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Influences of Parental Control and Decision Making on Risk-Taking Behavior:
A Cross-Cultural Study in the U.S. and Taiwan

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Psychology

by

Catherine Pei Wern Chou

June 2014

Dissertation Committee:

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The Dissertation of Catherine Pei Wern Chou is approved:

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University of California, Riverside

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ABSTRACT OF THE DISSERTATION

Influences of Parental Control and Decision Making on Risk-Taking Behavior:
A Cross-Cultural Study in the U.S. and Taiwan

by

Catherine Pei Wern Chou

Doctor of Philosophy, Graduate Program in Psychology
University of California, Riverside, June 2014
Dr. Misaki N. Natsuaki, Chairperson

The purpose of the present research was to examine the use and the effect of parental control (i.e., behavioral control and psychological control) on risk-taking behavior among emerging adults by using a cross-cultural approach. Specifically, the current research aimed to examine the associations between parental control and risk-taking behavior as mediated by decision making processes. Data were drawn from college students from the U.S. (Asian American $N = 164$) and Taiwan ($N = 156$) by using an online survey.

Study 1 aimed to explore the cultural differences in the association and levels between parental psychological control and behavioral control. The association between the two forms of control was not significant among Asian American college students, while it was positive among Taiwanese students. Taiwanese students perceived higher levels of personal attack from mother and invalidating feelings from father than the Asian American counterparts. Compared to Taiwanese students, Asian Americans reported higher levels of perceived guilt induction and behavioral control from both mother and

father. The findings suggest that although parents of Taiwanese and Asian Americans may both hold values and beliefs rooted in Asian culture, their parenting behaviors differ by the exposure to different host cultures.

Study 2 examined the levels and the associations among psychological control, behavioral control, risk tolerance for others, consequence consideration for others, and risk-taking behavior among Asian American and Taiwanese emerging adults. Taiwanese participants were more likely than Asian Americans to think about the consequences for others, and were willing to tolerate causing more risk to others. Behavioral control was negatively associated with risk-taking behavior among Asian Americans, whereas the association was not significant in Taiwanese. Psychological control was positively associated with risk-taking behavior in Taiwan, but this association was not significant among Asian Americans. Decision making factor (i.e., consequence consideration for others) mediated the link between psychological control and risk-taking behavior in both the U.S. and Taiwan, suggesting the similarity in the mediating process across the two countries. Study 2 suggests the importance of understanding cultural context when examining parental control and its influences in emerging adulthood. The implications of these findings are discussed in terms of the role of culture in studies of parental control among college students.

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Influences of Parental Control and Decision Making on Risk-Taking Behavior:

A Cross-Cultural Study in the U.S. and Taiwan

Risk-taking is defined as engagement in behaviors that are associated with some probability of undesirable results (Boyer, 2006). Among youth, common risk-taking behaviors include binge drinking, risky driving, smoking, unprotected sexual activity, and drug use (Centers for Disease Control and Prevention [CDC], 2012). These behaviors are sometimes referred to as “externalizing behaviors” (Rogers, Buchanan, & Winchell, 2003; Barber, Olsen, & Shagle, 1994) or “problem behaviors” (Schwartz et al., 2009; McIntosh, Flannery, Sugai, Braun, & Cochrane, 2008), yet these terms have slightly different definitions. Youth are typically perceived as risk takers because they often exercise poor decision-making, favoring short-term gains despite negative long-term consequences (Spear, 2002; Steinberg, 2004).

According to the 2009 national Youth Risk Behavior Survey (YRBS) conducted by the CDC (2010), an alarming rate of adolescents in the U.S. engages in different kinds of risk-taking behaviors. For example, among high school students nationwide, 9.7% rarely or never wore a seat belt when riding in a car driven by someone else. Within the 30 days prior to the survey, 19.5% of high school students had smoked cigarettes, 41.8% had drunk alcohol, and 20.8% had used marijuana. In addition, 38.9% of currently sexually active students had not used a condom during their last sexual intercourse.

Risk-taking behavior is not unique to American youth; it is also prevalent among Taiwanese adolescents. The Taiwan Youth Health Survey (TYHS), which was administered in Taiwan by the Bureau of Health Promotion (BHP, 2012), showed that in

2009, 51.8% of high school students in Taiwan did not always wear a seat belt when riding in a car driven by someone else. Although less prevalent when compared to the U.S., other risk-taking behaviors such as substance use are still significant problems among youth in Taiwan. Nearly 15% had smoked cigarettes, 28.8% had drunk alcohol in the past 30 days, and 4.6% of students had used any kind of drugs one or more times during their life.

The cross-cultural comparison of these rates indicates that the percentage of youth engaging in risk-taking behavior is generally higher in the U.S., drawing researchers' attention to cultural differences in risk-taking. The increased attention has generated research on ethnic or racial differences in risk-taking behavior (e.g., Marin, 1996; Stern & Wiens, 2009; Kandel, Kiros, Schaffran, & Hu, 2004; Walker, Treno, Grube, & Light, 2003). However, the mechanism underlying the differences in risk-taking behavior across cultures remains understudied.

Research on risk-taking behavior has mainly focused on teenagers because many types of risk-taking behavior are considered to emerge, increase, and peak in adolescence (Arnett, 1992). Nonetheless, recent studies have drawn attention to emerging adulthood (e.g., Arria et al., 2008; Borsari, Murphy, & Barnett, 2007) because of the unique features during this age; emerging adulthood is known as "the age of identity exploration, instability, self-focus, feeling in-between, and possibilities" (Arnett & Tanner, 2006, p.7), connecting adolescence and adulthood. Due to industrialization and the extension of education, individuals between the ages of 18 and 25 are at the transitional period, establishing and refining their new identities and social network (Borsari et al., 2007;

Scheir & Botvin, 1997). These psychosocial contexts create an opportunity for young adults to try out risk-taking behavior. In addition, some risk-taking behaviors, such as drinking and smoking, are no longer illegal for emerging adults, which may increase the likelihood of their engagement in these behaviors. For instance, evidence shows that binge drinking and marijuana use increase from age 18, peak at age 21-23, then gradually decline into adulthood (Arnett, 1992).

To examine the factors that influence risk-taking among emerging adults, the current study focused on parental control. In the literature of youth's risk-taking behavior, parental control (i.e., how parents oversee and regulate the behaviors, activities, feelings, and thoughts of their children) has received much attention (e.g., Barber, 1996; Kincaid, Jones, Cuellar, & Gonzale, 2011). Although most of the past research on parental control has been conducted with children and adolescents, recent findings suggest that parents may continue to exert control over their children beyond adolescence (Padilla-Walker & Nelson, 2012). Still, the role of parental control on emerging adults' risk-taking is a relatively understudied topic that deserves attention.

Parental control and risk-taking behavior have been considered in previous studies in the U.S. (Barber et al., 1994; Pettit, Laird, Dodge, Bates, & Criss, 2001; Kincaid et al., 2011); however, there are voids in the literature. First, the majority of studies have examined behavioral control (e.g., Barber et al., 1994; Han et al., 2012; Fletcher, Steinberg, & Sellers, 1999), and only few attempts have been made to elucidate how psychological control influences risk-taking behavior and how it exerts a differential impact on decision making process in various cultural contexts. Second, little attention

has been paid to how parents in different cultures use different forms of parental control, and how the meaning of parental control varies across cultures. This study sought to fill these gaps in the literature.

The purpose of the present research was to examine the role of parental control (i.e., behavioral control and psychological control) in risk-taking behavior among emerging adults by utilizing a cross-cultural approach. More specific, the purpose was to examine the relationship between parental control and risk-taking behavior as mediated by the decision making process among emerging adults in the U.S. and Taiwan. Two studies were included in the current project. The aim of Study 1 was to explore cultural differences in the levels and the association between parental psychological control and behavioral control. Study 2 was designed to examine the associations among parental control (i.e., behavioral and psychological control), decision making processes involving concern for others, and risk-taking behavior.

The introduction is organized as follows. In the first section, the history of how the concept of parental control has evolved is presented. Next, I reviewed the literature examining the associations between parental control and risk-taking. The cultural differences in parental control and its associations with youth outcomes were also discussed. In the second section, I reviewed the studies on decision making process as well as its relations to risk-taking behavior. Then, the mediating role of decision making involving concern for others was discussed. Finally, I described the aims and the hypotheses for the current research.

Parental Control and Risk-Taking Behavior

Parents are viewed as important agents in children's socialization because of their enduring influences on children's development. Although emerging adulthood is a time for emerging autonomy and independence from the family of origin, recent evidence suggests that the majority of parents do not regard their 18- to 25-year-old children as adults (Nelson et al., 2007) and therefore, parental influence does not seem to wane during this period. Research has pointed out that parents may continue to guide their children during college years to help them explore their adult identities (Padilla-Walker & Nelson, 2012). In other words, parents continue to play an important role in their children's behavior throughout emerging adulthood.

Parental control is a form of parenting that is still active in young adulthood. Research has indicated that parents continue to behaviorally and/or psychologically control their college children and may maintain the decision making role that their college children should be taking on (Roman, Human, & Hiss, 2012). Despite the fact that children have entered college and reached legal adult age, parents often do not stop attempting to control their college-aged children (e.g., calling and texting them, asking questions about their lives), and further influence their children's risk-taking behavior such as drinking patterns (Wood, Read, Mitchell, & Brand, 2004). Therefore, an examination of the role that parental control plays during this transition would contribute to the understanding of parenting in emerging adulthood.

Parental control. Parental control, which is defined as a cluster of parental behaviors through which parents instruct and regulate their children's behavior, activities,

thoughts, and feelings (Barber, 1996), has been linked to youth's social, emotional, and psychological development (Maccoby & Martin, 1983). In the area of parental control, two dimensions have been distinguished: behavioral control and psychological control. Generally, *behavioral control* refers to a form of parental control that provides rules, regulations, and restrictions on children's behavioral world (Barber et al., 1994; Smetana & Daddis, 2002). Specific parenting behaviors in behavioral control include knowing the whereabouts of the child's activities, posing parental rules and expectations, monitoring, and implementing discipline and demandingness (Shek, 2006). These parental practices attempt to control or manage children's behavior.

Psychological control, on the other hand, is defined as parental control that intrudes on the psychological and emotional development of children (Barber, Stolz, & Olsen, 2005). It is the degree of psychological distance a child perceives from the parents (Sabatelli & Mazor, 1985), or the parental practices that intrude upon the child's individuation process. Parenting behaviors that are psychologically controlling include constraining verbal expressions, invalidating feelings, personally attacking, inducing guilt, withdrawing love, and disrespecting (Barber, Xia, Olsen, McNeely, & Bose, 2012). Such behaviors manipulate children's thoughts and feelings, and may interfere with the development of the psychological self.

Research on behavioral and psychological control has spanned nearly five decades of history. Schaefer (1965) was among the first to recognize psychological control as a component of parental behavior. Using the Children's Reports of Parental Behavior Inventory (CRPBI), Schaefer identified a factor, Psychological Autonomy versus

Psychological Control, which included characteristics such as parental intrusiveness, direction, and control through guilt. Schaefer (1965) viewed this construct as “covert, psychological methods of controlling the child’s activities and behaviors that would not permit the child to develop as an individual apart from the parent” (p.555). This factor became the founding of psychological control. Schaefer also identified another factor, Firm Control versus Lax Control, which was most clearly defined by lax discipline and extreme autonomy, indicating “the degree to which the parent makes rules and regulations, sets limits to the child’s activities, and enforces these rules and limits” (Schaefer, 1965, p.555). This factor evolved into the concept of behavioral control in the following decades.

Baumrind’s (1967) early typological works also incorporated control as one of the important facets of parental behaviors. Authoritarian parents attempt to shape, control, and evaluate the child using firm standards. On the other hand, authoritative parents firmly enforce rules, but are warm and accepting, and generally promote psychological autonomy. Permissive parents impose few demands, and encourage individuality and independence. Although Baumrind did not identify the specific role of parental control and the components that form parental control types, her typological approach raised attention to controlling behavior in parenting.

Steinberg and colleagues (1989) elaborated on the operationalization of parental control by conceptualizing parenting into three distinct features: warmth or acceptance, behavioral control, and psychological autonomy or democracy. According to Steinberg and colleagues, behavioral control refers to parents’ attempt to regulate how their

children should behave (e.g., spending money, leisure activities, and completing school assignments), whereas psychological autonomy refers to children's sense of self-reliance, identity, and self-direction. Steinberg and colleagues found that these forms of parental control are qualitatively different and influence adolescents differently in terms of academic success and psychosocial maturity (Steinberg, Elmen, & Mounts, 1989).

Following Steinberg's work, Barber et al. (1994) further clarified the conceptual distinction between behavioral control and psychological control. According to Barber (Barber et al., 1994; 1996), behavioral control focuses on regulation of behavior and activities without negating youth's own thoughts, ideas, or intrinsic values, thus serving a positive socializing function by providing youth with necessary supervision. In contrast, psychological control attempts to shape behaviors via tactics such as constraining verbal expressions, invalidating feelings, personal attack, guilt induction, love withdrawal, and erratic emotional behavior; therefore, it impedes the development of autonomy and self-direction.

Some researchers have used other theories to define or distinguish among different forms of parental control. For example, Nucci, Hasebe, and Lins-Dyer (2005) employed the domain theory to emphasize parental control over children's personal issues (e.g., one's thoughts and preferences). Adolescents tend to view parental control as acceptable when it is exerted over adolescents' actions, which is known to have positive consequences for health and safety or pertain to the general conventions of society (Smetana, 1995). However, when parental control regulates behaviors that fall within their personal domain, adolescents tend to reject parental control. Nucci (1996) proposed

that control over children's personal domain is critical to their development of personal autonomy and individual identity. Parental control of children's personal domain is considered intrusive, which is similar to the conceptualization of psychological control proposed by Barber (1996).

Recently, psychological control has received close examination. Soenens, Vansteenkiste, and Luyten (2010) suggested that parental psychological control consists of two domains: dependency-oriented and achievement-oriented psychological control. Dependency-oriented psychological control refers to attempts to make children psychologically and emotionally dependent on the parent, whereas achievement-oriented psychological control refers to parents' demanding high degrees of achievement from their children (Soenens et al., 2010). Soenens et al. (2010) found that dependency-oriented and achievement-oriented psychological controls were conceptually different and were related differently to middle adolescent dependency and self-criticism. That is, dependency-oriented psychological control was related to adolescent dependency, which further influenced adolescents' depression. On the other hand, the association between achievement-oriented psychological control and adolescents' depressive symptoms was mediated by adolescents' self-criticism. The distinction between two domain-specific forms of psychological control allows for another way to examine psychological control and its effects.

Based on the prior works on psychological control, Barber et al. (2012) suggested that psychological control can be viewed as manipulation and coercion, and as intrusion into the personal domain. Additionally, Barber et al. introduced another component,

disrespect, in order to elaborate on the construct of psychological control. Parental intrusive behaviors often include disrespect for children's integrity and individuality. These behaviors include parents violating their children's privacy, ignoring their children, and unfairly comparing their children to someone else. Empirical evidence has shown that disrespect is a unique component of psychological control and can be linked to youth depression and antisocial behavior and impedes development of individuality (Barber et al., 2012).

In sum, psychological control and its distinction from behavioral control have been examined and clarified in many studies (e.g., Barber et al., 1994; Barber, 1996; Shek, 2006; Soenens, Vansteenkiste, & Sierens, 2009) and have been studied over several decades. The current research thus examined psychological control and behavioral control as two forms of parental control. In this research, behavioral control is defined as parental control that regulates, supervises, and manages children's behavioral world. Monitoring is a fundamental component of behavioral control, and is defined as parents' awareness and supervision of their children's whereabouts, activities, and companions (Brown, Mounts, Lamborn, & Steinberg, 1993). Psychological control, on the other hand, is defined as the form of parental control that manipulates and intrudes on children's psychological world.

Parental control and risk-taking. Parental behavioral control and psychological control have been linked to a variety of youth's developmental outcomes. It has been suggested that behavioral control promotes positive behavioral outcomes (e.g., Barber, 1996; Fletcher et al., 1999; Kincaid et al., 2011) because parents who utilize behavioral

control provide rules and restrictions, which regulates children's activities after school, the way children spend their free time, friends whom children hang out with, etc. With their behavioral worlds being monitored and regulated by parents, children and adolescents have been consistently found to be more likely to have positive behavioral outcomes (Barber et al., 1994; Smith & Krohn, 1995; Smetana, 2008).

Not surprisingly, a large body of empirical studies has found that parental behavioral control has protective effects on a wide array of externalizing problems in children and adolescents, including conduct problems (Kilgore, Snyder, & Lentz, 2000), sexual activity (Rai et al., 2003; Cottrell et al., 2003), drug use (Li, Stanton, & Feigelman, 2000; Martins, Storr, Alexandre, & Chilcoat, 2008), tobacco use or cigarette smoking (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Guo, Reeder, McGee, & Darling, 2011), alcohol use (Webb, Bray, Getz, & Adams, 2002; Arria et al., 2008), and other substance use (Rodgers-Farmer, 2000; Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006). In addition, some studies found that behavioral control or monitoring is related to not only fewer problem behaviors but also to higher social and academic achievement in children and adolescents (Brody, 2003; Seyfried & Chung, 2002). Parents' low level of behavioral control, on the other hand, increases youths' impulsivity, reckless behaviors, and willingness to take risks and violate social norms (Fowler, Toro, Tompsett, & Baltes, 2009; Dillon, Pantin, Robbins, & Szapocznik, 2008; Smetana, 2008; Patock-Peckham, King, Morgan-Lopez, Ulloa, & Filson Moses, 2011). Furthermore, adolescents who perceive low levels of parental behavioral control are more likely to be susceptible to peer influence, which may include peer's negative influence on deviant behavior (Barber,

1996). Generally, the findings indicate that behavioral control is linked to higher levels of psychosocial functioning and lower levels of maladjustment. Given its beneficial effects on child development, behavioral control is considered a necessary ingredient for the well-being of children and adolescents (Baumrind, 1991).

On the other hand, parental use of psychological control is linked to negative outcomes, such as internalizing problems in children and adolescents (Barber, 1996; Kincaid et al., 2011) because parents who use high levels of psychological control may manipulate youth's thoughts and feelings, which then inhibits youth's development of autonomy and independence. Research has pointed out that parental love withdrawal and discounting children's perspectives may lead to children's maladaptive coping processes, such as dependence, inhibition, and submissiveness (Cummings, Davies, & Campbell, 2000). Empirical evidence has demonstrated that parental psychological control is linked to internalizing problems such as depressive symptoms (Loukas, 2009; Pettit et al., 2001), low self-esteem (Bean & Northrup, 2009; Conger, Conger, & Scaramella, 1997), emotion regulation (Manzeske & Stright, 2009), and shyness (Van Zalk & Kerr, 2011). Furthermore, some studies have linked parental psychological control to poor outcomes not only during childhood and adolescence, but also during young adulthood as a lasting effect (Burbach & Borduin, 1986).

Interestingly, research that explores the links between psychological control and risk-taking behaviors has mixed results. Several studies have demonstrated a positive association between parental use of psychological control and adolescents' aggressive and externalizing behavior (Barber, 1996; Albrecht, Galambos, & Jansson, 2007;

Kuppens, Grietens, Onghena, & Michiels, 2009; Rathert, Fite, & Gaertner, 2011). In addition, Rogers et al.'s (2003) findings indicated that paternal psychological control was predictive of higher externalizing problems among girls when maternal psychological control was also high. However, a study by Bean, Barber, and Crane (2006) revealed that there was no association between psychological control and adolescent delinquency, depression, or academic achievement. Therefore, the relation between psychological control and risk-taking behavior remains unclear.

Some researchers argue that parental psychological control may have indirect effects on youth risk-taking behavior. For instance, Kincaid et al. (2011) found that higher levels of maternal psychological control were associated with increased youth externalizing problems (i.e., aggression and conduct problems), which then influenced youth risk-taking behaviors. Moreover, findings from Pettit and colleagues' (2001) longitudinal study indicated that high levels of psychological control were associated with more delinquent problems only for female adolescents who had few preadolescent delinquent problems, whereas high levels of psychological control were linked to more anxiety or depression for female adolescents who had many pre-adolescent internalizing problems. Hence, parental psychological control may affect youth risk-taking behaviors both directly and indirectly.

In sum, parental behavioral control is associated with fewer youth's risk-taking behaviors. However, the link between parental psychological control and risk-taking behavior is more complex and not clearly stated. Additionally, few studies to date have examined the aforementioned associations among emerging adults cross-culturally. One

aim of the current research was therefore to explore the relationship between parental control, namely behavioral control and psychological control, and risk-taking behavior among emerging adults in two different countries.

Parental Control and Culture

Research has suggested that it is important to take culture into account when studying the influences of parenting (Kagitcibasi, 1996). Hofstede (1980) defined culture as “the interactive aggregate of common characteristics that influence a group’s response to its environment” (p. 19). Cultural knowledge and skills, which consist of the attitudes, beliefs, values, and behaviors necessary for an individual to deal with the physical and social environment, are passed on from person to person, and from one generation to the next. Culture has been shown to affect many domains of family life, including the way in which parents socialize with their children (Harrison, Wilson, Pine, Chan, & Buriel, 1990).

Importantly, the meaning of parenting differs across cultures (Kagitcibasi, 1996). The same parental behavior may convey different meanings to children and adolescents in various cultures. Consequently, parental control as well as its relation to youth outcomes may differ as a function of culture. Research has revealed that parenting in Asian cultures involves strict control and high expectations for children’s behavior (Fung, 1999), whereas parenting in other cultures (e.g., European and American cultures) is less strict (Julian, McKenry, & McKelvey, 1994). Findings from research have indicated that supportive and non-punitive parenting is linked to good psychosocial outcomes in all cultures (Rowe, Vazsonyi, & Flannery, 1994), but parental strictness and dominance also

result in positive developmental outcomes among Asian children (Chao, 1994). Some researchers further argue that the effects of parental control may be different in Asian cultures from those in American culture (Wu, 1985; Olsen et al., 2002). Given that interpersonal connectedness and interdependence are highly valued in Asian cultures, parental control over children's thoughts and feelings may not be associated with violation of children's sense of self. To explore if there are cultural differences in the usage of parental control and its relations to risk-taking behavior, the current study used a cross-cultural design that allowed comparison between emerging adults in the U.S. and in Taiwan.

Cultural differences in parental control. As reviewed earlier, investigation of parental control conducted in the U.S. demonstrates that behavioral control is positive for youth developmental outcomes, whereas psychological control is negative. For instance, parents who set rules for their children's activities and behaviors and monitor them (i.e., behavioral control) have been linked to increased positive outcomes among American youth (e.g., Gray & Steinberg, 1999). On the other hand, parental manipulation and intrusion upon children's thoughts and feelings in the psychological world (i.e., psychological control) are associated with negative functioning among youth in the U.S. (e.g., Silk, Morris, Kanaya, & Steinberg, 2003).

The meanings and the effects of these parenting behaviors, however, may differ across cultures (Chao, 1994; Kagitcibasi, 1996). In terms of parenting in Asian culture, research has depicted that the parenting style of Chinese parents is directive and controlling, reflecting high involvement with their children (Huntsinger & Jose, 1995).

Several studies viewed common Chinese parenting as restrictive and controlling (Chiu, 1987), authoritarian (Steinberg, Dornbusch, & Brown, 1992), or rejecting (Lin & Fu, 1990). That is, Chinese parents generally tell children what to do, set firm rules, and have high expectations of children's conformity to the rules. These parents demand that their children follow their directions obediently without question. In addition, children are often punished if they do not follow the rules set for them by their parents. These parenting behaviors have been claimed to be linked to negative youth outcomes (e.g., poor academic performances) in the U.S.; however, research findings reveal that these parenting behaviors are associated with good school performance among Asian youth (Sue & Abe, 1988).

One potential reason for the cross-cultural differences in the effects of restrictive parenting is that the interpretation of the same parenting behavior differs by cultures. Chao (1994) found that Chinese children view their parents' strictness and control as parental care and involvement. Chao (1994, 1995) proposed that *guan*, a culturally-based parental control style, which refers to parenting behavior as "to govern" or "to care for" the child, retains a positive meaning for Chinese youth. Children consider *guan* positive parenting because it reflects the expression of their parents' love and concern. Thus, youth in Chinese culture may interpret parental control with a more positive connotation than youth in American culture.

Chinese parents have been known to use more psychological control than American parents because of the underlying Confucian ideology in their parenting practices (Olsen et al., 2002). Confucianism plays a significant role in Chinese traditional

cultural value systems. Its concepts include humanism, collectivity, self-discipline, order and hierarchy, wisdom of the elderly, moderation and harmony, and obligation (Suzuki, 1980). The value of filial piety is also highly emphasized. Children are expected to respect and care about their parents and the elderly and are encouraged to promote family harmony (Lau & Cheung, 1987). Youth are expected to learn to subordinate their personal interests for the greater collective good for the family, be obedient to their parents, and value their parents' needs and expectations (Markus & Kitayama, 1991; Park, Kim, Chiang, & Ju, 2010). As a result, Chinese parents may control children both behaviorally and psychologically so that their children would comply with a set of standards and place emphasis on obedience, order, and respect for parents, whereas Chinese children may interpret parental control over their psychological self as parent's concern and love for them.

One particular form of psychological control that is often used by parents in Chinese culture is shaming as a motivator in children's socialization (Rudy & Halgunseth, 2005). As a matter of fact, Chinese culture, along with other Asian cultures, has been characterized as a "shame culture" in many studies (Benedict, 1946; Fung, 1999; Ha, 1995; Bedford & Hwang, 2003). Shame is defined as "a reaction to criticism from others and as a fear of rejection and withdrawal of love" (Bierbrauer, 1992, p.184). Shame is the result of a failure to live up to expectations from others about one's role or status (Bedford & Hwang, 2003). Research has found a shame culture in many Asian countries, such as Taiwan (Fung, Lieber, & Leung, 2003), China (Bedford & Hwang, 2003), Japan (Bear, Uribe-Zarain, Manning, & Shiomi, 2009), and Korea (Furukawa, Tangney, &

Higashibara, 2012). Empirical evidence has shown that individuals in Eastern cultures are more shame-prone than individuals from Western cultures (Szeto-Wong, 1997; Lutwak, Razzino, & Ferrari, 1998), and that when responding to norm violation, individuals from collectivistic cultures responded with more shame than individuals from individualistic cultures (Bierbrauer, 1992).

