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### Personality variables and frequency of risk-taking across five domains

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**Abstract**

While most people may admit to taking risks once in a while, consistent risk-taking across the lifespan endangers the person and leads to negative consequences endured by society. By understanding more about this group of individuals we may be able to identify variables that lead to consistent risk-taking. The purpose of the present study was to explore differences in personality traits and thinking style between consistent risk-takers and occasional risk-takers and to examine gender differences in reported risk-taking. Participants ( $N = 159$ ) were undergraduate students who completed the Risk-Taking Questionnaire, Psychopathic Personality Inventory (PPI), and Personal Fable Scale (PFS). The sample was racially diverse and included 51% men and 49% women with a mean (standard deviation) age of 21.4 (3.3) years. Results showed that Consistent Risk-takers scored significantly higher than Occasional Risk-takers on Machiavellian Egocentricity ( $M = 50.2, SD = 7.0$  vs.  $M = 46.6, SD = 7.5, p = 0.005$ ) and Fearlessness subscales of the PPI ( $M = 34.2, SD = 5.2$  vs.  $M = 32.0, SD = 5.1, p = 0.015$ ) as well as the PFS ( $M = 39.8, SD = 5.5$  vs.  $M = 37.5, SD = 5.9, p = 0.015$ ). Additionally, the results showed an inverse relationship between age and PFS ( $r = -0.21, p = 0.014$ ), indicating that younger participants scored higher on the PFS than older participants. And males reported engaging in more risky behaviors than females ( $M = 15.0, SD = 6.1$  vs.  $M = 12.5, SD = 5.8, p = 0.013$ ). The results contribute new knowledge about the relationship between PPI traits and risky behaviors in five different domains and the extent of personal fable thinking in college students. Possible explanations and implications of the results are offered.

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“Seize opportunities,” “take chances” – such phrases are common forms of advice particularly for young people. At times, it is proposed that to win big you have to risk losing big, or in other words, that a person who is truly successful or stands out among everyone else did not follow a prescribed to-do list but took a risk others would not. In our society, a person who takes risks or chooses an unexplored path of actions is admired. The benefits of risk-taking are often presented positively in the media, for instance in movies depicting war heroes, such as *Schindler’s List*, and in people highly respected by our society, for example, Bill Gates. Risk-taking can be socially acceptable, in nonclinical or nonpathological domains, for example, vocational (e.g. a stockbroker) or sporting (e.g. professional mountain climbers); and can certainly be viewed in positive way and lead to great benefits.

While, risk-taking creates opportunity for potential rewards, it may also bring about negative consequences. Some risky behaviors might be labeled negative because the negative consequences are much more likely and have greater physical, financial or other impact on the person in comparison to the minimal, immediate rewards. An example of such risky behavior is driving under the influence of alcohol or drugs. This behavior has minimal rewards (e.g. a teenager getting home by curfew time to avoid punishment), but harmful consequences ranging from getting one’s license suspended or permanent injury or death. The negative outcome is more likely and more severe in comparison to the reward. This study will focus on risk-takers who engage in negative risky acts, which can be said to be maladaptive. These risk-taking behaviors include anti-social or illegal behaviors, such as aggression and illicit drug use as well as behaviors that pose a risk to a person’s health, such as smoking, excessive alcohol consumption, and unsafe sexual behaviors (Magar, Phillips, & Hosie, 2008).

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The literature distinguishes between consistent risk-taking behavior and occasional risky acts. The former is more likely a learned behavior dictated by certain personality characteristics, while the latter tends to be a result of situational or environmental characteristics (Alberts et al., 2007). Therefore, while studying risky behavior in general has important implications, it is important to identify those who consistently engage in risk-taking in many aspects of life and those who participate in risky behaviors during a certain period, for example, adolescence, or those who are prone to take risks in certain situations. This study will specifically look at risk-takers who consistently engage in risky behaviors throughout their lifetime. Thus, the main question of this study is what kind of person takes counterproductive risks.

There are two main perspectives proposed for explaining risk-taking behavior: a neurological perspective and a personality (or trait) perspective. According to the neurological perspective, the dopaminergic system and frontal and medial brain regions have been found to relate to risk-taking. From the personality perspective, two theories have been put forth to explain risk taking: the sensation-seeking trait and T-type personality.

Firstly, according to the neurological perspective, risk-taking has been linked to the dopaminergic system, specifically neurotransmission along the mesocorticolimbic pathways (Claassen et al., 2011). This system affects processing of potential rewards and losses, and consideration of both potential and actual outcomes. In a normal individual dopamine activity is phasic, with suppression or pauses of dopamine release. But increased dopamine levels (release) have been associated with impulse control disorder, which is marked by behaviors that can be perceived as risky, such as, hypersexuality, impulsive and compulsive shopping, pathological gambling, and compulsive hobbyism (being consumed by participation in a hobby while neglecting daily responsibilities) (Claassen et al., 2011).

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Secondly, dysfunction in a number of specific brain regions has been linked to engagement in risky behaviors. Interactions between the inferior frontal gyrus and insula have been shown to play a role in cognitive evaluations of risk and contribute to avoidance of risky behaviors (Cox et al., 2010). Further, dysfunction in the orbitofrontal cortex is related to exaggerated risk-taking behavior in gambling tasks (Floden, Alexander, Kubu, Katz, & Stuss, 2008) and dysfunction in the dorsolateral prefrontal cortex has been identified in people having difficulty inhibiting competing responses (Llewellyn, 2008), such as forgoing risky immediate rewards for guaranteed smaller long-term rewards. The orbitofrontal cortex has also been implicated in sociopathy and the dorsolateral prefrontal cortex has been implicated in psychopathy, two disorders marked by failure to plan ahead and recklessness when it comes to theirs or others safety (Hare, 1998). Lastly, dysfunction in the ventromedial prefrontal cortex results in behavior guided primarily by immediate rewards, in disregard to future consequences. In summary, abnormal functioning in various brain regions are related to risk-taking; however, in many cases it seems to be related to both positive and negative risk-taking.

In the field of personality, two theories have been put forward to explain why certain individuals take risks but not others. Zuckerman's sensation-seeking theory (1994) stipulates that certain individuals who possess this trait seek novel and complex stimuli and therefore, are prone to risk-taking (as cite by Morehouse, Farley, & Youngquist, 1990). Similarly, Farley's Type T personality (1986) describes individuals who, more than others, seek stimulation, excitement, thrill, and arousal, and engage in risk-taking (as cited by Morehouse et al.). Both of these personality theories explain that people high on sensation-seeking or T-type trait look for new experiences that are complex or comprised of intricate stimuli.

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For the most part, the neurological and personality perspectives explain both positive and negative risk-taking. That is, most of these variables can be found to some degree in individuals who engage in socially acceptable or somewhat calculated risks not only in people who engage in negative risky acts. The aim of the current study is to identify variables that are associated with consistent negative risk-taking behavior. Specifically, this study will assess the relationship between engagement in risky behaviors across various domains (such as ethical, financial, health, recreational, and social) and a group of specific personality traits, cognitive style, and gender. Understanding more about this group of individuals who have a chronic pattern of engaging in activities that pose a threat to self and others (Consistent Risk-takers) may be helpful in predicting consistent risky behavior.

### **Classification of risk-takers**

The literature distinguishes between individuals who demonstrate a pattern of consistent risk-taking behavior and those who engage in occasional risky acts. While there is no universally accepted definition of consistent risk-taking, several methods have been used to categorize individuals in terms of risk-taking behavior.

One method is the dimensional approach, in which a range of problem behaviors is rated from absent to severe (Bartlett, Holditch-Davis, & Belyea, 2005). This method creates a continuum for the frequency of risk-taking behaviors and it allows for a comparison between individuals, who are categorized relative to each other in terms of risk-taking behavior. For example, in a mixed sample of adolescents and young adults (ages 11-21) taken from the National Longitudinal Study of Adolescent Health, Bartlett and colleagues (2005) found three clusters of individuals: normal cluster or low levels of participation in risky behaviors; problem cluster with higher frequency of risky behaviors; and deviant cluster, with the highest frequency

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of risky behaviors. Later analysis revealed qualitative differences between adolescents in the deviant cluster and the other two clusters. Individuals in the deviant cluster engaged more frequently in all behaviors (such as lying, stealing, fighting, public disruption, unsafe sex practices, property damage, alcohol and marijuana use) reported by the problem cluster. In addition, selling drugs and weapon use distinguished the deviant group from the other two.

