950; Spencer-Rodgers et al., 2010) and has led researchers to believe compartmentalization (i. e., low blendedness) as maladaptive to the identity integration process (Amiot et al., 2007; Schwartz et al., 2011; Yampolsky et al., 2013). However, a consistent self-concept may not be as important for dialectical thinkers because their belief system espouses a tolerance for inconsistencies (Boucher et al., 2009; Chen et al., 2018; Kim et al., 2008; Spencer-Rodgers et al., 2004; Wong & Liu, 2018). Indeed, a study found that dialectical thinking moderated the relation between self-concept inconsistency and well-being (Boucher, 2011), such that for those high in dialectical thinking, the negative association between self-concept inconsistency and well-being was significantly weaker compared to those low in dialectical thinking. Relatedly, a malleable racial identity (e.g., a Black-White biracial individual may identify as more Black, White, or Multiracial in different contexts and spaces) was related to poorer psychological well-being for those low in dialectical thinking, but the association was not significant for those high in dialectical thinking (Garcia et al., 2018). In summary, previous theoretical and empirical work indicates that dialectical thinking moderates the association between identity (e.g., inconsistency, malleability) and well-being. Based on these previous findings, we believe dialectical thinking should also act as a moderator of the association between bicultural compartmentalization and psychological adjustment.

It is important to note that we hypothesized a moderating—rather than mediating—effect of dialectical thinking on the compartmentalization-adjustment association. Some previous studies found that dialectical thinking mediated the relationship between global BII and psychological adjustment (Chen et al., 2013), such that BII predicted lower levels of dialectical thinking, and lower levels of dialectical thinking predicted better psychological adjustment. However, in this study, BII was primarily operationalized as a global construct (Studies 1–5; Chen et al., 2013). Yet, other studies show that BII consists of two independent components: harmony (vs. conflict) and compartmentalization (vs. blendedness; Benet-Martínez & Haritatos, 2005; Huynh et al., 2018), so it is not possible to disentangle the independent contributions of harmony and compartmentalization in the studies reported by Chen and colleagues (2013). In our study, we focused specifically on the compartmentalization component of BII to better understand its association with adjustment.

In addition, we argue that dialectical thinking is a boundary condition or a moderator—not a mechanism or a mediator—of the

compartmentalization-adjustment association. In other words, we posit that some bicultural people engage in less dialectical thinking while others engage in more dialectical thinking (an individual difference), and that the dialectical thinking style should be more compatible with identity compartmentalization (i.e., low blendedness). Due to dialectical thinkers' tolerance for inconsistencies, blendedness may not be beneficial or desired, and compartmentalization may not necessarily be associated with negative outcomes. In fact, having a blended bicultural identity is similar to having cross-role consistency or self-concept consistency, a hallmark of Western conceptions of identity integration and well-being (Boucher, 2011). However, having a compartmentalized identity necessitates inconsistency between roles and selves across situations, which reflects an embeddedness in contexts and change and contradictions that come with it. According to the principle of contradiction (Peng & Nisbett, 1999), dialectical thinking allows for contradictions to exist simultaneously, albeit in potentially different spheres or domains (e.g., school vs. home environment). Thus, contextual variations in self-view (i.e., bicultural identity compartmentalization) should actually promote well-being for dialectical thinkers.

The current study

The current study aimed to expand on the literature by examining specifically the compartmentalization (vs. blendedness) component of BII, its association with adjustment, and dialectical thinking as a possible moderator of that association. The extant literature suggests that psychological adjustment is associated with higher BII harmony but is unrelated or weakly associated with BII compartmentalization (Amini & Nguyen, 2021; Huynh et al., 2011, 2018; Miller et al., 2011; Schwartz et al., 2019; Tikhonov et al., 2019). Therefore, the purpose of this paper was to empirically test Huynh et al.'s (2011) proposition by examining a possible moderator of the compartmentalization-adjustment association: dialectical thinking. It may be the case that dialectical thinkers do not need to blend (but instead compartmentalize) their two cultures to experience better psychological adjustment. In other words, we hypothesized that dialectical thinking would moderate the association between compartmentalization and psychological adjustment, such that the current extant null association between compartmentalization and adjustment is true for those low on dialectical thinking, but not for those high on dialectical thinking. Rather, compartmentalization and adjustment will be positively associated for biculturals high on dialectical thinking.

