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## Self-determination, perceived approval, and drinking: Differences between Asian Americans and Whites\*

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### Abstract

The present research assessed racial differences in the associations among controlled orientation, injunctive norms, and increased drinking by White and Asian American college students. Previous research has noted racial differences in drinking, but reasons have not been considered in the context of individual differences in self-determination or responses to social influences. The authors evaluated perceived parental and peer injunctive norms as mediators of the relationship between controlled orientation and number of drinks consumed per week. The association between controlled orientation and drinking was further expected to be moderated by race. This study consisted of 534 White and 198 Asian American participants who had at least one heavy drinking episode in the month prior to assessment. Participants completed self-report measures assessing self-determination, perceived parental/peer injunctive norms, and drinking. Results indicated that peer injunctive norms served as a mediator between controlled orientation and greater number of drinks consumed per week for Whites only. Although Asian Americans were significantly higher in controlled orientation than Whites, they drank less and perceived their peers to be less approving of drinking. In contrast, Whites who were high in controlled orientation viewed their friends as being significantly more approving of alcohol and consumed significantly more drinks per week. Results provide unique considerations for understanding cultural differences in drinking among White and Asian American young adults.

### Keywords

Alcohol; Controlled orientation; Race; Injunctive norms

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### Conflict of interest

The authors declare there are no conflicts of interests.

### Contributors

Clayton Neighbors designed the initial study and wrote the protocol whereas Mai-Ly Nguyen conducted the literature search and wrote a majority of the introduction, methods, and discussion. In addition, Clayton Neighbors wrote the results section and served as editor of the final manuscript. Both authors conducted statistical analysis and approved of the final manuscript.

## 1. Introduction

Previous research has indicated that young adults who are lower in self-determination tend to drink more. One aspect of self-determination, namely, controlled orientation, has been specifically associated with heavier drinking. This is presumably because controlled orientation reflects the tendency to base behaviors on the perceived expectations and approval of others. Therefore, among college students, we would expect that the association between controlled orientation and drinking would be mediated by perceived expectations of others (e.g., injunctive norms for friends and parents). However, there may be important cultural differences with respect to self-determination and its connection to perceived expectations of others in the context of drinking. The present research focuses on differences between Asian Americans and Whites in the associations among self-determination, perceived approval of important others, and drinking. For the purpose of this paper, we use the term “race” to correspond with race/ethnicity. In addition, we classify students who self-identify as Asian/Pacific Islander as being “Asian American” and “Whites” as those who self-identify as White/Caucasian.

### 1.1. Self-determination

In their seminal work on Self-Determination Theory, Deci and Ryan (1985a) identified different Causality Orientations or personality characteristics that distinguish individuals who are more intrinsically or extrinsically motivated and described how these orientations relate to behavioral outcomes. Autonomous individuals are more likely to perform particular tasks based on intrinsic interests in the task or because the task is consistent with well-integrated values. Being more autonomously oriented has been associated with positive outcomes such as maintaining healthy behaviors following a long-term weight loss program (Williams, Grow, Freedman, Ryan, & Deci, 1996); lowering of glycosylated hemoglobin (an indicator of lower glucose levels) following a diabetes intervention (Williams, Freedman, & Deci, 1998); and constructive changes in lifestyle following chest pain (Williams, Gagné, Mushlin, & Deci, 2005).

In contrast, individuals with a more controlled orientation are more likely to be extrinsically motivated, that is, driven by possible external rewards or punishments they feel they will receive. Hence, they seek out external cues to guide them in their behavioral decision-making. According to Ryan and Deci (2000), a crucial incentive for controlled individuals to perform actions that are not integrally interesting to them is to model or implement behaviors in order to engender acceptance or approval from significant others. Since gaining external approval can be difficult to maintain but easy to lose, controlled individuals exert an exorbitant amount of effort in regulating their behaviors; but ironically, feel less in control of their overall fate, because their decisions have been heavily influenced by external factors. Thus, controlled orientation has been linked to such negative consequences as higher levels of stress (Deci & Ryan, 1985a); increased aggression (Deci & Ryan, 1985b); and committing acts of violence against an intimate partner (Hove, Parkhill, Neighbors, McConchie, & Foss, 2010).

