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Best Friend Influence Over Adolescent Problem Behaviors: Socialized by the Satisfied

Cody Hiatt,

Department of Psychology, Florida Atlantic University, chiatt@fau.edu

Brett Laursen,

Department of Psychology, Florida Atlantic University, laursen@fau.edu

Håkan Stattin, and

School of Law, Psychology and Social Work, Örebro University, Örebro, Sweden,
hakan.stattin@oru.se

Margaret Kerr

School of Law, Psychology and Social Work, Örebro University, Örebro, Sweden,
margaret.kerr@oru.se

Abstract

Objective—The present study was designed to examine best friend influence over alcohol intoxication and truancy as a function of relative perceptions of friendship satisfaction.

Method—The participants were 700 adolescents (306 boys, 394 girls) who were involved in same-sex best friendships that were stable from one academic year to the next. Participants completed self-report measures of alcohol intoxication frequency and truancy at one year intervals. Each member of each friendship dyad also rated his or her satisfaction with the relationship. At the outset, participants were in secondary school (approximately 13-14 years old) or high school (approximately 16-17 years old).

Results—More satisfied friends had greater influence than less satisfied friends over changes in intoxication frequency and truancy. Problem behaviors of less satisfied friends increased over time if the more satisfied friend reported relatively higher, but not relatively lower, initial levels of drinking or truancy.

Conclusions—The results support the hypothesis that adolescent friends are not similarly influential. The power to socialize, for better and for worse, rests with the partner who has a more positive perception of the relationship.

Keywords

Friendship quality; Peer Relationships; Influence; Problem Behaviors

Friend influence over deviant behavior is a concern because of fears that adolescents engage in health risk behaviors in response to peer pressure. We know that friends play an important role in the development of problem behaviors such as drinking and truancy (Brechwald & Prinstein, 2011). We also know that influential youth share characteristics that make them influential (Furman & Rose, in press), but it is not clear if attitudes about a friendship contribute to differences in intra-individual influence. The current study examines the proposition that within an adolescent friendship dyad, influence varies as a function of relationship satisfaction. Stable friends were identified from a large community sample of Swedish youth. Self-reports of intoxication frequency and truancy were used to determine how influence was apportioned between the relatively more satisfied and the relatively less satisfied friend.

Alcohol use (Hussong, 2000) and truancy (Studsrød & Bru, 2011) tend to occur the company of friends. It is not surprising, therefore, that friends and affiliates resemble one another on problem behaviors. To be sure, adolescents select friends on the basis of problem behavior similarity (e.g., Kiuru, Burk, Laursen, Salmela-Aro, & Nurmi, 2010). But this is only part of the story. Over time, friends tend to become even more similar on salient attributes, a process that represents influence or socialization. Influence can be seen at the level of the group, through interactions with affiliates and age mates, in settings that typically involve multiple adolescents. Influence can also be seen at the level of the dyad, through interactions with friends. Peer groups and friends represent unique sources of influence. Each independently predicts cigarette smoking and drinking to intoxication during adolescence (Urberg, Degirmencioglu, & Pilgrim, 1997).

In the present study, we focus on friend influence over problem behavior, partialling out the contribution of the peer group to better understand intra-individual influence. We seek to answer the question: Who influences whom? Growing evidence indicates that influence is not uniform within a friendship. Some friends are more influential than others. Adolescent friend influence over problem behaviors varies as a function of relative age and relative acceptance (Laursen, Hafen, Kerr, & Stattin, 2012; Popp et al., 2008) as well as perceptions of autonomy and support from parents (Allen et al., 2013; Marion et al. 2013). Little is known, however, about whether views of the friendship shape influence within the friendship. There is good reason to suspect they might: Relative power in married and romantically involved couples varies as a function of attitudes toward the relationship (Sprecher, 1985).

Two competing hypotheses have been advanced to explain how differences between friends in perceptions of relationship quality may translate into differences in the influence that one friend has over another. One hypothesis holds that the friend who perceives the relationship to be poorer in quality should be the more influential partner. Dissatisfaction may be a source of influence, because it gives the less satisfied partner leverage over the more satisfied partner, who has a greater stake in the preservation of the relationship (Rusbult & Buunk, 1993). As satisfaction increases, so should investment in the friendship. It follows that the relatively more satisfied friend may be inclined to defer to the relatively less satisfied friend, because he or she has a greater commitment to the relationship and the rewards it provides (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991). Influence may also

reflect efforts to redress relationship dissatisfaction. Adolescent friendships are predicated on norms that assume responsivity to needs and desires (Hartup, 1993). Influence attempts by the less satisfied partner may have the goal of addressing unmet needs or obtaining compensation for other sources of dissatisfaction; conformity by the more satisfied partner may reflect appeasement or a sincere effort to remedy dissatisfaction.

An alternative hypothesis holds that the friend who perceives the relationship to be better in quality should be the more influential partner. Satisfied friends may display more positive affect in social interactions than less satisfied friends. Satisfaction may promote influence to the extent that satisfied friends make more influence attempts and their influence attempts are conducted with an enthusiasm that is contagious and persuasive (Baron & Kepner, 1970). There may be a direct link between the affect that accompanies an influence attempt and the success of the attempt. The target of the influence attempt may misattribute the source of the positive affect displayed by the agent of influence to the activity being discussed, or the positive affect associated with the persuasion attempt may trigger the selective retrieval of positive information about the activity (Petty & Cacioppo, 1986). In each case, more satisfied friends should hold a persuasive advantage over less satisfied friends. Relationship satisfaction may translate into influence, because it is rewarding to be in the company of someone who is satisfied (Lyubomirsky, King, & Diener, 2005), and because satisfied people are models of a positive state that others seek to replicate (Kagan, 1958). Satisfaction may result in influence as partners who like one another have a stronger working relationship, with more frequent exchange of ideas (Hartl et al., *in press*). Finally, satisfied friends may be more effective in their persuasion attempts because they hold and convey beliefs about the relationship that inspire, in the less satisfied friend, trust in the partner's motives, guilt about one's own beliefs, and a desire to close the gap between the two (Bukowski, Velasquez, & Brendgen, 2008). Thus, satisfied friends may invite social comparisons that are conducive to securing cooperation and compliance.