Method

Participants

The current sample of 795 bicultural/multicultural undergraduate students at a large, public university in the United States came from a larger study. We define bicultural and multicultural individuals in our study as those who self-identify as bicultural/multicultural: as being American *and* as a member of one or more ethnic minority cultures (e.g., Korean, Mexican, Black). Participants' ages ranged from 17 to 30 years old ($M = 19.07$ and $SD = 1.37$ years). More than half of participants identified as female ($n = 440$, 55.35%), and the rest identified as male ($n = 348$, 43.77 %) or other/unidentified ($n = 7$, 0.009 %). A large majority ($n = 673$; 84.65 %) of participants were born in the United States. In terms of race/ethnicity, participants identified as Asian American ($n = 425$, 53.46 %), Latino/a/x or Hispanic[1] ($n = 277$, 34.84 %), European/Anglo ($n = 184$, 23.14 %), Black/African American ($n = 72$, 9.06 %), Southwest Asian and North African ($n = 41$, 5.16 %), Native American/American Indian ($n = 31$, 3.90%), and other ($n = 1$, 0.13 %). Note that percentages sum to more than 100 because participants were able to identify with more than one group. See Table 1 for full demographics.

Measures

The measurement of well-being

The Measurement of Well-Being Scale (Warr, 1990) assesses participants' psychological adjustment operationalized as positive and negative affective well-being. There are 12 items (e.g., "Thinking of the past few weeks, how much of the time did you feel each of the following: tense/cheerful") rated on a 6-point Likert-type scale from 1 (*never*) to 6 (*all the time*). Higher mean scores indicate better psychological adjustment. For our sample, internal consistency reliability was good ($\alpha = 0.88$).

Bicultural identity integration scale-version 2 (BIIS-2)

The Bicultural Identity Integration Scale-Version 2 or BIIS-2 (Huynh et al., 2018) evaluates two components of bicultural identity (compartmentalization and harmony), and items are rated on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The 7-item compartmentalization subscale measures perceived separation between participants' two cultures (e.g., "I keep [ethnic] and American cultures separate"). The 10-item harmony subscale assesses perceived compatibility between their two cultures (e.g., "I find it easy to balance both [ethnic] and American cultures"). Higher mean scores indicate higher separation (compartmentalization) and compatibility (harmony) between participants' cultures. For our sample, internal consistency reliabilities for both the compartmentalization subscale ($\alpha = 0.82$) and the harmony subscale ($\alpha = 0.89$) were good.

---

[1] We include the $<x>$ suffix in "Latino/a/x or Hispanic" as a gender-inclusive practice to include those who are nonbinary from this group and use such terminology.

Table 1

Participants' age, gender, race/ethnicity, nativity, self-reported socioeconomic status, and class standing.

Variables	Frequency	Percentage
Age (years)		
M	19.07	
SD	1.37	
Range	17–30	
Gender		
Male	348	43.77 %
Female	440	55.35 %
Other/unidentified	7	0.88 %
Race/Ethnicity[a]		
Asian American	425	53.46 %
Black/African American	72	9.06 %
European/Anglo American	184	23.14 %
Latino/a/x or Hispanic	277	34.84 %
Southwest Asian/North African American	41	5.16 %
Native American	31	3.90 %
Other/unidentified	1	0.13 %
Nativity		
U.S. born	673	84.65 %
Non-U.S. born	122	15.35 %
Self-reported socioeconomic status		
Lower class	60	7.55 %
Lower middle class	203	25.53 %
Middle class	374	47.04 %
Upper middle class	134	16.86 %
Upper class	14	1.76 %
Other/unidentified	10	1.26 %
Class standing		
Freshman	273	34.34 %
Sophomore	340	42.77 %
Junior	126	15.85 %
Senior	47	5.91 %
Other/unidentified	9	1.13 %

Note. [a]Percentages do not equal 100 because participants could choose more than one race/ethnicity.

Dialectical self scale

The Dialectical Self Scale (Spencer- Rodgers et al., 2015) measures three aspects of dialectical thinking: contradiction, cognitive change, and behavior change. Due to time constraints and to avoid participant fatigue, we administered a shortened version comprising six items. Specifically, we used two items from each of the three subscales that index high tolerance for inconsistencies and between perceived selves across contexts. The contradiction domain measures participants' tolerance for psychological contradictions (e.g., "When I hear two sides of an argument, I often agree with both"). The cognitive change domain measures participants' beliefs and attitudes (e.g., "I find that my values and beliefs will change depending on who I am with"). The behavior change domain measures how participants' behave in different situations (e.g., "I am constantly changing and am different from one time to the next"). Respondents rated the items using a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher mean scores indicate higher levels of dialectical thinking in self-perception. For our sample, internal consistency reliability was poor ($\alpha = 0.55$); however, this may be an underestimate of reliability due to the multidimensionality of the scale and with few items representing each dimension (Schmitt, 1996). Nonetheless, previous studies—making notable contributions to the literature—were published using a shortened 14-item version ($\alpha = 0.62$; Luj et al., 2017) and even the full 32-item version ($\alpha = 0.60$ to.77; Zheng et al., 2020) of the Dialectical Self Scale despite low internal consistency.