## 1.2. Cultural differences in self-determination

Cross-cultural differences in self-determination may exist. Some researchers have argued that autonomy may be purely a Western construct and that the notion of autonomy runs counter to Eastern/Asian cultures' emphasis on conformity to group values and/or authority figures as a means to maintaining harmony (i.e., Cross & Gore, 2003; Markus & Kitayama, 2003). For example, Iyengar and Lepper (1999) found that Asian American children persevered longer on an anagram when their mothers chose the task for them than when they made the choice. On the other hand, European American children persisted in trying to solve the anagram when they selected the task rather than when it was decided for them. Likewise, Miller (1997) argued that conceding to cultural expectations might fulfill more relatedness concerns; therefore, contributing to greater personal satisfaction than pursuing an autonomous orientation.

In contrast, some evidence suggests that there are cultural differences in self-determination that are associated with well-being, even after accounting for distinctions between individualism and independence (e.g., Chirkov, Ryan, Kim, & Kaplan, 2003; La Guardia, Ryan, Couchman, & Deci, 2000; Ryan & Solky, 1996). In the present study, our goal was to empirically evaluate cultural differences in controlled orientation. We expected that controlled orientation would be higher in Asian cultures than White cultures.

Previous authors have noted that Asians have been socialized to become attuned to and conform to the expectations of others in order to maintain the societal hierarchal order and group cohesion (i.e., Markus & Kitayama, 1991). In addition, researchers have discovered that greater utilization of self-presentation strategies in order to self-enhance may be an outward indicator of a controlled orientation (Lewis & Neighbors, 2005). One uniquely salient dimension of impression management found in Asian cultures is the need to save face. "Saving face" is defined as a strong external drive to reinstate and maintain a positive public self-image following an embarrassing situation rather than attempting tasks in order to fulfill intrinsic needs (Modigliani, 1968, 1971). For instance, Heine, Kitayama, and Lehman (2001) found that Japanese participants were motivated more by failure feedback than success feedback, while success feedback motivated Canadians more than failure feedback. Moreover, a tendency to base behaviors on external contingencies, particularly those associated with others' approval or disapproval, as assessed by controlled orientation may be more evident among Asians.

## 1.3. Self-determination and drinking

Previous research has shown controlled orientation to be associated with higher rates of drinking and self-handicapping (Higgins & Harris, 1988; Knee & Zuckerman, 1998). Research has also shown that controlled orientation moderates the association between peer pressure and alcohol use, such that men who are higher in controlled orientation appear to be more susceptible to peer influences on drinking (Knee & Neighbors, 2002). Additionally, controlled orientation has been linked to alcohol-related problems and increased alcohol consumption among those higher in social acceptance-based contingent self-esteem (Neighbors, Larimer, Geisner, & Knee, 2004). In sum, previous research suggests that

controlled orientation is associated with heavier drinking to the extent that individuals perceive others as approving of drinking.

#### 1.4. Social norms

Extensive research has demonstrated that perceived social norms are among the strongest predictors of drinking among young adults (e.g., Borsari & Carey, 2003). Social norms have placed emphasis on perceptions of others' behaviors (i.e., descriptive norms) and perceptions of others' approval (i.e., injunctive norms; Cialdini, Kallgren, & Reno, 1991). The present research focuses exclusively on injunctive norms operationalized as perceptions of peers' approval of drinking and parents' approval of drinking, both of which have shown to be significant predictors of drinking among college students (Abar & Turrisi, 2008; Keefe, 1994; Neighbors, Lee, Lewis, Fossos, & Larimer, 2007; Turrisi & Ray, 2010).

In recent years, research has been dedicated to understanding how norms relate to college student drinking behaviors (Baer, 2002; Berkowitz & Perkins, 1986; Borsari & Carey, 2001, 2003; Dejong & Linkenbach, 1999). In general, studies have shown that the majority of college students tend to *overestimate* the approval of drinking among their peers (e.g., Prentice & Miller, 1993). Potential explanations for this phenomenon include false consensus and pluralistic ignorance (Marks, Graham, & Hansen, 1992; Prentice, 2008). Hence, students believe that their friends hold positive perceptions towards drinking and consume alcohol just as much, if not more, than they do (i.e., Mullen & Hu, 1988). As a result, they fail to question or recognize their own problematic heavy drinking habits.