A different classification system, the person-centered approach gives rise to at least two distinct profiles of risk-takers: individuals who exhibit low levels of participation in very few risky behaviors, and those characterized by high levels of participation in a variety of risky behaviors (Hair, Light, Park, & Moore, 2009). However, there is no exact number of groups of risk-takers and there are no precise cutoffs for each level of risk-taking. For example, Hair et al. (2009) created four categories: a low-risk group – generally abstain from risky behaviors and exercise; two moderate-risk groups – those who drink heavily and engage in unsafe sex but exercise frequently and those characterized by higher levels of smoking and unsafe sex; and a high-risk group – participants engaged in delinquency, smoking, drug use, drinking, and unsafe sex. In this study, researchers used exercise, or engaging in healthy behavior, as one of the factors for identifying the groups. That is, risk groups differed not only in negative behaviors but in positive as well, and both types were used to identify risk-takers.

While a system of classifying risk-takers is necessary for identifying variables common to consistent risk-takers and therefore predicting who will engage in problematic or maladaptive behaviors, looking at *co-occurrence* of risky behaviors or grouping the behaviors themselves might also provide additional information for predicting risky behaviors. For example, cheating and stealing might be one type (or category) of behavior, so, we might say that individuals who participate in one behavior of a certain type are also more likely to participate in other behaviors

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of that type. However, if cheating and stealing are qualitatively different and are less likely to co-occur, a person who does both may be more consistent in risk-taking than a person who does only one act. So a person who participates in a number of risky behaviors but only within the same category of behaviors may be different (and belong to a different risk-group) from a person who engages in behaviors across various categories.

Grouping risky behaviors into domains or categories may be very useful in identifying consistent risk-takers by showing a clearer relationship between such acts and personality traits. Weber, Blais, and Betz (2002) divided risky behaviors into several domains, such as risk in financial, health/safety, recreation, ethical, and social domains. Financial domain addresses irresponsible gambling and spending. Health domain includes behaviors that have potential direct effect on the person's health (e. g. regularly consuming high-cholesterol foods). Recreational domain includes engagement in dangerous sports or unregulated activities. Ethical domain includes behaviors such as cheating, plagiarizing, forging signatures, stealing, destroying public property, driving under the influence, and purchasing illegal drugs. Social domain addresses behaviors such as verbal and physical aggression and defying authority figures and popular opinion. Some researchers address unsafe sexual practices, illicit drug use and drinking, which sometimes are grouped together, while smoking is studied as a separate category. But Calvert, Bucholz, and Steger-May (2010) found that participants who reported alcohol consumption also reported smoking. It is not surprising that substance use would correlate with other risky behaviors due to lower inhibitions. But not all groups of risk-taking behavior co-occur or correlate with each other. Santelli, Carter, Orr, and Dittus (2009) found that engagement in risky sexual behaviors was similar between teens across different risk groups regardless of how often participants engaged in nonsexual risk behaviors. There could be a number of

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proposed relationships between groups of risky behaviors, and it is likely that in one instance engaging in risk-taking within one area can lead to other risky decisions.

Identifying the connection between types of risky behavior can allow for better preventative measures. For example, if a person who participates in risky alcohol consumption is more likely to engage in risky financial behaviors, then people who exhibit risky alcohol use can be identified as having higher likelihood of experiencing financial problems in the future, and present a target group for preventative treatment. So looking at each domain of risky behavior may provide more in-depth information about the relationships and illuminate subtle differences between factors which lead to the behavior, such as a personality trait and the behavior of interest (Katz, Fromme, & D'Amico, 2000).

### **Personality variables related to risk-taking behaviors**

Previous research has identified several personality traits that relate to risky behaviors. For instance, using the Five-Factor personality model (Costa & McCrae, 1992), Fulton, Marcus, and Payne (2010) found that Extraversion positively correlated with risky sexual behavior in a mixed sample of college students, while Conscientiousness and Agreeableness negatively correlated with such behaviors. Hoyle and colleagues (2000) offer additional evidence for a positive correlation between Extraversion and risky sexual activities through a review of 53 prior studies. Hong and Paunonen (2009) showed a relationship between smoking, speeding, and drinking and low Conscientiousness (in particular, low in Deliberation and Dutifulness facets) and low Agreeableness (in particular, the Straightforwardness facet) in seven independent samples, all of which consisted of undergraduate males and females. Increased drinking behavior was differentiated from smoking and speeding by a modest relation with Extraversion (Excitement Seeking and Gregariousness being the most important facets). In addition,

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Impulsive Antisociality, which includes, impulsivity, irresponsibility, and aggression, was found to be a reliable predictor of risky sexual behavior as well. When it comes to risky, aggressive behavior, Okada (2010) found that Vulnerable Narcissism, which is characterized by lack of self-confidence and initiative, and hypersensitivity to others' evaluations, increases aggressive behavior, however it was also dependent on situational factors and was more likely to correlate with indirect aggression. In summary, Extroversion, Impulsive Antisociality, and (to an extent) Vulnerable Narcissism have been shown to relate to negative risk-taking; Extroversion is also related to positive risk-taking.

The Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996) is a measure that assesses eight personality traits associated with psychopathy: Machiavellian Egocentricity, Coldheartedness, Carefree Nonplanfulness, Fearlessness, Blame Externalization, Impulsive Nonconformity, and Stress Immunity. The PPI was developed to assess psychopathy in nonclinical, noncriminal populations with a focus on personality characteristics as opposed to behaviors. Because it presents measures of psychopathy-related deviant characteristics it may offer more information about the relationship between personality and risk-taking behaviors than a measure of standard or normative personality traits, such as the Five-Factor Model. In a study of incarcerated youth, Vaughn, Howard, and DeLisi (2008) showed that higher psychopathy scores were predictive of general delinquency, including, property offenses, status offenses (acts that would not be considered illegal if committed by an adult), alcohol and drug use, and hostile aggression. In a study of college students, Fulton et al. (2010) explored the relationships between subscales of the PPI and risky sexual behaviors. They found that Impulsive Antisociality (lack of regard for social norms) contributed significant variance to the prediction of risky sexual behaviors in both genders, while Fearless Dominance (a measure lack of anxiety to the threat of

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physical danger) predicted risky sexual behaviors only in men. Apart from this study there has been little research on the association between PPI subscales and engagement in a breadth of risky behaviors. Thus, a main objective of the current study is to examine the presence of specific PPI traits and their relationship to risk-taking.

### **Personal Fable and its relationship to risk-taking behaviors**

In addition to personality variables, cognitive style also may be related to risk-taking behavior. A type of thinking that has been examined in relation to risk-taking is called the personal fable phenomenon. The concept of personal fable, coined by David Elkind (1967), is a belief that younger people tend to have, which is that they are unique and special and the consequences that others suffer for engaging in risky behavior will not happen to them. These thoughts are the result of cognitive egocentrism common in adolescence. Personal fable creates a sense of invulnerability in the person and therefore diminishes the fear of consequences. The content of personal fable thinking includes speciality, a belief that one is unique and experiences the world in a very distinctive manner; and invulnerability, a conviction that negative consequences or damage from the behavior may result for others and will not happen for the self (Aalsma, Lapsley, & Flannery, 2006). Speciality or personal uniqueness is associated with internalizing behavior and isolation, which in turn can lead to depression and suicidal ideation. In contrast, invulnerability correlates with externalizing behavior, risk-taking, and delinquency (Aalsma et al., 2006).

Alberts and colleagues (2007) found that Personal Fable scores increased in participants from 6<sup>th</sup> grade to 8<sup>th</sup> grade, with males scoring higher than females on the invulnerability dimension. They also found a positive correlation between Personal Fable scores and Risk-

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Taking scores. However, Alberts et al. assessed presence of personal fable among adolescents and it remains unclear whether college students are as susceptible to this type of thinking.

Some research has examined the extent of this type of thinking across an individual's life. Aalsma and colleagues (2006) reported a significant increase in stated invulnerability between early and middle adolescence and suggested that the stability of this relationship might continue well into adulthood. Frankenberger (2000) studied personal fable in a sample of participants, ranging in age from 14 to 89 years, and the findings supported the theory that egocentric tendencies extend into early adulthood and do not begin to decline until middle adult years. Schwartz, Maynard, and Uzelac (2008) proposed another hypothesis about emergence and presence of egocentrism. If egocentrism is viewed as an effective coping strategy when an individual is faced with environmental, social, and personal changes, which are certainly present as a child enters adolescence, then it is possible that egocentrism reemerges or is activated during any period marked by such changes. This perspective would suggest that as an individual enters college and adapts to a new life situation, he or she may utilize egocentrism as a coping strategy. Therefore, personal fable thinking may continue to exist beyond adolescence and into young adulthood. It is possible that this type of thinking is employed by individuals beyond the college years as well, as one accepts new life roles and enters new environments.

