Influence or Convenience? Disentangling Peer Influence and Co-offending for Chronic offenders

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Abstract
Both developmental and propensity theories root the etiology of chronic offending in factors other than peer influence. This does not mean that peers have no role in the expression of chronic offending, however. For instance, scholars have noted that offending with accomplices (i.e., co-offending) can reflect processes other than normative influence, such as selection and cooperation. Drawing from these notions, this investigation hypothesizes that chronic offenders will be less likely to cite peer influence as a reason for their deviance when compared to other offenders, whereas they will be equally likely to engage in group offending. The analysis uses information from the Racine cohort data and the results support the

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hypothesis. The discussion considers the implications of these findings for theory and research, as well as provides directions for future work.

Keywords
criminological theory, antisocial behavior, causes/correlates, crime

Introduction

Unlike most individuals who engage in offending at some point over their life course, chronic offenders engage in repeated and persistent criminal acts. Also known as habitual offenders or career criminals, they comprise a small portion of the population but are responsible for a disproportionate amount of crime (DeLisi 2005). A number of earlier case studies provided rich descriptions of chronic offenders (e.g., Shaw 1930), but Wolfgang and colleagues' (Wolfgang, Figlio, and Sellin 1972) study of a Philadelphia birth cohort is often credited with drawing attention to this "type" of offender. They found that habitual offenders (those with at least 5 offenses) were responsible for over 50 percent of the delinquency in the entire cohort, a finding that has been replicated across numerous other samples.

Because of consistent findings along this vein, chronic offenders are now a staple of criminological discourse. Indeed, a number of theories are clear to distinguish the causal pathway toward chronic offending.[1] Such discussions typically stem from developmental and propensity perspectives (DeLisi 2005), both of which place heavy attention on constitutional factors and attributes, consequently downplaying or discounting the role of peer influence in the offending process. This does not necessarily mean that peers are irrelevant, however. For instance, a number of scholars have been careful to note that co-offenders are not equivalent to deviant peers and that, while group offending may partly reflect peer influence, it can also reflect processes such as selection and cooperation (Weerman 2003). With this in mind, peers still may play a prominent role in the expression of chronic offending.

Drawing from theoretical discussions both about chronic offending and co-offending, one can hypothesize that chronic offenders are less apt to offend because of peer influence when compared to their nonchronic counterparts but are equally prone to engage in group offending. Unfortunately, no known empirical study has distinguished between peer influence and group offending, which regrettably stunts knowledge about the nature of

group offending generally and the various roles of peers for particular "types" of offenders specifically. In order to address this void, the current inquiry turns attention to the Racine cohort data, which contain information on whether subjects offended with other individuals (i.e., patterns of co-offending), as well as self-reported information on why they engaged in these deviant acts (i.e., whether it was due to peer influence). In the end, this study will shed insight on the extent to which being influenced by peers and offending with accomplices overlap and/or diverge, particularly for chronic offenders.

Chronic Offenders and Peers

Moffitt's (1993) dual taxonomy is perhaps the best-known theory that articulates a specific developmental path for chronic offenders. According to Moffitt (1993), life-course persistent (LCP) offenders develop out of a combination of neuropsychological deficits and a disadvantaged environment. Because the origins of chronic offending are pathological in nature (Moffitt 1993, 1994), she argues that peers have no causal role in the deviant acts of LCP offenders; chronic offenders need no peer processes (e.g., learning mechanisms, peer pressure) to prompt or promote their deviant behavior. Partly for this reason, Moffitt asserts that chronic offenders begin offending before the height of peer influence and persist in their offending well past adolescence, when the prominence of peers is at its peak. Thus, chronic offending emerges from primarily biopsychological origins rather than from social factors or processes (see also Rutter 1997).

Another developmental theory also draws a distinction between chronic and other offenders, likewise asserting that the salience of peers varies according to the offending pathway of interest. Patterson's (1982, 1995) coercion model suggests that, whereas late-starting delinquents are highly influenced by peers and find their motivation for offending largely invested in them, early-starting chronic offenders emerge from poor parental environments defined by coercive interactions. Because coercive family social processes in childhood essentially structure a difficult personality that results in conflict with other individuals and institutions, the child is set on a pathway toward chronic offending. The typical peer processes that induce and prompt offending among nonchronic (i.e., late-starting) offenders are not etiological risks for chronic offenders—instead, having deviant peers is a *consequence* of this coercive process, much like academic failure and deviant behavior.