#### 1.5. Asian American versus White drinking

Recent research has increasingly begun to examine racial differences in drinking. Specifically, a number of articles have begun to look more closely at drinking behaviors among Asian Americans in comparison to Whites (Han & Short, 2009; LaBrie, Lac, Kenney, & Mirza, 2010; Oei & Jardim, 2007). The Asian American population is one of the fastest-growing populations in the United States, increasing by over 43% between 2000 and 2010 (U.S. Census Bureau, 2010). Research has consistently shown that Asian Americans drink less than Whites, but drinking is still a significant problem in this group (i.e., Han & Short, 2009; Iwamoto, Corbin, & Fromme, 2010; O'Hare, 1995). Furthermore, recent studies have determined that alcohol abuse has risen approximately 6% among Asian American men and over 3% in Asian American women from 1992 to 2002 (Grant et al., 2004).

Multiple factors may account for drinking differences between Asian Americans and Whites. Genetic factors have been most commonly evaluated in explaining lower drinking rates among Asian Americans. Variations in two genes coding for alcohol-metabolizing enzymes, aldehyde dehydrogenase (ALDH2) and alcohol dehydrogenase (ADH1B—formerly termed ADH2), have been associated with less alcohol dependence (Li, 2000). Hendershot et al. (2009) demonstrated a link between physiological and cognitive behavioral responses to alcohol such that the ADH2\*2 allele mediated drinking frequency and peak lifetime consumption through alcohol expectancies. Hence, Asian Americans, particularly if they have this gene, tend to drink less. However, certain subgroups may be more susceptible to drinking.

While research has considered genetic variation as an explanation for differences between Whites and Asian Americans, other factors have been less widely considered. Some studies have found that Korean-Americans are more likely to drink if they are less acculturated to American society (Hendershot, Dillworth, Neighbors, & George, 2008). This suggests that sensitivity to social influences may also be important to consider in the context of racial differences in drinking.

## 1.6. Study aims and hypotheses

To date, little research has considered non-biological factors that may account for differences in drinking rates between Asian Americans and Whites. Despite research suggesting that there are important differences in drinking as a function of social influences and self-determination, to our knowledge, neither of these have been considered in the context of racial differences. We considered several propositions in the present research. First, controlled orientation has been previously associated with heavier drinking, presumably due to greater susceptibility to others' expectations. Thus, perceptions of parents' and friends' approval of drinking were expected to mediate associations between controlled orientation and drinking, and we were interested in whether this mediation might differ by race. Second, Asian Americans may be higher in controlled orientation and drink less, even though controlled orientation is typically associated with higher drinking. This may suggest that the association between controlled orientation and drinking differs between Asian Americans and Whites. Furthermore, we expected an interaction between race and controlled orientation in predicting drinking. Finally, we anticipated that the association between perceived parents' and peers' approval might vary as a function of race, but did not have explicit predictions regarding direction.

## 2. Material and methods

### 2.1. Participants and procedures

Participants for the present study included 732 undergraduates enrolled at a large public West Coast university who reported at least one heavy drinking episode in the previous month (defined as consuming at least four/five drinks at one sitting for women/men). All respondents were full-time freshman who were pre-screened, and completed assessments in the fall quarter as part of a larger intervention trial. The 73% White and 27% Asian American participants used in this study were generally representative of the incoming class, which consisted of 51.04% White, 28.05% Asian American, and 20.91% other ethnicities (none higher than 5%). As previously mentioned, "Whites" were classified as those who self-identified as White/Caucasian, whereas "Asian Americans" were defined as those who self-identified as Asian/Pacific Islander.

In addition, 42% of the participants were men and 58% were women ranging in age from 17 to 21 years ( $M=18.16$ ,  $SD=0.50$ ). Sexual orientation was 96.4% straight/heterosexual; 0.82% gay/lesbian; 1.64% bisexual; and 1.10% questioning. Relationship status was 38% single and not dating; 36% casually dating; 25% exclusively dating; and 1% engaged or married/life partner. Residence status was 65% residence halls/dorm rooms; 22% fraternity/sorority house; 6% off campus housing; and 6% with parents.

Participants received \$35 for completing the combined screening and assessment survey, which took approximately 50 min to complete. Data examined in this manuscript were taken from the initial screen and assessment prior to any interventions. Details regarding the larger trial are available elsewhere (Neighbors et al., 2010).

