**Distribution Agreement**

In presenting this thesis as a partial fulfillment of the requirements for a degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis in whole or in part in all forms of media, now or hereafter now, including display on the World Wide Web. I understand that I may select some access restrictions as part of the online submission of this thesis. I retain all ownership rights to the copyright of the thesis. I also retain the right to use in future works (such as articles or books) all or part of this thesis.

Wenting Kang March 4th, 2014

# Comparison of Psychopathic Traits Between Individualistic and Collectivist Cultures Using a North American and an Asian Sample

By

Wenting Kang

Scott O. Lilienfeld, Ph.D.
Adviser

Psychology Department

Scott O. Lilienfeld, Ph.D.

Adviser

Marshall Duke, Ph.D.

Committee Member

Judith Raggi Moore, Ph.D.

Committee Member

# Comparison of Psychopathic Traits Between Individualistic and Collectivist Cultures Using a North American and an Asian Sample

By

Wenting Kang

Scott O. Lilienfeld, Ph.D.

Adviser

An abstract of
a thesis submitted to the Faculty of Emory College of Arts and Sciences of Emory University in partial fulfillment of the requirements of the degree of Bachelor of Arts with Honors

Psychology Department

2014

Abstract

Comparison of Psychopathic Traits Between Individualistic and Collectivist Cultures Using a North American and an Asian Sample

By Wenting Kang

This present study investigated potential cross-cultural differences in the expression of psychopathic personality traits in a sample of Caucasian American (n=560), Non-Asian international (n=79), and Asian International (n=127) students in the greater Atlanta area. Students were recruited by convenience sampling to complete an online survey consisting of self-report measures of personality, attitudes, and behavior. Psychopathic personality traits were assessed by the Psychopathic Personality Inventory (Lilienfeld, 1990) and Levenson's Self-Report Psychopathy Scale (Levenson & Fitzpatrick, 1995). Asian international and International students reported higher levels of psychopathy, particularly PPI Factor 2 attributes, than Caucasian American students. Asian international students were found to endorse more interdependent values in their self-construal. Although higher levels of psychopathy were related to higher levels of individualism across all three groups, PPI Factor 1 and Factor 2 traits were positively related to individualism only among Asian international students. Higher levels of indirect aggression were associated with higher PPI Factor 2 scores. The antisocial behavioral traits of psychopathy were positively related to somatization only among Caucasian American students. In all three groups, higher levels of Taijin Kyofusho were associated with higher levels of the antisocial behavioral attributes assessed by PPI Factor 2. Such differences warrant further investigation in studies that accommodate the methodological limitations commonly seen in the cross-cultural study of personality.

# Comparison of Psychopathic Traits Between Individualistic and Collectivist Cultures Using a North American and an Asian Sample

By

Wenting Kang

Scott O. Lilienfeld, Ph.D.

Adviser

A thesis submitted to the Faculty of Emory College of Arts and Sciences of Emory University in partial fulfillment of the requirements of the degree of Bachelor of Arts with Honors

Psychology Department

2014

Acknowledgements

I would like to thank my parents for their unwavering support in all of my endeavors. Additionally, I would like to thank my thesis advisor, Professor Scott Lilienfeld for being a great mentor throughout my academic study in psychology. Finally, thanks to Professor Marshall Duke, who offered me valuable advice as my major advisor, and Professor Judy Raggi Moore, who witnessed my growth at Emory, for serving on my committee.

Table of Contents

# Introduction

Although existing research speaks volumes of the ubiquity of psychopathic personality, whether psychopathy is a universal concept or a culturally specific phenomenon remains an open question. Research on psychopathy has focused primarily on Caucasian male prisoners, but psychopathy research among other cultures and ethnicities in non-institutionalized samples may greatly inform audience about how cultures shape the expression of psychopathy and shed light on the nature of psychopathic personality.

## *Defining psychopathy*

Although researchers have been extensively studying the manifestations of psychopathy for the past few decades, the nature of psychopathy and its correlates still remain in heated debates. Typically, individuals who possess psychopathic personality traits demonstrate emotional processing deficits, arguably prefrontal dysfunction, and heightened probability of violence and recidivism (Grann, Långström, Tengström, & Kullgren, 1999; Hill, Neumann, & Rogers, 2004; Lorenz & Newman, 2002).

The founder of the research on psychopathy, Cleckley, proposed 16 specific personality characteristics and behavioral criteria central to the concept of psychopathy for the first time, including, but not limited to, being incapable of cultivating genuine relationships, lack of empathy, and callousness (Cleckley, 1976). Karpman (1948) proposed that primary psychopaths are callous, manipulative, selfish, and insincere, and secondary psychopaths engage in self-defeating life styles and antisocial behaviors under the influence of emotional disorder (Leveson, Kiehl, & Fitzpatrick, 1995). The primary and secondary psychopathy scales were later included in the *Levenson's Self-Report Psychopathy Scale* (Hare, 1991). In the view of Clekley's and Karpman's efforts in outlining the core attributes of psychopathy, Hare devised the *Psychopathy*

*Checklist* (PCL; Hare, 1985), followed by the *Psychopathy Checklist-Revised* (PCL-R; Hare, 1991). A two-factor model emerged based on the analyses of PCL-R, resulting in Factor I, characterized by remorselessness and callous manipulation of other, and Factor II, characteristic of antisocial behaviors. Of note, Antisocial Personality Disorder (APD) is thought to largely overlap with the correlates of psychopathy, but APD does not fully capture the concept of psychopathy (Lilienfeld, 1994). Further attempts to define psychopathy more accurately entail the three-factor solution of psychopathy (Skeem, Mulvey, & Grisso, 2003), adding a third dimension that measures personality deviation[1].

The internationally wide use of the PCL-R has prompted PCL-R to become one of the best empirically validated measures of psychopathy; nonetheless, more measures have been formulated to more comprehensively operationalize psychopathic personality, among which the *Psychopathic Personality Inventory-Revised* stands out on account of adequate theoretical considerations (PPI-R; Lilienfeld & Widows, 2005). The PPI-R self-report questionnaire generates a total score symbolizing global psychopathy and eight sub-scores that represent eight specific facets of psychopathy displaying significant factor loadings (Patrick, Edens, Poythress, Lilienfeld, & Benning, 2006). The PPI-R measure draws upon another two-factor model, distinctively different from Hare's (1991). PPI-R Factor 1, *Fearless Dominance*, as termed by Benning, Patrick, Blonigen, Hicks, and Iacono (2005) consists of the Social Potency,

---

[1] Cooke and Michie (2001) advanced a four-factor model, which is omitted in the text because of its irrelevance to the hypotheses at concern. The four-factor model is based off of ample statistical analyses from PCL-R results, arguing antisocial behaviors could form a new factor statistically distinguishable from the rest of the three factors – interpersonal, affective, and impulsive behaviors. Vitacco, Neumann, and Jackson (2005) examined the four-factor model of psychopathy with adult male offenders, yielding encouraging results supporting the four-factor model. Overall, researchers suggest testing the goodness of fit of the four-factor model on various populations, such as adolescent, psychiatric patients, forensic criminals, and community samples (Vitacco et al., 2005).

Fearlessness, and Stress Immunity sub-scales. PPI-R Factor 2, *Impulsive Antisociality*, again termed by Benning et al. (2005), entails sub-scales of Machiavellian Egocentricity, Impulsive Nonconformity, Blame Externalization, and Carefree Nonplanfulness. Factor 1 is marked by emotional and interpersonal elements such as superficial charm, callousness, flattened emotions, low fearfulness, and immunity to stress reactions (Benning et al., 2005). Factor 2 is reflective of externalizing antisocial conduct of psychopathy, including alcohol and drug problems, impulsive and aggressive behaviors. The two-factor structure of PPI-R has been supported by a plethora of studies (Benning et al., 2005); however, the Benning et al. PPI-R model may not fit well among other populations, yielding mixed results among offenders' population. A study by Neumann, Malterer, and Newman (2008) attempted to replicate the Benning et al. two-factor solution using a large (N=1224) incarcerated male sample. Nonetheless, confirmatory factor analyses suggested that the two-factor model was not a viable option to measure psychopathy among offenders. Neumann et al. (2008) proposed that carefree nonplanfulness emerged as a possible third factor.

*Psychopathy in North America*

A wealth of studies has been devoted to investigate psychopathy cross-culturally and across different populations using the PCL-R (Hare, 1991). Particularly in North America, researchers have reached a general conclusion (Bolt, Hare, & Neumann, 2005). In terms of behaviors, individuals displaying psychopathic traits are not afraid of recklessly engaging in impulsive actions and sensation seeking (Cooke & Michie, 1999). As a result, they often disregard social norms and commit crimes. Speaking of affections, psychopaths are emotionally shallow, and incapable of sustaining loving relationships due to their lack of remorse, guilt, and empathy (Cooke & Michie, 1999). As for interpersonal lives, psychopaths tend to manipulate

people and exhibit egocentric characteristics, deviating from socially sanctioned conventions (Cooke & Michie, 1999).

Researchers identify psychopathy as a potent predictor of the possibility of being involved in criminal activities and violent behaviors (Hart & Hare, 1997). Cooke, Kosson, and Michie (2001) suggest that although the PCL-R has been widely used as the standard assessment of psychopathy, the studies that attest the validity of the PCL-R were largely administered on Caucasian male offenders; therefore, the construct validity of psychopathy in non-Caucasian and noncriminal samples requires more avenues of research. For example, Caucasian and African American offenders demonstrated significant correlations between psychopathic traits and criminal behaviors; however, an exploratory factor analysis pointed to a fairly different underlying factor structure concerning the pattern of correlations (Kosson, Smith, & Newman, 1990). Factor analysis and empirical results revealed differences in the correlates of psychopathy, possibly because psychopathy is labeled by different symptoms in African American than in Caucasian populations. In other words, African Americans may share some traits that do not completely overlap with those of Caucasians. For instance, both African Americans and Caucasians marked by high PCL-R scores could be more prone to violence and other criminal activity, and both share cognitive deficits pertinent to left-hemisphere activation (Kosson, 1998), but unlike Caucasian psychopaths, their African American counterparts do not display response modulation deficits (Newman & Schmitt, 1998).

Although psychopathy was shown to manifest differently among different cultures, Wernke and Huss (2008) provided another possible explanation besides cultural variance to account for the different patterns of psychopathy cross-culturally – different legal practices. The legal system in the United States tends to prosecute and incarcerate crimes that are

disproportionately committed by psychopaths, such as armed robbery and violation of property rights, leading to exaggerated representation of psychopathy among incarcerated criminals (Wernke & Huss, 2008). Some European countries, such as Ireland, show proclivity to educate criminal offenders instead of locking them up in prisons (Wernke & Huss, 2008). Different emphasis placed by legal systems funnel people with varied characteristics into prison.

*Psychopathy in Europe*

Overall, investigations of psychopathy have been conducted cross-culturally, but most of them were administered in Europe, still using the PCL-R. Cooke and Michie (1999) concluded that the slope parameters did not vary significantly between Scottish and North American inmates, indicating that psychopathy is largely marked by a similar set of behavioral, affective, and interpersonal features. The results further suggested that PCL-R yields consistent findings in North America and Scotland, generalizable to European populations. The only apparent discrepancy between the two cultural samples is that Scottish prisoners did not demonstrate psychopathic traits overtly when they only carried low levels of the traits; instead those with obvious traits usually score highly on PCL-R. One possibility could be that the Scottish culture subtly encourages people to suppress the externalization of psychopathic characteristics, which are deemed undesirable or unacceptable in Scottish culture (Cooke & Michie, 1999).