Conventional wisdom holds that peers are usually a bad influence, invariably promoting deviant or risk-taking behavior. But this can only be true up to a point. If every friend was a detrimental force, then the problem behaviors of every adolescent would increase until he or she resembled his or her worst behaving friend. By this logic, there would be no room for positive peer influence, no instances in which one friend influences another to desist from deviant behavior or to adopt prosocial behavior (Allen & Antionishak, 2008). Research suggesting that groups of adolescent friends tend to become more similar on problem behaviors often leaves the direction of influence indeterminate (e.g., Vitaro, Brendgen, & Tremblay, 2000). When directionality is considered, there is evidence that estimates of adverse group influence may be a product of deselection, the tendency for dissimilar others to drop out rather than conform (e.g., DeLay et al., 2013). Unmeasured factors may also alter estimates of influence at the dyadic level. Although it is typically assumed that higher initial levels of friend deviancy predict greater increases in problem behaviors, it may also be the case that lower initial levels of friend deviancy predict greater decreases in problem behavior. These alternatives must be disentangled if we are to better understand the form and functions of peer influence.

Statistical obstacles have hindered past efforts to identify the magnitude and the direction of peer influence (Laursen, 2005). Friends are interdependent, which means that their thoughts, feelings, and behaviors are interconnected. Accordingly, data collected from friends are not statistically independent, which can introduce bias into conventional parametric statistics (Kenny, 1996). Dyadic data analyses are designed to overcome this limitation. The Actor-Partner Interdependence Model (APIM: Kenny, Kashy, & Cook, 2006) partitions variance shared by dyad members from variance that uniquely describes associations between partners. Distinguishable dyad longitudinal APIM analyses, which treat each member of the dyad as belonging to a unique class of participants, make it possible to determine relative levels of intra-individual influence within the dyad (Popp, Laursen, Burk, Kerr, & Stattin, 2008).

The present study utilizes a longitudinal APIM to determine the degree to which relatively more and relatively less satisfied friends influence one another's alcohol abuse and truancy. Alcohol abuse and truancy are distinct, in the sense that the behaviors are only modestly correlated, yet clearly open to influence, in the sense that friends appear to hold greater sway over these potential forms of problem behavior than other forms of health-risk or antisocial behaviors (Hussong, 2000; Studsrød & Bru, 2011). Supplemental analyses will test the hypothesis that the type of influence exerted by the more influential partner will vary according to whether that partner's initial level of problem behavior is higher or lower than his or her friend. Influential partners with relatively more problem behaviors should promote increases in friend alcohol abuse and truancy, whereas influential partners with relatively fewer problem behaviors should promote decreases in friend alcohol abuse and truancy. The analyses will control for attributes known to contribute to intra-individual influence, so as to separate relationship perceptions from other traits that confer influence. We know that older children (Popp et al., 2008), attractive children (Langlois et al., 2000), and children higher in acceptance (Hafen et al., 2011) are more influential and/or socially preferred. Also, children with higher perceived parental control (Laursen et al., 2014) and depressive symptoms (Prinstein, Boergers, & Spirito, 2001) are more susceptible to peer influence. Additional analyses will control for these effects to ensure that analyses gauge the unique contribution of satisfaction influence.

Method

Participants

Participants included 700 adolescents (306 boys, 394 girls), drawn from a longitudinal study of all students attending secondary school (7th – 9th grade) and high school (10th – 12th grade) in a small city in Sweden. Secondary school students were in the 7th ($M=11.8$ years old, $SD=1.01$) or 8th ($M=13.09$ years old, $SD=1.16$) grade at the outset. High school students were in the 10th ($M=14.93$ years old, $SD=1.16$) or 11th ($M=15.93$ years old, $SD=1.14$) grade at the outset. Students in the 9th and 12th grade at the outset were excluded to avoid confounding relationship stability and friend influence with school transitions. Of those returning surveys, 59.4% of mothers were employed full-time, 34.9% were employed part-time, and 5.6% were not employed. For fathers, 94.6% were employed full-time, 2.9%

were employed part-time, and 2.5% were not employed. Ethnic Swedes comprised 89.9% of the sample.

Instruments

Peer nominations—At both time points, adolescents identified up to three important peers (Kiesner, Kerr, & Stattin, 2004) defined as “someone you talk with, hang out with, and do things with.” Adolescents labeled important peers as friends, siblings, or romantic partners. Adolescents also nominated peer affiliates: Up to 10 individuals with whom they spent time in school and up to 10 individuals with whom they spent time out of school. Important peers and peer affiliates could be older or younger, boys and girls, from the same school or different school, but not parents or other adults.

Important peer nominations were used to identify reciprocated friends. Reciprocated friends nominated each other as important peers and labeled one another as friends. Reciprocated best friends nominated one another as their highest ranked important peer. *Stable reciprocated best friends* nominated one another as their highest ranked important peer at time 1 and as one of three important peers at time 2. Of the 350 reciprocated best friend dyads at time 1 ($n=153$ male dyads, $n=197$ female dyads), 202 dyads ($n=91$ male dyads, $n=111$ female dyads) remained reciprocated best friends at time 2 and 148 ($n=62$ male dyads, $n=86$ female dyads) remained reciprocated friends at time 2 but one partner in the dyad did not rank the other as the most important peer. The prior friendship status of some, but not all dyads could be determined. Of the 350 reciprocated best friend dyads at time 1, participants in 116 dyads did not nominate one another as friends during the previous year (i.e., new friends), 165 nominated one another as friends during the previous year (i.e., continuing friends), and information was not available for 69 dyads because time 1 marked their first year in the study.

Perceived Friendship Satisfaction—At both time points, adolescents completed an 18-item measure of relationship satisfaction (e.g. “I am very pleased with our relationship,” “We make each other feel important and special”) describing perceptions of relations with the highest ranked important peer (Tillfors et al., 2012). The response format ranged from 1 (*don’t agree at all*) to 5 (*agree perfectly*). Item scores were averaged. Internal reliability was good ($\alpha=.86$ to $.87$).