## 2.2. Measures

**2.2.1. Controlled orientation**—Controlled orientation was measured using the General Causality Orientations Scale (GCOS; Deci & Ryan, 1985a; Ryan & Connell, 1989). This scale includes 17 vignettes which are each followed by a response. Participants report the likelihood that they would engage in each response on a seven-point scale from *very unlikely* to *very likely*. One of the scenarios is: “You have been invited to a large party where you know very few people. As you look forward to the evening you would likely expect that...” Participants rate the likelihood that they would “... try to fit in with whatever is happening in order to have a good time and not look bad.” Another scenario is: “A woman who works for you has generally done an adequate job. However, for the past two weeks her work has not been up to par and she appears to be less interested in her work. Your reaction is likely to be:” Participants rate the likelihood that they would “Tell her that her work is below what is expected and that she should start working harder.” The GCOS has been found to have good construct validity and acceptable reliability (Deci & Ryan, 1985a). In the present study, alpha was .74.

**2.2.2. Injunctive norms**—*Peer injunctive norms* were assessed using John Baer’s (1994) four-item measure. Participants were asked to rate how their friends would feel if: “You drank alcohol every weekend; You drank alcohol daily; You drove a car after drinking; You drank enough alcohol to pass out.” Participants responded on a seven-point scale from *strongly disapprove* to *strongly approve*. *Parental injunctive norms* used the same items, but followed the stem “How would your parents feel if...” Alphas were .72 and .70 for peer and parental injunctive norms respectively.

**2.2.3. Drinking**—Drinking was assessed using the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985). Participants were asked to consider a typical week during the last three months, and to report how much alcohol they consumed on average (measured in number of drinks) on each day. Drinking was calculated by adding participants’ responses for each day of the week. Moreover, scores reflect average number of drinks per week. This measure has shown good test–retest reliability and convergent validity with measures of drinking (Baer, Stacy, & Larimer, 1991; Borsari & Carey, 2000; Neighbors, Lewis, Bergstrom, & Larimer, 2006).

## 3. Results

### 3.1. Correlations and descriptive statistics

Means, standard deviations, correlation for controlled orientation, peer and parent norms, and drinking by ethnicity are presented in Table 1. Controlled orientation was associated with peer norms for all participants, and among Whites, it was associated with drinking. Peer norms were in turn associated with parental norms and drinking for all participants,

although the association was only marginal for Asian Americans. Finally, parental norms were associated with drinking for all participants. We conducted t-tests comparing Asian Americans and Whites on each variable. Consistent with expectations, results indicated that Asian Americans scored higher on controlled orientation,  $t(730)=3.86, p<.001$ . In contrast, Whites were higher on peer norms,  $t(730)=3.17, p=.001$ , parent norms,  $t(730)=2.34, p=.02$ , and drinks per week  $t(730)=2.11, p=.04$ .

### 3.2. Analysis approach

In order to evaluate our research questions, a three-stage approach was utilized to analyze the data. First, we employed linear regression to assess the associations of each predictor (controlled orientation, peer norms, and parental norms). By testing the interactions between race and each predictor, we were able to examine whether each of these associations differed. Second, we used path analysis to evaluate the fit of the model suggesting that controlled orientation predicts peer and parent norms, which in turn, predicts drinking. The goal was to determine whether the associations implied by the model differed by race as well. Third and finally, Sobel tests were conducted to test mediators for the relationship between controlled orientation and drinking.

### 3.3. Regressions and interactions

Linear regression was used to evaluate whether the relations between races moderated associations of controlled orientation, peer norms, and parental norms with drinking. Accordingly, three regression analyses were conducted where drinking was regressed on race, the specific predictor, and the product of race with the predictor. Regression results are presented in Table 2. Race was dummy code (Asian American = 1, White = 0). All other variables were mean centered.

In the first regression analysis, we found main effects suggesting that White participants and those who were higher in controlled orientation drank more. We also found an interaction suggesting that the association between controlled orientation and drinking was weaker for Asian Americans. The interaction presented in Fig. 1 was graphed using parameter coefficients where high and low values of controlled orientation were specified as one standard deviation above and below the mean, respectively (Cohen, Cohen, West, & Aiken, 2003).

In the second regression analysis, we discovered a main effect for peer injunctive norms and an interaction between race and peer norms. The interaction presented in Fig. 2 reveals the association between peer norms and drinking to be weaker for Asian Americans.

In contrast to the first two regression analyses, we did not find an interaction between parental injunctive norms and race. We did find a main effect for parental norms, suggesting that participants who view their parents as less approving of drinking consumed fewer drinks per week.

