

2017

Does Participation in High Risk Behaviors Creates More Intimate Adolescent Friendships?

Hayden Babby
Portland State University

Let us know how access to this document benefits you.

Follow this and additional works at: <http://pdxscholar.library.pdx.edu/honorsthesis>

Recommended Citation

Babby, Hayden, "Does Participation in High Risk Behaviors Creates More Intimate Adolescent Friendships?" (2017). *University Honors Theses*. Paper 384.

[10.15760/honors.379](https://pdxscholar.library.pdx.edu/honors/379)

This Thesis is brought to you for free and open access. It has been accepted for inclusion in University Honors Theses by an authorized administrator of PDXScholar. For more information, please contact pdxscholar@pdx.edu.

Does Participation in High Risk Behaviors Creates More Intimate Adolescent Friendships?

by

Hayden Babby

An undergraduate honors thesis submitted in partial fulfillment of the

requirements for the degree of

Bachelor of Science

in

University Honors

and

Psychology

and

Sociology

Thesis Adviser

Melissa Thompson

Portland State University

2017

Table of Contents

High Risk Behaviors.....	2
Forming Friendships.....	4
Friendships and High Risk Behaviors.....	6
Parental Influence.....	9
Methods and Measures.....	11
Limitations.....	13
Conclusion.....	14
References.....	15

Adolescents often take more risks in experimental situations while in peer groups; they tend to experiment with high risk behavior, such as substance abuse, drugs, and unsafe sexual activity (Brauer, Jonathan R., and Stacy De Coster, 2012). Research has shown that we seek out relationships with those who are most like us, which would mean our friendships and relationships would be affected by these activities (Launay & Dunbar, 2015). This thesis seeks to understand whether engagement in high risk behaviors such as drinking, drug use, and sex leads adolescents have more stable and intimate friendship patterns.

High Risk Behaviors

What are high risk behaviors? There are a variety of high risk behaviors that an individual can participate in. “High-risk behaviors are those that can have adverse effects on the overall development and well-being of youth, or that might prevent them from future successes and development. This includes behaviors that cause immediate physical injury (e.g., fighting), as well as behaviors with cumulative negative effects (e.g., substance use)” (de Guzman, Maria Rosario and Bosch, Kathy R., 2007).

Many of the behaviors that injure adolescents are related to driving, and car accidents are the leading cause of teen deaths. This is due to the fact that teens fail to wear seatbelts; 30 percent of youth report that they rarely or never wear seatbelts (de Guzman, Maria Rosario and Bosch, Kathy R., 2007). Combining alcohol and driving also plays a part in death among teens, both driving after drinking as well as getting into a car where the driver has been drinking. Fighting and aggression are also a cause of injury among adolescents. 36 percent of teens admit to have being involved in a physical fight, with males outweighing the females. Suicide is also considered a risk behavior. Roughly 17 percent of youth report having considered suicide, 13

percent actually planned it, and 8.4 percent of teens have attempted it (de Guzman, Maria Rosario and Bosch, Kathy R., 2007).

Alcohol and drug use are some of the most common risk behaviors, and can further lead to other behaviors such as motor vehicle accidents, fighting/violence, problematic relationships and social interactions, and various diseases (de Guzman, Maria Rosario and Bosch, Kathy R., 2007). It can lead to brain damage, major organ damage, and other major health issues. Over 43 percent of youth report that they consume alcohol, with 26 percent admitting to heavy drinking (defined as five or more drinks in a row) (de Guzman, Maria Rosario and Bosch, Kathy R., 2007). Roughly 23 percent of teens admit to being cigarette smokers, 9.4 percent being frequent cigarette smokers (de Guzman, Maria Rosario and Bosch, Kathy R., 2007).

Another category of high risk behaviors is engagement of sexual behavior. Engagement in sexual behaviors can lead to many physical and socioemotional problems. “Youth may or may not be ready for the social and emotional implications of sexual activity, and many sexually active youth do not use safe sexual practices” (de Guzman, Maria Rosario and Bosch, Kathy R., 2007). Among those who engage in sex, only about 63 percent report to have used a condom during intercourse, and 17 percent report using alternative methods of birth control (de Guzman, Maria Rosario and Bosch, Kathy R., 2007). Having unprotected sex increases the chance for contracting an STD and the potential for unwanted pregnancy. “Approximately half of the 19 million new STD cases diagnosed per year are of youth ages 15-19; and 13 percent of new HIV/AIDS diagnoses are of youth ages 13-24” (de Guzman, Maria Rosario and Bosch, Kathy R., 2007).

