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Gangs, clubs, and alcohol: The effect of organizational membership on adolescent drinking behavior

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ABSTRACT

How does adolescent organizational membership in general, and simultaneous membership in distinct types of organizations in particular, impact drinking behavior? While past studies have focused either on the learning effect of involvement with gangs or on the constraining influence of conventional organizations on adolescent problem behavior, we explore the possibility that conventional school clubs can serve as socializing opportunities for existing gang members to engage in drinking behavior with non-gang club members. Using the Add Health data, we show that gang members drink more often, and engage in more binge drinking, than non-members. More importantly, individuals who are members of both gangs and school clubs drink alcohol at greater levels than those who are solely involved in gangs. In addition, non-gang adolescents who are co-members with gang members in the same school club are more likely to drink alcohol than non-members. This result has important implications for understanding the role of organizations in adolescent behavior and suggests that the study of delinquent behaviors would benefit from devoting more attention to individuals who bridge distinct types of organizations.

1. Introduction

How does organizational membership influence adolescent drinking behavior? Previous studies in criminology have explained adolescent delinquency and problem behavior by focusing on the effect of interpersonal networks. These studies differ in viewing either learning from delinquent peers (Akers, 1985; Burgess and Akers 1966; Sutherland, 1947), constraints by societal norms (Gibbs, 1989; Hirschi, 1969), or opportunities to be delinquent in front of others (Cohen and Felson, 1979; Gold, 1970; Osgood et al., 1996), as the most salient factors, but are similar in emphasizing the importance of interpersonal networks to determining one's engagement in problem behavior. However, interpersonal relationships are not the only source of influence; individual linkage to organizations has an impact on adolescents that has not received adequate attention.

Previous studies that have examined organizational involvement have focused on the learning effect of involvement with delinquent organizations such as youth gangs (Battin et al., 1998; Bjerregaard, 2010; Decker and van Winkle, 1996; Spergel, 1995) or on the constraining influence of conventional organizations, such as school clubs (Crosnoe, 2001; Kreager, 2007;

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Mahoney and Cairns, 1997; McNeal, 1995; Thorlindsson and Bernburg, 2006), on adolescent problem behavior. Yet the literature is silent on individuals who belong to both types of groups simultaneously. By assuming that participation in one type of organization will discourage, or even prevent entirely, participation in the other type of organization (Glueck and Glueck, 1950; Hirschi, 1969; Sutherland, 1947), past studies have failed to distinguish between those who devote their limited time and attention to, and are under the exclusive influence of, a single type of organization and those who enjoy socializing opportunities in multiple kinds of organizations. This is a serious oversight in understanding adolescent problem behavior because a large number of adolescents are likely involved with multiple organizations, and exclusive and joint membership in gangs and school clubs may attenuate or enhance engagement in problem behavior. We fill this theoretical gap by exploring the possibility that conventional organizations can serve as socializing opportunities for existing gang members to exhibit their drinking behavior and spread a drinking repertoire to club-members who are not involved in youth gangs.

We focus on the effects of membership to explain adolescents' drinking behavior. Adolescent alcohol use is illegal, but still a common and widespread element in the adolescent behavioral repertoire in the United States (Eaton et al., 2012; Johnston et al., 2010).[1] On the one hand, adolescent drinking is perceived as a problem behavior that conventional society generally discourages. Adolescent use of alcohol is reported not only to harm academic achievement and enhance emotional distress (Crosnoe et al., 2004), but also to serve as a gateway for some individuals, under certain social contexts, to involvement with more serious criminal and delinquent behaviors (Felson et al., 2008; Parker and Auerhahn, 1998; Rossow, 1996). On the other hand, adolescents often accept drinking behavior as common or unremarkable and can easily participate through association with alcohol-using peers (Curran et al., 1997; Fujimoto et al., 2013; Kreager and Haynie, 2011). Since adolescents often drink together in a group setting to socialize with each other, alcohol use is categorized as a behavior that should be highly sensitive to immediate social pressures (Warr, 2002). Alcohol use is therefore a good candidate to test our theoretical model of the effect of organizational membership.

Using data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), we examine the determinants of adolescent drinking behavior measured by both drinking frequency and binge drinking. We find that gang members are more likely to drink alcohol than non-members. Involvement in conventional school clubs, on the other hand, does not significantly influence the likelihood. More importantly, simultaneous members of both gangs and school clubs engage in both frequent drinking and binge drinking at greater levels than members who are exclusive members of gangs. In addition, exclusive members of conventional clubs are also more likely to engage in drinking behavior than non-members when they are co-members with gangs in the same school clubs. In other words, our results suggest that members who have a foot in both the delinquent and the conventional worlds not only engage in drinking behavior to a greater extent, but also influence non-gang members to drink alcohol through co-membership in conventional clubs. Our results point to an important area for future study regarding the complex relationship between organizations and delinquency.

2. Theoretical background

2.1. Criminological theories of problem behavior

Past studies have emphasized the importance of social interaction with others to an individual's involvement in delinquency and problem behavior, and have generated three distinct, but not mutually exclusive, theoretical accounts that are relevant to our study: the social learning perspective, the social control perspective, and the social opportunity perspective. The social learning perspective originated in the differential association theory tradition that focuses on how individuals learn favorable or unfavorable definitions toward criminal behavior through association with others (Sutherland, 1947). Building on this tradition, the social learning perspective primarily focuses on the learning process of delinquent behavior (Akers, 1985; Burgess and Akers 1966). According to social learning theory, individuals observe their peers' behaviors and feel normative pressure to do the same during social interaction with delinquent friends. Thus, delinquency is a particular set of definitions, motivations, and behaviors that are learned from associates who already possess them, and individuals are prone to imitate their delinquent friends' behaviors in order to receive positive rewards, to avoid punishment, and to become more integrated into their social circles (Akers, 1985). Empirical research is consistent with this perspective, showing that having delinquent peers increases the likelihood of engaging in delinquency and other problem behavior (Haynie, 2001; Rice et al., 2003; Warr, 2002; Warr and Stafford, 1991).

