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COMPARISON OF RISK-TAKING TENDENCIES BETWEEN WHITE AND ASIAN
AMERICAN UNDERGRADUATE STUDENTS

JACOB MICHAEL YOUSEF
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Reviewed and approved* by the following:

Stephen Wilson
Assistant Professor of Psychology
Thesis Supervisor

Richard Carlson
Associate Head
Professor of Psychology
Honors Adviser

* Signatures are on file in the Schreyer Honors College.

Abstract

Risky patterns of behavior result in a huge number of unnecessary costs, injuries, and deaths. These specific patterns vary within subpopulations, and some significant differences have been demonstrated between ethnicities. The aim of the present study was to address the dearth in research on patterns of risk-behavior in Asian-Americans, specifically college students, by examining self-report and performance-based assessments of general risk-taking tendencies in this population. Asian-American college students were found to be less sensation-seeking, less likely to suffer from alcohol-related problems, and less responsive to peer influence. However, no significant differences in impulsivity or generalized risk-taking were evident. These patterns could be explained in a variety of ways, including the fact that some of the factors on the impulsivity assessment used in this study, such as lack of attention, seemed unrelated to risk-taking tendencies, and by the fact that the participants did not have much at stake on the generalized riskiness assessment. Further research using self-report and functional brain imaging are essential to providing a better idea regarding the nature of these patterns, which may have implications for preventing certain types of risk behaviors, or unnecessary riskiness in general.

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A considerable number of deaths and serious injuries are the direct result of unnecessary risk-taking behaviors on the part of the victim or another individual. For example, a nationwide study has found that nearly one in three high school students has ridden in a car with a drunk driver in the past and is currently open to the idea of doing so again, placing them at an immensely increased risk for car accidents (Eaton et al., 2010). Many other potentially lethal behaviors, such as smoking and leading a sedentary lifestyle, do not pose such an immediate threat which makes them much more common and socially acceptable. Despite all of the warnings against and evidence of the harmful effects of these behaviors, it has been found that about 26% of teens in the United States binge drink and 23% smoke cigarettes (Eaton et al., 2010). Converging evidence also indicates that various races and ethnicities display different patterns of risk-behavior, which is a phenomenon that has not yet been well-understood (Eaton et al., 2010). Therefore, studying intricacies that may lead to these risk-taking tendencies has great potential to provide insight into how best to prevent them and all of their associated harm.

Literature Review

Some previous studies have investigated risk-taking with a focus on either particular behaviors or groups of people, but few have studied patterns of general risk-taking behavior across ethnicities. One study by Unger et al. (2001) examined the relationship between ethnicity and susceptibility to peer influence regarding smoking habits. In a standardized survey, 5,143 eighth-grade students from California reported whether they had smoked any cigarettes within the last thirty days and whether they would ever consider taking a cigarette from a friend. Hispanic and mixed-ethnicity students were most likely to have smoked recently, while Black and Asian students were least likely (Unger et al., 2001). Similarly, Hispanics were most open to

the idea of smoking, while Asians were least open, and these two groups had the most and least peer smokers, respectively (Unger et al., 2001).

In this study, the authors also distinguish informative peer influence from normative peer influence. In informative influence, the individual's peers directly promote or facilitate the behavior, while normative influence occurs when the individual simply perceives the behavior as a social norm (Unger et al., 2001). Both normative and informative peer influence significantly increased smoking and openness to smoking. Informative peer influence was most effective on White participants. The authors hypothesize that this is because Whites are raised in a more individualistic culture that encourages the youth to diverge from the lifestyle of his parents, while other ethnic cultures promote collectivism with the adult population (Unger et al., 2001). Interestingly, those of mixed ethnicities were more likely to smoke than Whites, but were more resistant to peer influence for unknown reasons (Unger et al., 2001). No major differences were found across ethnicities in the impact of normative peer influence (Unger et al., 2001). While this study had a relatively narrow focus and range of participants, the patterns observed could provide some insight into impulsivity in these ethnic subpopulations.

In another study, Caetano (1984), of the Alcohol Research Group at Berkeley, subjected data from three surveys, which were carried out as part of the California Prevention Demonstration Program, to analyses aimed at finding differences in the alcohol use and abuse patterns of Whites, Blacks, and Hispanics. This analysis had a few shortcomings, including the fact that the original surveys were carried out between 1977 and 1980 in just three counties in the San Francisco area (Caetano, 1984). Furthermore, individuals currently in an institution or in the military were not pursued for survey, which may bias the sample. However, unlike Unger's smoking study, this analysis allowed for inspection of a specific risk behavior across a wide

range of age groups. In the original surveys, housing areas were selected within specified regions and one individual between the ages of 18 and 59 was selected from each household, yielding a total of 4,510 participants of various demographics (Caetano, 1984).

