

Cognitive Frame Switching in Biracial Asian/Caucasian Individuals

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Bicultural individuals possess two conflicting cultural systems and have the ability to switch between belief systems depending on the context. The purpose of the current research was to examine whether this phenomenon extends to biracial individuals. To examine whether Asian/Caucasian individuals think differently when using an Asian versus a Caucasian cultural lens, Asian/Caucasian biracial individuals were primed with one of their ethnic identities and then they completed measures of individualism and collectivism. In contrast to our prediction, participants did not respond differently when primed with their Asian versus their Caucasian identity. However, ethnic identity moderated this effect. It seems that individuals low in a certain ethnic identification (in this case Caucasian identity) contrast away from that identity when reminded of it. Ultimately, these data demonstrate that identity appears to play a complex role with cultural frames and the cognitive flexibility of Asian/Caucasian biracial individuals. Limitations and future research are discussed.

Keywords: biracial, frame switching, identity, individualism, collectivism

Les individus biculturels disposent de deux systèmes culturels contradictoires et sont capables d'alterner entre les systèmes de croyance selon le contexte. L'objectif de la présente recherche est d'examiner si ce phénomène s'étend aux individus biraciaux. Dans le but d'étudier si les individus asiatiques/caucasiens pensent différemment selon s'ils utilisent un système de croyance asiatique versus caucasien, une amorce en lien avec une de leurs deux cultures leur a été présentée préalablement à la complétion de mesures d'individualisme et de collectivisme. Contrairement à nos prédictions, les participants ne répondaient pas différemment selon l'amorce présentée, qu'elle représente l'identité asiatique ou caucasienne. Cependant, l'identité ethnique modérait cet effet. Il semble que les individus avec une faible identification ethnique (dans ce cas-ci, l'identité caucasienne) s'éloignent de cette identité lorsque celle-ci leur est rappelée. Finalement, ces données démontrent que l'identité semble jouer un rôle complexe dans les cadres culturels et la flexibilité cognitive des individus biraciaux asiatiques/caucasiens. Les limites de la présente étude et les implications pour les recherches futures sont discutées.

Mots-clés : biracial, alternance de cadre, identité, individualisme, collectivisme

Of the 281.4 million Americans counted in the 2000 U.S. Census, approximately 862,032 were Asian/Caucasian biracial individuals (U.S. Bureau of the Census, 2001). The combination of Asian and Caucasian ethnicities comprise the third largest racial combination in the United States (U.S. Bureau of the Census, 2001). Such individuals have most likely been

exposed to more than one culture and are faced with the challenge of navigating between various and sometimes conflicting cultural identities in their everyday lives. For instance, an Asian/Caucasian biracial student might win the first prize in a school science fair and experience a clash between two cultural lenses. His or her Western cultural lens (an *individualistic* cognitive style) could make him or her feel comfortable being singled out for the award and able to confidently tell classmates about the prize. On the other hand, his or her Eastern cultural lens (a *collectivistic* cognitive style) could make him or her embarrassed of the attention and sorry for the other classmates who did not win the prize. For many biracial individuals, switching between these two cultural frames could feel quite natural and could possibly be operated at an unconscious level. This

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example captures the unique experience of many biracial individuals who constantly find themselves switching from one cultural context to another.

The phenomenon of possessing two cultures and passing between them has been described by researchers as “cognitive frame switching” (Benet-Martínez, Leu, Lee, & Morris, 2002; Hong, Morris, Chiu, & Benet-Martínez, 2000). Research on frame switching supports the theory that individuals have access to multiple cultural meaning systems and have the ability to switch between different culturally suitable behaviors or beliefs depending on the context. For example, when Asian Americans were primed with icons of an Asian flag or an American president, they thought about the world differently and in terms that were either culturally “Asian” or “American” (Hong et al., 2000).

To date, research on frame switching has dealt exclusively with bicultural individuals (Hong et al., 2000). However, frame switching should extend beyond biculturals to other individuals who might internalize two distinct cultures, for instance, biracial individuals. The purpose of the research presented here was to examine the possibility that frame switching will occur in biracial individuals. Specifically, we examined whether Asian/Caucasian biracial individuals would think differently when focused on their Asian or Caucasian ethnic identity. Additionally, we were interested in examining if the strength of one’s ethnic identity (i.e., whether one self-identifies strongly as Asian or Caucasian) might alter the influence of the social context. For instance, are Asian/Caucasian biracial individuals who have a strong Asian identity affected differently by cultural primes than those with a weaker Asian identity? To answer this question and form hypotheses, we review literature on cognitive flexibility and the impact of identity on cultural behavior. However, before doing so, it is important to distinguish between the concepts of biculturalism and biracialism.