As technology advances, cell phones have become a more widespread phenomenon. Sexting, or “the act of sending sexually explicit or suggestive images via text message,” has

become a new form of high risk sexual behavior (Benotsch, E., Snipes, D., Martin, A. & Bull, S. 2013). There are social and legal consequences that are related to sexting. Sexting with and between minors is illegal, and can be child pornography. Benotsch, Snipes, Martin, and Bull's (2013) study found that those who reported sexting were the same individuals that were more than twice as likely to report multiple partners and unprotected sex (Benotsch, E., et. al, 2013). They also found that that sexting was related to other high risk behaviors as well, including substance use.

Forming Friendships

In order to fully understand the relationship between high risk behaviors and adolescent friendships, we have to not only understand high risk behaviors, but also how friendships are created. The first step to understanding friendships is to look at how friendships are formed. Every time we have a potential social interaction with someone, it involves costs and benefits. Marmaros and Sacerdote (2006) describe the benefits of social interaction as “a flow of information and ideas” and “the utility from sharing a common experience and conversation with another human being” (Marmaros & Sacerdote, 2006, pp. 83). It also depends on the number of prior social interactions an individual has had with this person; the more interactions that have happened, the more increase in utility there is. Marmaros and Sacerdote (2006) present two different costs associated with social interactions. The first cost is “time.” It takes time to have conversations, whether face to face, over the phone, or over the internet. They even say “perhaps the biggest time cost of all is finding out that the other person exists and might be a useful person with whom to speak” (Marmaros & Sacerdote, 2006, pp. 84-84). The authors also say that “distance” is another cost. If the person with whom the social interaction is going to take place with is unknown, or the value of the interaction is unknown, it can be a big cost; how intimate or

personal are the people having the interaction? Marmaros and Sacerdote (2006) point out that two people having a common background, common interests, and common race could raise or lower benefits of a social interaction. They use an example involving a white senior from one city, and a black freshman from a completely different city. Their interaction may be seen as beneficial as they have such different sets of information. But, because they are completely different, the value of the interaction may decrease, even if they both had knowledge and information they could share with each other (Marmaros & Sacerdote, 2006).

Jacques Launay and Robin Dunbar (2015) discuss the tendency of people, especially adolescents, to form close association with those who are most similar to them, known as homophily. Launay and Dunbar's (2015) studies have shown that there is a strong directional friendship between the belief that an interaction partner has the same attitudes and traits to oneself. This means that individuals express a strong desire to engage with people they have similarities with (Launay & Dunbar, 2015). According to this research, adolescence has been depicted as a crucial transition period of psychological and physical development from childhood to adulthood and is specifically characterized by risk taking behavior. Due to the very strong motivation for peer acceptance among the adolescents, risk taking behavior is most likely to occur in the presence of peers (Launay & Dunbar, 2015).

It is clear that positive adolescent relationships are important for development, but negative relationships can lead to a number of mental health problems. Spithoven et. al (2017) describe two dimensions of friendships that are related to an individual's problem internalization: The number of friendships (i.e., friendship quantity) and the degree to which the friendship provides support, security, closeness, and companionship (i.e., friendship quality) (Spithoven, A., Lodder, G., Goossens, L., Bijttebier, P., Bastin, M., Verhagen, M., & Scholte, R., 2017).

Negative friendships can lead to loneliness and depressive symptoms. These problems have further been related to a lowering in social skills, which can in turn alienate individuals and lower the chances of an adolescent to form and maintain a quantity of quality friendships (Spithoven, A. et. al, 2017)

Friendships and High Risk Behaviors

According to the attachment theory discussed in both Launay & Dunbar (2015) and Chow et. al (2006), people internalize their experiences with those who are close to them and form attachment representations of such relationships. These are the attachment representations that shape an individual's perception and the understanding of subsequent interpersonal experiences. Whereas uncaring and rejecting relationships give rise to attachments that are insecure, warm and supportive relationships give rise to attachments that are secure. Secure attachments in friendships are assumed to be crucial for psychological adjustment. For adolescents, whenever they are upset they often turn to their friends who they have secure attachments to offer comfort and advice. Due to the fact that close friendship attachments occupy unique and crucial developmental functions during adolescents, friendship attachments among adolescents play a huge role in influencing the behavior of an adolescent (Launay & Dunbar, 2015). This could explain the reasons as to why adolescents who partake in high risk behavior tend to have stronger and more stable friendships; having to do with the level of the security of the friendship attachments. The trust among them is very high as well as the comfort hence making them more stable than friendships of adolescents who do not engage in high risk behaviors.