Shame is also emphasized in Confucianism as a tool of socialization in Chinese culture. Fung (1999) demonstrated in her longitudinal study that Taiwanese parents taught children morality and appropriate behaviors by manipulating the sense of shame in children. The socialization of shame began as early as when children were two-and-a-half years old, facilitated through parent-child interaction such as play. Furthermore, Wilson (1981) showed that shaming is a dominant moral training technique in schools in Taiwan. Taiwanese teachers in elementary schools used shaming to correct children's misbehavior, to emphasize the group's disapproval, as well as to reinforce the appropriateness of the other students' behavior. Therefore, shaming is a common socialization technique not only at home but also across contexts in Taiwan. Schoenhals (1993) thus further claimed that Chinese culture is a "shame-socialized culture" (p.192).

Some shaming behaviors are similar to the concept of love withdrawal, which is a component of psychological control. Love withdrawal refers to a parenting strategy in which parents use their love to pressure children to remain within proximity (Barber et al., 2012). Parenting behaviors that reflect love withdrawal include ignoring, isolating the child, indications of rejection, and displaying disappointment or coldness in response to something the child has done that displeases the parent (Rollins & Thomas, 1979). A

study by Wu (1985) showed that when children misbehaved, Chinese mothers scolded their children to make them feel ashamed, but then offered their children the reinstatement of affection as long as they behave well. This finding suggests that Chinese parents often rely on love withdrawal when using shaming techniques to foster children's adherence to social norms and to promote sensitivity towards the feelings of parents.

On the other hand, some studies found that individuals from individualistic culture are more guilt-prone (as compared to shame-prone), and thus polarized Western cultures as guilt cultures and Eastern cultures as shame cultures (Benedict, 1946; Szeto-Wong, 1997). Guilt is defined as "a form of self-criticism that results from a comparison of one's action with internalized standards" (Bierbrauer, 1992, p.184). Guilt emphasizes individual responsibility and is a foundation for a moral system (Bedford & Hwang, 2003). People internalize a sense of proper behavior in line with social norms, and experience guilt when social norms are violated. Thus, guilt results from one's own eyes (i.e., a moral guidance coming from inside of the individual), whereas shame results from the eyes of others (i.e., a real or imagined audience observing one's wrong behavior). As a result, parents in Asian countries may be more likely to use shaming and socialize their children to define their behavior based on ingroup standards (Bierbrauer, 1992). In contrast, parents in the U.S. may use more guilt induction and expect children to develop their own behavioral standards (Johnson et al. 1987).

Cultural differences in the association between psychological control and behavioral control. Prior research has shown that parental psychological control and behavioral control are two distinct constructs (Barber et al., 1994), yet the relationship

between them merits further exploration. Findings on the association between psychological control and behavioral control are mixed in both Western and Asian studies. For example, some U.S. studies found that perceived psychological control was negatively correlated with perceived behavioral control among children and adolescents (Pettit et al., 2001; Barber et al., 1994; Barber et al., 2005), whereas another study found that the two were positively correlated (Manzeske & Stright, 2009). At the same time, a few studies found that there was no correlation between the two for both mothers and fathers (Bean et al., 2006; Galambos, Barker, & Almeida, 2003). With regard to research conducted in Asia, one study showed a positive correlation between psychological control and behavioral control among children in China (Wang, Pomerantz, & Chen, 2007), while another study indicated that the association between the two was negative for fathers but positive for mothers among adolescents in Hong Kong (Shek, 2006). Such mixed results contribute to the lack of clarity surrounding the association between psychological and behavioral control, and the role played by cultural differences. Consequently, the aim of Study 1 in this project was to examine the association between the two forms of control in order to understand parental use of control in different cultural contexts, and how the meaning of parental control varies across cultures.

Cultural differences in parental control and youth outcomes. It is necessary to take culture into account when exploring the relation between parental control and youth outcome. Findings from previous research are generally concordant in showing that behavioral control used by parents has a positive effect on better psychological and behavioral adjustment in children across cultures, including American, European, and

Asian countries (Han et al., 2012; Bergh, Hagquist, & Starrin, 2011; Li, Fang, Stanton, Su, & Wu, 2003; Tragesser, Beauvais, Swaim, Edwards, & Oetting, 2007; Lenciauskiene & Zaborskis, 2008). In terms of psychological control and its effects on youth, ethnic or racial differences have been found in a few studies. Walker-Barnes and Mason (2001) found that higher levels of psychological control were related to decreases in gang involvement over time for Hispanic youth, but not for Black or White youth. In addition, Schludermann and Schludermann (1983) found that traditional Indian adolescents reported higher levels of parental psychological control as well as higher levels of acceptance than Canadian adolescents. Thus, the negative effect of psychological control suggested in the Western literature is not uniformly supported.

Similarly mixed results for psychological control have been reported in studies of Asian cultures. For instance, Ho, Bluestein, and Jenkins (2008) investigated the relationship between ethnicity, parenting, and youth aggression. The findings indicated that parental psychological control was negatively associated with youth aggression in the South Asian group, whereas it was positively related to youth aggression in the European group. Moreover, Rudy and Halgunseth (2005)'s study demonstrated that psychological control was perceived to be higher in the Middle Eastern and South Asian participants than their West-European counterparts. However, high levels of psychological control in Middle Eastern and South Asian youth were not linked to higher levels of maladaptive outcomes (e.g., school grades and self-esteem) as shown in West-European youth.

In summary, while behavioral control has been studied over several decades in various forms such as parental monitoring and parental knowledge (e.g., Fletcher, Darling, & Steinberg, 1995; Dishion & McMahon, 1998; Hadley et al., 2011) and has been examined in several cultures (e.g., Li, Feigelman, & Stanton, 2000; Parsai, Marsiglia, & Kulis, 2010), psychological control has not been fully explored in culturally-sensitive research. There is evidence that cultural differences in the effect of psychological control may exist. The reason that parents employ psychological control and the way that youth interpret it are in line with respective cultural values. Additionally, cultural differences in parental psychological control reflect different socialization processes and different developmental outcomes. Consequently, although psychological control has been viewed as negative in the U.S., it may be used more frequently and some specific techniques of psychological control, i.e., love withdrawal and shame, may be perceived as more acceptable and effective as a mean of regulating youth behavior in other cultures, such as in Taiwan.

Decision Making and Risk-Taking Behavior

While it is well-established that parental control is associated with one's developmental outcomes (Barber, 1996; Fletcher et al., 1999; Bean et al., 2006; Kincaid et al., 2011), one question remains: how does parental control get “under the skin” to affect college students' risk-taking behavior? The current investigation focused on the mediating role of decision making.

Decision making is defined as the cognitive process of making choices among competing courses of actions (Raiffa, 1968). The majority of prior studies on risky

decision making were primarily based on cost and benefit analyses, where risk-taking decisions were made by thinking about potential gains and losses associated with taking a particular action (e.g., Smith, Dickhaut, McCabe, & Pardo, 2002; Levin & Hart, 2003). Previous work has focused on several domains of decision making processes, such as perceived vulnerability (Urberg & Robbins, 1984), risk perception (Beyth-Marom, Austin, Fischhoff, Palmgren, & Jacobs-Quadrel, 1993), and risk attitudes (Harrison, Lau, & Rutstrom, 2005). The current study examined two domains of risky decision making: risk tolerance and consequence consideration.

Decision-making ability is influenced by “efficient use of automatic cognitive heuristics and fuzzy, intuitive, gist-like representation” of risk (Boyer, 2006, p. 301). Studies suggest that while youth perceive risks associated with their decisions, they tend to underestimate the severity of the consequences (Reyna & Farley, 2006). For example, Reyna (1996) explains that youth engage in high-risk behaviors because they have not made the developmental shift towards adult decision making processes (i.e., adults rely on gist representations to make a decision). Youth are more likely to engage in risk-taking behavior because they rely more on weighing potential benefits than the perceived risks when making decisions. However, individuals become more risk-averse over the course of development. Adults are more capable of accurately processing appropriate contextual information and quickly accessing the basic mental or gist representation than adolescents (Reyna, Adam, Poirier, LeCray, & Brainerd, 2005).

Based on the decision making framework, adolescents are more likely to engage in risk-taking behavior than adults because these two age groups differ across a number

of decision making processes (Furby & Beyth-Marom, 1992). Adolescents may not sufficiently consider the possible consequences of their actions and have a perception of invulnerability to consequences, thus engaging in high-risk behaviors more frequently than adults. Additionally, adolescents may rely on peers when considering taking risks. Although the comparison of decision making between adolescents and adults has been examined in the literature, the decision making process in the transition between the two age groups has not been exclusively discussed.

According to Furby and Beyth-Marom (1992), five steps of cognitive processing are involved in risky decision making: (1) identify possible options; (2) identify possible consequences that may follow each option; (3) evaluate the desirability of each possible consequence; (4) assess the likelihood of each possible consequence; and (5) combine all of the above information according to some decision rule. For example, a college student may first have the option to ride with a drinking driver or not (Step 1). Identifying possible consequences, the college student may think that not riding with a drinking driver can avoid being injured in a car accident. However, his friends may call him “chicken” (Step 2). On the other hand, the college student may think about the consequence involving others more, contemplating how riding with a drinking driver and having an accident will make his family worried (Step 2). Next, the college student evaluates the desirability of each possible consequence and may consider that not appearing square is more important to him (Step 3). Alternatively, the college student may desire options that are less harmful to others (Step 3). Then, the college student may feel that there is no chance of having a car accident or being injured and that he will

arrive home safely. On the other hand, the isolation from peers is certain if he does not ride with them (Step 4). Combining all the information, the college student may advocate a decision rule that promotes an option allowing him to appear “cool” (Step 5). The present investigation focused on Steps 2 and 3; the aim was to examine emerging adults’ consequence consideration and the willingness of choosing various options in the decision making process, and how they may be associated with parental control and risk-taking behavior.

Risk tolerance and consequence consideration. To better capture the decision making process of one’s risk-taking behavior from a culturally sensitive perspective, the current study focused on two domains of risky decision making: risk tolerance and consequence consideration. Risk tolerance, which is developed from the concept of risk propensity (i.e., an individual’s tendency to take or avoid risks; Sitkin & Weingart, 1995), is defined as the maximum amount of uncertainty that someone is willing to accept when making a decision (Grable, 2000). It can be referred to as one’s willingness to accept the risk, which has been shown to predict risk behaviors (Gibbons, Gerrard, Blanton, & Russell, 1998). Lopes (1987) suggested that one’s willingness to engage in behavior depends on the evaluation of the risk, such as the threat of loss or the opportunity for gain. When individuals are in the pursuit of some goals, they may judge the goals as worthy of higher levels of risk exposure. Thus, they may be more willing to accept the risks in order to achieve their goals.

Research on risk tolerance is scarce and is primarily seen in economic literature (e.g., Yao, Gutter, & Hanna, 2005) or among airplane pilots (e.g., Pauley, O’Hare, &

Wiggins, 2008). For instance, Corter and Chen (2006) used the concept of risk tolerance to predict actual risk-related investing behavior. Risk tolerance was operationalized as the probability p that individuals would make the decision given the situation that there is “a $p\%$ chance of doubling the investment stake, and a $(1-p)\%$ chance of losing the entire investment stake” (p. 373). The results showed that risk tolerance was positively correlated with the participants’ actual investment.

The second decision making variable examined in the current study was consequence consideration, which is defined as the likelihood that an individual would think about the various consequences before deciding on an action. Although consequence consideration deals with the anticipated risk, it differs from the concept of risk perception. Risk perception refers to an individual’s assessment of the probability of the unwanted consequences, whereas consequence consideration in the current study refers to how much one would think about those consequences, which can be either positive or negative. Previous research has indicated that the consequences of decisions are anticipated and taken into account when making decisions (Beyth-Marom et al., 1993; Quadrel, Fischhoff, & Davis, 1993). For example, anticipated regret has been shown to force individuals towards the safe options, exercising less risk-taking (Zeelenberg, Beattie, van der Pligt, & de Vries, 1996). Furthermore, when making a decision on taking risks or not, an individual considers the possible outcomes of the options, as well as the emotions (e.g., anxiety, regret) evoked by the outcomes (Loomes & Sugden, 1982). The tendencies to avoid negative outcomes and emotions and to strive for positive outcomes

and feelings are proposed to be important determinants of one's decision making (Beyth-Marom et al., 1993).

The role culture plays in decision making of risk-taking behavior has not received much attention in the literature. The majority of studies exploring cultural effects on decision making have focused on financial risk in business (Dollinger & Danis, 1998; Mann et al., 1998), leaving risk-taking behavior in other contexts that are age-appropriate to young adults (e.g., smoking, risky driving, binge drinking) unexamined. For example, a study by Tse, Lee, Vertinsky, and Wehrung (1988) investigated whether managers' cultural backgrounds had an effect on their marketing risky decisions. The results demonstrated that Chinese managers were more inclined than Canadian managers to adopt a "face-saving" option and to favor long-term business arrangements. The finding attests to the point raised by McDaniels and Gregory (1991) that cultural norms play an important role in how people perceive and evaluate risky options. However, no study to date has examined the role of cultures in the link between consequence consideration and risk-taking behavior among emerging adults.

As discussed in the earlier sections, Asian cultures emphasize order, hierarchy, and harmony in family, school, and society. Based on the Confucianism, individuals in Chinese culture care about the members in the in-group, and tend to meet the needs of others even if they have to suppress their own wants. Hence, it is assumed that compared to other cultures, individuals from Asian culture would weigh more the possible outcomes to others that may result from one's decision, and thus engage in risk-taking behavior less frequently. For instance, when deciding whether or not to ride with a

drinking driver, individuals from Asian cultures may think of their parents who would be sad to find out if they get caught, and therefore decide not to do it. This is supported by a study that examined whether risk taking is influenced by the perspective that youth take when making risky decisions (Crone, Bullens, van der Plas, Kijkuit, & Zelazo, 2008). Perspective taking was manipulated by telling adolescents whether the decision was made for “self” or made for “other” prior to each decision. Findings indicated that adolescents made fewer risky choices for others than for themselves. Thus, it can be inferred that Chinese individuals may be less likely to take risks because they consider others more in their decision making processes.

Extending Crone et al. (2008)’s study, the current research focused on decision making involving concern for others. For example, risk tolerance involving concern for others includes tolerance of hurting other people and disappointing family, and consequence consideration for others includes causing emotional stress to others and others getting hurt. Cultural differences are assumed to be found in risk tolerance and consequence consideration involving concern for others, which can help to understand the differences in risk-taking behavior across countries.

Mediating Role of Decision Making

The relation of parental control and risk-taking behavior has been considered in some studies (Barber et al., 1994; Bean et al., 2006; Kincaid et al., 2011). However, little research has attempted to elucidate how psychological control influences risk-taking behavior cross-culturally, and how psychological control is internalized into one’s decision making process. The current study was designed to fill the void in literature by

examining the relation between parental control (particularly psychological control) and risk-taking behaviors as mediated through the decision making process involving concern for others among emerging adults in the U.S. and in Taiwan.

Prior research has found an association between parental control and youth decision making. Grolnick, Deci, and Ryan (1997) suggested that when parental control strategies are based on obedience and conformity to social and family norms, adolescents' perceived parental control may limit their decision making process and reduce their behavioral autonomy. For example, Pérez and Cumsille (2012) found that adolescents' perceived parental control was related to their reduced decision making autonomy in several domains (e.g., deciding hairstyle, deciding if they can smoke cigarettes, etc.). Therefore, parental control can influence one's decision making through internalization, which is "the process through which individuals acquire beliefs, attitudes, and behavioral regulations from external sources and progressively transform those external regulations into personal attributes, values, or regulatory styles" (Grolnick, 2003, p.54). Thus, via parenting, youth internalize and integrate the cultural values into their value system or sense of self, which influences how they make decisions.

Researchers have suggested that certain types of parenting practices may foster the development of decision-making skills and influence the risky decisions that adolescents make (Udell, Bannon, & McKay, 2008). For example, Udell and colleagues (2008) examined the association between parenting practices and adolescent decision making in several scenarios, such as deciding how to respond to persistent teasing and whether to intervene in a group fight. They found that racial socialization parenting

practices, defined as a set of parenting messages conveying cultural values and reinforcing cultural pride (Greene, 1990), were significant protective factors against choosing risky options (e.g., involvement in a group fight). Therefore, it is likely that culturally-based parenting practices may influence individuals' decision making and prevent or encourage them to engaging in risk-taking behavior.

The present investigation viewed decision making process (i.e., risk tolerance and consequence consideration involving concerns for others) as a mediator between psychological control and risk-taking behavior. Parental psychological control is particularly relevant to decision making, because some domains of psychological control (e.g., love withdrawal, shame) in Asian countries may elicit more perspective-taking in one's decision making process (Fung, 2013), which subsequently influences one's risk-taking behavior (Crone et al., 2008). Therefore, psychological control is proposed to be internalized into emerging adults' decision making process involving concern for others, and further influence their risk-taking behavior.

The Current Study: Aims and Hypotheses

The purpose of the present research was to examine the use and the impact of parental control (i.e., behavioral control and psychological control) on risk-taking behaviors via decision making process among emerging adults in the U.S. and in Taiwan. The current research sought to contribute to the literature by the exclusive examination of the followings. First, students in their first two years of college were the target population in the current study, as they have just entered the transition from high school to college with many moving out of the family home and gaining autonomy. The focus on emerging

adulthood is relatively new in the parenting literature. Second, the present study is based on a cross-cultural comparison model whereby the Taiwanese sample is compared to the Asian American sample. The use of the Asian American sample as a comparison group is a conservative approach to explore the cultural effect; Asian Americans have the orientation of collective familism (Chao, 1994), but at the same time they endorse the cultural values of independence from the host culture and may modify their beliefs and behaviors toward American values (Rubin & Chung, 2006). The differences between Asian Americans and Taiwanese thus can be attributed to the effect of Asian American being exposed to the U.S. culture. Third, both maternal control and paternal control were included in the current research. There is an increase in fathers being child care providers in recent decades (O'Connell, 1993). Although fathers' increasingly active role in child rearing is acknowledged, most studies that investigated parental control focused on maternal control only (e.g., Kincaid et al., 2011; Pettit et al., 2001). Paternal control is lacking in the literature, especially in emerging adulthood.

The current investigation is composed of two studies. The specific aims and hypotheses were as follows:

Specific aims.

1. Study 1: To examine the levels and the association between parental psychological control and behavioral control among emerging adults in the U.S. and Taiwan.
2. Study 2-1: To examine the levels and the associations between perceived parental control (i.e., behavioral control, psychological control), decision

making involving concern for others (i.e., risk tolerance for others, consequence consideration for others), and risk-taking behavior among emerging adults in the U.S. and Taiwan.

3. Study 2-2: To examine the mediating role of decision making process in the relation between psychological control and risk-taking behavior among emerging adults in the U.S. and Taiwan.

Hypotheses. A hypothetical model is shown in Figure 1. The model presents the hypothetical relations among parental control, decision making involving concern for others, and risk-taking behaviors among emerging adults in the U.S. and Taiwan. The predictions of the paths are depicted by the plus and minus signs in the figure.

Based on previous research that found Asian parenting more controlling and restrictive (Chiu, 1987; Chao & Aque, 2009; Rudy & Halgunseth, 2005), the current study hypothesized that individuals in Taiwan would perceive a higher level of behavioral control than their Asian American counterparts (Hypothesis 1). Also, Taiwanese would perceive a higher level of psychological control than Asian Americans, expect for guilt induction (Hypothesis 1), given that parents in the U.S. may use guilt induction to help children develop their behavioral standards (Johnson et al., 1987). In addition, the current study hypothesized that the association between the two forms of parental control would be negative in the U.S. (Hypothesis 1: Path A), as behavioral control is generally perceived as positive while psychological control is negative to children's developmental outcomes (Barber, 1996; Kincaid et al., 2011). On the other hand, both psychological control and behavioral control may be interpreted as more

acceptable ways to socialize children under the Chinese cultural values, so a positive association was predicted between the two forms of parental control in Taiwan (Hypothesis 1: Path A).

Given that Asian traditional values emphasize collectivity and harmony (Suzuki, 1980), the current study hypothesized that Taiwanese emerging adults would be less willing to tolerate risks involving others, and would consider consequences for others more than Asian Americans (Hypothesis 2-1). In addition, based on the youth health behavior reports (CDC, 2010; BHP, 2012), it was assumed that Asian Americans would engage in risk-taking behavior more frequently than their Taiwanese counterparts (Hypothesis 2-1).

There would be an expected negative association between parental behavioral control and risk-taking behavior among both Asian American and Taiwanese emerging adults (Hypothesis 2-1: Path B), as suggested in literature that behavior control is predictive of fewer externalizing behaviors among youth across countries (e.g., Han et al., 2012; Fletcher et al., 1999; Li et al., 2003). In contrast, there would be a positive association between parental psychological control and risk-taking behavior among Asian Americans (Hypothesis 2-1: Path C), based on the findings that psychological control is linked to negative youth outcomes in the U.S. (e.g., Barber et al., 1994; Loukas, 2009; Pettit et al., 2001). However, a negative relationship would be found between psychological control and risk-taking behavior in Taiwan (Hypothesis 2-1: Path C), according to the findings that psychological control may have a different meaning in

Asian culture and may be related to positive youth outcomes (Ho et al., 2008; Rudy & Halgunseth, 2005).

In terms of decision making process involving concern for others, it was hypothesized that there would be a negative association between consequence consideration for others and risk-taking behavior for both Asian American and Taiwanese participants (Hypothesis 2-1: Path E), based on the findings that youth are less likely to take risks when considering others in their decision making processes (Crone et al., 2008). Similarly, the present study predicted that there would be a positive relation between risk tolerance for others and risk-taking behavior in both countries, such that the more risks involving others that one can tolerate, the more likely one would engage in risk-taking behavior (Hypothesis 2-1: Path D).

Moreover, it was predicted that decision making process involving concern for others would mediate the relation between psychological control and risk-taking behavior in both countries (Hypothesis 2-2: Paths F and D, Paths G and E). Given that psychological control is linked to youth negative developmental outcomes in the U.S. (Barber, 1996; Kincaid et al., 2011, Rathert et al., 2011), it is likely that there would be a positive association between psychological control and risk tolerance for others (Hypothesis 2-1: Path F), and a negative association between psychological control and consequence consideration for others (Hypothesis 2-1: Path G). When Asian Americans perceive a higher level of psychological control from parents, they would be more likely to tolerate risks involving others and consider others less when making a decision, which subsequently increase the likelihood of their engagement in risk-taking behavior.

On the contrary, the current study predicted that psychological control would be negatively related to risk tolerance for others (Hypothesis 2-1: Path F), while be positively related to consequence consideration for others in Taiwan (Hypothesis 2-1: Path G). That is, when Taiwanese perceive a higher level of psychological control, they would be more likely to consider parents as well as others when making a decision, and be less willing to tolerate risks involving others, which further reduce their risk-taking behavior.

Findings from prior research have suggested that there are differences between maternal and paternal parenting styles (Collins & Russell, 1991; Dobkin, Tremblay, & Sacchitelle, 1997). For instance, mothers tend to show authoritative pattern in their parenting styles, while fathers are more likely to show authoritarian and permissive patterns (Russell et al., 1998). Nonetheless, the present study did not have specific hypotheses for the difference between the two in parental control and their relations to risk-taking behavior.

Methods

Participants

College students from the U.S. and Taiwan participated in an online survey. Descriptive statistics of the demographics are presented in Table 1. For the U.S. sample, 675 participants were recruited from a university in Southern California. Participants were ethnically diverse (42.9% Asian American, 33.5% Latino/Latina, 12.8% European American, 3.9% African American, and 6.9% other or mixed). The current study focused on Asian American only and those who were in the first two years of college. As such,

there were 164 participants (62 males and 102 females) with ages ranging from 17 to 19 years ($M = 18.53$, $SD = 0.52$). Among the Asian American participants, 58.5% lived on campus, 12.8% lived at home with parents/family, and 28.7% lived off campus (alone or with friends/roommates). On a scale regarding one's identity (1 = Individual from the culture of origin to 5 = American), 14.0% identified themselves as 1 or 2.

For the Taiwanese sample, 156 college students in Taiwan were recruited online. Students from 39 different universities/colleges in 21 cities participated in the study voluntarily. Among the participants, 54 were males and 102 were females (age $M = 18.94$, $SD = 0.62$). All the participants were of Taiwanese descent and speak Mandarin. Most of them (91.7%) were first- or second-year college students. In terms of living arrangements, 42.3% of the participants lived on campus, 27.6% lived at home, and 30.1% lived off campus.

Design and Procedure

The U.S. participants were recruited from a university in Southern California by using the psychology subject pool. In terms of the recruitment in Taiwan, the study advertisement was posted on an online Bulletin Board System (i.e., ptt.cc), which is a popular nationwide information system for college students in Taiwan. In both countries participants were given a link to an online survey after they signed up for the study.

Participants completed the survey from any computers where surveys were electronically administered through SurveyMonkey.com. An informed consent form was presented online in an electronic form before the survey items showed up. The average time to complete the survey was 45 minutes. After completion, each participant in the

U.S. received one research credit for his/her course requirement. For the Taiwanese participants, a gift card (NT\$100) was mailed to those who completed the survey as compensation. The study was reviewed by the Human Research Review Board at the University of California, Riverside.

Measures

The materials used for the survey were administered in English for the U.S. participants and in Mandarin Chinese for the Taiwanese participants (see Appendices A and B). All the measures, which were originally developed in English, were translated into Mandarin Chinese and back translated by bilingual researchers. Original and back-translated versions of the measures were compared, and an iterative procedure was used to resolve any discrepancies in order to ensure that the same constructs were measured in different languages. Measurement invariance was tested after data were collected.

Psychological Control. The construct of psychological control was assessed by a combination of three scales: the 10-item Psychological Control Scale (Barber, 1996), the 8-item Psychological Control-Disrespect Scale (Barber et al., 2012), and one item for shame. The 10-item psychological control scale revised from the Psychological Control Scale-Youth Self-Report (PCS-YSR; Barber, 1996) is a widely-used measure for adolescents' perceived parental psychological control. This measure consists of the following sub-domains: *Constraining Verbal Expression* (e.g., "My mother is a person who changes the subject, whenever I have something to say."), *Invalidating Feeling* (e.g., "My mother is a person who is always trying to change how I feel or think about things."), *Personal Attack* (e.g., "My mother is a person who blames me for other family members'

problems.”), *Love Withdrawal* (e.g., “My mother is a person who is less friendly with me, if I do not see things her way”), and *Guilt Induction* (e.g., “My mother is a person who says, if I really cared for her, I would not do things that cause her to worry.”). *Disrespect* (i.e., lack of respect toward children’s individuality) is another dimension of parental psychological control, which was not included in the original PCS-YSR, but later was validated to be an important component of parental psychological control (Barber et al., 2012). Disrespect was assessed by the Psychological Control-Disrespect Scale (PCDS; Barber et al., 2012), which is distinct from yet related to the PCS-YSR (Barber et al., 2012). It consists of eight items describing parents’ disrespect toward the child, such as “My mother is a person who doesn’t respect me as a person (e.g., not letting me talk, favoring others over me, etc.)”. In addition, the present study created one item to measure *shame* as a part of psychological control construct (e.g., “My mother is a person who says, any behavior that brings shame to me also brings shame to my family.”).