Biculturalism and Biracialism

The definitions of the terms *biracial* and *bicultural* overlap, but clear distinctions exist. The terms overlap as both biracial and bicultural individuals are exposed to two cultures and might have several cultural identifications. As an example of a bicultural individual, consider an individual who was born in

Japan to Japanese parents and moved to America to attend college. Such an individual would become knowledgeable of different cultural lenses and would likely internalize different sets of cultural norms. With bicultural individuals, the internalized cultures are not completely blended, and exposure to a second culture does not mean that one culture is replaced by a second (Hong et al., 2000, Yamada & Singelis, 1999). Like bicultural individuals, biracial individuals are exposed to two cultures and have the potential to possess multiple cultural identities (Root, 1996b). In research involving Black/Japanese biracial individuals, for example, Hall (1992) showed that these individuals felt that they were both Black and Japanese and that they did not have to divorce one identity in favor of the other. Additionally, in a variety of samples, multiracial individuals tend to adopt ethnic identities (e.g., self-labels) that acknowledge their multi-ethnic heritage and that do not forfeit one ethnicity in favor of another (see Stephan, 1992).

Despite the overlap, biracial and bicultural individuals exhibit explicit differences. In contrast to bicultural individuals, a biracial individual is the result of a coupling between two people of distinctly different racial backgrounds. For example, an individual with an Asian mother and Caucasian father would be described as a biracial individual. Biracial individuals have different backgrounds that guide them and shape their experience in the world. Even if a biracial individual grew up with one parent or in an environment where only one culture was present, it is still likely that this individual grew up aware that he or she was a biracial individual and possessed two ethnicities.

An important distinction between the terms *biracial* and *bicultural* is that presumably all biracial individuals are bicultural individuals, but not all bicultural individuals are biracial individuals. In most cases, biracial individuals can also be described as bicultural individuals because biracial individuals are often exposed and familiar with more than one culture. On the other hand, not all bicultural individuals can be considered biracial individuals because not all bicultural individuals have parents from two different racial backgrounds. This study specifically examines biracial individuals, as all participants were required to have one Asian parent and one Caucasian parent. While the biracial participants have similarities to bicultural individuals in that both are exposed to two cultures, the prime used in this study was distinctly

tailored for biracial individuals. The study is designed in such a way to examine the unique phenomenon in the biracial Asian/Caucasian population.

Research on Frame Switching

Although there is no previous research on frame switching among *biracial* individuals (to our knowledge), research demonstrates that *bicultural* individuals switch cognitive frames. This research has largely focused on Asian American or Westernized Asian populations and has therefore examined the switch between “American” and “Asian” cognitive styles (Hong et al., 2000). More accurately, researchers have been interested in examining the switch between an individualistic mindset (which is stereotypically more American) and a collectivistic mindset (which is stereotypically more Asian). Individualism is the cognitive style in which individuals are the basic unit of analysis, and societal structures are measured in relation to how much the structure supports each individual’s best interest. Collectivism, in contrast, is the cognitive style in which the group is the basic unit of analysis, and societal structures are measured in relation to how the structure enhances and supports the group as a whole (Oyserman & Lee, 2007, 2008).

Generally speaking, individualism is an independent way of thinking characteristic of Western society whereas collectivism is an interdependent way of thinking characteristic of Eastern society. For example, Westerners have been shown to make internal attributions and use personal characteristics to define themselves, whereas Easterners tend to make external attributions and use their social relations with others to define themselves (Markus & Kitayama, 1991; Norenzayan & Nisbett, 2000). In addition, Westerners have an enhanced sense of individual control while Easterners believe that they cannot control their destinies independent of the group. For instance, managers from America had stronger expectations of individual control in a performance task, while managers from Hong Kong were shown to have stronger expectations of group control (Earley, 1994). In studies on how perceivers attribute actions, researchers have found that Westerners have a tendency to focus on an individual’s personal disposition while Easterners emphasize the social context (Morris & Peng, 1994). Research suggests that Westerners more readily attribute causes to internal

dispositions compared to Easterners who more readily attribute causes to social situations (Menon, Morris, Chiu, & Hong, 1999).