Moreover, Grann, Långström, Tengström, and Kullgren (1999) conducted a study examining the relationship between psychopathy and violent recidivism in a sample of Swedish offenders diagnosed with personality disorders. Prior studies in North America suggest that a high score in PCL-R strongly predicts twice the risk of repeating violence compared to non-psychopaths (Salekin, Rogers, & Sewell, 1996). Psychopathy serves as a stronger indicator of reconvictions of violence than other well-validated risk factors, such as problematic conduct in

childhood, substance abuse, age, number of previous offends, and type of crimes (Grann et al., 1999). The fact that a significant correlation between psychopathy and criminal recidivism is also discovered in North America may be informative of a shared component regarding psychopathy across cultures.

*The necessity to examine psychopathy cross-culturally*

Even two decades ago, Weisz et al. (1987) noticed that culture might tamp down the expression of certain characteristics of a disorder while highlighting others. Cooke and Michie (1999) said that: "The nature and expression of the symptoms and signs that characterize the syndrome of psychopathy may be molded by culture" (p.58). By the same token, Hare (1998) argued that "the behavioral expression of psychopathy, as well as the degree to which they stand out from the behaviors of other, are influenced by societal and cultural structures and norms (p.106). Hare (1998), Cooke and Michie (1999) all emphasized placing psychopathy in a global context, because psychopathic personality traits have been documented across cultures. Cooke and Michie (1999) drew an analogical comparison between cross-cultural psychopathy and the argument that Robins, Tipp, and Przybeck (1991) made on Antisocial Personality Disorder (ASPD). ASPD appears in all cultures, despite their economic power, but the diagnoses of ASPD vary from place to place (Robins, Tipp, & Przybeck, 1991). Similarly, the theoretical construct of psychopathy may be prevalent across the globe, but the expression of psychopathic traits varies among other cultures (Fiske, 1995). Murphy (1976) recognized two distinct cultures – the Inuit of Alaska and the Yoruba of Nigeria – both acquiring a concept of psychopathy. Cooke and Michie (1999) therefore posited that perhaps personality disorders are in particular need of extensive cross-cultural research to establish comparisons that elucidate the complexity of psychopathy. Their goal is to search for a "pan-cultural core", which the concept of psychopathy

lacks of (Draguns, 1986, p.333). Nevertheless, considerations of cultural factors have been taken into account in the descriptions of diagnostic criteria of psychological disorders in the *Diagnostic and Statistical Manual of Mental Disorders 5th Edition*, because clinicians and researchers are aware of the impacts that culture may bring to the practice of mental health.

In addition, since psychopathy is a crucial predictor of criminal behaviors and violence especially, assessment of psychopathy has become a critical procedure among criminals and psychiatric patients (Quinsey, Harris, Rice, & Cormier, 1998). Consequently, important psychopathy measures, such as PCL-R and PPI-R could seriously impact judicial, convictive, and legislative decisions in reality if their results were misinterpreted, without considering how cultures could shape the manifestations of psychopathy.

*The individualism/collectivism distinction of psychopathy*

Although ample evidence endorses the view that psychopathy is ubiquitous across the globe, it was argued that psychopathy might be more prevalent in individualistic societies (Cooke, Michie, Hart, & Clark, 2005). Individualistic cultures underline the development of self-identity and relatively independent interpersonal relationships. Oyserman, Coon, and Kemmelmeir (2002) proposed that individualistic cultures might have a propensity towards more extreme levels of psychopathic features, such as competitiveness, preference for temporary relationships, lack of empathy and recklessness. Collectivist cultures, typically present in Asian cultures, however, value cooperation, interpersonal harmony and conformation to social norms to sustain the stability and cohesion of societies (Tedeschi & Bond, 2001). Further research is needed to capture the culture-specific differences that the individualism/collectivism distinction may impose on the expression of psychopathy.

Several attributes may affect the manifestations of psychopathy. First of all, the widespread notion that psychopathy is strongly associated with direct aggression may not hold true in Asian populations, where an emphasis on group cohesion may inhibit the overt displays of negative emotions such as anger (Cale & Lilienfeld, 2006; Gao, Ting-Toomy, & Gudykunst, 1996). It was thus suspected that Asians tend to express negative emotionality indirectly and subtlety (Gao et al., 1996). Collectivistic cultures are in favor of avoidance rather than confrontational conflict resolution tactics (Tedeschi & Bond, 2001). Besides, in terms of expressing one's anxiety and distress, Eastern collective nations commonly utilize somatization as a strategy to transform stigmatized mental health symptoms to physical complaints (Kleinman, 1988). The linkage between somatization disorder and Factor II in psychopathy measures has been detected, connecting somatization symptoms to elevated risks of depression and psychological maladjustment (Patrick, Poythress, Edens, Lilienfeld, & Benning, 2006). Additionally, substance abuse/dependence is positively correlated with psychopathy among Caucasian American samples (Smith & Newman, 1990). Nonetheless, because the mutations that Asians frequently possess on the variant alleles of two genes for aldehyde dehydrogenase and alcohol dehydrogenase lead to uncomfortable flushing, nausea, vomiting, tachycardia, and hypotension reacting to alcohol consumption, this genetic factor may render some Asians immune to alcohol abuse, thus precluding the association between psychopathy and alcohol dependence (Fromme et al., 2004). Last but not least, social anxiety negatively correlates with psychopathy (Lilienfeld & Andrews, 1996). Taijin Kyofusho, characteristic of intense fear of one's body offending others, has been recognized as a culturally bound syndrome typical in interdependent, collectivist societies, and should be negatively associated with psychopathy.

*Psychopathy in Asian cultures*

Studies that directly examine psychopathy are almost non-existent in Asia. This section intends to provide a summary of indirectly related research, most of which did not use well-known psychopathy measures such as PCL-R and PPI-R.

In a study that examined the relationship between the PCL-R scores and institutional problematic behaviors, Korean psychopaths in prisons demonstrated significantly more negative thinking (implicit aggression) than Korean non-psychopaths (Sohn, Weebb, & Lee, 2010). The Korean PCL-R scores significantly positively related with implicit aggression, but did not correlate significantly with physical violence in prisons, supporting the notion that Asians who endorse collectivist values tend to opt for indirect expression of negativity (Sohn et al., 2010). In addition, Factor II from the PCL-R model was a better predictor of implicit aggression than Factor I (Sohn et al., 2010).

In another Korean study, delinquent behavior was grouped into three types: antisocial, aggressive, and psychopathic delinquent behaviors (Kim & Kim, 2008). In particular, psychopathic delinquent behaviors are characterized by pathological gambling, and repeated misconduct without perceived guilt (Kim et al., 2008). Results demonstrated that antisocial personality was the most significant predictor of psychopathic delinquent behaviors (Kim et al., 2008). This finding aligned with previous findings in North America that antisocial personality overlaps with psychopathic personality.

In a Mainland China study, Machiavellianism, a relevant psychopathy facet, was moderately and positively correlated with internalizing behaviors and social problems, and was moderately and negatively correlated with social relations in a sample of 70 Chinese boys aged 8-12 with ADHD who met the DSM-IV criteria of diagnosis (Geng, Liu, Su, Wang, & Li, 1999). Geng et al. (1999) defined high Machiavellian personality as lacking emotional involvement in

interpersonal relationships, being detached and distant, being manipulative, and disrespect for traditional morality, which are all strong correlates of psychopathic personality. The influence of Machiavellian personality on ADHD children's social competency may indirectly facilitate researchers' understanding of psychopathy among Asians.

A Japanese study using a Japanese version of the *Primary and Secondary Psychopathy Scale* (Hare, 1991) on a non-institutionalized Japanese sample suggests that two specific physiological parameters may be responsible for the affective dysfunction in psychopathy: weakened brain reactivity in the prefrontal cortex toward antisocial behaviors and diminished emotional attachment to unpleasant content (Osumi, Shimazaki, Imai, Sugiura, & Ohira, 2007). This finding accords the widely accepted finding in Western samples that the affective deficiency in psychopathy may be due to deficits in prefrontal cortex (Wernke & Huss, 2008).

Moreover, acculturation is a concept that denotes the degree to which people adopt new cultural values while living in a foreign culture. Sue, Sue, Sue, and Takeuchi (1995) suggested that less acculturated Asian American students showed greater elevation on the Psychopathic Deviate scale of the *Minnesota Multiphasic Personality Inventory-2* (MMPI-2) than did highly acculturated Asian American students or Caucasian students. Although the PD scale in MMPI-2 does not fully capture psychopathic traits, the PD scale entails a strong component of alienation, which could be related to the Blame Externalization subscale from PPI-R. This conclusion contributes to the formulation of hypotheses under investigation, because the present study aims to evaluate how acculturation shapes the expression of psychopathic personality traits.

*The present study*

The aforementioned literature indicates that few prior studies have examined psychopathy in Asian populations, and few have established comparisons between two cultures

in the same study. Moreover, most studies employed institutional or incarcerated sample; therefore studies that examine non-institutional populations. The present study intends to fill the gap by examining the correlates of psychopathy in an Asian international versus a North American sample to create a direct comparison between those two samples for the first time. The present study recruited a non-institutionalized, mixed gender sample to establish greater generalizability of findings.

I hypothesized the following predictions:

1. Psychopathy in Asian cultures will be more highly correlated with indirect rather than with direct aggression than in non-Asian cultures.

2. In Asian cultures, somatization will be more highly correlated with Factor II characteristics of psychopathy than in non-Asian cultures.

3. In Asian cultures, measures of psychopathy will correlate more negatively with indigenous measures of social anxiety (such as Taijin Kyofusho) than in non-Asian cultures.

4. In Asian populations, psychopathy should be less highly correlated with alcohol abuse than in non-Asian cultures.

# Methods

## *Participants*

Our sample consisted of 779 undergraduate and graduate students, 99% of which were recruited from Emory University, and the remaining 1% of which were from colleges and universities in the greater Atlanta area. Seven hundred and seventy-three students in total were included in the final data analyses. The six students were excluded from analyses because two of them did not meet the minimum age requirement, and four responded to questionnaires inconsistently. Participants were instructed to sign a consent form for the Internet survey electronically. The Institutional Review Board required participants to be at least 18 years old, so the two students who reported ages younger than 18 years were excluded from data analyses.

Females constituted 70.5% of the students in the final sample. Participants were 24 years old on average (SD=5.69). Ages ranged from 18 to 55. The sample was categorized into three groups in accord with the hypotheses under investigation: 1) 73.1% of the students (N=560) were American-born Caucasians; 2) 16.6% of the students (N=127) were non-Asian international; 3) 10.3% (N=86) were registered as international students born in Asian countries such as China, South Korea, Taiwan, Japan, Vietnam, and Myanmar. Female students constituted 72.9% of the Caucasian USA-born group, 62.2% of the non-Asian international group, and 67.1% of the Asian international group. Of note, 21 students from the Caucasian USA-born group identified themselves as Asian Americans.

## *Procedure*

Participants were recruited via email and fliers that listed requirement of being either "American born Caucasians" or "International students." The study was advertised via email and fliers described as a cross-cultural comparison of personality traits, attitudes, and behaviors

pertaining to psychopathy. The school registrar and the International Student and Scholar Programs office at Emory University provided the email addresses used to contact students. At other universities, participants were solicited only via fliers, as students' email addresses were inaccessible. For compensation, students at Emory University received research credits for the introduction psychology courses in which they were enrolled. To further encourage participation, students were allowed to enter a raffle licensed by the Dekalb County policy department for one of eight $50.00 gift certificates.