It is important to identify the duration of personal fable thinking across an individual's lifespan because it has been shown that personal fable thinking can result in engagement in risky behavior. Aalsma et al. (2006) showed that invulnerability was a significant predictor of a variety of risk-taking behaviors, including the use of tobacco, beer, and other controlled substances. In a study of female and male college students ages 17-25, Bright, McKillop, and Ryder (2008) reported that personal fable was found to correlate with a range of unhealthy and risk-taking

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behaviors, such as nonchalant contraceptive use, promiscuity, criminal activity, dangerous driving, and substance use. Interestingly, Serovich and Greene (1996) found that personal fable was predictive only for college students' sexual behavior but not for eighth-grade, eleventh-grade, or twelfth-grade students.

Prior studies have shown that personal fable type of thinking relates to risk-taking in adolescents, but there is limited research examining the extent of personal fable type of thinking and its association to risk-taking in a college-aged sample. Thus, the present study will offer important information in this regard.

### **Gender as a possible correlate to risk-taking behaviors**

There is some evidence for gender differences in risky behaviors, both in frequency and in types of behaviors. In a meta-analysis of 150 studies, Byrnes, Miller, and Schafer (1999) reported that the majority of the effects found supported “the idea of greater risk-taking on the part of males” (p. 372). A number of studies show that males are more likely than females to engage in risky behaviors. For instance, findings from Duangpatra, Bradley, and Glendon (2009) indicate that males report engaging more frequently in three types of reckless behavior: reckless driving, substance use, and sexual behaviors. As far as sexual behaviors, consistently across numerous studies, males report engaging in or intention to engage in a greater number of risky acts. For example, males are more likely to report low condom use and more sex partners (Huang, Jacobs, & Derevensky, 2010). Further, males report engaging in more casual sexual risk-taking and males with many partners were less likely to use contraception, while females who engage in casual sex are more likely to consistently use condoms (Poppen, 1995).

In terms of substance use, men are more likely than women to report past-year non-medical use of prescription opioids and more likely to have abuse or dependence (Back, Payne,

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Simpson, & Brady, 2010). Johnson, and Novak (2009) found that the group at highest risk for new onset daily smoking consisted of lower educated men. That is, gender differences are present only for new onset of daily smoking (not persistent daily smoking) and only among individuals with lower education levels (not graduated high school). Harris and Glaser (2006) found that women report lower likelihood than men of engaging in risky behaviors in health, recreational, and gambling domains. Other research has found differences between males and females in perceptions of risk and *intentions* to engage in a certain behavior rather than actual *participation* in risk-taking behaviors (Fernandes, Hatfield, & Job, 2010; Turchik & Garske, 2009; Wang, Kruger, & Wilke, 2009). When it comes to financial behaviors, females are more likely to plan their spending and save regularly. While male students are more likely to carry debt, females are more likely to be risky in using their credit cards (Borden, Lee, Serido, & Collins, 2008).

However, other research has failed to show significant gender differences in reported actual behaviors (Turchik et al., 2009). In a sample of late adolescent urban youths, Schwinn, Schinke, Trent (2010) did not find differences between genders in rates of alcohol, cigarette, marijuana, and other illicit drug use. Further, Fernandes et al., (2010) reported that female drivers expressed intentions to speed more frequently than male drivers. Thus, it is not yet established that gender differences appear in every domain of risky behaviors.

### **Present study**

In summary, prior research in the area of risk-taking has identified different groups of risk-takers based on the number of different risky acts. Research has shown that some risky behaviors co-occur. The present study adds to the existing literature by assessing participation in risky behaviors across several different domains and assessing the frequency with which the

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behaviors occurred. Past research has looked at correlations between normative personality traits and risk-taking, but little work has been done to examine how deviant traits measured by the PPI are associated with risk-taking behavior. Thus, use of the PPI in the current study is a novel contribution. In addition, this study will evaluate personal fable type of thinking, which, if present during young adulthood, may contribute to engagement in risky behaviors. Lastly, this study will examine potential gender differences in the frequency of risk-taking. Although it is not clear that gender differences are present in risk-taking, males do tend to score higher at least on some scales of the Personal Fable scale and the PPI (Alberts, Elkind, & Ginsberg, 2007; Lilienfeld & Widows, 2005).

Participants will be categorized as Consistent or Occasional Risk-takers based on the frequency of their participation in a number of risk-taking behaviors of different types. I hypothesize that individuals who are Consistent Risk-takers will score higher than Occasional Risk-takers on four personality traits: Machiavellian Egocentricity, Fearlessness, Blame Externalization, Stress Immunity. Risky sexual behavior among college students has received a lot of attention in the literature and it has been established that engaging in risky behaviors increases during adolescence. However, the reasons for this are not clear. Disposition towards personal fable type of thinking may be related to the increase in risk-taking during those years. Thus, I hypothesize that Consistent Risk-takers will score higher on the personal fable phenomenon than Occasional Risk-takers. Past research has shown that scores on Personal Fable increase through adolescence. Thus, I hypothesize that younger college students will score higher on personal fable than older college students. Finally, I hypothesize that male college students will report engaging in more risky behavior than female college students.

## Method

### Participants

Participants (N=159) were undergraduate students enrolled in an Introductory Psychology or Management course at Baruch College. Participants were at least 18 years of age and received credit toward their course research requirement for participating in the study. The study was approved by the Baruch College IRB and all participants provided written informed consent prior to participation.

### Measures

**Psychopathic Personality Inventory-Revised (PPI; Appendix A).** The PPI (Lilienfeld & Andrews, 1996; Lilienfeld & Widows, 2005) contains 154 questions, answered using a 4-point Likert scale: 1 (*false*), 2 (*mostly false*), 3 (*mostly true*), and 4 (*true*). The inventory yields a total score, interpretable as a global index of psychopathy, as well as scores on eight subscales reflecting specific constituent traits. The Machiavellian Egocentricity subscale (20 items) measures narcissistic and ruthless attitudes in interpersonal functioning (sample items: “I always look out for my own interests before worrying about those of the other guy”). The Social Potency subscale (18 items) measures perceived ability to influence and manipulate others (sample item: “Even when others are upset with me, I can usually win them over with my charm”). The Coldheartedness subscale (16 items) measures propensity toward callousness, guiltlessness, and lack of sentimentality (sample item: “I have had ‘crushes’ on people that were so intense that they were painful”). The Carefree Nonplanfulness subscale (19 items) measures attitude of indifference in planning one’s actions (sample item: “I often make the same errors in judgment over and over again”). The Fearlessness subscale (14 items) measures absence of anticipatory anxiety concerning harm and a willingness to participate in risky activities (sample

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item: “Making a parachute jump would really frighten me”). The Blame Externalization subscale (15 items) measures the tendency to blame others for one’s problems and to rationalize one’s misbehavior (sample item: “I usually feel that people give me the credit I deserve”). The Impulsive Nonconformity subscale (16 items) measures reckless concern regarding social norms (sample item: “I sometimes question authority figures ‘just for the hell of it’ ”). The Stress Immunity subscale (13 items) measures absence of marked reactions to anxiety-provoking events (sample item: “I can remain calm in situations that would make many other people panic”). The scores on the PPI range 20-80 on Machiavellian Egocentricity subscale, 15-60 on Blame Externalization subscale, 14-56 on Fearlessness subscale, and 13-52 on Stress Immunity subscale. On the PPI, there is an Inconsistent Responding scale that detects respondents who have answered questions randomly or carelessly, were unable to respond accurately due to reading ability, or who deliberately gave odd responses, or all three (Lilienfeld & Widows, 2005). According to the PPI manual, protocols with scores on this scale at or above the “highly atypical” level are considered inconsistent and invalid.

**Personal Fable Scale (PFS; Appendix B).** The PFS (Alberts, Elkind, & Ginsberg, 2007) is a 12-item Likert-type scale comprised of two 6-item subscales: invulnerability and speciality. Invulnerability assesses the degree of belief that one is immune from harm or injury (sample item: “I know I get away with a lot of stuff other kids get in trouble for”). Speciality assesses the degree of belief one is unique from all others (sample item: “When my parents or friends tell me that they know how I feel, I don’t believe that they really do”). Participants indicate the degree to which they regard each statement as “true for me” using the 5-point scale from 1 (“this is *never* true for me”) to 5 (“this is *always* true for me”). A total score per subscale is obtained by summing the item scores (1–5) in that subscale. Thus, the total score for each subscale can range

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from 6–30. A composite score for the PFS is obtained by summing the two subscales so that total scores can range from 12–60.