Individualism and collectivism are conceptualized as broad cognitive styles affecting a range of thoughts and emotions. Both cognitive styles can be primed, bringing a specific cultural frame to the forefront of the mind. In a pivotal set of studies, Hong et al. (2000) experimentally induced frame switching among bicultural individuals. In one experiment, Westernized Chinese students in Hong Kong were randomly assigned to either the American culture priming condition, the Chinese culture priming condition, or the control condition. Participants in the American culture priming condition were shown pictures of American icons (e.g., American flag, Superman, Marilyn Monroe) to make American values and individualism salient. Participants in the Chinese culture priming condition were shown pictures of Chinese icons (e.g., Chinese dragon, Stone Monkey, the Great Wall) to make Chinese values and collectivism salient. Participants in the control condition were shown pictures of geometric figures.

Following the prime, participants completed an attribution task (developed by Morris & Peng, 1994) in which they were shown a picture of a lone fish swimming in front of a group of fish and were asked to describe the behavior of this fish. Results indicated that American primed (vs. Chinese primed) participants were more likely to attribute the behavior of a lone fish swimming in front of a group of fish to internal (vs. external) factors. In addition, American primed (vs. Chinese primed) participants were more likely to say that the fish was leading the group (vs. being chased by the group). These results demonstrate that individuals can internalize multiple cultural lenses and that exposure to a second culture does not mean that the first culture is replaced by a second (Hong et al., 2000). Perhaps most important for the current research, these data show that individuals will shift their cultural lens depending on the social context.

Biracial Individuals and Frame Switching: The Present Research

Research has shown that biculturals engage in cultural frame switching, but there is no evidence to indicate whether biracial individuals engage in a similar process. Given the overlap between the

experiences of bicultural and biracial individuals, which we described earlier, it is likely that biracial individuals also engage in this cognitive phenomenon. To begin, like their bicultural counterparts, biracials may engage in frame switching simply on account of being exposed to two cultures. However, biracial individuals might also engage in this cognitive process as a way to conform to society's fixed notions of racial categories. An individual's assignment into a single race group is often necessary in order to be a socially recognized and functional member of society. Race is the ticket that gives individuals membership into the social world and gives an individual a position to measure his or her similarities and differences to others (Williams, 1996). In a racially defined world, it may be easier to take out one "racial group membership card" at a time, depending on the social context.

In our own research, we are particularly interested in the experiences of Asian/Caucasian biracial individuals living in the U.S. Like Asian Americans, Asian/Caucasian biracial individuals (a potential subset of Asian Americans) likely experience tension between Eastern and Western cultural frames. As part Asian, these biracial individuals are exposed to Eastern cultural ideals and are influenced by values associated with working hard as a group and bringing honor to one's family. As part Caucasian, these individuals are exposed to Western culture and are influenced by the Protestant work ethic focused on working hard to stand out and get ahead of others. Research has shown that when people think of the prototypical American they think of a Caucasian individual (Devos & Banaji, 2005). In other words, there is much perceived overlap between American and Caucasian. Thus the American mindset, or individualistic mindset, that is adopted by Americans is likely the same or similar to that adopted by Caucasians.

In order to examine frame switching among Asian/Caucasian biracial individuals, we conducted an experiment in which Asian/Caucasian biracial individuals were primed to think about their Asian or Caucasian identity and then were asked about their worldview. Based on research done with biculturals, we predicted that participants primed with their Asian identity would think in more collectivistic terms, and those primed with their Caucasian identity would think in more individualistic terms.

In addition to this hypothesis, we wanted to explore the extent to which the strength of one's ethnic identification might moderate the link between priming and cultural frame switching. In other words, does the effect of the prime on one's cultural lens change depending on whether one is strongly identified with either of one's ethnic identity? For example, do individuals high in Asian identity respond differently after being primed for their Asian identity compared to those low in Asian identity? Also, do individuals high in Caucasian identity respond differently after being primed for their Caucasian identity compared to those low in Caucasian identity?

Though no published research has examined the role of ethnic identification (assumed to be a stable, trait-like property) on frame switching, we had reason to believe that such identifications could impact cognitive processes. For example, Hall and Crisp (2008) showed that the strength of one's social identification interacted with group-related primes to affect behavior. Specifically, the researchers showed that young individuals were more likely to behave in ways that were stereotypically young after being primed with images of the old and that this effect was particularly strong *for those who highly identified as young*. In other words, individuals high in social identity self-stereotyped after being primed to think of the outgroup. Though these findings illuminate the importance of social identification on priming effects, we hesitate to assume that our research will elicit a similar pattern of results. Hall and Crisp's work examined social identifications in the context of ingroup/outgroup relations. In contrast, our study examines social identifications in the context of multiple ingroup identities. Ultimately, this piece of our research was exploratory; therefore, we did not make a specific prediction regarding the direction of our effect.