The attachment theory posits that the security of attachment is based on relational experiences of the past and still remains stable and strong across the life span. The maintenance

of the stability of the attachment security is achieved through inclination to evoke feedback in interpersonal interactions that in turn confirm the internal working models. The attachment of security is assumed to be stable over time; however, internal models that are not in harmony are likely to change the security of attachments. This could explain the reason as to why friendships of adolescents engaging in high risk behavior are very closer and more stable (Chow, Ruhl & Buhrmester, 2016).

Adolescents' friendships of those participating in high risk behaviors tend to be closer and stable because adolescents are very sensitive to rejection. This means that adolescents tend to evade the rejection by continuing to engage in the high risk behaviors that make them stick together in friendship attachments. In case an adolescent decides to shun such friendships, he or she may not effectively fit in other friendships since he may be viewed as an outcast and may not be accepted due to his past experiences. This means that the adolescence characteristic of acceptance and belonging play a significant role in holding tight the friendships of adolescents involved in high risk behaviors.

Reniers et. al (2016), discuss risk taking in adolescence. The huge risk-taking inclination of adolescents has been viewed as a reflection of maturational imbalance between two brain systems that influence decision making; cognitive control systems and reward processing systems (Reniers, Murphy, Lin, Bartolome & Wood, 2016). The reward system shows a very dramatic change in early adolescents while cognitive system undergoes gradual maturation. This means that the immature cognitive control capacity, paired with increased sensitivity to rewards, highly influences the decisions of the adolescents towards a higher risk taking behavior. Furthermore, the elevated reward value of peer presence, acceptance and interactions among the adolescents sensitize the reward system to potential rewards of greater risky behavior. This

simply means that adolescents engaging in similar high risk behaviors will tend to have strong and stable relationships with the peers due to the acceptance and interaction.

Scholars that take a more sociological stance from the perspective of delinquency say that peers promote delinquency because they value and model non-convention. The National Youth Survey (NYS) data suggest that social learning theory is best equipped to explain peer influence. “If adolescents are attached to individuals who promote delinquency, the underlying mechanism through which attachments curb delinquency—fear of jeopardizing the relationship—is undermined” (Brauer, Jonathan R., and Stacy De Coster, 2012, pp. 376).

It is clear that there is social influence on behavior, and that is brought upon by the perceived behaviors of others. Jacob Young and Frank Weerman (2013) write that individuals typically are not accurate in their perceptions of others; “Individuals rarely have complete information about what others think and do, and when individuals form perceptions about the behavior of others and about group norms, a variety of mistakes and cognitive biases can occur, leading to misperceptions about reality” (Young, Jacob T.N., and Frank M. Weerman, 2013, pp. 335). In their article, they examine the consequences of inaccurate perceptions regarding delinquent behavior in adolescent friendship networks. Adolescents use the behaviors of others as a point of reference for acceptable behavior when in uncertain situations. Because adolescence is such a huge time for change- changes in schools, interactions with the opposite sex, physical developments- peers become the main reference point; Young and Weerman (2013) claim this is one reason that an individual’s delinquent behavior is so strongly related to peer delinquency.

Due to the fact that peers seek acceptance and avoid rejection, they can overestimate the delinquency of their peers within their peer group; “These mechanisms all operate at the cognitive level, and they are based on what adolescents think their friends do rather than what

they actually do” (Young, Jacob T.N., and Frank M. Weerman, 2013, pp. 338). Through their research, they found that respondents were more likely to overestimate the extent in which their peers engaged in delinquency if they themselves engaged in delinquency and had supportive attitudes toward delinquent behavior. They also found that adolescents who felt pressure from their peers to engage in delinquent behaviors were also more likely to overestimate the prevalence of delinquency in their friend networks (Young, Jacob T.N., and Frank M. Weerman, 2013).

Parental Influence

When looking at high risk behaviors, it is important to look at parental and family influence. It is important to consider these factors because while this study is to look at adolescent peers, it does explain other reasons for participation in the high risk behaviors. Parents and family play a huge part in the reasons why adolescents take risks. Crandall et. al (2007) did a study on how financial stress influences risk taking, and the results showed a link between high levels of family financial stress and adolescent risk taking. “Family financial stressors strain family dynamics and structure, ultimately negatively impacting individual coping skills. Engaging in risky behaviors is a maladaptive coping mechanism that some adolescents may adopt in the face of poverty or other family stressors” (Crandall, A., Magnusson, B. M., Novilla, M. L. B., Novilla, L. K. B., & Dyer, W. J., 2017, pp. 45).