Procedure

We recruited participants from a large Hispanic-Serving Institution (HSI) and Asian American and Native American Pacific Islander-Serving Institution (AANAPISI) on the West Coast of the U.S. Only those who self-identified as bicultural or multicultural were eligible to participate. After providing informed consent, they completed the above measures along with a demographics questionnaire using QuestionPro.com. First, participants indicated their ethnicity by selecting all that applied from a list of racial/ethnic groups (e.g., Black, Asian, Latinx). Additionally, they responded to an open-ended question about the specific ethnic groups to which they belong (e. g., Salvadoran and Mexican). The open-ended ethnicity response was automatically piped into the BIIS-2 items where appropriate. Next, they completed measures assessing our main study variables. Finally, they provided demographic information: country of birth, age, gender, year in college, and socioeconomic status. Participation, which took approximately 45 min, partially fulfilled requirements for an introductory psychology course.

Data analytic plan

We used SPSS version 28 to conduct all analyses. First, we computed bivariate correlations between the main study variables (see Table 2). Next, we tested for potential covariates by computing bivariate correlations between main study variables and several demographic variables. These demographic variables included gender and age because they are common covariates in psychological studies and nativity because it is known to be related to compartmentalization from published literature (Huynh et al., 2018; Miller et al., 2011; Tikhonov et al., 2019). To test our main hypothesis that dialectical thinking moderates the association between compartmentalization and psychological adjustment, we used model 1 of the PROCESS macro (Hayes, 2017). The criterion variable was psychological adjustment, the predictor variable was compartmentalization, and the moderating variable was dialectical thinking. We included variables that were significantly associated with psychological adjustment, dialectical thinking, and compartmentalization in the model as covariates.

Results

Preliminary analyses

Consistent with extant literature, compartmentalization had a null-to-weak, negative, significant association with psychological adjustment, $r = -0.08$, $p = .03$, 95% CI [$-0.15, -0.01$], and harmony had a weak-to-moderate, positive, and significant association with psychological adjustment, $r = 0.24$, $p < .001$, 95% CI [.18,.31]. Compartmentalization and harmony were moderately-to-strongly, negatively, and significantly associated with each other, $r = -0.46$, $p < .001$, 95% CI [$-0.51, -0.40$]. Interestingly, dialectical thinking was weakly, negatively, and significantly associated with psychological adjustment, $r = -0.18$, $p < .001$, 95% CI [$-0.24, -0.11$]. In our tests for covariates, nativity (1 = U.S. born; 2 = non-U.S. born) was weakly and significantly associated with psychological adjustment, $r = -0.10$, $p = .003$, 95% CI [$-0.17, -0.03$], such that U.S.-born participants were more psychologically adjusted than those born elsewhere, and had a null-to-weak and significant association with compartmentalization, $r = 0.09$, $p = .02$, 95% CI [.02,.15], such that U.S.-born participants compartmentalized their bicultural identities less than those born elsewhere. Gender (0 = male; 1 = female) was weakly and significantly associated with both compartmentalization, $r = -0.15$, $p < .001$, 95% CI [$-0.22, -0.08$], such that male participants compartmentalized their bicultural identities more than female participants, and dialectical thinking, $r = -0.13$, $p < .001$, 95% CI [$-0.19, -0.06$], such that male participants also reported higher levels of dialectical thinking than female participants. Age was not significantly associated with compartmentalization, $r = 0.02$, $p = .51$, 95% CI [$-0.05,.09$], dialectical thinking, $r = -0.03$, $p = .38$, 95% CI [$-0.10,.04$], or psychological adjustment, $r = -0.06$, $p = .09$, 95% CI [$-0.13,.01$]. Therefore, we included harmony, nativity, and gender as covariates for the moderation analysis presented below.

Moderation analysis

With a sample of 795 participants and five predictors, we had a power of .80 to detect a small effect ($R^2 = 0.08$). Supporting our hypothesis, the overall regression model was significant, $R^2 = 0.09$, $F(6, 781) = 12.56$, $p < .001$, and more importantly, the moderating effect of dialectical thinking on the compartmentalization-adjustment was significant, $b = 0.15$, 95% CI [.02,.28], $\beta = 0.43$, $t(788) = 2.21$, $p = .03$. As shown in Fig. 1, at low levels of dialectical thinking, compartmentalization did not significantly predict adjustment, $b = -0.01$, 95% CI [$-0.12,.10$], $\beta = -0.04$, $t(788) = -0.24$, $p = .81$. Conversely, at high levels of dialectical thinking, compartmentalization (or lower blendedness) significantly predicted better psychological adjustment, $b = 0.16$, 95% CI [.03,.28], $\beta = 0.46$, $t(788) = 2.39$, $p = .02$. In other words, our findings for participants low on dialectical thinking are congruent with previous findings on compartmentalization and adjustment: that there is a null association between these two variables. However, for those high on dialectical thinking, perceiving their identities as compartmentalized (rather than blended) is associated with better adjustment.