Participants were instructed so that the term “parent” included both biological and non-biological parents (e.g., step mother, adoptive mother). Participants rated the aforementioned items on a 3-point scale, indicating how well the items described their mother and father separately (0 = *not like her/him* to 3 = *a lot like her/him*). Higher scores represented greater perceived levels of psychological control. All items were aggregated at the subscale-level. The Cronbach’s alphas for all items were .912 and .929 for maternal and paternal psychological control, respectively, in the U.S. sample, and .889 and .919 for maternal and paternal psychological control, respectively, in the Taiwanese sample. Cronbach’s alphas were > .569 for all the subscales.

Behavioral Control. The 9-item Behavioral Control Scale (Barber et al., 1994) was used to assess perceived parental behavioral control. Participants rated on a 3-point scale how well the items described their parents. Sample items are “My mother/father lets me go any place I please without asking” (1 = *not like her/him* to 3 = *a lot like her/him*) and “How much does your mother/father really know what you do with your free time?” (1 = *doesn't know* to 3 = *knows a lot*). Four items were coded reversely, and then the total 9 items were combined to create a score of behavioral control, separately for mother and father. Higher scores represented greater perceived levels of behavioral control. The Cronbach's alphas were .670 and .766 for maternal and paternal behavioral control, respectively, in the U.S. sample, and .769 and .681 for maternal and paternal behavioral control, respectively, in the Taiwanese sample.

Concern for Others in Decision Making. *Risk Tolerance Involving Concern for Others.* An 8-item Risk Tolerance Scale developed by the author and colleagues was used to assess the amount of risk in percentage that one is willing to accept given different situations (Chou, unpublished manuscript). Different situations include situations concerning self (e.g., getting injured or hurt, getting in legal trouble/arrested, and losing one's money) and situations concerning others (e.g., hurting other people, and disappointing one's family). Results from factor analyses for the whole scale suggested that there were two components extracted, with four items loading on risk tolerance for self (Cronbach's alpha = .692 for U.S.; .678 for Taiwan) and four items on risk tolerance for others (Cronbach's alpha = .799 for U.S.; .900 for Taiwan).

The current study focused on items tapping onto concern for others. Participants were asked to rate their willingness to tolerate risk given a risky situation. Sample items include “At what percentage would you be willing to risk in order to do something you really want to do?”, followed by each situation, such as “I would be willing to tolerate a ___% chance (risk) of hurting other people if I really wanted to do something.” Participants were instructed to answer the questions on a scale from 0% to 100% chance of risk, where 0% indicated no tolerance of risk and 100% indicated the maximum tolerance of risk. The average of the responses on the four items on concern for others was calculated for each participant to create a score of risk tolerance involving concern for others.

Consequence Consideration for Others. Risky Decision Making Scenarios developed by the author and colleagues were used to assess participants’ consequence consideration when making risky decisions (Chou, unpublished manuscript). This measure consists of 7 hypothetical scenarios, including drinking, smoking, drug use, unprotected sex, risky driving, stealing, and jumping off the rocks into water. Each risky scenario was described in detail, and was designed to capture as realistically as possible the kinds of risky situations and contexts college students might typically find themselves in. Following each hypothetical scenario, participants answered on a 4-point scale how much they would think about the various consequences before they decided what to do (0 = *Not at all* to 3 = *A lot*). The consequence items include consequence for self (e.g., getting physically sick, and damaging your academic standing) and consequence for others (e.g., causing emotional/financial stress to others, and what family would think if

they found out). The current study focused on consequence for others (Cronbach's alpha = .831 for U.S.; .844 for Taiwan), and used the responses from the scenarios of drinking, smoking, drug use, and risky driving of interests.

Risk-Taking Behavior. The Risk Involvement and Perception Scale-Revised (Parsons, Siegel, & Cousins, 1997) was used to assess participants' self-reported risk-taking behaviors. The scale includes three subscales: involvement, perceived risks, and perceived benefits. The present study only used the involvement subscale. Participants were asked to choose a number that corresponded to their involvement in each of the 18 behaviors during the past 3 months. The 18 behaviors constitute a representative set of risk-taking behaviors, such as riding with a drunk driver, using marijuana, and having sex without a condom. Participants rated on a 9-point scale, from 1 = *never* to 9 = *daily*. For the interest of the current study, only items for risky driving, binge drinking, marijuana use, smoking, and unprotected sex were used. Cronbach's alpha coefficients of internal consistency for these selected items were .605 for U.S. and .752 for Taiwan.

Demographic Characteristics. Participants were given a questionnaire including several demographic questions. In addition to their gender, age, ethnicity, school year, and living arrangement (e.g., live on campus, live at home, live off campus), they were also asked to provide information about their parents, such as ethnicity, education level, and marital status.

Analytical Strategies

Study 1. Study 1 aimed to explore the association and levels between parental psychological control and behavioral control among emerging adults in the U.S. and

Taiwan. All analyses were completed using *Mplus 6.1* (Muthén & Muthén, 1998-2010) and *SPSS 17.0* (SPSS Inc., 2008). Data analysis was organized into two sections. First, a set of preliminary analyses was conducted prior to testing the hypotheses: (1) zero-order correlations among the variables were computed separately by countries, and (2) multi-group confirmatory factor analysis (CFA) was conducted to examine measurement invariance of parental psychological control across the two countries. A series of model testing was performed on mothers and fathers separately. Parental behavioral control has only one indicator in the current study, so there was no need to do CFA.

Second, the primary analyses focused on the cultural differences in the association and levels of psychological control and behavioral control. Multi-group structural equation modeling (SEM) was used to examine cultural differences in the association between psychological control and behavioral control. One-way multivariate analysis of variance (MANOVA) was then performed to explore the cultural differences in the perceived levels of psychological control and behavioral control. Mothers and fathers were tested separately.

Study 2. For the preliminary analyses, descriptive statistics of the study variables were presented by countries. Multi-group CFA was also conducted for measurement invariance of risk tolerance for others, consequence consideration for others, and risk-taking behavior across the samples in U.S. and Taiwan. Next, a one-way MANOVA was performed to test whether there were cultural differences on the study variables. Finally, multi-group SEM was used to test the theoretical model (Figure 1) and compare whether and how the model differed by countries.

Missing data. For parental control, some participants had only one parent (see Table 1 for descriptive statistics) so they only reported the perceived parental control from either mother or father. In terms of the other study variables (e.g., risk tolerance for others, consequence consideration for others, risk-taking behavior), missing values ranged from 0 – 0.6% and were missing completely at random (Little’s MCAR test: $\chi^2(48) = 41.021, p = .752$).

Covariates. Several covariates were considered. First, living arrangement (e.g., live on campus, live at home, live off campus) was viewed as a possible covariate because the perceived level of parental control as well as engagement in risk-taking behavior might be associated with whether or not the participants lived with their parents. To test this possibility, a MANOVA was performed and no significant differences were found between individuals who lived with parents versus those who lived away from parents for the study variables among either the U.S. or Taiwanese participants, with the following exceptions: Taiwanese students living off campus (alone or with friends) perceived more maternal constraining verbal expression than those living with parents ($F(2, 138) = 3.334, p = .039$); Taiwanese students living off campus engaged in risk-taking behaviors more frequently than those living on campus or with parents ($F(2, 138) = 5.944, p = .003$). Living arrangement was not included as a covariate in the following analyses because it did not have consistent effect on most of the study variables.

Gender of participant was also regarded as a possible covariate. The bivariate correlations (see Tables 2 and 3) showed that the only significant correlations between gender and the study variables were found in paternal guilt induction in both countries

(i.e., females perceived more paternal guilt induction than males in the U.S., while males perceived it more than females in Taiwan), and paternal personal attack and risk-taking behavior in Taiwan (i.e., males perceived more paternal personal attack and engaged in more risk-taking behavior than females in Taiwan). Given that gender was not correlated with the majority of the variables in the study, it was excluded as a covariate from the model.

Study 1 Results

Preliminary Analysis

Bivariate Correlations. Bivariate correlations of the study variables are displayed in Tables 2 and 3. Results showed that in the U.S. maternal Constraining Verbal Expression was negatively correlated with maternal behavioral control, $r = -.242$, $p = .002$. Three domains of maternal psychological control (i.e., Invalidating Feeling, Guilt Induction, Love Withdrawal,) were marginally correlated with maternal behavioral control, $r = -.143$, $-.148$, and $-.150$, respectively, $p < .10$. The negative association with behavioral control was also found in paternal Love Withdrawal marginally, $r = -.155$, $p = .055$.

In Taiwan, maternal psychological control (i.e., Invalidating Feeling, Love Withdrawal, Disrespect, Shame) was positively correlated with maternal behavioral control, $r = .332$, $.254$, $.209$, and $.218$, respectively, $p < .01$. Paternal psychological control (i.e., Personal Attack, Shame) was also positively correlated with paternal behavioral control, $r = .259$ and $.201$, respectively, $p < .05$.

Measurement Invariance. Measurement invariance of parental psychological control across the U.S. and Taiwan was examined by multi-group CFA. The following sequence of model testing was performed. First, to examine configural invariance (i.e., the factor is associated with identical indicators across the two countries), CFA was conducted with the unconstrained factor loadings, intercepts, and residual variances. Second, to examine measurement invariance, a fully constrained model (i.e., all the factor loadings, intercepts, and residual variances were fixed to be equal across the U.S. and Taiwan) was compared to an unconstrained model in which all the parameters were allowed to vary across samples. If the fit of the fully constrained model showed a good fit, it indicated full measurement invariance. If the hypothesis of full measurement invariance was rejected, further analyses were conducted to examine whether partial measurement invariance existed. Next, the scalar model and the metric model were tested. For the scalar model, the factor loadings and intercepts were forced to be the same across groups, whereas for the metric model only the factor loadings were constrained to be equal. A good fit of these models indicated partial measurement invariance, allowing for cross-group comparisons at the mean levels (Byrne, Shavelson, & Muthen, 1989). Similar procedures have been used in prior cross-cultural studies (e.g., Gregorich, 2006; Van de Schoot, Lugtig & Hox, 2012). The general guideline for evaluating model fit indices was that a model that has the comparative fit index (CFI) and the Tucker–Lewis index (TLI) $> .95$ indicates a good fit and value $< .95$ but $> .90$ indicates an adequate fit; the root mean square error of approximation (RMSEA) $< .05$ indicates a good fit, while value $> .05$ but $< .08$ indicates an adequate fit (McDonald & Ho, 2002).

Maternal Psychological Control. Table 4 presents model fit indices of models tested in CFAs. First, an unconstrained model (Model 1) was examined to ensure that psychological control contains the seven indicators in both samples. The model fits were as follows: $\chi^2(28) = 35.483, p = .156$; CFI = .991; TLI = .986; RMSEA = .041. The χ^2 , CFI, TLI, and RMSEA all suggested configural invariance of maternal psychological control across the two countries.

Second, a fully constrained model (Model 2) was tested. Model 2 did not have a good fit to the data, $\chi^2(49) = 96.839, p < .001$; CFI = .940; TLI = .949; RMSEA = .079, indicating that the hypothesis of full measurement invariance was not supported. Next, the scalar model (Model 3) and the metric model (Model 4) were examined. Model 3 did not fit the data well, $\chi^2(42) = 81.761, p < .001$; CFI = .950; TLI = .950; RMSEA = .078. Model 4 had a better fit to the data, $\chi^2(35) = 49.355, p = .055$; CFI = .982; TLI = .978; RMSEA = .051, indicating that partial measurement invariance of maternal psychological control existed across the two countries.

Paternal Psychological Control. The model fit examination for paternal psychological control followed the same procedure as for the maternal models (described above) (see Table 4). An unconstrained model (Model 1) was tested, $\chi^2(28) = 84.565, p < .001$; CFI = .943; TLI = .915; RMSEA = .115. Although the RMSEA did not show an adequate fit (RMSEA > .08), the CFI and TLI showed an acceptable fit (CFI and TLI > .90). In order to be comparable to the maternal psychological control model, the study accepted the unconstrained models of paternal psychological control in the two countries.

Next, a fully constrained model (Model 2) was compared to Model 1. The model fit indices for Model 2 were: $\chi^2(49) = 137.253, p < .001$; CFI = .912; TLI = .924; RMSEA = .109. In order to be consistent with the maternal model, the scalar model (Model 3) and the metric model (Model 4) were also examined to test partial measurement invariance. Model 3 showed an adequate fit to the data, $\chi^2(42) = 113.692, p < .001$; CFI = .928; TLI = .928; RMSEA = .106, while the model fit indices of Model 4 suggested a better fit than Model 3, $\chi^2(35) = 93.720, p < .001$; CFI = .941; TLI = .930; RMSEA = .105. The study accepted the metric model (Model 4), suggesting that paternal psychological control had partial measurement invariance across the U.S. and Taiwan.

Primary Analysis 1: Cultural Differences in the Association of Psychological Control and Behavioral Control

The study next tested the cultural differences in the associations between psychological control and behavioral control. Based on the results of the partial measurement invariance described above, all of the factor loadings were fixed to be equal across the two countries. Two models were fitted for mothers and fathers separately (see Table 5): the metric model with fixed covariance of psychological and behavioral control (Model 1) versus the metric model with free covariance of psychological and behavioral control (Model 2). If the model fit of Model 2 was significantly better than that of Model 1, it would indicate that the association between psychological and behavioral control differed by countries.

For the maternal model, Model 2 showed a good fit to the data, $\chi^2(47) = 77.779, p = .003$; CFI = .962; TLI = .955; RMSEA = .065, which was better than Model 1. The

same results were found in the paternal model that Model 2 fitted the data better, $\chi^2(47) = 111.468$, $p < .001$; CFI = .933; TLI = .920; RMSEA = .096, than Model 1. Thus, Model 2 was accepted for both maternal and paternal models, with the covariance of psychological and behavioral control being freely estimated in both countries.

The standardized estimated parameters for maternal and paternal models are presented in Figures 2 and 3 respectively. The standardized covariance estimates of maternal psychological and behavioral control were -0.122 in the U.S. ($p = .125$) and 0.303 in Taiwan ($p < .001$). For paternal model, the standardized covariance estimates of psychological and behavioral control were -0.112 in the U.S. ($p = .163$) and 0.224 in Taiwan ($p = .011$).

Primary Analysis 2: Cultural Differences in the Levels of Psychological Control and Behavioral Control

To analyze the effect of culture on the levels of control that mothers and fathers implement in their parenting, one-way MANOVA was conducted. Means and standard deviations of the dependent variables are reported in Table 6. The multivariate tests revealed an overall effect of culture on maternal control (Wilks' $\lambda = .882$, $F(8, 302) = 5.036$, $p < .001$) and paternal control (Wilks' $\lambda = .923$, $F(8, 290) = 3.006$, $p = .003$). The Taiwanese sample perceived a higher level of maternal psychological control on Personal Attack ($F(1, 309) = 7.163$, $p = .008$) than the U.S. sample, whereas the U.S. sample perceived a higher level of maternal Guilt Induction ($F(1, 309) = 11.783$, $p = .001$) and maternal behavioral control ($F(1, 309) = 4.081$, $p = .044$) than their Taiwanese counterparts. For paternal control, the Taiwanese sample perceived a higher level of

psychological control on Invalidating Feelings ($F(1, 297) = 5.136, p = .024$), and a lower level of Guilt Induction ($F(1, 297) = 4.896, p = .028$) and behavioral control ($F(1, 297) = 7.042, p = .008$) than the U.S. sample.

Study 1 Discussion

Study 1 aimed to explore the cultural differences in the association and levels between parental psychological control and behavioral control among Asian Americans in the U.S. and Taiwanese emerging adults. Several important findings emerged and partially supported the hypotheses.

First, the association between psychological control and behavioral control was not significant among Asian Americans for both parents, whereas it was positive in Taiwan. These findings support the conceptual distinction between behavioral and psychological control in the U.S. Previous research indicated that there was no correlation between psychological and behavioral control for both mothers and fathers in the U.S. (Bean et al., 2006; Galambos et al., 2003). This empirical distinction between these constructs reflects the different functions of psychological control and behavioral control (Barber et al., 1994). For U.S. parents, behavioral control is regarded as positive parenting that promotes children's better developmental outcomes (Fletcher et al., 1999; Kincaid et al., 2011). On the other hand, psychological control is considered negative because such parenting practice is regarded as an intrusion on children's psychological world and may inhibit their development of autonomy.

Interestingly, the results from the Taiwanese sample showed that unlike the findings from the U.S. data, behavioral control had a positive association with

psychological control. This finding is in concordance with the findings in China (Wang et al., 2007). Previous work suggests that, as in the U.S., behavioral control is regarded as a necessary ingredient for the well-being of children in Taiwan. However, psychological control, which is viewed negatively in the U.S., may be considered as an equally positive parenting that reflects an expression of love and concern to their children and is linked to warmth and cohesion in family (Nomura, Noguchi, Saito, & Tezuka, 1995). Consequently, it appears that Taiwanese parents who are controlling behaviorally have a tendency to exert psychological control as well.

The second aim of Study 1 was to examine the cultural differences in the levels of psychological and behavioral control in mothers and fathers. While all the participants in this study were Asian dependents, it was predicted that Taiwanese parents would be more likely to use both psychological and behavioral control than parents in the U.S., given that Asian American parents may have been acculturated toward the American culture. The results, however, only partially supported this hypothesis.

Patterns of results were complicated by the different domains of psychological control. The results showed that Taiwanese college students perceived a higher level of personal attack from mother and a higher level of invalidating feeling from father than did the Asian American college students. This finding may be explained by the cultural values transmitted through emotional socialization. Research has suggested that emotion suppression is desired in cultures that emphasize the maintenance of social order (Matsumoto, Yoo, & Nakagawa, 2008). For example, Chinese individuals tend to restrain their emotions to maintain interpersonal harmony (Bond & Wang, 1982). As a result,

parents in Taiwan may be more likely to actively encourage children to inhibit their expression of feelings, and attempt to change how children feel or think about things (i.e., invalidating feeling) than parents in the U.S. In addition, family members are connected and interdependent in Chinese culture, so Taiwanese parents may blame children for other family member's problems (i.e., personal attack).

The results indicated that the Asian American sample reported a higher level of perceived guilt induction from both mother and father than their Taiwanese counterparts, which is in line with the findings that individuals in Western cultures are more guilt-prone compared to those in Eastern cultures (Benedict, 1946; Szeto-Wong, 1997). Parents in the U.S. encourage children to be independent and responsible for their own behavior. Thus, they tend to use guilt induction in their parenting to help children internalize and generate a moral guidance that comes from inside of the individual (Bedford & Hwang, 2003). In contrast, shaming is used more often in Chinese culture, where maintaining harmony in interpersonal relationships is valued (Fung, 1999). Although previous research has shown that Taiwanese parents tend to use shaming in their parenting, the current study did not find any cultural difference in shame.

The importance of the observed cultural difference notwithstanding, it is noteworthy not to oversimplify and conclude that psychological control is perceived as an acceptable way to maintain family harmony in Taiwan. Studies have shown that some Chinese children did not perceive strict parenting as a reflection of care and love, and that some Chinese parents did value individual autonomy (Lau & Yeung, 1996). In fact, Taiwan has become increasingly Westernized in recent decades (Fung, 1999). Individuals

in major cities of Taiwan live a Westernized lifestyle and emphasize individuality and personal values. Therefore, the findings in the present study suggest that different domains of psychological control need to be examined individually; Taiwanese parents do not always use more psychological control than parents in the U.S.

Lastly, the present study found that the U.S. participants reported a higher level of perceived behavioral control from both mother and father than the Taiwanese participants. This finding differs from prior studies in which Chinese parents exerted more behavioral control over children and adolescents than European American parents did (Chiu, 1987; Chao & Aque, 2009). One potential explanation for the inconsistency is the age of participant; this study focused on emerging adults who were transitioning to college while previous studies focused on younger children. Chinese parents view their children's education as a priority (Chao & Tseng, 2002) and consider themselves being responsible for their children's academic success (Wu, 1996), a goal which is mainly assessed by successful college entrance. When children get into college, parents' expectation of college entrance is met so they may no longer feel the need to be as controlling behaviorally as before. On the other hand, after enduring a stressful high school experience, children may have a strong desire for the newfound freedom of college life and resist their parents' attempts at behavioral control. Consequently, there may be a great decline in the level of perceived behavioral control from adolescents to college students in Taiwan, resulting in a lower level of behavioral control than that of the U.S. college students. However, the present study did not have longitudinal data to examine

the transition and test these speculations. More data are needed in future research to explore the cultural difference in behavioral control from adolescents to emerging adults.

The aforementioned differences found between the two countries are striking, given that this study utilized a conservative approach by using Asian American participants as a comparison group against Taiwanese participants. Although parents of Taiwanese and Asian Americans may both hold values and beliefs rooted in Asian cultures, being exposed to different environments modifies their behaviors. The present study did not have information about Asian Americans and their parents' acculturation levels, yet the results indicated that parenting among Asian Americans was somewhat shaped by American cultural ideologies, thus showing a difference from the Taiwanese sample in the levels and the association between psychological control and behavioral control.

Study 2 Results

Preliminary Analysis

Bivariate Correlations. Bivariate correlations of the study variables are displayed in Tables 2 and 3. Results showed that in the U.S. maternal psychological control (i.e., Invalidating Feeling, Personal Attack, Love Withdrawal, Disrespect) was positively correlated with risk tolerance involving concern for others ($r = .246, .220, .234,$ and $.295$, respectively), whereas maternal behavioral control was not associated with risk tolerance for others. Maternal psychological control (i.e., Invalidating Feeling, Guilt Induction, Disrespect) was negatively correlated with consequence consideration for others ($r = -.195, -.182,$ and $-.202$, respectively), and maternal behavioral control was

positively correlated with consequence consideration for others, $r = .303$. In terms of risk-taking behavior, maternal psychological control (i.e., Guilt Induction, Love Withdrawal) had a positive association with risk-taking behavior ($r = .194$ and $.175$), while maternal behavioral control had a negative correlation with it ($r = -.335$).

Similar results were found in the U.S. paternal model, such that paternal psychological control was positively correlated with risk tolerance for others ($r = .221 - .419$) and risk-taking behavior ($r = .159 - .214$), and negatively correlated with consequence consideration for others ($r = -.199 - -.275$). Paternal behavioral control was positively correlated with consequence consideration for others ($r = .329$) and negatively correlated with risk-taking behavior ($r = -.252$). The association with risk tolerance for others was not significant.

In Taiwan, maternal psychological control (i.e., Constraining Verbal Expression) was positively correlated with risk tolerance for others ($r = .168$) and negatively correlated with consequence consideration for others ($r = -.191, -.176, -.174, -.282$ for Constraining Verbal Expression, Invalidating Feeling, Personal Attack, Love Withdrawal). Maternal psychological control (i.e., Constraining Verbal Expression, Love Withdrawal, Disrespect, Shame) also had a positive association with risk-taking behavior ($r = .185, .222, .217, .249$, respectively). On the other hand, maternal behavioral control had no significant association with risk tolerance for others, consequence consideration for others, or risk-taking behavior.

Consistent with maternal control, paternal psychological control in Taiwan had positive correlations with risk tolerance for others ($r = .162 - .168$) and risk-taking

behavior ($r = .160 - .259$), and negative correlations with consequence consideration for others ($r = -.162 - -.170$). Paternal behavioral control was not significantly correlated with risk tolerance for others, consequence consideration for others, or risk-taking behavior.

Measurement Invariance. Measurement invariance of risk tolerance for others, consequence consideration for others, and risk-taking behavior across U.S. and Taiwan was examined by multi-group CFA. The model fit examination followed the same procedure as described in Study 1.

Risk Tolerance Involving Concern for Others. Table 7 presents model fit indices of models tested in CFAs. First, an unconstrained model (Model 1) was examined. The model fit indices suggested configural invariance of risk tolerance for others across the two countries, $\chi^2(4) = 2.995, p = .559$; CFI = 1.000; TLI = 1.004; RMSEA = 0.000. Second, a fully constrained model (Model 2) was compared to Model 1. Model 2 did not have a good fit to the data, $\chi^2(16) = 180.823, p < .001$; CFI = .754; TLI = .816; RMSEA = .254, rejecting the hypothesis of full measurement invariance.

Next, the scalar model (Model 3) and the metric model (Model 4) were tested. Model 3 did not fit the data well, $\chi^2(12) = 137.132, p < .001$; CFI = .813; TLI = .813; RMSEA = .255. Model 4 did not show a good fit to the data, $\chi^2(8) = 50.015, p < .001$; CFI = .937; TLI = .906; RMSEA = .181. Following the model modification indices of Model 4, two partial metric models were tested (Model 5: all the factor loadings were fixed to be the same except one indicator, RT007, i.e., causing financial stress to others; Model 6: all the factor loadings were fixed to be the same except RT006, i.e., causing

emotional stress to others, and RT007). Model 6 showed a better fit to the data, $\chi^2(6) = 27.040$, $p < .001$; CFI = .969; TLI = .937; RMSEA = .148, suggesting partial measurement invariance of risk tolerance for others across the two countries.

Consequence Consideration for Others. The model fit indices of testing consequence consideration for others were presented in Table 8. First, an unconstrained model (Model 1) was tested, $\chi^2(4) = 14.526$, $p = .006$; CFI = .979; TLI = .936; RMSEA = .129. Although the RMSEA did not show an adequate fit, the CFI and TLI showed an acceptable fit. Thus, the unconstrained model of consequence consideration for others was accepted. Next, a fully constrained model (Model 2) was tested. The model fit indices for Model 2 were: $\chi^2(16) = 63.900$, $p < .001$; CFI = .903; TLI = .928; RMSEA = .138. The scalar model (Model 3) and the metric model (Model 4) were also examined to test partial measurement invariance. Model 3 showed an adequate fit to the data, $\chi^2(12) = 47.772$, $p < .001$; CFI = .928; TLI = .928; RMSEA = .138, whereas Model 4 indicated a better fit, $\chi^2(8) = 25.162$, $p = .002$; CFI = .965; TLI = .948; RMSEA = .117. The current study accepted Model 4, suggesting that partial measurement invariance existed in consequence consideration for others across the U.S. and Taiwan.

