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Same feathers, different flocks: Breaking down the meaning of ‘behavioral Homophily’ in the etiology of crime

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Abstract

Purpose: This study’s purpose is to (1) examine how behavioral homophily relates to deviance among friendship pairs and (2) to assess how deviance and non-deviance homophily may be independently and jointly important for deviant behavior.

Methods: Using a sample of 2154 individuals nested within 1077 dyadic friendship pairs, a series of mixed-effects models explore how behavioral, deviance, and non-deviance homophily at the dyadic level relate to an actor’s theft, vandalism, violence, drug, and alcohol use.

Results: Findings demonstrate that behavioral homophily is a more robust protective factor than risk factor for deviance. Specifically, non-deviance homophily is significantly more related to abstaining from offending than deviance homophily is in promoting offending for theft, vandalism, violence, and drug use. And while behavioral homophily was not significantly associated with alcohol use, deviance homophily related to higher levels of alcohol use and non-deviance homophily related to less alcohol use with relatively equal effect sizes.

Conclusions: Behavioral homophily contains two empirically and theoretically distinct components – deviance and non-deviance homophily. While both criminological theory and research have long established that peers “matter,” behavioral homophily across friendships can operate in a bifurcated role by associating with offending while simultaneously relating to normative behavior.

Keywords

Homophily; Deviance; Peers; Friendships; Social Learning; Self-control

1. Introduction

A wide array of criminological research has demonstrated that peers and friends play an important role in the process of offending. Research consistently demonstrates that individuals who associate with more deviant peers often report higher levels of crime, substance use, and deviance than individuals with fewer deviant peer associates (Elliott, Huizinga, & Ageton, 1985; Haynie & Osgood, 2005; Matsueda & Anderson, 1998; Vásquez & Zimmerman, 2014; Warr, 1998, 2002; see also Beaver et al., 2011). Drawing on a

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precedent that is largely rooted in the theoretical traditions promoted by Sutherland in the 1930s and 1940s, Warr (1998, p. 184) summarizes that peer effects are one of the “strongest” correlates of crime, and highlights that this relationship has been recognized “for decades.” As such, it has been well established that the effect of peers on behavior is both theoretically (e.g., see Agnew, 2006; Akers, 2009; Colvin, Cullen, & Vander Ven, 2002; Stafford & Warr, 1993; Sutherland, 1947) and empirically (e.g., Agnew, 1991; McCuddy & Vogel, 2015; Pratt et al., 2010) meaningful for the understanding of crime (see also Hoeben, Meldrum, Walker, & Young, 2016).

Despite a rich understanding that peers and/or friends (see a summary of the difference in the terminology by Kreager, 2004) are influential for crime, criminologists have debated extensively over the mechanisms through which peers exert influence on one another. One of the debates that has received considerable recent attention pertains to the colloquialism that ‘birds of a feather flock together.’ Despite being somewhat of a cliché, the phrase carries substantive importance for crime as it suggests that individuals tend to behave in the same way as their friends. This behavioral similarity, called ‘behavioral homophily’ (see McPherson, Smith-Lovin, & Cook, 2001; also Lazarsfeld & Merton, 1954), carries a fundamental importance to research on peers and crime as it suggests that people who engage in crime tend to cluster together whereas people who do not engage in crime tend to form friendships distinct from offending groups.

From a theoretical perspective, the concentration on homophily is warranted as social learning, differential association, and self-control theories all suggest that behavioral homophily among friends is important for understanding deviance. From Sutherland’s (1947) and Akers’ perspectives (2009; also Burgess & Akers, 1966), behavioral homophily forms after friends acquire differential associates who engage in crime, create definitions favorable to crime, and begin to imitate the behavior. As such, behavioral homophily – whether it is reflected in the form of deviance or normative behavior – should be high between friends. On the other hand, Gottfredson and Hirschi (1990) also use the ‘birds’ argument to further their position that self-control forms the etiology of criminal behavior. Instead of behavioral homophily developing within a friendship as it would from the learning perspective, low levels of self-control lead deviant persons to select into friendships with other deviant, or deviantly-inclined, individuals. As such, homophily pertains to both social influence (through mechanisms of social learning) as well as selection processes (through mechanisms of self-control, see also Hirtenlehner, Pauwels, & Mesko, 2015).

With the understanding that homophily carries a rich and meaningful history in criminology (e.g., see Kreager et al., 2016, 2017; McPherson et al., 2001; Schaefer, Kornienko, & Fox, 2011; Young, 2011; also see work on co-offending in group contexts by Hochstetler, Copes, & DeLisi, 2002; McGloin & Piquero, 2010; McGloin & Thomas, 2016; Reiss & Farrington, 1991), this study is focused primarily on exploring the specific dynamics held within the concept of behavioral homophily. Drawing on the substantive (e.g., Reiss & Farrington, 1991) and theoretical (e.g., Burgess & Akers, 1966; Gottfredson & Hirschi, 1990; Sutherland, 1947) importance of the construct, the main argument we advance is that the construct of behavioral homophily may contain two different subcomponents that are entirely distinct from one another. Instead of treating ‘behavioral homophily’ as a singular

construct, we argue that homophily contains two completely distinct – and inverse – processes of deviance and non-deviance homophily. Drawing on these arguments, we use data from friendship pairs to explore how behavioral homophily, deviance homophily, and non-deviance homophily that exist within a friendship relate to the offending levels of individual people within that friendship.

2. Homophily as a risk factor for crime

Although the first uses of the ‘birds’ phrase in criminological research are found in the works of the Glueck and Glueck (1950), p. 164 and Lazarsfeld and Merton (1954); see McPherson et al., 2001 for a historical summary of the phrase, these statements came long after Shaw (1930) had established that friends tend to behave similarly based on a detailed life history of ‘Stanley’ (see other influential work by Park & Burgess, 1921). Perhaps motivated by the work of Burgess and Akers (1966), researchers began studying various forms of homophily in earnest in the 1970s. Among the first studies on homophily, Kandel (1978a, 1978b) found that even though similarity between friends “varied greatly” across a wide variety of dimensions (1978a, p. 309), there was a strong tendency for people to show behavioral homophily. In fact, Kandel, 1978b, p. 435 found that people overtly sought to maintain behavioral homophily within a friendship, concluding that friends will “break off the friendship and seek another friend” in the event of behavioral non-homophily (dissimilarity; also see Turanovic & Young, 2016). As such, Kandel’s early research supports the notion that while people may not be extraordinarily similar to their friends in a broad scope, friends soundly demonstrate a tendency towards sharing high levels of behavioral homophily.

A wide variety of more recent work has demonstrated that friends share keen behavioral similarities as well. Generally, studies find that behavioral homophily is related to higher amounts of drug use (Kandel, 1978b; Kandel & Davies, 1991; cf. Krohn & Thornberry, 1993), gang membership (Grund & Densley, 2015), and violence (Turanovic & Young, 2016). More recent work explores homophily concepts in relation to mental health (Schaefer et al., 2011) and hierarchy in the social structure of incarcerated persons (see Kreager et al., 2016, 2017). Regardless of the mechanism through which it is drawn, Schaefer (2012, p. 1271) is correct in stating that homophily is a “law-like feature of social networks” which extends across demographic characteristics, attitudes, opinions, and behaviors.