In their study, in order to understand how family stress influences risk taking, Crandall, et. al (2017) measured how family financial stress intersects with adolescent self-regulation. They broke it down into two different models. In their first model, which they call the “mediation model,” they hypothesize that family financial stress leads to increased adolescent engagement in risky behaviors indirectly through its relationship with adolescent self-regulation.

The model says that financial stress impairs adolescent self-regulation, and that impaired control of emotions, thoughts, and behaviors, in turn, leads to engagement in the risky behaviors. The second model is called the “moderation model.” In this model, an adolescent’s self-regulation influences the degree to which family financial stress predicts adolescent risky behaviors. They theorize that high self-regulation would lower the degree to which high family financial stress leads to increased risky behaviors. On the other side, low adolescent self-regulation would increase the effect that family financial stress has on risk taking behaviors (Crandall, A. et. al, 2017).

The results of their study indicate that family financial stress negatively impairs adolescent self-regulation, and this impaired ability to regulate their thoughts, emotions, and behaviors leads to increased sexual risk-taking. Although there are differences between sexes, the relationship between financial stress and risk taking holds true for both males and females. Their second model, the “moderation model,” did not hold true, as their results show that self-regulation does not appear to moderate the role of family financial stress on risky behaviors (Crandall, A. et. al, 2017).

One relevant factor we have to consider is parental knowledge; just how much parents know about what their children do in their free time. In one study on this issue, the authors lay out two objectives they hope to explain. The first objective is to “examine whether parental knowledge differs depending on the sex of the children, their age and other socio-demographic variables” (Albertos, A., Osorio, A., Lopez-del Burgo, C., Carlos, S., Beltramo, C., & Trullols, F., 2016). In regards to their first study, they found that being younger, being female, and having a high degree of religiosity were associated with greater parental knowledge.

Their second objective is to “confirm whether parental knowledge is associated with adolescents' risk behaviors such as the use of tobacco, alcohol or drugs and early sexual relations” (Albertos et. al, 2016, pp. 232). Within this, they found that regardless of how much their parents know, males are more likely to and have a higher prevalence of high risk behaviors. They also found that male adolescents report a lower degree of parental knowledge, which the authors attribute to the possibility that parents tend to monitor their daughters more than their sons; they say it just could be due to gender stereotyping (Albertos, A., et. al, 2016). According to their graph, it appears that if the parents never know or almost never know what their child is up to, drinking and smoking have the highest likelihood of occurring by these adolescents. Drug use is the least engaged in activity. (Albertos, A., et. al, 2016). Overall, it seems that despite the fact that boys are at higher risk than girls, they are supervised less.

Methods and Measures

Many surveys already measure high risk behaviors. The behaviors that are typically measured include drug use, alcohol use, and criminal activity. While these behaviors can be subjective, it can be easy to measure if the behavior has actually taken place. What surveys do not adequately measure is friendship and friendship intimacy. While some surveys ask questions about peers, they ask basic demographic information or questions such as “do you know someone who has...”. This is due to the fact that friendship closeness and intimacy are very subjective items, and hard to quantitatively measure. For the purpose of this study, a survey has been created that includes questions about both high risk behaviors as well as questions regarding peer relationships. The survey aims to get information on activities participated in by both the respondent and their best friend together, as well as attempts to get a measurement on

the “intimacy level” between the two by using the Inclusion of the Other Self Scale (Gächter S, Starmer C, Tufano F, 2015).

The high risk behavior questions are adapted from three main sources: The National Longitudinal Survey of Youth (NLSY97); The Youth Risk Behavior Surveillance System (Centers for Disease Control and Prevention, 2015); and The General Social Survey (Smith, Tom W, Peter Marsden, Michael Hout, and Jibum Kim, 1972-2016). These 46 ask questions about participation with specific drugs, alcohol use, and include questions about sexual behavior. There are 33 questions regarding friendships, and they were generated based on the types of interactions that adolescents face and the activities they do everyday, as well as using feedback from many adolescents themselves. These adolescents were asked to consider activities they do in their lives with their friends that they consider an important part of friendship, and this was used to generate many of the friendship questions. After the study was explained to them, many felt like they could see high risk behaviors having a positive effect on their own friendships.