Intoxication Frequency—At both time points, adolescents completed a problem behavior inventory with documented validity among Swedish youth (Magnusson, Duner, & Zetterbloom, 1975). Intoxication frequency included three items referring to alcohol abuse during the past month (e.g. “have you drank alcohol until you got drunk”) or year (e.g. “have you drunk so much beer, liquor or wine that you got drunk”) (Laursen et al., 2012). Items were rated on a scale ranging from 1 (*no, it has not happened*) to 3 (*several times*). Scores were standardized and averaged. Internal reliability was good ($\alpha=.87$ to $.90$).

Truancy—The problem behavior inventory (Magnusson et al., 1975) completed by adolescents also included three items that described truancy (e.g. “have you played hookey,” “have you skipped class”) during the past school term or academic year. At each time point,

parents also completed a child behavior problem inventory that included one item describing truancy. Items were rated on a scale ranging from 1 (*no, it hasn't happened*) to 3 (*yes, several times*). Item scores were standardized within adolescent and parent reports, then averaged. Internal reliability was acceptable ($\alpha=.71$ to $.72$).

Confounding variables—Ten additional variables, measured at Time 1, were included in supplemental analyses, to disentangle the contribution of individual characteristics from perceptions of the friendship. *Age* (in months) was calculated at the start of the school year. *Peer acceptance* was calculated by summing the total number of incoming friend and peer affiliate nominations an adolescent received. Adolescents completed 10 items describing *self-esteem* (Rosenberg, 1979). Items were rated on a scale ranging from 1 (*don't agree at all*) to 4 (*agree totally*). Adolescents completed 20 items describing *depressive symptoms* (Radloff, 1977). Items were rated on a scale ranging from 1 (*not at all*) to 4 (*often*). Adolescents completed 10 items describing *manipulativeness* (Overbeek, Biesecker, Kerr, Stattin, Meeus, & Engels, 2006). Items were rated on a scale ranging from 1 (*does not apply to me at all*) to 4 (*applies to me very well*). Adolescents completed 6 items describing *perceived maternal warmth* (Persson, Stattin, & Kerr, 2004). Items were rated on a scale ranging from 1 (*never*) to 3 (*often*). Adolescents completed a parent-child communication questionnaire (Kerr & Stattin, 2000), which included 5- to 9-item subscales that measured *perceived parental control*, *perceived parental knowledge*, *parental solicitation of information about child*, and *child disclosure to parents*. Items were rated on a scale ranging from 1 (*no, never or not at all*) to 5 (*yes, always or fully*). For each of the preceding control variables, scale scores were created by averaging items. Internal reliability for these control variables was acceptable ($\alpha=.74$ to $.81$).

Two peer group variables, measured at Time 1, were added to the model as controls in an effort to disentangle dyadic influence from network influence. *Peer group intoxication frequency* was calculated by averaging the intoxication frequency scores of all those an individual nominated as important peers and peer affiliates, excluding the reciprocated best friend. *Peer group truancy* was calculated by averaging the truancy scores of all those an individual nominated as important peers and peer affiliates, excluding the reciprocated best friend. Finally, three partner perception variables, also measured at Time 1, were added to the model as controls, to distinguish friendship satisfaction from partner attributes that contribute to perceptions of the relationship. Adolescents also completed single-item assessments of *perceived friend attractiveness* (“My friend looks good”), *perceived friend competence* (“My friend is very talented”), and *perceived differential affection in friendship* (“My friend doesn't like me as much as I like him or her”). Items were rated on a scale ranging from 1 (*don't agree at all*) to 5 (*agree completely*).

Procedure

Students were recruited in classrooms during school hours. They were informed that participation was voluntary and were assured that answers would not be shared with parents, teachers, or police. Parents were informed about the study through community and school meetings, and through the mail. Parents received a postage-paid card to return if they did not

wish to have their child participate in the study and approximately 1% did so. Parents and students were informed that they were free to end participation in the study at any time.

Trained research assistants administered measures during regular school hours. Teachers were not present. Data were collected at annual intervals during the spring semester. Across the 5-year cohort-sequential longitudinal study, there were across the 5-year cohort-sequential longitudinal study, there were 1455 students with two waves of data beginning in the 7th and 8th grades, or 11th and 12th grades. Of this total, there were 1218 students in friendships that were stable for at least two consecutive years during secondary school (from 7th to 8th grades or from 8th to 9th grades) or high school (from 10th to 11th grades or from 11th to 12th grades). Of this total, 37.27% ($n=454$) were eliminated from the analyses because friend nominations at time 1 were reciprocated but both were not highest ranked. This exclusion rule was necessary because students only completed a relationship satisfaction inventory for the highest ranked important peer nominated. There were no greater than chance differences between the final sample and the total sample of students with friends on any demographic or study variables. Neither were there any greater than chance differences between the final sample and those excluded because reciprocated friend nominations were not highest ranked, with one exception: Those included in the study reported higher levels of perceived friendship satisfaction than those excluded from the study ($d=0.07$). There were no differences on any study or demographic variable between those who were reciprocated best friends at both time points and those who were reciprocated best friends at the first time point only. The final sample of friends differed from those included in previous studies of friend influence derived from the same project (i.e., Laursen et al., 2011; Popp et al., 2008) in terms of the age periods covered, timing and longevity of the relationship, and the relative significance and stability of the affiliation; only 15-20% of the dyads in the present study were included in these previous studies.

Plan of Analysis

An average of 15.9% (range= 2.9% to 34.9%) of the data were missing. An MCAR test (Little, 1988) indicated that friendship satisfaction, truancy and intoxication frequency data were missing completely at random, $\chi^2(610, n=350)=654.49, p=.10$. Missing friendship satisfaction data were handled using multiple imputation using an EM algorithm with 25 iterations, so that participants could be categorized as more or less satisfied partners. Full-Information Maximum Likelihood (FIML) estimation procedures were used to handle missing values in APIM analyses. FIML is a robust and accurate estimator of results when up to 50% of data are missing completely at random (Graham, 2009).

Path analyses were conducted in a structural equation modeling framework with Mplus 7.0 (Muthén & Muthén, 2012). Skewed variables were corrected with a square root transformation. We used a four step procedure to examine friend influence over intoxication frequency and truancy for partners who differed on perceived friendship satisfaction.