Caetano proceeded to group each participant into one of five categories based on the quantity and frequency of his or her drinking (Caetano, 1984). Those who did not drink were labeled “abstainers” while those who drank most intensely were labeled “frequent heavier drinkers.” With regard to females, Whites were found to be least likely to abstain entirely. The same was true for males, but only by a small margin (Caetano, 1984). While there are more complex differences between ethnicities, it became easiest to see the trends when the two heaviest-drinking categories were combined. When this was done, 47% of White and Hispanic males fell into this new category, while only 39% of Black men did. Additionally, 15% of Black and White women fell into this combined group, while only 10% of Hispanic women did (Caetano, 1984).

When the age of the participants was taken into account, a few more interesting patterns emerged. As males crossed from their 20’s into their 30’s, Whites became half as likely to be frequent binge drinkers, Hispanics became slightly less likely to binge, and Blacks became twice *more* likely to binge drink (Caetano, 1984). At ages 40 and higher, White binge drinking rates stabilized while Black and Hispanic rates decreased. It is important to note that Hispanics were always most likely to drink frequently and to suffer problems from this pattern of drinking (Caetano, 1984). One final key observation in Caetano’s analysis was the openness of various ethnicities to the idea of becoming drunk. Hispanics generally had the most accepting attitude toward alcohol. Blacks were slightly less liberal, and Whites were the most conservative (Caetano, 1984).

Caetano's article provided much insight into the intricacies involved in producing varied drinking patterns between races. Many of these, such as Black and Hispanic males being less accepting of drinking in women, are learned cultural differences. The difficulty arises in deciphering whether any of these differences result from an inherent psychological construct producing generalized risk-taking tendencies rather than from social or other factors. This analysis will attempt to study this via two different methods: examining a range of risk-behaviors and using an objective measure of risk-taking tendencies known as the Balloon Analogue Risk Task (BART), which will be discussed shortly.

Perhaps the deepest research into impulsive and risk-taking behavior, at this time, is the Youth Risk Behavior Surveillance (YRBS) conducted in 2009 (Eaton et al., 2010). The data for this study was collected using standardized questionnaires from 16,460 high school students across the United States. This study examined six categories of risky behavior: physical injury, tobacco use, alcohol/drug use, sexual practices, diet, and physical idleness (Eaton et al., 2010). It found that White high school students were most likely to use and abuse tobacco and alcohol. They were also the most likely to take prescription drugs, that were not intended for them, for recreational purposes (Eaton et al., 2010). Black students were most prone to unhealthy sexual activity levels and practices, as well as harmful lack of physical activity (Eaton et al., 2010). Hispanic students were most likely to take risks with drunk driving and to use a variety of drugs including cocaine and methamphetamines (Eaton et al., 2010). While this study was very well executed, it only collected facts and did not provide any form of explanation for its findings (Eaton et al., 2010).

One specific ethnic group that has not received much attention in the domain of risk-taking is the Asian American population. However, while there are relatively few studies

focused on them, there is evidence that shows some disparities in their risk-taking behavior as compared to the other ethnicities. For example, Asian American adolescents have been found to be more worried about contracting HIV than other groups (Strunin, 1991), less likely to use drugs and alcohol, and least likely to get involved in sexual activity (Tosh & Simmons, 2007). This study also found evidence to suggest that the degree of assimilation with American culture increased risky behavior (Tosh & Simmons, 2007).

O'Hare (1995) published another of the few studies focused specifically on patterns of risky behavior by Asian Americans. This study used data from a survey, done at Rutgers in 1987, of 816 undergraduate and graduate students, 637 White and 179 Asian. This study found drastic differences in the alcohol use patterns of Whites and Asians, including the fact that Asians were five times more likely than Whites to entirely abstain from drinking (O'Hare, 1995). Furthermore, White students were nearly five times more likely to binge (O'Hare, 1995). Accordingly, White students were found to have many more alcohol-related troubles. On the other hand, Asians tended to have more positive expectancies for drinking than Whites (O'Hare, 1995). It has been proposed that the difference in the indulgence of Asian Americans in alcohol may result from a commonly inherited defect of aldehyde dehydrogenase (ALDH), an enzyme involved in the digestion of alcohol, in the Asian population (Wall & Ehlers, 1995). When Asians lacking the functional enzyme consume alcohol, they flush and become nauseated, among other reactions (Wall & Ehlers, 1995). This is just one example of possible underlying factors affecting inter-ethnic differences in risk-taking.