Table 2
Correlation matrix of major study variables.

Variable	1	2	3	4	5	6	7
1. Nativity[a]	–						
2. Gender[b]	-.04	–					
3. Age	.13**	-0.08*	–				
4. BII Harmony	-.14**	.04	-0.03	(0.89)			
5. BII Compartmentalization	.09*	-0.15**	.02	-0.46**	(0.82)		
6. Dialectical Thinking	.06	-0.13**	-0.03	-0.29**	.15**	(0.55)	
7. Psychological Adjustment	-.10**	-0.01	-0.06	.24**	-0.08*	-0.18**	(0.88)

Note. [a]Nativity is coded as 1 U.S. born and 2 non-U.S. born.
[b]Gender is coded as 0 male and 1 female.
*p < .05, * *p < .01. Cronbach's α for internal-consistent reliability are shown on the diagonal.
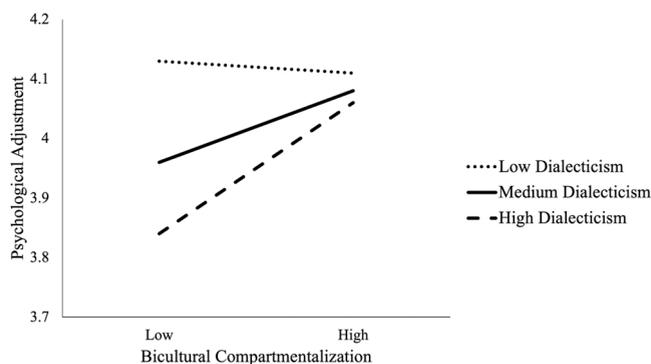
Fig. 1. *Moderation effect of dialectical thinking on the association between BII compartmentalization and psychological adjustment. Note.* Low levels of dialectical thinking [b = −0.01, 95% CI [− 0.12,.10], β = −0.04, *t*(788) = −0.24, p = .81], medium levels of dialectical thinking [b = 0.08, 95% CI [− 0.01,.18], β = 0.24, *t*(788) = 1.73, p = .08], high levels of dialectical thinking [b = 0.16, 95% CI [.03,.28], β = 0.46, *t*(788) = 2.39, p = .02,]. Psychological adjustment scores ranged from 1 to 6, with higher mean scores indicating better psychological adjustment.

Discussion

The purpose of our study was to examine dialectical thinking as a moderator in the association between compartmentalization and psychological adjustment for bicultural individuals. We found that dialectical thinking significantly moderated the compartmentalization-adjustment association, such that for those with high levels of dialectical thinking, bicultural identity compartmentalization (i.e., low blendedness) was related to better psychological adjustment, even after controlling for bicultural harmony (a predictor of better adjustment based on previous literature), nativity, and gender. In other words, our findings challenge current understandings in the biculturalism literature that compartmentalization is inconsequential (or harmful) for psychological adjustment. Rather, for dialectical thinkers, compartmentalization (i.e., low blendedness) may actually be beneficial for adjustment. Because they can tolerate contradictions and inconsistencies, keeping their ethnic and dominant cultures compartmentalized may be better for psychological adjustment although future experiments are necessary to test this causal relationship.

Implications

The current study extends research on biculturalism by identifying dialectical thinking as a moderator in the association between compartmentalization and adjustment for bicultural undergraduate students in the United States. Our results align with theoretical work by Huynh et al. (2011) that proposes that either compartmentalization *or* blendedness may be associated with better psychological outcomes, but that association depends on various factors, such as the group's sociopolitical history, the immediate environment, and individual differences. In our study, we examined dialectical thinking as an individual difference variable moderating the biculturalism-adjustment association. We found that compartmentalization (low blendedness) was associated with better psychological adjustment for a specific group: biculturals with high levels of dialectical thinking.

Therefore, the current study highlights the importance of further unpacking recognized—and even null—associations between variables found in the existing literature. It is imperative that researchers consider for whom and in which contexts these relationships hold true. Without our study, biculturalism researchers would simply accept that compartmentalization and adjustment are unrelated. However, we demonstrated that this is the case only for biculturals who do *not* engage in dialectical thinking. For dialectical thinkers, compartmentalization—the lack of blendedness—relates to adjustment. Furthermore, our findings point to the benefits of measuring harmony and compartmentalization independently rather than BII as a global construct. Based on previous literature, it is clear that harmony is related to better psychological adjustment. However, as underscored in the current study, more research is needed to further understand the compartmentalization-adjustment association. Because it is impossible to disentangle the independent contributions of compartmentalization and harmony when measuring BII as a unitary construct (Chen et al., 2013; Schwartz et al., 2015), we recommend that future studies conceptually and operationally define BII by its two independent components of harmony (vs. conflict) and compartmentalization (vs. blendedness; Huynh et al., 2011; Huynh et al., 2018).