Despite homophily existing, however, Young (2014, p. 374) is correct in saying that “understanding why homophily occurs has a long, and contentious, history in criminology”. From the perspective of differential association and social learning theories, findings relevant to homophily are reinforced by a sizable amount of research that concludes that behaviors of friends are strongly related to individual behaviors (see Pratt et al., 2010). On the other hand, while self-control theory’s causal hypotheses would call the peer influence mechanism seemingly driving behavioral homophily into question, two recent studies fail to find any evidence that homophily is driven by mechanisms of selection and/or self-control (Boman IV, 2017; Young, 2011; cf. McGloin & O’Neill Shermer, 2009; Turanovic & Young, 2016). As such, the current state of the literature supports the notion that friends who show a preference for behavioral homophily tend to engage in higher amounts of deviance

themselves, although questions do remain over whether the mechanism driving the homophily is one of influence or selection (see Flashman & Gambetta, 2014).

Despite not investigating the issue of behavioral homophily specifically, other social network research contains findings and concepts which directly apply to the concept. Using the Add Health data, Haynie (2002) conducted an in-depth analysis of behavioral patterns of individuals within social networks. She concluded that “most commonly, friendship networks contain both delinquent and non-delinquent friends, with the least common pattern consisting entirely of non-delinquent friendship networks” (p. 116). That is, people’s friendship networks commonly contain people who do and do not engage in criminal behavior. This led her to conclude that the “homogeneity” (p. 124) of peer influence is the driving force behind involvement in deviance at the individual level.

Haynie’s (2002) findings apply to the study of behavioral homophily in two key ways. First, her study provides reason to question the overall extent of homophily that exists within networks since any particular person is likely to have friends with whom he/she will share behavioral homophily and those with whom he/she will not share behavioral homophily. Accordingly, her study suggests that behavioral homophily may not be as widespread as other research suggests.

A second observation from Haynie’s (2002) study concerns the finding that behavioral homogeneity – a construct that is extremely similar to behavioral homophily – was the driving force behind involvement in deviance. Since homogeneity was so important for individual-level deviance, this reinforces the observation that behavioral homophily – when it exists – is extremely important for engaging in crime. Haynie’s findings, then, provide reason to question the extent to which behavioral homophily occurs within social networks while also emphasizing the importance of behavioral homophily as a predictor of crime.

3. Homophily as a protective factor: lessons from network and developmental research

Overall, criminal behavior is more uncommon than it is common. While most people tend to engage in some amount of relatively minor crime as they develop through adolescence and emerging adulthood (e.g., Krohn, Lizotte, & Perez, 1997; also Moffitt, 1993; Sampson & Laub, 1993), this does not change the fact that more often people abstain from crime rather than commit it. The observation that crime is a more infrequent occurrence than a frequent occurrence bears considerably on conclusions that imply that behavioral homophily is a risk factor for deviant behavior after incorporating tenets of social network and friendship research.

At the most basic level, social networks exist because friendship pairs are clustered together with other pairs of friends. That is, social networks are a higher-order collective that consists of many patterns and sets of friendship pairs (see Hartup, 1993), the latter of which are frequently referred to as friendship ‘dyads’ (see Kenny, Kashy, & Cook, 2006). In any particular dyad, there are two people – the ‘actor,’ or the person who is treated as the respondent of focal interest, and the actor’s ‘friend.’ Since any particular criminal act carries

relatively low rates of occurrence, it is more likely that an actor will refrain from committing the crime than engage in it. For the same reason, it is more likely that a friend will refrain from committing the crime as well.

This brings attention to two potential possibilities when behavioral homophily is considered at the dyadic level. First is the relatively straightforward scenario when the actor and the friend do not show behavioral homophily. This occurs in the situation where the actor engages in crime *A* and the friend does not, or, inversely, the situation where the friend engages in crime *A* and the actor does not. In either case, the friendship pair engaged in different behavioral patterns, and thus failed to show behavioral homophily. The second possibility involves the situation where the actor and the friend behave in similar ways. In this case, the actor and friend either behave similarly by either 1 both committing crime *A* or 2 failing to commit crime *A*.

By extension of the understanding that people refrain from crime more frequently than they commit it, it seems reasonable that the most common behavioral homophily scenario would be two friends abstaining from crime, not committing it. From this perspective, behavioral homophily is not perceived as a risk factor that promotes crime, but rather as a protective factor that restrains it (for a discussion of the term ‘protective’ versus ‘promotive’ factor, see Farrington, Ttofi, and Piquero’s article in the *Journal of Criminal Justice* [2016, p. 64]). Accordingly, this study expands the notion of behavioral homophily to account for patterns of deviance homophily and non-deviance homophily. While this is a necessary and non-trivial distinction, it becomes far more complicated when the understanding of crime is switched from that of deviance and non-deviance homophily for individual criminal acts (i.e., crime *A*) to multiple acts (i.e., crimes *A*, *B*, *C*, etc.).

Fig. 1 displays the scenario when there are three different forms of deviance under question for a hypothetical friendship pair. While the actor engaged in crimes *A* and *B* and refrained from *C*, the friend committed only crime *A* and abstained from *B* and *C*. At the most basic level, the dyad has indicated behavioral homophily on two items (*A* and *C*) and dissimilarity on one item (*B*). If a summated index were to be created that captured ‘behavioral homophily,’ the dyad’s score would be two (*A* and *C*). However, the exact meaning of this score is difficult to determine because the fundamentally different processes of deviance homophily (*A*) would be combined with non-deviance homophily (*C*). The use of separate indicators of deviance homophily (score = 1) and non-deviance homophily (score = 1) resolves this conceptual obscurity.

In the prior example, the friendship dyad showed patterns of deviance homophily, non-deviance homophily, and behavioral dissimilarity (non-homophily). Although this represents a hypothetical example, it reflects the very real possibility that any pair of friends could have homophilous deviant behaviors, homophilous non-deviant behaviors, and non-homophilous behaviors. Building on this key observation, there is ample evidence that friendships may routinely and simultaneously experience deviance homophily, non-deviance homophily, and dissimilarity. In addition to Haynie’s (2002) previously discussed research, McGloin (2009) used the Add Health data to investigate the extent to which people sought to have similarities in deviant behavior – a term she called ‘deviance balance’ – with their friends over time. She

found that in the event when one dyad member's deviance becomes imbalanced, the other person in the friendship is likely to maintain the friendship tie but may adjust their own behavior (cf. Kandel, 1978b). McGloin's research speaks exactly to what we are making the case for because it suggests that while people share similarities in behavior, this behavior is constantly changing and is comprised of both deviant and non-deviant acts. Accordingly, Haynie's and McGloin's research serve as important foundations through which to understand how homophily may take two distinct forms. If this is in fact the case, it is possible that research on homophily may not have matured enough to fully understand the implications of the construct for behavior. As such, the construct of homophily may represent a very complex issue – a point to which we seek to elaborate.