Risk-Taking Behavior. Table 9 presents model fit indices of risk-taking behavior models. First, an unconstrained model (Model 1) was examined, $\chi^2(10) = 11.400$, $p = .327$; CFI = .994; TLI = .988; RMSEA = .030, suggesting configural invariance. Next, a fully constrained model (Model 2) did not show an adequate fit to the data, $\chi^2(25) = 326.814$, $p < .001$; CFI = .000; TLI = -.073; RMSEA = .275. The hypothesis of full measurement invariance was not supported. Then, the scalar model (Model 3) and the

metric model (Model 4) were tested. Model 3 did not show a good fit to the data, $\chi^2(20) = 111.324$, $p < .001$; CFI = .594; TLI = .594; RMSEA = .169. Model 4 did not fit to the data well, $\chi^2(15) = 77.708$, $p < .001$; CFI = .721; TLI = .628; RMSEA = .162. Following the model modification indices of Model 4, two modified metric models were tested (Model 5: all the factor loadings were fixed to be the same except Marijuana Use; Model 6: all the factor loadings were fixed to be the same except Marijuana Use and Risky Driving). Model 6 showed a good fit to the data, $\chi^2(13) = 18.284$, $p = .147$; CFI = .977; TLI = .964; RMSEA = .050, suggesting partial measurement invariance of risk-taking behavior across the two countries.

Primary Analysis 1: Cultural Differences in the Levels of Study Variables

To compare the levels of the study variables across countries, a series of MANOVA was conducted. Results are reported in Table 10.

Risk Tolerance Involving Concern for Others. The multivariate test indicated an overall effect of culture on risk tolerance for others, Wilks' $\lambda = .768$, $F(4, 315) = 23.728$, $p < .001$. The Taiwanese participants were willing to tolerate more risks than their U.S. counterparts on hurting other people ($F(1, 318) = 55.047$, $p < .001$), causing emotion stress to others ($F(1, 318) = 57.387$, $p < .001$), causing financial stress to others ($F(1, 318) = 91.411$, $p < .001$), and disappointing family ($F(1, 318) = 47.851$, $p < .001$) when making a decision.

Consequence Consideration for Others. There was an overall effect of culture on consequence consideration for others, Wilks' $\lambda = .942$, $F(4, 310) = 4.813$, $p = .001$. Taiwanese participants considered consequences for others more than the U.S.

participants when they were deciding on an action in the scenarios of binge drinking ($F(1, 313) = 10.698, p = .001$) and smoking ($F(1, 313) = 7.729, p = .006$).

Risk-Taking Behavior. The results showed an overall effect of culture on risk-taking behavior, Wilks' $\lambda = .920, F(5, 313) = 5.416, p < .001$. The U.S. students engaged in more risk-taking behavior, such as binge drinking ($F(1, 317) = 15.225, p < .001$) and marijuana use ($F(1, 317) = 17.783, p < .001$), than the Taiwanese students.

Primary Analysis 2: Cultural Differences in the Hypothesized Model

Next, the present study used multi-group SEM to test the conceptual model (Figure 1) across the two countries. The measurement models for each construct were based on the results from the aforementioned preliminary analyses. To compare the conceptual models across the two countries, a series of models was fitted. First, an unconstrained model (Model 1: all the other parameters were freely estimated) was tested. Second, a fully constrained model (Model 2: all the parameters were fixed to be equal across the two countries) was examined. Next, the parameters of interests were released one at a time from the fully constrained model to explore the cultural differences in the associations among parental control, risk tolerance involving concern for others, consequence consideration for others, and risk-taking behavior. Maternal and paternal models were tested separately. The model fit indices are presented in Table 11 for maternal model and Table 12 for paternal model.

Maternal Model. For the maternal model, the unconstrained model (Model 1) was tested, $\chi^2(381) = 617.962, p < .001$; CFI = .901; TLI = .890; RMSEA = .064. Both CFI and RMSEA suggested an adequate fit to the data. Model 2 did not show a good fit

to the data, $\chi^2(387) = 631.048, p < .001$; CFI = .898; TLI = .889; RMSEA = .064. From Model 3 to Model 8, each path was released accordingly in each model. Model fit indices in these models indicated that the models did not fit the data well, CFI = .897 – .900, TLI = .888 – .891, RMSEA = .064 – .065. Model 9 showed a slightly better fit to the data, $\chi^2(385) = 618.539, p < .001$; CFI = .902; TLI = .893; RMSEA = .063. Thus, Model 9 was accepted because it was more parsimonious than Model 1 and showed a better fit than the other models. In Model 9, the paths from risk tolerance for others to risk-taking behavior, from consequence consideration for others to risk-taking behavior, from psychological control to risk tolerance for others, and from psychological control to consequence consideration for others were forced to be equal across the two countries, but the paths from psychological control to risk-taking behavior, and from behavioral control to risk-taking behavior were freed to vary by the two countries.

The standardized estimated path coefficients for maternal model in the U.S. and Taiwan are presented in Figure 4. Maternal psychological control was positively associated with risk-taking behavior in Taiwan ($\beta = .272, p = .007$) but not in the U.S. ($\beta = -.053, p = .576$), whereas maternal behavioral control was negatively associated with risk-taking behavior in the U.S. ($\beta = -.346, p < .001$) but not in Taiwan ($\beta = -.041, p = .664$). Risk tolerance for others was not associated with risk-taking behavior for both countries ($\beta = .101, p = .165$ for the U.S. and $\beta = .102, p = .166$ for Taiwan), while consequence consideration for others was negatively associated with risk-taking behavior ($\beta = -.240, p = .002$ for the U.S. and $\beta = -.242, p = .002$ for Taiwan). Maternal psychological control was positively associated with risk tolerance for others ($\beta = .185, p$

= .003 for the U.S and Taiwan) and negatively associated with consequence consideration for others ($\beta = -.223, p < .001$ for the U.S. and Taiwan).

Mediation. To investigate whether risk tolerance for others and consequence consideration for others mediated the relation between maternal psychological control and risk-taking behavior, the indirect effects in the path model were tested. For the U.S. sample, results indicated that consequence consideration for others significantly predicted risk-taking behavior ($\beta = -.240, p = .002$), and maternal psychological control was not significantly related to risk-taking behavior ($\beta = -.053, p = .576$). The indirect effect from maternal psychological control to risk-taking behavior via consequence consideration for others tested using bootstrapped standard errors was significant ($b = .060, SE = .027, p = .025$), while the direct effect from maternal psychological control to risk-taking behavior was not significant ($b = -.059, SE = .106, p = .576$). These findings support the hypothesized mediational model, such that consequence consideration for others mediated the relation between maternal psychological control and risk-taking behavior. In terms of risk tolerance for others, results showed that risk tolerance for others did not significantly predict risk-taking behavior ($\beta = .101, p = .165$). The indirect effect from maternal psychological control to risk-taking behavior via risk tolerance for others was not significant ($b = .021, SE = .017, p = .210$), rejecting the mediational hypothesis.

For the Taiwanese sample, consequence consideration for others significantly predicted risk-taking behavior ($\beta = -.242, p = .002$), and maternal psychological control was significantly related to risk-taking behavior ($\beta = .272, p = .007$). The indirect effect from maternal psychological control to risk-taking behavior via consequence

consideration for others was significant ($b = .060$, $SE = .027$, $p = .025$), while the direct effect from maternal psychological control to risk-taking behavior still remained significant ($b = .304$, $SE = .121$, $p = .012$). That is, consequence consideration for others partially mediated the relation between maternal psychological control and risk-taking behavior in Taiwan. In regard to risk tolerance for others, results showed that risk tolerance for others did not significantly predicted risk-taking behavior ($\beta = .102$, $p = .166$). The indirect effect from maternal psychological control to risk-taking behavior via risk tolerance for others was not significant ($b = .021$, $SE = .017$, $p = .210$), rejecting the mediational hypothesis.

Paternal Model. Following the same procedure as in the maternal model, the unconstrained model (Model 1) was first tested (see Table 12), $\chi^2(381) = 643.495$, $p < .001$; CFI = .894; TLI = .883; RMSEA = .069. Only RMSEA suggested an adequate fit to the data. Model 2 did not show a better fit to the data, $\chi^2(387) = 650.526$, $p < .001$; CFI = .893; TLI = .884; RMSEA = .068. From Model 3 to Model 8, each parameter that was hypothesized to vary by the countries was released one by one. Model fit indices in these models were similar to Model 1, CFI = .893 – .894, TLI = .883 – .885, RMSEA = .068. As in the maternal model, Model 9 was also tested with paternal data, $\chi^2(385) = 647.017$, $p < .001$; CFI = .894; TLI = .884; RMSEA = .068. Although Model 9 did not show much improvement in the model fit, the present study decided to keep Model 9 to be consistent with the maternal model.

Figure 5 presents the standardized estimated parameters for paternal model in the U.S. and Taiwan. Paternal psychological control was marginally associated with risk-

taking behavior in Taiwan ($\beta = .171, p = .091$) but not in the U.S. ($\beta = .114, p = .267$). Paternal behavioral control was negatively associated with risk-taking behavior in the U.S. ($\beta = -.201, p = .038$) but not in Taiwan ($\beta = .048, p = .603$). Risk tolerance for others was not associated with risk-taking behavior in both countries ($\beta = .051, p = .514$ for the U.S. and $\beta = .052, p = .514$ for Taiwan), and consequence consideration for others was negatively associated with risk-taking behavior ($\beta = -.287, p = .001$ for the U.S. and $\beta = -.289, p = .001$ for Taiwan). Paternal psychological control was positively associated with risk tolerance for others ($\beta = .299, p < .001$ for the U.S and Taiwan) and negatively associated with consequence consideration for others ($\beta = -.300, p < .001$ for the U.S. and Taiwan).

Mediation. For the U.S. data, results showed that consequence consideration for others was significantly related to risk-taking behavior ($\beta = -.287, p = .001$), and paternal psychological control was not related to risk-taking behavior ($\beta = .114, p = .267$). The indirect effect from paternal psychological control to risk-taking behavior via consequence consideration for others was significant ($b = .095, SE = .036, p = .008$), whereas the direct effect from paternal psychological control to risk-taking behavior was not significant ($b = .126, SE = .116, p = .276$). These findings suggested that consequence consideration for others mediated the relation between paternal psychological control and risk-taking behavior. In terms of risk tolerance, results indicated that risk tolerance for others was not significantly related to risk-taking behavior ($\beta = .051, p = .514$). The indirect effect from paternal psychological control to risk-taking behavior via risk

tolerance for others was not significant ($b = .017$, $SE = .026$, $p = .517$), rejecting the hypothesis of risk tolerance for others as a mediator.

For the Taiwanese data, consequence consideration for others was related to risk-taking behavior ($\beta = -.289$, $p = .001$), and paternal psychological control was not significantly associated with risk-taking behavior ($\beta = .171$, $p = .091$). The indirect effect from paternal psychological control to risk-taking behavior via consequence consideration for others was significant ($b = .095$, $SE = .036$, $p = .008$), while the direct effect from paternal psychological control to risk-taking behavior was not significant ($b = .188$, $SE = .115$, $p = .102$). In other words, consequence consideration for others mediated the relation between paternal psychological control and risk-taking behavior. For risk tolerance for others, results showed that it did not significantly predicted risk-taking behavior ($\beta = .052$, $p = .514$). The indirect effect from paternal psychological control to risk-taking behavior via risk tolerance for others was not significant ($b = .017$, $SE = .026$, $p = .517$), rejecting the hypothesis of mediation.

Study 2 Discussion

The purpose of Study 2 was to examine cultural differences between Asian American and Taiwanese emerging adults in the levels and the associations among psychological control, behavioral control, risk tolerance for others, consequence consideration for others, and risk-taking behavior. Moreover, the mediation roles of risk tolerance and consequence consideration involving concern for others in the model were examined across the two countries. Several interesting findings emerged, which are discussed below.

Parental Control and Risk-Taking Behavior

The results showed that the effect of behavioral control on risk-taking behavior was moderated by culture. Both maternal and paternal behavioral control were negatively associated with risk-taking behavior among Asian American students, whereas the associations were not significant in Taiwanese students. The findings of the Asian American sample are in line with the prior findings in the U.S., such that parents who use more behavioral control have children engaging less frequently in risk-taking behaviors, such as smoking (Guo et al., 2011) and drinking (Arria et al., 2008). Studies have also suggested that parents monitoring and regulating their children's activities and behavior are linked to increased positive outcomes among youth not only in the U.S. (Fletcher et al., 1999; Smetana, 2008) but also in Asian countries (Barber et al., 1994; Li et al., 2003; Tragesser et al., 2007).

Maternal and paternal behavioral control were not associated with risk-taking behavior in Taiwan, implying that parental usage of behavioral control may no longer have an impact on their college-aged child's behavior as seen in childhood and adolescence (e.g., Shek, 2006; Li, Li, & Newman, 2013). This null finding may be explained by the cultural expectation of how college life should be in Taiwan. Children's education is the priority for parents in Taiwan (Chao & Tseng, 2002), and the primary goal is to enter college. Once children are in college, strict behavioral control may not be as important and influential as before. In fact, findings from Study 1 showed that the level of perceived behavioral control among Taiwanese college students was significantly lower than among Asian American college students.

In terms of psychological control, in contrast, maternal and paternal psychological control were positively associated with risk-taking behavior in Taiwan, while the associations were not significant among Asian Americans. Parental psychological control has been mostly linked to internalizing problems among children and adolescents (Barber, 1996; Kincaid et al., 2011; Pettit et al., 2001), but the relation to risk-taking behavior has remained unclear due to the mixed results in the literature (Albrecht et al., 2007; Rogers et al., 2003; Kuppens et al., 2009). The results in the current study with Asian Americans are consistent with Bean et al.'s (2006) findings, such that there was no association between parental psychological control and youth externalizing problems in the U.S.

The results from the Taiwanese students, again, showed a difference from the results of the Asian American students. The positive association between psychological control and risk-taking behavior suggested that psychological control had an adverse impact on risk-taking behavior among emerging adults in Taiwan. This finding is inconsistent with either the hypothesis or previous studies that have shown that some types of psychological control may be viewed as more acceptable and beneficial in Asian countries (Ho et al., 2008; Rudy & Halgunseth, 2005). For instance, the goal of using love withdrawal and shaming in some Asian countries is to elicit perspective-taking in the child, which can promote group harmony and lead to better behavioral outcomes (Fung, 2013). However, the current results from both the SEM and bivariate correlations indicated that none of the psychological control domains exerted beneficial impacts on emerging adults' risk-taking behavior in Taiwan.

These results can be explained by the characteristics of emerging adulthood in Asia. In many Asian countries, the transition to college is the time for the emergence of independence and freedom. Until the college entrance, students are closely controlled behaviorally and psychologically by parents (Rudy & Halgunseth, 2005), but this tight control loosens once the primary goal of education (i.e., college entrance) is met. Parents knowing what they do (i.e., behavioral control) no longer influences college students' risk-taking behavior (as described above); however, parents trying to change how they think or feel (i.e., psychological control) may dampen their sense of autonomy as emerging adults. Parental psychological control may cause young adults to feel worthless and anxious (Barber, 2002). Thus, when Taiwanese college students perceive a higher level of psychological control from parents, they may become more likely to take risks in order to have a feeling of being able to make risky decisions on their own.

The cross-cultural differences between parental control and risk-taking behavior found in the present study suggested that the usage and the impact of parental control were shaped by not only cultural beliefs and socialization goals in context, but also the developmental stage of the child. In addition, although behavioral control and psychological control were positively correlated in Taiwan, the two forms of control were associated with risk-taking behavior differently.

Decision Making and Risk-Taking Behavior

The current study examined risk tolerance and consequence consideration in the decision making process, with a focus on concern for others. The findings from this study showed that Taiwanese participants were more likely than their Asian American

counterparts to think about the consequences for others before they decided on an action in the substance use scenarios (e.g., binge drinking and smoking). That is, when Taiwanese students were deciding whether or not to engage in substance use, they were more likely to consider whether they would cause emotional/financial stress to others and what family would think if they found out, compared to their Asian American counterparts. This finding reflects the cultural values of in-group hierarchy and harmony that are highly emphasized in Taiwan, whereby individuals consider the possible outcomes to others when assessing the costs and benefits of their own risky actions (Park et al., 2010).

Interestingly, Taiwanese college students were more willing than Asian American students to tolerate the risks of hurting other people, causing emotional stress to others, causing financial stress to others, and disappointing family if they really wanted to do something. However, it is noteworthy that although Taiwanese had higher risk tolerance involving others, they in fact engaged in risk-taking behavior (e.g., binge drinking, marijuana use) less frequently than Asian Americans. It is possible that the cultural emphasis on interdependence among in-group members itself made Taiwanese to feel acceptable to cause certain levels of stress to others without jeopardizing interpersonal relationships. In other words, it is possible that individuals in collectivistic culture can tolerate risks of causing stress to others, because they can also tolerate risks of others causing stress to them. In fact, the findings indicated that Taiwanese participants were more willing to tolerate risks for others, but they also considered consequence for others more in their decision making processes.

The present study also found that the effect of consequence consideration for others in preventing risk-taking behavior was culturally universal, at least across these two countries. This is in line with the prior finding that individuals who consider others more in their decision making processes are less likely to make risky choices (Crone et al., 2008). On the other hand, risk tolerance for others was not significantly related to risk-taking behavior for both Asian Americans and Taiwanese, indicating that one's willingness to tolerate risks does not necessarily contribute to more risk-taking behaviors. The consistent findings in the Asian American and Taiwanese samples suggested that there was no cultural difference in the relation between concern for others in the decision making process and risk-taking behavior.

Mediating Role of Decision Making Involving Concern for Others

The results pointed out the mediating role of consequence consideration for others in the relation between psychological control and risk-taking behavior. The indirect effects from psychological control to risk-taking behavior via consequence consideration for others were found in maternal control and paternal control among both the Asian American and Taiwanese college students. This finding is consistent with prior work that parenting practices influence how individuals make risky decisions through fostering the development of decision-making skills (Pérez & Cumsille, 2012). The current findings extended existing research by pointing out the importance of consequence consideration for others in risk assessment, which in turn influenced emerging adults' risk-taking behavior in both countries.

Although consequence consideration was found as a mediator of the psychological control-risk taking association, the direction of the effect of psychological control on consequence consideration for others was negative, which was in the opposite direction of the prediction for Taiwanese. Given that some domains of psychological control emphasize perspective-taking (Fung, 2013), the current study hypothesized that Taiwanese participants who perceived higher levels of psychological control would consider consequences for others more. However, the results showed negative associations between psychological control and consequence consideration for others, and this pattern of findings were consistent across maternal and paternal models as well as across countries. It is possible that the perception of parental psychological control makes students feel a threat to their senses of self and independence, which are important in the transition to emerging adulthood (Arnett & Tanner, 2006). The growing conflict between parent and child could result in rebelliousness and antisocial behavior in young adults (Aquilino, 2006); therefore, emerging adults want to be capable of making their own decisions, and think about consequences for others less in their cognitive processes, which subsequently influences their risk-taking behavior.

Additionally, the current study found that a higher level of perceived psychological control was associated with one's willingness to tolerate more risks. This finding was shown in both maternal control and paternal control across the two samples. However, it is noteworthy that risk tolerance for others did not mediate the relation between psychological control and risk-taking behavior in either country. That is,

perception of parental psychological control might facilitate the process of tolerating risks, but it did not further influence one's risk-taking behavior through the process.

In sum, Study 2 suggests the importance of understanding cultural context when examining parental control and its influences. Variations in the relation between parental control and risk-taking behavior across the two countries imply the socialization of different cultural values and the different characteristics in the transition to emerging adulthood in different cultural contexts. However, there were also some similarities found in predicting decision making process involving concern for others and risk-taking behavior. Study 2 contributes to the parenting and risk-taking research that some paths to risk-taking behavior among emerging adults are universal while some are culturally specific. The consideration of cultural context is necessary in the future research.

General Discussion

Emerging adulthood is viewed as an ambiguous developmental period (Harris-McKoy & Cui, 2013). Individuals in this stage are exploring and refining their identities (Borsari et al., 2007); they gain autonomy as becoming adults, but they may not have the same responsibility as adults do. Especially for college students in their first two years, they may have desires to experiment with behaviors that were prohibited in high school by their parents, such as drinking alcohol and cigarette use. Therefore, this is a time of heightened risk for risk-taking behavior (Arnett, 1992). Using a cross-cultural approach, the two studies in the current research sought to contribute to the understanding of why emerging adults engage in risk-taking behavior, with special attention to the roles of parental control and decision making processes.

Study 1 showed that there were cultural differences between the U.S. and Taiwanese college students in terms of the levels and association of perceived parental psychological control and behavioral control. Previous studies suggest that Asian parents tend to be more controlling both behaviorally and psychologically in order to guide children to follow social norms and to promote sensitivity to others' perspectives (Rudy & Halgunseth, 2005; Fung, 2013). However, the present research showed more nuanced findings. In particular, the current findings suggest that a breakdown of the components of psychological control is necessary to examine how different cultural values influence different domains of psychological control. For instance, Study 1 found that Taiwanese students reported higher levels of personal attack from mothers and invalidating feeling from fathers than their Asian American counterparts. However, Asian Americans perceived higher levels of guilt induction from both parents than Taiwanese, indicating that psychological control is not always used more often in Asian countries. Moreover, Study 1 also indicated the importance of examining emerging adults; parents are continuing to exert control after children get into college. Due to the scarcity of cross-cultural research on parenting among college students, replication is needed to support these conclusions.

Results from Study 2 showed that there were cultural differences in the levels of risk tolerance for others, consequence consideration for others, and risk-taking behavior, such that Taiwanese participants were less likely than Asian Americans to engage in risk-taking behavior, were more likely to think about the consequences for others when making a decision, and, interestingly, were more willing to tolerate a higher amount of

risk involving others. These differences are again tied to the cultural values. Taiwanese are socialized to regulate their personal desires and be sensitive to others' thoughts and feelings in order to maintain family and social order (Park et al., 2010; Mascolo, Fischer, & Li, 2003); consequently, compared to Asian Americans, Taiwanese tend to consider consequences for others more in their decision making processes. At the same time, given the value of interdependence among the in-group members, Taiwanese students may feel it is acceptable to cause risk to others as well as others causing risks to them. The different cultural values in the two countries lead to the different decision making processes involving concern for others.

Furthermore, cultural differences were also found in the associations between perceived parental control and risk-taking behavior. Parental behavioral control was effective in preventing risk-taking behavior among Asian American college students but not in Taiwanese counterparts. The null finding on behavioral control in the Taiwanese sample was somewhat surprising. One potential explanation is that the transition to college may entail unique changes in behavioral control in Taiwan. The primary goal of education for Taiwanese parents is to have children successfully enter college; hence, parents may loosen control after children successfully navigate through this developmental demarcation. This assumption is somewhat supported by the preliminary results of another study by the author (Chou, unpublished manuscript); in Taiwan, high school students reported a significantly higher level of perceived behavioral control than college students, $t(373) = 4.437, p < .001$.

Another cultural difference emerged in the association between psychological control and risk-taking behavior in Study 2. Psychological control was harmful to Taiwanese college students as it was linked to more risk-taking behavior, but this pattern of association was not found in their Asian American counterparts. Altogether, these findings suggest that behavioral control and psychological control contribute to culturally unique pathways to risk-taking behavior in emerging adulthood.

A unique feature of the current research is the inclusion of both maternal and paternal control. Inclusion of fathers in family studies has been increasingly encouraged (Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000). The current research showed that the associations among parental control, decision making, and risk-taking behavior operated similarly for the maternal and paternal models. The fact that there was no difference between maternal control and paternal control – their effects were both significant – indicated that both parents are important social agents in shaping college students' behavior across countries.

It is important to note that the U.S. sample in the current research consisted of Asian American participants only. Literature that examined cultural differences usually compares European Americans and Asian Americans in the U.S. (e.g., Kelley & Tseng, 1992; Chao & Aque, 2009), or European Americans and Asians in different countries (e.g., Hasebe, Nucci, & Nucci, 2004; Rudy & Halgunseth, 2005); not many studies pay attention to the comparison between Asian Americans in the U.S. and individuals in Asian country as in the current research. One methodological advantage of using Asian American students as a comparison group to Taiwanese students is that it allows a more

conservative examination of the cultural effects. In other words, Asian American and Taiwanese may share the same Asian values to some extent, but the exposure to the U.S. culture shapes Asian American's beliefs and behaviors toward the American direction. The comparison of the two groups is thus meaningful as it reflects the effects of Asian Americans being exposed to the American cultural ideologies.

Indeed, research has shown that American values are promoted widely through public representations (Sperber, 1996), so Asian immigrant parents change their beliefs and behaviors in parenting with exposure to American culture (Choi, Kim, Kim, & Park, 2013). For example, although Asian immigrant mothers were socialized to emphasize education in their home countries, many of them begin to disapprove of this value after immigration (Cheah, Leung, & Zhou, 2013). They become more flexible to children's academic performance, and focus more on children's overall development including non-academic domains. Similarly, some immigrant parents tended to be very protective of their children at first, but gradually learn to adopt American values of parenting and foster their children's development of independence (Cheah et al., 2013). The host culture and social environment shape immigrant parents' beliefs about parenting goals toward American values, and subsequently modify their parenting behaviors (Rubin & Chung, 2006). In fact, this is reflected in the current research that the results of Asian Americans were consistent with the European American findings in the literature, and some differences were found between Asian Americans and Taiwanese in the study variables.

Importantly, future research should include the investigation of acculturation among Asian Americans and their parents to better interpret the differences between Asian Americans and Taiwanese. The meanings of parental control among Asian Americans, and its associations with decision making involving concern for others and risk-taking behavior could be a blend of the influences from the U.S. and Asian cultures. The examination of acculturation and the variations within Asian Americans will provide further information in understanding the cultural influences underlying parenting and its outcomes.

Additionally, a closer examination of different Asian ethnic groups in the future will help to explore the heterogeneity of Asian American culture. Researchers have suggested that there may be variations in parenting among different Asian American groups in the U.S. (Chao & Tseng, 2002). Also, some research findings have indicated that the rates of risk-taking behavior engagement are different among Asian American groups, such that Japanese Americans engage in heavy drinking more than Korean Americans and Chinese Americans (Chi, Lubben, & Kitano, 1989). Therefore, it may be an oversimplification to treat individuals who were originally from different regions of Asia (e.g., Taiwan, China, Japan, Korea, Vietnam, Philippines) as one ethnicity, namely Asian American, which may overlook the cultural dynamic and heterogeneity among the Asian American groups.