The social control perspective is similar to the learning perspective in its focus on normative pressure, but distinct in its primary emphasis on the role of social bonds that constrain adolescents from engaging in problem behavior (Gibbs, 1989; Hirschi, 1969). The assumption, stemming from Durkheim (2010 [1951]), is that people may become delinquent if they are not prevented from doing so by social integration. More specifically, four elements of social bonds prevent adolescents from engaging in antisocial behaviors: (1) involvement in conventional activities, (2) attachment to significant others such as parents and teachers in school, (3) commitment to future goals such as college attendance and job attainment, and (4) beliefs in the moral values the society holds (Gibbs, 1989; Hirschi, 1969). Empirical studies provide evidence for this perspective and

[1] For example, Johnston et al. (2010) report in their Monitoring the Future study that 71% of American adolescents have drunk alcohol more than just a few sips by the end of high school.

suggest that involvement in conventional activities, as well as connections to significant others, decrease the expected level of problem behavior (Crosnoe, 2001; Jenkins, 1997; Mahoney and Cairns, 1997; McNeal, 1995; Wiatrowski et al., 1981).

Finally, the social opportunity perspective suggests that, when individuals have more opportunities to engage in delinquency, more delinquency will occur ceteris paribus. Criminological literature has long hypothesized that the unsupervised time of adolescents provides opportunities for delinquency and problem behavior (Glueck and Glueck, 1950; Hirschi, 1969; Sutherland, 1947; Warr, 2005). Specifically, Cohen and Felson (1979) have argued in their "routine activity approach" that available opportunities for crime influence the patterns and rates of crime at the macro-level. At the micro-level, the likelihood of problem behavior is increased by the presence of peers who make problem behavior more rewarding and by the absence of authority figures who might have enhanced the cost of engaging (Gold, 1970). As engagement in problem behavior is often identified as being cool and brave among adolescents, the presence of friends leads to symbolic rewards such as enhancement of status (Fagan and Wilkinson 1998; Osgood et al., 1996). Even in structured settings where authority figures are present, adolescents may share their delinquent values and distribute information about future delinquent events. Previous studies have supported the social opportunity perspective, finding that socializing with peers increases the rewards, and therefore the likelihood of, delinquent behavior (Felson, 2002; Haynie and Osgood, 2005; Osgood et al., 1996). In particular, past studies have shown that substance users enjoy higher external status and popularity among their adolescent peers (Crosnoe et al., 2004; Hagan, 1991; Kreager et al., 2011; Maggs and Hurrelmann, 1998), leading to an expectation that socializing opportunities are more important in adolescent alcohol consumption, as compared to other violent and property crime.

Past literature has focused on the role of interpersonal relationships in engaging in problem behavior; however, interpersonal networks are not the only relational factor that adolescents experience. Organizations also provide structured opportunities for association and the transmission of norms, and therefore should be another important factor predicting problem behavior.

2.2. Organizational membership and problem behavior

Individual membership in organizations is conceptually distinct from interpersonal networks. Whereas interpersonal networks are direct ties between pairs of individuals, organizational membership provides linkage to the subset of individuals who are also affiliated with the same organization, and individuals who share membership are indirectly tied to each other through organizations (Frank, 2009). Thus, organizations have unique effects on their members that are not reducible to interpersonal friendship and the behaviors of adolescents can only be fully understood when placed in the context of organizations.

Organizations play a pivotal role in transmitting organization-specific norms and behaviors to these members in two ways. First of all, organizations act as a structure within which members experience a heightened level of contact with other members (Feld, 1981). Socializing opportunities that organizations provide can develop new intimate relationships with others (Breiger, 1974; McPherson, 1982; Simmel, 1950, 1955). This heightened level of contact, however, does not necessarily transform into dyadic interpersonal ties but still works as a conduit for information and resources to flow among members. In other words, these relationships are sustained but never move beyond the organizational context. Thus, organizations shape individual influence networks in ways that are not reducible to dyadic-level interpersonal networks, thereby exerting a considerable effect on the local social world. Inside the organizational setting, members can both obtain resources from other members (e.g., alcohol) and find socializing opportunities to participate in collective behavior with them (e.g., drinking together in a group-setting).

Second, organizations exert a powerful normative influence over their members (Alexander et al., 1970; Zucker, 1977), and previous studies have indeed found that individuals who are involved in organizations are more likely to adopt organization-specific norms, behavioral scripts and identities (Friedkin, 2001; King et al., 2010; Steele and King, 2011). For example, juvenile gangs have been shown to be influential in transmitting their delinquent norms and repertoires to, and monitoring and enforcing the compliance of, their members (Barnes et al., 2010; Giordano et al., 1986). Similarly, schools are regarded as an important institution for social integration, and conventional clubs within schools provide social bonds to conventional society and reduce problem behavior (Crosnoe, 2001; Mahoney and Cairns, 1997; McNeal, 1995; Thorlindsson and Bernburg, 2006; but, for opposite findings, see Agnew and Petersen, 1989 and Kreager, 2007).

Individuals who are members of the same organization have opportunities to meet during organizational activities and are exposed to a common normative environment, but past studies have rarely examined the impact of adolescents' simultaneous membership in multiple types of organizations. Since individuals are limited in the time and attention they can devote to organizations, individuals who are members of a single type of organization are more likely to adopt the group's norms. On the other hand, individuals who are connected to multiple types of organizations are under a weaker normative influence of a single organizational type; one is less likely to fully adopt a specific organizations behaviors when other organizations are vying for your attention. However, members of multiple organizations will be in an advantageous position to interact with various groups of individuals, share and spread information, and adopt common socializing activities. To better capture the effect of simultaneous membership in multiple types of organizations, we focus our study on membership in two distinct types of organizations: gangs and school clubs. Gangs are an explicit form of a delinquent organization in which delinquent norms and repertoires flow among members; Clubs affiliated with schools are regarded as a typical conventional organization for members to build a stronger bond to the conventional society.

We utilize this idea of simultaneous membership to explain adolescent alcohol use. Adolescent alcohol use is regarded as a major problem behavior, often resulting in major delinquent and violent behavior (Felson et al., 2008; Parker and Auerhahn, 1998; Rossow, 1996). Past research has shown that adolescents can easily engage in drinking behavior through the influence of their friends' drinking behavior (Curran et al., 1997; Fujimoto et al., 2013; Valente et al., 2004) as well as the drinking behavior of the friends-of-romantic-partners (Kreager and Haynie, 2011). Past studies have also identified psychological attributes such as the quality of parent-child relationship, the strength of attachment to school, and depressive symptoms as a risk factor for alcohol use (Deykin et al., 1987; Hirschi, 1969; Prado et al., 2009). In the current study, we analyze adolescent alcohol use to test our theoretical model of the effect of organizational membership. We follow Kreager and Haynie's operationalization (2011) by examining both drinking frequency and binge drinking as the two dimensions of alcohol use. Drinking frequency measures the number of occurrences in which adolescents drink alcohol, while binge drinking measures the number of times adolescents become intoxicated by heavy use of alcohol. We investigate whether exclusive and simultaneous memberships in gangs and conventional clubs influence both the frequency and the intensity of adolescent alcohol use.