Goals and Hypotheses

It is also possible that many risk-behaviors result, in part, from a single underlying psychological construct, an inherent disinhibition that causes the individual to engage in risky behaviors without heeding the harmful aspects of the behaviors. The goal of this particular study will be to discover whether there is a difference in this construct between two specific ethnic populations. Because this assessment specifically focuses on the differences between White and Asian American college students, the limitations in literature on Asian American risk-taking patterns will also be addressed.

The possibility of a disinhibition factor can be assessed through a variety of measures. The participants in this investigation will complete a series of surveys (described further below), including the Sensation Seeking Scale V (SSSV), the Barratt Impulsiveness Scale-11 (BIS-11), and the Resistance to Peer Influence scale (RPI) in order to assess their level of disinhibition. Most notably, the propensity of the individual to take risks, in general, will be assessed using the Balloon Analogue Risk Task (BART). The BART is a computer program developed and described by Lejuez et al. (2002). This program consists of an image of a balloon that gets increasingly inflated as the participant clicks it. Because the participant is given some incentive to inflate the balloon as much as possible without having it pop, this is an effective measure of risk-taking tendencies and the factors that may affect these tendencies in an individual (Lejuez et al., 2002). The authors found the BART results to correlate with self-reported risk-taking constructs and behaviors (Lejuez et al., 2002).

In light of the previously discussed studies, it is hypothesized that the Asian American participants will display lower rates of indulgence in the specific risk-behaviors such as alcoholism and drug use. Extrapolating from these specific behaviors, it is also hypothesized that they will have lower self-reported sensation seeking tendencies. Finally, in accordance with

the notion of an inherent riskiness construct, it is expected that they will exhibit more conservative response patterns on the BART.

Methods

Participants

The participants for this study were taken from the Penn State Psychology Subject Pool, through which their participation earned them course credit. The sample size consisted of 96 undergraduate Penn State students, but two participants did not supply their ethnicity information in the demographics survey. Of the remaining 94, 77 (81.9%) identified themselves as White, 11 (11.7%) were Asian, 3 (3.2%) were Hispanic, 1 (1.1%) was Black, and 2 (2.1%) marked “other.” The present study will focus on the sample of 88 White and Asian participants. Of the 77 White participants, 41 (53.2%) were female and 36 (46.8%) were male. Of the 11 Asian participants, 8 (72.7%) were female and 3 (27.3%) were male. The mean age of the White participants was 19.2 years old, while the mean age of the Asian participants was 19.3 years old.

Measures

Rutgers Alcohol Problems Index (RAPI)

The RAPI consists of 23 items regarding problems related to alcohol use—including both chronic and acute symptom patterns (e.g., “Passed out or fainted suddenly,” and “Had withdrawal symptoms”) (White & Labouvie, 1989). Each of these items was rated on a point scale based on frequency from 1 (“Never”) to 5 (“Always or almost always” or “More than 10 times,” depending on whether the item described discreet events). The RAPI was specifically designed to measure problem drinking in adolescents because, while they do tend to have

problematic drinking patterns, they are less likely to fit and be diagnosed by the criteria for addiction as described for adults. When administered in conjunction with other survey methods at different sessions, three years apart, the RAPI was found to have an internal consistency of 0.92 (White & Labouvie, 1989). The RAPI was found to have moderately strong correlations (.20-.57) with other measures of alcohol use intensity as well (White & Labouvie, 1989). This implies that the RAPI is a better assessment tool than a simple interview, but would be most ideally used in conjunction with other measurements (White & Labouvie, 1989).

Barratt Impulsiveness Scale-11 (BIS-11)

The BIS-11 is a 34 item survey in which each item is scored on a scale from 1 (“Never/Rarely”) to 4 (“Always/Almost always”) (Patton, Stanford, & Barratt, 1995). The items in the BIS are designed to measure different facets of trait impulsivity (e.g., “I buy things on impulse” and “I ‘squirm’ at plays or lectures”). Aside from the six first-order factors described in the original version of the BIS (attention, motor impulsiveness, self-control, cognitive complexity, perseverance, and cognitive instability) the BIS-11 found three second-order factors (motor impulsiveness, cognitive impulsiveness, and nonplanning impulsiveness). All of these factors were found to be significantly intercorrelated and the measure overall was found to have sufficient internal consistency for applied use (Patton et al., 1995).