Method

Participants

The original sample included 114 Asian/Caucasian biracial participants recruited through e-mail lists of mixed-race organizations, particularly mixed-race organizations on college campuses. Five participants skipped the priming essay and were excluded from the study. Six participants had a biracial Asian/Caucasian

parent and were also excluded from the study because our prime is based on activating ethnic identity of individuals with monoracial parents (i.e., one Asian parent and one Caucasian parent). Of the final sample, 66 were women, 36 were men, and 1 participant did not indicate gender. The mean age was 23.45 ($SD = 5.50$) years.

Materials

Cultural Prime. In order to prime participants' cultural lenses, we adapted the priming technique developed by Chiao, Heck, Nakayama, and Ambady (2006). In our study, participants were asked to write an essay about the ethnic identity of their Asian or Caucasian parent, depending on the prime condition to which they were randomly assigned.

Individualism and Collectivism. This study has two dependent variables, one designed to assess participants' sense of individualism and the other to assess collectivism. Specifically we used the individualism and collectivism subscales of the *Self-Construal Scale* (Singelis, 1994) to measure the strength of a participant's individualistic and collectivistic self-construals. Due to limited space in the online survey, we modified the original 30-item scale by choosing the five highest loading items from each subscale of the originally validated measure. Using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*), participants rated the extent to which they agreed or disagreed with a variety of statements regarding individualistic and collectivistic self-construals. The five-item collectivistic scale ($\alpha = .67$) included such items as "I will sacrifice my self-interest for the benefit of the group I am in" and "If someone close to me fails, I feel responsible". The five-item individualistic scale ($\alpha = .68$) included items such as "I am comfortable with being singled out for praise or rewards" and "I enjoy being unique and different from others in many respects". Although the reliabilities are low, the items have face validity and have been found to possess adequate validity and reliability in previous studies (Singelis, 1994; Yamada & Singelis, 1999).

Ethnic Identity. In order to measure the strength of ethnic identification, a modified version of the *Multigroup Ethnic Identity Measure (MEIM)* (Phinney, 1992; Roberts et al., 1999) was implemented. Generally, this measure has been used to assess single ethnic identification (e.g., strength of identification

among monoracial individuals). In several published studies, however, researchers have used the measure to assess ethnic identification among biracial or multiracial individuals (e.g., Phinney & Alipuria, 1996; Spencer, Icard, Harachi, Catalano, & Oxford, 2000). Importantly, these studies have assessed individuals' sense of their overall multiracial identity (for an exception, see Cooke, 1997). This ignores the fact that multiracial individuals may possess distinct identifications with each of their component identities (Hall, 1992).

To better assess ethnic identification among biracial individuals, we believe it is crucial to separately measure individuals' sense of themselves in relation to their mother's ethnic identity and father's ethnic identity. Thus, we administered the MEIM twice, once with regard to participants' Asian identity and once with respect to their Caucasian identity. Participants responded to 24 items on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) with statements regarding Asian and Caucasian identity. The Caucasian identity subscale ($\alpha = .92$) included such items as "I have spent time trying to find out more about my Caucasian ethnic group, such as the history, traditions, and customs" and "I have a clear sense of my Caucasian ethnic background and what it means to me". The Asian identity subscale ($\alpha = .91$) included the same set of items; the term Caucasian was simply replaced with Asian.

Demographics. General demographic questions were asked at the end of the study. In addition to their age and gender, participants indicated their ethnicity, their father's ethnicity, and their mother's ethnicity by clicking on the appropriate ethnicity from a list.

Procedure

Participants were recruited from e-mail lists of mixed-race organizations such as Swirl, a social justice organization for the mixed heritage community, and multiple mixed-race organizations on college campuses across the nation. Links to the study were also posted on multiracial facebook groups and social networking sites. Potential participants were told that they would be invited to take an online survey on biracial identity. All participants gave consent prior to testing and had the option of being entered into a raffle for one of ten \$20 iTunes gift cards.