In the first step, friends were distinguished on the basis of perceived friendship satisfaction. Each friend in each dyad was classified as either relatively more satisfied ($M=4.18, SD=0.33, 95\% \text{ CI } [4.15, 4.21]$) or relatively less satisfied ($M=3.69, SD=0.46, 95\% \text{ CI } [3.64, 3.74]$) with the relationship. We started with a sample of 382 dyads. After imputing

friendship satisfaction, we identified 32 Dyads in which friends switched roles as the more and less satisfied partner from time 1 to time 2. These dyads were removed from the analyses. There no differences between those who were eliminated from the study and those who were retained on any study variable. To determine whether dyads should be distinguished on the basis of perceived satisfaction, a χ^2 test of distinguishability (Kenny et al., 2006) constrained the variances, means, and correlations of all study variables to be equal for relatively more satisfied and relatively less satisfied friends. Significant χ^2 values revealed poor fit, indicating that friends should be distinguished on the basis of relative friendship satisfaction, $\chi^2(32, N=350)=1988.61, p<.01$. Chi-square analyses addressed the possibility that classifications on the basis of relative perceptions of satisfaction were confounded with individual characteristics that might account for perceptions of satisfaction (e.g., self-esteem). Within dyads, friends were categorized as either relatively high or relatively low on each of ten individual characteristics. Statistically significant results did not emerge at levels greater than chance in separate 2 (relative satisfaction: higher vs. lower) by 2 (relative individual characteristic: higher vs. lower) chi-square analyses (Cramer's $V=0.03$ to 0.13). We conclude that the distribution of friends as relatively more or relatively less satisfied is independent of the distribution of friends on relative levels of individual characteristics. In the second step, longitudinal APIM analyses were conducted to measure the influence of relatively more and relatively less satisfied friends on each problem behavior (i.e. intoxication frequency and truancy). Figure 1 depicts the measurement model. Friend influence is indicated by a statistically significant beta weight on intra-individual partner paths ($b1$ and $b2$). A significant $b1$ partner path indicates that the initial problem behavior of the friend who perceived relatively higher levels of friendship satisfaction predicted changes in the problem behavior of the friend who perceived relatively lower levels of friendship satisfaction. A significant $b2$ partner path indicates that the initial problem behavior of the friend who perceived relatively lower levels of friendship satisfaction predicted changes in the problem behavior of the friend who perceived relatively higher levels of friendship satisfaction. To ensure that effects were unique to friends, the analyses were rerun on a comparison group consisting of random pairs of same-grade, same-gender participants, neither of whom had ever nominated the other as an important peer or peer associate. Dyads were distinguished on the basis of friendship satisfaction scores (who was not the partner in these analyses).

In the third step, multiple-group APIM analyses were conducted using gender, age group (secondary school and high school), and friendship timing (new friendships, ongoing friendships, and unknown start friendships) as moderators. There were no statistically χ^2 significant differences, suggesting that the influence of more satisfied and less satisfied partners did not vary as a function of these variables.

In the fourth step, APIM analyses were rerun to include control variables at time 1. These analyses were conducted to rule out the possibility that results were driven by individual traits known to contribute to differences between friends in influence over problem behaviors and (in the case of peer group variables) to demonstrate that the results describe processes unique to best friendships. Partner perception variables were included to disentangle satisfaction from perceptions of partner capabilities. Perceived friendship satisfaction was also included as a control variable to address the possibility that influence

was restricted to the highest quality relationships. For each control variable, two sets of analyses were conducted. One set of analyses included correlation paths between each friend's score on the control variable and his or her time 1 predictor variable. Another set of analyses included a difference score on the control variable (e.g., more satisfied friend time 1 peer acceptance minus less satisfied friend time 1 peer acceptance) that was correlated with time 1 predictor variables. In each case, the same pattern of results emerged and/or model fit became unacceptable with the inclusion of the control variable.

Follow-up analyses of variance (ANOVA) were conducted to determine if changes in intoxication frequency and truancy varied as a function of the individual's initial level of the problem behavior, both in absolute terms (above and below the group mean) and in relatively terms (above or below the partner's score). These analyses were designed to complement the beta weights, because the latter neither indicate whether mean levels of problem behaviors increase or decrease over time, nor make a distinction between friends who promote problem behaviors and friends who discourage problem behaviors (Laursen et al., 2012). We were cognizant of the risk of regression to the mean in test-retest assessments of subsamples created from baseline scores (e.g., above and below average groups). More common in experimental or test settings than in self-reports of behaviors, regression to the mean describes the tendency of an extreme random event to be followed by a less extreme (less random) event (Stigler, 1997). To determine whether reports of intoxication frequency and truancy showed signs of regression to the mean, we repeated ANOVAs using randomly paired dyads that included (a) all participants who completed the problem behavior inventory ($n=3068$) and (b) a randomly selected subsample of the same number of participants in the present study ($n=700$). For intoxication frequency, there were statistically significant main effects for time ($\eta_p^2=.03$) and groups ($\eta_p^2=.47$ to $.48$), but no group by time interactions ($\eta_p^2<.01$), indicating that intoxication frequency increased by comparable amounts in low and high drinking groups. For truancy, there were statistically significant main effects for time ($\eta_p^2=.01$) and groups ($\eta_p^2=.50$ to $.51$), as well as statistically significant group by time interactions ($\eta_p^2=.03$ to $.04$). Follow-up paired sample t -tests indicated that truancy increased in both groups, but the rate of increase was greater in the absolute and relatively low truancy groups ($d=.17$ to $.19$) than in the absolute and relatively high truancy groups ($d=.01$ to $.03$). Taken together, the findings suggest but do not prove, that increases in intoxication frequency and truancy were unlikely to be a product of regression to the mean.

Results

Preliminary Analyses

Bivariate correlations are presented in Table 1. Truancy and intoxication frequency were positively correlated within and across time points. There were modest but statistically significant positive correlations between friendship satisfaction and intoxication frequency (time 2 only).

Intraclass correlations (interpreted as r^2) established nonindependence between partners on predictor variables (i.e., Time 1 intoxication frequency and truancy), a necessary precondition for APIM analyses (Kenny et al., 2006). Statistically significant within-dyad

intraclass correlations emerged for intoxication frequency (intraclass $r=.79$, $p<.001$) and truancy (intraclass $r=.59$, $p<.001$).