Though their propositions stem from the view that criminogenic risk exists on a continuum rather than in distinct categories by offender type,

population heterogeneity perspectives also provide guidance regarding the causal underpinnings of chronic offending. Interestingly, these perspectives also downplay the role of peer influence. First, the general theory of crime posits that the singular cause of offending behavior is low self-control (Gottfredson and Hirschi 1990). Accordingly, chronic offenders are those individuals who are lowest in self-control (i.e., they have the highest criminal propensity). Their low self-control will cause them to begin offending early, to offend with high frequency, and to persist over time; peer influence is not a causal agent for their offending pathway. On a somewhat similar note, Wilson and Herrnstein (1985) assert that chronic offenders are those individuals who are most likely to discount the future consequences of behavior in favor of the immediate rewards. This predisposition toward chronic offending rests primarily in one's constitutional attributes, such as intelligence and impulsivity, not in peers. Accordingly, the mechanisms of peer influence (i.e., norm transmission, reinforcement, peer pressure) are largely unnecessary for chronic offenders to engage in crime, given their heightened propensity (see Granovetter 1978). Thus, it would seem reasonable to conclude from these treatises that, although peer influence is typically implicated as one of the most robust causes of delinquency and crime generally (Warr 2002), this should not be the case for chronic offenders. This does not necessarily mean, however, that peers play no role in the offending repertoires of chronic offenders—group offending may be an important part of their offending pathways.

Peers as Co-Offenders

The fact that much offending—in fact, the majority of delinquency—is group-based has long been known by criminology (McGloin et al. 2008). Indeed, several key theoretical works recognize that oftentimes crime is a collective behavior (Cloward and Ohlin 1960; Cohen 1955; Shaw and McKay 1942; Short and Strodtbeck 1965; Sutherland 1947). Even so, it remains the case that the literature on group offending is sparse and under-developed (Kennedy 2009). As Van Mastrigt and Farrington (2009; see also McGloin et al. 2008) rightly observe, most analyses of co-offending have been cross-sectional and aggregate; focused discussions about the meaning of co-offending for the criminal career, as opposed to viewing it simply as an attribute of the criminal event, are rare. This is despite the facts that individual offending repertoires typically consist of both solo and co-offending (Reiss 1988) and offending with others is consistently identified as a key attribute of the criminal career (Piquero, Farrington, and Blumstein

2003). The general void of attention is unfortunate because the few studies that do recognize these points demonstrate the important impact co-offending patterns can have on offending pathways (Conway and McCord 2002; McGloin and Piquero 2009, 2010).

Warr (2002) is perhaps the most notable exception to this lack of attention. He clearly states that a proper discussion of peers with regard to the criminal career requires an understanding of both peer influence and group offending (Warr 2002). Because co-offending, membership in delinquent groups, and time spent with peers all tend to peak in mid-adolescence and then decline markedly in late adolescence/early adulthood (Elliott and Menard 1996; Reiss 1988; Weerman 2003), Warr (2002) suggests that the modal nature of group offending during adolescence reflects, at least in part, the potency of peer influence during this developmental phase. For instance, group offending may reflect the fact that deviant peers provide access to learning environments conducive to delinquency (see Akers 1998; Sutherland 1947). Although such influence can clearly promote solo offending, the intensity of these processes when in the immediate presence of accomplices can facilitate group offending in particular. Moreover, Warr (2002) also notes that adolescents have a strong drive for conformity and avoiding ridicule, the stakes for which are likewise higher when in the presence of others (i.e., potential accomplices). In other words, though group offending and peer influence are not conceptually equivalent, the latter can be the driving mechanism of the former.

Transferring this information to the current issue, if group offending only reflected normative influence or social pressure then one would assume that chronic offenders would commit the majority, if not all, of their offenses alone. Group offending can reflect a number of other factors, however, at least two of which may be particularly salient for chronic offenders: selection and the instrumental decision to cooperate. The selection perspective argues that "co-offending is ... a byproduct of the tendency of offenders to select each other as friends or companions" (Weerman 2003:402; see also Reiss and Farrington 1991). Both Patterson (1982, 1995) and Gottfredson and Hirschi (1990) assert that associating with deviant peers is a consequence of the underlying propensity toward offending. In other words, chronic offenders are especially likely to have deviant peers and, arguably, to be rejected by prosocial peers (Gottfredson and Hirschi 1990; Patterson 1982, 1995; see also Chapple 2005). When individuals prone toward delinquency associate with one another, this could naturally lead to spontaneous group offending because of shared deviant motivations and opportunities.