4. Current study

Using a large dyadic dataset, this research explores the possibility that behavioral homophily represents an intricate and complex process. We begin by establishing that behavioral homophily is empirically distinct from indicators capturing the unique constructs of deviance and non-deviance homophily. Because of the theoretical sensitivity of the construct of homophily, all analyses control for variables central to differential association, social learning, and self-control theories. Next, we explore three research questions. First, is behavioral homophily – in its traditional form – a risk factor for crime like prior studies suggest or a protective factor? Following the argument that crime is a relatively rare occurrence, we expect (H1) that behavioral homophily within a friendship pair will be related to individuals in the friendship committing significantly less crime.

Second, is the dyad's proclivity towards deviance homophily or non-deviance homophily more strongly related to crime at the individual level? Generally, we expect (H2) that the proclivity towards deviance homophily will be a risk factor for crime and that the proclivity towards non-deviance homophily will protect. Drawing on our expectations that non-deviance homophily is more common than deviance homophily, we also hypothesize (H3) that non-deviance homophily will be a significantly stronger protector from crime than deviance homophily is a risk factor.

Third, and finally, it is established that some types of deviance are more likely to be committed in peer groups than others (e.g., Warr, 2002). To replicate findings from the first two research questions, we explore how behavioral, deviance, and non-deviance homophily apply to several specific types of deviant behavior. If hypotheses 1 through 3 receive support for this portion of the analysis, results would lend credence to the notion that behavioral homophily, deviance homophily, and non-deviance homophily are all different constructs.

5. Methods

5.1. Data and sample

Data for this project come from an original sample of people nested within self-identified friendships. Each friendship, called a 'dyad' (see Kenny et al., 2006), contains two friends who were undergraduate college students attending a large university in the southeastern United States in 2009. To collect the dyadic sample, the primary investigator (PI) of the

study contacted the instructors of the 50 highest-enrolled classes at the university during the semester the data collection was conducted. After explaining the goals of the project, instructors were asked if they would be interested in offering extra credit in their courses as compensation for participation. The instructors of 24 classes (48%) responded that they would offer extra credit to their students for participation. These courses, which ranged in size from as few as 50 students to over 1500 students, carried a combined enrollment of over 5000 persons.

To recruit participants, the PI made in-class visits to each course and presented information about the study and recruitment procedure. Specifically, respondents were informed (1) that they would need to bring one of their 'five best friends' who was also an undergraduate at the university in order to participate in the study; (2) that they would be compensated with extra credit; and (3) of the location and operating times of the research center's space on campus.

Upon arriving at the study's headquarters, the individual and his/her friend's information was entered into a secured database that was used to ensure that no participant was a member of more than one dyad. Upon providing informed consent, the friends were separated and given a paper-and-pencil survey that asked questions about him/herself, the friend, and the friendship. Surveys were coded with a unique dyadic identification number to link the friends together. Survey-taking spaces were monitored by members of the research team to ensure that there was no electronic communication (e.g., texting) between the friends. Following completion of the survey, each friend was individually debriefed and exited the study's building separately.

In total, 2154 unique people nested within half as many friendship pairs (1077) participated in the study. Due to having a large number of courses with a sizable combined enrollment, the friend who accompanied the target respondent was also awarded extra credit 21% of the time. Accordingly, the main reason why people participated in the study was to simply help their friend, the target respondent, receive extra credit in a class.

5.2. Dataset structure

The current project requires a dataset that can take advantage of using information from individual persons within the dyads (e.g., level 1 data) as well as dyadic-level characteristics (e.g., level 2 data; see Kenny et al., 2006). To account for this, this study uses a double-entry datafile. In a double-entry dataset, each person has their own line of data and, at the end of that line, the characteristics of the friend are inserted. This procedure results in Person A being the target respondent – called the 'actor' – whose behavior may rely on characteristics of him/herself as well as characteristics of his/her 'friend' (Person B). Likewise, Person B serves as the 'actor' whose behavior may be dependent on Person A, who in this case is nested as the 'friend.' As dyadic-level characteristics vary between – but not within – dyads, they are represented on both the actor and friend's line of data (see Kenny et al., 2006; also Campbell & Kashy, 2002).

5.3. Dependent variables

The dependent variables in this study capture self-reported deviance. Using a set of 23 items styled similarly to those used in the National Youth Survey (see Elliott et al., 1985), we use a general variety index (all 23 items) as the first outcome. Because specific types of deviance are more ‘groupy’ than others (e.g., Warr, 2002), we then use these 23 items to create specific measures capturing theft, vandalism, violence, drug use and sales, and alcohol use and related behaviors. The wording and descriptive statistics of all 23 items can be seen in Appendix A.

The general variety index of self-reported deviance captures the actor’s offending over the past 12 months. For each of the 23 items, a score of ‘0’ means the actor did not engage in the act and a score of ‘1’ captures that the actor did engage in the act. Each of the 23 binary items was summed to create the 23-item self-reported crime index. This index has a mean of 4.858, a standard deviation of 3.631, and ranges from 0 (no deviant acts reported) to 23 (all deviant acts reported). Descriptives are shown in Table 1.

To create indices of specific types of deviance, each of the 23 deviance items was categorized into one of the following categories and then summed to create an index capturing the actor’s prevalence of crime-type specific deviance over the past 12 months. These sub dimensions include theft (5 items; $M = 0.647$, $SD = 1.046$, range 0–5), vandalism (5 items; $M = 0.762$, $SD = 1.058$, range 0–5), violence (3 items; $M = 0.491$, $SD = 0.777$, range 0–3), drug use and sales (5 items; $M = 0.458$, $SD = 0.783$, range 0–5), and alcohol use and related behaviors (5 items; $M = 2.534$, $SD = 1.576$, range 0–5).

5.4. Independent variables

The focal independent variables in this study represent three conceptualizations of homophily – (1) behavioral homophily, (2) deviance homophily, and (3) non-deviance homophily. To create these measures, three steps were necessary. In the first step, the dichotomous indicators of whether the actor and the friend engaged in each of the 23 deviant behaviors were summed together (i.e., actor behavior + friend behavior), resulting in 23 new variables. Each new variable consisted of three possible scores – 0, 1, and 2. In these measures, ‘0’ indicates that neither the actor nor friend engaged in the act, ‘1’ indicates that only one member of the dyad engaged in the act, and scores of ‘2’ indicate that both the actor and the friend engaged in the act.

When considered across a wide number of crimes (which vary between different datasets and samples), using an additive score-type method would complicate the comparability of the relationship between behavioral homophily and crime between samples. Instead, a more effective way to capture deviance and non-deviance homophily is to treat them as latent constructs (see Young, 2014). Latent constructs carry the advantage of having a more universal interpretation across different numbers of items, datasets, and populations (see a similar argument by Osgood & Schreck, 2007). In terms of behavioral, deviance, and non-deviance homophily, this procedure would shift the focus away from the number of observed homophilous deviant and non-deviant acts to separate scores which indicate the dyad’s

proclivity towards homophily, or, stated differently, the dyad's tendency to engage in homophilous acts.