**Risk-Taking Questionnaire (RTQ; Appendix C).** The RTQ was developed specifically for the current study because no comprehensive and concise measure exists to address the behaviors of interest to this study. The questionnaire consists of 47 items and addresses risk-taking behaviors such as illicit drug use, smoking, consuming alcohol, verbal and physical aggression, activities which endanger the person's health, cheating, and theft. The RTQ assesses risk-taking in five domains: ethical, financial, health, recreational, and social, as identified by Weber, Blais, and Betz (2002). In the current study, the ethical domain included questions about cheating, plagiarizing, forging signatures, stealing, destroying public property, driving under the influence, and purchasing illegal drugs. The financial domain addressed risky gambling behaviors. The recreational domain looked at engagement in dangerous sports or unregulated activities (such as camping in the wilderness instead of campgrounds), and the social domain assessed frequency and initiation of verbal and physical aggression. The RTQ utilizes questions from the Risky Behavior Scale (item #s: 1-12, 14-19, 21-26) (Weber et al., 2002), the Reckless Behavior Questionnaire (item #s: 27-29) (Shaw, Wagner, Arnett, & Aber, 1992), and the Sexual Activity Survey (item #s: 34-47) (Flannery & Ellingson, 2003). Questions 13 and 20 of the RTQ were modifications of two other items from the Risky Behavior Scale to assess general gambling (Q13), in addition to other gambling behaviors (Q9-12), and to assess shoplifting items worth \$50 or more (Q20) in addition to shoplifting items of lesser value (Q19). Questions that were selected were relevant to college students (for example, a question about investing large percent of annual income in a stock or bond was excluded). Item responses were modified to obtain

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variables of interest to this study, for example, the number of times the participant engaged in a reported behavior over the course of his/her life.

### **Procedure**

Participants were given a brief overview of the study, including the types of questions on self-report questionnaires, and informed consent was obtained. Participants completed study questionnaires online using a secure online survey program. All data were collected anonymously (i.e., questionnaires were coded with ID numbers and were not linked to identifying information). Upon completion of the questionnaires, participants were thanked and dismissed.

### **Operational Definition of Independent Variables**

Participants were categorized as Consistent Risk-takers or Occasional Risk-takers based on the number of risk-taking behaviors and frequency of behaviors endorsed across the five domains assessed: ethical, financial, health, recreational, and social. Engagement in risky behaviors was assessed during the participant's lifetime. Consistent Risk-takers were participants who reported engaging in risky behaviors in at least three of the five behavioral domains assessed and participated in a majority (defined as at least the median number) of behaviors within a specific domain. Furthermore they reported doing at least half of these behaviors repeatedly, which was defined as four or more times. Occasional Risk-takers were participants who reported engaging in a majority of risky behaviors in at least three domains but not repeatedly (defined as less than four times) and individuals who engaged in risk-taking behaviors repeatedly but only in one or two domains. Thus Occasional Risk-takers were individuals who reported engaging in a majority of behaviors in each domain, across several domains but did not engage in these behaviors repeatedly or individuals who repeatedly engaged in majority of risk-

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taking behaviors but in only one or two domains. Low Risk-takers were participants who denied participation in any risky behavior or reported non-repetitive risk-taking in only one or two domains. Because of the small number of participants in this Low-risk group (n=7) and since this group was not of specific interest in this study, these individuals were omitted from analyses.

### **Statistical Analyses**

Statistical analyses were performed using independent sample t-tests, which compared the mean scores of two groups on a given variable. To test the hypothesis that Consistent Risk-takers will score higher on Machiavellian Egocentricity, Social Potency, Blame Externalization, and Stress Immunity than will Occasional Risk-takers an independent samples t-test was conducted for each PPI subscale, with risk-taking status as the independent variable and PPI subscale as the dependent variable. To test the hypothesis that Consistent Risk-takers will score higher on the PFS than Occasional Risk-takers an independent samples t-test was conducted, where risk-taking status was the independent variable and PFS was the dependent variable. To test the hypothesis that younger college students will score higher on the PFS than older college students a pearson correlation was used. To test the hypothesis that male students will report engaging in more risk-taking overall than female students, an independent samples t-test was conducted with gender as the independent variable and total number of risky behaviors as the dependent variable. Post-hoc exploratory analyses were conducted on each domain of risky behaviors (i.e., ethical, financial, health, recreational, and social) to examine differences between men and women in specific categories of behavior. A Chi-Square test was conducted to examine gender differences between groups of risk-takers. Descriptive statistics are presented as mean (standard deviation). P-values  $\leq 0.05$  were considered statistically significant. All analyses were conducted with SPSS version 18 (Chicago, IL).

## Results

A total of 159 participants completed the study. Six participants were excluded from all analyses because of missing data on the PPI and PFS due to computer error. In addition, participants who were categorized as Low Risk ( $n=7$ ) were excluded from analyses because the objective of this study was to compare Consistent Risk-takers to Occasional Risk-takers. Thus, the total number of participants who were included in data analyses was 146 (see Table 1 for participant characteristics). Participants ranged in age from 18 to 38 years, with a mean age of 21.4 (3.3) years. Overall, the sample was racially diverse and approximately evenly split between men and women. There were 62 participants (42%) classified as Consistent Risk-takers and 84 participants (58%) classified as Occasional Risk-takers.

On the PPI, 12 participants produced scores that met the cutoff for “highly atypical” according to the PPI manual and one participant omitted too many questions to compute a valid score. Thus, 13 participants were excluded from analyses on the PPI.

Mean scores and standard deviations on each PPI subscale for Consistent and Occasional Risk-takers are reported in Table 2. Results showed that Consistent Risk-takers scored significantly higher on the Machiavellian Egocentricity subscale ( $t(131) = 2.9, p = 0.005$ ) and on the Fearlessness subscale ( $t(131) = 2.5, p = 0.015$ ) compared to Occasional Risk-takers. There was no difference between Consistent and Occasional Risk-takers on the Blame Externalization ( $t(131) = 1.3, p = 0.204$ ) and Stress Immunity ( $t(131) = 0.4, p = 0.666$ ) subscales of the PPI.

Consistent Risk-takers reported higher scores on the PFS ( $M = 39.8, SD = 5.5$ ) compared to Occasional Risk-takers ( $M = 37.5, SD = 5.9$ ), ( $t(144) = 2.5, p = 0.015$ ). There was a marginally significant negative relationship between age and scores on the PFS scores ( $r = -0.16, p = 0.050$ ). However, after removing one participant who was substantially older than the rest of

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the sample, the negative association between age and PFS became statistically significant ( $r = -0.21$ ,  $p = 0.014$ ), indicating that younger participants scored higher on the PFS than older participants. Age was not related to risk-taking group (Consistent Risk-takers ( $M = 21.2$ ,  $SD = 2.8$ ), Occasional Risk-takers ( $M = 21.5$ ,  $SD = 3.6$ ), ( $t(143) = 0.5$ ,  $p = 0.609$ )).

Males reported engaging in more risky behaviors ( $M = 15.0$ ,  $SD = 6.1$ ) compared to females ( $M = 12.5$ ,  $SD = 5.8$ ), ( $t(144) = 2.5$ ,  $p = 0.013$ ). Post-hoc analyses showed that males engaged in a significantly higher number of behaviors within the ethical ( $t(144) = 2.1$ ,  $p = 0.034$ ), financial ( $t(144) = 3.8$ ,  $p < 0.001$ ), recreation ( $t(144) = 3.5$ ,  $p < 0.001$ ), and social ( $t(144) = 2.1$ ,  $p = 0.036$ ) domains. There were no differences between men and women in number of risky behaviors in the health domain ( $t(144) = 0.6$ ,  $p = 0.950$ ). The mean number of behaviors in each domain for males and females is reported in Table 3. In addition, a greater percentage of men (52%) were classified as Consistent Risk-takers compared to women (32%),  $\chi^2 (1, N=146) = 5.74$ ,  $p = 0.017$ .

## Discussion

This study addressed the relationship between consistent risk-taking – repeatedly engaging in unsafe behaviors – and personality traits, thinking style, and gender. An operational definition of a Consistent Risk-taker was developed for this study, as a person who repeatedly participates in risky behaviors of various types (i.e. in different domains of behavior).