### 3.4. Path analysis

Multi-group path analysis (Bollen, 1989; Kline, 2005) was used to evaluate model fit and racial variation in the models. AMOS 18.0 (Arbuckle, 2009) with full information maximum likelihood was used to test a model specifying perceived peer approval and perceived parental approval as potential intermediary variables between controlled orientation and drinking among Asian Americans and Whites. All path coefficients were free to vary across race. Consistent with the interactions reported above, this model fit significantly better than a model in which parameters were not free to vary across race ( $\chi^2(4)=26.42, p<.001, \chi^2(7)=19.26, p=.007, GFI=.987, CFI=.952, RMSEA=.049$ ). Fig. 3 presents parameter coefficients for Asian Americans (in parentheses) and Whites. Results suggested that for Asian Americans there was no association between injunctive norms and drinking, whereas this association was significant and positive among Whites. Results further implied that among Whites parental injunctive norms were not associated with either controlled orientation or drinking, whereas these associations were marginally significant for Asian Americans and consistent in direction with the fully constrained model.

### 3.5. Mediation analyses

Mediation analyses were conducted using the *ab* products method described by MacKinnon and colleagues (MacKinnon, Fairchild, & Fritz, 2007; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). The Sobel formula (Sobel, 1982) was used to test the significance of indirect effects. Across all participants there was a significant indirect effect from controlled orientation to drinking through peer norms ( $Z=3.79, p<.001$ ). In contrast, the indirect effect from controlled orientation to drinking through parental norms was not significant ( $Z=1.37, p=.17$ ). Thus, across all participants, peer norms but not parental norms mediated the association between controlled orientation and drinking.

For Asian Americans, specifically, there was no relationship between controlled orientation and drinking to be mediated. Thus, no significant mediators were found for this group. In contrast, for Whites, we found evidence for peer norms as a mediator ( $Z=2.93, p=.003$ ) but not parental norms ( $Z=.60, p=.55$ ). Hence, mediation results for Whites duplicated results for the larger sample, whereas no evidence of mediation was found for Asian Americans.

## 4. Discussion

In line with other studies (e.g., Knee & Neighbors, 2002; Neighbors et al., 2004), controlled orientation and peer injunctive norms were associated with heavier drinking for Whites. However, this appears to be moderated by race. Although Asian Americans were significantly higher in controlled orientation relative to Whites, they tended to drink less. They also perceived their friends and parents as less approving of drinking. Furthermore, for Whites, perceived friend approval had a stronger association with drinking than parental approval, whereas among Asian American students, neither perceived parental approval nor peer approval was strongly associated with drinking.

We hypothesized and found that Asian American students would be more controlled than White students. To our knowledge, no previous studies have explicitly tested this; although,

it is consistent with cultural differences in motivation and face concerns. Moreover, controlled orientation may serve as a proxy for sensitivity to external expectancies. Thus, Asian Americans may be more controlled than Whites would because they have been socialized from a young age to monitor and try to live up to other people's expectations of them in order to maintain harmony (e.g., Markus & Kitayama, 1991).

Along these lines, controlled orientation may be unassociated with drinking among Asian Americans for several reasons. First, as mentioned above, Asian Americans perceive their parents and friends as being less approving of drinking than Whites do. These implicit negative attitudes may not only be culturally based but also biologically based, because Asian Americans often possess genetic mutations of alcohol-metabolizing enzymes. This can lead to noticeable negative consequences after drinking such as flushing and nausea (Thomasson & Li, 1993).

Second, Asian Americans may refrain from drinking due to face concerns (i.e., they may not want to appear red-faced, inebriated, or out of control in front of their friends). Face concerns have been linked to greater use of impression management strategies, a quality that has also been strongly associated with higher controlled orientation, in order to prevent potential public embarrassment (Lewis & Neighbors, 2005; Modigliani, 1968, 1971). Although attempting to save face is not exclusive to Asian societies, researchers have determined that it is a core concept in understanding Asian culturally defined motivations and behaviors (e.g., Bond, 1991; Ho, 1976; Redding & Ng, 1982).

Finally, there may be significant differences in self-identification between White students and Asian American students. For example, drinking may be a more salient dimension of identity among White college students. In contrast, Asian American students may identify on average more with the "model minority" stereotype, which places an emphasis on academic achievement. Furthermore, both groups may be consciously aware of these stereotypes, which in turn can affect how they behave under certain circumstances. For instance, Asian Americans who internalize the "model minority" stereotype report greater psychological distress, although they fail to seek mental health services in dealing with their distress (Gupta, Szymanski, & Leong, 2011). In addition, White males have been found to expect, and in fact deliver, lower performance relative to their Asian peers on math tasks (Aronson et al., 1999). Thus, self-identification may be essential in considering the association between controlled orientation and drinking.