An Internet survey was composed on www.surveymonkey.com, a site where authors can manipulate the format of each questionnaire, obtain responses confidentially, and export results to statistical software easily for data analysis. Given a password from email and flier advertisements, each student could take the survey online remotely at their convenience. Each participant was required to provide informed consent via an electronic consent form. Students were told they could exit the survey at any time.

The survey was composed of 10 self-report measures that required 35 to 60 minutes in total to complete. No personal information that could reveal the identities of participants, such as names or school identification numbers, was collected, but participants were asked to report basic demographic information including gender, age, ethnicity, and nationality. For international students to enroll in American universities, they must have demonstrated proof of a certain level of proficiency concerning the English language, thus allowing them to comprehend measures in English without translation. Asian participants only were asked to answer items from the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA; see Measures). Students were debriefed about the general purpose of the study after finishing the questionnaires.

*Measures*

*Levenson Self-Report Psychopathy Scale (LSRPS).* The LSRPS, a 26-item instrument, employs a four point Likert scale to capture characteristics of primary and secondary psychopathy in non-institutionalized samples. The scales were constructed to reflect Hare's (1991) PCL-R Factor I and II, respectively. The primary psychopathy scale is said to measure the core personality traits of psychopathy, capturing ruthless, selfish, and manipulative attitudes towards others. The secondary psychopathy scale captures the behavioral aspects of psychopathy, especially its impulsive and socially deviant lifestyle (Levenson & Fitzpatrick, 1995). Higher scores correlate with a higher degree of psychopathy, as reasoned by Levenson et al. (1995).

In the current study, Cronbach's alphas for the primary and secondary scales of the LSRPS were 0.79 and 0.70 respectively, for the entire sample. Numerous studies offer evidence for the construct validity of the LSRPS. Lynam et al. (1999) reported a significant correlation between substance abuse and high scores on the LSRPS. Lynam et al. (1999) also found that correlations between the LSRPS and the Big Five personality traits were consistent with theoretical expectations. In particular, the primary scale correlated negatively with Agreeableness (r= -.41), and the secondary scale correlated with high Neuroticism and low Conscientiousness (r = .37, and r = -.59). Additionally, scores on the short form of Michigan Alcohol Screening Test (SMAST) correlated only with the secondary scale of LSRPS, not with the primary scale, demonstrating discriminant validity of the primary and secondary scales of LSRPS (Brinkley et al., 2001).

*The Psychopathic Personality Inventory (PPI) shortened version.* Lilienfeld (1990) developed the PPI, a 187-item self-report measure using a four point Likert rating, intending to measure psychopathic personality from non-pathological samples. The PPI gives a total score,

measuring the global concept of psychopathy, and also scores from eight factor-analytically derived subscales to capture specific characteristics of psychopathy. Subscale scores are calculated by adding up standardized z scores of each factor. The eight subscales (with one sample item from each) are:

*Machiavellian Egocentricity* ["I often tell people only the part of the truth they want to hear" (True)]

*Social Potency* ["I am a good conversationalist" (True)]

*Coldheartedness* ["I often become deeply attached to people I like" (False)]

*Fearlessness* ["Making a parachute jump would really frighten me" (False)]

*Impulsive Nonconformity* ["I've always considered myself to be something of a rebel" (True)]

*Blame Externalization* ["Some people seem to have gone out of their way to make life difficult for me" (True)]

*Carefree Nonplanfulness* [["I weigh the pros and cons of major decisions carefully before making them" (False)]

*Stress Immunity* ["I can remain calm in situations that would make many other people panic" (True)] (Lilienfeld & Hess, 2001)

The eight subscales load onto either one of two higher order factors (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). PPI Factor 1, termed as Fearless Dominance, comprises the Fearlessness, Social Potency, and Stress Immunity subscales (Benning, Patrick, Blonigen, Hicks, & Iacono, 2005). Factor 1 assesses emotional and interpersonal features, including heightened stress tolerance, physical fearlessness, and superficial charm (Benning et al., 2005). PPI Factor 2, termed as Impulsive Antisociality, consists of Machiavellian Egocentricity, Impulsive

Nonconformity, Blame Externalization, and Carefree Nonplanfulness subscales (Benning et al., 2005). Factor 2 measures the antisocial behavioral patterns relevant to psychopathy, including impulsivity and antisocial behaviors such as aggression (Benning et al., 2005). The PPI Coldheartedness subscale, included in neither PPI Factor 1 nor Factor 2, was analyzed independently as an important facet of psychopathy. A moderate to high correlation was identified between PPI total scores and measures of physical aggression and absence of social anxiety (Lilienfeld & Andrews, 1996).

The PPI displays substantial convergent validity, because it exhibits significant correlations with other well-validated measure of psychopathy and allied constructs, such as the *Psychopathy Checklist-Revised* (Hare, 1991), the *Levenson Self-Report Psychopathy* (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995), *Personality Assessment Inventory Antisocial Scale* (PAI; Morey, 1991), *Sensation Seeking Scale* (Zuckerman, 1994), which are all related to psychopathy (Lilienfeld & Widows, 2005).

The shortened form of the PPI used in this study retains the validity of the full form, as the shortened form is highly associated with the full form ($r > .95$; Lilienfeld & Hess, 2001). The total scale has been reported to have a high internal consistency, indicated by a Cronbach's alpha of .85. In the present study, Cronbach's alpha of the PPI short form across the sample was .81, and Cronbach's alphas for PPI Factor 1 and Factor 2 were .82 and .81 respectively. Cronbach's alphas for the eight factors across the sample ranged from 0.57 to 0.81.

*Michigan Alcohol Screening Test (MAST).* The MAST, a 25-item, self-report, dichotomous (yes or no) measure, assesses the extent to which alcohol use affects how one functions in life. A score of five or higher is associated with high risk of alcoholism (Selzer, 1971). In a sample of drivers charged for driving while inebriated (DWI), the MAST detected

drivers whose drinking problems compromised their judgment, in comparison with those whose drinking did not impair their functionality (Zung, 1982). Otto and Hall (1988), however, argued that although the MAST successfully distinguished frequent drinkers from non-drinkers, those who intended to mask their alcohol dependence could score lower on the MAST.

The MAST consistently yields high test-retest reliability. Zung (1982) reported test-retest reliability of r = .94 over a three-day interval. Skinner and Sheu (1982) similarly reported test-retest reliability of r = .84 over an average interval of 4.6 months. The present study yielded a Cronbach's alpha of 0.71 across the sample.

*The Buss-Durkee Hostility Inventory (BDHI).* The BDHI, a 75-item, forced-choice, self-report measure, assesses seven aspects of aggression, including physical aggression, indirect aggression, irritability, negativism, resentment, suspiciousness, and verbal aggression (Buss & Durkee, 1957). The BDHI has contributed to the research on aggression significantly. The original BDHI was modified to meet higher standards of reliability and validity, resulting in a more up-to-date measure called the Buss-Perry Aggression Questionnaire, also included in the current study (Buss & Perry, 1992). The items of the original measure loaded onto four factors, including Physical Aggression, Verbal Aggression, Hostility, and Anger. Of note, nine items on the BDHI did not factor-analytically load onto any of the four subscales, and were therefore excluded from this study.

*The Buss-Perry Aggression Questionnaire (BPAQ)*. The BPAQ is an adaption from the Buss-Durkee Hostility Inventory (BDHI; Buss & Durkee, 1957), consisting of 29 items. Like the BDHI, the items of BPAQ, loading onto four subscales derived from confirmatory factor analyses, assess Physical Aggression, Verbal Aggression, Hostility, and Anger. Scores were calculated on a five point Likert scale. Buss and Perry (1992) reported internal consistencies (in

Cronbach's alphas) of each subscale, which were .85 for Physical Aggression, .72 for Verbal Aggression, .83 for Anger, and .77 for Hostility across an undergraduate sample. Buss et al. (1992) also reported test-retest reliability correlations across a nine-week interval of .80 (Physical Aggression), .76 (Verbal Aggression), .72 (Anger), and .72 (Hostility). In the present study, Cronbach's alpha for the full questionnaire was 0.91 across the sample. Moreover, the BPAQ demonstrates convergent validity with other aggression questionnaires, including the Personality Assessment Inventory (PAI; Morley, 1991), the Lack of Frustration Scale (Olweus, 1986), and items from the Aggression Inventory (AI; Gladue, 1991).

*The Coolidge Axis II Inventory (CATI).* The CATI is a self-report assessment tool to evaluate personality disorders that draws on criteria from the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV, American Psychiatric Association, 1980). The items are scored on a four-point Likert scale with 1 = strong false to 4 = strongly true (Coolidge, 1984).

The full CATI includes 200 items, but the present study utilized the abbreviated 70-item version. The CATI is comprised of 13 personality disorder subscales, but this study focuses on four of the subscales in particular that pertain to our hypotheses. The four subscales are Passive-aggressive Personality, Antisocial Personality, Borderline Personality, and Histrionic Personality. Besides the aforementioned BDHI, the Passive-aggressive Personality subscale also serves as a complementary measure of indirect aggression, displaying a Cronbach's alpha of .78 (Coolidge & Merwin, 2002). In the current study, Cronbach's alpha for the Passive-aggressive subscale was .69 across the sample. Cronbach's alphas for Antisocial Personality, Borderline Personality, and Histrionic Personality were 0.68, 0.66, and 0.58, respectively.

*Taijin Kyofusho Scale (TKS).* The TKS (Kleinknecht et al., 1994) is a 31-item, self-report measure that assesses an other-centered fear of offending others during social interactions

(Dinnel, Kleinknecht, & Tanaka-Matsumi, 2002). Items are scored on seven point Likert scale. Higher scores positively correlate with affirming Taijin Kyofusho symptoms such as "I am afraid that when talking to others my trembling voice will offend them."

Taijin Kyofusho is defined as a form of social phobia culturally bound largely to Japan and some other Asian countries. People who identify with Taijin Kyofusho symptoms often fear offending others by emitting unpleasant bodily odors, blushing, and showing one's embarrassing appearance, and so on (Kleinknecht et al., 1997). This type of extreme fear results in avoidance of social occasions. Taijin Kyofusho is recognized as a formal psychiatric disorder in Japan. People who perceive themselves as interdependent possess a higher risk for developing social phobia than those who perceive themselves as independent. This association largely explains why Taijin Kyofusho is a disorder indigenous to Japan where collectivist culture is prevalent. Cronbach's alpha was 0.95 across the sample in this study.

*The Patient Health Questionnaire (PHQ-15).* The PHQ-15 measures 15 somatic symptoms using self-report. Items are scored on a scale of 0 = not bothered at all to 2 = bothered a lot. The PHQ-15 assesses physical complaints such as stomachache, back pain, headaches, and other somatic concerns across the past four weeks before participants took this study. With 30 being the maximum score, cutoffs of 5, 10, and 15 indicate a person is experiencing low, medium, and high levels of somatic symptoms.

PHQ-15 reflects general physical functioning, frequency of clinic visits, and difficulty in psychological adjustment. The Cronbach's alpha from a sample of primary care and gynecology patients was .80 (Kroenke, Spitzer, & Williams, 2002). In this study, Cronbach's alpha for the PHQ-15 was 0.76 across the sample.