3. Hypotheses

We derive hypotheses from criminological theories — social learning, social control, and social opportunity theories — to understand how organizational memberships in delinquent and conventional clubs impact adolescents' drinking behavior. First, the social learning perspective asserts that adolescents learn problem behavior from their delinquent peers. Extending this logic, we expect that adolescents who are exclusive members of gangs will experience normative pressure to engage in problem behaviors, such as drinking alcohol. Thus, these adolescents will have engaged in alcohol use at greater levels.

Gang Membership Learning Hypothesis. Being an exclusive member of a gang will *increase* the level of alcohol use.

On the other hand, the social control perspective argues that problem behavior is inhibited by connections to, and surveillance by, non-delinquent others. Adolescents who are exclusive members of conventional organizations such as school clubs will therefore experience normative pressure to follow the conventional rules given by society (Crosnoe, 2001; Hirschi, 1969; Wiatrowski et al., 1981). Thus, exclusive club members will have a decreased likelihood of alcohol use due to the constraining force of conventional organizations.

Club Membership Constraint Hypothesis. Being an exclusive member of a school club will *decrease* the level of alcohol use.

Finally, compared to the influence of exclusive organizational membership on individuals, our expectation for the impact of simultaneous membership is not straightforward. Individuals who participate in several groups are under pressure from their limited time and attention, and are not under the exclusive normative influence of a single group. Thus, extending the preceding logic of the social learning and social control theories, we expect that individuals affiliated with both gangs and conventional clubs will be forced to balance the conflicting normative demands of these organizations. In other words, for individuals who are conventional club members, the positive influence of gangs on alcohol use will appear but, at the same time, be mitigated by the countervailing influence of conventional clubs. Thus, simultaneous members should have lower levels of alcohol use than exclusive gang members, but possibly higher levels than exclusive club members.

Simultaneous Membership Balance Hypothesis. Being a member of a school club will *decrease* the effect of membership in a gang on the level of alcohol use.

In contrast, compared to those who are solely members of gangs, those who are members of both gangs and school clubs might have additional opportunities to engage in drinking behavior. Because adolescent drinking is relatively common and enjoys high levels of acceptance among non-delinquent adolescents, members of youth gangs can exploit these socializing opportunities to enhance their status among their peers (Crosnoe et al., 2004; Gold, 1970; Hagan, 1991; Osgood et al., 1996). As a result, members of both types of organizations will exhibit higher levels of alcohol use than exclusive members of either gangs or conventional clubs. In other words, their membership in gangs allows them to learn the problem behaviors, while their simultaneous membership in school clubs provides additional settings in which to engage in those behaviors.

Simultaneous Membership Opportunity Hypothesis. Being a member of a school club will *increase* the effect of membership in a gang on the level of alcohol use.

As a logical extension of the expectation that membership in school clubs will increase the likelihood of alcohol use for existing gang members, we also explore the possibility that non-gang members of those clubs will be influenced by the drinking behavior of their gang co-club members. Since gang members are more likely to drink alcohol through their engagement in conventional clubs, non-gang individuals in these clubs are more likely to engage in drinking behavior resulting from the presence of the gang members. The underlying assumption is that conventional school clubs can serve as an organizational setting within which a drinking repertoire can spill over from gang members to non-gang members. More specifically, those who share club membership with gang members can not only learn delinquent attitudes and behaviors from them but also be informed about delinquent events outside the structured club setting. Thus, club members who are not involved in gangs will be more likely to drink alcohol if gang members are affiliated with the same school clubs.

Simultaneous Membership Spill-Over Hypothesis. Being an exclusive member of a school club that includes a gang member will *increase* the level of alcohol use.

4. Data and methods

4.1. Data

We test our hypotheses using data from the National Longitudinal Study of Adolescent to Adult Health (i.e. Add Health). These data were gathered from a stratified sample of adolescents in grades 7 to 12, and when properly weighted can serve as a nationally representative sample of adolescents in the United States (Harris et al., 2009). Variables in the data include information on drinking behaviors, the peer-to-peer friendship networks of adolescents, their club and gang memberships, and other socio-demographic and psychological variables. A self-administered questionnaire was used in class to collect the In-School data. A face-to-face interview was conducted and answers were recorded on laptop computers to collect the In-Home data. For sensitive questions including involvement in problem behaviors, an ACASI (Audio Computer Assisted Self Interview) system was utilized for privacy. Thus, the Add Health data provides a unique opportunity to obtain candid answers on sensitive questions such as drinking alcohol.

To test our hypotheses we use the In-School survey in Wave I, the In-Home interview in Wave I, and the In-Home interview in Wave II. The In-School survey was administered to 90,118 students between September 1994 and April 1995. The Wave I In-Home interview was conducted between April and December 1995, which yielded data from 20,745 individuals. From the student roster of the In-School sample, respondents in the In-Home interview were stratified by grade and sex and then randomly selected from each stratum, supplemented by oversamples. Approximately 200 adolescents were chosen from each schools and the data contained 20,745 individuals. The Wave II In-Home interview was drawn from the same pool as the Wave I sample between April and August 1996 and the data included 14,738 respondents. While 15,355 individuals completed both In-School and In-Home questionnaires at Wave I, 10,701 (69.7%) respondents also participated in the Wave II interview. The loss of respondents is largely accounted for by the exclusion of the majority of those who were 12th-grade students at the time of Wave I. The actual response rate is close to 90% (88.6%).