Following this logic, the second step to create the behavioral homophily measure involved creating a latent measure of the dyad's proclivity towards behavioral homophily. To construct this variable, observed items indicating whether the dyad engaged in behavioral homophily for any particular act had to first be created. Accordingly, each of the 23 variables from step one was recoded into a new set of measures encompassing behavioral homophily (a new score of '1'; prior scores of '0' and '2') or non-homophily (a new score of '0'; prior scores of '1'). To create the latent measure of proclivity towards behavioral homophily, these items were entered into a series of unconstrained Rasch models (also known as one parameter logistic models; de Ayala, 2009). Broadly, Rasch models – a type of item-response theory model (IRT) – are designed to estimate a latent trait (a 'proclivity') based on observed variables (de Ayala, 2009; also see Osgood & Schreck, 2007). The use of an IRT-based approach carries the advantage of accounting for the fact that some deviant behaviors are more difficult to commit with friends than others (e.g., battery is more difficult to commit with friends than common vandalism; see Warr, 2002).

Created based upon estimation parameters from the IRT model, the dyad's proclivity (or tendency) towards behavioral homophily indicates the extent to which members of each friendship tend to engage in similar behaviors. The proclivity is a level 2 measure because it varies between, but not within, dyads. Higher values on this scale indicate a stronger preference for similar behaviors among dyads. Proclivities were calculated for the 23-item index as well as its subcomponents (i.e., theft, vandalism, violence, drugs, and alcohol). Descriptive statistics for these proclivities, which are designed to have a mean of 0, are presented in Table 1.

As we have argued, behavioral homophily has two theoretically distinct subcomponents – deviance homophily and non-deviance homophily. The third, and final, step of creating the homophily measures involved the construction of the deviance and non-deviance homophily measures. To construct the measure of the dyad's proclivity towards deviance homophily, the observed measures from step one were recoded to indicate whether the dyad had displayed homophily in deviance (new score of 1; old score of 2). Not indicating homophily in deviance is the comparison group (new score of 0; old scores of 1 or 0). The resulting items were then entered into a series of Rasch models to estimate the latent trait of the dyad's proclivity towards deviance homophily across the 23-item index and its subcomponents. Within this level 2, latent trait, higher scores capture a greater proclivity to engage in similar deviant behaviors among dyads. An analogous procedure was used to calculate the dyad's proclivity towards non-deviance homophily, with higher scores indicating a stronger preference for similarity in non-deviant acts.

5.5. Control variables

Due to competing theoretical underpinnings behind the homophily construct, a series of control variables are included in the analysis. Although we elaborate more on this in the description of our analytic strategy, we include separate effects of actor and friend characteristics in the models. The first control we include is the actor and friend's levels of

self-control as measured by the scale developed by Grasmick, Tittle, Bursik, and Arneklev (1993). This scale, which includes 24 items and is consistently related to criminal behavior outcomes (e.g., Pratt & Cullen, 2000), contains six subdimensions of self-control as identified by Gottfredson and Hirschi (1990). Each item was measured on a four-point, Likert-type scale (strongly disagree to strongly agree). The items scaled consistently (Cronbach's $\alpha = 0.84$). To construct the scale, scores were added together and divided by the number of items to capture the average item response (see Table 1 for descriptive statistics).

Behavioral homophily may also be somewhat dependent on the level of warmth between the two friends (e.g., Boman IV, Krohn, Gibson, & Stogner, 2012; Giordano, Cernkovich, & Pugh, 1986; Krohn & Thornberry, 1993; Piehler & Dishion, 2007). This measure corresponds with Sutherland's modality of intensity. Thus, we covary the actor's and friend's estimates of friendship quality towards the other person. The measure used is the Friendship Qualities Scale (FQS) as developed by Bukowski, Hoza, and Boivin (1994). The FQS is beneficial over other unidimensional measures of friendship quality because it is designed to capture five different dimensions of friendship – companionship, help, security, closeness, and conflict (reverse coded) – across 23 different items via a five-point Likert scale. In addition to scaling consistently ($\alpha = 0.89$), the scale has been validated for use in college populations (see Saferstein, Neimeyer, & Hagans, 2005). To construct the measure of the actor's and friend's friendship quality towards one another, the items were summed and averaged ($M = 3.952$, $SD = 1.433$, range 1–5).

Finally, we control for several demographic characteristics of the actor and the friend. First, we control for the sex of the actor and friend. Males (coded '1') are compared to females (coded '0'). Second, we control for the race of the actor and the friend. Non-white respondents (coded '1') are compared to whites (coded '0'). Third, we control for the actor's and friend's age ($M = 19.339$, $SD = 1.433$). Fourth, and finally, we control for whether or not the actor and the friend were of Latino/a descent ('1' = Latino; '0' = non-Latino).

5.6. Analytical strategy

The current analysis places a substantive focus on how a series of behavioral homophily measures (occurring at level 2) relate to the actor's self-reported deviance (occurring at level 1). As such, an analytical technique must be employed that can account for the fact that the individual's behavior may be dependent on 1) characteristics of him/herself, 2) his/her friend, and 3) behavioral homophily shared between him/her and his/her friend. To accomplish this, the current study uses a specialized class of analysis meant for dyadic data called the Actor-Partner Interdependence Model (APIM). While this class of models has many variations, the appropriate type of modeling for this study is the use of an APIM-class mixed-effects linear regression model (see Kenny et al., 2006) because the dyads differ from one another (providing level 2 variance) and friends within dyads also differ (providing level 1 variance). APIM mixed models have two levels of analysis where level 1 represents the effects of the individuals within the dyads and contains the control variables of the actor and the friend (e.g., self-control, friendship quality, demographics). In addition to containing the random effects components, the level 2 equation also contains the homophily measures.

To best answer the research question, three series of mixed models are presented. In the first series of models, we first regress the general 23-item crime index onto actor and friend controls as well as the first variation of the homophily measure – proclivity towards behavioral homophily between the friends. In model 2, the behavioral homophily measure is removed in favor of separate indicators of deviance and non-deviance homophily, respectively.

The second series of mixed models removes the 23-item deviance outcome and replaces it with five models which regress the five sub-components of the measure – theft (Model 1), vandalism (Model 2), violence (Model 3), drugs (Model 4), and alcohol (Model 5) – onto level 1 and 2 predictors. Specifically, these models regress the individual deviance outcomes onto level 1 actor and friend controls and the level 2 measure of behavioral homophily. The third and final series of mixed models are identical to the second series of models, except the third series replaces the behavioral homophily measure with individual measures of deviance and non-deviance homophily. Very minor amounts of missing data (< 2% on all measures) were imputed using a Markov-Chain Monte Carlo (MCMC) method with 20 random pulls from 200 iterated datasets.¹ Due to the inclusion of both actor and friend effects and measures of deviance and non-deviance homophily in the same models, we employed rigorous checks for multicollinearity and bias. All models were checked via correlations, tolerance levels, variance inflation factors, and sensitivity analyses using latent variable item-response methods (see Young, 2014). At no point did any of these indications suggest that a model was suffering from multicollinearity issues.