*The Self-Construal Scale (SCS).* The SCS (Singelis, 1994) contains 30 items intended to measure Markus and Kitayama's (1991) independent and interdependent self-construal, each consisting of 15 items. An independent self-construal means perceiving oneself as autonomous and emphasizing qualities such as assertiveness, uniqueness, and confidence (Hardin, Leong, & Bhagwat, 2004). An interdependent self-construal, on the contrary, entails a self-image that is more connected with others in the society and valuing substantiating group harmony and blending in (Hardin et al., 2004). The concept of independence corresponds to individualism, whereas interdependence corresponds to collectivism (Markus et al., 1991).

The items are scored on a seven point Likert scale ranging from *strongly disagree* to *strongly agree*. Responses from the independent and interdependent scales are averaged to give a score for each scale. Asian Americans, who tend to endorse more collectivist values, scored significantly higher on the interdependent scale, compared with Caucasian Americans, who tend to endorse more individualistic qualities, reflecting the ability of SCS to distinguish collectivism from individualism (Singelis, 1994). Singelis (1994) reported internal consistency (Cronbach's alpha) of 0.69 for the independent scale and 0.73 for the interdependent scale. In the present study, Cronbach's alphas were 0.67 (independent) and 0.69 (interdependent).

*The Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA).* Acculturation is defined as the degree to which a person assimilates the beliefs, customs, attitudes, social conventions, and societal values of another cultures. The SL-ASIA self-report measure contains 26 items that quantify the level of acculturation among Asians (Suinn, Rikard-Figueroa, Lew, & Vigil, 1987). Items are scored on a five point Likert scale, with 1 = very Asian and 5 = very Americanized (Abe-Kim at etl., 2001). The mean of all scores is the total score. Lower scores

imply that one clings primarily to Asian values, whereas higher scores imply that one identifies primarily with Western values.

Cronbach's alphas between .72 and .91 in numerous studies are indicative of a high level of internal consistency (Abe-Kim et al., 2001). In this study, Cronbach's alpha for the SL-ASIA among Asian international students was 0.88. The SL-ASIA is capable of distinguishing Asian internationals from Asian Americans, as Suinn and Khoo (1995) pointed out that Singaporeans scored significantly lower than Asian Americans did on the SL-ASIA.

*The Marlowe-Crowne Social Desirability Scale (MCSDS).* The MCSDS is a widely used 33-item self-report measure constructed to assess the potential effects of social desirability (Marlowe & Crowne, 1960). This true-false questionnaire contains statements of attitudes and behaviors that are socially desirable, but implausible, such as "I have never intensely disliked anyone" and "Before voting I thoroughly investigate the qualifications of all the candidates" (Marlowe & Crowne, 1960). These statements are designed to reflect people's tendency to consciously or unconsciously portray themselves in a positive light. A test-retest correlation of r = .89 and internal consistency in terms of Cronbach's alpha of .88 obtained from a college sample (Marlowe & Crowne, 1960). The Cronbach's alpha in the present study was 0.74 across the sample.

# Results

*Descriptive statistics*

Descriptive statistics can be seen in Table 1 in the appendices, which lists the means and standard deviations for each scale across the three groups – Caucasian American, Non-Asian International, and Asian International. Participants were excluded from analyses if they answered the capital of the country they reported they were from incorrectly (N=11), and if they missed more than 10% of the questions in each questionnaire (N=61). In other words, the numbers of participants in each group on which the descriptive statistics were calculated are based on two criteria to be eligible for data analyses (correct answers of capitals of home country and meeting the 90% cutoff criteria). The final sample consisted of 556 American students, 70 non-Asian international students, and 79 Asian international students, totaling up to 712 students together who satisfied the two criteria.

Because there were 21 Asian Americans in the North American group, a subsidiary analysis was conducted to compare the differences between within-group correlations including and excluding Asian Americans. Overall correlations changed very little when Asian Americans were extracted from the 'Caucasian American' group, with differences ranging from 0.01 to 0.03, so subsequent analyses on the North American group included all participants.

*Levels of psychopathy, collectivism and individualism*

*Hypothesis 1:* Levels of psychopathy will be lower among collectivist Asian populations, who value the collective good, group harmony, and social conformity over independence and personal interests.

An analysis of variance revealed significant differences across the three groups on PPI total scores ($F(2,622)=6.873$, $p<.001$). Post-hoc Tukey's HSD test revealed that non-Asian

international students (*M*=124.37, *SD*=12.98) obtained higher PPI total scores than did Caucasian American students (*M*=119.00, *SD*=14.69). The effect size for the difference in means between non-Asian international students and Caucasian American students was small to medium, *d*=.39. Asian international students (*M*=123.56, *SD*=13.81) also scored significantly higher on PPI total than Caucasian Americans. The effect size for the difference in means between Caucasian American and Asian international students was small to medium (*d*=.32). The three groups did not differ significantly on PPI Factor 1 traits.

Analyses of variance yielded significant group differences for PPI Factor 2 scores ($F(2,619)=9.572$, $p<.001$). Follow-up Tukey's HSD analyses revealed that Asian international students (M=1.06, SD=2.26) scored significantly higher than Caucasian Americans (*M*=-.2546, *SD*=2.59) on PPI Factor 2. The effect size for the difference in means between Caucasian American and Asian international students was medium to large, *d*=.73. Another analysis of variance revealed group differences in PPI Coldheartedness scores ($F(2,622)=5.415$, $p<.005$). Non-Asian international students (*M*=13.28, *SD*=3.36) obtained significantly higher scores on the PPI Coldheartedness subscale than Caucasian Americans (*M*=12.63, *SD*=3.07) did. The effect size for the difference in means between Caucasian American and non-Asian international students was small (*d*=.18).

Analysis of variance revealed group differences in LSRPS primary psychopathy ($F(2,521)=28.42$, $p<.001$), and LSRPS secondary psychopathy ($F(2,525)=28.38$, $p<.001$). Tukey's HSD post-hoc analyses revealed that in both LSRPS primary and secondary psychopathy scales, Asian international students ($M_{Prim}$=32.81, $SD_{Prim}$=5.11; $M_{Sec}$=20.63, $SD_{Sec}$=3.88) scored significantly higher than non-Asian international students ($M_{Prim}$ =28.37, $SD_{Prim}$=6.81; $M_{Sec}$=17.87, $SD_{Sec}$=4.18), who in turn scored significantly higher than Caucasian

American students ($M_{Prim}$=26.77, $SD_{Prim}$=6.20; $M_{Sec}$=16.53, $SD_{Sec}$=4.27). The effect size for the difference in means between Caucasian American and Asian international students was large for LSRPS primary psychopathy scores ($d$=1.06), and LSRPS secondary psychopathy scores ($d$=1.01). The effect size for the difference in means between Asian international and non-Asian international students was large for LSRPS primary ($d$=.74) psychopathy scores, and it was medium ($d$=0.68) for LSRPS secondary psychopathy scores.

No significant group differences was found in level of affiliation with individualistic values as measured by the Independent SCS; however, significant group difference was revealed in terms of the Interdependent SCS ($F(2,671)=13.511$, $p<.001$), a measure of affiliation with collectivistic values. Specifically, as predicted, Tukey's HSD analyses revealed that Asian international students ($M$=75.93, $SD$=9.63) exhibited a significantly higher mean score than Caucasian American students ($M$=70.39, $SD$=9.08) and non-Asian international students ($M$=70.58, $SD$=9.40) on the Interdependent SCS. The effect size for the difference in means between Caucasian American and Asian international students was medium to large, $d$=.59, and the effect size between non-Asian and Asian international students was medium, $d$=.56.

Zero-order-correlations examine the associations between self-construal and psychopathy scores, Pearson product moment correlations were calculated (see table 2). Among Caucasian Americans, PPI total scores were positively and moderately correlated with the independent SCS, a measure of self-construal ($r_{Caucasian}(472)=.313$, $p<.01$), whereas PPI total scores were negatively and significantly correlated with the interdependent SCS ($r_{Caucasian}(472)=-.207$, $p<.01$). PPI Factor 1, Fearless Dominance, was highly and positively correlated with the independent SCS ($r_{Caucasian}(470)=.464$, $p<.01$), and negatively and significantly correlated with the interdependent SCS ($r_{Caucasian}(470)=-.141$, $p<.01$). PPI Coldheartedness was significantly and

negatively correlated with the interdependent SCS ($r_{Caucasian}(472)=-.280$, $p<.01$). Among non-Asian international students, PPI total scores were significantly and positively correlated with the independent SCS ($r_{non\text{-}Asian}(74)=.293$, $p<.05$), but the interdependent SCS was not significantly correlated with PPI total scores. PPI Factor 1 was positively correlated with the independent SCS ($r_{Non\text{-}Asian}(73)=.353$, $p<.01$). PPI Coldheartedness was significantly and negatively correlated with the interdependent SCS ($r_{Non\text{-}Asian}(74)=-.259$, $p<.05$). Among Asian international students, PPI total scores were positively and significantly correlated with the independent SCS, and the magnitude of the correlation was high ($r_{Asian}(78)=.464$, $p<.01$). Again, the interdependent SCS was not significantly correlated with PPI total scores. PPI Factor 1 was positively correlated with the independent SCS ($r_{Asian}(78)=.378$, $p<.01$). PPI Factor 2, Self-centered Impulsivity, was positively and significantly correlated with the independent SCS ($r_{Asian}(78)=.277$, $p<.05$). PPI Coldheartedness was significantly and negatively correlated with the interdependent SCS ($r_{Asian}(78)=-.276$, $p<.05$).

In summary, contrary to expectations, mean levels of psychopathic traits were not higher among Caucasian American students than Asian international students. In all three groups of students, higher levels of psychopathy as assessed by the PPI were associated with significantly higher reported levels of affiliation with individualistic values. Interdependent self-construal was associated with significantly lower levels of psychopathy only among Caucasian American students. Across three groups, features of Coldheartedness were associated with lower levels of collectivism. Only among Asian international students were higher levels of individualism associated with significantly higher levels of the antisocial and behavioral attributes assessed by PPI Factor 2.

*The association between psychopathy and direct and indirect aggression*

*Hypothesis 2:* Psychopathy in Asian cultures will be more highly correlated with indirect as opposed to direct aggression than in non-Asian cultures.

Exploratory analyses of variance revealed significant group differences for direct aggression ($F(2,567)=11.83$, $p<.001$), as measured by the BPAQ, but not for indirect aggression, as measured by the BDHI. Follow-up Tukey's HSD analyses revealed that Asian international students ($M=75.55$, $SD=16.81$) exhibited substantially higher mean scores than Caucasian Americans students ($M=64.84$, $SD=18.25$) on the BPAQ. The effect size for the difference in means between Asian international students and Caucasian students was medium to large ($d=.62$).