We limit our focus to individuals who participated in all three surveys and responded to the questions of interest. We also restrict our focus to schools that have at least a single gang and a club member as our hypotheses will be impossible to test otherwise. While 8832 individuals participated in all three surveys and attend schools that have at least a single gang and a club member, 1862 of these individuals (21.1%) have incomplete information on one or more variables of interest. The majority of the missing data comes from non-responses to either the club membership items from the In-School questionnaire or the friendship (in-degree/out-degree) items, in addition to the lack of the grand weight values in number of cases. We use listwise deletion to remove these missing cases, and our final sample for the comprehensive model consists of 6970 adolescents in 86 schools.[2]

4.2. Dependent variables: alcohol use

We explain the use of alcohol by the respondents in Wave II, using independent and control variables collected in Wave I. We use drinking frequency and binge drinking as the two dependent variables in our models (Kreager and Haynie, 2011). In the case of drinking frequency, we use the original variable provided by the Wave 2 In-Home Interview that asks "During the past 12 months, on how many days did you drink alcohol?" As for binge drinking, we use the original item that is taken from the question "Over the past 12 months, on how many days did you drink five or more drinks in a row?" Both items are asked in an ordinal 7-point scale: In both items, 0 equals never, 1 equals 1—2 days a year, 2 equals once a month, 3 equals 2—3 days a month, 4 equals 1—2 days a week, 5 equals 3—5 days a week, and 6 equals every day. Considering the selection effect in which individuals with a high level of drinking become members of organizations rather than vice versa, we control the same set of items — drinking frequency and binge drinking — from Wave I. Thus, we examine the effects of our main predictors on the changes in the drinking behavior between Wave I and Wave II.

4.3. Independent variables: organizational membership

Involvement in gangs is often concealed, but past studies have suggested that the self-report method is a robust measure of gang membership (Esbensen et al., 2001). The Add Health asks one's membership in a gang not in Wave I but only in Wave II. Thus, we identify gang members as those who answer in retrospect in Wave II that they "have been initiated into a named gang". As an alternative to our primary measure, we also identify gang members using a multi-stage method. To sort out individuals who were not involved in any gang-typical activity in Wave I and became a gang member only in Wave II, we use the Wave I group fight variable, which asks "In the past 12 months, how often did you take part in fight where a group of your

[2] When we remove the two friendship variables from our analyses to recover information, the results are not qualitatively different. It therefore appears unlikely that the resulting sample is heavily biased.

friends was against another group?"[3] We use our primary measure in Wave II with which to test our hypotheses, but we also report the results using the alternative measure.

To measure the degree to which adolescents spend time with other members in school club activities, we count the number of club memberships using items on thirty-three extracurricular club organizations in the Wave I In-School data. The original variables ask whether the respondent has been a member or intends to become a member of a certain school club in the same academic year.[4] Using these items, we construct a continuous club membership variable ranging from zero to thirty-three. The timing of the measurement for conventional club membership at Wave I (In-School data; September 1994 to April 1995) precedes that for alcohol use at Wave I (In-Home data; April to December, 1995). This makes our tests very conservative since we are expecting that conventional club membership at Wave I In-School will influence adolescent alcohol use between Wave I In-Home and Wave II In-Home.

A respondent is able to simultaneously belong to both gangs and school clubs in Wave I. We test whether membership in delinquent or conventional organizations, as well as the interaction effect between the two, has an independent effect on the use of alcohol. Additionally, we test whether school club members have a greater chance of drinking alcohol if gang members are also members of the same school club. To test this possibility, we compute a continuous variable that counts the total number of gang members with whom a non-gang individual shares club membership. For example, if an individual is not a gang member, but is a member of a soccer club where three gang members also participate, the score of this individual would be 3.

4.4. Control variables

We include twelve control variables in our analyses. We begin with Wave I drinking frequency and binge drinking variables to help control for selection effects and to focus on the adolescents' change in their use of alcohol between Wave I and Wave II. Items related to drinking behaviors are identical between Wave I and Wave II. The correlation of the alcohol use variables between Wave I and Wave II is only moderately high (.530 ($p < 0.001$) for drinking frequency and .488 ($p < 0.001$) for binge drinking and, thus, there is substantial within-individual variation to be explained.

Next, to distinguish the effect of organizational linkage from interpersonal relationships, we include six interpersonal network variables. First of all, we control for the direct influence of peers' drinking behavior. Past studies have warned that the respondent's report on peer delinquency has involved false consensus and projection bias (Young et al., 2011, 2014). Young et al. (2014) have used structural equation models to more precisely show that respondents indeed project their own delinquent behaviors to their peers. Thus, instead of using the respondent's report on their peers' alcohol use, we rely on the reports of friends who are nominated by the respondent. We generate a friends' alcohol use index that calculates the average drinking frequency of ten male and female friends at Wave I. In addition, we include (1) the respondent's popularity among peers, or how many times they were selected as a friend by other students regardless of the selecting person's delinquency status (i.e. in-degree), and (2) the respondent's influence over peers, or how many peers the respondent nominated as one's friends (i.e. out-degree). To capture the extent of socialization with friends, we add a variable that asks how many times the respondent just hangs out with their friends. We add a romantic relationship variable in Wave I to examine whether adolescents are more likely to drink alcohol when they are involved in a romantic relationship. This is a binary variable that asks whether the respondent had a special romantic relationship with anyone in the last 18 months. Finally, when we test whether individuals who share club membership with gang members are more likely to drink alcohol, we also control the possibility that gang members have direct influence on club members through intimate interpersonal relationship. Accordingly, we control for the proportion of the respondent's friendship nominations that were directed to gang members.

We also included three basic demographic variables in our analyses: gender, age, and race. These demographic variables are critical in explaining the degree and type of substance-using behaviors among adolescents in the United States (Barnes et al., 2002; Khan et al., 2014). Gender is coded one if the respondent is female, age ranges from 10 to 19, and race is coded into a series of binary variables equaling one if the respondent marked their race as white, black, and Asian, and others, respectively, and zero otherwise.

Finally, we also include five psychological controls in our models. Social control theory suggests that close attachment of adolescents to their parents, schools, and conventional lines of action decreases the likelihood of engaging in delinquency (Hirschi, 1969; Pratt and Cullen, 2000), so we include the quality of parent-child relationship, the strength of school attachment, the student's aspiration to college, and the degree of self-control in our analyses. We use an index of parent-child relationship by computing the average value of twenty items that measure maternal and paternal involvement (Prado et al., 2009). We compute the mean of these twenty variables while disregarding missing values in any of these variables. Twenty variables ask whether the respondent participated in various activities with parents in the past four weeks. The Cronbach's alpha for the scale is .703. A close attachment to one's school is assessed by whether or not the respondent reports feeling that

[3] The correlation between group fight and gang membership in Wave II is .326 ($p < 0.001$), which justifies our claim that group fight is an activity typical to gang members. No other delinquent behavior appears to have a higher correlation with gang membership than group fight in Wave II.

[4] The Add Health provides a list of 33 clubs, organizations, and teams at school and asks to mark the clubs the respondent is participating or planning to participate later in the same school year (e.g., "Darken the oval next to any of them that you are participating in this year, or that you plan to participate in later in the school year"). The questionnaire additionally asks whether the respondent does not participate in any school clubs, and this variable was used to distinguish between non-participation in clubs and non-response to the questions.