Participants completed the study online and the first measure was the 24-item MEIM for Asian and Caucasian ethnic identities. Participants were then randomly assigned to either the Asian prime or Caucasian prime, based on the last digit of their telephone number. Participants were presented with the following instructions for the prime essay task: "Please write about a time that you particularly connected with your Asian [Caucasian] parent's ethnic identity. Do not worry about grammar or the style of your essay, just write freely. Please look at the clock now. It's important that you write for 7 minutes straight". In order to assess the effect of the prime, participants completed the Self-Construal Scale. To conclude, participants completed general demographic questions and were debriefed. Participants were then directed to a separate survey where they could write their e-mail address to enter a draw for an iTunes gift card.

Results

Effect of Prime on Cognitive Frame

To address the hypotheses of this study, we wanted to assess the effect of the prime on participants' cultural frame. Independent-samples *t*-tests were conducted to compare scores between the two conditions on the individualism and collectivism scales. In contrast to our prediction, there were no significant differences between the two conditions on the measure of individualism (Asian prime: $M = 5.01$, $SD = 0.96$; Caucasian prime: $M = 4.65$, $SD = 1.01$; $t(101) = 1.82$, $p > .05$) or collectivism (Asian prime: $M = 4.62$, $SD = 1.06$; Caucasian prime: $M = 4.48$, $SD = 0.74$; $t(101) = .77$, $p > .05$).

Effect of Prime and Ethnic Identity on Cognitive Frame

Though the previous findings suggest that frame switching is not occurring on average for our biracial participants, we wanted to examine whether frame switching and the priming effect might be occurring for some of our participants but not for others. Specifically, we examined how the strength of one's ethnic identification might moderate the link between prime and cultural frame.

Because little research treats biracial individuals' dual identifications independently, we began by

examining scores on the two identity scales. Scores on the two scales were uncorrelated, $r(103) = .11$, $p > .05$. In other words, it appears that individuals' identification with their Asian identity exists independently from their identification with their Caucasian identity.

Next, a paired-samples *t*-test was conducted to compare the strength of identification with one's Asian ethnic identity to the strength of identification with one's Caucasian ethnic identity. Participants more strongly identified with their Asian ethnic identity ($M = 3.75$, $SD = 0.69$) than their Caucasian ethnic identity ($M = 3.20$, $SD = 0.72$); $t(102) = 5.92$, $p < .05$.

In order to examine the moderating role of ethnic identification on the link between priming and cultural frame, stepwise linear regression analyses were conducted in which Asian identity, Caucasian identity, and prime were used to predict responses to the two self-construal measures. The first step in each regression analysis included each predictor independently; the second step included the two-way interactions; and the third step included the three-way interaction. Though none of the three-way interactions were significant, several of the two-way interactions between the separate ethnic identity scales and the prime were significant. We re-ran our analyses including just the components in the significant two-way interactions.

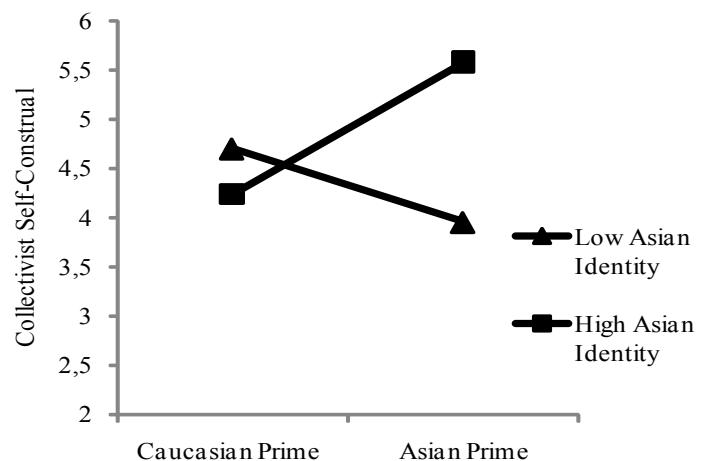


Figure 1. Asian ethnic identity and prime predicting collectivistic self-construal.

Note. Regression line inferred by approximating plus or minus one standard deviation for the identity mean.