As hypothesized, Consistent Risk-takers scored higher than Occasional Risk-takers on Machiavellian Egocentricity and Fearlessness subscales of the PPI. Higher scores on Machiavellian Egocentricity among Consistent Risk-takers may be related to higher scores on the PFS in this group since this trait bears some similarity to personal fable type of thinking (which is known to relate to engagement in risky behaviors). Personal fable thinking and

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Machiavellian Egocentricity appear to be similar constructs. The former measures intrapersonal egocentricity, and the latter measures narcissism in interpersonal functioning. The majority of risky behaviors are not actions independent of other people; that is, people other than the individual engaging in these acts are usually affected by the consequences of the behaviors. Consistent Risk-takers possibly engage in risk-taking because they are more likely than other individuals to think that they will not suffer the negative consequences people commonly do and they fail to consider the costs of their behaviors that other people might bear. Perhaps due to these traits, Consistent Risk-takers fail to learn from experiences of others or their own past mistakes. Prior research has shown that Fearlessness predicted risky sexual behaviors only in men (Fulton et al., 2010). This study extends the literature by showing a relationship between Fearlessness and a range of risky behaviors, present in both, men *and women*. That is, Consistent Risk-takers might experience less anxiety than Occasional or Low Risk-takers when about to engage in an activity that presents danger for the self. This difference in levels of anxiety might be a factor that stops other individuals from participating in risky behaviors but makes Consistent Risk-takers willing to participate in risk-taking. It is possible that there may be neurological differences between Consistent Risk-takers and other people that underlie production of anxiety responses or the self-preservation instinct. Although beyond the scope of the present study, this would be a valuable area for future investigation. In the current study, no significant differences were found between Consistent and Occasional Risk-takers on Stress Immunity and Blame Externalization subscales of the PPI.

In line with previous research, Consistent Risk-takers scored higher on the Personal Fable scale than Occasional Risk-takers. In a study of 2,390 male and female adolescent participants, the average score for the PFS was 33.1 (Elkind et al., 2005 as cited by Alberts et al., 2007). In

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the current study, mean scores on the PFS were somewhat higher (ranging from 37-40 across both groups of risk-takers and younger and older participants). This suggests that personal fable type of thinking continues to be present to some degree in this sample of undergraduate college students. The present findings showed that younger participants scored higher than older participants on the PFS. Frankenberger (2000) found that personal fable declined in middle aged (31-59) and older (60-89) adults but adolescents and young adults scored similarly and higher than the older groups. Thus, the results of this study are consistent with past research, showing an inverse relationship between age and scores on the personal fable. Both Occasional and Consistent Risk-takers scored higher on personal fable than the average participant in the study conducted by Elkind et al., indicating a possible relationship between risk-taking and this type of thinking. However, since personal fable thinking appears to decline over one's lifetime, it is unlikely to be related to consistently engaging in risk-taking.

The current study examined differences in risk-taking between men and women and, as predicted, showed that males reported engaging in a greater total number of risky behaviors than females. Further analyses revealed differences were present in ethical, financial, recreational, and social domains. These findings extend knowledge about risk-taking because five different domains of risky behaviors were examined, while prior research has generally focused on a narrow selection of behaviors. Financial, ethical, recreational, and social domains represent a wide range of behaviors, with costs to both the self and others. In addition, more men than women were categorized as Consistent Risk-takers, demonstrating that men not only engage in a greater number of risky behaviors but also are more likely to engage in these behaviors repeatedly. Gender differences found in this study are somewhat in line with past research. While women reported engaging in risk-taking in all of the domains as well, the current findings

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indicate that men participate in more risky acts across a number of domains of behaviors and more men are classified as Consistent Risk-takers. This may be related to differences in societal norms as risk-taking seems to be more often associated with men while women are associated with safer actions. Byrnes (1998; Byrnes, Miller, & Schafer, 1999) has proposed a self-regulation model that may explain some of the differences between men and women with respect to participation in risk-taking. For instance, one aspect of this model states that there are gender differences in parental monitoring and males possess less knowledge of self-correcting strategies. That is, parents might let their sons participate in risky activities that daughters might be prohibited from, so there are more restrictions placed by parents on girls. In addition to parental monitoring, men are perhaps less skilled at self-correcting strategies – dealing with distractions. Perhaps men do not adapt as easily to new environments or new stages of life, and have more difficulty changing their behaviors. For example, boys who engaged in risky acts during their teenage years might have difficulty changing this pattern to make safer, more positive choices as they move into adulthood. Wigfield and Eccles's expectancy-value model (1992; Byrnes et al. 1999) suggests that present gender differences in risk-taking may be due to differences in expectations and values between males and females. The values especially shift during major transitions, which could explain increased risk-taking in adolescence and college years.

Results showed no significant differences between genders in the health domain, which includes frequency of eating high cholesterol foods, not using sunscreen, smoking, drug and alcohol use, and unsafe sexual practices. This finding is interesting since past researchers have shown gender differences in health-related behaviors such as smoking, drug and alcohol use, and unsafe sexual practices (Duangpatra et al., 2009; Huang et al., 2010; Harris & Glaser, 2006). Perhaps behaviors within the health domain are common to college students, both male and

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female, as part of the process of establishing independence and experimenting – acts they would not commit later in life, and are a big part of the social environment in college (Ravert, 2009). An important factor that distinguished the current study from others and may have influenced these results is that it was conducted at a commuter college in an urban environment, located in a city without the safety of a campus space.

Strengths of the current study include its large sample size and inclusion of the PPI as a measure of deviant personality characteristics, as well as assessment of risky behaviors across a number of domains.

### **Limitations and Future Directions**

There are a number of limitations to the present study. Theoretically, a consistent risk-taker engages in risky behaviors across a variety of behavioral domains (consistently), and across the lifespan (persistently). This study addressed only the consistent aspect of risk-taking; the operational definition of a Consistent Risk-taker does not take duration of the behaviors into consideration. Since the population of interest for this study was college students, it was not possible to assess for risk-taking behavior beyond this period. The age period or the length of engaging in risky behaviors is integral to the definition of consistency and it would be helpful to study this in the future. To address this component of risk-taking, it is necessary to study individuals in their middle and late adulthood periods. A longitudinal design might be the most effective way to look at this variable in consistent risk-taking because of potential inaccuracy associated with recall of past risky behaviors from childhood or teenage years.

The operational definition of Consistent Risk-takers was specifically devised for this study because no clear system exists, thus it was not previously tested. Since the Risk-taking Questionnaire assessed past behaviors over the course of one's life, it did not differentiate

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between individuals who engaged in risky behaviors only in the past few years and those who have done so for a much longer period. In this study repetitive behavior was defined as participating in one behavior on four or more occasions. This definition was created in the absence of guidelines in prior literature. In thinking through how to operationally define a Consistent Risk-taker, one possibility considered was to use a dimensional approach by simply summing the number of risky behaviors endorsed. However, this method fails to address the issue of repetition of behaviors or participation across a variety of types (or domains) of behavior. Therefore, the operational definition of a Consistent Risk-taker included 1) the number of times doing a behavior, 2) the number of behaviors within a domain, and 3) the total number of domains. It is unlikely that an individual who frequently engaged in many behaviors, in different domains (or different types of behaviors) did so only within a few years, never before and never again in his or her life. However, the fact that this cannot be stated with certainty is a limitation of this study and needs to be addressed in the future.

In addition, the Risk-taking Questionnaire used in this study assessed engagement in risk behaviors over the course of one's life rather than during a specific period of time (e.g., in the last 5 years). This was done because lifetime engagement in risk-taking is thought to be crucial to the definition of Consistent risk-taking in that it reflects the persistency of risky behaviors. However, because the RTQ is a self-report of past behaviors, it is possible that recollection of these acts may not have been accurate, especially because participants were asked to remember behaviors they engaged in across the lifespan. Asking participants to report behaviors at frequent intervals (for example, during each age period) may improve the accuracy of the responses. As mentioned earlier, to assess the persistency of risk-taking, a longitudinal study would serve best.

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Additionally, looking at the relationship between personality traits and consistent risk-taking in each domain separately might provide further information about which type of behaviors is more closely associated with which personality trait. While this study identified variables thought to be central to consistent risk-taking, it is not suggested that these associations are exhaustive of what possibly underlies consistency in risky choices. Past research has looked at other variables, such as socio-economic status and education of parents as it relates to risk-taking. It might be useful to include additional variables in future studies of consistent risk-takers.