6. Results

6.1. Part 1: homophily's relationship with deviance across the 23-item index

A series of mixed models using a stepwise procedure regress the actor's deviant behavior for all 23 items onto characteristics of the actor, the friend, and the various homophily measures. Model 1, which includes the actor and friend controls and behavioral homophily, reaches statistical significance. The results from the level 2 equation show that friends' proclivity towards behavioral homophily is negative and significantly related to deviant behavior. The direction of this effect suggests that sharing behavioral homophily with a friend is associated with normative behavior instead of deviant behavior. Additionally, actor controls demonstrate that those with lower self-control and those who are male, white, and Latino commit significantly more deviance than their respective counterparts. Results from the friend portion of the equation demonstrates that actors with friends who estimate high levels of friendship quality are more likely to have committed deviant behavior.

Model 2 in Table 2 removes the behavioral homophily measure in favor of separate measures of deviance and non-deviance homophily, respectively. Both homophily measures reach levels of statistical significance. Specifically, sharing a proclivity for deviance homophily is significantly related to more actor offending, and sharing a proclivity for non-deviance homophily is significantly related to the actor offending less. The coefficient of

¹To further validate findings, the forthcoming analyses were also estimated with listwise deletion. The substantive results were the same regardless of whether or not the MCMC imputation was used. Accordingly, we chose to report results using the full sample size.

non-deviance homophily, however, is nearly twice the magnitude of the deviance homophily coefficient. Using the coefficient comparison test developed by Clogg, Petkova, and Haritou (1995) and used by Paternoster, Brame, Mazerolle, and Piquero (1998), this difference is enough to make the non-deviance homophily coefficient significantly higher in magnitude than deviance homophily ($z = 9.56, p < 0.001$), suggesting that non-deviance homophily is more strongly related to not offending than deviance homophily is related to offending. Results from the control variables also change once the behavioral homophily measure is broken into deviance and non-deviance components. In addition to the actor's race and ethnicity dropping from the model, the friendship quality of the friend drops in favor of the friend's self-control and gender. The direction of these effects demonstrates that actors who have female friends and friends with high self-control have committed significantly more crime.

6.2. Part 2: behavioral homophily's relationship with the 5 subcomponents of deviance

As certain behaviors are more "groupy" than others (Warr, 2002), Table 3 presents results from a series of mixed models which regress the five individual components of crime onto behavioral homophily and controls. In Model 1, which uses the outcome of self-reported theft, results demonstrate that the dyad's proclivity towards behavioral homophily is significantly and negatively related to deviant involvement. This again indicates that sharing behavioral homophily with the friend is related to less, and not more, deviant involvement. Results from the control portion of the equation reveal that male actors and those who have low self-control are more likely to commit theft. Additionally, those with friends who are higher in self-control and who are younger are more likely to commit theft.

Model 2 presents results for vandalism. A proclivity for behavioral homophily across vandalizing behaviors is highly significant and negative in direction, suggesting that more similar behaviors between friends is related to less involvement in vandalism among members of the friendship. While the actor controls are in a similar direction, the finding that friend self-control is positively related to crime is repeated. Again, this suggests that after accounting for behavioral homophily, actors who are friends with those who have high self-control tend to commit more vandalism than actors who are friends with those marked by low self-control (a point which we return to in the conclusions).

Model 3 regresses violence onto behavioral homophily and level 1 controls. The behavioral homophily measure is again significant and negative. However, despite being positive in direction, the friend's self-control no longer reaches levels of statistical significance. A similar story is told in Model 4, which uses the outcome of drug use and sales. Specifically, behavioral homophily is significant and negative, suggesting that higher amounts of drug-related activities are found in dyads who do not share a proclivity towards behavioral similarity.

Different results are found in Model 5, which uses the outcome of alcohol. For this subcomponent of deviance, behavioral homophily fails to reach statistical significance. This suggests that alcohol use patterns do not significantly differ based on whether or not the friends share a proclivity towards similar alcohol consumption patterns. Differences in this model are also noticeable in the control variable portion of the equation. Specifically, the

actor's gender fails to reach significance, suggesting that men and women drink approximately equally. The actor's age also reaches significance, as it suggests that older actors drink significantly more than younger actors. In another finding that goes against what has been observed in prior models, actors who have friends who have lower self-control tend to drink more than actors whose friends have high self-control.

6.3. Part 3: deviance and non-deviance homophily's relationship with the 5 subcomponents of deviance

Given the relatively consistent findings concerning behavioral homophily on deviance, Table 4 presents results of regression analyses that replace the dyad's proclivity towards behavioral homophily with specific indicators of the dyad's proclivity towards deviance and non-deviance homophily. Model 1, examining theft, demonstrates that the dyad's proclivity towards deviance homophily is significantly related to greater levels of self-reported theft and the dyad's proclivity towards non-deviance homophily is related to significantly less theft. Like results examining the 23-item index model, however, the coefficient of non-deviance homophily is significantly stronger in magnitude than the deviance homophily coefficient ($z = 8.59, p < 0.001$). This suggests that non-homophilous theft behaviors are more robustly related to abstaining from theft than homophilous theft behaviors are related to committing theft.

Model 2 in Table 4 regresses vandalism onto the two homophily measures and controls. Again, deviance homophily is positively and significantly related to vandalism and non-deviance homophily is significantly and negatively related to vandalism. Once again, the magnitude of the coefficient for non-deviance homophily is significantly stronger than the coefficient of deviance homophily ($z = 7.90, p < 0.001$). The same patterns also hold in Models 3 ($z = 7.62, p < 0.001$) and 4 ($z = 4.44, p < 0.001$), which respectively use the outcomes of violence and drug use and sales. However, like the prior analyses, results change somewhat in Model 5. While deviance and non-deviance homophily are again both significantly related to alcohol use and related behaviors, the magnitude of the coefficients are not significantly different ($z = 1.13, NS$). Thus, self-reported alcohol use appears to be equally related to deviance homophily as it is to non-deviance homophily.

7. Discussion and conclusions

Drawing from control-(Gottfredson & Hirschi, 1990) and learning-based approaches (e.g., Akers, 2009; Sutherland, 1947), the current study used pairs of friends to explore the elements contained in behavioral homophily and the extent to which two distinct subcomponents of behavioral homophily – deviance and non-deviance homophily – related to individual-level deviant behavior. Results raise attention to three main conclusions. First, the construct of behavioral homophily is associated with individuals committing significantly less crime. This finding yields strong support to the first hypothesis – that behavioral homophily would relate to lower levels of offending – and suggests that it is quite common for dyads – the fundamental lower-order unit of social networks (see Hartup, 1993) – to show a strong proclivity to engage in similar non-deviant behaviors. From this perspective, then, it appears that ‘birds of a feather tend to flock together’ more for

normative behaviors than they do deviant behaviors. Stated differently, behavioral homophily appears to be more of a protective factor than a risk factor for criminal and deviant behavior at the individual-level.