Table 1
Weighted means and standard deviations of variables ($N = 6970$).

Variables	Mean	S.D.	Min.	Max.
Drinking behavior				
Drinking frequency (wave II)	1.092	1.477	0	6
Binge drinking (wave II)	.709	1.353	0	6
Organizational membership				
Gang membership[a]	.048	…	0	1
Club membership	2.487	2.466	0	33
Gang as co-club-member	1.407	2.504	0	52
Interpersonal network				
Friends' drinking behavior	.339	.867	0	6
Time spent with friends	1.986	.991	0	3
Friends: in-degree	4.845	3.965	0	30
Friends: out-degree	4.826	2.972	0	10
Romantic relationship	.526	…	0	1
Gang as friend	.005	.044	0	1
Controls				
Drinking frequency (wave I)	.990	1.380	0	6
Binge drinking (wave I)	.566	1.206	0	6
Gender (female = 1)	.528	…	0	1
Age	14.465	1.590	10	19
Race: white	.708	…	0	1
Race: black	.171	…	0	1
Race: Asian	.047	…	0	1
Race: others	.074	…	0	1
Parent-child relationship (index)	.369	.185	0	1
Attachment with school	2.110	.985	1	5
College aspiration	4.513	.950	1	5
Lack of self-control	.203	4.167	−9.060	22.034
Depression	.513	.742	0	3

[a] Among gang members, 78.1% are also members of school clubs and 21.9% are exclusive gang members. The average number of club membership is 2.246 for gangs and 2.450 for non-gangs. Also, 72.1% of gang members are males and 27.9% are females. The weighted mean of the alternative gang membership variable is .028.

they are part of the school. Student's aspiration to college is measured by asking the degree to which the respondent wants to go to college. Both school attachment and college aspiration are measured on a scale of 1–5. Past studies have also suggested that low self-control is an important predictor of criminal and offending behavior (Perrone et al., 2004; Pratt and Cullen, 2000). To control the possibility that self-control may fully account for the relationship between organizational membership and alcohol use (McGloin and Shermer 2015; Pyrooz et al., 2014), we include an index of self-control. We follow McGloin and Shermer (2015) by summating the z-scores of seven items that are related to the respondent's lack of self-control. The Cronbach's alpha for the scale is .677. Finally, as previous research has strongly indicated that depression increases the likelihood of engaging in substance use (Deykin et al., 1987), we include the level of depression, measured as the respondent's self-reported frequency of feeling depressed.[5] Table 1 presents the descriptive statistics of the dependent and independent variables of our study.

4.5. Analytic strategy

Because both of our dependent variables are in a restricted range consisting of integer values (0–6), violating the normality assumption behind OLS regression, we use ordered logistic regression models to test our hypotheses on the effect of organizational membership statuses on drinking behavior. In particular, we use the proportional odds model where the cumulative probabilities of an equal or smaller response are compared to the probabilities of a larger response on an ordinal 7-point scale in the drinking variables (Long and Freese, 2005). We report our coefficients as odds ratios throughout the models, which should be interpreted such that a one-unit change in the independent variable is associated with the specified change in the odds of falling into a group that drinks more frequently versus a group that drinks less frequently. Put another way, the odds ratio gives the change in the odds that an observation would shift into a higher drinking category relative to a current or lower drinking category resulting from a one-unit increase in the independent variable.

Robust standard errors are obtained throughout the analysis to adjust for the school-level clustering in the data (Rabe-Hesketh and Skrondal, 2008). Independent variables are primarily derived from Wave I. The dependent variables, drinking frequency and binge drinking, come from Wave II dataset, while the same drinking behaviors in Wave I are controlled. We use the Wave II Grand Sample Weight to correct for biases in sampling design (Chantala and Suchindran, 2011); thus, we are able to make nationally representative statements of our results.

[5] We also include the parent's drinking frequency and binge drinking as controls in supplementary analysis. The variables are derived from the Parent In-Home questionnaire. We do not include these variables in our main analyses because of data quality (the high number of missing cases in particular).

Table 2
The effect of organizational membership on drinking behavior ($N = 6970$).