Additionally, recent empirical work demonstrated that low-self control (i.e., high criminal propensity) predicts higher levels of involvement with

peers (McGloin and Shermer 2009). Osgood et al. (1996) have argued that spending time with peers, particularly in unstructured and unsupervised settings during adolescence, can naturally lead to offending. Both Patterson and Gottfredson and Hirschi state that individuals prone toward chronic offending will not favor or seek out structured settings, meaning that the social time they spend with peers may be particularly amenable to fostering deviance. Though Osgood and colleagues (1996) do not specify the type of offending promoted in such settings, it would seem logical that if deviance is a natural outgrowth of collective engagement in leisure activities, it would often take the form of group offending.

This selection view coincides nicely with Felson's (2003:158) characterization of co-offending: "A relatively small number of identifiable settings in a given locality make it easy for co-offenders to find one another. The common denominator for such settings is the ability for likely offenders to gather without interference. An offender convergence setting has even greater chance to enhance crime if it is located in close proximity to numerous targets suitable for criminal attack." In other words, if chronic offenders' routines bring them into frequent contact with other motivated offenders while in the presence of suitable targets, group offending will naturally result (see also Pettersson 2003). In light of the previous discussion of their increased likelihood of (1) having deviant peers and (2) spending more time socializing with them, this would seem likely.

Second, group offending can also reflect an instrumental decision to cooperate with others (Weerman 2003). For instance, McCarthy, Hagan, and Cohen (1998) argue that even though co-offending carries inherent risks (e.g., accomplices may turn each other over to the authorities), the potential benefits of cooperation often lead active offenders to nonetheless offend with others. In particular, they highlight that accomplices can provide additional information, skill, and resources, which can amplify both the opportunities for and the rewards of crime. Indeed, Wright and Decker (1994) found in their sample of active burglars that offenders acknowledged the potential cost/costs that having accomplices can bring, but they nonetheless reported that group offending was often perceived to be safer and more successful. Some subjects reported that accomplices could help during the criminal act if it required more than one person or specific skills and that having accomplices could allow for bigger "scores." Arguably, as individuals acquire more offending experience, these benefits become increasingly clear and attractive.

It is important to note that the instrumental decision to co-offend because it makes crime easier or more beneficial does not have to be rooted in

equitable cooperation. Coleman (1990) notes that some people engage in unbalanced cooperation, in which they partner with subordinates and dominate the interactions (see also McCarthy et al. 1998). In such situations, one person can act as the instigator, perhaps exploiting or using an accomplice/accomplices for his or her benefit (also see Warr's 1996 discussion of different roles in co-offending relationships). This view lines up well with Moffitt's (1993) assertion that life-course persistent offenders will engage in group offending. Specifically, she contends that LCP offenders serve as behavioral "magnets" for adolescence-limited offenders and often act as the instigators and core members of rotating delinquent networks (Moffitt 1993:688). Simply, chronic offenders can use these late-onset deviants to facilitate their own illegal acts (Moffitt 2006; Piquero, Farrington, and Blumstein 2007). Though using them as lookouts, fences, or other roles can be seen as manipulative, it is nonetheless group offending. Thus, like the selection view of co-offending, the instrumental view also prompts one to hypothesize that even though chronic offenders may not engage in deviance because of peer influence, they nonetheless may be just as likely to offend with accomplices.

Current Study

The current study recognizes that peers can serve many roles with regard to offending pathways and that peer influence is not equivalent to group offending. Instead, co-offending can reflect a number of causal and non-causal processes, including selection and an instrumental decision to cooperate. Drawing on these arguments, as well as theoretical treatises that downplay the importance of peer influence for chronic offending, this investigation hypothesizes that chronic offenders will be less likely to offend *because* of peers, but just as likely to offend *with* them. Using the information from the Racine cohort data set, this inquiry tests this hypothesis across different operationalizations of chronic offenders. To our knowledge, this is the first study to empirically differentiate between group offending and peer influence.