It is important to note that the emphasis of traditional Chinese values in Taiwan is likely to be evolving with the changing social environment. Evidence has indicated that the economic, political, and social life in societies around the world are moving toward

globalization (Inglehart, 2000), with a movement toward urban residence, commerce, and high-technology environments (Greenfield, 2009). These changes reflect individualistic cultural values that are characteristics of Western societies (Inglehart, 2000). The contemporary culture in Taiwan most likely reflects these changes in values. Still, researchers argue that Confucianism remains influential in the current Taiwanese society (Wang & Heppner, 2002). For instance, findings showed that current Taiwanese college students still endorse traditional Confucian values, such as interpersonal harmony and relational hierarchy (Zhang, Lin, Nonaka, & Beom, 2005). As a result, some deep-rooted cultural values in Taiwan coexist with globalization, reflected in the findings of the current research among Taiwanese emerging adults.

It is also noteworthy that Taiwanese share the traditional Chinese culture with individuals in China, but Taiwan and China are different in social, political, and economic conditions (Berndt, Cheung, Lau, Hau, & Lew, 1993). For example, the one-child policy in China may make parents in China be more child-centered in parenting behaviors (Chow & Zhao, 1996). Furthermore, in the past decade, the family structure in Taiwan has changed because of the notable increase of females immigrating from Southeast Asia or China to Taiwan for marriage (Kuo, 2008), which may influence and change the traditional values and beliefs in parenting. Thus, the generalization of the current findings in Taiwan to other Chinese societies needs further investigations.

Limitations and Future Directions

There are some caveats in this study. First, the study was limited to emerging adults' self-reports, which may have inflated correlations between variables via shared

method variance issues. Research has suggested that the perceptions of maternal psychological control by mothers and children may be different (Laird, 2011). It is quite possible that the cultural difference in parental control found in the current study could have been the difference in children's perception of parental control, not the actual parental behavior. Thus, future research should include multiple sources of data, such as parents' reports of parental control from both mother and father, to avoid report bias.

Second, this study was cross-sectional. As mentioned earlier, a longitudinal design is needed in order to capture the developmental changes in parental control and its associations with behavioral outcomes from adolescence to emerging adulthood. In addition, the use of longitudinal design in future will allow researchers to closely examine the direction of effects. For example, the current study assumed that parental control influenced one's risk-taking behavior. However, it was equally possible that emerging adults' risk-taking behavior elicited stricter parental control. Although a longitudinal design alone would not be a definitive tool to uncover causal associations among the variables, it would help to make inferences about the sequence of the events.

Third, the differences in recruitment methods between the Taiwanese and U.S. samples may have played a role in the cross-cultural findings. The data from Taiwan were collected from 21 cities, including students from 39 different universities/colleges. However, the U.S. data were drawn from one university in Southern California and focused on Asian Americans only. Additionally, despite the fact that the comparison between Asian Americans and Taiwanese was advantageous in examining the influences of being exposed to the U.S. culture, it limited the generalizability of the findings. To

partially address this issue, I conducted a supplementary analysis by comparing Asian American students and non-Asian American students in the U.S. sample. Results (not shown) indicated that Asian American students showed a similar pattern in perceived parental control to other ethnic groups in the U.S. Nonetheless, a broader sampling within the U.S. may help to get more accurate estimates.

Despite some limitations, the current research contributes to a better understanding of parental control and decision making process underlying emerging adults' risk-taking behavior across the two countries. Based on the findings of the present research, future programs to prevent college students' risk-taking behavior should pay attention to the family and cultural context in which risk-taking takes place. Researchers have suggested that youth from collectivistic culture would benefit from intervention programs that are at the family level, given the important value of family interdependence in the collectivistic culture (Leidy, Guerra, & Toro, 2010). Also as the findings suggested, prevention efforts can target on decision making involving concern for others (e.g., consequence consideration). Social, cultural, and cognitive factors that contribute to risk-taking behavior can be integrated into activities for high school and college students, such as strengthening parent-child relationship, building decision making competencies (Guerra, Sadek, & Chou, 2012), and teaching social and emotional skills that decrease the chance of risk-taking, in order to prevent emerging adults from engaging in risk-taking behavior and to promote their positive development.

In conclusion, the current research highlights the importance of understanding the broader cultural context in which parental control takes place. Cultural values are

important in understanding the meaning of parental control and its associations with decision making involving concern for others as well as risk-taking behavior.

Additionally, findings of the two studies in this project suggest that although many 18- to 20-year-olds are in the transition of moving away from their parents for college, parental control is still influential in their lives in both the U.S. and Taiwan. In sum, the present research contributes to the field of parental control and risk-taking, and urges researchers to take a cultural perspective in their future endeavor to study risk-taking behavior among college students.

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Table 1. *Descriptive Statistics for the Demographics of the Participants*

Variables	U.S.	Taiwan
N	164	156
Male	62	54
Female	102	102
Age mean (SD)	18.53 (0.52)	18.94 (0.62)
Living Arrangement		
Live on campus	58.5%	42.3%
Live at home with parents/family	12.8%	27.6%
Live off campus (alone or with friends/roommates)	28.7%	30.1%
Parental Marital Status		
Married	81.7%	84.6%
Separated/Divorced/Widowed	14.0%	14.7%
Never married/Single	4.3%	0.6%
Maternal Education Level		
No formal education/Elementary/Middle school	5.4%	17.3%
High school	34.8%	40.6%
Junior college*		18.6%
College	34.1%	19.9%
Post graduate	14.1%	3.2%
Paternal Education Level		
No formal education/Elementary/Middle school	9.7%	9.7%
High school	25.0%	39.7%
Junior college*		21.2%
College	36.6%	21.2%
Post graduate	22.6%	7.1%

Note. * Junior college is one type of school in the Taiwanese education system: 5-year junior colleges admit graduates of middle schools, and 2-year junior colleges admit graduates of vocational high schools.

Table 2. *Bivariate Correlations for Maternal Control and Study Variables (Above Diagonal: U.S.; Below Diagonal: Taiwan)*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. GEN		.009	-.135	.151	.055	.104	.073	.153	.145	.123	.046	-.004
2. MCVE	-.013		.422**	.448**	.406**	.519**	.580**	.259**	-.242**	.037	-.070	.033
3. MIF	.114	.482**		.526**	.398**	.481**	.540**	.307**	-.143	.246**	-.195*	.089
4. MPA	.051	.424**	.405**		.460**	.590**	.685**	.416**	-.021	.220**	-.154	.059
5. MGI	-.081	.245**	.273**	.314**		.544**	.507**	.422**	-.148	.131	-.182*	.194*
6. MLW	.024	.394**	.406**	.401**	.404**		.689**	.393**	-.150	.234**	-.132	.175*
7. MD	.133	.567**	.506**	.522**	.325**	.595**		.522**	-.065	.295**	-.202*	.025
8. MS	.058	.425**	.380**	.320**	.385**	.425**	.545**		.034	.069	-.087	.062
9. MBC	.114	.117	.332**	.086	.155	.254**	.209**	.218**		-.074	.303**	-.335**
10. RT	.051	.168*	.010	.125	.029	.146	.128	.083	-.095		-.295**	.172*
11. CC	-.094	-.191*	-.176*	-.174*	.031	-.282**	-.125	-.032	.092	-.350**		-.320**
12. RBAvg	-.211**	.185*	.097	.059	.145	.222**	.217**	.249**	.012	.234**	-.274**	

Note. * $p < .05$, ** $p < .01$ (2-tailed).

GEN: Gender (1= male, 2= female); CVE: Constraining Verbal Expression; IF: Invalidating Feeling; PA: Personal Attack; GI: Guilt Induction; LW: Love Withdrawal; D: Disrespect; S: Shame; BC: Behavioral Control; RT: Risk Tolerance for Others; CC: Consequence Consideration for Others; RBAvg: Average score of Risky Driving, Binge Drinking, Marijuana Use, Smoking, and Unprotected Sex.

Table 3. Bivariate Correlations for Paternal Control and Study Variables (Above Diagonal: U.S.; Below Diagonal: Taiwan)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. GEN		-.065	-.028	.018	.236**	.153	.023	.102	.144	.123	.046	-.004
2. PCVE	-.127		.640**	.622**	.368**	.549**	.719**	.342**	-.053	.240**	-.199*	.066
3. PIF	-.110	.627**		.625**	.339**	.394**	.601**	.318**	-.074	.286**	-.231**	.204*
4. PPA	-.164*	.544**	.498**		.549**	.648**	.763**	.500**	-.062	.331**	-.274**	.159*
5. PGI	-.235**	.290**	.299**	.290**		.575**	.521**	.496**	.014	.302**	-.102	.125
6. PLW	-.093	.462**	.541**	.582**	.332**		.698**	.373**	-.155	.290**	-.212**	.129
7. PD	-.125	.551**	.551**	.615**	.382**	.671**		.462**	-.131	.419**	-.275**	.214**
8. PS	-.086	.293**	.343**	.385**	.372**	.458**	.446**		-.054	.221**	-.065	.151
9. PBC	.025	.119	.122	.259**	.121	.140	.111	.201*		-.153	.329**	-.252**
10. RT	.051	.162*	.115	.168*	-.121	.159	.168*	.094	-.079		-.295**	.172*
11. CC	-.094	-.134	-.166*	-.162*	.128	-.170*	-.167*	-.031	.085	-.350**		-.320**
12. RBAvg	-.211**	.114	.041	.133	.144	.259**	.160*	.114	.045	.234**	-.274**	

Note. * $p < .05$, ** $p < .001$ (2-tailed).

GEN: Gender (1= male, 2= female); CVE: Constraining Verbal Expression; IF: Invalidating Feeling; PA: Personal Attack; GI: Guilt Induction; LW: Love Withdrawal; D: Disrespect; S: Shame; BC: Behavioral Control; RT: Risk Tolerance for Others; CC: Consequence Consideration for Others; RBAvg: Average score of Risky Driving, Binge Drinking, Marijuana Use, Smoking, and Unprotected Sex.

Table 4. *Model Fit Summary: Measurement Invariance of Maternal and Paternal Psychological Control*

Model	χ^2	df	p	CFI	TLI	RMSEA	AIC	BIC	Reference Model #	$\Delta\chi^2$	Δdf	Δp	ΔTLI	$\Delta RMSEA$	
<u>Maternal Psychological Control</u>															
1. Unconstrained (all parameters free)	35.483	28	0.156	0.991	0.986	0.041	3077.578	3235.053							
2. Fully constrained (all parameters fixed)	96.839	49	<.001	0.940	0.949	0.079	3096.935	3175.672	1	61.356	21	<.001	0.037	0.038	
3. Scalar invariance (invariant loadings & intercepts)	81.761	42	<.001	0.950	0.950	0.078	3095.856	3200.839	1	46.278	14	<.001	0.036	0.037	
4. Metric invariance (invariant loadings)	49.355	35	0.055	0.982	0.978	0.051	3077.450	3208.679	1	13.872	7	0.054	0.008	0.010	
<u>Paternal Psychological Control</u>															
1. Unconstrained (all parameters free)	84.565	28	<.001	0.943	0.915	0.115	2939.475	3095.591							
2. Fully constrained (all parameters fixed)	137.253	49	<.001	0.912	0.924	0.109	2950.164	3028.221	1	52.688	21	<.001	0.009	0.006	
3. Scalar invariance (invariant loadings & intercepts)	113.692	42	<.001	0.928	0.928	0.106	2940.603	3044.679	1	29.127	14	0.010	0.013	0.009	
4. Metric invariance (invariant loadings)	93.720	35	<.001	0.941	0.930	0.105	2934.631	3064.727	1	9.155	7	0.242	0.015	0.010	

Table 5. Model Fit Summary: Association Between Psychological Control and Behavioral Control

Model	χ^2	df	p	CFI	TLI	RMSEA	AIC	BIC	Reference Model #	$\Delta\chi^2$	Δdf	Δp	ΔTLI	$\Delta RMSEA$	
<u>Maternal Model</u>															
1. Metric invariance with fixed covariance of psychological and behavioral control	90.403	48	< .001	0.948	0.939	0.075	4684.471	4834.062							
2. Metric invariance with free covariance of psychological and behavioral control	77.779	47	0.003	0.962	0.955	0.065	4673.847	4827.179	1	12.624	1	< .001	0.016	0.010	
<u>Paternal Model</u>															
1. Metric invariance with fixed covariance of psychological and behavioral control	118.791	48	< .001	0.926	0.914	0.099	4516.896	4664.914							
2. Metric invariance with free covariance of psychological and behavioral control	111.468	47	< .001	0.933	0.920	0.096	4511.574	4663.292	1	7.323	1	0.007	0.006	0.003	

Table 6. *Levels of Parental Control Across Countries*

Variables	Maternal Control Mean (SD)		F	Paternal Control Mean (SD)		F
	U.S.	Taiwan		U.S.	Taiwan	
Psychological Control						
Constraining Verbal Expression	1.413 (0.519)	1.470 (0.539)	0.925	1.395 (0.617)	1.456 (0.587)	0.742
Invalidating Feelings	1.688 (0.737)	1.755 (0.739)	0.649	1.543 (0.752)	1.740 (0.753)	5.136*
Personal Attack	1.622 (0.560)	1.798 (0.601)	7.163**	1.431 (0.585)	1.531 (0.573)	2.202
Guilt Induction	1.891 (0.713)	1.639 (0.566)	11.783**	1.556 (0.668)	1.404 (0.499)	4.896*
Love Withdrawal	1.573 (0.591)	1.561 (0.543)	0.036	1.501 (0.623)	1.514 (0.585)	0.033
Disrespect	1.466 (0.427)	1.481 (0.427)	0.100	1.377 (0.424)	1.435 (0.442)	1.356
Shame	1.281 (0.585)	1.358 (0.626)	1.238	1.353 (0.664)	1.329 (0.577)	0.113
Behavioral Control	19.825 (3.228)	19.073 (3.337)	4.081*	17.706 (3.908)	16.575 (3.430)	7.042**

Note. * $p < .05$, ** $p < .01$ (2-tailed).

Table 7. Model Fit Summary: Measurement Invariance of Risk Tolerance for Others

Model	χ^2	df	p	CFI	TLI	RMSEA	AIC	BIC	Reference Model #	$\Delta\chi^2$	Δdf	Δp	ΔTLI	$\Delta RMSEA$	
1. Unconstrained (all parameters free)	2.995	4	0.559	1.000	1.004	0.000	10532.647	10623.086							
2. Fully constrained (all parameters fixed)	180.823	16	<.001	0.754	0.816	0.254	10686.474	10731.694	1	177.828	12	<.001	0.188	0.254	
3. Scalar invariance (invariant loadings & intercepts)	137.132	12	<.001	0.813	0.813	0.255	10650.784	10711.077	1	134.137	8	<.001	0.191	0.255	
4. Metric invariance (invariant loadings)	50.015	8	<.001	0.937	0.906	0.181	10571.666	10647.032	1	47.020	4	<.001	0.098	0.181	
5. Partial metric invariance (invariant loadings except RT007)	41.717	7	<.001	0.948	0.911	0.176	10565.368	10644.503	1	38.722	3	<.001	0.093	0.176	
6. Partial metric invariance (invariant loadings except RT006, RT007)	27.040	6	<.001	0.969	0.937	0.148	10552.691	10635.594	1	24.045	2	<.001	0.067	0.148	

Note. RT006: causing emotion stress to others; RT007: causing financial stress to others.

Table 8. Model Fit Summary: Measurement Invariance of Consequence Consideration for Others

Model	χ^2	df	p	CFI	TLI	RMSEA	AIC	BIC	Reference Model #	$\Delta\chi^2$	Δdf	Δp	ΔTLI	$\Delta RMSEA$
1. Unconstrained (all parameters free)	14.526	4	0.006	0.979	0.936	0.129	2729.622	2819.684						
2. Fully constrained (all parameters fixed)	63.900	16	<.001	0.903	0.928	0.138	2754.996	2800.027	1	49.374	12	<.001	0.008	0.009
3. Scalar invariance (invariant loadings & intercepts)	47.772	12	<.001	0.928	0.928	0.138	2746.868	2806.909	1	33.246	8	<.001	0.008	0.009
4. Metric invariance (invariant loadings)	25.162	8	0.002	0.965	0.948	0.117	2732.258	2807.309	1	10.636	4	0.031	0.012	0.012

Table 9. Model Fit Summary: Measurement Invariance of Risk-Taking Behavior

Model	χ^2	df	p	CFI	TLI	RMSEA	AIC	BIC	Reference Model #	$\Delta\chi^2$	Δdf	Δp	ΔTLI	$\Delta RMSEA$	
1. Unconstrained (all parameters free)	11.400	10	0.327	0.994	0.988	0.030	5082.339	5195.294							
2. Fully constrained (all parameters fixed)	326.814	25	<.001	0.000	-0.073	0.275	5367.753	5424.231	1	315.414	15	<.001	1.061	0.245	
3. Scalar invariance (invariant loadings & intercepts)	111.324	20	<.001	0.594	0.594	0.169	5162.262	5237.566	1	99.924	10	<.001	0.394	0.139	
4. Metric invariance (invariant loadings)	77.708	15	<.001	0.721	0.628	0.162	5138.646	5232.776	1	66.308	5	<.001	0.360	0.132	
5. Partial metric invariance (invariant loadings except RBDDrug)	35.737	14	0.001	0.903	0.862	0.099	5098.675	5196.570	1	24.337	4	<.001	0.126	0.069	
6. Partial metric invariance (invariant loadings except RBDDrug and RBDDrive)	18.284	13	0.147	0.977	0.964	0.050	5083.223	5184.883	1	6.884	3	0.076	0.024	0.020	

Note. RBDDrug: Marijuana Use; RBDDrive: Risky Driving.

Table 10. *Levels of Study Variables Across Countries*

Variables	Mean (SD)		F
	U.S.	Taiwan	
Risk Tolerance for Others			
RT005 (hurting other people)	9.006 (13.978)	24.699 (22.985)	55.047**
RT006 (causing emotion stress to others)	13.183 (16.211)	30.795 (24.702)	57.387**
RT007 (causing financial stress to others)	8.909 (13.906)	30.135 (24.598)	91.411**
RT008 (disappointing family)	13.317 (17.171)	29.250 (23.667)	47.851**
Consequence Consideration for Others			
CCO01(binge drinking scenario)	2.403 (0.911)	2.720 (0.808)	10.698*
CCO02 (smoking scenario)	2.742 (1.009)	3.024 (0.769)	7.729*
CCO03 (unprotected sex scenario)	2.849 (0.993)	2.927 (0.818)	0.582
CCO05 (risky driving scenario)	3.273 (0.824)	3.222 (0.748)	0.322
Risk-Taking Behavior			
Risky Driving	1.951 (0.933)	1.872 (1.113)	0.475
Binge Drinking	2.307 (2.121)	1.551 (1.188)	15.225**
Marijuana Use	1.595 (1.514)	1.064 (0.435)	17.783**
Smoking	1.380 (1.458)	1.340 (1.327)	0.068
Unprotected Sex	1.834 (1.883)	1.667 (1.551)	0.750

Note. * $p < .05$; ** $p < .001$ (2-tailed).

Table 11. SEM Model Fit Summary: Maternal Model

Model	χ^2	df	p	CFI	TLI	RMSEA	AIC	BIC	Reference Model #	$\Delta\chi^2$	Δdf	Δp
1. Unconstrained	617.962	381	<.001	0.901	0.890	0.064	22051.376	22508.974				
2. Fully constrained (all parameters fixed)	631.048	387	<.001	0.898	0.889	0.064	22052.462	22487.738	1	13.086	6	0.042
3. Fully constrained except MPsy-RB	624.174	386	<.001	0.900	0.891	0.064	22047.588	22486.585	1	6.212	5	0.286
4. Fully constrained except MBeh-RB	623.882	386	<.001	0.900	0.891	0.064	22047.296	22486.293	1	5.920	5	0.314
5. Fully constrained except RT-RB	630.884	386	<.001	0.897	0.888	0.064	22054.298	22493.294	1	12.922	5	0.024
6. Fully constrained except CC-RB	630.824	386	<.001	0.897	0.888	0.064	22054.238	22493.235	1	12.862	5	0.025
7. Fully constrained except MPsy-RT	630.998	386	<.001	0.897	0.888	0.065	22054.412	22493.409	1	13.036	5	0.023
8. Fully constrained except MPsy-CC	630.996	386	<.001	0.897	0.888	0.065	22054.410	22493.406	1	13.034	5	0.023
9. Fully constrained except MPsy-RB, MBeh-RB	618.539	385	<.001	0.902	0.893	0.063	22486.670	22109.260	1	0.577	4	0.966

Note. The models tested were based on measurement invariance: (1) Parental Control: Invariant loadings of psychological control with free covariance of psychological control and behavioral control; (2) Risk Tolerance: Invariant loadings except RT006 and RT007; (3) Consequence Consideration: Invariant loadings; (4) Fixed covariance of risk tolerance and consequence consideration; (5) Risk-taking Behavior: Invariant loadings except RBDDrug and RBDDrive. MPsy: Maternal Psychological Control; MBeh: Maternal Behavioral Control; RT: Risk Tolerance for Others; CC: Consequence Consideration for Others; RB: Risk-Taking Behavior.

Table 12. SEM Model Fit Summary: Paternal Model

Model	χ^2	df	p	CFI	TLI	RMSEA	AIC	BIC	Reference Model #	$\Delta\chi^2$	Δdf	Δp
1. Unconstrained	643.495	381	<.001	0.894	0.883	0.069	21122.758	21575.419				
2. Fully constrained (all parameters fixed)	650.526	387	<.001	0.893	0.884	0.068	21117.789	21548.369	1	7.031	6	0.318
3. Fully constrained except PPsy-RB	650.232	386	<.001	0.893	0.883	0.068	21119.495	21553.755	1	6.737	5	0.240
4. Fully constrained except PBeh-RB	647.170	386	<.001	0.894	0.885	0.068	21116.433	21550.694	1	3.675	5	0.597
5. Fully constrained except RT-RB	650.399	386	<.001	0.893	0.883	0.068	21119.662	21553.923	1	6.904	5	0.228
6. Fully constrained except CC-RB	648.285	386	<.001	0.894	0.884	0.068	21117.548	21551.809	1	4.790	5	0.442
7. Fully constrained except PPsy-RT	650.450	386	<.001	0.893	0.883	0.068	21119.713	21553.974	1	6.955	5	0.224
8. Fully constrained except PPsy-CC	650.088	386	<.001	0.893	0.883	0.068	21119.350	21553.611	1	6.593	5	0.253
9. Fully constrained except PPsy-RB, PBeh-RB	647.017	385	<.001	0.894	0.884	0.068	21118.280	21556.220	1	3.522	4	0.475

Note. The models tested were based on measurement invariance: (1) Parental Control: Invariant loadings of psychological control with free covariance of psychological control and behavioral control; (2) Risk Tolerance: Invariant loadings except RT006 and RT007; (3) Consequence Consideration: Invariant loadings; (4) Fixed covariance of risk tolerance and consequence consideration; (5) Risk-taking Behavior: Invariant loadings except RBDDrug and RBDDrive. PPsy: Paternal Psychological Control; PBeh: Paternal Behavioral Control; RT: Risk Tolerance for Others; CC: Consequence Consideration for Others; RB: Risk-Taking Behavior.

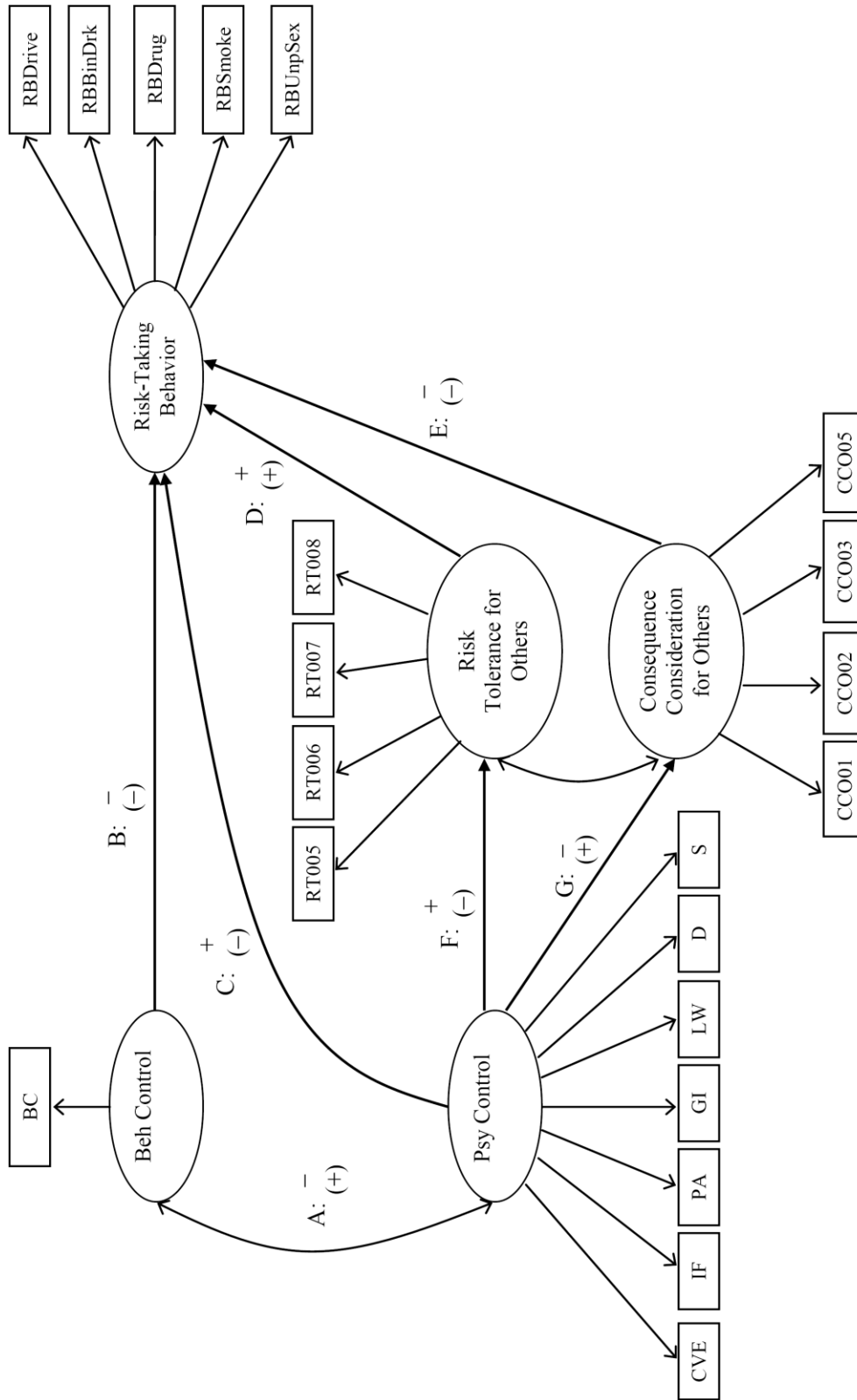


Figure 1. Hypothesized model for the U.S. and for Taiwan (in parentheses).