There was a significant interaction between Asian ethnic identity and the prime condition in predicting collectivism, $R^2 = .09$, $\Delta R^2 = .07$, $F(1,99) = 7.64$, $p < .01$; $\beta = -.33$, $p < .01$. (There were no significant effects at Step 1 for the independent effects of either condition or identity). Following Aiken and West's (1991) procedures for examining interaction effects in regression, we computed the standard errors for the simple slopes and conducted t -tests to determine whether each simple slope was significantly different from zero. As Figure 1 reveals, for those high in Asian identity, those who were primed to think about their Asian identity scored higher on collectivism than those who were primed to think about their Caucasian identity, $t(99) = -2.50$, $p < .05$. For those low in Asian identity, there was no difference in collectivism based on prime, $t(99) = 1.44$, $p > .05$.

As Figure 2 shows, there was a significant interaction between Asian ethnic identity and the prime predicting individualism, $R^2 = .10$, $\Delta R^2 = .05$, $F(1,99) = 5.83$, $p < .05$; $\beta = .29$, $p < .05$ (there were no significant effects at Step 1 for the independent effects of either condition or identity). Simple effects tests revealed that for those high in Asian identity, there was no difference in individualism based on prime, $t(99) = .43$, $p > .05$. However, for those low in Asian identity, those who were primed to think about their Asian identity scored higher on individualism than those who were primed to think about their Caucasian identity, $t(99) = -3.06$, $p < .01$.

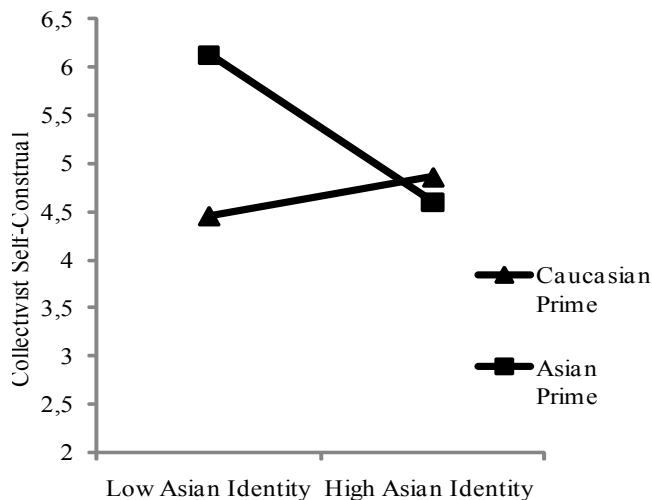


Figure 2. Asian ethnic identity and prime predicting individualistic self-construct.

Note. Regression line inferred by approximating plus or minus one standard deviation for the identity mean.

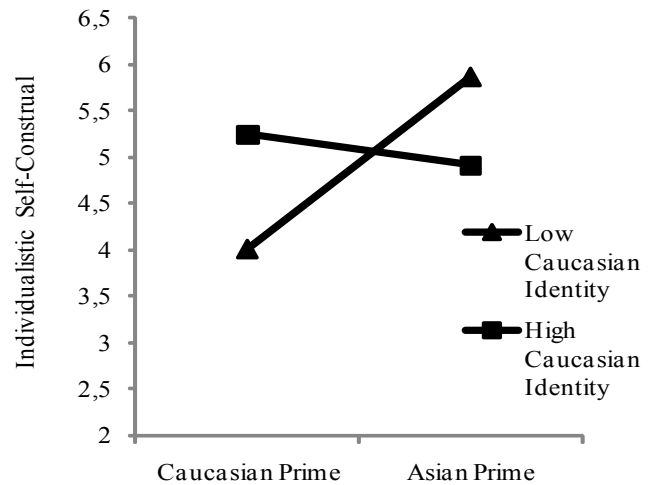


Figure 3. Caucasian ethnic identity and prime predicting individualistic self-construct.

Note. Regression line inferred by approximating plus or minus one standard deviation for the identity mean.

Finally, there was a significant interaction between Caucasian ethnic identity and the prime predicting individualism, $R^2 = .16$, $\Delta R^2 = .07$, $F(1,99) = 7.66$, $p < .01$; $\beta = .31$, $p < .01$. (see Figure 3). There were effects at Step 1 for this analysis. Specifically, those who scored higher on Caucasian ethnic identity scored higher on independence ($\beta = .25$, $p < .01$). In addition, those who were primed to think about their Asian identity scored higher on independence than those who were primed to think about their Caucasian identity ($\beta = -.19$, $p < .05$). As for the interaction, for those high in Caucasian identity, there was no difference in individualism based on prime, $t(99) = .58$, $p > .05$. For those low in Caucasian identity, those who were primed to think about their Asian identity scored higher on individualism than those who were primed to think about their Caucasian identity, $t(99) = -3.39$, $p < .01$.