Data and Methods

The analysis uses longitudinal data collected from the 1942 and 1949 birth cohorts in the industrial Midwestern town of Racine, Wisconsin (Shannon 1973, 1994). For both cohorts, data on police contacts are available from age 6 though age 25.[2] These records included offense characteristics such

Table 1. Descriptive Information for the Sample on Variables of Interest ($N = 500$)

	Mean	Standard Deviation
Number of offenses	5.95	9.44
Proportion of co-offenses	.25	.29
Peer Influence (yes = 1)	.29	–
Gender (male = 1)	.68	–
Race (White = 1)	.86	–
SES	9.92	6.64
Age of onset	15.90	3.94

Note: SES = socioeconomic status.

as location, severity of offense, and the number of offenders involved. Because the current study hypothesizes about distinctions between chronic and nonchronic offenders (not between offenders and nonoffenders), the sample was limited to those subjects who had at least one official contact with police by age 25. Moreover, it was also interested only in those subjects who provided self-reported information on why they engaged in offending (i.e., whether it was because of peer influence).[3] This resulted in a final sample size of 500 individuals. Table 1 contains descriptive information for the sample.

Measures

Dependent variable: chronic offenders. Because there is no universal standard for what constitutes a "chronic offender," this research operationalizes the concept in a few ways. First, we use an objective measure of chronic offending (i.e., a decision rule). When Wolfgang et al. (1972) spoke of chronic offenders, they referred to individuals who committed at least 5 offenses, a measure that has been replicated in other work (e.g., Conseur et al. 1997). Using this cutoff, 33 percent of the sample qualifies as a chronic offender, which seems high. This fact, along with the observation that the bulk of offenses for many subjects are low-level crimes (e.g., traffic offenses), prompted us to have a second standard.[4] Therefore, the second measure, which is also binary, adopts a cutoff of at least 15 offenses by the age of 25. Under this definition, approximately 9 percent of the sample qualifies as chronic offenders.[5]

Next, this analysis also adopts a relative measure of chronic offenders. To be clear, Nagin (2005) has offered several reasons why rule-based group

assignment should be used with caution. Such reasons include the possibility that group assignment reflects only random variation in groups rather than actual differences in developmental patterns and that these assignments make the assumption that the probability of membership in a group is 100 percent. The use of semi-parametric mixture models to identify developmental patterns of offending over the life course accounts for these weaknesses and has been increasingly used in research to identify chronic offenders (e.g., Fergusson, Horwood, and Nagin 2000; Nagin and Land 2003). Because the trajectory method is driven by data, it distinguishes among groups according to offending patterns in this particular sample, rather than some objective standard or definition.

Thus, as another means of identifying chronic offenders in this sample, we estimate trajectories for the subjects' total number of police contacts yearly from the age of 6 through 25. Because the data are based on counts, the model uses a Poisson distribution. Model selection (i.e., the most appropriate number of groups), relies on a number of indicators. First, we examine the Bayesian Information Criterion (BIC), a measure often recognized as one of the most reliable statistics available for determining model fit (D'Unger et al. 1998; Nagin 2005; Nagin and Tremblay 2001). The BIC indicates whether the model is estimated correctly given the data; BIC values closer to zero indicate a better fit (Nagin 2005). Next, posterior probabilities measure the likelihood that individuals with certain offending patterns are assigned to particular groups; the average posterior probabilities (AvePP) take the average probability of all subjects assigned to a specific group. Ideally, the AvePP should be 100 percent for each group, indicating that all subjects are correctly assigned. In practice, Nagin (2005) argues that the AvePP for each group should equal 70 percent or higher. We also rely on the odds of correct classification (OCC), which indicate the accuracy with which people are assigned to groups (Nagin 2005). The threshold for the OCC is a value at or above 5 for all groups, suggesting high assignment accuracy. Finally, there is a diagnostic that compares the estimated probability of group membership to the proportion of individuals assigned to each group. Since a subject's probability of fitting into a certain group is not always equal to 1, the proportion of subjects assigned to a group may not be equal to the estimated probability of group membership. When the sample's probability of group assignment is high, the proportion of individuals assigned to each group is equal or close in value to the estimated probability of group membership. The closeness of these two measures is, therefore, also an indicator of model fit (Nagin 2005).

Table 2. BIC Values for the Trajectory Analysis

Number of Groups	Bayesian Information Criterion, $N = (500)$	AvePP	OCC
1	−7131.44		
2	−5986.33	.993, .960	24.134, 146.665
3	−5779.49	.985, .958, .987	15.499, 111.364, 3401.634
4	−5704.33	.984, .916, .999, .940	15.278, 160.106, 54501.0, 116.688

Note: AvePP = average posterior probabilities; OCC, odds of correct classification.