Limitations and future directions

There were several limitations to our study. First, we only sampled undergraduate students, who were primarily young adults; therefore, future studies should examine whether dialectical thinking moderates the compartmentalization-adjustment association for other age groups. Nevertheless, we chose to study young adults because early adulthood marks a pivotal period in bicultural identity formation (Vedder & Phinney, 2014). During this time, they are required to transition between various spaces and roles that require different identities (e.g., son/daughter/child at home, student at school, professional at work, advocate in community spaces).

Secondly, another limitation of this study was that our dialectical thinking subscale had poor internal consistency. This could be because we used a shortened version of the measure, and because the measure is multidimensional (Schmitt, 1996). However, poor

internal consistency attenuates—rather than exaggerates—effect sizes and significance levels. Therefore, despite the conservative estimates, dialectical thinking was still a significant moderator of the compartmentalization-adjustment association.

Third, we recognized that bicultural integration is an ongoing transformative process (Schwartz et al., 2019; West et al., 2017), such that bicultural individuals are constantly exposed to situations where they must choose to compartmentalize or blend their cultural identities (Huynh et al., 2018). Due to this context-dependent and reciprocal process, our study is limited to numerical data provided by our quantitative measures administered at one timepoint. Although the framework of BII is effective in assessing compartmentalization at the individual level, it generalizes across contexts and assumes that one's level of compartmentalization is relatively stable. Our findings help elucidate the nuances in the compartmentalization-adjustment association in the biculturalism process; however, future studies can build on this understanding by implementing a mixed-methods study design to further contextualize in what situations and given what factors does one choose to compartmentalize vs. blend their two cultures.

Finally, we encourage researchers to explore and identify other factors (e.g., sociopolitical history, the immediate environment, individual differences; Huynh et al., 2011) that might moderate the biculturalism process, including antecedents and outcomes of compartmentalization and harmony. For example, in this study, we challenged the extant null association between compartmentalization and adjustment. Relatedly, future research can examine boundary conditions that would weaken the established association between harmony and adjustment. For example, viewing one's two cultural identities as compatible corresponds to better adjustment, but are harmony and adjustment still positively related if the perception of compatibility is not between two cultural identities but between one cultural identity (Chinese) and one gender identity (female)? Moreover, much of the literature on BII has examined the association between the integration of ethnic and dominant culture, with only a handful examining other dual identities, such as the integration of Muslim and national identities (Amini & Nguyen, 2021; Saleem et al., 2018; Spiegler et al., 2021). Further research can investigate how other minoritized groups (e.g., sexual, class, ability, Multiracial) make sense of their cultural identities (or other intersecting identities) and how that relates to adjustment.

Conclusion

In this study, we investigated a potential moderator of the current extant null association between compartmentalization and adjustment found in the literature. Challenging this generally-accepted finding, we found that compartmentalization is indeed related to adjustment, but only for those high on dialectical thinking. For these individuals, compartmentalization (i.e., lower blendedness) is related to better psychological adjustment. Conversely, those low on dialectical thinking, the null relationship between compartmentalization and adjustment remains. With this study, we contributed to both theoretical and empirical work on BII in several ways. First, we tested Huynh et al.'s (2011) proposed model and identified dialectical thinking as an individual difference variable moderating the compartmentalization-adjustment association. Second, we highlighted the necessity of continually exploring boundary conditions of current extant research findings. Third, we emphasized the importance of measuring harmony and compartmentalization separately (vs. as a unitary BII construct) for disentangling their independent effects. Alongside the rapidly growing population of bicultural individuals, our findings reveal new possibilities and suggestions for biculturalism research.

We end with a quote from bicultural martial artist, Bruce Lee, that embodies compartmentalization and dialectical thinking for a bicultural individual.

> "Empty your mind, be formless, shapeless – like water. Now you put water in a cup, it becomes the cup; you put water into a bottle it becomes the bottle; you put it in a teapot it becomes the teapot. Now water can flow or it can crash. Be water, my friend." – Bruce Lee (1971)

Water symbolizes the multiple perspectives and contradictions that exist in life. It can adapt to various shapes and forms, and it can also be tranquil or uncontrolled; however, despite these changes, water still retains its fundamental identity. Thus, water is perhaps analogous to how a bicultural individual may navigate the challenge of making sense of their cultural identities. Maybe for a bicultural individual who adheres to dialectical thinking, their ability to tolerate contradictions and inconsistencies allows them to "be water" and compartmentalize their identities to fit the given context. Dialectical thinking and "being like water" can be a crucial key to helping bicultural individuals negotiate their cultural identities in the ever-increasing diversity of the world.