Sensation Seeking Scale V (SSSV)

The SSSV consists of 40 items selected from the 71 items of the SSSIV in a manner designed to measure four different factors that the authors have attributed to general Sensation Seeking: Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (Dis), and Boredom Susceptibility (BS) (Zuckerman, S. Eysenck, & H.J. Eysenck, 1978). Three of

these four factors have been found consistently across both English and American males and females (Zuckerman et al., 1978). Boredom Susceptibility, however, was not as consistent between American males and females and in some international comparisons (Zuckerman et al., 1978). The goal of the authors was to select 10 items from the SSSIV that had a primary loading exceeding .30 for each of these four factors (A. "I often wish I could be a mountain climber" or B. "I can't understand people who risk their necks climbing mountains," for TAS, and A. "I have tried marijuana or would like to" or B. "I would never smoke marijuana," for ES). However, a few items that did not meet this requirement had to be selected. The reliability of each of these scales remained within the acceptable range, though it dropped from about .7 or .8 to .6 for the Experience Seeking scale (Zuckerman et al., 1978). Furthermore, the scores on these scales became relatively independent, supporting the idea that they actually measure these individual factors. Only TAS still had some correlation with ES scores, and very little with the other factors. While the value of this scale for cross-cultural assessments is not clearly defined, it is useful in its brevity and simplicity and in the fact that its total score does convey a balanced assessment of four supported factors of Sensation Seeking. Overall, the scale was found to have internal consistency with alpha between .83 and .86. Furthermore its longitudinal reliability (over three weeks) was sufficient, with $r = .92$ (Zuckerman et al., 1978).

Resistance to Peer Influence Scale (RPIS)

The RPIS consists of 10 pairs of opposing statements ("Some people will not break the law just because their friends say that they would. BUT Other people would break the law if their friends said that they would break it."), and the individual must select one from each pair (Steinburg & Monahan, 2007). For each of the selected statements, the individual must indicate whether it is "Really true," or "Sort of true." As a result, each item is scaled from 1 to 4 with

higher scores indicating a higher degree of resistance to the pressures of peer influence. The RPIS is designed to measure generalized susceptibility to peer influence in antisocial as well as other types of situations (Steinburg & Monahan, 2007). Furthermore, it avoids the problem of desirable responding, as shown by the fact that there was a very minimal (and negative, in fact) correlation between responses on the RPIS and a lie detector scale from the Revised Children's Manifest Anxiety Scale used for this purpose (Steinburg & Monahan, 2007). The RPIS has also been found to be sufficiently internally consistent as the Cronbach's alpha over four different samples (low income, detainees, community, and serious offenders) was found to be between .76 and .70. RPIS results were found to have only a moderate negative correlation to scores on the BIS and the Benthin Risk Perception Measure, which is consistent with the idea that they measure the related but separate construct of peer influence (Steinburg & Monahan, 2007). The validity of the RPIS was also supported by a few experimental measurements. For example, a sample of adolescents whose closest friends were between the ages of 21 and 30 were assessed and those whose RPIS results were lower than the median score exhibited a 33% greater increase in unruly conduct over the following six months than those above the median (Steinburg & Monahan, 2007). Furthermore, some biological evidence has also been found. In a sample of 43 children, it was found that those with low RPIS scores had greater activation in the right dorsal premotor cortex, which is involved in the observation and evaluation of the actions of others. Those with higher scores had greater connectivity between these areas and the dorsolateral prefrontal cortex which is involved in decision making, implying that they may have more personal input and thought into the decisions they make (Steinburg & Monahan, 2007).

Automatic Balloon Analogue Risk Task (AutoBART)

The BART is one type of gambling task that can be used to effectively measure the risk-taking propensity of an individual (Lejuez et al., 2002). In the original BART, the participant would continue clicking to inflate an on-screen balloon until either the participant was satisfied or the balloon popped. The participants are offered monetary compensation and instructed that the best way to maximize their earnings is to inflate each balloon as much as possible without popping it. The participant's average number of pumps, adjusted for the trials in which the balloon popped, was found to be an effective measure of risk-taking, through correlations with other accepted measures. The BART results were significantly correlated with the original Barratt Impulsiveness Scale, the Eysenck Impulsivity subscale, and the Sensation Seeking Scale V (Lejuez et al., 2002). Furthermore, BART scores were significantly correlated with self-reported risk behaviors including alcohol abuse, drug abuse, gambling, and unprotected sex (Lejuez et al., 2002).

However, one major problem with the BART was thus: if the balloon popped before the participant voluntarily stopped pumping it, the researchers would be forced to estimate how many more pumps he or she would have administered, which biases the results (Pleskac, Wallsten, Wang, & Lejuez, 2008). The automatic version of the BART was developed in order to address this problem. In this version, the participant simply types a total number of pumps at the start of each trial. If the balloon does pop before the specified number of pumps is reached, the program will display the pump at which it popped so that the participant will have this added benefit for subsequent balloons, as in the old program (Pleskac et al., 2008). Furthermore, the authors have found that participants tended to decide on a number of pumps for the balloon before beginning to click anyway, and this new model remains consistent with this strategy (Pleskac et al., 2008). Consistent with the goals of the authors, the scores on the new method

were found to be, on average, 9-12 pumps more than on the adjusted score of the old. Furthermore, this new version eliminates the possible confound of having increased risk lead to increased reward by informing the participant of the ideal average number of pumps (different balloons pop at different levels) (Pleskac et al., 2008).