Due to sample size limitations, this study did not differentiate between Occasional Risk-takers who engage in fewer behaviors very frequently and Occasional Risk-takers who engage in a wide range of behaviors but less frequently. Perhaps Occasional Risk-takers who participate in a few behaviors but much more frequently are more similar to Consistent Risk-takers, while those who try out a vast range of risky activities but engage in each only once or twice are more similar to Low Risk-takers. That is, some of the individuals in the Occasional Risk-takers group might be at opposite ends of the moderate scale of risk-taking. Examining potential differences in these two types of Occasional Risk-takers could be a valuable contribution.

Although this study did not aim to establish if gender differences truly exist in risk-taking, a question that is still debated in this type of research, it would be useful to study this issue in a design that would actually provide a conclusive answer. Perhaps, as the standards and expectations change in our society, gender differences in risky behaviors are diminishing. On the other hand, they might continue to exist because some biological differentiation underlies these dissimilarities.

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The findings of this study show relationships between consistent risk-taking and personality traits, thinking style, and gender. Consistent Risk-takers score higher on egocentric-type personality traits and thinking style, have lower levels of anxiety and are more willing to take risks. This study used reported past engagement and the frequency of engaging in a broad range of risky behaviors to identify consistent risk-takers which is a novel way of addressing consistency. In sum, this study aimed to address initial questions about consistent risk-taking behavior and the findings provide a solid base for studying features of consistent risk-taking. It is hoped that future research will continue to add information to the currently limited body of evidence about individuals who are Consistent Risk-takers.

References

- Aalsma, M. C., Lapsley, D. K., Flannery, D. J. (2006). Personal fables, narcissism, and adolescent adjustment. *Psychology in the Schools, 43*, 481-491.
- Alberts, A., Elkind, D., Ginsberg, S. (2007). The personal fable and risk-taking in early adolescence. *Journal of Youth and Adolescence, 36*, 71-76.
- Arnett, J. J. (1996). Sensation seeking, aggressiveness, and adolescent reckless behavior. *Personality and Individual Differences, 20*, 693-702.
- Back, S. E., Payne, R. L., Simpson, A. N., Brady, K. T. (2010). Gender and prescription opioids: findings from the National Survey on Drug Use and Health. *Addictive Behaviors, 35*, 1001-1007.
- Bartlett, R., Holditch-Davis, D., Belyea, M. (2005). Clusters of problem behaviors in adolescents. *Research in Nursing & Health, 28*, 230-239.
- Beaudoin, K. M., Schonert-Reichl, K. A. (2006). Epistemic reasoning and adolescent egocentrism: Relations to internalizing and externalizing symptoms in problem youth. *Journal of Youth and Adolescence, 35*, 999-1014.
- Borden, L. M., Lee, S-A., Serido, J., Collins, D. (2008). Changing college students' financial knowledge, attitudes, and behavior through seminar participation. *Journal of Family and Economic Issues, 29*, 23-40.
- Bright, S. J., McKillop, D., Ryder, D. (2008). Cigarette smoking among young adults: Inegrating adolescent cognitive egocentrism with the trans-theoretical model. *Australian Journal of Psychology, 60*, 18-25.
- Buss, D. M., Schmitt, D. P. (1993). Sexual Strategies Theory: An evolutionary perspective on human mating. *Psychological Review, 100*, 204-232.

## Personality variables and frequency of risk-taking

- Byrnes, J. P., Miller, D. C., Schafer, W. D. (1999). Gender differences in risk-taking: a meta-analysis. *Psychological Bulletin*, 125, 367-383.
- Calvert, W. J., Bucholz, K. K., Steger-May, K. (2010). Early drinking and its association with adolescents' participation in risky behaviors. *Journal of the American Psychiatric Nurses Association*, 16, 239-251.
- Claassen, D. O., van den Wildenberg, W. P. M., Ridderinkhof, K. R., Jessup, C. K., Harrison, M. B., Wooten, G. F., Wylie, S. A. (2011). The Risky Business of Dopamine Agonists in Parkinson Disease and Impulse Control Disorders. *Behavioral Neuroscience*, 1-9.
- Cox C. L., Gotimer K., Roy A. K., Castellanos F. X., Milham M. P., Kelly, C. (2010). Your Resting Brain CAREs about Your Risky Behavior. *PLoS ONE*, 5, 1-10.
- Duangpatra, K. N. K., Bradley, G. L., Glendon, A. I. (2009). Variables affecting emerging adults' self-reported risk and reckless behaviors. *Journal of Applied Developmental Psychology*, 30, 298-309.
- Fernandes, R., Hatfield, J., Soames Job, R. F. (2010). A systematic investigation of the differential predictors for speeding, drink-driving, driving while fatigued, and not wearing a seat belt, among young drivers. *Transportation Research, Part F* 13, 179-196.
- Flannery, D., Ellingson, L. (2003). Sexual risk behaviors among first year college students, 2000-2002. *Californian Journal of Health Promotion*, 1, 93-104.
- Floden, D., Alexander, M. P., Kubu, C. S., Katz, D., Stuss, D. T. (2008). Impulsivity and risk-taking behavior in focal frontal lobe lesions. *Neuropsychologia*, 46, 213-223.
- Frankenberger, K.D. (2000). Adolescent egocentrism: a comparison among adolescents and adults. *Journal of Adolescence*, 23, 343-354.

## Personality variables and frequency of risk-taking

- Fulton, J. F., Marcus, D. K., Payne, K. T. (2010). Psychopathic personality traits and risky sexual behavior in college students. *Personality and Individual Differences, 49*, 29-33.
- Hair, E. C., Park, M. J., Ling, T. J., Moore, K. A. (2009). Risky behaviors in late adolescence: Co-occurrence, predictors, and consequences. *Journal of Adolescent Health, 45*, 253-261.
- Hare, R. D. (1998). *Without conscience: The disturbing world of the psychopaths among us*. New York: Guilford Press.
- Harris, C. R., Glaser, D. (2006). Gender differences in risk assessment: why do women take fewer risks than men? *Judgment and Decision Making, 1*, 48-63.
- Hong, R. Y., Paunonen, S. V. (2009). Personality traits and health-risk behaviours in university students. *European Journal of Personality, 23*, 675-696.
- Hoyle, R. H., Fejfar, M. C., Miller, J. D. (2000). Personality and sexual risk-taking: a quantitative review. *Journal of Personality, 68*, 1201-1231.
- Huang, J., Jacobs D. F., Derevensky, J. L. (2010). Sexual risk-taking behaviors, gambling, and heavy drinking among U.S. college athletes. *Archives of Sexual Behavior, 39*, 706-713.
- Johnson, E. O., Novak, S. P. (2009). Onset and persistence of daily smoking: the interplay of socioeconomic status, gender, and psychiatric disorders. *Drug and Alcohol Dependence, 104S*, S50-S57.
- Katz, E. C., Fromme K., D'Amico, E. J. (2000). Effects of outcome expectancies and personality on young adults' illicit drug use, heavy drinking, and risky sexual behavior. *Cognitive Therapy and Research, 24*, 1-22.
- Lenzenweger, M. F. (2010) A source, a cascade, a schizoid: a heuristic proposal from the Longitudinal Study of Personality Disorders. *Development and Psychopathology, 22*, 867-881.

## Personality variables and frequency of risk-taking

- 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., Widows, M. R. (2005) Psychopathic Personality Inventory-Revised: professional manual. Psychological Assessment Resources, Inc.
- Llewellyn, D. J. (2008). The psychology of risk-taking: Toward the integration of psychometric and neuropsychological paradigms. *The American Journal of Psychology, 121*, 363-376.
- Magar, E. C. E., Phillips, L. H., Hosie, J. A. (2008). Self-regulation and risk-taking. *Personality and Individual Differences, 45*, 153-159.
- Morehouse, R. E., Farley, F., Youngquist, J. V. (1990). Type T personality and the Jungian classification system. *Journal of Personality Assessment, 54*, 231-235.
- Okada, R. (2010). The relationship between vulnerable narcissism and aggression in Japanese undergraduate students. *Personality and Individual Differences, 49*, 113-118.
- Poppen, P. J. (1995). Gender and patterns of sexual risk taking in college students. *Sex Roles, 32*, 545-555.
- Ravert, R. D. (2009). "You're only young once": things college students report doing now before it is too late. *Journal of Adolescent Research, 24*, 376-396.
- Santelli, J., Carter, M., Orr, M., Dittus, P. (2009). Trends in sexual risk behaviors by nonsexual risk behavior involvement, U.S. high school students 1991-2007. *Journal of Adolescent Health, 44*, 372-379.
- Schwartz, P. D., Maynard, A. M., Uzelac, S. M. (2008). Adolescent egocentrism: a contemporary view. *Adolescence, 43*, 441-448.