Note. CVE: Constraining Verbal Expression; IF: Invalidating Feeling; PA: Personal Attack; GI: Guilt Induction; LW: Love Withdrawal; D: Disrespect; S: Shame; BC: Behavioral Control; RBDdrive: Risky Driving; RBBinDrk: Binge Drinking; RBDdrug: Marijuana Use; RBSmoke: Smoking; RBUnpSex: Unprotected Sex.

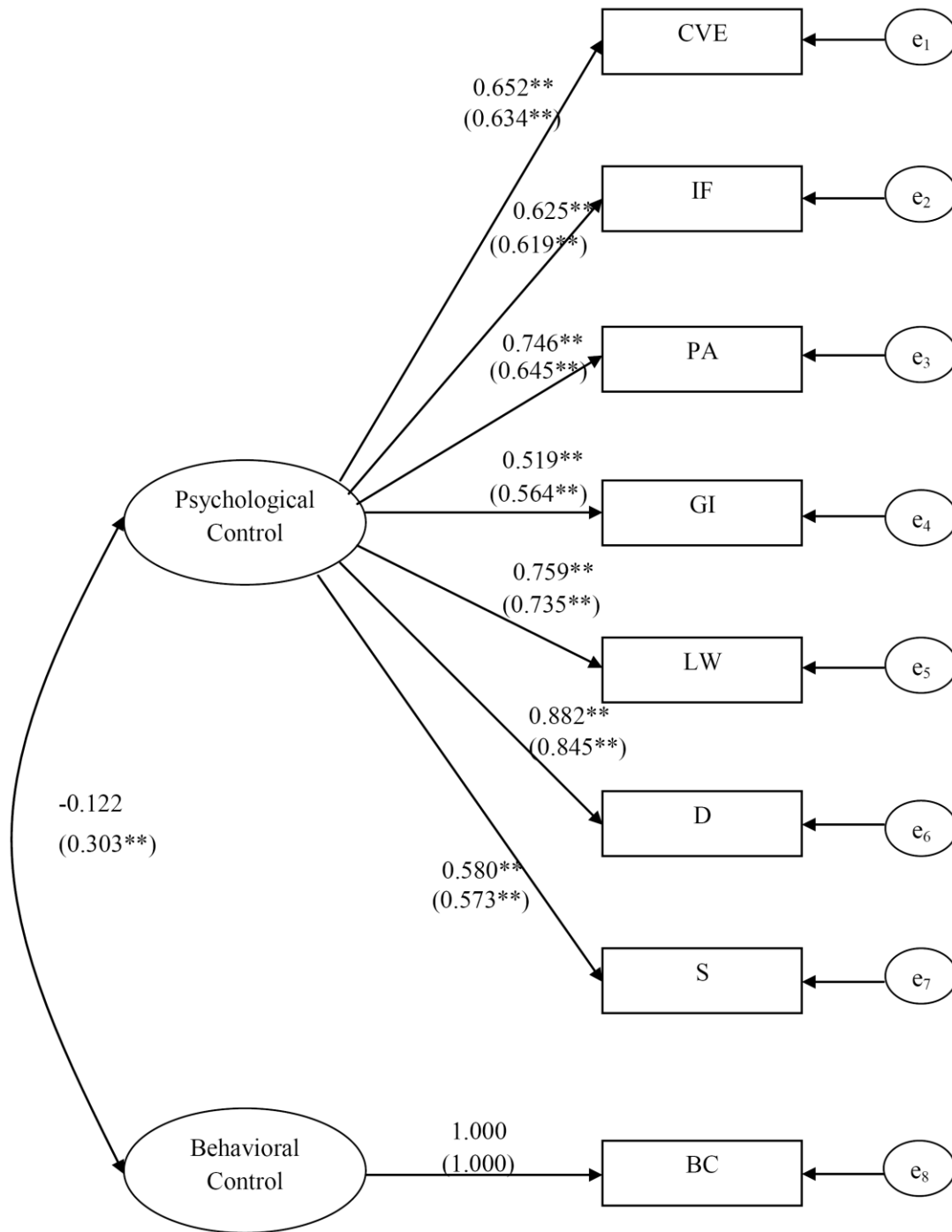


Figure 2. Standardized model of maternal psychological control and behavioral control for the U.S. and for Taiwan (in parentheses).

Note. * $p < .05$; ** $p < .001$ (2-tailed). CVE: Constraining Verbal Expression; IF: Invalidating Feeling; PA: Personal Attack; GI: Guilt Induction; LW: Love Withdrawal; D: Disrespect; S: Shame; BC: Behavioral Control.

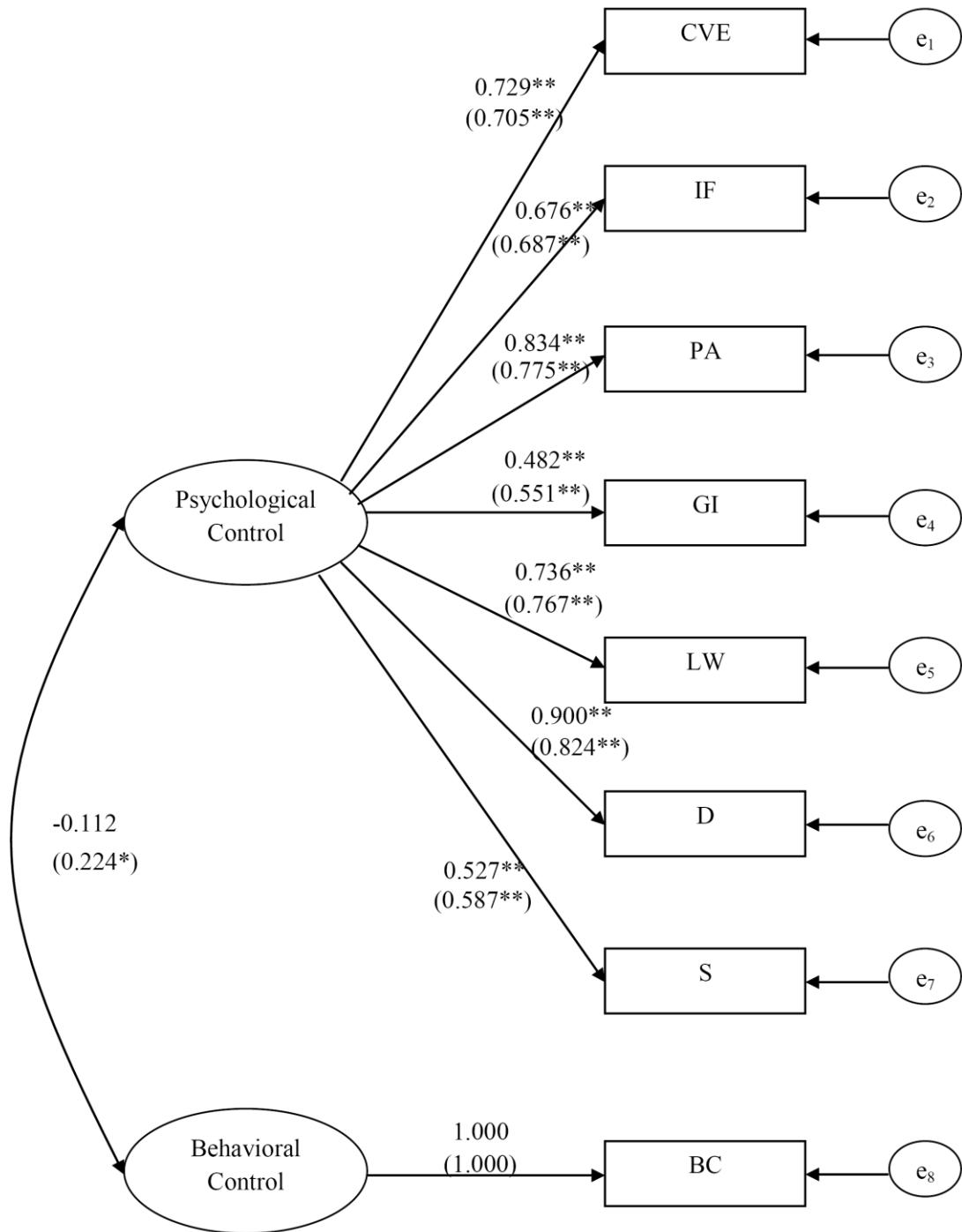


Figure 3. Standardized model of paternal psychological control and behavioral control for the U.S. and for Taiwan (in parentheses).

Note. * $p < .05$; ** $p < .001$ (2-tailed). CVE: Constraining Verbal Expression; IF: Invalidating Feeling; PA: Personal Attack; GI: Guilt Induction; LW: Love Withdrawal; D: Disrespect; S: Shame; BC: Behavioral Control

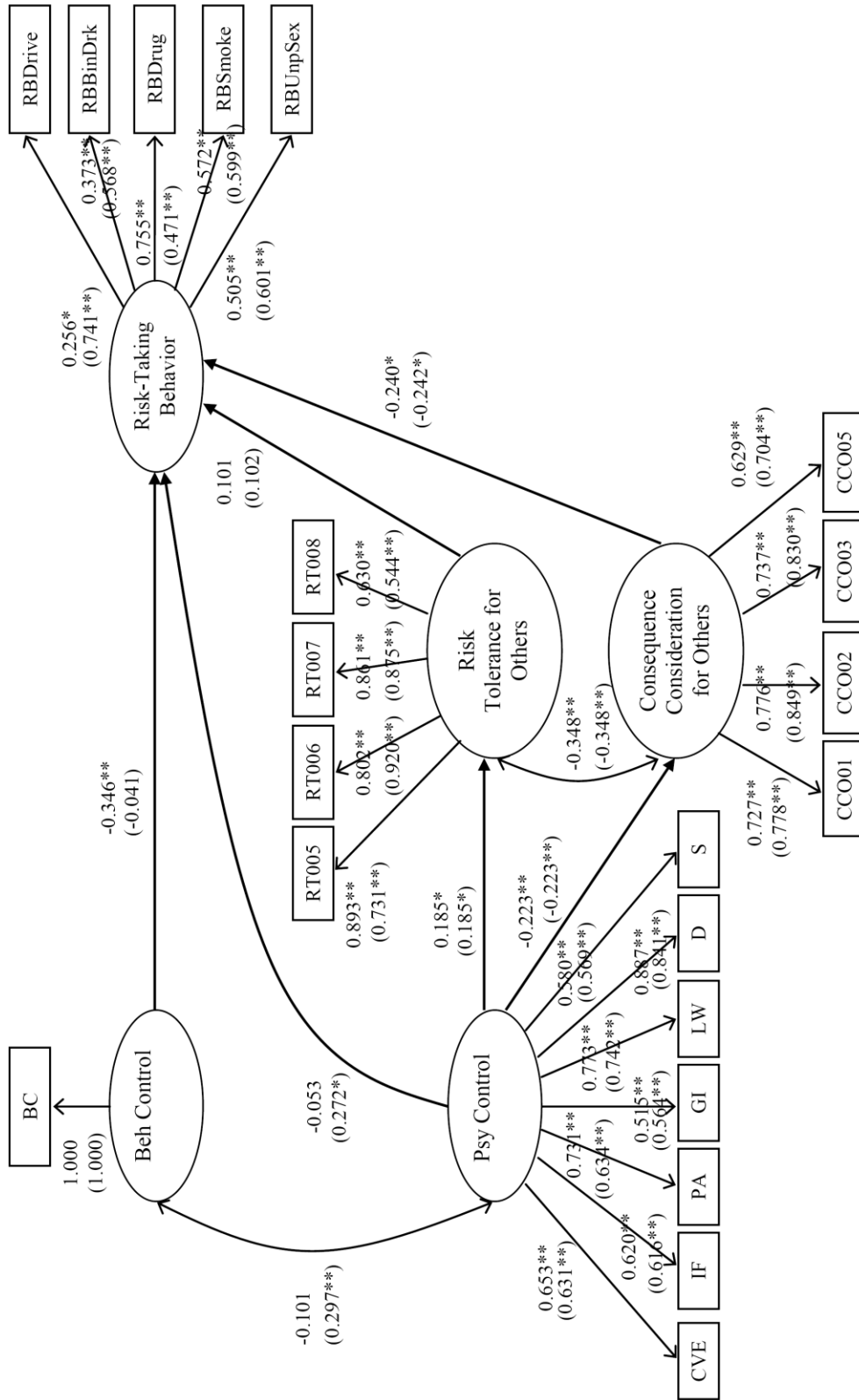


Figure 4. Standardized maternal model for the U.S. and for Taiwan (in parentheses).

Note. * $p < .05$; ** $p < .001$ (2-tailed). CVE: Constraining Verbal Expression; IF: Invalidating Feelings; PA: Personal Attack; GI: Guilt Induction; LW: Love Withdrawal; D: Disrespect; S: Shame; BC: Behavioral Control; RBD: Risky Driving; RBDDrive: Binge Drinking; RBBinDrk: Marijuana Use; RBSmoke: Smoking; RBUnpSex: Unprotected Sex.

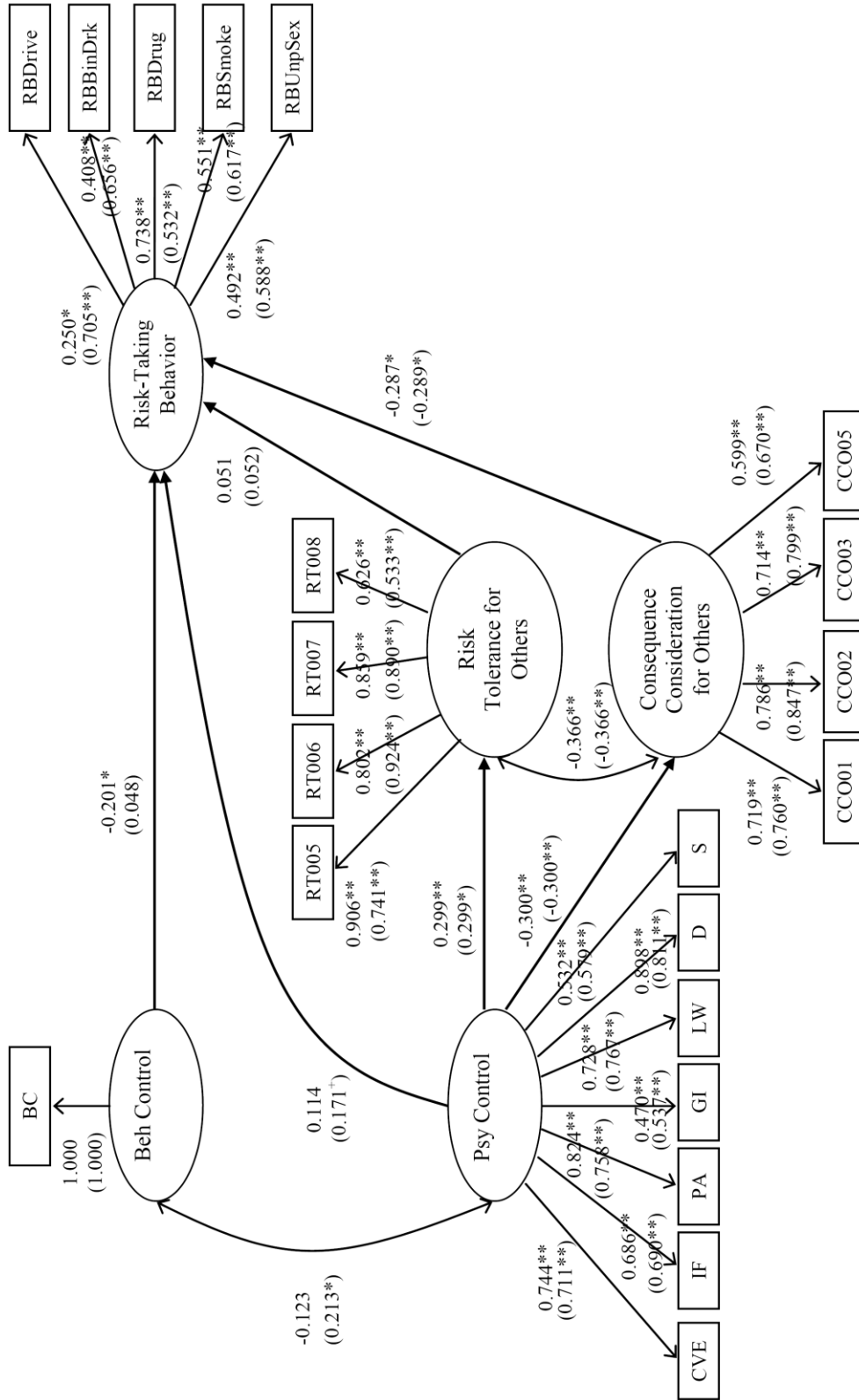


Figure 5. Standardized paternal model for the U.S. and for Taiwan (in parentheses).

Note. [†] $p < .10$; * $p < .05$; ** $p < .001$ (2-tailed). CVE: Constraining Verbal Expression; IF: Invalidating Feeling; PA: Personal Attack; GI: Guilt Induction; LW: Love Withdrawal; D: Disrespect; S: Shame; BC: Behavioral Control; RBD001: Risky Driving; RBD002: Binge Drinking; RBD003: Marijuana Use; RBD004: Smoking; RBD005: Unprotected Sex.

Appendix A

Parenting and Risk Taking Survey Consent

This is an online study being conducted by Catherine Chou from the Department of Psychology at the University of California, Riverside. We are interested in understanding how parenting influences risky decision making among youth. Your responses will help us better understand this topic.

If you agree to participate in this study, you will be asked to complete an online survey that should take approximately 40-50 minutes. One to three days after you finish the survey, you will get one course credit. Survey questions will address the following areas: parenting, hypothetical scenarios about risk, and risk taking behavior.

All responses will be kept confidential. There will be no negative consequences if you admit to participating in any illegal behavior because no one (including school administration, law enforcement officials, or parents) except the investigator will have access to your answers. You will only be asked to provide your name for course credit purpose. Your name and your responses to the survey will be kept separately.

Your participation is completely voluntary. If you choose not to participate, you will be advised by your instructor of alternative methods for satisfying this course requirement. As a participant, if you feel you do not want to answer any particular question, you will be free to skip any survey question. You are also free to discontinue participation at any time with no penalties.

It is not anticipated that you will experience any discomfort or risk as a result of participating in this online survey. However, if any discomfort does occur, feel free to email Ms. Chou (cchou007@ucr.edu). Additionally, if you have questions about your rights as a research subject, please contact the UCR Office of Research Integrity at 951-827-4810, or to contact them by email, please use IRB@ucr.edu.

Please click on the button below if you consent to participate in this study. If you choose to not participate, you will not experience any negative consequences and will be asked to participate in an alternative method of satisfying course requirements.
Thank you!

I understand that by clicking on the button, I am providing my consent to participate in this survey.

First name: (Your name will only be used to give you course credit.) _____

Last name: _____

General Background

1. What is your gender?
(1) Male (2) Female
2. How old are you? (Please enter the number in the blank.) _____
3. How many years of college have you completed?
(1) Less than one year
(2) One
(3) Two
(4) Three
(5) Four
(6) Five or more
4. Which of the following best describes your ethnicity? (Select one response)
(1) American Indian or Alaska Native
(2) Asian or Asian American
(3) Black or African American
(4) Caucasian
(5) Hispanic
(6) Middle Eastern
(7) Native Hawaiian or Other Pacific Islander
(8) Other (please specify): _____
5. What is your marital status?
(1) Single
(2) Engaged
(3) Married
(4) Divorced
6. Where do you currently live?
(1) On campus
(2) At home with my parents/family
(3) Off campus (alone or with friends/roommates)
7. What is your parents' marital status?
(1) Married
(2) Separated
(3) Divorced
(4) Never married/single
(5) Widowed
8. What is your mother's highest completed level of education?
(1) No formal education
(2) Elementary (1-5)
(3) Middle school
(4) High School (9-12)
(5) BA/BS
(6) MA/MS/MBA
(7) Ph.D. or Ed.D.

- (8) Other (please specify): _____
9. What is your father's highest completed level of education?
- (1) No formal education
 - (2) Elementary (1-5)
 - (3) Middle school
 - (4) High School (9-12)
 - (5) BA/BS
 - (6) MA/MS/MBA
 - (7) Ph.D. or Ed.D.
 - (8) Other (please specify): _____
10. To what extent do you identify yourself? (*culture of origin refers to the culture of the country either you or your parents/grandparents came from, such as Puerto Rico, Cuba, China, etc.)
- (1) Individual from the culture of origin*
 - (2)
 - (3)
 - (4)
 - (5) American

Parenting: Mother

The following items are for the purpose of collecting information about your mother. Please rate on the scale how well the following items describe your mother.

IMPORTANT: For the following items, please refer to the one (your mother or female caregiver) with whom you spent most time during your high school years.

1. For the following items, I am referring to
- (1) My biological mother (2) My step mother (3) My adoptive mother (4) Other (please specify) _____

My Mother (or female caregiver) is a person who...

1. changes the subject, whenever I have something to say.
 - (1) Not like her (2) Somewhat like her (3) A lot like her
2. often interrupts me.
 - (1) Not like her (2) Somewhat like her (3) A lot like her
3. is always trying to change how I feel or think about things.
 - (1) Not like her (2) Somewhat like her (3) A lot like her
4. blames me for other family members' problems.
 - (1) Not like her (2) Somewhat like her (3) A lot like her
5. brings up my past mistakes when she criticizes me.
 - (1) Not like her (2) Somewhat like her (3) A lot like her
6. tells me of all the things she had done for me.
 - (1) Not like her (2) Somewhat like her (3) A lot like her

7. says, if I really cared for her, I would not do things that cause her to worry.
(1) Not like her (2) Somewhat like her (3) A lot like her
8. is less friendly with me, if I do not see things her way.
(1) Not like her (2) Somewhat like her (3) A lot like her
9. will avoid looking at me when I have disappointed her.
(1) Not like her (2) Somewhat like her (3) A lot like her
10. if I have hurt her feelings, stops talking to me until I please her again.
(1) Not like her (2) Somewhat like her (3) A lot like her
11. ridicules me or puts me down (e.g., saying I am stupid, useless, etc.).
(1) Not like her (2) Somewhat like her (3) A lot like her
12. embarrasses me in public (e.g., in front of my friends).
(1) Not like her (2) Somewhat like her (3) A lot like her
13. doesn't respect me as a person (e.g., not letting me talk, favoring others over me, etc.).
(1) Not like her (2) Somewhat like her (3) A lot like her
14. violates my privacy (e.g., entering my room, going through my things, etc.).
(1) Not like her (2) Somewhat like her (3) A lot like her
15. tries to make me feel guilty for something I've done or something she thinks I should do.
(1) Not like her (2) Somewhat like her (3) A lot like her
16. expects too much of me (e.g., to do better in school, to be a better person, etc.).
(1) Not like her (2) Somewhat like her (3) A lot like her
17. often unfairly compares me to someone else (e.g., to my brother or sister, to herself).
(1) Not like her (2) Somewhat like her (3) A lot like her
18. often ignores me (e.g., walking away from me, not paying attention to me).
(1) Not like her (2) Somewhat like her (3) A lot like her
19. says, any behavior that brings shame to me also brings shame to my family
(1) Not like her (2) Somewhat like her (3) A lot like her

Please rate on the scale how well the following items describe your MOTHER.

1. My mother gives me as much freedom as I want.
(1) Not like her (2) Somewhat like her (3) A lot like her
2. My mother lets me do anything I like to do.
(1) Not like her (2) Somewhat like her (3) A lot like her
3. My mother lets me go out any evening I want.
(1) Not like her (2) Somewhat like her (3) A lot like her
4. My mother lets me go any place I please without asking.
(1) Not like her (2) Somewhat like her (3) A lot like her

How much does your MOTHER know?

1. How much does your mother really know where you go at night?
(1) Doesn't know (2) knows a little (3) knows a lot
2. How much does your mother really know where you are most afternoons after school?

- (1) Doesn't know (2) knows a little (3) knows a lot
3. How much does your mother really know how you spend your money?
(1) Doesn't know (2) knows a little (3) knows a lot
 4. How much does your mother really know what you do with your free time?
(1) Doesn't know (2) knows a little (3) knows a lot
 5. How much does your mother really know who your friends are?
(1) Doesn't know (2) knows a little (3) knows a lot

Parenting: Father

The following items are for the purpose of collecting information about your father. Please rate on the scale how well the following items describe your father.

IMPORTANT: For the following items, please refer to the one (your father or male caregiver) with whom you spent most time during your high school years.

1. For the following items, I am referring to
(1) My biological father (2) My step father (3) My adoptive father (4) Other (please specify) _____

My Father (or male caregiver) is a person who...

1. changes the subject, whenever I have something to say.
(1) Not like him (2) Somewhat like him (3) A lot like him
2. often interrupts me.
(1) Not like him (2) Somewhat like him (3) A lot like him
3. is always trying to change how I feel or think about things.
(1) Not like him (2) Somewhat like him (3) A lot like him
4. blames me for other family members' problems.
(1) Not like him (2) Somewhat like him (3) A lot like him
5. brings up my past mistakes when he criticizes me.
(1) Not like him (2) Somewhat like him (3) A lot like him
6. tells me of all the things he had done for me.
(1) Not like him (2) Somewhat like him (3) A lot like him
7. says, if I really cared for him, I would not do things that cause him to worry.
(1) Not like him (2) Somewhat like him (3) A lot like him
8. is less friendly with me, if I do not see things his way.
(1) Not like him (2) Somewhat like him (3) A lot like him
9. will avoid looking at me when I have disappointed him.
(1) Not like him (2) Somewhat like him (3) A lot like him
10. if I have hurt his feelings, stops talking to me until I please him again.
(1) Not like him (2) Somewhat like him (3) A lot like him
11. ridicules me or puts me down (e.g., saying I am stupid, useless, etc.).
(1) Not like him (2) Somewhat like him (3) A lot like him
12. embarrasses me in public (e.g., in front of my friends).