T-tests indicated that more satisfied friends were neither more frequently intoxicated nor more frequently truant than less satisfied friends ($d=0.03$ to 0.05). Additional *t*-tests indicated that there were no greater than chance differences between more satisfied friends and less satisfied friends on any individual characteristic variable ($d=0.04$ to 0.14).

Influence Analyses

Intoxication Frequency—Figure 2 depicts results of the longitudinal APIM analysis on intoxication frequency with friends distinguished on the basis of relative relationship satisfaction. Higher levels of initial intoxication frequency on the part of the friend who was more satisfied with the relationship predicted greater increases from time 1 to time 2 in intoxication frequency for the friend who was less satisfied with the relationship ($\beta=.45$). In a similar fashion, the initial intoxication frequency of the friend who was less satisfied with the relationship predicted changes in the intoxication frequency of the friend who was more satisfied with the relationship ($\beta=.13$). There was a statistically significant difference between friends on influence over intoxication frequency [$\chi^2(1, N=350)=8.54$, $p=.004$], such that the more satisfied friend had greater influence than the less satisfied friend. The addition of control variables did not alter this pattern of results. The findings were unique to friends. Analyses conducted on a comparison group of random pairs of same-grade, same-gender participants yielded no statistically significant influence paths ($\beta=.01$ and $.07$, $p=.38$ and $.87$).

To better understand the nature of the statistically significant influence paths identified in the APIM analysis, each friendship dyad was divided into one of two groups on the basis of *relative levels of drinking*: the more satisfied friend had higher initial intoxication frequency than the less satisfied friend ($n=106$ dyads), or the less satisfied friend had higher initial intoxication frequency than the more satisfied friend ($n=100$ dyads). Dyads in which friends differed by less than 0.25 *SD* in initial intoxication frequency were excluded ($n=144$ dyads). Additional follow up analyses classifying dyads with a median split produced the same pattern of statistically significant results.

The first set of follow-up analyses determined whether changes in the intoxication frequency of the less satisfied friend varied as a function of whether the more satisfied friend drank more or less than the less satisfied friend, and whether the more satisfied friend was a heavy (above average) or light (below average) drinker. For the latter, each friendship dyad was divided into one of two groups on the basis of the *more satisfied friend's absolute level of drinking*: the more satisfied friend was a heavy drinker with above average initial intoxication frequency ($n=134$ dyads), or the more satisfied friend was a light drinker with below average initial intoxication frequency ($n=179$ dyads). A 2 (relative level of drinking: more satisfied friend reported higher initial levels of intoxication frequency than less satisfied friend or more satisfied friend reported lower initial levels of intoxication frequency than less satisfied friend) $\times 2$ (absolute level of drinking: more satisfied friend was a heavy drinker or more satisfied friend was a light drinker) repeated measures (time 1 and time 2)

ANOVA was conducted. The intoxication frequency of the less satisfied friend was the dependent variable.

There were main effects for relative level of drinking $F(1, 173)=26.79, p=.01, \eta_p^2=0.13$; and absolute level of drinking $F(1, 173)=20.68, p<.001, \eta_p^2=0.11$. The less satisfied friend reported higher rates of intoxication frequency when the more satisfied friend was a heavy drinker ($M=1.88, SD=0.78, 95\% \text{ CI } [1.79, 1.97]$) than when the more satisfied friend was a light drinker ($M=1.59, SD=0.61, 95\% \text{ CI } [1.52, 1.66]$), and (by definition) the less satisfied friend reported higher rates of intoxication frequency when he or she drank relatively more than the more satisfied friend ($M=1.83, SD=0.67, 95\% \text{ CI } [1.75, 1.91]$) than when he or she drank relatively less than the more satisfied friend ($M=1.65, SD=0.72, 95\% \text{ CI } [1.57, 1.73]$). There was no statistically significant main effect for time, $F(1, 173)=0.35, p=0.55, \eta_p^2=0.01$; but there was a statistically significant interaction between time and the more satisfied friend's relative level of drinking, $F(1, 173)=39.11, p<.001, \eta_p^2=.184$. Follow-up paired-samples t -tests indicated that the intoxication frequency of the less satisfied friend increased from time 1 ($M=1.54, SD=0.60, 95\% \text{ CI } [1.47, 1.61]$) to time 2 ($M=1.79, SD=0.83, 95\% \text{ CI } [1.69, 1.89]$) when the more satisfied friend reported relatively higher levels of drinking at the outset ($d=0.25$), whereas the intoxication frequency of the less satisfied friend decreased from time 1 ($M=1.99, SD=0.58, 95\% \text{ CI } [1.92, 2.06]$) to time 2 ($M=1.67, SD=0.76, 95\% \text{ CI } [1.58, 1.76]$) when the more satisfied friend reported relatively lower levels of drinking at the outset ($d=0.32$). The absence of statistically significant two- and three-way interactions involving absolute levels of drinking [$F(1, 173)=0.55 - 2.05, p=0.15 - 0.47, \eta_p^2=.01$] suggests that more satisfied friends who drank more than their partners were similarly detrimental at above average levels of intoxication frequency and at below average levels of intoxication frequency, and that more satisfied friends who drank less than their partners were similarly beneficial at above average levels of intoxication frequency and at below average levels of intoxication frequency.

The second set of follow-up analyses determined whether changes in the intoxication frequency of the more satisfied friend varied as a function of whether the less satisfied friend drank more or less than the more satisfied friend, and whether the less satisfied friend was a heavy (above average) or light (below average) drinker. For the latter, each friendship dyad was divided into one of two groups on the basis of the *less satisfied friend's absolute level of drinking*: the less satisfied friend was a heavy drinker with above average initial intoxication frequency ($n=118$ dyads), or the less satisfied friend was a light drinker with below average initial intoxication frequency ($n=194$ dyads). A 2 (relative level of drinking: less satisfied friend reported higher initial levels of intoxication frequency than more satisfied friend or less satisfied friend reported lower initial levels of intoxication frequency than more satisfied friend) $\times$ 2 (absolute level of drinking: less satisfied friend was a heavy drinker or less satisfied friend was a light drinker) repeated measures (time 1 and time 2) ANOVA was conducted. The intoxication frequency of the more satisfied friend was the dependent variable.