For the current data, a two-group model was selected as the most appropriate. Although the BIC indicated the four-group model as having the best fit, when other considerations were taken into account, a two-group model seemed most appropriate (see Table 2; Figure 1). First, post hoc analysis confirmed the stability of the two-group model. The AvePP are above 95 percent for both groups; the OCC are both well above five; and, the group populations and sample proportions assigned to each group are all within a half of the percentage of one another. Thus, the diagnostics suggest that the two-group model is a reasonable fit; of course, they also suggest the three- and four-group models would be reasonable selections, as well. Upon closer inspection, however, the benefit of the two-group model over these alternatives for the current purpose becomes clear: the third and fourth groups each had less than 2 percent of the sample (i.e., less than 10 individuals) assigned to them.

The largest group (group 1), to which approximately 86 percent of the sample is assigned, appears to comprise very low-level offenders. The average rate of offending stays below .5 for every year the police contacts are measured (ages 6 through 25). The second group, consisting of 14 percent of the sample, illustrates a higher offending rate that peaks in late adolescence and starts to decline in the early 20s. We identify this group as chronic offenders. This group does not demonstrate excessively high rates of offending but nevertheless shows significantly more offending and greater persistence than group 1 (like other cohort studies, this group also comprises a relatively small portion of the sample).[6]

These three operationalizations of chronic offending converge in a logical manner. All 45 subjects who are labeled "chronics" by the 15+ definition are contained within the 70 subjects assigned to the chronic trajectory, and all of these individuals are contained within the 165 subjects who meet
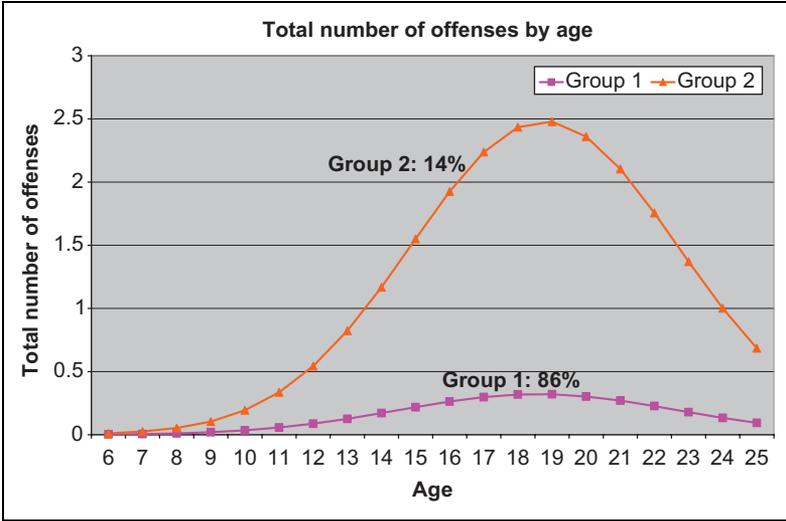
Figure 1. The total offending trajectories for the two group model.

the 5+ definition. The 15+ operationalization captured the most frequent and persistent offenders, with an average of more than 29 contacts with police from ages 6 through 25 ($SD = 17.34$). Individuals assigned to the chronic trajectory had an average close to this value (23.21, $SD = 15.99$), whereas subjects who committed at least 5 offenses typically had approximately 14 official contacts with police ($SD = 13.19$).

Independent Variable/Variables

Proportion of co-offenses. Unlike much data, the Racine data include a measure of the number of people involved for each officially recorded offense. Thus, every offense was re-coded as "solo" (i.e., only the subject was involved) or "group" (i.e., at least one other person besides the subject was involved in the event). Because we are interested in the extent to which each individual favored co-offending over the course of his or her offending behavior through age 25, the measure of interest is a proportion. Specifically, it is the number of crimes involving at least one accomplice divided by the offender's total number of crimes. Thus, a value of 0 would indicate that all of the offender's crimes were committed alone, whereas a 1 would

indicate that all of his crimes were committed with others. The average proportion of co-offenses for the entire sample is .25 ($SD = .29$).[7]

Peer influence. Many studies measure exposure to peer deviance and infer that a statistically significant relationship with an offending outcome represents normative influence. To assume this mechanism from a link that could reflect many processes is arguably problematic, regardless of whether the measure is based on respondent perceptions or on friend self-reports (Wikstrom 2006). For such reasons, some scholars instead use more direct "process" measures of peer influence, such as respondent reports of experiencing peer pressure (e.g., Giordano et al. 1986; McGloin, Pratt, and Maahs 2004; Pleydon and Schner 2001). Because the current inquiry's core argument is that deviant peers/accomplices can involve a number of mechanisms, it is important that the measure of peer influence capture process rather than simple exposure. Fortunately, the Racine data provide a comparatively direct measure of whether the subject's offending was due to peer influence. Specifically, subjects who engaged in illegal activity were asked, overall, why they think they engaged in this behavior. Options included peer influence, economic conditions, curiosity/experience, testing the law, and it was part of leisure activities.[8] The answers were recoded so that subjects who responded with peer influence received a value of 1, whereas all others received a value of 0. Approximately 29 percent of the subjects reported that they engaged in offending because of peer influence.