	Drinking frequency				Binge drinking			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Organizational membership								
Gang membership	3.224*** (.723)	3.242*** (.797)	2.456*** (.633)	2.487*** (.642)	3.344*** (.775)	3.335*** (.869)	2.798*** (.675)	2.868*** (.696)
Club membership	1.028* (.014)	1.007 (.014)	1.015 (.016)	1.001 (.016)	1.018 (.018)	.998 (.017)	.999 (.021)	.976 (.022)
Gang X club membership	1.162*** (.049)	1.170*** (.053)	1.119* (.054)	1.134* (.057)	1.141** (.056)	1.144* (.061)	1.104* (.047)	1.130** (.050)
Gang as co-club-member				1.028* (.013)				1.048** (.019)
Interpersonal network								
Friends' drinking behavior		1.206*** (.066)	1.118** (.045)	1.110** (.042)		1.276*** (.076)	1.201*** (.062)	1.194*** (.054)
Time spent with friends		1.205*** (.037)	1.077* (.037)	1.077* (.038)		1.229*** (.046)	1.110** (.042)	1.111** (.043)
Friends: in-degree		1.046*** (.012)	1.025* (.011)	1.025* (.011)		1.047** (.015)	1.031* (.016)	1.032* (.016)
Friends: out-degree		1.023 (.013)	1.022 (.013)	1.021 (.013)		1.012 (.019)	1.014 (.019)	1.012 (.019)
Romantic relationship		1.824*** (.139)	1.394*** (.114)	1.395*** (.113)		1.745*** (.153)	1.429*** (.131)	1.430*** (.131)
Gang as friend				1.100 (.843)				.658 (.730)
Controls								
Wave I drinking frequency			2.017*** (.067)	2.019*** (.068)				
Wave I binge drinking							1.865*** (.075)	1.867*** (.075)
Gender (female = 1)	1.096 (.105)	1.071 (.108)	1.101 (.087)	1.112 (.086)	.806 (.106)	.776 (.108)	.859 (.099)	.874 (.101)
Age	1.308*** (.032)	1.248*** (.031)	1.142*** (.029)	1.142*** (.029)	1.362*** (.034)	1.300*** (.031)	1.196*** (.030)	1.195*** (.029)
Race: white	1.486*** (.170)	1.307* (.162)	1.351* (.185)	1.391* (.198)	1.221 (.148)	1.079 (.126)	1.076 (.134)	1.130 (.149)
Race: black	.602*** (.093)	.615** (.105)	.671* (.126)	.682* (.131)	.251*** (.043)	.262*** (.045)	.283*** (.058)	.291*** (.060)
Race: Asian	.578** (.108)	.666* (.132)	.928 (.185)	.926 (.188)	.373*** (.084)	.427*** (.092)	.535** (.116)	.530** (.120)
Parent-child relationship	1.058 (.243)	.787 (.177)	.879 (.199)	.862 (.197)	.878 (.215)	.676 (.158)	.795 (.199)	.759 (.195)
Attachment with school	1.017 (.046)	1.074 (.048)	1.038 (.044)	1.039 (.045)	.984 (.050)	1.033 (.050)	.995 (.046)	.995 (.047)
College aspiration	.952 (.039)	.934 (.041)	.950 (.037)	.950 (.038)	.925 (.041)	.908* (.045)	.936 (.044)	.936 (.044)
Lack of self-control	1.059*** (.009)	1.052*** (.009)	1.032*** (.010)	1.031*** (.010)	1.068*** (.011)	1.059*** (.011)	1.041*** (.011)	1.041*** (.011)
Depression	1.094* (.049)	1.025 (.048)	.901* (.041)	.901* (.041)	1.096 (.069)	1.033 (.064)	.932 (.054)	.927 (.053)
Cut 1	4.318 (.472)	4.470 (.470)	3.373 (.478)	3.399 (.480)	5.047 (.436)	5.232 (.435)	4.095 (.447)	4.129 (.445)
Cut 2	4.979 (.475)	5.169 (.473)	4.198 (.479)	4.225 (.482)	5.627 (.438)	5.843 (.437)	4.794 (.450)	4.829 (.447)
Cut 3	5.754 (.476)	5.984 (.472)	5.181 (.480)	5.209 (.482)	6.193 (.437)	6.438 (.436)	5.495 (.447)	5.532 (.443)
Cut 4	6.504 (.477)	6.758 (.471)	6.098 (.486)	6.126 (.487)	6.853 (.444)	7.120 (.443)	6.290 (.451)	6.328 (.447)
Cut 5	7.790 (.486)	8.064 (.477)	7.556 (.505)	7.585 (.506)	7.843 (.449)	8.121 (.448)	7.414 (.453)	7.453 (.448)
Cut 6	9.589 (.563)	9.863 (.535)	9.471 (.571)	9.499 (.570)	9.220 (.496)	9.494 (.503)	8.899 (.506)	8.941 (.504)
Wald Chi Square	487.30	831.08	1391.85	1454.61	705.09	917.03	1348.27	1375.37

Note: ***p < 0.001, **p < 0.01, *p < 0.05 (two-tailed); Odds ratios are reported, and standard errors are in parentheses.

5. Results

How does the organizational membership of adolescents influence their drinking behavior? The results in Table 2 provide evidence that membership statuses have a unique effect on adolescent alcohol use. In Table 2, models 1 to 4 present results for drinking frequency and models 5 to 8 show results for binge drinking. Our analysis of both drinking frequency and binge drinking clearly show that organizational membership matters for the likelihood of drinking alcohol, even after controlling for the previous usage of alcohol, interpersonal networks, and other psychological and socio-demographic factors.

First of all, the results in Model 1 indicate that, relative to adolescents who are not affiliated with any organizations, being a gang member is associated with 3.224 times ($p < 0.001$) increase in the odds of drinking more frequently compared to not drinking more frequently, holding all other variables constant. In addition, Model 5 shows that being a gang member is associated with 3.344 times ($p < 0.001$) increase in the odds of engaging in binge drinking more frequently versus the

alternatives.[6] Club membership rather has a positive and significant effect on drinking frequency in the first model, although this relationship does not hold after including control variables in subsequent models. In addition, the interaction effect between gang and club membership is positive and significant, meaning that being a joint member of both gang and club organizations has an even stronger and positive effect on alcohol use than exclusive gang members.[7] For those who are gang members, each additional increase in club membership is associated with 1.162 times (16.2%; $p < 0.001$) and 1.141 times (14.1%; $p < 0.01$) increase in the odds of engaging more frequently in drinking and binge drinking, respectively.

In Model 2 and Model 6, we include variables that control for one's interpersonal networks. The results show that both the effect of gang membership and the interaction effect between gang and club membership are robust to this inclusion of additional controls. Consistent with the Gang Membership Learning hypothesis, being a gang member is associated with 3.242 times ($p < 0.001$) increase in the odds of moving to a higher drinking frequency category and 3.335 times ($p < 0.001$) increase in the odds of moving to a higher category of binge drinking, even after controlling for the drinking behavior of friends and parents as well as the in-degree and out-degree in friendship networks. On the other hand, our results do not provide any evidence for the Club Membership Constraint hypothesis. In addition, the results support for the Simultaneous Membership Opportunity hypotheses by showing a positive and significant interaction effect between gang and club membership. For gang members, each additional membership in a school club is related to 17.0% ($p < 0.001$) and 14.4% ($p < 0.05$) increases in the odds of more frequently engaging in drinking in general and heavy drinking, respectively.

In models 3 and 7, we include adolescent's drinking behavior at Wave I as additional control variables. This allows us to conduct a more rigorous test by examining the change in drinking frequency and binge drinking between Wave I and Wave II. In this conservative test, our results still support the Gang Membership Learning hypothesis by showing that being a gang member is positively associated with the odds of more often engaging in drinking and binge drinking by 2.456 times ($p < 0.001$) and 2.798 times ($p < 0.001$), respectively. In addition, the interaction effect has a positive impact on both drinking frequency (1.119 times; $p < 0.05$) and binge drinking (1.104 times; $p < 0.05$), although the magnitude of coefficients decreases to some extent. The results suggest that club membership measured in Wave I In-School survey (September 1994 to April 1995) still has a lasting effect on the changing use of alcohol between Wave I In-Home interview (April and December 1995) and Wave II In-Home interview (April and August 1996).