The developers of the AutoBART also addressed another problem with the original BART. On the original assessment, most participants tended to inflate the balloons *less* than the ideal amount (on average, 64 pumps per balloon) for maximizing their profit (Pleskac et al., 2008). This confounds increased riskiness with greater reward, and the authors addressed this issue by openly instructing their participants that the ideal average number of pumps is 64, and by letting them know at which pump each balloon popped (Pleskac et al., 2008).

Procedure

The participants were brought in for this series of questionnaires regarding a variety of risk-taking tendencies and their correlates. After the consent and demographics forms, participants filled out the Sensitivity to Punishment/Reward Questionnaire (SPSRQ), Sensation Seeking Scale V (SSSV), Resistance to Peer Influence scale (RPI), Barratt Impulsiveness Scale-11 (BIS-11), Brief Substance Use Questionnaire (BSUQ), College Alcohol Problems Scale-Revised (CAPS-R), Rutgers Alcohol Problems Index (RAPI), Balanced Inventory of Desired Responding-6 (BIDR-6), and a working memory task called the OSPAN. The participants were then instructed to complete the BART in order to obtain a baseline for their general risk-taking tendencies. Finally, the participants completed a second round of BART assessments under one of four conditions designed to measure peer influences on risk-taking as part of another study. However, this final analysis will not be included in this thesis.

Results

In order to determine whether the White and Asian groups of participants performed differently on the five tasks, independent-samples t-tests were completed for each task. When an independent-samples t-test was done to compare performance on the BART, no significant differences between the White ($M = 32.61$, $SE = 1.75$) and Asian ($M = 31.90$, $SE = 4.54$) were found; $t(86) = .14$, $p = .886$. This implies that both groups have a similar general risk-taking propensity, and took risks in a similar manner on this task.

An independent samples t-test was done to compare performance on the BIS-11 between Whites ($M = 60.57$, $SE = 1.02$) and Asians ($M = 65.30$, $SE = 3.16$), and there was no significant difference; $t(86) = -1.55$, $p = .125$. This implies that both the White and Asian American undergraduate students have similar levels of trait impulsivity, as measured by this task.

An independent samples t-test was done to compare performance on the RAPI between Whites ($M = 7.82$, $SE = 1.00$) and Asians ($M = 1.73$, $SE = .78$), and a significant difference was found between the two; $t(86) = 4.79$, $p < .001$. This suggests that Asian American college students tend to have fewer alcohol-related problems than their White counterparts.

An independent samples t-test was done to compare performance on the RPIS between Whites ($M = 2.98$, $SE = .05$) and Asians ($M = 1.97$, $SE = .39$), and, again, a significant difference was found; $t(86) = 2.57$, $p < .05$. This finding suggests that White undergraduate students tend to be more susceptible to the influences of their peers than are Asian American undergraduate students.

An independent samples t-test was done to compare performance on the SSSV between Whites ($M = 20.52$, $SE = .74$) and Asians ($M = 13.27$, $SE = 2.94$), and a significant difference

was found here as well; $t(86) = 3.23, p < .01$. The results of this survey suggest that Asian American college students have less sensation seeking tendencies than do White college students. The mean scores for the SSSV, as well as the RPIS and the RAPI, are graphed with standard error bars in Figure 1.

Discussion

After a review of previous publications on the topic, and due to the fact that BART results were shown to be correlated with the BIS and SSSV scales (Lejuez et al., 2002), it was hypothesized that the Asian American sample would display lower levels across all five of the surveys (BART, BIS-11, SSSV, RAPI, and RPIS) that were used to assess risk-taking and related behaviors and tendencies. However, the findings of the present study were not so straightforward. The five main findings of this study will first be examined individually, and then a possible explanation for the findings as a whole will be presented.