Declaration of Interest

None.

References

Amini, S. S., & Nguyen, A.-M. D. (2021). Muslim and Jewish immigrants' adjustment: The role of religious-American harmony, religious-American identity centrality, and discrimination. *Journal of Cross-Cultural Psychology, 52*(3), 259–274. https://doi.org/10.1177/0022022121994328

Amiot, C. E., De La Sablonnire, R., Terry, D. J., & Smith, J. R. (2007). Integration of social identities in the self: Toward a cognitive- developmental model. *Personality and Social Psychology Review, 11*(4), 364–388. https://doi.org/10.1177/1088868307304091

Benet-Martínez, V., & Haritatos, J. (2005). Bicultural identity integration (BII): Components and psychosocial antecedents. *Journal of Personality, 73*(4), 1015–1050. https://doi.org/10.1111/j.1467-6494.2005.00337.x

Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology, 46*(1), 5–34. https://doi.org/10.1111/J.1464-0597.1997.TB01087.X

Boucher, H. C. (2011). The dialectical self-concept II: Cross-role and within-role consistency, well-being, self-certainty, and authenticity. *Journal of Cross-Cultural Psychology, 42*(7), 1251–1271. https://doi.org/10.1177/0022022110383316

Boucher, H. C., Peng, K., Shi, J., & Wang, L. (2009). Culture and implicit self-esteem: Chinese are "good" and "bad" at the same time. *Journal of Cross-Cultural Psychology, 40*(1), 24–45. https://doi.org/10.1177/0022022108326195

Chen, S. X., Benet-Martínez, V., Wu, W. C. H., Lam, B. C. P., & Bond, M. H. (2013). The role of dialectical self and bicultural identity integration in psychological adjustment. *Journal of Personality, 81*(1), 61–75. https://doi.org/10.1111/j.1467-6494.2012.00791.x

Chen, S. X., Spencer-Rodgers, J., & Peng, K. (2018). The dialectical self: The internal consistency, cross-situational consistency, and temporal stability of self-conception. In J. Spencer-Rodgers, & K. Peng (Eds.), *The Psychological and Cultural Foundations of East Asian Cognition: Contradiction, Change, and Holism* (pp. 411–442). Oxford University Press. https://doi.org/10.1093/OSO/9780199348541.003.0014.

Cheng, C. Y., Sanchez-Burks, J., & Lee, F. (2008). Connecting the dots within: Creative performance and identity integration. *Psychological Science, 19*(11), 1178–1184. https://doi.org/10.1111/j.1467-9280.2008.02220.x

Cheng, C.-Y., Lee, F., Benet-Martínez, V., & Huynh, Q.-L. (2014). Variations in multicultural experience: Influence of bicultural identity integration on socio-cognitive processes and outcomes. In V. Benet-Martínez, & Y.-Y. Hong (Eds.), *The Oxford Handbook of multicultural Identity* (pp. 276–299). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199796694.013.025.

Erikson, E. H. (1950). *Childhood and society.* W W Norton & Co.

Garcia, J.A., Sanchez, D.T., Shih, M., 2018. Contextual and cultural factors influencing malleable racial identity. *The Psychological and Cultural Foundations of East Asian* Cognition: Contradiction Change, and Holism 2018 465 487 doi: 10.1093/oso/9780199348541.003.0016.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based aproach* (third ed.). Guilford Press.

Hong, Y. Y., Morris, M. W., Chiu, C. Y., & Benet-Martínez, V. (2000). Multiculrtiral minds: A dynamic constructivist approach to culture and cognition. *American Psychologist, 55*(7), 709–720. https://doi.org/10.1037/0003-066X.55.7.709

Huff, S. T., Lee, F., & Hong, Y. Y. (2017). Bicultural and generalized identity integration predicts interpersonal tolerance. *Journal of Cross-Cultural Psychology, 48*(5), 644–666. https://doi.org/10.1177/0022022117701193

Huff, S. T., Saleem, M., & Rivas-Drake, D. (2020). Examining the role of majority group attitudes and bicultural identity integration on bicultural students' behavioral responses toward white Americans. *Cultural Diversity and Ethnic Minority Psychology, 26*(2), 149–162. https://doi.org/10.1037/cdp0000284

Huynh, Q.-L., Benet-Martínez, V., & Nguyen, A.-M. D. (2018). 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). *Psychological Assessment, 30*(12), 1581–1596. https://doi.org/10.1037/pas0000606