Discussion

The present study contributes, to varying extents, to our understanding of frame switching among biracial Asian/Caucasian participants. We proposed that Asian/Caucasian biracial individuals primed with their Asian identity would think in more collectivistic terms, and those primed with their Caucasian identity would think in more individualistic terms. Though many of our predictions were not confirmed, frame switching effects similar to those found in studies with biculturals

did occur in some contexts for some biracial individuals. For example, biracial individuals thought significantly more collectivistically when primed to think about their Asian identity as opposed to their Caucasian identity, but only when participants were high in Asian identity. Thus, the effect that has been found in biculturals was also seen in biracials but only for those who strongly identified with their Asian identity.

Interestingly, and perhaps in contrast to the previously mentioned finding, results also revealed that biracial individuals thought significantly more individualistically when primed to think about their Asian side, but only when participants were low in Asian identity. Thus, those low in Asian identity seem to contrast away from their "Asian-ness" when reminded that they possess an Asian identity. Finally, biracial individuals low in Caucasian identity who were primed to think about their Caucasian identity scored lower on individualism than those primed to think about their Asian identity. Once again, it seems that individuals low in a certain ethnic identification (in this case Caucasian identity) contrast away from that identity when reminded of it. More research is needed to better understand how individuals move either toward or away from their identities when these identities are made salient. Ultimately, these data demonstrate that identity appears to play a complex role with cultural frames and the cognitive flexibility of Asian/Caucasian biracial individuals.

Aside from the main purpose of our study, it is interesting to note that the participants overall felt more Asian than Caucasian. The participants reported a stronger tie to their Asian ethnic identity than their Caucasian ethnic identity. Spickard (2004) suggests that the strength of the dominant Anglo-American culture is prominent in America, leading parents of biracial Asian/Caucasian children to emphasize their Asian heritage. Perhaps participants in this study grew up in homes where their Asian identity was emphasized, especially in comparison with their Caucasian identity, leading these individuals to feel more strongly Asian. While it is true that parents might stress Asian heritage through ethnic foods, language, and customs, it might be the case that our participants felt more Asian due to the prevalence of Asian college organizations and commonly practiced cultural traditions, especially in comparison to such organizations and practices oriented toward Caucasians

(e.g., where the majority of group members are Caucasian; for a further discussion of Caucasian organizations, especially in U.S. colleges, see Sidanius, Van Laar, Levin, & Sinclair, 2004). While Asian/Caucasian biracial individuals may participate in both minority and majority organizations, the focus on culture is more explicit in Asian college organizations and the activities further increase the degree of ethnic identities. Interestingly, previous research has shown that the choice of a biracial identity is a healthier choice for most multiracials than being forced to make an artificial decision when filling out race-related questions on standardized forms or through conversation (Binning, Unzueta, Huo, & Molina, 2009; Mass, 1992; Suzuki-Crumly & Hyers, 2004). It is unclear, however, how one's connectedness to each identity relative to the other might impact psychological well-being.

The present study has several limitations. First, the format of the online survey may have created problems with the priming technique. Although the empirically tested priming technique used in previous studies required that participants write the prime essay for seven minutes (Chiao et al., 2006), this was not possible in our online study, due to the nature of our online survey hosted by Survey Monkey. Instead, although we asked participants to write for seven minutes, in actuality they could write for as long as they wanted. Despite this limitation, recent research has found that it takes very little time to prime participants in priming studies. In a study on social category priming, for example, participants wrote a description of a photograph for five minutes (Kawakami, Dovidio, & Dijksterhuis, 2003). This was a shorter amount of time requested than in the present study, yet it yielded significant effects. Even more convincing are subliminal priming studies which suggest that rapid presentation of information can prime individuals. In a study on racial attitudes, participants were primed with Caucasian faces that were presented for 13 milliseconds (Smith, Dijksterhuis, & Chaiken, 2008). In a related study, participants were exposed to words related to the elderly for 17 milliseconds (Kawakami et al., 2003). In this study a priming effect still occurred, even with exposure so minimal that participants could not report that they saw anything.

The reliability of our measures for the Self-Construct Scale is another possible limitation. The

reliabilities of the collectivistic subscale ($\alpha = .67$) and the individualistic subscale ($\alpha = .68$) are lower than we anticipated. Despite this, the face validity of the items lends confidence to their reliability. The questions asked from the Self-Construal Scale have been found to possess adequate validity and reliability in previous studies (Singelis, 1994; Yamada & Singelis, 1999).