The Racine data do not contain information on many covariates, but the analysis does account for several control variables. First, one of the key factors that scholars suggest differentiates chronic offenders from their non-chronic counterparts is an earlier age of onset (Moffitt 1993; Patterson 1982). We measure age of onset as the age at which the subject had his or her first official contact with police. The average age of (official) onset for the sample of offenders is 15.9 ($SD = 3.94$), within a range of 6 to 25. In addition, the analysis accounts for *gender* (1 = male, 0 = female), *race* (1 = White, 0 = non-White), as well as *socioeconomic status* (SES). The sample is approximately 68 percent male and 86 percent White. The SES measure is drawn from data on the block characteristics of the subjects' residences. In particular, factor scores of the average dollar value of owner-occupied housing, average contract rent, percentage lacking some or all plumbing, percentage of units renter occupied, and percentage of units overcrowded were used to create this variable (Shannon 1994). A subject received a ranking of 1 through 26, with a lower rank indicating lower SES. As Table 1 shows, the average SES score for the sample is 9.92 ($SD = 6.64$).

Analytic Plan

The analysis tests the hypothesis that chronic offenders will be less apt to report peer influence as the reason for their offending, but will be just as apt to rely on co-offending over the course of their offending careers. The first models to assess this proposition will use the objective measures of chronic offending as the dependent variables. Specifically, the first model will predict chronic offending under the 5 offense cutoff, whereas the second model will predict chronic offending according to the 15 offense cutoff. The third model will use the subjective (i.e., sample-based) measure of chronic offending derived from the trajectory analysis. Because all three measures of chronic offending are binary, all models will rely on logistic regression.[9] By using three operationalizations of chronic offending, these models will collectively speak to the robustness of the emergent findings.

Results

Bivariate analyses demonstrate some interesting relationships between chronic offending and the two primary variables of interest: peer influence and co-offending. Under all three measures, it appears that chronic offenders are less likely to report peer influence as the reason for their offending behavior, which supports the hypothesis. For instance, when chronic offending is defined as 5+ offenses, approximately 19 percent these subjects report peer influence as the cause of their offending, as compared to 33 percent of nonchronic offenders ($p < .01$). Seventeen percent of subjects assigned to the chronic trajectory cited peer influence as the reason for their offending, whereas 28 percent of subjects assigned to the other offending group did ($p < .05$). Finally, when defined as 15+ offenses, less than 7 percent of chronic offenders report peer influence as the cause, compared to 30 percent of nonchronic offenders ($p < .001$). Thus, under the strictest measure of chronic offending, nonchronic offenders are more than 4 times as likely to offer peer influence as the primary reason for their offending behavior.

Though peer influence was consistently ranked second by nonchronic offenders (behind leisure activities) as the reason for their offending behavior across all three operationalizations, the rank of peer influence for chronic offenders descended as the measure became more restrictive and reflected more serious offenders. It was tied for second with curiosity/experience among offenders with at least 5 offenses, and it was tied for third with testing the law for offenders assigned to the "chronic" trajectory, only out

ranking economic reasons. For the definition that defines chronic offenders as 15+ offenses, peer influence dropped to last on this list—it was ranked as the least frequent reason for offending.

Turning to the proportion of co-offenses, the bivariate patterns suggest that chronic offenders are actually more likely to rely on group offending from the age of 6 through 25. For offenders with five or more offenses, the average proportion of co-offenses was .33, as compared to .21 for other offenders ($p < .001$). Likewise, individuals assigned to the second trajectory group also had higher co-offending proportions than did individuals assigned to the first group (.34 vs. .23, $p < .01$). Finally, for subjects with 15 or more offenses, the average proportion of co-offenses to all offenses was .35 as compared to .24 ($p < .05$). While the difference in values of "peer influence" increase as the measures of chronic offending become more strict, that is not the case with the proportion measure—it remains relatively stable (though the statistical significance declines).