## Personality variables and frequency of risk-taking

- Schwinn, T. M., Schinke, S. P., Trent, D. N. (2010). Substance use among late adolescent urban youths: mental health and gender influences. *Addictive Behaviors, 35*, 30-34.
- Serovich, J. M, Greene, K. (1996). Predictors of adolescent sexual risk taking behaviors which put them at risk for contracting HIV. *Journal of Youth and Adolescence, 26*, 429-444.
- Shaw, D. S., Wagner, E. F., Arnett, J., Aber, M. S. (1992). The factor structure of the Reckless Behavior Questionnaire. *Journal of Youth and Adolescence, 21*, 305-323.
- Turchik, J. A., Garske, J. P. (2009). Measurement of sexual risk taking among college students. *Archives of Sexual Behavior, 38*, 936-948.
- Vaughn, M. G., Howard, M. O., DeLisi, M. (2008). Psychopathic personality traits and delinquent careers: an empirical examination. *International Journal of Law and Psychiatry, 31*, 407-416.
- Wang, X. T., Kruger, D. J., Wilke, A. (2009). Life history variables and risk-taking propensity. *Evolution and Human Behavior, 30*, 77-84.
- Weber, E. U., Blais, A., Betz, N. E. (2002). A domain-specific risk-attitude scale: measuring risk perceptions and risk behaviors. *Journal of Behavioral Decision Making, 15*, 263-290.

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Table 1. Participant Characteristics.

	N (%)
Gender	
Male	75 (51.4)
Female	71 (48.6)
Race	
Asian	51 (34.9)
Black / African-American	10 (6.8)
Hispanic / Latino	25 (17.1)
White / Caucasian	42 (28.8)
Pacific Islander	1 (0.7)
Other	17 (11.6)
Age*	
Younger age group (18-21 years)	92 (63.0)
Older age group ( $\geq 22$ years)	53 (36.3)

\* N=145 due to missing data for one participant.

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Table 2. Mean scores for Consistent Risk-takers and Occasional Risk-takers groups on PPI subscales.

	Consistent Risk-takers (n=56) M (SD)	Occasional Risk-Takers (n=77) M (SD)	p-value
Machiavellian Egocentricity	50.2 (7.0)	46.6 (7.5)	0.005
Fearlessness	34.2 (5.2)	32.0 (5.1)	0.015
Blame Externalization	34.9 (5.9)	33.5 (6.6)	0.204
Stress Immunity	32.4 (4.0)	32.1 (3.9)	0.666

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Table 3. Mean number of risk-taking behaviors reported by males and females in each domain measured by the Risk-Taking Questionnaire.

	Males (n=75) M (SD)	Females (n=71) M (SD)	p-value
Ethical domain	4.3 (2.4)	3.5 (2.1)	0.034
Financial domain	1.3 (1.2)	0.7 (0.7)	< 0.001
Health domain	5.7 (2.9)	5.7 (3.0)	0.950
Recreational domain	2.3 (1.4)	1.5 (1.2)	< 0.001
Social domain	1.5 (0.8)	1.2 (0.8)	0.036

## **Appendix A. Selected items from the Psychopathic Personality Inventory**

### **Machiavellian Egocentricity subscale**

1. If I really want to, I can persuade most people of almost anything.
11. I tell a lot of “white lies.”
17. It would bother me to cheat on a test even if no one was hurt by it.
23. I get mad if I don’t receive special favors I deserve.
33. I could be a good “con artist.”
39. If I want to, I can get people to do what I want without them ever knowing.
45. To be honest, I believe that I am more important than most people.
55. I’ll break a promise if it’s too hard to keep.
61. In school or at work, I try to “stretch” the rules just to see what I can get away with.
67. I enjoy seeing someone I don’t like get into trouble.
77. I like to (or would like to) wear expensive and “showy” clothing.
83. I don’t take advantage of people even when it would be good for me.
92. I sometimes lie just to see if I can get someone to believe me.
103. I have to admit that I’m a bit of a materialist.
114. I often lose patience with people when I have to keep explaining things.
125. How much I like someone really depends on how much that person does for me.
132. I tell people only the part of the truth they want to hear.
136. I quickly get annoyed with people who do not give me what I want.
147. To be honest, I try not to help people unless there’s something in it for me.
154. If I can’t change the rules, I try to get others to bend them for me.

### **Fearlessness subscale**

3. Dangerous activities like skydiving scare me more than they do most people.
12. I would find the job of a movie stunt person exciting.
13. When my life gets boring, I like to take chances.
25. It might be exciting to be on a plane that was about to crash but somehow landed safely.
35. I like (or would like) to play sports with a lot of physical contact.
47. Parachute jumping would really scare me.
57. It would be fun to fly a small airplane by myself.
69. High places make me nervous.
79. I would not like to be a race-car driver.
93. I agree with the motto, “If you are bored with life, risk it.”
115. I might like flying across the ocean in a hot-air balloon.
126. Sometimes I do dangerous things in a dare.
137. If I were a firefighter, I would like the thrill of saving someone from the top of a burning building.
148. I am a daredevil.

### **Blame Externalization subscale**

16. If I’d had fewer bad breaks in life, I’d be more successful.
18. A lot of people have tried to “stab me in the back.”

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- 19. People's reactions to the things I do often are not what I would expect.
- 38. People usually give me the credit that I have coming to me.
- 40. When I'm with people who do something wrong, I usually get the blame.
- 60. People "take me over the coals" for no good reason.
- 62. I've often been betrayed by people I trusted.
- 82. Few people in my life have taken advantage of me.
- 84. I've been the victim of a lot of bad luck.
- 90. Some people have gone out of their own way to make my life difficult.
- 100. I feel that life has treated me fairly.
- 112. I'm sure some people would be pleased to see me fail in life.
- 122. People I thought were my "friends" have gotten me into trouble.
- 134. I get blamed for many things that aren't my fault.
- 144. Some people have made up stories about me to get me in trouble.

### **Stress Immunity subscale**

- 6. Sometimes I wake up feeling nervous without knowing why.
- 10. I am easily flustered in pressured situations.
- 28. I tend to get crabby and irritable when I have too many things to do.
- 32. I don't let everyday hassles get on my nerves.
- 50. I am high-strung.
- 54. When I'm in a frightening situation, I can "turn off" my fear almost at will.
- 72. Some people say that I am a "worry wart."
- 76. I get stressed out when I'm "juggling" too many tasks.
- 96. I function well under stress.
- 118. I don't get nervous under pressure.
- 119. I worry about things even when there's no reason to.
- 140. I can remain calm in situations that would make many other people panic.
- 141. I'm the kind of person who gets "stressed out" pretty easily.

**Appendix B. Personal Fable Scale**

1. Even though other kids, besides me, got A's on their papers, I feel that the teacher liked mine the best.
2. I know I get away with a lot of stuff other kids get in trouble for.
3. When I realize I have said or done something really hurtful to a good friend it seems to me that no one else has ever done anything quite so bad.
4. Some kids don't worry about getting injured when they play sports.
5. Although I know that many other people may never realize their goals and ambitions I am sure that I will.
6. Some kids believe that even if they try drugs they will never get hooked on them.
7. When teams are picked in gym or at recess, I know I will never be the one picked last.
8. I don't worry about what I eat because I know I won't get fat.
9. When my parents or friends tell me that they know how I feel, I don't believe that they really do.
10. Some kids believe that they don't need to put on their seatbelt every time they get in a car.
11. Sometimes when I see a good-looking girl/boy, I think that they are looking at me in a very admiring way.
12. Some kids think that wearing a helmet while skateboarding, biking, or rollerblading is unnecessary because nothing is going to happen to them.