First, no significant differences between the White and Asian American samples on the automatic BART were found. As previously described, the BART has been used to assess generalized risk-taking tendencies in an individual, and the efficacy of the BART in this use has been supported by correlations with self-reported risk behaviors, including unprotected sex, drug use, and alcohol abuse, as well as with other measures (Lejuez et al., 2002). In this study, both groups inflated the balloons in a similar manner, meaning White and Asian Americans were equally likely to take risks in pumping them. This finding could have a few different meanings when examined on its own. The most straightforward of these is the possibility that the participants in this study have similar generalized risk-taking tendencies; that they are likely to approach every-day risks in a similar manner. However, there is evidence to contradict this idea,

as will be discussed shortly. Another possible explanation is the previously mentioned tendency of participants to inflate the balloons less than the level that would optimize their reward, taking less risk than is ideal for the assessment. While the automatic version of the BART used in this study did inform the participants of the point at which each balloon popped, it did not instruct them that the ideal average is 64 pumps per balloon. This may affect the results of the assessment, as described by Pleskac et al. (2008). Yet another possibility is that the BART does not give a complete picture of risk-taking across a variety of realistic risky situations. For example, the fact that there is not much at stake on the BART may allow participants to be more risky than they normally would in situations where they may be risking something more serious, such as getting into a car with a drunk driver or having unprotected sex. This may also have some implications for the ubiquity of some of the socially acceptable dangerous behaviors that do not carry a risk of immediate consequences, such as smoking.

The second major finding, consistent with the previously discussed correlation between results of the BART and the original BIS, was that there were also no significant differences in the responses of these two groups on the BIS-11. The 11th version of the Barratt Impulsiveness Scale was developed to provide a representative overview of the various factors implicated in trait impulsivity (Patton et al., 2005). The fact that both groups of participants responded similarly to this survey could have several possible explanations. Again, the most obvious of these would be that the two groups truly had a comparable level of trait impulsivity. Upon closer examination, it becomes clear that this is not so simple. For example, some of the impulsivity factors, such as attention and cognitive complexity, assessed by the BIS-11 do not seem to be related to the type of risky behavior of interest to the present study. It follows that some items from the BIS-11, such as “I ‘squirm’ at plays or lectures” and “I like puzzles,” may not be

directly linked to the participant's engagement in risky behavior, while "I am future oriented" and "I am self-controlled," seem more relevant (Patton et al., 2005).

Contrarily to the findings on the BART and BIS-11, statistically significant differences between White and Asian Americans were found on the Rutgers Alcohol Problems Index, the Resistance to Peer Influence Scale, and the Sensation Seeking Scale V. The RAPI has been shown to be a quick but valid assessment of problem drinking tendencies (White & Labouvie, 1989). The finding that the Asian American participants reported being less involved with alcohol-related problems than White participants implies that these two groups differ, at least with respect to the specific risk behavior of alcohol abuse. This finding is expected and consistent with the findings of O'Hare (1995) and the idea that there is a common enzymatic defect in alcohol metabolism in Asians that makes them less likely to abuse alcohol (Wall & Ehlers, 1995).

As previously described, the RPIS has been shown to measure generalized responsiveness to peer influence and to be associated with risky and unruly or antisocial behavioral patterns (Steinburg & Monahan, 2007). The fact that the Asian American participants in the present study responded in a manner indicative of a greater level of resistance than the White participants supports the idea that there is some underlying difference between the two groups, and that this difference may be generalizable to more than simply alcohol abuse. Furthermore, the developers of the RPIS claim that it effectively suppresses the common problem of desirable responses (Steinburg & Monahan, 2007). The possibility does remain that there may be some other factor, less directly related to risk-taking, in the structure of the study that would be responsible for this difference. This scale measures susceptibility in both risky and non-risky types of situations, giving it a moderate, but not strong, correlation with other

measures of riskiness, such as the Bentlin Risk Perception Measure (Steinburg & Monahan, 2007).

The possibility that there is an underlying difference in the risk-taking correlates between these two groups was further supported by the finding that they also differed in performance on the Sensation Seeking Scale V. The SSSV has been shown to be a reliable assessment of a variety of facets of sensation seeking tendencies (Zuckerman et al., 1978). In the present study, the responses of the Asian American participants were indicative of less sensation seeking tendency than those of the White participants. Again, it is possible that this difference may have been caused by confounds or other factors in the administration of the survey. As previously described, the SSSV is designed to measure four different factors that have been attributed to trait sensation seeking, and those four factors are Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (Dis), and Boredom Susceptibility (BS) (Zuckerman et al., 1978). However, only two of these factors, TAS and Dis, are directly related to engagement in risky behavior, so the small possibility that the Asian American participants simply scored higher in those areas *not* directly associated with riskiness remains.