There were main effects for relative level of drinking $F(1, 164)=63.14, p=.01, \eta_p^2=0.27$; and absolute level of drinking $F(1, 164)=137.51, p=.01, \eta_p^2=0.46$. The more satisfied friend reported higher rates of intoxication frequency when the less satisfied friend was a heavy

drinker ($M=2.18$, $SD=0.71$, 95% CI [2.07, 2.29]) than when the less satisfied friend was a light drinker ($M=1.54$, $SD=0.50$, 95% CI [1.46, 1.62]), and (by definition) the more satisfied friend reported higher rates of intoxication frequency when he or she drank relatively more than the less satisfied friend ($M=1.90$, $SD=0.70$, 95% CI [1.79, 2.01]) than when he or she drank relatively less than the less satisfied friend ($M=1.72$, $SD=0.65$, 95% CI [1.62, 1.82]). There was a statistically significant main effect for time, $F(1, 164)=14.38$, $p<0.001$, $\eta_p^2=0.08$; and there was a statistically significant interaction between time and the less satisfied friend's relative level of drinking, $F(1, 164)=12.51$, $p<.001$, $\eta_p^2=.07$. Follow-up paired-samples t -tests indicated that the intoxication frequency of the more satisfied friend increased from time 1 ($M=1.54$, $SD=0.55$, 95% CI [1.46, 1.62]) to time 2 ($M=1.90$, $SD=0.74$, 95% CI [1.79, 2.01]) when the less satisfied friend reported relatively higher levels of drinking at the outset ($d=0.22$), whereas the intoxication frequency of the more satisfied friend did not significantly increase from time 1 ($M=1.87$, $SD=0.66$, 95% CI [1.77, 1.97]) to time 2 ($M=1.95$, $SD=0.74$, 95% CI [1.84, 2.06]) when the less satisfied friend reported relatively lower levels of drinking at the outset ($d=0.08$). The absence of statistically significant two and three-way interactions involving absolute levels of drinking [$F(1, 164)=1.06 - 2.81$, $p=0.10 - 0.31$, $\eta_p^2=.01 - .02$] suggests that less satisfied friends who drank more than their partners were similarly detrimental at above average levels of intoxication frequency and at below average levels of intoxication frequency.

Truancy—Figure 3 depicts results of the longitudinal APIM analysis on truancy with friends distinguished on the basis of relative relationship satisfaction. Higher levels of initial truancy on the part of the friend who was more satisfied with the relationship predicted greater increases from time 1 to time 2 in truancy for the friend who was less satisfied with the relationship ($\beta=.22$). The initial truancy of the friend who was less satisfied with the relationship did not predict changes in levels of truancy in the friend who was more satisfied with the relationship ($\beta=.04$). The addition of control variables did not alter this pattern of results. The findings were unique to friends. Analyses conducted on a comparison group of random pairs of same-grade, same-gender participants yielded no statistically significant influence paths ($\beta=-.01$ and $.04$, $p=.58$ and $.84$).

To better understand the nature of the statistically significant influence path identified in the APIM analysis, each friendship dyad was classified into one of two groups on the basis of *relative levels of truancy*: the more satisfied friend had higher initial truancy than the less satisfied friend ($n=112$ dyads), or the less satisfied friend had higher initial truancy than the more satisfied friend ($n=112$ dyads). Dyads in which friends differed by less than $.25 SD$ in initial truancy were excluded ($n=126$ dyads). Additional follow up analyses classifying dyads with a median split produced the same pattern of statistically significant results. Each friendship dyad was also divided into one of two groups on the basis of the *more satisfied friend's absolute levels of truancy*: the more satisfied friend had above average initial truancy ($n=127$ dyads), or the more satisfied friend had below average initial truancy ($n=191$ dyads).

Follow-up analyses determined whether changes in the truancy of the less satisfied friend varied as a function of whether the more satisfied friend was truant more or less often than the less satisfied friend, and whether the more satisfied friend was frequently (above

average) or infrequently (below average) truant. A 2 (relative level of truancy: more satisfied friend reported higher initial levels of truancy than less satisfied friend or more satisfied friend reported lower initial levels of truancy than less satisfied friend) $\times$ 2 (absolute level of truancy: more satisfied friend was frequently truant or more satisfied friend was infrequently truant) repeated measures ANOVA was conducted. The truancy of the less satisfied friend was the dependent variable.

There was a main effect for time, $F(1, 196)=4.39, p=.04, \eta_p^2=.02$. The truancy of less satisfied friends increased from time 1 ($M=1.42, SD=0.37, 95\% \text{ CI } [1.38, 1.46]$) to time 2 ($M=1.46, SD=0.49, 95\% \text{ CI } [1.40, 1.52]$). There were also main effects for relative level of truancy $F(1, 196)=45.58, p<.001, \eta_p^2=.19$; and absolute level of truancy $F(1, 196)=21.13, p<.001, \eta_p^2=.10$. The less satisfied friend reported higher rates of truancy when the more satisfied friend was frequently truant ($M=1.65, SD=0.46, 95\% \text{ CI } [1.60, 1.70]$) than when the more satisfied friend was infrequently truant ($M=1.41, SD=0.39, 95\% \text{ CI } [1.37, 1.45]$), and (by definition) the less satisfied friend reported higher rates of truancy when he or she was truant relatively more than the more satisfied friend ($M=1.57, SD=0.46, 95\% \text{ CI } [1.52, 1.62]$) than when he or she was truant relatively less than the more satisfied friend ($M=1.31, SD=0.36, 95\% \text{ CI } [1.27, 1.35]$). There was a statistically significant interaction between time and relative level of truancy, $F(1, 196)=4.89, p=.03, \eta_p^2=.02$. Follow-up paired-samples t -tests indicated that the truancy of the less satisfied friend increased from time 1 ($M=1.26, SD=0.26, 95\% \text{ CI } [1.23, 1.29]$) to time 2 ($M=1.36, SD=0.45, 95\% \text{ CI } [1.31, 1.41]$) when the more satisfied friend reported relatively higher levels of truancy at the outset ($d=0.10$), whereas the truancy of the less satisfied friend did not change from time 1 ($M=1.58, SD=0.40, 95\% \text{ CI } [1.53, 1.63]$) to time 2 ($M=1.55, SD=0.52, 95\% \text{ CI } [1.49, 1.61]$) when the more satisfied friend reported relatively lower levels of truancy at the outset ($d=0.03$). The absence of statistically significant two- and three-way interactions involving the absolute level of truancy [$F(1, 197)=0.22 - 2.73, p=.07 - .80, \eta_p^2=.01 - .02$] suggests that more satisfied friends who were truant more often than their partners were similarly detrimental at above average levels of truancy and at below average levels of truancy.