- (1) Not like him (2) Somewhat like him (3) A lot like him
13. doesn't respect me as a person (e.g., not letting me talk, favoring others over me, etc.).
(1) Not like him (2) Somewhat like him (3) A lot like him
14. violates my privacy (e.g., entering my room, going through my things, etc.).
(1) Not like him (2) Somewhat like him (3) A lot like him
15. tries to make me feel guilty for something I've done or something he thinks I should do.
(1) Not like him (2) Somewhat like him (3) A lot like him
16. expects too much of me (e.g., to do better in school, to be a better person, etc.).
(1) Not like him (2) Somewhat like him (3) A lot like him
17. often unfairly compares me to someone else (e.g., to my brother or sister, to himself).
(1) Not like him (2) Somewhat like him (3) A lot like him
18. often ignores me (e.g., walking away from me, not paying attention to me).
(1) Not like him (2) Somewhat like him (3) A lot like him
19. says, any behavior that brings shame to me also brings shame to my family
(1) Not like him (2) Somewhat like him (3) A lot like him

Please rate on the scale how well the following items describe your FATHER.

1. My father gives me as much freedom as I want.
(1) Not like him (2) Somewhat like him (3) A lot like him
2. My father lets me do anything I like to do.
(1) Not like him (2) Somewhat like him (3) A lot like him
3. My father lets me go out any evening I want.
(1) Not like him (2) Somewhat like him (3) A lot like him
4. My father lets me go any place I please without asking.
(1) Not like him (2) Somewhat like him (3) A lot like him

How much does your FATHER know?

1. How much does your father really know where you go at night?
(1) Doesn't know (2) knows a little (3) knows a lot
2. How much does your father really know where you are most afternoons after school?
(1) Doesn't know (2) knows a little (3) knows a lot
3. How much does your father really know how you spend your money?
(1) Doesn't know (2) knows a little (3) knows a lot
4. How much does your father really know what you do with your free time?
(1) Doesn't know (2) knows a little (3) knows a lot
5. How much does your father really know who your friends are?
(1) Doesn't know (2) knows a little (3) knows a lot

When is something too risky for you to do?

When is something too risky for you to do? Please answer the following questions on a scale from 0% to 100% chance of risk. Think about how high the chance of risk has to be for you to decide NOT to do something. Write this number in the box to the right of each question.

For example, “At what percentage would you be willing to risk getting injured or hurt in order to do something you really want to do?” So, if you would tolerate a 30% risk of getting injured or hurt, then write “30” in the box to the right of the question.

IMPORTANT: The **HIGHER** your percentage the **HIGHER** the risk you are willing to tolerate.

The **LOWER** your percentage the **LOWER** the risk you are willing to tolerate.

1. At what percentage would you be willing to risk getting injured or hurt in order to do something you really want to do? I would be willing to tolerate a ___% chance (risk) of getting injured or hurt if I really wanted to do something.
2. At what percentage would you be willing to risk getting in legal trouble/arrested in order to do something you really want to do? I would be willing to tolerate a ___% chance (risk) of getting in legal trouble/arrested if I really wanted to do something.
3. At what percentage would you be willing to risk damaging your academic standing in order to do something you really want to do? I would be willing to tolerate a ___% chance (risk) of damaging my academic standing if I really wanted to do something.
4. At what percentage would you be willing to risk your money (i.e. gambling) in order to do something you really want to do? I would be willing to tolerate a ___% chance (risk) of losing my money if I really wanted to do something.
5. At what percentage would you be willing to risk hurting other people in order to do something you really want to do? I would be willing to tolerate a ___% chance (risk) of hurting other people if I really wanted to do something.
6. At what percentage would you be willing to risk causing emotional stress to others in order to do something you really want to do? I would be willing to tolerate a ___% chance (risk) of causing emotional stress to others if I really wanted to do something.
7. At what percentage would you be willing to risk causing financial stress to others in order to do something you really want to do? I would be willing to tolerate a ___% chance (risk) of causing financial stress to others if I really wanted to do something.
8. At what percentage would you be willing to risk disappointing your family in order to do something you really want to do? I would be willing to tolerate a ___% chance (risk) of disappointing my family if I really wanted to do something.

Risky Decision Making Scenarios

The following hypothetical scenarios ask you to think about how you make decisions in risky situations. There are no right or wrong answers. Please respond honestly. You may or may not have been in these kinds of situations before but try to place yourself in the moment and imagine you are experiencing all kinds of emotions and thoughts.

- A. Your friends have thrown a huge party. You've been there for a while and you're having a good time. Some of them start daring you and one of your friends to a drinking game to see who can drink more beer. Your friend is ready to go for it, and says he/she could for sure handle at least 3 bottles. You also know your friends are expecting you to take the challenge. It's a good party but this could make it even better. You're thinking about whether it is a good idea to join the drinking game.
1. Overall, how risky do you think it would be to join the drinking game?
(1) Not at All Risky (2) A Little Risky (3) Somewhat Risky (4) Very Risky (5) Definitely Risky
 2. How likely do you think it is that you would decide to join the drinking game?
(1) Not at All Likely (2) Not Very Likely (3) Likely (4) Very Likely (5) Definitely

Since you're with a bunch of friends who are daring you to a drinking game you may have mixed feelings and be uncertain about what to do. Imagine yourself in that moment. Here are some examples of what some people might think when making this kind of decision. In that moment, how much would you think about the following before you decide what to do?

1. In that moment how much would you think about getting physically sick?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
2. In that moment how much would you think about whether you'd regret doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
3. In that moment how much would you think about getting in legal trouble/arrested?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
4. In that moment how much would you think about damaging your academic standing (i.e. being expelled; violating athletic requirements)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
5. In that moment how much would you think about whether you'd enjoy doing this/get a thrill out of it?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
6. In that moment how much would you think about others getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
7. In that how much would you think about causing emotional/financial stress to others?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
8. In that moment how much would you think about earning bragging rights or impressing others by doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot

9. In that moment how much would you think about what your family would think if they found out?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
- B. You are on the way home after school. You notice some of your friends at the street corner smoking. They say they got a pack of cigarettes and the flavor is awesome. You're curious about what the flavor is about so your friends ask you to try one. You want to try the cigarette but you're thinking about whether it's a good idea.
1. Overall, how risky do you think it would be to try the cigarette?
(1) Not at All Risky (2) A Little Risky (3) Somewhat Risky (4) Very Risky (5) Definitely Risky
2. How likely do you think it is that you would decide to try the cigarette?
(1) Not at All Likely (2) Not Very Likely (3) Likely (4) Very Likely (5) Definitely
- Since you're with a bunch of friends who are trying the cigarette you may have mixed feelings and be uncertain about what to do. Imagine yourself in that moment. Here are some examples of what some people might think when making this kind of decision. In that moment, how much would you think about the following before you decide what to do?
1. In that moment how much would you think about getting physically sick (i.e. addiction)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
2. In that moment how much would you think about whether you'd regret doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
3. In that moment how much would you think about getting in legal trouble/arrested?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
4. In that moment how much would you think about damaging your academic standing (i.e. being expelled; violating athletic requirements)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
5. In that moment how much would you think about whether you'd enjoy doing this/get a thrill out of it?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
6. In that moment how much would you think about others getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
7. In that how much would you think about causing emotional/financial stress to others?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
8. In that moment how much would you think about earning bragging rights or impressing others by doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
9. In that moment how much would you think about what your family would think if they found out?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
- C. You meet a new and attractive person at a party. You're having a good time and after talking for a little bit, you start messing around and things get heated. You're really

attracted to him/her and feel like hooking up. This person has been around and you don't really know if he/she has any STD's. Neither one of you has protection. Imagine that you really want to have sex with this person but you're thinking about what to do.

1. Overall, how risky do you think it would be to have unprotected sex?
(1) Not at All Risky (2) A Little Risky (3) Somewhat Risky (4) Very Risky (5) Definitely Risky
2. How likely do you think it is that you would decide to have unprotected sex?
(1) Not at All Likely (2) Not Very Likely (3) Likely (4) Very Likely (5) Definitely

Since you are very attracted to this person you may have mixed feelings and be uncertain about what to do. Imagine yourself in that moment. Here are some examples of what some people might think when making this kind of decision. In that moment, how much would you think about the following before you decide what to do?

1. In that moment how much would you think about the possibility of pregnancy or getting physically sick/hurt (i.e. sexual force, STD)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
2. In that moment how much would you think about whether you'd regret doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
3. In that moment how much would you think about getting in legal trouble/arrested?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
4. In that moment how much would you think about damaging your academic standing (i.e. being expelled; violating athletic requirements)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
5. In that moment how much would you think about whether you'd enjoy doing this/get a thrill out of it?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
6. In that moment how much would you think about others getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
7. In that how much would you think about causing emotional/financial stress to others?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
8. In that moment how much would you think about earning bragging rights or impressing others by doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
9. In that moment how much would you think about what your family would think if they found out?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot

D. You are hanging out with a bunch of friends. People are having a good time. You notice some of your friends in the living room experimenting with a new drug. You asked them about it and they seem to think they can handle it but you aren't really sure if it is dangerous. They seem like they have a really good high so you're curious about what all the hype is about. You want to try the drug but you're thinking about whether it's a good idea.

1. Overall, how risky do you think it would be to try this drug?
(1) Not at All Risky (2) A Little Risky (3) Somewhat Risky (4) Very Risky (5) Definitely Risky
2. How likely do you think it is that you would decide to try the drug?
(1) Not at All Likely (2) Not Very Likely (3) Likely (4) Very Likely (5) Definitely

Since you're with a bunch of friends who are trying this new drug you may have mixed feelings and be uncertain about what to do. Imagine yourself in that moment. Here are some examples of what some people might think when making this kind of decision. In that moment, how much would you think about the following before you decide what to do?

1. In that moment how much would you think about getting physically sick (i.e. addiction)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
2. In that moment how much would you think about whether you'd regret doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
3. In that moment how much would you think about getting in legal trouble/arrested?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
4. In that moment how much would you think about damaging your academic standing (i.e. being expelled; violating athletic requirements)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
5. In that moment how much would you think about whether you'd enjoy doing this/get a thrill out of it?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
6. In that moment how much would you think about others getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
7. In that how much would you think about causing emotional/financial stress to others?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
8. In that moment how much would you think about earning bragging rights or impressing others by doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
9. In that moment how much would you think about what your family would think if they found out?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot

E. After watching a late movie you are driving home with your boyfriend/girlfriend who is sitting in the passenger seat. A sporty car pulls up alongside you revving up the engine and giving you the signal that they're ready to race. They speed up to the next stoplight and since you have a pretty decent car you play along you entertain the idea of racing this car to get a good adrenaline rush. Your boyfriend/girlfriend in the passenger seat is telling you to go for it but you're thinking about what to do.

1. Overall, how risky do you think it would be to race?
(1) Not at All Risky (2) A Little Risky (3) Somewhat Risky (4) Very Risky (5) Definitely Risky

2. How likely do you think it is that you would decide to race?
(1) Not at All Likely (2) Not Very Likely (3) Likely (4) Very Likely (5) Definitely

Since your boyfriend/girlfriend is excited and wants you to race you may have mixed feelings and be uncertain about what to do. Imagine yourself in that moment. How much would you think about the following before you decide what to do? Here are some examples of what some people might think when making this kind of decision. In that moment, how much would you think about the following before you decide what to do?

1. In that moment how much would you think about getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
2. In that moment how much would you think about whether you'd regret doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
3. In that moment how much would you think about getting in legal trouble/arrested?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
4. In that moment how much would you think about damaging your academic standing (i.e. being expelled; violating athletic requirements)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
5. In that moment how much would you think about whether you'd enjoy doing this/get a thrill out of it?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
6. In that moment how much would you think about others getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
7. In that how much would you think about causing emotional/financial stress to others?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
8. In that moment how much would you think about earning bragging rights or impressing others by doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
9. In that moment how much would you think about what your family would think if they found out?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot

F. After a couple of hours studying in the library you get frustrated that your laptop keeps crashing. It hasn't been working for a few weeks. You pick up your things and notice that there's a new Mac Book, definitely worth over \$1000.00, on the desk across from where you've been studying. You haven't seen anyone come around to look for it. You think someone probably forgot it and you think of taking it before someone comes back to get it. You figure that you can take it without getting caught since there are no security cameras.

1. Overall, how risky do you think it would be to take the laptop?
(1) Not at All Risky (2) A Little Risky (3) Somewhat Risky (4) Very Risky (5) Definitely Risky
2. How likely do you think it is that you would decide to take the laptop?
(1) Not at All Likely (2) Not Very Likely (3) Likely (4) Very Likely (5) Definitely

Since you're frustrated about how your laptop keeps crashing you may have mixed feelings and be uncertain about what to do. Imagine yourself in that moment. Here are some examples of what some people might think when making this kind of decision. In that moment, how much would you think about the following before you decide what to do?

1. In that moment how much would you think about getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
2. In that moment how much would you think about whether you'd regret doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
3. In that moment how much would you think about getting in legal trouble/arrested?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
4. In that moment how much would you think about damaging your academic standing (i.e. being expelled; violating athletic requirements)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
5. In that moment how much would you think about whether you'd enjoy doing this/get a thrill out of it?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
6. In that moment how much would you think about others getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
7. In that how much would you think about causing emotional/financial stress to others?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
8. In that moment how much would you think about earning bragging rights or impressing others by doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
9. In that moment how much would you think about what your family would think if they found out?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot

G. You and a few friends drive out to a quiet spot to hang out at a cliff overlooking a small waterfall. Some of your friends have been jumping off the rocks, about 15 feet above the water. It's a hot and humid day and it looks kind of cool to jump into the water that way. You can see some rocks near the base of the waterfall. You remember a news story about a teenager who landed head-first on the rocks and got paralyzed but none of your friends have been hurt doing it. You want to try it but you're still thinking about if you should.

1. Overall, how risky do you think it would be to jump off the rocks?
(1) Not at All Risky (2) A Little Risky (3) Somewhat Risky (4) Very Risky (5) Definitely Risky
2. How likely do you think it is that you would decide to jump off the rocks?
(1) Not at All Likely (2) Not Very Likely (3) Likely (4) Very Likely (5) Definitely

Since your friends are having fun you may have mixed feelings and be uncertain about what to do. Imagine yourself in that moment. Here are some examples of what some

people might think when making this kind of decision. In that moment, how much would you think about the following before you decide what to do?

1. In that moment how much would you think about getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
2. In that moment how much would you think about whether you'd regret doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
3. In that moment how much would you think about getting in legal trouble/arrested?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
4. In that moment how much would you think about damaging your academic standing (i.e. being expelled; violating athletic requirements)?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
5. In that moment how much would you think about whether you'd enjoy doing this/get a thrill out of it?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
6. In that moment how much would you think about others getting physically hurt?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
7. In that how much would you think about causing emotional/financial stress to others?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
8. In that moment how much would you think about earning bragging rights or impressing others by doing this?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot
9. In that moment how much would you think about what your family would think if they found out?
(1) Not at All (2) Very Little (3) Somewhat (4) A Lot

Are you a "risk-taker"?

Some people really enjoy taking risks. Other people prefer not to do anything risky. On the following scale, indicate how much the term "risk-taker" describes you at this time in your life.

1. First, what do you think about yourself as a risk-taker, in general?
(1) Not me at All! (2) (3) (4) (5) That's me!

Now, think about how much the term "risk-taker" describes you at this time in your life when it comes to each of the following behaviors.

1. Doing extreme physical activities
(1) Not me at All! (2) (3) (4) (5) That's me!
2. Risking your money (i.e. gambling)
(1) Not me at All! (2) (3) (4) (5) That's me!
3. Risky sexual activity (i.e. unprotected sex, being promiscuous)
(1) Not me at All! (2) (3) (4) (5) That's me!
4. Substance use (i.e. hard drugs)
(1) Not me at All! (2) (3) (4) (5) That's me!

5. Risky driving behaviors (i.e. speeding, driving buzzed)
 - (1) Not me at All! (2) (3) (4) (5) That's me!
6. Excessive or binge drinking
 - (1) Not me at All! (2) (3) (4) (5) That's me!
7. Doing minor illegal activities (i.e. misdemeanors, vandalism, petty theft, possession of illegal drugs)
 - (1) Not me at All! (2) (3) (4) (5) That's me!
8. Doing major illegal activities (i.e. felonies, burglary, arson, aggravated assault)
 - (1) Not me at All! (2) (3) (4) (5) That's me!

Behavior Survey

1. Have you ever tried cigarette smoking, even one or two puffs?
 - (1) Yes
 - (2) No
2. How old were you when you smoked a whole cigarette for the first time?
 - (1) I have never smoked a whole cigarette
 - (2) 8 years old or younger
 - (3) 9 or 10 years old
 - (4) 11 or 12 years old
 - (5) 13 or 14 years old
 - (6) 15 or 16 years old
 - (7) 17 years old
 - (8) 18 years old or older
3. Have you ever tried drinking alcohol?
 - (1) Yes
 - (2) No
4. How old were you when you had your first drink of alcohol other than a few sips?
 - (1) I have never had a drink of alcohol other than a few sips
 - (2) 8 years old or younger
 - (3) 9 or 10 years old
 - (4) 11 or 12 years old
 - (5) 13 or 14 years old
 - (6) 15 or 16 years old
 - (7) 17 or 18 years old
 - (8) 19 or 20 years old
 - (9) 21 years old or older
5. Have you ever tried using any form of illegal drug, including cocaine, marijuana, ecstasy, heroin?
 - (1) Yes
 - (2) No
6. How old were you when you tried any form of illegal drug, including cocaine, marijuana, ecstasy, heroin, for the first time?
 - (1) I have never tried any form of illegal drug

- (2) 8 years old or younger
 - (3) 9 or 10 years old
 - (4) 11 or 12 years old
 - (5) 13 or 14 years old
 - (6) 15 or 16 years old
 - (7) 17 years old
 - (8) 18 years old or older
7. Have you ever had sexual intercourse?
- (1) Yes
 - (2) No
8. How old were you when you had sexual intercourse for the first time?
- (1) I have never had sexual intercourse
 - (2) 11 years old or younger
 - (3) 12 years old
 - (4) 13 years old
 - (5) 14 years old
 - (6) 15 years old
 - (7) 16 years old
 - (8) 17 years old
 - (9) 18 years old or older

Risk Involvement and Perception Scale

For each of the following, circle the number that corresponds to your involvement in that behavior during the last 3 months.

1. having sex
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
2. riding with a drunk driver
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
3. drinking alcohol
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
4. walking alone at night
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
5. getting drunk
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
6. binge eating
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
7. riding a motorcycle
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
8. Using marijuana
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
9. driving a car
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
10. taking speed while driving
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
11. having sex without a condom

- (1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
12. shoplifting
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
 13. driving after drinking
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
 14. riding without a seatbelt
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
 15. taking cocaine/crack
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
 16. smoking cigarettes
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
 17. texting or e-mailing while driving
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily
 18. Drinking 4 - 5 alcohol drinks within 2 hours
(1) Never (2) (3) Rarely (4) (5) Occasionally (6) (7) Often (8) (9) Daily

For each of the following, how risky or dangerous it would be for you to engage in the behavior?

1. having sex
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
2. riding with a drunk driver
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
3. drinking alcohol
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
4. walking alone at night
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
5. getting drunk
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
6. binge eating
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
7. riding a motorcycle
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
8. Using marijuana
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
9. driving a car
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
10. taking speed while driving
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
11. having sex without a condom
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
12. shoplifting
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
13. driving after drinking
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
14. riding without a seatbelt
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
15. taking cocaine/crack
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky

16. smoking cigarettes
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
17. texting or e-mailing while driving
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky
18. Drinking 4 - 5 alcohol drinks within 2 hours
(1) not at all risky (2) (3) (4) (5) (6) (7) (8) (9) extremely risky

For each of the following, how advantageous or beneficial it would be for you to engage in the behavior?

1. having sex
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
2. riding with a drunk driver
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
3. drinking alcohol
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
4. walking alone at night
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
5. getting drunk
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
6. binge eating
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
7. riding a motorcycle
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
8. Using marijuana
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
9. driving a car
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
10. taking speed while driving
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
11. having sex without a condom
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
12. shoplifting
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
13. driving after drinking
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
14. riding without a seatbelt
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
15. taking cocaine/crack
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
16. smoking cigarettes
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
17. texting or e-mailing while driving
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial
18. Drinking 4 - 5 alcohol drinks within 2 hours
(1) not at all beneficial (2) (3) (4) (5) (6) (7) (8) (9) extremely beneficial

Appendix B

大學生行為研究

親愛的同學：

您好！我們正在進行一個關於父母如何影響大學生行為的研究，希望能透過此問卷了解您與父母親的關係。您將會花 40 分鐘填寫此線上問卷，問卷內容包括您的父母與您相處的情形，以及您從事一些行為的頻率。

請您依照真實情況填答，並在問卷的最後留下您的姓名與聯絡方式，我們將會寄送禮券給您以表達感謝！您的填答將會完全保密，如果您在問卷中回答您曾經從事過非法的行為，您不會受到任何懲罰或負面的影響。此問卷完全匿名，您的個人資料只會用於寄送禮券，您的名字和您的問卷會被分開存放。在此誠摯地感謝您的參與！

我們並不預期您會因為填寫此問卷而感受到不舒服，但如果您真的有相關的感受，請您和研究者周珮雯聯絡（cchou007@ucr.edu）。另外，如果您對您的權益有任何的問題，請您聯絡美國 UCR Office of Research Integrity（IRB@ucr.edu）。

謝謝您的協助與合作！

我同意參與此研究，並願意依照真實情形填寫此線上問卷。

加州大學河濱分校 (University of California, Riverside) 心理研究所

指導教授：Misaki Natsuaki

研究生：周珮雯 敬上

基本資料

- _____ 1. 性別：(1) 男 (2) 女
- _____ 2. 年齡：(1) 17 (含) 以下 (2) 18 (3) 19 (4) 20
(5) 21 (6) 22 (7) 23 (含)以上
- _____ 3. 年級：(1) 大一 (2) 大二 (3) 大三 (4) 大四(含)以上
- _____ 4. 目前居住狀況：(1) 住學校宿舍 (2) 和父母/親人同住
(3) 住校外 (自己獨住/和朋友住)
- _____ 5. 父母婚姻狀況：(1) 結婚 (2) 分居 (3) 離婚 (4) 從未結婚/單身
(5) 父母其中之一已過世
- _____ 6. 您的媽媽來自？(1) 台灣 (閩南、客家、外省人)
(2) 原住民
(3) 中國大陸 (含港澳)
(4) 東南亞國家 (如印尼、菲律賓、越南)
(0) 其它國家 _____ (請說明)
- _____ 7. 您的爸爸來自？(1) 台灣 (閩南、客家、外省人)
(2) 原住民
(3) 中國大陸 (含港澳)
(4) 東南亞國家 (如印尼、菲律賓、越南)
(0) 其它國家 _____ (請說明)
- _____ 8. 您母親的最高教育程度？(1) 小學 (2) 國中 (3) 高中/職 (4) 五專
(5) 大學 (6) 碩士 (7) 博士 (0) 其它
- _____ 9. 您父親的最高教育程度？(1) 小學 (2) 國中 (3) 高中/職 (4) 五專
(5) 大學 (6) 碩士 (7) 博士 (0) 其它
- _____ 10. 您的經濟來源？(1) 完全靠父母 (2) 大部分靠父母
(3) 自己負擔一半 (4) 大部分靠自己
(5) 完全靠自己

母親與我

下列問題為關於您母親的敘述，目的在讓我們更加了解您的母親。請根據您**高中時期**的情況，圈選出最符合您母親的答案。

請注意：關於以下描述，請依據您母親（或在您高中階段照顧您的女性）來作答。

- _____ 1. 以下問題我將依據_____來作答：
(1) 親生母親 (2) 繼母 (父親再婚的對象)
(3) 領養我的母親 (0) 其它 (請說明) _____

我的媽媽是個怎樣的人？

- _____ 1. 即使當我有些話想說，她仍會改變我的話題。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 2. 時常打斷我說話。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 3. 總是想要改變我對事情的看法與想法。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 4. 會因為其他家人的問題而責怪我。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 5. 當她批評我時，會提起我過去做錯的事。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 6. 告訴我所有她為我做過的事。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 7. 說如果我在乎她，就不應該做出讓她擔心的事。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 8. 如果我不順著她的意思，她就會對我不友善。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 9. 當我讓她失望時，她會不理我。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 10. 如果我傷了她的心，她會不跟我說話，直到我主動討好她。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 11. 嘲笑我或貶低我 (例如：說我笨、沒用)。
(1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 12. 讓我在公眾場合出糗 (例如：在我朋友面前)。

- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 13. 不尊重我 (例如：不讓我說話、比較喜歡別人)。
- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 14. 不尊重我的隱私 (例如：進入我的房間、看我的東西)。
- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 15. 當我做了某些不該做的事，她會試圖讓我有罪惡感。
- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 16. 對我期望太高 (例如：成績可以更好、可以成為更好的人)。
- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 17. 常常不公平地把我跟別人比較 (例如：和我的兄弟姊妹比較、和她自己比較)。
- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 18. 常常忽略我 (例如：不接近我、不關心我)。
- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 19. 說我如果做出不好的事會讓家人也蒙羞。
- (1) 不像她 (2) 有些像她 (3) 非常像她

請根據下列描述，圈選出最符合您母親的答案。

- _____ 1. 我媽媽允許我擁有我想要的自由。
- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 2. 我媽媽允許我做任何我喜歡做的事。
- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 3. 我媽媽允許我在任何一個我想要出去的晚上出去。
- (1) 不像她 (2) 有些像她 (3) 非常像她
- _____ 4. 我媽媽允許我，不用向她詢問就可以去任何地方。
- (1) 不像她 (2) 有些像她 (3) 非常像她

關於下列敘述，您的母親知道多少？

- _____ 1. 你媽媽知道你晚上去哪裡嗎？
- (1) 不知道 (2) 知道一些 (3) 幾乎都知道
- _____ 2. 你媽媽知道你放學後在哪裡嗎？
- (1) 不知道 (2) 知道一些 (3) 幾乎都知道
- _____ 3. 你媽媽知道你把你的零用錢花在哪裡嗎？
- (1) 不知道 (2) 知道一些 (3) 幾乎都知道
- _____ 4. 你媽媽知道你的閒暇時間在做些什麼嗎？

- (1) 不知道 (2) 知道一些 (3) 幾乎都知道
- _____ 5. 你媽媽知道你的朋友們是誰嗎？
- (1) 不知道 (2) 知道一些 (3) 幾乎都知道