To examine the statistical associations among aggression, psychopathy, and the collectivism-versus-individualism distinction, Pearson product moment correlations were calculated (see table 2). Across the three groups, PPI total scores were always positively and significantly correlated with the BPAQ totals ($r_{Caucasian}(423)=.396$, $p<.01$; $r_{non\text{-}Asian}(70)=.252$, $p<.05$; $r_{Asian}(71)=.298$, $p<.05$, respectively). Scores on PPI Factor 2, Self-centered Impulsivity, not PPI Factor 1, Fearless Dominance, were positively and significantly correlated with the BPAQ total scores across all three groups as well ($r_{Caucasian}(421)=.586$, $p<.01$; $r_{non\text{-}Asian}(70)=.441$, $p<.01$; $r_{Asian}(71)=.509$, $p<.01$, respectively). Similarly, scores of both of the LSRPS Primary and Secondary scales were positively and significantly correlated with the BPAQ total ($r_{Caucasian\text{-}prim}(392)=.582$, $p<.01$; $r_{Caucasian\text{-}sec}(392)=.533$, $p<.01$; $r_{non\text{-}Asian\text{-}prim}(62)=.468$, $p<.01$; $r_{non\text{-}Asian\text{-}sec}(62)=.420$, $p<.01$; $r_{Asian\text{-}prim}(68)=.295$, $p<.05$; $r_{Asian\text{-}prim}(68)=.315$, $p<.01$). In addition, among Caucasian Americans, BPAQ total scores were negatively and significantly correlated with the interdependent SCS ($r_{Caucasian}(426)=-.127$, $p<.01$). Among Asian international students, however, BPAQ total scores are not significantly correlated with SL-ASIA scores or SCS scores.

To examine the relationship between passive aggressive personality and psychopathy, Pearson product moment correlations were calculated(see table 2). The pattern of correlations was broadly similar across the three groups of students. In all three groups, CATI passive aggressive scores were correlated significantly and positively with PPI Factor 2 scores. The magnitude of these relationships was large among Caucasian American students ($r(393)=.598$, $p<.01$) and non-Asian international students ($r(64)=.522$, $p<.01$), and medium among Asian international students, $r(67)=.461$, $p<.01$. In all three groups, CATI passive aggressive scores were not significantly correlated with PPI Factor 1 scores. Among Caucasian American students, but not among Asian international students, CATI passive aggressive scores were positively and significantly correlated with PPI total scores ($r(395)=.326$, $p<.01$). The magnitude of this correlation was medium. Only among Caucasian American students, CATI passive aggressive scores were negatively and significantly correlated with PPI Coldheartedness scores ($r(395)=-.214$, $p<.01$). In all three groups, CATI passive aggressive scores were significantly and positively correlated with both LSRPS primary psychopathy ($r_{Caucasian}(389)=.566$, $p<.01$; $r_{Non-Asian}(62)=.444$, $p<.01$; $r_{Asian}(66)=.410$, $p<.01$) and LSRPS secondary psychopathy scores ($r_{Caucasian}(389)=.546$, $p<.01$; $r_{Non-Asian}(62)=.482$, $p<.01$; $r_{Asian}(66)=.566$, $p<.01$). The magnitude of these correlations ranged from medium to large.

In summary, Caucasian American and Asian international students exhibited a similar level of indirect aggression, but Asian international students exhibited higher levels of direct aggression than Caucasian American students. In all three groups, higher levels of direct aggression were associated with significantly higher levels of psychopathy, especially, higher levels of the antisocial behavioral attributes assessed by PPI Factor 2. Among Caucasian Americans, indirect aggression as assessed by CATI passive aggressive, was associated with

significantly higher levels of global psychopathy traits assessed by PPI total scores, and was also associated with significantly higher levels of PPI Coldheartedness. In all three groups, indirect aggression expressed as passive aggression was associated with higher levels of LSRPS primary psychopathy and secondary psychopathy and significantly higher levels of the antisocial behavioral attributes assessed by PPI Factor 2, but was not associated significantly with interpersonal and affective traits as assessed by PPI Factor 1 scores.

*The relationship between psychopathy and somatization*

*Hypothesis 3:* In Asian cultures, somatization will be more highly correlated with Factor 2 attributes of psychopathy than in non-Asian cultures.

No clear predictions were made regarding the relationship between cultural group and levels of somatization; however, an exploratory analysis of variance revealed group differences for PHQ-15 scores ($F(2,560)=4.94$, $p<.007$). Follow-up Tukey's HSD analyses revealed Caucasian Amerian students ($M=22.20$, $SD=4.03$) scored significantly lower than non-Asian international students ($M=20.65$, $SD=4.36$), $p<.001$. No significant mean differences existed between Asian international students ($M=21.29$, $SD=4.85$) and the other two groups. The effect size for the difference between Caucasian American and non-Asian international students was small to medium ($d=.34$).

To examine the association between somatization and psychopathy across groups, Pearson product moment correlations were calculated (see table 2). The pattern of correlations among PHQ-15 scores, measures of somatization, and psychopathy varied across the three groups of students. Among Caucasian American students, PHQ-15 correlated significantly and negatively with PPI Factor 1 scores ($r(413)=-.196$, $p<.01$), but correlated positively and significantly with PPI Factor 2 scores ($r(413)=0.197$, $p<.01$). The magnitudes of these

correlations were small. PHQ-15 scores were not significantly correlated with PPI total scores. PHQ-15 scores also significantly and negatively correlated with PPI Coldheartedness ($r(415)=-.248$, $p<.01$) at a medium magnitude. Moreover, PHQ-15 scores were significantly and positively correlated with LSRPS primary psychopathy scores ($r(391)=.112$, $p<.05$) at a small magnitude, but were not significantly correlated with LSRPS secondary psychopathy scores. Among non-Asian international students, PHQ-15 scores were not significantly correlated with PPI total scores, PPI Factor 1 scores, or PPI Coldheartedness scores, but were significantly and positively correlated with PPI Factor 2 scores ($r(68)=0.254$, $p<.05$). The magnitude was small to medium. PHQ-15 scores were positively and significantly correlated with LSRPS secondary psychopathy scores ($r(63)=0.28$, $p<.05$) with a small magnitude, but were not significantly correlated with LSRPS primary scores. Among Asian international students, PHQ-15 scores were negatively and significantly correlated with PPI total scores ($r(71)=-.325$, $p<.01$), and PPI Factor 1 scores ($r(71)=-.400$, $p<.01$) with large magnitudes, but were not significantly correlated with the remainder of psychopathy measures.

In summary, somatization as measured by the PHQ-15 was significantly related to higher PPI Factor 2 scores among Caucasian American and non-Asian international students. Contrary to prediction, no such relationship existed for Asian international students. Somatization was significantly associated with higher levels of PPI total and Factor 1 scores among Asian international students.

*The relationship between psychopathy and social anxiety*

*Hypothesis 4:* In Asian cultures, measures of psychopathy will correlate more negatively with indigenous measures of social anxiety (such as Taijin Kyofusho) than in non-Asian cultures.

No predictions were made regarding the relation of ethnicity to levels of Taijin Kyofusho; nonetheless, an exploratory analysis of variance revealed group differences for TKS scores, $F(2,574)=10.44$, $p<.001$). Follow-up Tukey's HSD tests revealed that Asian international students ($M=85.78$, $SD=33.82$) obtained substantially higher TKS scores than either Caucasian American ($M=71.70$, $SD=28.58$) or non-Asian international students ($M=64.96$, $SD=23.60$), $p<.01$. These results should be interpreted with caution, however, because error variances were unequal across groups. The effect size for the difference in means between Asian international and Caucasian American students was medium to large, insert $d=.52$. The effect size between Asian international and non-Asian international students was large, insert $d=.46$.

I next examined the correlational associations between characteristics of Taijin Kyofusho and psychopathy scores (see table 2). None of the TKS total scores was correlated significantly with PPI total scores, but they were all negatively and significantly correlated with PPI Factor 1 scores ($r_{Caucasian}(427)=-.349$, $p<.01$; $r_{non\text{-}Asian}(69)=-.309$, $p<.01$; $r_{Asian}(72)=-.256$, $p<.05$). TKS total scores from all three groups were positively correlated with PPI Factor 2 scores ($r_{Caucasian}(427)=.355$, $p<.01$; $r_{non\text{-}Asian}(69)=.456$, $p<.01$; $r_{Asian}(72)=.471$, $p<.01$). Among Caucasian Americans and Asian international students, PPI Coldheartedness scores were negatively and significantly correlated with TKS scores ($r_{Caucasian}(429)=-.288$, $p<.01$; $r_{Asian}(72)=-.245$, $p<.05$, respectively). The TKS total scores across the three groups were all significantly and positively correlated with both LSRPS Primary and Secondary scores ($r_{Caucasian\text{-}prim}(391)=.298$, $p<.01$; $r_{Caucasian\text{-}sec}(391)=.295$, $p<.01$; $r_{non\text{-}Asian\text{-}prim}(62)=.334$, $p<.01$; $r_{non\text{-}Asian\text{-}sec}(62)=.415$, $p<.01$; $r_{Asian\text{-}prim}(68)=.393$, $p<.05$; $r_{Asian\text{-}prim}(68)=.371$, $p<.01$, respectively).

In summary, in line with predictions, Asian international students demonstrated the highest levels of TKS. Higher levels of TKS were associated with lower levels of the affective

and interpersonal traits assessed by PPI Factor 1 in all three groups, and PPI Coldheartedness only among Caucasian American and International students. In all three groups, higher levels of TKS were associated with higher levels of the antisocial behavioral attributes assessed by PPI Factor 2, as well as higher levels of psychopathy as measured by the LSRPS total and secondary psychopathy scales.

*The relationship between psychopathy and alcohol use*

*Hypothesis 5:* In Asian populations, psychopathy should be less highly correlated with alcohol abuse than in non-Asian cultures.

An exploratory analysis of variance yielded no significant group differences for the MAST scores.

I next examined correlations between psychopathy scores and alcohol use was conducted (see table 2). Among Caucasian American students, PPI total scores were positively correlated with the MAST total scores ($r_{Caucasian}(286)=.215$, $p<.01$). PPI Factor 2 was positively and significantly correlated with the MAST total scores as well ($r_{Caucasian}(284)=.339$, $p<.01$). Both of the LSRPS Primary and Secondary scores were positively and significantly correlated with the MAST total scores at a high magnitude ($r_{PRIM}(266)=.383$, $p<.01$; $r_{SEC}(266)=.367$, $p<.01$). As in non-Asian international students, none of the psychopathy measures was significantly correlated with the MAST total scores. Among Asian international students, only PPI Factor 2 out of all psychopathy measures was significantly and positively correlated with the MAST total scores at a large magnitude ($r_{Asian}(61)=.306$, $p<.05$).

In summary, among Caucasian American students only, higher MAST scores, indicating higher levels of alcohol abuse, were associated with significantly higher levels of psychopathy and, more specifically, to PPI total scores. Among Caucasian American and Asian international

students, higher levels of alcohol abuse as indicated by higher MAST scores, were associated with higher levels of antisocial personality traits of psychopathy, as assessed by PPI Factor 2 scores.

*Partial correlations*

To investigate the effects of social desirability on self-report data, as measured by MCSDS scores, analyses of partial correlations were conducted. Controlling for social desirability resulted in only minor changes in the correlations, ranging from 0.01 to 0.3. Most variances center around 0.01 to 0.05, so the change of 0.3 is only an extreme case.

# Discussion

The results from this investigation revealed that levels of psychopathy were higher among Asian international and non-Asian international students than among Caucasian American students. In addition, although PPI Factor 1 attributes were related to individualism across all three groups, PPI Factor 2 attributes were statistically related to individualism only among Asian international students. Psychopathy was similarly related to direct aggression, but not indirect aggression across all three groups. Culturally bound social anxiety as operationalized by Taijin Kyofusho was related to psychopathy similarly within each group as well. PPI Factor 2 scores were related to somatization only among Caucasian American and non-Asian international students. Alcohol use was significantly related to psychopathy only among Caucasian American students. Of note, none of the between-group comparisons of correlations were significant, so cross-group findings should be interpreted with caution.