Huynh, Q.-L., Nguyen, A.-M. D., & Benet-Martínez, V. (2011). Bicultural identity integration. *Handbook of Identity Theory and Research* (pp. 827–842). New York, NY: Springer. https://doi.org/10.1007/978-1-4419-7988-9

Kim, Y. H., Peng, S., & Chiu, C. Y. (2008). Explaining self-esteem differences between Chinese and North Americans: Dialectical self (vs. self-consistency) or lack of positive self-regard. *Self and Identity, 7*(2), 113–128. https://doi.org/10.1080/15298860601063437

Lam, A. (2018, March 21). There and back again: A Vietnamese journey. Boom California. ⟨https://boomcalifornia.org/2018/03/21/there-and-back-again⟩.

Lin, E. Y. (2008). Family and social influences on identity conflict in overseas Chinese. *International Journal of Intercultural Relations, 32*(2), 130–141. https://doi.org/10.1016/j.ijintrel.2007.09.005

Lu, M., Hamamura, T., Doosje, B., Suzuki, S., & Takemura, K. (2017). Culture and group-based emotions: could group-based emotions be dialectical? *Cognition and Emotion, 31*(5), 937–949. https://doi.org/10.1080/02699931.2016.1185394

Miller, M. J., Kim, J., & Benet-Martínez, V. (2011). Validating the riverside acculturation stress inventory with Asian Americans. *Psychological Assessment, 23*(2), 300–310. https://doi.org/10.1037/a0021589

Miramontez, D. R., Benet-Martínez, V., & Nguyen, A.-M. D. (2008). Bicultural identity and self/group personality perceptions. *Self and Identity, 7*(4), 430–445. https://doi.org/10.1080/15298860701833119

Nguyen, A.-M. D., & Benet-Martínez, V. (2013). Biculturalism and adjustment: A Meta-analysis. *Journal of Cross-Cultural Psychology, 44*(1), 122–159. https://doi.org/10.1177/0022022111435097

Nguyen, A.-M. D., & Rule, N. O. (2020). Implicit biculturalism theories: How bicultural individuals perceive others and organize their own cultures. *Identity, 20*(4), 258–271. https://doi.org/10.1080/15283488.2020.1820868

Peng, K., & Nisbett, R. E. (1999). Culture, dialectics, and reasoning about contradiction. *American Psychologist, 54*(9), 741–754. https://doi.org/10.1037/0003-066X.54.9.741

Pew Research Center. (2008). *U.S. population projections: 2005–2050.* ⟨https://www.pewresearch.org/hispanic/2008/02/11/us-population-projections-2005–2050/⟩.

Pew Research Center. (2016). 5 facts about the U.S. rank in worldwide migration. ⟨https://www.pewresearch.org/fact-tank/2016/05/18/5-facts-about-the-u-s-rank-in-worldwide-migration/⟩.

Pew Research Center. (2020). Facts on U.S. immigrants, 2018. ⟨https://www.pewresearch.org/hispanic/2020/08/20/facts-on-u-s-immigrants/⟩.

Repke, L., & Benet-Martínez, V. (2018). The (diverse) company you keep: Content and structure of immigrants' social networks as a window Into intercultural relations in Catalonia. *Journal of Cross-Cultural Psychology, 49*(6), 924–944. https://doi.org/10.1177/0022022117733475

Saad, C. S., Damian, R. I., Benet-Martínez, V., Moons, W. G., & Robins, R. W. (2013). Multiculturalism and creativity: Effects of cultural context, bicultural identity, and ideational fluency. *Social Psychological and Personality Science, 4*(3), 369–375. https://doi.org/10.1177/1948550612456560

Saleem, M., Dubow, E., Lee, F., & Huesmann, R. (2018). Perceived discrimination and intergroup behaviors: The role of muslim and American identity integration. *Journal of Cross-Cultural Psychology, 49*(4), 602–617. https://doi.org/10.1177/0022022118763113

Schmitt, N. (1996). Uses and abuses of coefficient alpha. *Psychological Assessment, 8*(4), 350–353. https://doi.org/10.1037/1040-3590.8.4.350

Schwartz, S. J., Klimstra, T. A., Luyckx, K., Hale, W. W., Frijns, T., Oosterwegel, A., … Meeus, W. H. J. (2011). Daily dynamics of personal identity and self-concept clarity. *European Journal of Personality, 25*(5), 373–385. https://doi.org/10.1002/PER.798