Finally, in Model 4 and Model 8, we add an independent variable that measures the number of gang members that a non-gang adolescent shares club memberships with. Models 4 and 8 achieve better fit to the data than any previous model (Wald Chi Square is 1454.61 and 1375.37). The results indicate that, for non-gang club members, each unit increase in the number of gang members as a co-club-member is associated with 2.8% ($p < 0.05$) and 4.8% ($p < 0.01$) increase in the odds of more frequently engaging in drinking and binge drinking, respectively, even after controlling for the proportion of gang members as intimate friends. The results provide evidence for the Simultaneous Membership Spill-Over hypothesis and point to the possibility that gang members spread drinking behavior to non-gang adolescents in a conventional club setting. It is noteworthy that both the gang membership variable and the interaction term between gang and club membership have stronger and more significant effects on drinking behavior in models 4 and 8. Being a gang member is positively and significantly associated with the odds of engaging in drinking in general and heavy drinking by 2.487 times ($p < 0.001$) and 2.868 times ($p < 0.001$), respectively. For gang members, each unit increase in club membership is also related to 13.4% ($p < 0.05$) increases for the odds of more frequently drinking and 13.0% ($p < 0.01$) increase for the odds of more often engaging in binge drinking, providing support for the Simultaneous Membership Opportunity hypothesis.

Moving on to the effects of the control variables, the results indicate that the interpersonal network variables have generally positive and significant effects on drinking behavior. Drinking behaviors of close friends are positively related to one's future likelihood of using alcohols. Also, popularity among friends, measured by in-degree, has positive and significant effects on both drinking frequency and binge drinking. Both time spent with friends and involvement in a romantic relationship variables are also positively associated with both of the drinking behaviors. These results are consistent with the findings in previous studies that interaction with alcohol-drinking peers (Curran et al., 1997; Fujimoto et al., 2013; Kreager and Haynie, 2011; Valente et al., 2004) or socializing opportunities with peers (Haynie and Osgood, 2005; Kreager et al., 2011; Osgood et al., 1996) increase the likelihood of engaging in drinking behavior. Race turns out to be an important factor across all models: Corresponding to past studies on race and alcohol use (Khan et al., 2014), whites are positively associated with drinking frequency, while blacks and Asians are significantly and negatively related to these behaviors throughout the models. Age also has a consistently positive and statistically significant influence on both drinking frequency and binge drinking. Among psychological controls, the lack of self-control is positively and significantly associated with alcohol use in all models (McGloin and Shermer 2015; Perrone et al., 2004; Pratt and Cullen, 2000). On the other hand, the results do not consistently support a significant association between other psychological variables and drinking behavior.

[6] Since we use ordinal logistic regression models, all coefficients refer to the change in the likelihood of transitioning to a higher outcome category, relative to the alternative, resulting from a one unit change in the associated independent variable. While we prefer not to repeat this interpretation throughout the manuscript, it should always be understood that coefficients are describing transitions between categories.

[7] In calculating the interaction term, the number of club memberships is centered to the mean values (Aiken and West 1991) in order to deal with otherwise high levels of multicollinearity with the original club membership variable (e.g., Klein 1962; Park 2002).

Fig. 1 illustrates the effects of distinct membership statuses on drinking frequency and binge drinking. The predicted levels of engagement in alcohol use are calculated from Model 4 and Model 8, while other control variables are set to mean values. The figure shows that, while the number of club memberships does not increase the probability of drinking behavior for those who are not gang members, the number of memberships obviously increases the predicted level of engagement for individuals who are simultaneously involved in gangs. The distinct effect of club membership between gang members and non-gang members is observed in both drinking frequency and binge drinking.

As an additional test, we used the alternative gang membership variable that is computed in combination with the Wave I group fight variable (see our earlier discussion). The results show that our main predictors are unchanged by this new measure. Membership in gangs significantly predicts both the odds of more frequently engaging in drinking and binge drinking ($p < 0.05$), although the odds ratio slightly decreases for both drinking frequency (2.018 times increase) and binge drinking (2.012 times increase). In addition, the interaction between gang membership and club membership remains significant, and the odds ratio generally increases for both drinking frequency (1.138 times increase; $p < 0.05$) and binge drinking (1.158 times increase; $p < 0.001$). The effect of gang members who are co-club-members is also not influenced in any qualitative sense.

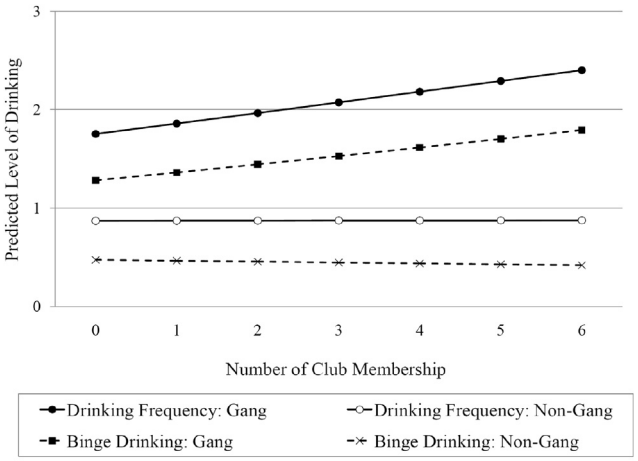
Second, we use a binary variable for school club membership to test whether a simple engagement in school clubs, rather than the level of engagement through multiple memberships in clubs, has the anticipated effect on drinking behavior. In this alternative test, the results fail to show a statistically significant effect for the interaction between gang and club membership. We suspect that this is due to lack of variation in the binary variable of club membership: 83.55% of adolescents engage in at least a single school club. This additional test suggests that the Simultaneous Membership Opportunity hypothesis is supported only when the number of school club memberships — as a proxy of the unsupervised time that students spend in conventional club activities — is considered in our analyses.

Finally, we include the parent's drinking frequency and binge drinking as control variables. The results corroborate our findings by showing that both gang membership and the interaction between gang and club membership have consistently positive and significant effects on both drinking frequency and binge drinking. In addition, parental alcohol use turns out to have a positive impact on the odds of more frequently engaging in drinking (1.088 times increase; $p < 0.01$) as well as binge drinking (1.130 times increase; $p < 0.001$).

In sum, after controlling for interpersonal networks among peers and other socio-demographic and psychological attributes, gang membership is positively and significantly related to engagement in alcohol use, while the number of club memberships is not significantly associated with drinking behavior. In addition, adolescents who have connections to both gangs and conventional clubs exhibit higher levels of engagement in drinking. For gang members, simultaneous membership in school clubs serves as an opportunity, instead of a constraint, to engage in drinking behavior. Moreover, even for club members who are not involved in a gang, being affiliated with the same school club as gang members can increase the likelihood of drinking alcohol.