The second main finding, which is closely related to the first, is that the construct of behavioral homophily indeed contains two distinct components of deviance and non-deviance homophily. Both deviance homophily and non-deviance homophily are robustly and consistently related to engaging in deviance and refraining from it, respectively. This raises attention to the second hypothesis, which premised that deviance homophily would be a risk factor for individual-level crime and non-deviance homophily would be a protective factor. Indeed, this hypothesis has received support, and each homophily component is related to crime in the expected directions. Extending this argument, however, the third hypothesis speculated that the protective factor of non-deviance homophily would carry a significantly stronger relationship with crime than deviance homophily. With the exception of one type of behavior (alcohol), we find strong support for this notion. Accordingly, results from this study lead to the overall conclusion that non-deviance homophily is a stronger protector from individual-level deviant behavior than deviance homophily is a risk factor for crime. This further reinforces the notion that the most important behavioral homophily-type mechanism that occurs within friendships is sharing similar non-deviant behaviors.

Although the results demonstrate consistent patterns across a variety index of crime and four subconstructs of that index (theft, vandalism, violence, and drugs), the results from the alcohol models are starkly different to those from other models. For alcohol, the general construct of behavioral homophily was not significantly related to self-reported alcohol use and behaviors among the dyadic members. Additionally, while deviance and non-deviance homophily were both significantly related to alcohol use and related behaviors, the magnitude of the coefficients did not significantly differ. In interpreting the different findings of alcohol, two important findings become immediately apparent. First, despite the non-significant effect of behavioral homophily on alcohol use, alcohol use homophily and non-use homophily seem extremely important for alcohol-related behaviors of individuals. These significant relationships between deviance and non-deviance homophily and alcohol use would have been lost if the dyad's proclivity towards behavioral homophily had been used as the sole indicator of homophily. Second, it is noteworthy that the majority of people in this dataset report heavy alcohol use (see Table 1 and Appendix A). As such, alcohol use in this study is more precisely a normative behavior, not a deviant one. This insinuates that homophily constructs may be useful at explaining both deviant and normative behaviors – a point which future research should further explore.

Although not a primary goal of the study, a third major finding from this study pertains to how gender and self-control relate to deviant behavior. Supporting a great deal of prior literature (e.g., Cernkovich & Giordano, 1979; Moffitt, Caspi, Rutter, & Silva, 2001; Piquero & Sealock, 2004; Tittle, Ward, & Grasmick, 2003), findings demonstrated that actors who are male tend to engage in significantly higher amounts of theft, vandalism, violence, and drug use and sales than females. What is not in line with prior research, however, is the finding that actors with female friends are significantly more involved in the same behaviors after deviance and non-deviance homophily are covaried. The finding suggests that both

deviance as well as homophily-based mechanisms may vary based on the gender alignment within a dyad. While the current study cannot definitively answer whether dyads of the same gender structure (i.e., male-male and female-female) and split gender structures (i.e., male-female and female-male) tend to show differences in terms of deviance and non-deviance homophily, this intriguing finding does raise attention to an underdeveloped, but seemingly important, area of research that centrally focuses on the relationship between deviance and dyadic gender structure. As such, future explorations regarding whether deviance and non-deviance homophily vary in different gender-structure friendships seem particularly necessary.

The second pattern in results meriting discussion is the patterns of significance in the self-control measures. While actors with lower self-control tend to engage in higher amounts of deviance (supporting prior work; see Pratt & Cullen, 2000), results also consistently demonstrate that people who are friends with those with higher self-control tend to engage in significantly higher amounts of deviance. The relationship between friend self-control and the actor's deviance brings up two points which bear on criminological theory. First, Gottfredson and Hirschi (1990) bring attention to the fact that people with low self-control should 'flock together' and form friendships which are, among other things, marked by high amounts of deviance homophily. After controlling for homophily, however, this study does not support this proposition. Considering we controlled for friendship quality (another tenet promoted by Gottfredson and Hirschi's general theory; see 1990), the results instead suggest quite the opposite: It appears that a dis-similarity in self-control, or self-control non-homophily, may be related to engaging in higher amounts of deviant behavior (cf. Hirtenlehner et al., 2015). It is also worth observing that differential association and social learning theories allow for a much more versatile approach to how friendships can form as well as the impact of these friendships on deviant involvement (see Akers, 2009). As such, this study joins two recent other studies (Boman IV, 2017; Young, 2011) which fundamentally question the validity of Gottfredson and Hirschi's hypotheses on how self-control should produce homophilous behaviors. Because these issues directly tap key issues in criminological theory, future research should further explore how self-control homophily may – or, based on our findings, may not – relate to deviance and non-deviance homophily.

Although we agree with Peterson and Merunka (2014) and are wary of offering policy implications based solely on one college student-based study, these findings – if replicated in other samples – could potentially be impactful to criminal justice policy. By realizing that non-deviance homophily is something that appears to be helpful for behavior on the whole, practitioners could potentially try to steer people towards friends with whom the respondent is likely to share non-deviance homophily. Of course, this policy recommendation does not represent anything 'new' in practice since sitting justices and probation and parole officers already attempt to do this through non-contact orders (mandates which attempt to get a client to break off communication with his/her criminally-inclined friends). However, non-contact orders could potentially become more effective by situating our findings within the broader literature. Past studies demonstrate that 1) people will try to maintain friendships once one is formed (McGloin, 2009) and 2) the vast majority of people's crime patterns change over time in favor of normative behavior (e.g., Moffitt, 1993). The de facto use of a friend's prior criminal record as a criterion to issue a non-contact order may be harmful in

the case where a friend's behavior is changing towards normativity. With our findings and McGloin's research considered together, a non-contact order – in this case – could potentially deprive a client of non-deviance homophily with whom a person who he/she would naturally want to remain friends. In fact, it may put the client at a greater risk of a technical violation(s) if he/she were to follow a natural inclination to remain in contact with the friend. With a strong recognition that this finding needs to be replicated several times before such a recommendation can be assuredly made, we use this narrative through which to illustrate how a non-contact order may be detrimental to clients when they are issued without proper recognition of the benefit which creating non-deviance homophily may have.

This study's results come with several limitations. First, a growing body of research examines the interaction among genes, environment, and delinquent peer group formation (Beaver, Wright, & Delisi, 2008) as well as the biosocial dynamics of delinquent peer associations (Beaver et al., 2011). In a related arena, research also examines how individual traits like intelligence might protect from offending (see Ttofi et al., 2016). Unfortunately, the data used in this study lack genetic/biological measures, meaning we are unable to account for these influences in the analysis. Second, while the fundamental unit of the friendship is the dyad, the current study lacks the ability to apply the findings to the larger social network. Furthermore, people frequently have many friends (see Weerman & Smeek, 2005), and this study has only captured one friend of each actor. Collectively, these limitations bring attention to the fact that this study has captured only a small portion of a person's potentially numerous friendship ties.