Schwartz, S. J., Meca, A., Ward, C., Szabó, Á., Benet-Martínez, V., Lorenzo-Blanco, E. I., & Zamboanga, B. L. (2019). Biculturalism dynamics: A daily diary study of bicultural identity and psychosocial functioning. *Journal of Applied Developmental Psychology, 62*, 26–37. https://doi.org/10.1016/j.appdev.2018.12.007

Schwartz, S. J., Unger, J. B., Baezconde-Garbanati, L., Benet-Martínez, V., Meca, A., Zamboanga, B. L., … Szapocznik, J. (2015). Longitudinal trajectories of bicultural identity integration in recently immigrated Hispanic adolescents: Links with mental health and family functioning. *International Journal of Psychology, 50*(6), 440–450. https://doi.org/10.1002/ijop.12196

Spencer- Rodgers, J., Srivastava, S., Boucher, H.C., English, T., Paletz, S.B., & Peng, K. (2015). The Dialectical Self Scale (Unpublished manuscript). Department of Psychology, California Polytechnic State University, San Luis Obispo, CA.

Spencer-Rodgers, J., Peng, K., Wang, L., & Hou, Y. (2004). Dialectical self-esteem and east-west differences in psychological well-being. *Personality and Social Psychology Bulletin, 30*(11), 1416–1432. https://doi.org/10.1177/0146167204264243

Spencer-Rodgers, J., Williams, M. J., & Peng, K. (2010). Cultural differences in expectations of change and tolerance for contradiction: A decade of empirical research. *Personality and Social Psychology Review, 14*(3), 296–312. https://doi.org/10.1177/1088868310362982

Spiegler, O., Schmid, K., Saleem, M., Hewstone, M., & Benet-Martínez, V. (2021). Dual identity, bicultural identity integration and social identity complexity among Muslim minority adolescents. *Self and Identity*. https://doi.org/10.1080/15298868.2021.1912819

Taušová, J., Bender, M., Dimitrova, R., & van de Vijver, F. (2019). The role of perceived cultural distance, personal growth initiative, language proficiencies, and tridimensional acculturation orientations for psychological adjustment among international students. *International Journal of Intercultural Relations, 69*, 11–23. https://doi.org/10.1016/j.ijintrel.2018.11.004

Tikhonov, A. A., Espinosa, A., Huynh, Q.-L., & Anglin, D. M. (2019). Bicultural identity harmony and American identity are associated with positive mental health in U.S. racial and ethnic minority immigrants. *Cultural Diversity and Ethnic Minority Psychology, 25*(4), 494–504. https://doi.org/10.1037/cdp0000268

Torres, L. (2010). Predicting levels of Latino depression: Acculturation, acculturative stress, and coping. *Cultural Diversity and Ethnic Minority Psychology, 16*(2), 256–263. https://doi.org/10.1037/a0017357

Valdivieso-Mora, E., Peet, C. L., Garnier-Villarreal, M., Salazar-Villanea, M., & Johnson, D. K. (2016). A systematic review of the relationship between familism and mental health outcomes in latino population. *Frontiers in Psychology, 7*(OCT). https://doi.org/10.3389/fpsyg.2016.01632

Vedder, P., & Phinney, J. S. (2014). Identity formation in bicultural youth: A developmental perspective. *The Oxford handbook of multicultural identity* (pp. 335–354). Oxford University Press. https://doi.org/10.1093/OXFORDHB/9780199796694.013.003

Warr, P. (1990). The measurement of well-being and other aspects of mental health. *Journal of Occupational Psychology, 63*(3), 193–210. https://doi.org/10.1111/j.2044-8325.1990.tb00521.x

West, A. L., Zhang, R., Yampolsky, M., & Sasaki, J. Y. (2017). More than the sum of its parts: A transformative theory of biculturalism. *Journal of Cross-Cultural Psychology, 48*(7), 963–990. https://doi.org/10.1177/0022022117709533

Wong, Y. J., & Liu, T. (2018). Dialecticism and mental health: Toward a yin-yang vision of well-being. In J. Spencer-Rodgers, & K. Peng (Eds.), *The psychological and cultural foundations of East Asian cognition: Contradiction, change, and holism* (pp. 547–572). Oxford University Press. https://doi.org/10.1093/oso/9780199348541.003.0019.

Yampolsky, M. A., Amiot, C. E., & de la Sablonnière, R. (2013). Multicultural identity integration and well-being: A qualitative exploration of variations in narrative coherence and multicultural identification. *Frontiers in Psychology, 4*(MAR). https://doi.org/10.3389/fpsyg.2013.00126

Zheng, P., Gray, M. J., Duan, W. J., Ho, S. M. Y., Xia, M., & Clapp, J. D. (2020). An exploration of the relationship between culture and resilience capacity in trauma survivors. *Journal of Cross-Cultural Psychology, 51*(6), 475–489. https://doi.org/10.1177/0022022120925907