父親與我

下列問題為關於您父親的敘述，目的在讓我們更加了解您的父親。請根據您**高中時期**的情況，圈選出最符合您父親的答案。

請注意：關於以下描述，請依據您父親（或在您高中階段照顧您的男性）來作答。

- _____ 1. 以下問題我將依據_____來作答：
- (1) 親生父親 (2) 繼父 (母親再婚的對象)
- (3) 領養我的父親 (0) 其它 (請說明) _____

我的爸爸是個怎樣的人？

- _____ 1. 即使當我有些話想說，他仍會改變我的話題。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 2. 時常打斷我說話。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 3. 總是想要改變我對事情的看法與想法。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 4. 會因為其他家人的問題而責怪我。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 5. 當他批評我時，會提起我過去做錯的事。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 6. 告訴我所有他為我做過的事。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 7. 說如果我在乎他，就不應該做出讓他擔心的事。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 8. 如果我不順著他的意思，他就會對我不友善。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 9. 當我讓他失望時，他會不理我。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 10. 如果我傷了他的心，他會不跟我說話，直到我主動討好他。

- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 11. 嘲笑我或貶低我 (例如：說我笨、沒用)。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 12. 讓我在公眾場合出糗 (例如：在我朋友面前)。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 13. 不尊重我 (例如：不讓我說話、比較喜歡別人)。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 14. 不尊重我的隱私 (例如：進入我的房間、看我的東西)。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 15. 當我做了某些不該做的事，他會試圖讓我有罪惡感。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 16. 對我期望太高 (例如：成績可以更好、可以成為更好的人)。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 17. 常常不公平地把我跟別人比較 (例如：和我的兄弟姐妹比較、和他自己比較)。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 18. 常常忽略我 (例如：不接近我、不關心我)。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 19. 說我如果做出不好的事會讓家人也蒙羞。
- (1) 不像他 (2) 有些像他 (3) 非常像他

請根據下列描述，圈選出最符合您父親的答案。

- _____ 1. 我爸爸允許我擁有我想要的自由。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 2. 我爸爸允許我做任何我喜歡做的事。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 3. 我爸爸允許我在任何一個我想要出去的晚上出去。
- (1) 不像他 (2) 有些像他 (3) 非常像他
- _____ 4. 我爸爸允許我，不用向他詢問就可以去任何地方。
- (1) 不像他 (2) 有些像他 (3) 非常像他

關於下列敘述，您的父親知道多少？

- _____ 1. 你爸爸知道你晚上去哪裡嗎？
- (1) 不知道 (2) 知道一些 (3) 幾乎都知道
- _____ 2. 你爸爸知道你放學後在哪裡嗎？

- (1) 不知道 (2) 知道一些 (3) 幾乎都知道
_____ 3. 你爸爸知道你把你的零用錢花在哪裡嗎？
(1) 不知道 (2) 知道一些 (3) 幾乎都知道
_____ 4. 你爸爸知道你的閒暇時間在做些什麼嗎？
(1) 不知道 (2) 知道一些 (3) 幾乎都知道
_____ 5. 你爸爸知道你的朋友們是誰嗎？
(1) 不知道 (2) 知道一些 (3) 幾乎都知道

風險容忍度

什麼時候會讓你覺得從事某件事會太危險呢？請依據 0%到 100% 的危險機率來回答下列問題。請想想看，當做一件事情發生危險的機率多高時，會讓你決定不做那件事？請於以下空格填上 0-100 的數字。

舉例來說，「當你很想做某件事時，你能忍受自己會受傷的機率有多高？」如果你能夠忍受 30%的機率自己可能會受傷，請在問題後面的格子裡填上「30」。

請注意：越大的數字表示你能夠忍受越大的風險，越小的數字代表你能忍受較小的風險。

1. 當你很想做某件事時，你能忍受自己會受傷的機率有多高？我能夠忍受 _____% 自己可能會受傷的機率。
2. 當你很想做某件事時，你能忍受會違規犯法/被逮捕的機率有多高？我能夠忍受 _____% 可能會違規犯法/被逮捕的機率。
3. 當你很想做某件事時，你能忍受會影響你學業表現的機率有多高？我能夠忍受 _____% 可能會影響我學業表現的機率。
4. 當你很想做某件事時，你能忍受會造成你金錢損失的機率有多高？我能夠忍受 _____% 可能會造成我金錢損失的機率。
5. 當你很想做某件事時，你能忍受別人會因此受傷的機率有多高？我能夠忍受 _____% 別人可能會受傷的機率。
6. 當你很想做某件事時，你能忍受會造成別人心理上的壓力的機率有多高？我能夠忍受 _____% 可能會造成別人心理上的壓力的機率。

7. 當你很想做某件事時，你能忍受會造成別人金錢上的壓力的機率有多高？我能夠忍受 _____% 可能會造成別人金錢上的壓力的機率。
8. 當你很想做某件事時，你能忍受會讓你家人失望的機率有多高？我能夠忍受 _____% 可能會讓我家人失望的機率。

行為情境

請想想看在下面幾個假想的情境中，您會如何做決定。答案沒有對錯，請依照您的想法作答。您可能曾經或不曾經歷過以下情境，請設想您處在所描述情境的當下，可能會感受到怎樣的情緒跟想法，並依此回答下列問題。

- A. 你的朋友辦了一場聚會，邀請你和其他朋友們一起去。你在這場聚會裡待了一陣子了，並且玩得很開心。後來其中一些朋友開始打賭，要你跟另一個朋友比賽，看誰可以喝比較多啤酒。那位朋友說自己已經準備好，而且確定可以喝三瓶以上。你知道你其他朋友們都很期待你可以接受挑戰，也知道你加入這個比賽可以讓這場聚會變得更好玩。你正在思考該不該加入這場喝酒比賽...

- _____ 1. 整體來說，你覺得參加這場喝酒比賽有多危險？
 (1) 一點也不危險 (2) 一點點危險 (3) 有些危險 (4) 非常危險 (5) 絕對危險
- _____ 2. 你覺得你有多可能參加這場喝酒比賽？
 (1) 一點也不可能 (2) 不是很可能 (3) 可能 (4) 非常可能 (5) 絕對會

因為你的朋友們在打賭這場遊戲，你可能有很多種想法，而且不確定該怎麼做才好。請設想你處在當下那個情境。當某些人處在這樣的情境時，可能會有下列這些想法。請想想看當你在做決定要不要加入喝酒比賽時，你有多可能想到以下的事情？

	一	點	也	很	有	考
	不	少	少	些	多	慮
1. 在那個情境當下，你會考慮到可能會造成身體受傷/不適嗎？	1	2	3	4	5	多
2. 在那個情境當下，你會考慮到是否你會後悔嗎？	1	2	3	4	5	多

3. 在那個情境當下，你會考慮到會有 <u>法律問題/遭到逮捕</u> 嗎？	1	2	3	4
4. 在那個情境當下，你會考慮到會 <u>影響你的學業表現</u> 嗎？	1	2	3	4
5. 在那個情境當下，你會考慮到 <u>你是否會開心/感到快樂</u> 嗎？	1	2	3	4
6. 在那個情境當下，你會考慮到 <u>其他人會身體受傷/不適</u> 嗎？	1	2	3	4
7. 在那個情境當下，你會考慮到 <u>造成其他人情緒上/金錢上的壓力</u> 嗎？	1	2	3	4
8. 在那個情境當下，你會考慮到 <u>贏得別人歡呼或讓人留下印象</u> 嗎？	1	2	3	4
9. 在那個情境當下，你會考慮到 <u>當你父母知道這件事會怎麼想</u> 嗎？	1	2	3	4

B. 你在放學回家的途中，看到你的幾個朋友在街角處抽菸。你朋友說他們剛拿到一包菸，抽起來的味道很棒。你很好奇那個味道是什麼，於是你的朋友叫你試一根看看。你想要試試看，但你不確定這麼做好不好。

_____ 1. 整體來說，你覺得試抽菸有多危險？

(1) 一點也不危險 (2) 一點點危險 (3) 有些危險 (4) 非常危險 (5) 絕對危險

_____ 2. 你覺得你有多可能試抽菸？

(1) 一點也不可能 (2) 不是很可能 (3) 可能 (4) 非常可能 (5) 絕對會

因為你的朋友們在試抽一包菸，你可能有很多種想法，而且不確定該怎麼做才好。請設想你處在當下那個情境。當某些人處在這樣的情境時，可能會有下列這些想法。請想想看當你在做決定要不要試抽菸時，你有多可能想到以下的事情？

一點
也
不
很少
有些
考慮
很多

1. 在那個情境當下，你會考慮到可能會造成身體受傷/不適（例如上癮）嗎？	1	2	3	4
2. 在那個情境當下，你會考慮到是否你會後悔嗎？	1	2	3	4
3. 在那個情境當下，你會考慮到會有法律問題/遭到逮捕嗎？	1	2	3	4
4. 在那個情境當下，你會考慮到會影響你的學業表現嗎？	1	2	3	4
5. 在那個情境當下，你會考慮到你是否會開心/感到快樂嗎？	1	2	3	4
6. 在那個情境當下，你會考慮到其他人會身體受傷/不適嗎？	1	2	3	4
7. 在那個情境當下，你會考慮到造成其他人情緒上/金錢上的壓力嗎？	1	2	3	4
8. 在那個情境當下，你會考慮到贏得別人歡呼或讓人留下印象嗎？	1	2	3	4
9. 在那個情境當下，你會考慮到當你父母知道這件事會怎麼想嗎？	1	2	3	4

- C. 你在一場聚會中認識了一個新朋友，並且覺得他/她很有吸引力。你們聊得很開心，也玩得很愉快，你開始感到兩人之間的火花，想要跟他/她發生進一步的關係。你真的很喜歡他/她，並順其自然地即將發生性行為。因為你才剛認識這個朋友，你不知道這個人是否有任何性傳染疾病，你們兩人也都沒有防護措施。你想和這個人發生關係，但你在想該怎麼做才好。

- _____ 1. 整體來說，你覺得進行沒有防護的性行為有多危險？
 (1) 一點也不危險 (2) 一點點危險 (3) 有些危險 (4) 非常危險 (5) 絕對危險
- _____ 2. 你覺得你有多可能進行沒有防護的性行為？
 (1) 一點也不可能 (2) 不是很可能 (3) 可能 (4) 非常可能 (5) 絕對會

因為你真的很喜歡這個人，你可能有很多種想法，而且不確定該怎麼做才好。請設想你處在當下那個情境。當某些人處在這樣的情境時，可能會有下列這些想法。請想想看當你在做決定要不要進行沒有防護的性行為時，你有多可能想到以下的事情？

	一 點 也 不	很 少	有 些	考 慮 很 多
1. 在那個情境當下，你會考慮到可能會造成身體受傷/不適（例如性傳染疾病）嗎？	1	2	3	4
2. 在那個情境當下，你會考慮到是否你會後悔嗎？	1	2	3	4
3. 在那個情境當下，你會考慮到會有法律問題/遭到逮捕嗎？	1	2	3	4
4. 在那個情境當下，你會考慮到會影響你的學業表現嗎？	1	2	3	4
5. 在那個情境當下，你會考慮到你是否會開心/感到快樂嗎？	1	2	3	4
6. 在那個情境當下，你會考慮到其他人會身體受傷/不適嗎？	1	2	3	4
7. 在那個情境當下，你會考慮到造成其他人情緒上/金錢上的壓力嗎？	1	2	3	4
8. 在那個情境當下，你會考慮到贏得別人歡呼或讓人留下印象嗎？	1	2	3	4
9. 在那個情境當下，你會考慮到當你父母知道這件事會怎麼想嗎？	1	2	3	4

D. 你和一群朋友出去玩，玩得很愉快，後來你注意到有幾個朋友在嘗試一種藥物。你問他們那是什麼，因為那藥物看起來對他們似乎沒有負面影響，但你不確定那藥物會不會危險。那幾個朋友顯得很快樂，情緒很嗨，讓你很好奇那種感覺是什麼。你想要試試看，但你不確定這麼做好不好。

_____ 1. 整體來說，你覺得嘗試藥物有多危險？

(1) 一點也不危險 (2) 一點點危險 (3) 有些危險 (4) 非常危險 (5) 絕對危險

_____ 2. 你覺得你有多可能嘗試藥物？

(1) 一點也不可能 (2) 不是很可能 (3) 可能 (4) 非常可能 (5) 絕對會

因為你和一群嘗試藥物的朋友在一起，你可能有很多種想法，而且不確定該怎麼做才好。請設想你處在當下那個情境。當某些人處在這樣的情境時，可能會有下列這些想法。請想想看當你在做決定要不要嘗試藥物時，你有多可能想到以下的事情？

	一 點 也 不	很 少	有 些	考 慮 很 多
1. 在那個情境當下，你會考慮到可能會造成身體受傷/不適（例如上癮）嗎？	1	2	3	4
2. 在那個情境當下，你會考慮到是否你會後悔嗎？	1	2	3	4
3. 在那個情境當下，你會考慮到會有法律問題/遭到逮捕嗎？	1	2	3	4
4. 在那個情境當下，你會考慮到會影響你的學業表現嗎？	1	2	3	4
5. 在那個情境當下，你會考慮到你是否會開心/感到快樂嗎？	1	2	3	4
6. 在那個情境當下，你會考慮到其他人會身體受傷/不適嗎？	1	2	3	4
7. 在那個情境當下，你會考慮到造成其他人情緒上/金錢上的壓力嗎？	1	2	3	4
8. 在那個情境當下，你會考慮到贏得別人歡呼或讓人留下印象嗎？	1	2	3	4
9. 在那個情境當下，你會考慮到當你父母知道這件事會怎麼想嗎？	1	2	3	4

- E. 你和你的男/女朋友看完電影後準備騎車回家。這時有另一台車停在你們旁邊，對你們挑釁，並且用燈號暗示你們要賽車。接著，那台車就加速往前停在下一個路口等待。你和你的男/女朋友對你們的機車很熟悉，騎得很好，所以你覺得賽車這個點子很有趣。你的男/女朋友想要追上那台車，但你在想該怎麼做才好。

- _____ 1. 整體來說，你覺得飆車有多危險？
 (1) 一點也不危險 (2) 一點點危險 (3) 有些危險 (4) 非常危險 (5) 絕對危險
 _____ 2. 你覺得你有多可能飆車？

(1) 一點也不可能 (2) 不是很可能 (3) 可能 (4) 非常可能 (5) 絕對會

因為你的男/女朋友很興奮地要飆車，你可能有很多種想法，而且不確定該怎麼做才好。請設想你處在當下那個情境。當某些人處在這樣的情境時，可能會有下列這些想法。請想想看當你在做決定要不要飆車時，你有多可能想到以下的事情？

	一 點 也 不	很 少	有 些	考 慮 很 多
1. 在那個情境當下，你會考慮到可能會造成身體受傷/不適嗎？	1	2	3	4
2. 在那個情境當下，你會考慮到是否你會後悔嗎？	1	2	3	4
3. 在那個情境當下，你會考慮到會有法律問題/遭到逮捕嗎？	1	2	3	4
4. 在那個情境當下，你會考慮到會影響你的學業表現嗎？	1	2	3	4
5. 在那個情境當下，你會考慮到你是否會開心/感到快樂嗎？	1	2	3	4
6. 在那個情境當下，你會考慮到其他人會身體受傷/不適嗎？	1	2	3	4
7. 在那個情境當下，你會考慮到造成其他人情緒上/金錢上的壓力嗎？	1	2	3	4
8. 在那個情境當下，你會考慮到贏得別人歡呼或讓人留下印象嗎？	1	2	3	4
9. 在那個情境當下，你會考慮到當你父母知道這件事會怎麼想嗎？	1	2	3	4

- F. 你在圖書館做作業待了好幾個小時，但是你的筆電一直當機讓你很生氣，你的筆電已經持續這樣好幾個星期了。你正收拾東西準備離開時，注意到你前方桌上有一台價值 30000 元以上的新筆電。這幾個小時內你都沒有看到有人來那個位置找筆電，你覺得應該是有人忘記帶走了。你想要趁筆電主人回來前把那台筆電拿走，你也注意到附近沒有監視器所以不會被抓到，但你不確定這麼做好不好。

_____ 1. 整體來說，你覺得拿走筆電有多危險？

(1) 一點也不危險 (2) 一點點危險 (3) 有些危險 (4) 非常危險 (5) 絕對危險

_____ 2. 你覺得你有多可能拿走筆電？

(1) 一點也不可能 (2) 不是很可能 (3) 可能 (4) 非常可能 (5) 絕對會

因為你很生氣你的筆電一直當機，你可能有很多種想法，而且不確定該怎麼做才好。請設想你處在當下那個情境。當某些人處在這樣的情境時，可能會有下列這些想法。請想想當你在做決定要不要拿走筆電時，你有多可能想到以下的事情？

	一 點 也 不	很 少	有 些	考 慮 很 多
1. 在那個情境當下，你會考慮到可能會 <u>造成身體受傷/不適</u> 嗎？	1	2	3	4
2. 在那個情境當下，你會考慮到 <u>是否你會後悔</u> 嗎？	1	2	3	4
3. 在那個情境當下，你會考慮到會有 <u>法律問題/遭到逮捕</u> 嗎？	1	2	3	4
4. 在那個情境當下，你會考慮到會 <u>影響你的學業表現</u> 嗎？	1	2	3	4
5. 在那個情境當下，你會考慮到 <u>你是否會開心/感到快樂</u> 嗎？	1	2	3	4
6. 在那個情境當下，你會考慮到 <u>其他人會身體受傷/不適</u> 嗎？	1	2	3	4
7. 在那個情境當下，你會考慮到 <u>造成其他人情緒上/金錢上的壓力</u> 嗎？	1	2	3	4
8. 在那個情境當下，你會考慮到 <u>贏得別人歡呼或讓人留下印象</u> 嗎？	1	2	3	4
9. 在那個情境當下，你會考慮到 <u>當你父母知道這件事會怎麼想</u> 嗎？	1	2	3	4

G. 你和幾個朋友到戶外玩，爬到一個小瀑布的上頭的岩石上。你的朋友們開始玩起跳水，岩石距離水面大約有 4.5 公尺。這天很熱又很潮濕，跳進水裡感覺會很涼快。你看到瀑布底層有一些石頭，你想起新聞曾經報導有學生跳水時頭部撞到石頭造成癱瘓，但是你的朋友們沒有人受傷。你想要跟著跳下岩石到水裡玩樂，但你在想到底該不該這麼做。

- _____ 1. 整體來說，你覺得跳下岩石有多危險？
 (1) 一點也不危險 (2) 一點點危險 (3) 有些危險 (4) 非常危險 (5) 絕對危險
- _____ 2. 你覺得你有多可能跳下岩石？
 (1) 一點也不可能 (2) 不是很可能 (3) 可能 (4) 非常可能 (5) 絕對會

因為你的朋友們玩得很開心，你可能有很多種想法，而且不確定該怎麼做才好。請設想你處在當下那個情境。當某些人處在這樣的情境時，可能會有下列這些想法。請想想看當你在做決定要不要跳下岩石時，你有多可能想到以下的事情？

	一 點 也 不	很 少	有 些	考 慮 很 多
1. 在那個情境當下，你會考慮到可能會造成身體受傷/不適嗎？	1	2	3	4
2. 在那個情境當下，你會考慮到是否你會後悔嗎？	1	2	3	4
3. 在那個情境當下，你會考慮到會有法律問題/遭到逮捕嗎？	1	2	3	4
4. 在那個情境當下，你會考慮到會影響你的學業表現嗎？	1	2	3	4
5. 在那個情境當下，你會考慮到你是否會開心/感到快樂嗎？	1	2	3	4
6. 在那個情境當下，你會考慮到其他人會身體受傷/不適嗎？	1	2	3	4
7. 在那個情境當下，你會考慮到造成其他人情緒上/金錢上的壓力嗎？	1	2	3	4
8. 在那個情境當下，你會考慮到贏得別人歡呼或讓人留下印象嗎？	1	2	3	4
9. 在那個情境當下，你會考慮到當你父母知道這件事會怎麼想嗎？	1	2	3	4

行為調查

請依據下列描述，選擇最適合您的選項。每個答案並無對錯之分，請依照您自己的真實情況作答。如果您在問卷中回答您曾經從事過非法的行為，您不會受到任何懲罰或負面的影響。

- _____ 1. 請問你是否嘗試過吸菸，即使只吸一、兩口？
 (1) 是 (2) 否
- _____ 2. 你第一次吸菸是幾歲的時候？
 (1) 我連一口菸都未曾嘗試 (2) 8 歲或 8 歲以前 (3) 9 或 10 歲
 (4) 11 或 12 歲 (5) 13 或 14 歲 (6) 15 或 16 歲 (7) 17 歲 (8) 18 歲 (含) 以後
- _____ 3. 你有沒有喝過酒（一口也算，但料理或食物裡加的酒不算）？
 (1) 有 (2) 沒有
- _____ 4. 你第一次喝酒是在你幾歲的時候？
 (1) 我從來沒有喝過酒 (2) 8 歲或 8 歲以前 (3) 9 或 10 歲
 (4) 11 或 12 歲 (5) 13 或 14 歲 (6) 15 或 16 歲 (7) 17 歲 (8) 18 歲 (含) 以後
- _____ 5. 你是否曾使用過毒品（例如：強力膠、安非他命、搖頭丸、FM2、K他命等）？
 (1) 是 (2) 否
- _____ 6. 你第一次使用毒品（例如：強力膠、安非他命、搖頭丸、FM2、K他命等），是在你幾歲的時候？
 (1) 我從來沒有使用過毒品 (2) 8 歲或 8 歲以前 (3) 9 或 10 歲
 (4) 11 或 12 歲 (5) 13 或 14 歲 (6) 15 或 16 歲 (7) 17 歲 (8) 18 歲 (含) 以後
- _____ 7. 你有跟別人發生過性行為嗎？
 (1) 有 (2) 沒有
- _____ 8. 你第一次和別人發生性行為，是在你幾歲的時候？
 (1) 我從來沒有和別人發生過性行為 (2) 11 歲或 11 歲以前 (3) 12 歲
 (4) 13 歲 (5) 14 歲 (6) 15 歲 (7) 16 歲 (8) 17 歲 (9) 18 歲 (含) 以後

請回想過去三個月內，您從事下列這些行為的頻率。

	從	未	很	少	偶	爾	常	常	每	天
	1	2	3	4	5	6	7	8	9	
1. 一個人晚上在外面行走	1	2	3	4	5	6	7	8	9	
2. 坐酒駕司機的車	1	2	3	4	5	6	7	8	9	
3. 喝酒	1	2	3	4	5	6	7	8	9	

4. 邊騎機車/開車邊使用手機	1	2	3	4	5	6	7	8	9
5. 喝醉	1	2	3	4	5	6	7	8	9
6. 性行為	1	2	3	4	5	6	7	8	9
7. 騎機車	1	2	3	4	5	6	7	8	9
8. 使用毒品	1	2	3	4	5	6	7	8	9
9. 騎/搭乘機車沒戴安全帽	1	2	3	4	5	6	7	8	9
10. 坐汽車前座沒繫安全帶	1	2	3	4	5	6	7	8	9
11. 從事性行為沒有保護措施	1	2	3	4	5	6	7	8	9
12. 騎機車/開車超速	1	2	3	4	5	6	7	8	9
13. 抽菸	1	2	3	4	5	6	7	8	9
14. 酒後騎機車/開車	1	2	3	4	5	6	7	8	9
15. 暴飲暴食	1	2	3	4	5	6	7	8	9
16. 偷竊	1	2	3	4	5	6	7	8	9
17. 飲酒過量 (兩小時內喝4-5杯酒)	1	2	3	4	5	6	7	8	9

你覺得從事下列行為有多危險？

完
全
不
危
險

非
常
危
險

1. 一個人晚上在外面行走	1	2	3	4	5	6	7	8	9
2. 坐酒駕司機的車	1	2	3	4	5	6	7	8	9
3. 喝酒	1	2	3	4	5	6	7	8	9
4. 邊騎機車/開車邊使用手機	1	2	3	4	5	6	7	8	9
5. 喝醉	1	2	3	4	5	6	7	8	9
6. 性行為	1	2	3	4	5	6	7	8	9
7. 騎機車	1	2	3	4	5	6	7	8	9
8. 使用毒品	1	2	3	4	5	6	7	8	9
9. 騎/搭乘機車沒戴安全帽	1	2	3	4	5	6	7	8	9
10. 坐汽車前座沒繫安全帶	1	2	3	4	5	6	7	8	9
11. 從事性行為沒有保護措施	1	2	3	4	5	6	7	8	9

12. 騎/搭乘機車超速	1	2	3	4	5	6	7	8	9
13. 抽菸	1	2	3	4	5	6	7	8	9
14. 偷竊	1	2	3	4	5	6	7	8	9
15. 暴飲暴食	1	2	3	4	5	6	7	8	9
16. 酒後騎機車/開車	1	2	3	4	5	6	7	8	9
17. 飲酒過量 (兩小時內喝4-5杯酒)	1	2	3	4	5	6	7	8	9

你覺得從事下列行為有多少益處？

完
全
沒
有
益
處

非
常
有
益

1. 一個人晚上在外面行走	1	2	3	4	5	6	7	8	9
2. 坐酒駕司機的車	1	2	3	4	5	6	7	8	9
3. 喝酒	1	2	3	4	5	6	7	8	9
4. 邊騎機車/開車邊使用手機	1	2	3	4	5	6	7	8	9
5. 喝醉	1	2	3	4	5	6	7	8	9
6. 性行為	1	2	3	4	5	6	7	8	9
7. 騎機車	1	2	3	4	5	6	7	8	9
8. 使用毒品	1	2	3	4	5	6	7	8	9
9. 騎/搭乘機車沒戴安全帽	1	2	3	4	5	6	7	8	9
10. 坐汽車前座沒繫安全帶	1	2	3	4	5	6	7	8	9
11. 從事性行為沒有保護措施	1	2	3	4	5	6	7	8	9
12. 騎/搭乘機車超速	1	2	3	4	5	6	7	8	9
13. 抽菸	1	2	3	4	5	6	7	8	9
14. 偷竊	1	2	3	4	5	6	7	8	9
15. 暴飲暴食	1	2	3	4	5	6	7	8	9
16. 酒後騎機車/開車	1	2	3	4	5	6	7	8	9
17. 飲酒過量 (兩小時內喝4-5杯酒)	1	2	3	4	5	6	7	8	9

----- 問卷到此結束，非常謝謝您的合作！☺ -----