A second limitation concerns that fact that the data used are cross-sectional and contain college-aged friendship pairs. In addition to leaving unanswered questions regarding time ordering of variables and generalizability of the sample to other populations, the study is also limited in comparability to studies of social networks, and particularly the Add Health data (which uses a panel sample of younger respondents; e.g., see Haynie, 2002; Turanovic & Young, 2016). Given that past research has established that the deviance and non-deviance patterns of individuals within friendships change over time (McGloin, 2009) and these changes carry importance for a person's own behavior as well as the extent of deviance and non-deviance homophily within friendships, this limitation is perhaps the most serious. Intriguingly, however, this study establishes that there is a real need in the research for a study like McGloin's that uses panel data to focus specifically on deviance and non-deviance homophily over time. We believe the Add Health data and/or Weerman's (e.g., Weerman & Smeek, 2005) data would be ideal for such an investigation. At the same time, we also believe that there is room for theoretical expansion of homophily into a differential association and/or social learning framework. Third, while college students often share similar frequencies of deviant involvement to other, more 'high risk' samples (Wiecko, 2010), scholars are correct to point out that findings from collegiate samples must be replicated prior to forming policies (Peterson & Merunka, 2014). As such, our study is inherently limited in what policies could be recommended based on homophily-based constructs. This limitation is further enhanced due to the use of binary measures of behavior which were used to construct the homophily measures. Finally, we have not been able to capture measures which fully capture the respective theories of self-control (see Hirschi & Gottfredson, 1993), differential association, or social learning. As such, the results pertain to

each theory although they stop short of offering a full test of either theory. Despite some limitations, however, this study offers a conceptual advancement in terms of what is meant by ‘behavioral homophily’ that will hopefully be of use to criminologists.

Although self-control and social learning theories explicitly discuss why friends should or should not behave similarly, behavioral homophily – or, more precisely, deviance and non-deviance homophily – are implicitly important to a wide variety of other criminological theories which apply concepts from the control and learning perspectives. These other perspectives include, but are not limited to, interactional theory (Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994), general strain (Agnew, 2006), differential coercion and social support (Colvin et al., 2002), and Hirschi’s revised conceptualization of self-control theory (2004). Drawing on the wide theoretical base, homophily is also a concept that carries a real and substantive meaning for involvement in, and abstention from, criminal behavior (see Turanovic & Young, 2016). Accordingly, continuing to further develop a more comprehensive understanding of the causes and results of homophilous behavioral patterns will aid future criminological research by honing theoretical knowledge while developing a more precise understanding of the meanings behind the effect of ‘peers’ on crime, deviance, and substance use.

Appendix A. Wording and Descriptive Statistics for Homophily Measures (N = 1077 Dyads)

Item	Construct	Percentage of dyads displaying		
		Behavioral homophily %	Deviance homophily %	Non-deviance homophily %
Stole things worth less than \$5	Theft	72.8	5.8	67.0
Stole things worth between \$5 and \$50	Theft	86.1	0.8	85.3
Stole things worth more than \$50	Theft	91.7	0.6	91.1
Stolen from neighbors, friends, or roommates	Theft	86.6	0.7	85.9
Avoided paying for goods and services	Theft	63.0	7.0	56.0
Vandalized property of a friend, neighbor, or roommate	Vandalism	82.5	1.8	80.7
Vandalized school property	Vandalism	84.8	2.0	82.8
Vandalized other property that didn’t belong to you	Vandalism	77.6	2.2	75.4
Broken in to a building to damage something	Vandalism	94.0	0.2	93.8
Been loud and unruly in public	Vandalism	57.2	18.5	38.7
Been involved in a group fight	Violence	84.1	2.1	82.0
Physically struck someone on purpose	Violence	65.8	7.6	58.2

Item	Construct	Percentage of dyads displaying		
		Behavioral homophily %	Deviance homophily %	Non-deviance homophily %
Threw rocks and bottles at cars and people	Violence	77.8	3.4	74.4
Used marijuana	Drugs	68.8	17.1	51.7
Used hard drugs	Drugs	94.0	0.8	93.2
Used Salvia divinorum	Drugs	92.6	0.5	92.1
Sold marijuana	Drugs	93.7	0.7	93.0
Sold hard drugs	Drugs	97.8	0.1	97.7
Drank alcohol	Alcohol	81.4	75.0	6.4
Used alcohol in excess	Alcohol	69.0	48.9	20.1
Lied about age to buy alcohol	Alcohol	66.4	14.5	51.9
Bought alcohol for a minor	Alcohol	69.9	7.2	62.7
Been intoxicated in public	Alcohol	66.8	35.5	31.3

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<i>Crime</i>	<u>Actor Behavior</u>		<u>Friend Behavior</u>		<u>Dyadic Behavior</u>
	Committed	Did not commit	Committed	Did not commit	Homophily type
A	✓		✓		Behavioral homophily & Deviance homophily
B	✓			✓	Non-homophily
C		✓		✓	Behavioral homophily & Non-deviance homophily

Fig. 1. Conceptual demonstration of the distinction between behavioral homophily, deviance homophily, and non-deviance homophily within a friendship pair.

Table 1

Descriptive statistics of all measures used in analyses (n = 2154 persons nested within 1077 dyads).

	M	SD	Range
Dependent variables			
Self-reported deviance (23 item index)	4.858	3.631	0–23
Self-reported theft	0.647	1.046	0–5
Self-reported vandalism	0.762	1.058	0–5
Self-reported violence	0.491	0.777	0–3
Self-reported drug use and sales	0.458	0.783	0–5
Self-reported alcohol use & behaviors	2.534	1.576	0–5
Focal independent variables (level 2)			
Dyadic proclivity for behavioral homophily			
Behavioral homophily (23 item index)	0.000	0.796	–3.864–1.459
Theft behavioral homophily	0.000	0.718	–2.171–0.666
Vandalism behavioral homophily	0.000	0.678	–2.180–0.676
Violence behavioral homophily	0.000	0.587	–1.520–0.518
Drugs behavioral homophily	0.000	0.584	–2.759–0.424
Alcohol behavioral homophily	0.000	0.471	–1.466–0.626
Dyadic proclivity for deviance homophily			
Deviance homophily (23 item index)	0.000	0.860	–1.230–2.779
Theft deviance homophily	0.000	0.496	–0.173–2.399
Vandalism deviance homophily	0.000	0.552	–0.270–2.858
Violence deviance homophily	0.000	0.495	–0.163–2.545
Drugs deviance homophily	0.000	0.474	–0.216–1.613
Alcohol deviance homophily	0.000	0.867	–1.208–1.898
Dyadic proclivity for non-deviance homophily			
Non-deviance homophily (23 item index)	0.000	0.909	–3.302–2.118
Theft non-deviance homophily	0.000	0.779	–2.069–0.761
Vandalism non-deviance homophily	0.000	0.787	–2.077–0.894
Violence non-deviance homophily	0.000	0.683	–1.500–0.649
Drugs non-deviance homophily	0.000	0.760	–2.537–0.666
Alcohol non-deviance homophily	0.000	0.855	–1.076–1.901
Control variables (all at level 1)			
Self-control Grasmick et al., (1993)	2.878	0.350	1–4
Friendship quality	3.952	0.536	1–5
Male	0.336	0.472	0–1
Non-white	19.339	1.433	18–42
Latino	0.186	0.389	0–1