Similarly, perceived friend approval may not be associated with drinking among Asian Americans because individuals are likely to be most influenced by their perception of friends' approval on self-identifying dimensions, behaviors, and/or characteristics. If Whites identify more strongly with drinking, it makes sense that they would be particularly influenced by their friends' approval of that behavior. Conversely, Asian Americans may be less likely to associate alcohol with their social identity. If Asian Americans identify more strongly with academic performance, they may be more motivated by their peers to excel in school. In fact, Asian Americans may curb heavy drinking relative to their White counterparts because it might make them appear less serious about scholastic achievements.

Overall, this research has important clinical implications because it suggests that Asian Americans and Whites may have different motivations for heavy drinking that go beyond controlled orientation and perceived norms. In fact, one possibility as to why Asian Americans are higher in controlled orientation, yet drink less, is that controlled orientation may hold different cultural meanings for Whites and Asian Americans. Whereas in Western culture controlled orientation may imply that an individual is too dependent on others, Asian cultures may actually value controlled orientation because it fosters interdependence and maintains harmony.

Because the results of the current study indicate that Asian Americans are not driven to drink in an effort to bond with friends, these at risk youths may be motivated to drink for other reasons, such as to alleviate academic stress. Although we did not explicitly test this in the current research, previous literature has suggested that Asian American students expected greater tension reduction when drinking in comparison to White students (O'Hare, 1995). We believe that these differences might extend to White and Asian American adolescents as well. Future studies and interventions should take these potential differences in motivations and self-identification into account.

#### 4.1. Limitations and future directions

One major limitation of this study was that all the participants were prescreened on the basis that they consumed four/five or more drinks in one occasion for females/males respectively. Thus, the range in testing this sample is restricted to drinkers with at least one heavy drinking episode, and the sample is probably more representative of typical White students than of typical Asian American students. Regardless of this limitation, we still found that Whites were significantly lower in controlled orientation, yet consumed significantly more drinks per week than Asian Americans do. We might expect these effects to be larger in a more representative sample.

Another possible limitation of this study is that we did not explore how descriptive norms influence drinking among Whites and Asian Americans. Descriptive norms relate to people's perceptions of how much their peers drink without taking into account whether others approve of that behavior. However, some researchers have suggested that injunctive norms for close others (e.g., friends and parents) may actually be more influential than descriptive norms for the same reference groups in predicting behavior, since injunctive norms place a normative value on that behavior (Kallgren, Reno, & Cialdini, 2000). Hence, in the present study, we focused on examining racial differences as a function of injunctive norms and drinking. Future studies might explore whether racial differences exist when participants are presented with descriptive and injunctive norms, and whether being given such descriptive norms feedback about one's own race might predict less drinking.

Finally, a major limitation of this study was that we did not assess the birthplace of participants. It may be possible that the relation between controlled orientation and drinking is similar for native-born Asian Americans and Whites. Likewise, peer norms may mediate the association between controlled orientation and drinking for both native-born Asian American and White student populations. Moreover, because birthplace was not determined, it is possible that the current research is only generalizable to foreign-born Asian Americans.

Future research should examine whether birthplace and acculturation play a role in the association between controlled orientation, perceived norms, and drinking behaviors.