**Appendix C. Risk-Taking Questionnaire**

1. Have you ever gone camping in the wilderness, beyond the civilization of a campground?  
Yes                      No  
a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A  
b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A  
c. If no, would you ever engage in this activity?  
Yes                      No
  
2. Have you ever chased a tornado or hurricane by car to take dramatic photos?  
Yes                      No  
a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A  
b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A  
c. If no, would you ever engage in this activity?  
Yes                      No
  
3. Have you ever gone on a vacation in a third-world country without prearranged travel and hotel accommodations?  
Yes                      No  
a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A  
b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A  
c. If no, would you ever engage in this activity?  
Yes                      No
  
4. Have you ever gone down a ski run that is beyond your ability or closed?  
Yes                      No  
a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A  
b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A  
c. If no, would you ever engage in this activity?  
Yes                      No
  
5. Have you ever gone whitewater rafting during rapid water flows in the spring?  
Yes                      No  
a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A  
b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A  
c. If no, would you ever engage in this activity?  
Yes                      No
  
6. Have you ever walked home alone at night in a somewhat unsafe area of town?  
Yes                      No  
a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A

Personality variables and frequency of risk-taking

- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes                      No
7. Have you ever engaged in a dangerous sport (e.g. mountain climbing or sky diving)?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes                      No
8. Have you ever tried out bungee jumping?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes                      No
9. Have you ever bet a day's income at the horse races?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes                      No
10. Have you ever bet a day's income at a high stake poker game?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity? \_\_\_\_\_ N/A  
Yes                      No
11. Have you ever bet a day's income on the outcome of a sporting event (e.g. baseball, basketball, football, soccer)?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes                      No

Personality variables and frequency of risk-taking

12. Have you ever gambled a week's income at a casino?  
Yes            No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)    N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes            No
13. Have you ever gambled?  
Yes            No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)    N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?            N/A  
Yes            No
14. Have you ever cheated on an exam?  
Yes            No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)    N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes            No
15. Have you ever passed off somebody else's work as your own?  
Yes            No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)    N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes            No
16. Have you ever forged somebody's signature?  
Yes            No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)    N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes            No
17. Have you ever illegally copied a piece of software?  
Yes            No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)    N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_ N/A

Personality variables and frequency of risk-taking

- c. If no, would you ever engage in this activity?
18. Have you ever cheated by a significant amount on your income tax return?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_                      N/A
- c. If no, would you ever engage in this activity?  
Yes                      No
19. Have you ever shoplifted a small item (e.g. a lipstick or a pen)?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_                      N/A
- c. If no, would you ever engage in this activity?  
Yes                      No
20. Have you ever shoplifted an item or items worth \$50 or more?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_                      N/A
- c. If no, would you ever engage in this activity?  
Yes                      No
21. Have you ever damaged or destroyed public or private property?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_                      N/A
- c. If no, would you ever engage in this activity?  
Yes                      No
22. Have you ever exposed yourself to the sun without using sunscreen?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_  
\_\_\_\_\_                      N/A
- c. If no, would you ever engage in this activity?  
Yes                      No
23. Have you ever eaten high cholesterol foods on a regular basis (at least three times per week)?  
Yes                      No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s)                      N/A

Personality variables and frequency of risk-taking

- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes No
24. Have you ever consumed five or more servings of alcohol in a single evening?  
(One serving = 12 oz. of beer, or 4 oz. of wine, or 1.25 oz of hard alcohol (80 proof-40%))  
Yes No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes No
25. Have you ever not worn a seatbelt when being a passenger in the front seat?  
Yes No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes No
26. Have you ever not worn a helmet when riding a motorcycle?  
Yes No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes No
27. Have you ever driven while under the influence of alcohol?  
Yes No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes No
28. Have you driven while under the influence of other substances which are known to impair driving ability (e.g. drugs)?  
Yes No
- a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A
- b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A
- c. If no, would you ever engage in this activity?  
Yes No

Personality variables and frequency of risk-taking

29. Have you ever driven a car at more than 20 miles per hour over the speed limit?

Yes No

a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A

b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A

c. If no, would you ever engage in this activity?

Yes No

30. Have you ever smoked a cigarette?

Yes No

a. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A

b. If yes, have you ever smoked cigarettes on a regular basis?

Yes No N/A

c. If you have smoked on a regular basis, indicate during what age period you have done so \_\_\_\_\_ N/A

d. If you have smoked cigarettes infrequently but over a long time period, how many times have you done so? \_\_\_\_\_ times

e. If you have smoked cigarettes infrequently but over a long period, during what age period(s) have you done so?

31. Have you ever bought an illegal drug for your own use?

Yes No

a. If yes, how many times have you engaged in this activity? \_\_\_\_\_ time(s) N/A

b. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A

c. If no, would you ever engage in this activity?

Yes No

32. Have you ever used marijuana?

Yes No

a. If yes, at what age(s) did you engage in this activity? (list all) \_\_\_\_\_ N/A

b. If yes, have you ever used marijuana on a regular basis?

Yes No N/A

c. If you have used marijuana on a regular basis, indicate during what age period you have done so \_\_\_\_\_ N/A

d. If you have used marijuana infrequently but over a long time period, how many times have you done so? \_\_\_\_\_ times N/A

e. If you have used marijuana infrequently but over a long period, during what age period(s) have you done so? \_\_\_\_\_ N/A

33. Have you ever used recreational drugs other than marijuana (e.g. cocaine, ecstasy)?

Yes No

a. If yes, at what age(s) did you engage in this activity? (list all)

Personality variables and frequency of risk-taking

N/A

- b. If yes, have you ever used a drug on a regular basis?  
Yes            No        N/A
- c. If you have ever used a drug on a regular basis, indicate during what age period you have done so \_\_\_\_\_ N/A
- d. If you have used recreational drugs infrequently but over a long time period, how many times have you done so? \_\_\_\_\_ times        N/A
- e. If you have used recreational drugs infrequently but over a long period, during what age period(s) have you done so? \_\_\_\_\_ N/A

34. Have you ever had sexual intercourse?

Yes            No

If you answered no, go on to question 46.

35. How old were you when you had sexual intercourse for the first time? \_\_\_\_\_

36. During your life, with how many people have you had sexual intercourse? \_\_\_\_\_

37. During the past year, with how many people did you have sexual intercourse? \_\_\_\_\_

38. Have you ever consumed alcohol or used drugs before you had sexual intercourse?

Yes            No

a. If yes, how many times have you done so? \_\_\_\_\_ times    N/A

b. If yes, at what age(s) did you do so? \_\_\_\_\_ N/A

39. Have you ever engaged in sex without using protection against STDs?

Yes            No

a. If yes, how many times have you done so? \_\_\_\_\_ times    N/A

b. If yes, at what age(s) did you do so? \_\_\_\_\_ N/A

40. Have you ever engaged in sex without using protection against pregnancy? (Withdrawal and having sex at a “safe” time of the menstrual cycle doesn’t count as contraception)

Yes            No

a. If yes, how many times have you done so? \_\_\_\_\_ times    N/A

b. If yes, at what age(s) did you do so? \_\_\_\_\_ N/A

41. Have you ever been pregnant or gotten someone pregnant?

Yes            No

a. If yes, how many times? \_\_\_\_\_ N/A

b. If yes, at what age(s) \_\_\_\_\_ N/A

c. If yes, did you use protection against pregnancy during the time of conception?

Yes            No            N/A

42. Have you ever had sexual intercourse on a “one night stand” or with someone you didn’t know well?

Yes            No

a. If yes, how many times? \_\_\_\_\_ N/A

Personality variables and frequency of risk-taking

b. If yes, at what age(s) \_\_\_\_\_ N/A

43. Have you ever engaged in anal intercourse?

Yes No

a. If yes, how many times? \_\_\_\_\_ N/A

b. If yes, with how many partners have you engaged in anal sex? \_\_\_\_\_ N/A

c. If yes, at what age(s) \_\_\_\_\_ N/A

d. If yes, how many times have you engaged in anal sex without using protection against STDs? \_\_\_\_\_ times N/A

e. If yes, at what age(s) did you engage in anal sex without using protection against STDs?  
\_\_\_\_\_ N/A

44. Have you ever experienced forced sexual intercourse?

Yes No

45. Have you ever forced someone to engage in sexual intercourse with you?

Yes No

46. Have you ever engaged in verbal aggression?

(Verbal aggression is calling another person an offensive name, laughing at another person, threatening to hurt another person, etc.)

Yes No

a. If yes, how many times? \_\_\_\_\_ times N/A

b. If yes, how many times did you initiate it? \_\_\_\_\_ times N/A

c. If yes, at what age(s) did you engage in this behavior?  
\_\_\_\_\_ N/A

47. Have you ever engaged in physical aggression?

(Physical aggression is any attempt or actual physical contact with another person in the form of hitting, slapping, pinching, spitting, biting, kicking, pushing, etc., or throwing objects at another person.)

Yes No

a. If yes, how many times? \_\_\_\_\_ times N/A

b. If yes, how many times did you initiate it? \_\_\_\_\_ times N/A

c. If yes, at what age(s) did you engage in this behavior?  
\_\_\_\_\_ N/A