Table 2

Mixed models regressing 23 item self-reported crime index onto level 2 homophily predictors and level 1 controls ($n = 2154$ persons nested within 1077 dyads).*

	Model 1		Model 2	
	b	SE	B	SE
Level 2 focal predictors				
Behavioral homophily	-2.103	0.090***	-	-
Deviance homophily	-	-	1.149	0.076***
Non-deviance homophily	-	-	-2.204	0.080***,A
Level 1 actor controls**				
Self-control	-0.126	0.008***	-0.071	0.007***
Friendship quality	0.202	0.137	-0.018	0.110
Male	0.898	0.151***	0.722	0.116***
Non-white	-0.643	0.152***	-0.150	0.114
Age	0.064	0.052	0.007	0.039
Hispanic	0.526	0.169**	0.210	0.127
Level 1 friend controls				
Self-control	-0.002	0.008	0.049	0.006***
Friendship quality	0.357	0.137**	0.169	0.106
Male	-0.262	0.155	-0.463	0.118***
Non-white	-0.280	0.153	0.201	0.117
Age	0.029	0.051	-0.024	0.038
Hispanic	0.084	0.169	-0.214	0.128
Model statistics				
τ	2.790		2.100	
σ^2	0.000		0.000	
F	107.84**		276.76***	

* $p < 0.05$

** $p < 0.01$.

*** $p < 0.001$.

A. Significantly stronger in magnitude than deviance homophily ($z = 9.56, p < 0.001$).

Table 3

Mixed models regressing crime-type indices onto level 2 behavioral homophily and level 1 controls ($n = 2154$ persons nested within 1077 dyads)

	Model 1 – theft		Model 2 – vandalism		Model 3 – violence		Model 4 – drugs		Model 5 – alcohol	
	b	SE	b	SE	b	SE	b	SE	b	SE
Level 2 focal predictors										
Behavioral homophily	-0.839	0.026***	-0.774	0.028***	-0.643	0.025***	-0.673	0.025***	-0.147	0.078
Level 1 actor controls										
Self-control	-0.018	0.002***	-0.030	0.002***	-0.017	0.002***	-0.015	0.002***	-0.048	0.004***
Friendship quality	-0.050	0.042	-0.038	0.044	0.018	0.033	0.035	0.034	0.074	0.071
Male	0.197	0.043***	0.305	0.044***	0.166	0.034***	0.155	0.033***	0.123	0.072
Non-white	0.062	0.043	-0.097	0.044*	0.024	0.034	-0.142	0.034***	-0.559	0.070***
Age	0.005	0.015	-0.017	0.015	-0.012	0.011	-0.008	0.011	0.123	0.025***
Latino	0.081	0.049	0.094	0.050	-0.020	0.039	0.043	0.038	0.310	0.082***
Level 1 friend controls										
Self-control	0.006	0.002**	0.005	0.002*	0.003	0.002	-0.001	0.002	-0.017	0.004***
Friendship quality	0.046	0.042	0.041	0.041	0.025	0.034	0.031	0.035	0.089	0.069
Male	-0.041	0.043	-0.091	0.044*	0.003	0.034	-0.025	0.034	-0.041	0.071
Non-white	-0.005	0.043	0.027	0.044	0.054	0.034	0.006	0.034	-0.385	0.070***
Age	-0.034	0.015*	0.008	0.015	0.010	0.012	0.006	0.011	0.020	0.024
Latino	-0.038	0.049	-0.062	0.050	-0.004	0.039	0.014	0.038	0.156	0.082
Model statistics										
τ	0.808		0.824		0.641		0.623		1.151	
σ^2	0.000		0.000		0.000		0.108		0.858	
F	106.31***		100.43***		74.33***		78.68***		25.80***	

* p 0.05

** p 0.01.

*** p 0.001.

Table 4

Mixed models regressing crime-type indices onto level 2 deviance homophily, non-deviance homophily, and level 1 controls ($n = 2154$ persons nested within 1077 dyads)

	Model 1 – theft		Model 2 – vandalism		Model 3 – violence		Model 4 – drugs		Model 5 – alcohol	
	b	SE	b	SE	b	SE	b	SE	b	SE
Level 2 focal predictors										
Deviance homophily	0.466	0.034***	0.486	0.030***	0.432	0.025***	0.474	0.026***	0.795	0.032***
Non-deviance homophily	-0.814	0.022***	-0.780	0.022***	-0.667	0.018***	-0.612	0.017***	-0.846	0.032***
Level 1 actor controls										
Self-control	-0.013	0.002***	-0.017	0.002***	-0.010	0.001***	-0.006	0.001***	-0.016	0.003***
Friendship quality	-0.041	0.037	-0.042	0.035	-0.003	0.028	0.002	0.024	0.007	0.043
Male	0.132	0.037***	0.213	0.036***	0.082	0.027**	0.103	0.025***	0.094	0.045*
Non-white	0.028	0.037	-0.064	0.036	-0.013	0.027	-0.070	0.026	-0.107	0.046*
Age	0.021	0.012	-0.015	0.012	-0.011	0.009	-0.007	0.008	0.056	0.018**
Latino	0.048	0.042	0.076	0.040	-0.010	0.030	0.010	0.028	0.086	0.051
Level 1 friend controls										
Self-control	0.011	0.002***	0.016	0.002***	0.009	0.002***	0.006	0.001***	0.012	0.002***
Friendship quality	0.049	0.037	0.029	0.034	0.002	0.027	-0.004	0.025	0.016	0.044
Male	-0.109	0.037**	-0.187	0.036***	-0.083	0.027**	-0.079	0.025**	-0.077	0.045
Non-white	-0.040	0.037	0.060	0.036	0.017	0.027	0.078	0.025**	0.064	0.046
Age	-0.018	0.012	0.010	0.012	0.012	0.009	0.008	0.009	-0.045	0.016**
Latino	-0.059	0.042	-0.079	0.040*	0.007	0.030	-0.019	0.028	-0.066	0.051
Model statistics										
τ	0.689		0.666		0.498		0.470		0.835	
σ^2	0.000		0.000		0.000		0.000		0.000	
F	188.97***		221.15***		205.91***		254.14***		355.40***	

* $p < 0.05$

** $p < 0.01$.

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 $p < 0.001$.

^A Significantly stronger in magnitude than deviance homophily ($p < 0.001$).

^B Coefficient magnitudes of deviance homophily and non-deviance homophily do not differ significantly.