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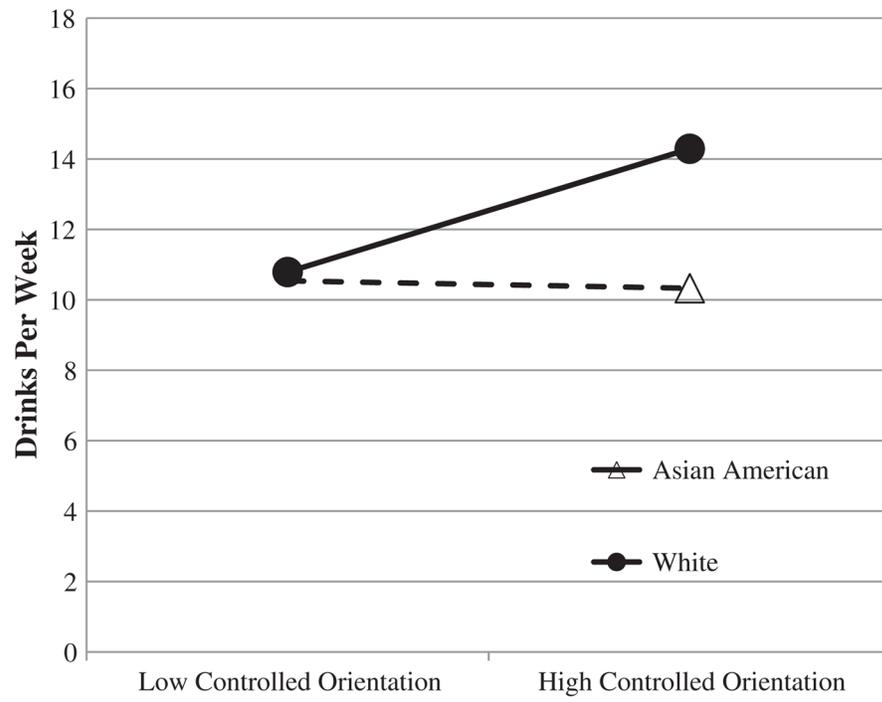
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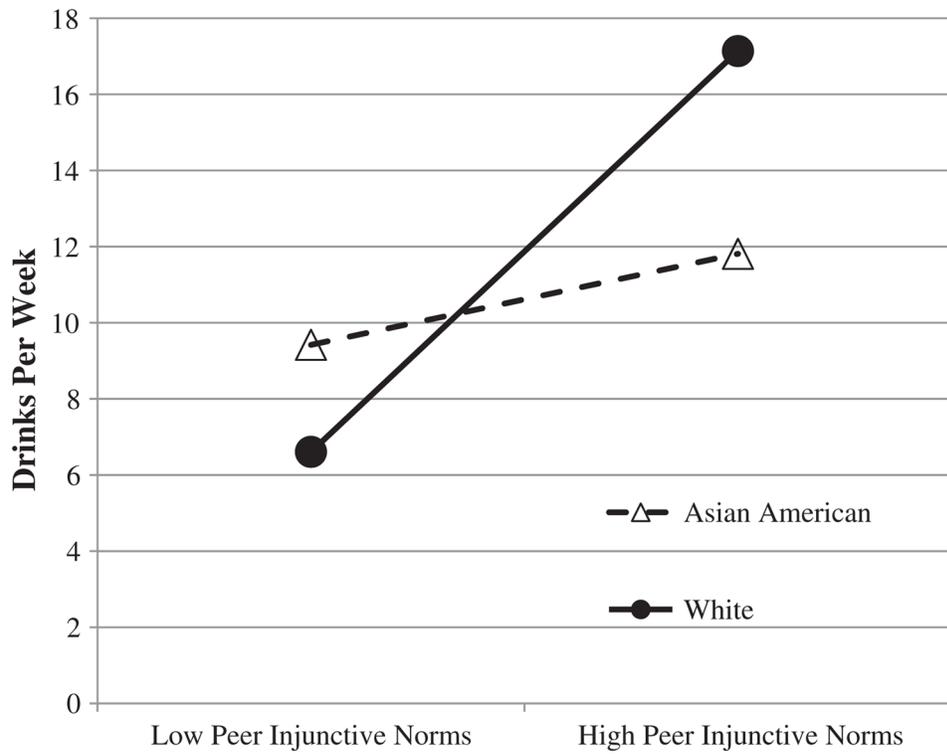
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**HIGHLIGHTS**