Table 3 reports the findings of the logistic regression models. Models 1 and 2 predict the rule-based (i.e., objective) definitions of chronic offending. Both of these models demonstrate that chronic offenders are significantly less likely to cite peer influence as the reason for their offending, which is consistent with the bivariate patterns and supports the hypothesis. For example, model 1 suggests that individuals who reported peer influence as the motivation for their offending are approximately half as likely to have committed at least five offenses when compared to subjects who did not cite this reason. This pattern continues with model 3, which used trajectory analysis to identify and label chronic offenders. It is worth noting that as the criterion for what constitutes a chronic offender becomes more "stringent," the magnitude of the relationship increases. As discussed earlier, the fewest number of subjects belong to the "15+" operationalization, followed by the trajectory group, and then the 5+ measure. The magnitudes of the coefficients descend in the same way (i.e., for the 15+ offenses, the odds ratio decreases to .15), which is consistent with the bivariate patterns discussed earlier regarding the relative ranking of peer influence in the reasons given for offending behavior.

The regression results regarding group offending are somewhat different from the aforementioned bivariate patterns and consequently line up more closely with the research hypothesis. Although the coefficient for the proportion of co-offenses is positive across all three models (suggesting that chronic offenders are more likely to engage in group offending over the course of their criminal careers), it does not achieve statistical significance net of peer influence and the controls. In other words, the proportion of an

Table 3. Logistic Regression Models Predicting Chronic Offending (N = 500)

Variable	Model 1, Chronic = 5+ Offenses		Model 2, Chronic = 15+ Offenses		Model 3, Chronic = Chronic Trajectory	
	Coeff(SE)	OR	Coeff(SE)	OR	Coeff(SE)	OR
Peer Influence (yes = 1)	−.805 (.298)	.447**	−1.930 (.670)	.145**	−1.156 (.513)	.315**
Proportion of co-offenses	.195 (.463)	1.215	.704 (.759)	2.023	.618 (.624)	1.856
Gender (male = 1)	1.276 (.314)	3.583***	1.997 (.780)	7.365*	.961 (.474)	2.617*
Race (White = 1)	−1.253 (.364)	.286**	−1.297 (.425)	.273**	−1.384 (.389)	.251***
SES	−.030 (.021)	.970	−.090 (.035)	.914*	−.086 (.031)	.917**
Age of onset	−.328 (.044)	.720***	−.258 (.057)	.772***	−.244 (.049)	.783***

Note: SES = socioeconomic status; OR = odds ratio; SE = standard error.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

offender's offenses that are committed with others does not differentiate chronic from nonchronic offenders. Finally, it is worth noting that the control variables largely behave in anticipated ways. First, across all three operationalizations of the outcome, subjects who have their first contact with police at younger ages are more likely to be assigned to the chronic offender group. Also like previous work, non-Whites and males are at greater risk for being chronic offenders. Models 2 and 3 also suggest that chronic offenders tend to have lower SES scores.[10]

Discussion

The majority of individuals engage in some form of deviance over the life course, but few individuals become chronic offenders (DeLisi 2005). Despite their relatively low prevalence, they have garnered much scholarly attention, largely because they are responsible for a disproportionate amount of crime. In articulating the pathway toward chronic offending, a number of theoretical perspectives downplay the influence of deviant peers—some go so far as to discount the criminogenic influence of peers entirely. This stands in marked contrast to the seminal role that peer influence often plays in descriptions of more "normative" offending pathways, which highlight the desire to avoid ridicule, acquiesce to peer pressure, and derive satisfaction and respect from conforming to peers' norms and behaviors, especially during adolescence (Akers 1998; Sutherland 1947; Warr 2002). Although this could lead some to conclude that peers are irrelevant to discussions of chronic offending, such an inference would ignore the fact that there are many ways that peers can "matter" over the criminal career (Haynie and Osgood 2005). For instance, at least one other way to think about the role of peers is to focus on the extent to which individuals tend to commit crimes with others. Indeed, Warr (2002) has argued that a full discussion of "companions in crime" should at least include both peer influence and group offending.

  Many scholars root their initial thoughts of co-offending in Sutherland's (1947) discussion of tutelage or Shaw's (1931) case study of the delinquent Sidney, whose deviance both in form and frequency demonstrated the influence of his criminal accomplices (Conway and McCord, 2002; McGloin and Piquero, 2010; Warr, 2002). Perhaps it is not surprising then that group offending is often thought to reflect the normative influence or social pressure of deviant peers. Although they do overlap, "'peer influence' and 'group delinquency' . . . are not necessarily analogous concepts" (Warr 2002:7). This point has been echoed by a number of other scholars (Reiss

and Farrington 1991; Stolzenberg and D'Alessio 2008; Weerman 2003), yet the co-offending literature remains anemic when compared to that on peer influence. Investigations of co-offending do exist (Carrington 2002; Conway and McCord 2002; McCord and Conway 2005; McGloin et al. 2008; McGloin and Piquero 2009; Pettersson 2003; Reiss 1986, 1988; Reiss and Farrington 1991; Sarnecki 2001, 2004; Suzuki et al. 1994), but it remains the case that researchers and theorists rarely integrate group offending into discussions about continuity/change over the life course.