## *Levels of psychopathy, individualism, and collectivism*

Levels of psychopathic traits were not higher among Caucasian American students compared with other groups in this sample. Contrary to prediction, both Asian international and non-Asian international students scored higher on some measures of psychopathy, specifically, PPI total, PPI Factor 2, PPI Coldheartedness and Levenson's Self-Report Psychopathy Scale, including both primary and secondary psychopathy subscales. These findings suggest that levels of the interpersonal and affective deficits and antisocial behavioral traits associated with psychopathy are higher among both Asian and non-Asian international students than among Caucasian American students.

All three groups showed no significant group differences in identification with individualistic values. Individualism was related to higher levels of PPI total and PPI Factor 1

scores in all three groups of students. Additionally, individualism was related to higher levels of PPI Coldheartedness among Caucasian students, and of PPI Factor 2 among Asian international students. These findings align with previous studies that psychopathy, its core interpersonal and affective traits in particular, indicate higher levels of individualism (Cooke & Michie, 2004). The finding that higher individualism was uniquely related to significantly higher levels of the antisocial attributes implied by PPI Factor 2 among Asian international students is novel and thought provoking, and therefore warrants replications in further studies. A possible explanation from Triandis (1995)'s study that distinguished idiocentrics – individuals endorsing individualistic values –, in an allocentric (collectivist) culture are not likely to blend in with other allocentric peers by acting according to more individualistic values, and demonstrating more externalizing behaviors. Similarly, Cadwell-Harris and Aycicegi (2006) found that idiocentricism within an allocentric culture was positively correlated with higher scores on measures of antisocial personality disorders.

Asian international students reported a higher level of affiliation with collectivist values than Caucasian Americans, and among Asian international students, collectivism was significantly and negatively related to Coldheartedness in psychopathy. Contrary to expectations, PPI total, Fearless Dominance and Coldheartedness were significantly related to collectivism only within the Caucasian American group. In other words, only among Caucasian Americans, higher levels of collectivism were associated with lower levels of psychopathic traits. Nevertheless, the cross-cultural comparison is marked by insignificant between-group comparisons.

*Aggression and psychopathy*

Asian international students reported higher mean levels of direct aggression than

Caucasian American students. Indirect aggression, however, was not significantly different across three groups of students. The present study confirmed the well-replicated finding that psychopathy is strongly associated with direct aggression, as direct aggression was similarly and highly related to main psychopathy measures, including PPI total, Factor 1, Factor 2, and LSRPS primary and secondary psychopathy. Although indirect aggression was not significantly related to Factor 2 traits among Asian international students, correlations between passive aggression and psychopathy total and coldheartedness were similar across groups. Moreover, among Caucasian American students, the more interdependent they are, the less direct aggression they express. Also among Caucasian students, coldheartedness is negatively correlated with passive aggression. This finding possibly indicates that if people in an individualistic society are less relentless and coldhearted, they care more about others' judgment and opinions, thereby demonstrating more indirect tactics in the expression of aggression, such as passive aggression. Overall, these findings support the idea that the manifestation of direct aggression does not vary much cross-culturally in that higher levels of psychopathic traits are similarly related to higher levels of aggression cross-culturally.

*Somatization and psychopathy*

Non-Asian international students reported higher levels of somatization than their Caucasian counterparts; however, Asian international students were not found to somatize more than Caucasian Americans. Inconsistent with prediction, somatization was correlated with different aspects of psychopathy in different groups. Specifically, somatization was associated with higher levels of PPI Factor 2 traits only among Caucasian and non-Asian international students, but somatization was strongly and negatively associated with PPI total and PPI Factor 1 among Asian international students. This pattern provides at best mixed and inconsistent the

longstanding idea that somatization is a distinctive cultural pathway for the expression of distress, particularly anxiety and depression, among Eastern Asians (Kleinman, 1988). Keyes and Ryff (2003)'s finding that somatization is possibly associated with healthy coping in Asian, collectivist cultures, but is associated with poor mental health in individualistic societies like the U.S. may explain the variance in the pattern of somatization cross-culturally.

Although the present study did not include a measure of overall well-being, depression, or anxiety, PPI Factor 2 traits have been previously associated with higher levels of psychological maladjustment and negative affects, including depression and anxiety among American participants (Patrick, Poythress, Edens, Lilienfeld, & Benning, 2006). The significant positive association between PPI Factor 2, Self-centered Impulsivity, and somatization among Caucasian American students in this study is congruent with the notion that somatization is related to psychological maladjustment in the U.S. The idea that somatization has a negative association with PPI Factor 1, Fearless Dominance, among Asian international students, lends support to the notion that somatization is related to psychological adjustment and well-being in Asian groups, but in different ways. This conclusion, nonetheless, is largely speculative and warrants further replication.

*Social anxiety and psychopathy*

Asian international students reported substantially higher mean levels of Taijin Kyofusho, and Taijin Kyofusho was negatively related to PPI Coldheartedness among Caucasian American and Asian international students. This finding establishes similarity between North American culture and Asian cultures and is theoretically interpretable, because a more coldhearted person is less likely to develop other-centered Taijin Kyofusho symptoms due to the lack of sympathy and attention catering for others' opinions. Higher levels of TKS were congruently associated

with scores of PPI Factor 1, Factor 2, and LSRPS scores across three groups of students. This finding that higher-order traits of PPI and LSRPS are associated with higher levels of social anxiety syndrome across the sample indicates this relationship holds true cross-culturally.

*Alcohol use and psychopathy*

Contrary to prediction, alcohol abuse as measured by the MAST did not differ cross-culturally. This insignificant comparison may be due to the diminishing impact of the genes to decompose aldehyde dehydrogenase and alcohol dehydrogenase among Asians. Asians may have been engaged in more drinking due to elevated level of stress, thus the role of genetic variance may not be as prominent as expected. Within the group of Caucasian American students, alcohol use was correlated significantly and positively with psychopathy, as indicated by PPI total and LSRPS primary and secondary psychopathy subscales. Many psychologists, starting from Cleckley in 1941, have linked susceptibility to substance abuse to psychopathy. The relationship between Factor 2 traits and alcohol abuse is particularly well supported (Patrick et al., 2006; Smith & Newman, 1990). However, this relationship was only found among Asian international students. Within the group of Asian international students, only Factor 2 traits were related to alcohol abuse. It should be noted that although some within-group correlations were significant, between-group correlations of the same pair of variables were not significant. Therefore, the null hypothesis that in Asian populations, psychopathy should be less highly correlated with alcohol abuse than in non-Asian cultures cannot be rejected. Given the unprecedented nature of this finding, these require cautious interpretation and replication in the future. Future studies should attempt to parse components of psychopathy out to determine which aspect of psychopathy that is truly relevant to alcohol abuse cross-culturally.

*Limitations*

Cross-cultural studies typically are marked by a variety of methodological obstacles and inadequacies. This study was limited by a number of these problems, beginning with its reliance on convenience sampling. Although this method was able to recruit as large a sample of Asian international students as possible, the resulting sample was neither randomly selected nor matched in number or gender distribution to the Caucasian American group. The total number of Asian international students included in the final analyses, at 79, was much smaller than the Caucasian group. Selection bias may also exist, since all students chose to participate in the study voluntarily, and thus may not accurately represent the characteristics of their chosen populations. Selection bias adds to the difficulty of data interpretation. It is unclear how these results will generalize to Asians, given that international students are a subset of a population that has intentionally chosen to live in the United States and has spent a period of time in the U.S. In this case, Asian international students may defy some of the collectivist values compared with their collectivist counterparts in their home countries as they gradually incorporate cultural values in North American into their self-construal and behaviors, resulting in higher levels of acculturation than their compatriots. Thus, using international students as a comparison group further limits the study. The unexpected nature of some of the mean differences analyses raises concern of how the Asian international students in this study might differ from their compatriots at home. International students may possess characteristics that distinguish them from their fellow citizens and that may have biased the results of the analyses conducted here. Future studies should recruit Asian participants directly from Asian who are not acculturated to more clearly elucidate the variances in identities due to cultural differences. Despite these disadvantages, it was unpractical to separate Asians by nationality, given the small number of

participants within different countries. In further research, using more participants from different countries should be better than lumping different cultural groups together.

Grouping Asian students together, implying that all Asian cultures share the same cultural norms and values and express them similarly in response to personality tests, is problematic. Although most Asian cultures share more values and norms than they do with Western cultures, research has outlined non-negligible differences within Asian cultures. Meta-analyses by Oyserman, Kemmelmeir, and Coon (2002) indicated that there are cross-national differences in levels of individualism and collectivism. The Japanese, for example, tend to report high levels of both individualism and collectivism, whereas the Chinese tend to report low levels of individualism and high levels of collectivism. The core values and norms that constitute collectivism and individualism also vary among Asian cultures. Interpersonal harmony, for instance, appears to be at the heart of collectivism in China but is not as crucial in Japan (Oyserman et al., 2002). Therefore, grouping Asian students together incurs the risk of ignoring important sub-cultural differences.

Besides sampling bias, this study may also be limited by its reliance on self-report data. Some researchers suggest that self-report data regarding personality, behavior, and attitudes may not serve as the most valid method to assess cross-cultural differences. Heine, Lehman, Peng and Greenholz (2002) contended that self-report data are subject to the reference-group effect (RGE). For example, a typical NBA center basketball player is between 6’10” and 7’3” in height. A 6’8” player is short compared with other center players, but is much taller than ordinary people. The reference-group effect may raise concerns, because subjects tend to answer self-report questionnaires by comparing themselves with others using the norms and standards of their own cultural group. Cultural groups are likely to possess different construal regarding the meaning of

personality variables, leading to responses that distort important between-group differences, even at times in the direction opposite of true differences (Heine et al., 2002). For instance, Asian international students in this study might think they express higher-than-normal psychopathic traits compared with their fellow citizens, but in reference to Caucasians, they might actually possess lower levels of psychopathic traits. Although the possible influences from inconsistent reference groups are largely speculative, the RGE may shed light on some of the unexpected differences, particularly the particular differences between Caucasian American and Asian international students in mean levels of psychopathy and aggression. Taken together, the RGE might skew the data that render an inaccurate picture of between group cross-cultural differences.

*Conclusion*

This study is the first to investigate possible differences in the expression of psychopathic personality traits between Caucasian American and Asian populations. Taken together, these results offer weak support for some hypotheses. The patterns of findings are not very clear-cut. However, the results indicate that psychopathy measures appear to still predict meaningful outcomes cross-culturally. The overall findings also reflect the relevance of the construct of psychopathy in Eastern Asian cultures. Even in Asian cultures, psychopathy still broadly predicts aggressions, somatization, culturally bound social anxiety, and alcohol abuse, so the findings do address broader implications in psychopathy. Culture may shape expressions in subtle ways that warrant further studies. Sampling and reporting biases, as well as the reference group effect limited this study. Future research is encouraged to address these limitations by recruiting larger samples of Asian participants to enable analysis of Asian nationalities separately and by employing diverse measures of personality that do not rely exclusively on self-report.