This survey would be administered to middle school age and high school age students as they are the age of adolescence. It would be administered through school and would be completely voluntary, which an alternate assignment available for those who do not wish to participate. The survey would also be entirely anonymous, with no identifying information collected. This would help ensure that respondents are honest in their answers, without having to worry about their survey answers being shared with others as well as not having to worry about consequences with the law as this survey asks about illegal activities.

In order to analyze the data, it can be coded into a statistics program, such as SPSS. This program will allow for data analysis in order to see if there is a significant relationship between participation in high risk behaviors friendship intimacy. It will also allow for control of other

possible spurious variables, such as race. The data can be analyzed in many different ways. A composite variable could be created for the friendship questions in order to run either bivariate or multivariate analyses against the behavior responses. It could also be used to understand different types of friendship issues and how each separately affects behavior.

Limitations

There are many limitations to this study. The biggest limitation is that the data for the best friend relationships may not be accurate due to how subjective the topic is. While this survey intends to give a basic explanation for what to consider the respondent's "best friend," there is no clear cut definition and each person considers it differently. Another issue relating to this is that most adolescents spend time in larger friend groups, and may not consider just one person to be their "best friend." The goal of this study is to measure one-on-one relationships, not group relationships. While this type of study could be used to understand larger group behavior, there is already research about peer groups and activities within the groups. There is a research gap between high risk behaviors and friendship intimacy.

Another limitation of the study is that it contains mature content. There are various questions referring to sex, drugs, and alcohol that may be too mature for younger adolescents. This could be resolved by creating a second version of the survey to be administered to middle school aged students. This second version of the survey could minimize the amount of mature content that is asked. Due to the fact that they are younger, it may not even be necessary to ask all the question; the likelihood of them participating in some of these behaviors is very low. They will still be included in the sample because they still fall into the adolescence age range.

One more limitation that relates to the content is that there are questions about suicide, and these types of questions can be very triggering for some people. Respondents are given the

option to skip these questions. As all of this content is very mature and can be triggering, it would be ideal to have resources available to those who need it.

Conclusion

It is clear that being social is very important to an adolescent's development, and participation in high risk behaviors just seems to be a part of being an adolescent. Through previous research on both high risk behaviors and friendships, an association can be seen between engagement in high risk behaviors such as drinking, drug use, and sex and the intimacy of adolescent friendship patterns. Unfortunately, there is a research gap between high risk behaviors and if participation in these behaviors creates more intimate adolescent friendships. Participating in these behaviors can bring adolescents closer to their peers due to fear of rejection or due to a shared interest or behavior. To fill in the research gap, the survey created with this study aims to measure friendship intimacy so that it can be analyzed in regards to high risk behaviors. Utilizing data that can be collected through the survey, it would be possible to quantify these behaviors and relationships in order to statistically understand how the two relate.

References

- Albertos, A., Osorio, A., Lopez-del Burgo, C., Carlos, S., Beltramo, C., & Trullols, F. (2016). Parental knowledge and adolescents' risk behaviors. *Journal of Adolescence*, *53*, 231-236.
- Benotsch, E., Snipes, D., Martin, A. & Bull, S. (2013) Journal of Adolescent Health: Sexting, Substance Use, and Sexual Risk Behavior in Young Adults. *Society for Adolescent Health and Medicine*, 307-313.
- Brauer, Jonathan R., and Stacy De Coster. (2012). Social relationships and delinquency: Revisiting parent and peer influence during adolescence." *Youth & Society*, 374-394.
- Bureau of Labor Statistics, U.S. Department of Labor. National Longitudinal Survey of Youth 1997 cohort, 1997-2013 (rounds 1-16). Produced by the National Opinion Research Center, the University of Chicago and distributed by the Center for Human Resource Research, The Ohio State University. Columbus, OH: 2015.
- Centers for Disease Control and Prevention. [2015] Youth Risk Behavior Survey Questionnaire. Available at: www.cdc.gov/yrbs
- Chow, C.M., Ruhl, H. & Buhrmester, D. (2016) Reciprocal associations between friendship attachment and relational experiences in adolescence. *Journal of Social and Personal Relationships*, 122-146.
- Crandall, A., Magnusson, B. M., Novilla, M. L. B., Novilla, L. K. B., & Dyer, W. J. (2017). Family Financial Stress and Adolescent Sexual Risk-Taking: The Role of Self-Regulation. *Journal of Youth and Adolescence*, *46*(1), 45–62.
- Douglass, S., Mirpuri, S., & Yip, T. (2017). Considering Friends Within the Context of Peers in School for the Development of Ethnic/Racial Identity. *Journal of Youth & Adolescence*, *46*(2), 300-316.