When examined together, the results of the five surveys provide strong evidence for some underlying difference in levels of disinhibition between the White and Asian American participants. While the negative findings on the BART and BIS-11 imply that these two groups are similar in terms of actual risk-taking propensity and trait impulsivity, they are offset by the fact that statistically significant differences were found on both the RPIS and SSSV. While false negatives on these assessments may arise from a variety of sources, including the apparent artificiality of the task, desirable responding, or a sub-ideal level of riskiness during the BART trials, it is also possible that the two groups have similar risky tendencies and impulsivity. On

the other hand, the possibility that the findings on the RPIS, RAPI, and the SSSV are all false positives is small, suggesting that there is a difference, albeit of unknown nature and magnitude, between the two groups. Both sensation seeking tendencies (Zuckerman et al., 1978) and susceptibility to peer influence (Steinburg & Monahan, 2007) are related to engagement in risky behavior.

This study did have a few limitations that should be addressed in future research. One of the greatest of these limitations was the relatively small size of the sample of Asian American participants. Having a sample of only 11 Asian American participants increases the likelihood that some of the observed results were merely a product of chance; that these *particular* 11 Asian Americans were equally risky and impulsive, but less susceptible to peer influence, less sensation seeking, and less likely to experience alcohol-related problems. Another limitation was the tendency of participants to take too few risks on the AutoBART program, which could have biased the results as previously discussed (Pleskac et al., 2008). The BIS-11, RPIS, and SSSV all contained subscales or items that may not have been fully related to the subject of risk-taking propensity, and this may detract from the implications of the current study for risks for these two groups.

The suggestive findings of the present study call for further research on this topic. Most importantly, a similar study should be done on a larger scale. A larger sample of White and Asian American college students from across the country should be given a comprehensive battery of risk-related surveys. These surveys should include both risk-taking correlates, such as sensation seeking and impulsivity, and assessments for a variety of specific risky behaviors, such as drug use and unprotected sex. Furthermore, a more realistic measure of risk-taking tendencies, one in which participants have something substantial at stake, should be used.

However, such a setup is difficult to produce in an ethical way. One way this could be done is to provide a few participants with a substantial amount of cash in a casino environment and observe the way in which they gamble with it. However, a simple large-scale demographic analysis of risk seems to be the most plausible and insightful next step.

Aside from assessing the general trends in these behaviors across the population, some research should also be done into the underlying mechanisms and possible differences that cause them. In other words, a study should be carried out in which functional brain imaging techniques are used on participants of these two ethnicities as they complete risk-taking tasks and think about risk-taking situations. For example, increased activation in the prefrontal cortex, associated with planning, decision making, and other aspects of executive function, may imply greater foresight and, consequently, less risk-taking. While this is simply one possibility that must be assessed, it is likely that differential activation in various areas of the brain may be associated with different risk-taking tendencies. Once these differences in activation are established, their presence in Asian Americans and Whites can be assessed as part of the research into their inherent risk-taking propensities.

Furthermore, it remains to be seen whether such differences between ethnicities are the result of cultural differences, as has been suggested by Unger et al. (2001), physiological differences, as described by Wall et al. (1995) in the case of Asians and alcohol use, or a combination of the two. Tosh and Simmons (2007) found that increased assimilation into American culture was associated with increased risk-taking. It is most plausible that a combination of physiological and cultural factors work in concert to produce these differences. This and further research on this topic will become valuable in attempts to decrease the level of

unnecessary risk-taking by adolescents and may have implications in discovering effective strategies for individual subgroups of adolescents.

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Figure 1

Mean scores and standard errors on the RPIS, RAPI, and SSSV for White and Asian American participants.