APPENDIX

**Table 1.** Descriptive Statistics

| | Caucasian Americans | | | Non-Asian International | | | Asian International | | |
|---|---|---|---|---|---|---|---|---|---|
| | N[1] | Mean | Std. Deviation | N[1] | Mean | Std. Deviation | N[1] | Mean | Std. Deviation |
| PPI Total | 473 | 119.00 | 14.69 | 74 | 124.37 | 12.98 | 78 | 123.56 | 13.81 |
| PPI F1 | 471 | -0.01 | 2.14 | 73 | 0.41 | 1.96 | 78 | -0.29 | 1.99 |
| PPI F2 | 471 | -0.25 | 2.59 | 73 | 0.34 | 2.50 | 78 | 1.06 | 2.26 |
| PPI CO | 473 | 12.63 | 3.07 | 74 | 13.84 | 3.23 | 78 | 13.22 | 3.36 |
| LSRPSprim | 393 | 26.76 | 6.20 | 63 | 28.38 | 6.81 | 68 | 32.81 | 5.11 |
| LSRPSSec | 393 | 16.53 | 4.27 | 63 | 17.87 | 4.18 | 68 | 20.63 | 3.88 |
| SLASIA | 18 | 65.79 | 11.19 | 8 | 54.63 | 8.14 | 92 | 46.57 | 8.92 |
| SCS Ind | 505 | 73.74 | 9.23 | 83 | 75.83 | 9.09 | 86 | 73.75 | 8.66 |
| SCS Inter | 505 | 70.39 | 9.08 | 83 | 70.58 | 9.40 | 86 | 75.93 | 9.63 |
| TKS | 433 | 71.70 | 28.58 | 70 | 64.96 | 23.60 | 74 | 85.78 | 33.82 |
| BPAQ | 427 | 64.84 | 18.25 | 70 | 69.10 | 16.98 | 73 | 75.55 | 16.81 |
| BDHI | 300 | 13.84 | 2.10 | 57 | 13.21 | 2.32 | 63 | 13.82 | 2.19 |
| MAST | 290 | 27.55 | 2.27 | 51 | 27.69 | 3.17 | 63 | 27.86 | 3.12 |
| PHQ-15 | 419 | 22.20 | 4.03 | 69 | 20.65 | 4.36 | 75 | 21.29 | 4.85 |
| MCSDS | 351 | 14.57 | 5.01 | 64 | 17.10 | 5.20 | 69 | 16.41 | 4.65 |
| CATI ASP | 398 | 5.76 | 2.07 | 65 | 5.95 | 2.43 | 69 | 6.13 | 1.85 |
| CATI BD | 398 | 9.93 | 3.25 | 65 | 9.65 | 3.23 | 69 | 100.87 | 3.30 |
| CATI HIS | 398 | 9.59 | 2.51 | 65 | 8.75 | 2.82 | 69 | 8.69 | 2.28 |
| CATI PAG | 398 | 9.07 | 2.98 | 65 | 8.70 | 2.69 | 69 | 9.57 | 2.70 |

[1] The numbers of participants in each group on which the descriptives were calculated are based on two criteria to be eligible for data analyses: 1) they answered the capital of the country they said they were from correctly; 2) they answered more than 90% of the questions in every single scale.

*Note.* PPI: Psychopathic Personality Inventory – shortened version (Lilienfeld, 1990); F1: Factor 1; F2: Factor 2; CO: Coldheartedness; LSRPS – Levenson Self-Report Psychopathy Scale (Levenson & Fitzpatrick, 1995); LSRPSPrim: Levenson's Primary Psychopathy Scale; LSRPSSec: Levenson's Secondary Psychopathy Scale. BPAQ – Buss-Perry Aggression Questionnaire (Buss & Perry, 1992); BDHI – Buss-Durkee Hostility Inventory (Buss & Durkee, 1957); CATI – Coolidge Axis II Inventory (Coolidge, 1984); PAG: Passive-aggressive; ASP: Anti-social; BD: Borderline; HIS: Histrionic; TKS – Taijin Kyofusho (Kleinknecht et al., 1994); PHQ-15 – The Patient Health Questionnaire (Kroenke et al., 2002); MAST – Michigan Alcohol Screening Test (Selzer, 1971). SL-ASIA – The Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn et al., 1987); SCS – The Self-Construal Scale (Singelis, 1994); Ind: Independent; Inter: Interdependent; MCSDS – The Marlowe-Crowne Social Desirability Scale (Marlowe & Crowne, 1960)

**Table 2.** Psychopathy and self-construal, aggression, somatization, social anxiety, and alcohol abuse

| | | SCS Ind | SCS Inter | BPAQ | BDHI | CATI PAG | PHQ-15 | TKS | MAST |
|---|---|---|---|---|---|---|---|---|---|
| Caucasian American | PPI Total | .313** | -.207** | .396** | .080 | .326** | -.033 | -.025 | .216** |
| | PPI F1 | .464** | -.141** | .048 | -.137* | -.059 | -.196** | -.349** | .044 |
| | PPI F2 | -.008 | -.100* | .586** | .315** | .598** | .197** | .355** | .339** |
| | PPI CO | .076 | -.280** | -.180** | -.215* | -.214** | -.248** | -.288** | -.170** |
| | LSRPSPrim | -.017 | -.130* | .582** | .329** | .566** | .112* | .298** | .383** |
| | LSRPSSec | -.055 | -.056 | .533** | .290** | .546** | .096 | .295** | .367** |
| Non-Asian International | PPI Total | .293* | -.109 | .252* | .173 | .231 | .106 | .102 | -.111 |
| | PPI F1 | .353** | .032 | -.117 | -.074 | -.181 | -.099 | -.309** | -.104 |
| | PPI F2 | .067 | -.100 | .441** | .333** | .522** | .254* | .456** | -.107 |
| | PPI CO | -.078 | .259* | .005 | -.099 | -.084 | -.102 | .094 | .098 |
| | LSRPSPrim | -.024 | -.188 | .468** | .406** | .444** | .234 | .334** | -.021 |
| | LSRPSSec | .132 | -.075 | .420** | .298* | .482** | .280* | .415** | -.045 |
| Asian International | PPI Total | .464** | .042 | .298* | -.153 | .136 | -.325** | .091 | .196 |
| | PPI F1 | .378* | .017 | -.068 | -.300* | -.157 | -.400** | -.256* | .033 |
| | PPI F2 | .277* | .153 | .509** | .095 | .461** | -.092 | .471** | .306* |
| | PPI CO | .149 | -.276* | .031 | -.121 | -.236 | -.080 | -.245* | -.118 |
| | LSRPSPrim | .218 | .046 | .295* | .183 | .410** | .024 | .393** | .253 |
| | LSRPSSec | .053 | .225 | .315** | .194 | .566** | -.043 | .371** | .085 |

*$p$<.05, **$p$<.01

*Note.* PPI: Psychopathic Personality Inventory – shortened version (Lilienfeld, 1990); F1: Factor 1; F2: Factor 2; CO: Coldheartedness; LSRPS – Levenson Self-Report Psychopathy Scale (Levenson & Fitzpatrick, 1995); LSRPSPrim: Levenson's Primary Psychopathy Scale; LSRPSSec: Levenson's Secondary Psychopathy Scale. BPAQ – Buss-Perry Aggression Questionnaire (Buss & Perry, 1992); BDHI – Buss-Durkee Hostility Inventory (Buss & Durkee, 1957); CATI – Coolidge Axis II Inventory (Coolidge, 1984); PAG: Passive-aggressive; TKS – Taijin Kyofusho (Kleinknecht et al., 1994); PHQ-15 – The Patient Health Questionnaire (Kroenke et al., 2002); MAST – Michigan Alcohol Screening Test (Selzer, 1971); SCS – The Self-Construal Scale (Singelis, 1994); Ind: Independent; Inter: Interdependent

References

Abe-Kim, J. Okazaki, S., & Goto, S.G. (2001). Unidimensional versus multidimensional approaches to the assessment of acculturation for Asian American populations. *Cultural Diversity and Ethnic Minority Psychology, 7*, 232-246.

Benning, S.D., Patrick, C.J., Hicks, B.M., Blonigen, D.M., & Krueger, R.F. (2003). Factor structure of the Psychopathic Personality Inventory: Validity and implications for clinical assessment. *Psychological Assessment, 15,* 340–350.

Benning, S. D., Patrick, C. J., Blonigen, D. M., Hicks, B. M., & Iacono, W. G. (2005). Estimating Facets of Psychopathy From Normal Personality Traits A Step Toward Community Epidemiological Investigations. *Assessment, 12(1),* 3-18.

Bolt, D. M., Hare, R. D., & Neumann, C. S. (2007). Score Metric Equivalence of the Psychopathy Checklist–Revised (PCL-R) Across Criminal Offenders in North America and the United Kingdom A Critique of Cooke, Michie, Hart, and Clark (2005) and New Analyses. *Assessment, 14(1),* 44-56.

Brinkley, C.A., Scmitt, W.A., Smith, S.S., & Newman, J.P. (2001). Construct validation of a self-report psychopathy scale: Does Levenson's self-report psychopathy scale measure the same constructs as Hare's psychopathy checklist-revised? *Personality and Individual Differences, 31,* 1021-1038.

Buss, A.H. & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Consulting Psychology, 21, 343*-349.

Buss, A.H. & Perry, M. (1992). The Aggression Questionnaire. *Personality and Individual Differences, 63,* 452-459.

Cale, E.M. & Lilienfeld, S.O. (2006). Psychopathy factors and risk for aggressive behavior: A test of the "Threatened Egotism" hypothesis. Law and Human Behavior,30, 51-74.

Caldwell-Harris, C.L. & Aycicegi, A. (2006). When personality and culture clash: The psychological distress of allocentrics in an individualist culture and idiocentrics in a collectivist culture. *Transcultural Psychiatry, 43,* 331-361.

Chen, C. N., Wong, J., Lee, N., Chan-Ho, M. W., Lau, J. T. F., & Fung, M. (1993). The Shatin community mental health survey in Hong Kong: II. Major findings. *Archives of General Psychiatry, 50(2),* 125.

Cleckley, H. (1976). The mask of insanity. *St Louis: CV Mosby Co.*

Collier, E. (2009). *Psychopathic Traits in Individualist and Collectivist Cultures: A Comparison in a North American and Asian Sample (Doctoral dissertation, Emory University).*

Cooke, D. J., Kosson, D. S., & Michie, C. (2001). Psychopathy and ethnicity: Structural, item, and test generalizability of the Psychopathy Checklist—Revised (PCL-R) in Caucasian and African American participants. *Psychological assessment, 13(4),* 531.

Cooke, D. J., & Michie, C. (1999). Psychopathy across cultures: North America and Scotland compared. *Journal of abnormal psychology, 108(1),* 58.

Cooke, D. J., & Michie, C. (2001). Refining the construct of psychopathy: Towards a hierarchical model. *Psychological Assessment, 13,* 171–188.

Cooke, D. J., Michie, C., Hart, S. D., & Clark, D. (2005). Assessing psychopathy in the UK: concerns about cross-cultural generalisability. *The British Journal of Psychiatry, 186(4),* 335-341.

Coolidge, F. L. (1984). Coolidge Axis II Inventory. U.S. Copyright TXU 182-026, Washington, DC.

Coolidge, F.L. & Merwin, M.M. (1992). Reliability and validity of the Coolidge Axis II Inventory for the assessment of personality disorders. *Journal of Personality Assessment, 59,* 223-238.

Draguns, 1. G. (1986). Culture and psychopathology: What is known about their relationship? *Australian Journal of Psychology, 38,* 329-338.

Fiske, A. P. (1995). The cultural dimensions of psychological research: Method effects imply cultural mediation. In P. E. Shrout & S. T. Fiske (Eds.), *Personality research method and theory: A festschrift honoring Donald W. Fiske (pp. 271-294).* Hillsdale, Nl: Erlbaum.