Another possible limitation in this study is that we are not able to disentangle the effects of biculturalism as distinct from biracialism. Because all biracial individuals are bicultural (as we defined these constructs earlier), it is hard to know whether any of the frame switching effects we obtained resulted from participants' biracialism or biculturalism. Though future research needs to disentangle these, it can be argued that we tapped into biracialism as distinct from biculturalism because of the prime we used. The reason our prime was biracial rather than bicultural is because participants wrote about a time they identified with either their Asian or Caucasian parent's ethnic identity, which is a question that bicultural individuals would not be able to answer. The prime is operationalized in such a way that is unique for this population.

This study does not address different types of Asian ethnicities (e.g., Japanese, Chinese, Korean) represented in our participants. All the participants in our study self-identified with a biracial identity as having one Asian parent and one Caucasian parent. Future research should explore how different types of Asian ethnicities might affect frame switching. Additionally, these findings may be limited to the United States. The history of racial classifications and racial stereotypes within the United States might affect how biracial Asian/Caucasian participants view themselves and their cultural beliefs. If this same study was conducted in a country in Asia, the same findings might not occur due to the fact that the primary cultural belief in the country might be collectivistic. However, our findings may be applicable beyond the American context. For instance, the same results might occur if the study was conducted in another country with a primarily individualistic cultural mindset.

Our data suggest that identity is a critical factor affecting frame switching; however, it is currently unclear how or why identity matters. Future research should explore the role ethnic identity plays in frame switching. Future studies, for example, can look at other types of identity. In our own research, we

attempted to extend operationalizations of identity by treating Asian identity and Caucasian identity as two orthogonal constructs. Our modified measure of biracial ethnic identity is one of the first of its kind to measure Asian identity and Caucasian identity as two separate identities. We know, however, that this is only one way to think about identity and that identity is in fact varied and has multiple dimensions (Suyemoto & Tawa, 2009). As another example, researchers might want to examine the role that *ascribed racial identity* (i.e., how one is racially identified by others based on physical appearance or phenotype) has distinct effects from the role of *situational racialization of feeling* (i.e., how different contexts can bring out different aspects of one's identity; Tashiro, 2002).

Future research should also consider using more varied measures of individualism and collectivism. Self-report scales provide interesting insight on individualistic and collectivistic cultural frames, but they have their limitations. Future research might benefit from the use of behavioral outcomes of cultural priming and frame switching. For instance, after biracial participants are primed for either their Asian ethnic identity or Caucasian ethnic identity, they can be asked to work in small groups to perform a complicated task. The small groups could be composed of confederates, blind to the condition the participant is in. When completing the task, coders can rate if the participant has collectivistic behavior (i.e., agrees with the group, does not try to stand out) or individualistic behavior (i.e., disagrees with the group, becomes the leader).

The present study begins to fill in a gap in the literature on frame switching among biracial Asian/Caucasian individuals. This is an important introduction to a valuable line of research because the biracial population is growing. The population of multiracial children has considerably increased from 500,000 in 1970 to more than 6.8 million in 2000 (Jones & Symens Smith, 2001). Asian/Caucasian biracial individuals might encounter higher levels of racial detachment and conflict since they possess two conflicting cultural frames. Monoracial people may apply social pressure on biracial individuals to identify with one of their racial identities more than the other due to a need to categorize people who defy typical racial categories. In order to cope with societal pressures, biracial individuals might take on cognitive strategies that allow them to identify more with one

race or the other depending on the context (Chiao et al., 2006). The process of identifying differently depending on what aspect of identity is more salient can be thought of as “situational ethnicity”. In the novel, *The Crown of Columbus*, by Louise Erdrich and Michael Dorris (as cited in Root, 1996a), a multiracial Native American woman describes the strategy as watering whatever set of ethnic roots need it most. This changeability does not symbolize confusion but is a natural strategy that biracial individuals can engage in to better conform to societal standards.

The implication of having this cognitive flexibility is that it can change one’s way of thinking. This study provides a starting point for future examinations of the way biracial Asian/Caucasian individuals think about themselves and others. It can be determined how biracial individuals can simultaneously possess contradictory or conflicting constructs and how these constructs can guide cognition. Future research has the potential to create a theoretical understanding of frame switching and the mechanisms that allow biracial individuals to be primed for their different ethnic identities.

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