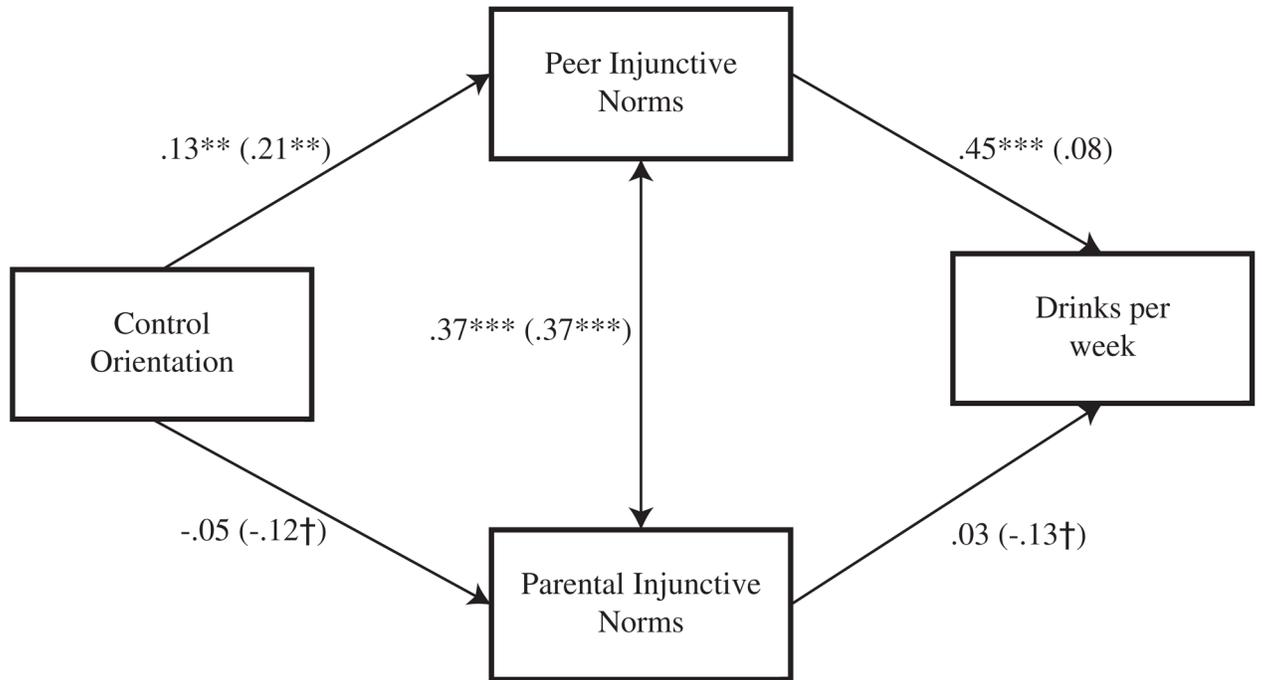
- Motivation, norms, and drinking among Asian Americans and Whites were evaluated.
- Asian Americans were significantly higher in controlled orientation but drank less.
- Asian Americans also viewed close others as being less approving of drinking.
- Controlled orientation and drinking were mediated by peer norms for Whites only.
- Results aid in understanding cultural differences in drinking for these two groups.



**Fig. 1.** Drinks per week as a function of race and controlled orientation.



**Fig. 2.** Drinks per week as a function of race and peer injunctive norms.



**Fig. 3.** Drinking as a function of controlled orientation, norms, and race. *Note.* Parameter estimates for Whites are presented first, whereas parameter estimates for Asian Americans are presented in parentheses.

**Table 1**

Means, standard deviations, and correlations for Asian Americans (N=198) and Whites (N=534).

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1. Controlled orientation	–	.13**	–.06	.14***
2. Peer injunctive norms	.20**	–	.40***	.44***
3. Parental injunctive norms	–.12	.25***	–	.20***
4. Drinks per week	–.01	.13 <sup>†</sup>	.18**	–
Asian Americans M (SD)	4.30 (.64)	2.49 (1.01)	1.36 (.63)	10.41 (9.05)
Whites M (SD)	4.09 (.66)	2.74 (.95)	1.48 (.61)	12.35 (11.67)

Note. Correlations for Asian Americans are presented below the diagonal. Correlations for Whites are presented above the diagonal.

<sup>†</sup>  $p < .06$ ,

\*  $p < .05$ ,

\*\*  $p < .01$ ,

\*\*\*  $p < .001$ .

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**Table 2**

Regression results for drinks per week.

	<b>b</b>	<b><math>\beta</math></b>	<b>t</b>	<b>p</b>
Race	-2.062	-0.083	-2.22	0.027
Controlled orientation	2.619	0.158	3.66	0.0003
Race×controlled orientation	-2.785	-0.087	-1.99	0.047
Race	-1.339	-0.0539	-1.57	0.1168
Peer norms	5.3610	0.473	11.67	<.0001
Race×peer norms	-4.144	-0.200	-4.89	<.0001
Race	-1.592	-0.064	-1.75	0.0800
Parental norms	3.770	0.211	4.93	<.0001
Race×parental norms	-1.224	-0.036	-0.84	0.3984

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