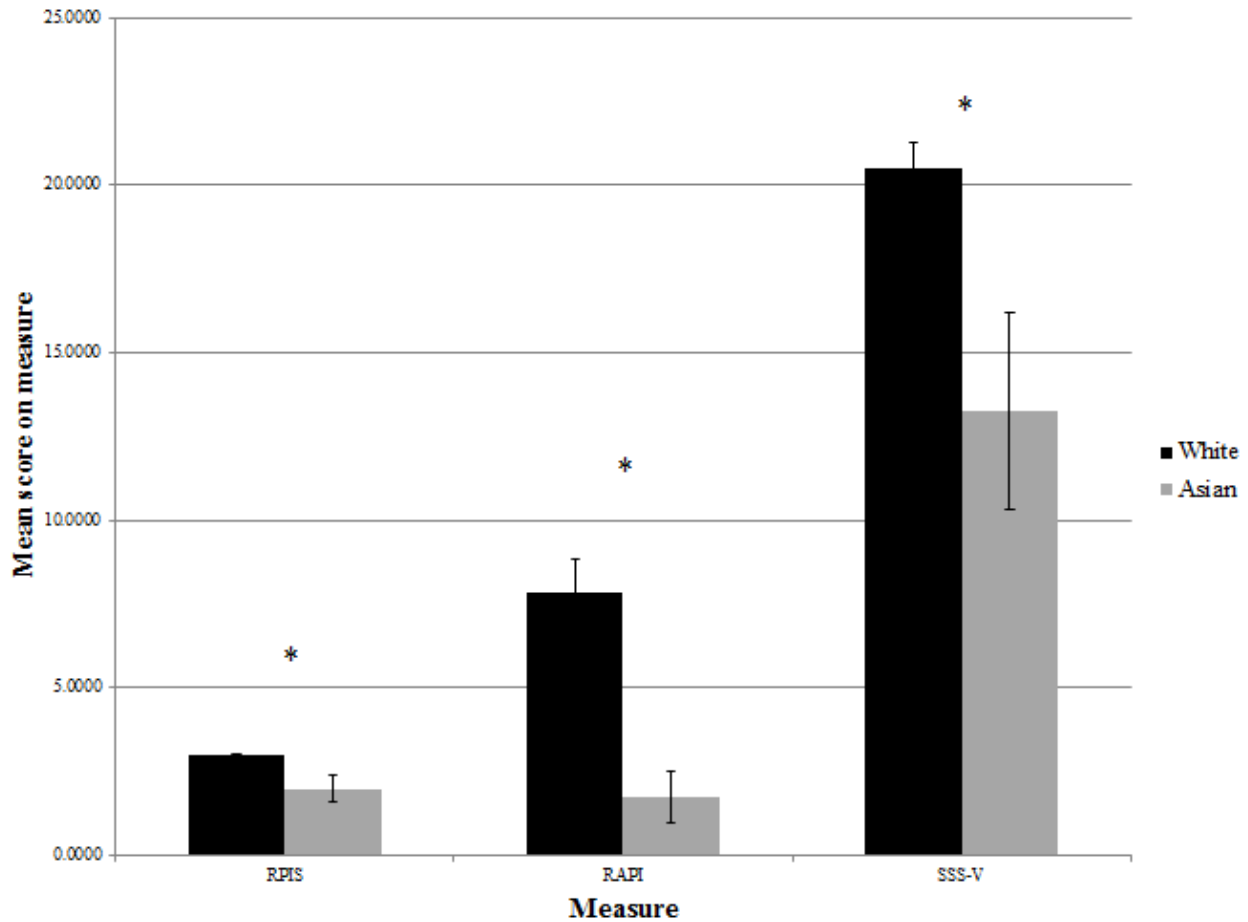


Figure 1 displays the mean scores and standard errors for White and Asian American participants on the RPIS, RAPI, and SSSV. Significant differences in performance between the two groups were found for each of these tasks, with Asian Americans being more resistant to peer influence, less likely to experience alcohol-related problems, and less sensation seeking.

Academic Vita
Jacob M. Yousef
154 Simmons Hall
University Park PA, 16802
jmy5041@psu.edu, (724) 263-3605

- Education** **Pennsylvania State University** **University Park**
Eberly College of Science *Graduation 2012*
Schreyer Honors College
Majoring in Premedicine and Psychology (Neuroscience option)
Dean's List FA08, SP09, FA09, SP10, FA10, SP11, FA11
- Thesis** Title: Comparison of Risk-taking Tendencies between White and Asian American College Students
Supervisor: Stephen Wilson
- Scholarships** Braddock Scholarship
Schreyer Honors Scholarship
Robert C. Byrd Honors Scholarship
- Leadership** **St. Clair Memorial Hospital, Pittsburgh, PA** *Summers of 2007-2010*
- Shadowed and aided pathologists at work
 - Contributed over 50 hours in the laboratory
 - Contributed over 100 hours at the front desk
 - Contributed over 50 hours in escort service
 - Trained and prepared new volunteers
- Research** **Tomas A. Carlo's Animal-Plant Interactions Laboratory** *January 2010- May 2010*
- Working on independent research on the affinity of *Euglossini* bees to certain fragrances
 - Designing, carrying out, and reporting on an experiment testing the possible anti-fungal effects of these fragrances in the bodies of the bees
- Stephen Wilson's Smoking Research Lab** *September 2010- May 2011*
- Confederate in study assessing the effects of peers on risk-taking behavior in adolescents
 - Screening potential participants and handling data for studies assessing the effects of perceived opportunity to smoke on neural activation in smokers
- Employment** **Sears—Cashier** *September 2006- September 2007*
- Worked at a store in Pittsburgh
 - Exercised and developed communication skills
 - Helped train new employees
- Activities** Premedical Society
Coptic Orthodox Youth Association
Intramural Soccer
Volleyball, Swimming
- Languages** Arabic—Fluent speaker of the language
Spanish—Competent speaker of the language with 5 years of study