6. Discussion and conclusion

We analyzed organizational membership to determine the effect of gangs and school clubs, and the connections they foster, on drinking behavior. We primarily investigated whether school clubs can serve as socializing opportunities, rather than a social constraint, for gang members to engage in drinking behavior with non-gang club members. The results indicate



Note: Predicted levels are calculated from Model 4 and Model 8. Adolescents with more than six club memberships consist of less than 5% of the sample.

Fig. 1. Predicted levels of drinking behavior.

that gang membership increases levels of alcohol use; on the other hand, the number of conventional clubs does not significantly influence the levels of alcohol use. Moreover, we found that additional memberships in school clubs increase the likelihood of using alcohol for members of gangs. Adolescents who have social interaction with both gangs and school clubs have additional socializing opportunities for drinking via engagement in conventional clubs. Adolescents who share school club membership with gang members are also more likely to engage in drinking behavior. These results suggest that a socializing opportunity in and of itself is not enough, and must be paired to at least some degree with access to youth gangs that already possess deviant norms and behaviors. Drinking behaviors are learned in the context of delinquent groups and then are available for expression when the additional opportunities afforded by conventional clubs present themselves. In sum, our results suggests that conventional clubs serve as a social structure within which conventional club members who are not affiliated with gangs are exposed to drinking behavior through social contact with simultaneous members of both gangs and school clubs.

We extend the previous literature to take account of organizational membership and find that it yields valuable insights. Organizations are not mutually exclusive but rather overlap, often sharing members. Our study indicates that simultaneous membership of delinquent and conventional organizations influence the likelihood of engaging in alcohol use. Involvement in school clubs appears to increase the likelihood of drinking alcohol among those who are simultaneously linked to youth gangs. Our findings imply that conventional school clubs may constrain problem behaviors by creating social bonds, but the same clubs can have an accelerating impact on drinking behaviors for individuals who hold simultaneous membership in gangs and school clubs. Thus, our research points to the need for social control theory to consider the individual contexts in which conventional activities may or may not constrain delinquent behaviors.

Not only do gang members find additional opportunities to drink together inside school clubs, but those who are not involved in a gang can also interact with gang members in those clubs and learn drinking repertoires from them. Social learning theory can be extended with a fuller consideration of the context of organizational membership. Our research provides evidence that school clubs can provide an additional social space within which problem behaviors are learned and imitated by adolescents. On the other hand, our study shows that social control theory is not applicable to school club organizations. While a high level of self-control leads to less drinking, adolescents who are exclusive members of conventional clubs are not less likely to engage in drinking. While our research does not challenge the theoretical utility of the social control theory (for a critical assessment of the theory, see Kempf-Leonard, 1993), the results fail to support extending the logic from social control theory to argue that school clubs can exert a normative pressure that prevents problem behavior.

Our findings also suggest that social opportunity theory should broaden its focus to include more structured socializing activities, such as school club activities, as sources of delinquency. Social opportunity theory has argued that structured activities provide fewer opportunities for delinquency due to the presence of supervising figures and the scheduled allocation of time (Osgood et al., 1996). Our study infers that conventional clubs organized by schools can still increase the likelihood of problem behavior since the frequency of contact increases among co-members and the presence of co-members in a group-setting can make problem behavior more rewarding.

As with any studies, our research involves certain limitations. First, the effect of delinquent peers on delinquency has previously been challenged due to the possibility of reverse causality (Glueck and Glueck, 1950; Hirschi, 1969). Delinquent adolescents can self-select into certain school clubs before members in those clubs influence each other. Our models attempt to account for selection effects by controlling for Wave I drinking behavior in explaining alcohol use in Wave II and by using a multi-stage computation of the original variable on gang membership, but our efforts are not enough to definitely distinguish learning processes from selection processes. More recent studies have addressed the issue of self-selection by using advanced statistical methods such as structural equation models (Young et al. 2014) or stochastic actor-oriented models (Haynie et al., 2014). Although the Add Health data are longitudinal, items on membership in conventional and delinquent organizations are not collected in a longitudinal manner, preventing us from employing these more complex approaches. Future studies can more rigorously test our hypotheses by using data that provide longitudinal measures of organizational membership and other relevant independent variables.

Second, the mechanism we propose should be investigated using in-depth interviews or surveys. Our results demonstrate that simultaneous members of gangs and school clubs engage in higher levels of drinking, and we use existing criminological theories to explain why membership in conventional organizations provides socializing opportunities for current gang members to use alcohol and to enhance their statuses among peers (Crosnoe et al., 2004; Hagan, 1991; Osgood et al., 1996). However, the data limits our ability to examine whether and how unstructured time spent with club members lead to engagement in drinking behavior. The number of club memberships and interpersonal network variables such as the respondent's popularity among peers (in-degree), the respondent's influence over peers (out-degree), and the amount of time spent with friends are positively and significantly correlated, but we still cannot determine if it is the greater unsupervised time spent among co-members through club-related meetings outside of school or simply a heightened contact with co-members during supervised club activities that increases the likelihood of drinking. Future studies are needed to identify the exact mechanism that drives youth gang members to engage in drinking behavior in a conventional club setting.

Adolescent drinking is illegal but relatively common and enjoys high levels of acceptance among adolescents. Therefore, when alcohol is used in a group setting, non-delinquent adolescents often overlook their group members' drinking behaviors and may even participate in them. This is different from other delinquent behaviors such as violent and property crimes in which most non-delinquent individuals typically avoid involvement. Accordingly, we expect that delinquent behaviors that are more tightly coupled with the norms of youth gangs, enjoy lower level of acceptance among adolescents, or involve higher

costs of adoption are less likely to be exhibited by those who are connected to both gangs and school clubs. Comparative studies of party-oriented delinquency such as alcohol and substance use with violent crimes and property crimes will likely further shed light on organizational membership as an important source of influence.

This research points towards a new and promising avenue for explaining behaviors through a lens of organizational dynamics. Organizational membership has a separate effect on drinking behavior even after controlling for interpersonal networks, reinforcing the sociological insight that organizations are greater than the sum of their members and their associated interpersonal networks (Brashears, 2010; King et al., 2010; Lim and Putnam, 2010; Steele and King, 2011). Individuals who bridge between distinct types of organizations can provide more opportunities to share and spread certain types of behavior to various group members. The study of the adoption and diffusion of individual behavior will benefit from directing more attention to the effect of organizational membership in a multi-organizational environment.

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