Fromme, K., de Wit, H., Hutchison, K., Ray, L.,William, R.C., Cook, T.L., & Goldman, D. (2004). Biological and behavioral markers of alcohol sensitivity. *Alcoholism: Clinical and Experimental Research, 28,* 247-256.

Fung, A. L. C., Gao, Y., & Raine, A. (2009). The utility of the child and adolescent psychopathy construct in Hong Kong, China. *Journal of Clinical Child & Adolescent Psychology, 39(1), 134*-140.

Gao, G., Ting-Toomey, S. & Gudykunst, W.B. (1996). Chinese communication processes. In: Bond, M.H. (ed.) The handbook of Chinese psychology. New York: Oxford University Press, 280-293.

Geng, Y., Liu, D., Su, L., Wang, C., & Li, Y. (2009). Machiavellianism and Related Behavioral Problems in Chinese Boys with Attention Deficit Hyperactivity Disorder. *Acta of Zhengzhou University Overseas Edition, 6(4),* 56.

Grann, M., Långström, N., Tengström, A., & Kullgren, G. (1999). Psychopathy (PCL-R) predicts violent recidivism among criminal offenders with personality disorders in Sweden. Law and Human Behavior, 23(2), 205.

Hall, J.R., Benning, S.D., & Patrick, C.J. (2004). Criterion-related validity of the threefactor model of psychopathy: Personality, behavior, and adaptive functioning. *Assessment, 11,* 4-16.

Hardin, E.E., Leong, F.T., & Bhagwat, A.A. (2004). Factor structure of the Self- Construal Scale revisited: Implications for multidimensionality of self-construal. *Journal of Cross-Cultural Psychology, 35,* 327-345.

Hare, R. D. (1985). *The Hare Psychopathy Checklist.* Toronto, Ontario, Canada: Multi-Health Systems.

Hare, R. D. (1991). *The Hare Psychopathy Checklist—Revised*. Toronto, Ontario, Canada: Multi-Health Systems.

Hart, S. D., & Hare, R. D. (1997). *Psychopathy: Assessment and association with criminal conduct*.

Harris, J.A. (1997). A further evaluation of the Aggression Questionnaire: Issues of validity and reliability. *Behaviour Research & Therapy, 35,* 1047-1053.

Heine, S.J., Lehman, D.R., Peng, K. & Greenholz, J. (2002). What's wrong with crosscultural comparisons of subjective Likert scales? The Reference-Group Effect. *Journal of Personality and Social Psychology, 82,* 903-918.

Hill, C. D., Neumann, C. S., & Rogers, R. (2004). Confirmatory factor analysis of the psychopathy checklist: screening version in offenders with axis I disorders. *Psychological Assessment, 16(1),* 90.

Karpman, B. (1948). THE MYTH OF THE PSYCHOPATHIC PERSONALITY. *American Journal of Psychiatry, 104,* 523-534

Keyes, C.L.M. & Ryff, C.D. (2003). Somatization and mental health: A comparative study of the

idiom of distress hypothesis. *Social Science & Medicine, 57*, 1833-1845.

Kim, H. S., & Kim, H. S. (2008). The impact of family violence, family functioning, and parental partner dynamics on Korean juvenile delinquency. *Child psychiatry and human development, 39(4),* 439-453.

Kleinman, A. (1988). *Rethinking psychiatry: From cultural category to personal experience.* New York, NY: The Free Press.

Kleinknecht, R.A., Dinnel, D.L., & Kleinknecht, E. (1997). Cultural factors in social anxiety: A comparison of social phobia symptoms and Taijin Kyofusho. *Journal of Anxiety Disorders, 11,* 157-177.

Kleinknecht, R.A., Dinnel, D.L. Tanouye-Wilson, S., & Lonner, W.L. (1994). Cultural variation in social anxiety and phobia: A study of Taijin Kyofusho. *The Behavior Therapist, 17,* 175-178.

Kosson, D. S., Smith, S. S., & Newman, J. P. (1990). Evaluating the construct validity of psychopathy in black and white male inmates: three preliminary studies. *Journal of abnormal psychology, 99(3),* 250.

Kosson. D. S. (1998). Divided visual attention in psychopathic and nonpsychopathic offenders. *Personality and Individual Differences, 24.* 373-391.

Kroenke, K., Spitzer, R.L., & Williams, J.B.W. (2002). The PHQ-15: Validity of a new measure for evaluating the severity of somatic symptoms. *Psychosomatic Medicine, 64,* 258-266.

Levenson, M. R., Kiehl, K. A., & Fitzpatrick, C. M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of personality and social psychology, 68(1),* 151.

Levenson, M.R., & Fitzpatrick, C.M. (1995). Assessing psychopathic attributes in a

noninstitutionalized population. *Journal of Personality and Social Psychology, 68,* 151-158.

Lilienfeld, S.O. (1990). Development and preliminary validation of a self-report measure of psychopathic personality (Doctoral dissertation, University of Minnesota, Minneapolis).

Lilienfeld, S.O. (1994). Conceptual problems in the assessment of psychopathy. *Clinical Psychology Review, 14, 17*-38.

Lilienfeld, S.O. (1994). Conceptual problems in the assessment of psychopathy. *Clinical Psychology Review, 14,* 17-38.

Lilienfeld, S.O. & Andrews, B.P. (1996). Development and preliminary validation of a self-report measure of psychopathic personality traits in noncriminal populations. *Journal of Personality Assessment, 66,* 488-524.

Lilienfeld, S.O. & Hess, T.H. (2001). Psychopathic personality traits and somatization: Sex differences and the mediating role of negative emotionality. *Journal of Psychopathology and Behavioral Assessment, 23,* 11-24.

Lilienfeld, S. O., Widows, M. R., & Staff, P. A. R. (2005). Psychopathic Personality InventoryTM-Revised. *Social Influence (SOI), 61(65),* 97.

Lorenz, A. R., & Newman, J. P. (2002). Deficient response modulation and emotion processing in low-anxious Caucasian psychopathic offenders: results from a lexical decision task. *Emotion, 2(2),* 91.

Lykken, D. T. (1995). *The antisocial personalities*. Hillsdale, NJ: Erlbaum.

Lynam, D.R., Whiteside, S., & Jones, S. (1999). Self-reported psychopathy: A validation study. *Journal of Personality Assessment, 73*, 110-132.

Markus, H.R. & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion,

and motivation. *Psychological Review, 98,* 224-253.

Marlowe, D. & Crowne, D.P. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24,* 349-354.

Murphy, 1. M. (1976, March 12). Psychiatric labeling in cross-cultural perspective: Similar kinds of disturbed behavior appear to be labeled abnormal in diverse cultures. *Science, 191,* 1019-1028.

Neumann, C. S., Malterer, M. B., & Newman, J. P. (2008). Factor structure of the Psychopathic Personality Inventory (PPI): findings from a large incarcerated sample. *Psychological assessment, 20(2),* 169.

Osumi, T., Shimazaki, H., Imai, A., Sugiura, Y., & Ohira, H. (2007). Psychopathic traits and cardiovascular responses to emotional stimuli. *Personality and individual differences, 42(7),* 1391-1402.

Otto, R.K. & Hall, J.E. (1988). The utility of the Michigan Alcohol Screening Test in the detection of alcoholics and problem drinkers. *Journal of Personality Assessment, 52,* 499-505.

Oyserman, D., Coon, H.M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin, 128,* 3-72.

Patrick, C. J., Edens, J. F., Poythress, N. G., Lilienfeld, S. O., & Benning, S. D. (2006). Construct validity of the psychopathic personality inventory two-factor model with offenders. Psychological assessment, 18(2), 204.

Quinsey, V. L., Harris, G. T., Rice, M. E., & Cormier, C. A. (1998). *Violent offenders: Appraising and managing risk.* Washington DC.

Robins, L. N., Tipp, J., & Przybeck, T. (1991). Antisocial personality. *Psychiatric disorders in America*, 258-290.

Salekin, R. T., Rogers, R., & Sewell, K. W. (1996). A review and meta‐analysis of the Psychopathy Checklist and Psychopathy Checklist‐Revised: Predictive validity of dangerousness. *Clinical Psychology: Science and Practice, 3(3),* 203-215.

Singelis, T.M. (1994). The measurement of independent and interdependent selfconstruals. *Personality and Social Psychology Bulletin, 20*, 580-591.

Singelis, T.M., Triandis, H.C., Bhawuk, D.S., & Gelfand, M. (1994). Horizontal and vertical dimensions of individualism and collectivism. Cross-Cultural Research: *The Journal of Comparative Social Science, 29,* 240-247.

Skinner, H.A. & Sheu, W. (1982). Reliability of alcohol use indices: The Lifetime Drinking History and the MAST. *Journal of Studies on Alcohol, 43*, 1157-1170.

Skeem, J., Mulvey, E. P., & Grisso, T. (2003). Applicability of traditional and revised models of psychopathy to the Psychopathy Checklist: Screening Version. *Psychological Assessment, 15,* 41–55.

Smith, S.S. & Newman, J.P. (1990). Alcohol and drug abuse dependence disorders in psychopathic and nonpsychopathic criminal offenders. *Journal of Abnormal Psychology, 99,* 430-439.

Sohn, J. S., Webb, D., & Lee, S. J. (2010). CAN KOREAN PCL-R PREDICT IMPLICIT AGGRESSION AMONG KOREAN INMATES?. *Asian Pacific Journal of Police & Criminal Justic, 8, 2,* 49-69

Sue, S., Sue, D. W., Sue, L., & Takeuchi, D. T. (1995). Psychopathology among Asian Americans: A model minority? *Cultural Diversity and Mental Health, 1(1),* 39.

Suinn, R.M., Rikard-Figueroa, K., Lew, S., & Vigil, P. (1987). The Suinn-Lew Asian Self-Identity Acculturation Scale: An initial report. *Educational and Psychological Measurement, 47, 401*-407.

Suinn, R.M. & Khoo, G. (1995). The Suinn-Lew Asian Self-Identity Acculturation Scale: Cross-cultural information. *Journal of Multicultural Counseling & Development, 23,* 139-151.

Tedeschi, J.T. & Bond, M.H. (2001). Aversive behavior and aggression in cultural perspective. In R. Kowalski (Ed.) *Behaving badly: Aversive behaviors in interpersonal relationships (pp. 257-293).* Washington, DC: American Psychological Association.

Triandis, H.C. & Suh, E.M. (2002). Cultural influences on personality. *Annual Review of Psychology, 53*, 133-160.

Vitacco, M. J., Neumann, C. S., & Jackson, R. L. (2005). Testing a four-factor model of psychopathy and its association with ethnicity, gender, intelligence, and violence. *Journal of consulting and clinical psychology, 73(3),* 466.

Weisz, 1. R, Suwanlert, S., Chaiyasit, W., & Walter, B. R (1987). *Overand undercontrolled referral problems among children and adolescents from Thailand and the United States: The Wat and Wai of cultural differences*.

Wernke, M. R., & Huss, M. T. (2008). An alternative explanation for cross-cultural differences in the expression of psychopathy. *Aggression and violent behavior, 13(3),* 229-236.

Zung, B.J. (1982). Evaluation of the Michigan Alcohol Screening Test (MAST) in assessing lifetime and recent problems. *Journal of Clinical Psychology, 38,* 425-439.