Discussion

The findings add to a growing literature indicating that adolescent friends are not similarly influential. Our results revealed that the friend who was more satisfied with the relationship had greater influence than the friend who was less satisfied with the relationship. Results support the hypothesis that satisfied friends are influential because of their contagious and persuasive enthusiasm (Baron & Kepner, 1970). Some friends were a positive influence, others were not, depending on the initial level of the problem behavior displayed by the agent of influence. Alcohol abuse and truancy increased when the more satisfied friend reported greater problems, but either declined or remained unchanged when the more satisfied friend reported fewer problems.

Why might satisfaction be of service to socialization? The more satisfied friend may be the more engaged friend, with a stronger impetus for maintaining the rewards that are a source of satisfaction. Greater engagement on the part of the more satisfied friend may manifest itself in a variety of ways that promote influence. Engagement may take the form of frequent

invitations for social activities. Only a small fraction of entreaties to drink alcohol or skip class (or take up activities that preclude these behaviors) need be accepted for behavioral change to occur. Engagement may take the form of enticement. A happy friend is a rewarding friend (Demir, Ozdemir, & Weitekamp, 2007). It is not difficult to imagine the emotional and behavioral contagion that follows when an exuberant youth persuades a special friend to drink alcohol or cut class. Engagement may take the form of successful modeling. People who look like they are having fun serve as role models that others seek to emulate (Diener, Lucas, & Oishi, 2002). As the number of successful influence attempts by the more satisfied partner grows, both friends may come to view that partner as the leader. Once a precedent has been established, the follower may increasingly defer to the leader.

We cannot rule out the possibility that satisfaction is a byproduct of power, and not an independent source of influence. Those with more power in a relationship usually have greater access to relationship resources and higher levels of agentic control (Fiske, 1993), which are sources of satisfaction. Yet evidence for the proposition that relative power begets relationship satisfaction is scarce. Most studies report weak or negligible associations between power discrepancies and friendship satisfaction (Furman & Burhmester, 1985; Zarbatany, Conley, & Pepper, 2004) and in the case of romantic relationships, unequal power is more apt to be a source of dissatisfaction than satisfaction (Eldridge & Gilbert, 1990; Lennon, Stewart, & Ledermann, 2012). Nevertheless, we must take seriously the proposition that differences in satisfaction were a proxy for differences on a confounding variable that corresponds with power. Supplemental analyses indicated that age, peer acceptance, self-esteem, depressive symptoms, manipulateness, relations with parents (i.e., perceptions of parental control, knowledge, warmth, and disclosure), and perceptions of partners (i.e., friend attractiveness, competence, and differences in affection) were not responsible for the finding that more satisfied friends influenced the problem behaviors of less satisfied friends. We may yet find that satisfaction is confounded with sources of dominance that were not measured in this study, but candidate variables that may convey influence (e.g., extraversion, popularity) are not obviously correlated with relationship satisfaction.

Hartup (1996) suggested that the significance of a friendship may be defined, in part, by the identity of the friend. There is no question that some friends are bad news. Being friends with a deviant peer is a risk factor for maladjustment (Vitaro, Boivin, & Bukowski, 2009). Yet the focus on risks arising from peer pressure has overshadowed the good news about friends. As we found, friend influence may also reduce problem behaviors. Which friends are a positive influence and which friends are negative influences? Friend influence is apportioned on the basis of a number of factors, one of which we now know to be perceived satisfaction. The nature of this influence depends on the inclinations of the more satisfied partner, because the less influential friend typically altered his or her behavior to resemble the more influential friend. It will surprise few to learn that deviant peers can be a bad influence and that nondeviant peers can be a good influence. But it may surprise some to learn that these roles can be reversed. We found instances where nondeviant peers were a pernicious influence: Behavior problems increased for adolescents with a best friend who was below average on truancy and intoxication frequency if that friend was (a) relatively more satisfied with the relationship and (b) relatively higher on these problem behaviors. We also found instances where deviant peers were a beneficent influence: Alcohol abuse

decreased for adolescents with a best friend who was above average on intoxication frequency if that friend was (a) relatively more satisfied with the relationship and (b) relatively lower on drinking.

During adolescence, influence defines the nature of many interactions between friends, at the same time that it shapes the identity of many participants. For the individual adolescent, the goal of affiliation must be balanced against each friend's desire to develop a sense of separateness, autonomy, and a unique identity (Allen, Porter, & McFarland, 2006). Expressions of autonomy and individuality are a potential threat to friendships, interfering with the establishment of common ground and discouraging companionship and shared activities. They can also interfere with the socialization processes that are necessary for a friendship to survive and thrive. Friends who become more similar over time tend to remain friends; those who do not often find themselves to be former friends (Hafen, Laursen, Burk, Kerr, & Stattin, 2011). Thus, influence is both a source of similarity and a hallmark of a successful friendship, at the same time that it can be an obstacle to an adolescent's emerging sense of autonomy and individuality.

Although our discussion has focused on characteristics of the agent of influence, it would be a mistake to ignore the target. One might argue, for instance, that dissatisfied partners are motivated partners. Perceptions of a poor quality relationship may foster cognitive disequilibrium, prompted by a disparity between the actual state and the desired state of the friendship (Bukowski, Velazquez, & Brendgen, 2008). The friend who perceives the relationship to be poorer in quality may be motivated to improve the relationship, perhaps by conforming to the wishes of the partner. Links between dissatisfaction in close relationships and adjustment difficulties may account for findings that link individual differences in susceptibility to peers to later depressive symptoms (Allen et al., 2006) and antisocial behavior (Monahan, Steinberg, Cauffman, & Mulvey 2009). Our findings did not change when we controlled for self-esteem or depressive symptoms, suggesting that susceptibility to friend influence is not a product of adjustment, but this is a poor substitute for a direct test of individual differences in susceptibility to peer influence.