- Gächter S, Starmer C, Tufano F. (2015). Measuring the Closeness of Relationships: A Comprehensive Evaluation of the 'Inclusion of the Other in the Self' Scale.
- Guttman, J. (1993). Adolescents from divorced families and their best-friend relationship: a qualitative analysis. *Journal of Divorce & Remarriage*, 95.
- de Guzman, Maria Rosario and Bosch, Kathy R. (2007). High-Risk Behaviors Among Youth. *Historical Materials from University of Nebraska-Lincoln Extension*. Paper 4099.
- Iwamoto, Derek K., and Andrew P. Smiler. (2013). Alcohol makes you macho and helps you make friends: The role of masculine norms and peer pressure in adolescent boys' and girls' alcohol use. *Substance use & misuse* 48.5 (2013): 371-378.
- Kilmartin, C., & Smiler, A. P. (2015). *The Masculine Self* (Fifth Edition). Sloan Publishing.
- Launay J, Dunbar, Robin. (2015). Playing with Strangers: Which Shared Traits Attract Us Most to New People? *PLoS ONE* 10(6): e0129688. doi:10.1371/journal.pone.0129688
- Marmaros, D., & Sacerdote, B. (2006). How Do Friendships Form? *The Quarterly Journal of Economics*, 121(1), 79-119.
- Reniers, R., Murphy, L., Lin, A., Bartolome, S. & Wood, S. (2016). Risk Perception and Risk-Taking Behaviour during Adolescence: The Influence of Personality and Gender. *PLoS ONE* 11(4): e0153842. doi:10.1371/journal.pone.0153842
- Scalici, F., & Schulz, P. J. (2017). Parents' and peers' normative influence on adolescents' smoking: results from a Swiss-Italian sample of middle school students. *Substance Abuse Treatment, Prevention & Policy*, 121-9.
- Shadur, J. M., & Hussong, A. M. (2014). Friendship intimacy, close friend drug use, and self-medication in adolescence. *Journal of Social and Personal Relationships*, 31(8), 997–1018.

- Smith, Tom W, Peter Marsden, Michael Hout, and Jibum Kim. General Social Surveys, 1972-2016; Principal Investigator, Tom W. Smith; Co-Principal Investigator, Peter V. Marsden; Co-Principal Investigator, Michael Hout; Sponsored by National Science Foundation. -NORC ed.- Chicago: NORC at the University of Chicago. Data accessed from the GSS Data Explorer website at gssdataexplorer.norc.org.
- Spithoven, A., Lodder, G., Goossens, L., Bijttebier, P., Bastin, M., Verhagen, M., & Scholte, R. (2017). Adolescents' Loneliness and Depression Associated with Friendship Experiences and Well-Being: A Person-Centered Approach. *Journal of Youth & Adolescence*, 46(2), 429-441.
- Teunissen, H. A., Kuntsche, E., Scholte, R. H. J., Spijkerman, R., Prinstein, M. J., & Engels, R. C. M. E. (2016). Friends' drinking norms and male adolescents' alcohol consumption: The moderating role of performance-based peer influence susceptibility. *Journal of Adolescence*, 53, 45.
- Vorobyev V, Kwon MS, Moe D, Parkkola R, Hämäläinen H. (2015). Risk-Taking Behavior in a Computerized Driving Task: Brain Activation Correlates of Decision-Making, Outcome, and Peer Influence in Male Adolescents. *PLoS ONE* 10(6): e0129516.
doi:10.1371/journal.pone.0129516
- Walters, G. D. (2016). Criminal Thought Content and Criminal Thought Process as Mediators of Peer Influence Combined Versus Individual Effects. *Criminal Justice Review*, 318-334.
- Young, Jacob T.N., and Frank M. Weerman. (2013). Delinquency as a consequence of misperception: Overestimation of friends' delinquent behavior and mechanisms of social influence." *Social Problems* 60.3 (2013): 334-356.

Zimmerman, G. M., & Farrell, C. (2017). Parents, peers, perceived risk of harm, and the neighborhood: Contextualizing key influences on adolescent substance use. *Journal of Youth and Adolescence*, 46(1), 228-247.