Alcohol use and truancy are observable and salient. The reputation salience hypothesis holds that youth are more apt to share observable characteristics with friends than internal states and attitudes (Hartup, 1993). Consistent with this view, previous studies have found both greater initial similarity and greater increases in similarity on observable behaviors, such as alcohol abuse, than on internal states, such as achievement motivation (Hafen et al., 2011). Differential similarity arises because children tend to focus on behaviors rather than inner states when they select friends, and because friends place a greater priority on behavioral congruence than attitudinal agreement (Werner & Parmelee, 1979). Note that our findings only address relatively normative adolescent behaviors. It is not clear that friends would demonstrate the same level of influence (or any influence whatsoever) over atypical behaviors. Low risk behaviors that are tangential to one's identity may be more susceptible to influence than high risk behaviors that are central to self definition.

The study is not without limitations. Friend influence over deviant behavior tends to be strongest in high quality friendships (Urberg, Luo, Pilgrim, & Degirmencioglu, 2003). Our

definition of best friendship was quite strict: Reciprocal top ranked friend nominations. Only the closest of friends met this criterion. The strict definition of friendship and strict definition of friendship categories required for follow-up analyses resulted in a reported sample less generalizable than the total sample. Some studies indicate that lesser friends may not be as influential as best friends (e.g., Burk, Steglich, & Snijders, 2007; Fujimoto & Valente, 2012), but other studies indicate that neither reciprocity (e.g., Urberg, 1992) nor closeness (Ennett et al., 2008) are significant factors in the amount of influence that friends exert over adolescent problem behaviors. Supplemental analyses discounted the possibility that influence is greatest in the highest quality relationships, but our focus on best friendships undoubtedly limited the variance in reports of satisfaction. Adolescents who change friends with some regularity may differ from those who keep the same friends on dimensions that are associated with intoxication frequency and delinquency. Many adolescents have multiple friends, who are embedded in a network of peers. We were unable to separate variance attributable to the peer group from variance attributable to the dyad, because the analytic strategy employed does not permit individuals to participate in more than one friendship. Supplemental analyses that revealed the same level of friend influence after controlling for the problem behaviors of all other important peer nominees should help to ameliorate concerns that the magnitude of friend influence effects are inflated by effects that are more appropriately ascribed to group influence. It is worth remembering that our findings focus on intra-individual influence; they do not speak to intra-dyad differences. Deviant youth tend to have poor quality friendships, which may undermine the stability and significance of the relationship, both of which are related to influence; alternatively, the isolation of troubled youth may amplify the significance of their friends (Dishion, Piehler, & Myers, 2008). Finally, participants were drawn from a mid-sized community in central Sweden. Although they were representative of the population from which they were drawn, it will be up to future scholars to determine whether the findings generalize to youth living in areas that are more urban and transient.

The findings suggest that it will be difficult for outsiders, such as parents, teachers, or practitioners, to prognosticate about the risks posed by any particular friend, because some of that influence depends on participant perceptions of the relationship and casual observations seem unlikely to yield insight into relative friendship satisfaction. As a result, judgments about the risks and benefits of a particular friendship should be made with care. Well-intentioned adults may attempt to steer youth away from friends who have been known to engage in deviant behavior, without realizing that the friend may actually be a force of moderation. Unsuspecting adults may encourage friendships with seemingly well-adjusted youth, without realizing that the consequences of the intended affiliation may not be benign. We do not mean to suggest that it is counterproductive to monitor adolescent friendships, but it is worth remembering that influence is a complex, sometimes counterintuitive process.

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Figure 1.

A longitudinal Actor-Partner Interdependence Model (APIM) for distinguishable dyads:
Measurement model

Note. Stability (actor) paths = $a1$ and $a2$. Influence (partner) paths = $b1$ and $b2$. Concurrent correlations = $c1$ and $c2$

Figure 2.

Friend influence over intoxication frequency: Results from a longitudinal APIM with friends distinguished on the basis of relative relationship satisfaction.

Note. $N=700$ (350 dyads). Standardized beta weights are reported with standard errors in parentheses. 95% confidence intervals in brackets.

* $p < .05$, ** $p < .01$, two-tailed.

Figure 3.

Friend influence over truancy: Results from a longitudinal APIM with friends distinguished on the basis of relative relationship satisfaction.

Note. $N=700$ (350 dyads). Standardized beta weights are reported with standard errors in parentheses. 95% confidence intervals in brackets.

* $p < .05$, ** $p < .01$, two-tailed.

Table 1

Intercorrelations, Means, and Standard Deviations.

Variable	1	2	3	4	5	6	M (SD)
<u>Time 1</u>							
1. Intoxication Frequency	-						1.72 (0.88) [1.65, 1.79]
2. Truancy	.38 ** [.31,.45]	-					1.26 (0.33) [1.24, 1.28]
3. Friendship Satisfaction	.06 [-.01,.13]	-.10 * [-.17,-.03]	-				3.92 (0.46) [3.89, 3.95]
<u>Time 2</u>							
4. Intoxication Frequency	.69 ** [.64,.74]	.28 ** [.21,.35]	.10 * [.03,.16]	-			1.79 (0.95) [1.72, 1.86]
5. Truancy	.39 ** [.32,.45]	.47 ** [.41,.53]	-.09 * [-.16,-.02]	.44 ** [.38,.50]	-		1.27 (0.41) [1.24, 1.3]
<u>Controls</u>							
6. Acceptance (Time 1)	.13 ** [.06,.20]	-.01 [-.08,.06]	.10 * [.03,.17]	.23 ** [.16,.29]	.07 [-.01,.14]	-	4.99 (2.52) [4.70, 5.28]
7. Age	.56 ** [.51,.61]	.24 ** [.18,.32]	.07 [-.01,.14]	.51 ** [.45,.56]	.29 ** [.22,.36]	.03 [-.04,.10]	14.22 (1.68) [14.10, 14.34]

Note: N=700. Friendship satisfaction scores ranged from 1 (*don't agree at all*) to 5 (*agree perfectly*). Intoxication frequency and truancy scores ranged from 1 (*no, it has not happened*) to 3 (*several times*). 95% confidence intervals given in brackets.

* $p < .05$.

** $p < .01$, two-tailed.