A number of the (few) investigations that have moved past describing patterns of co-offending have largely attempted to highlight the similarity between deviant peer influence and co-offending, perhaps in an attempt to demonstrate that group offending is more than simply an attribute of the criminal event and deserving of empirical attention. For instance, Conway and McCord (2002) illustrated that engaging in deviance with a violent offender can increase the likelihood that a nonviolent delinquent will "switch" to violent offending. More recently, McGloin and Piquero (2010) demonstrated that the social structure of co-offender networks can also shape offending behavior (i.e., offending versatility). McCarthy et al. (1998; see also Weerman 2003) arguably took the strongest step toward articulating the unique processes underlying group offending (i.e., an instrumental decision to cooperate). Still, the extent of overlap between peer influence and co-offending continues to be murky, largely because no known empirical work has yet attempted to disentangle the two.

This void resonates quite strongly with regard to chronic offenders because one can derive somewhat opposing hypotheses about the relative prominence of these peer roles for offending pathways. In light of earlier arguments that selection and the decision to cooperate may be particularly likely for chronic offenders, a more nuanced inference about how and what kind of peers "matter" for offending pathways emerges: though chronic offenders may not offend *because* of peer influence, they nonetheless may be just as likely to offend *with* peers. Using data from the Racine cohorts, the analysis found support for this hypothesis across a number of operationalizations of chronic offending. The results suggested that chronic offenders were less likely to report that the motivation for their criminal behavior stemmed from peer influence. Though this is consistent with the views offered here, it is worthy of note that it initially appears to be in contrast to a few previous studies. Specifically, Giordano et al. (1986) found that high-frequency offenders in a sample of youth were more likely to report experiencing peer pressure, which was replicated among young female delinquents by Pleydon and Schner (2001). Neither one of these

studies focused on chronic offenders, however—for instance, Giordano et al.'s definition of "high-frequency offenders" was scoring above the median on measures of delinquency.

The findings also revealed that chronic offenders were equally likely to rely on co-offending over their criminal career when compared to their non-chronic counterparts. In addition to underscoring that peers are significant in a number of different ways, this core result also urges both theorists and researchers to acknowledge that peers do not function in a universal fashion for all offenders. Although peer influence tends not to be the cause of criminality among chronic offenders, accomplices can certainly promote persistent and frequent offending. Sharing convergence spaces and/or recognizing the benefit of cooperation with (or the exploitation of) available accomplices can make illegal acts easier. Not only may there be an increased recognition of potential criminal opportunities (e.g., Hochstetler 2001), but co-offending provides the option of distributing tasks and duties (McCluskey and Wardle 2000). As McAndrew (2000:53) has noted, co-offending "can lead to sharing new methods of committing crime, identification of potential targets, information about police activities and opportunities to be part of specific criminal enterprises." In other words, peer influence may not be the primary reason why chronic offenders engage in crime, but the broadening of criminal opportunities and the reduction of criminal effort provided by accomplices might help solidify someone on this pathway. Indeed, the fact that supplementary analyses demonstrated that chronic offenders' co-offending trajectory was remarkably similar to their overall offending pathway suggests that it would be unwise to ignore the role of group offending when studying or theorizing about chronic offenders.

These mechanisms may also be relevant for nonchronic offenders, but for them group offending could be rooted more strongly in peer influence (Warr 2002). To be sure, if transient offenders are more likely to cite peer influence as the reason for illegal behavior, the social pressures and normative influence that pushed them toward deviance may be particularly strong in group settings. Further underscoring this point, supplementary analysis revealed that nonchronic offenders tended to offend with higher numbers of accomplices. After all, research has suggested that larger collectives can motivate deviant behavior and push someone who may be naturally disinclined toward delinquency past their "tipping point" of restraint (see Granovetter 1978; McGloin and Piquero 2010). Because investigations of co-offending have not yet distinguished between chronic and nonchronic offenders, however, these views are speculative and urge empirical inquiry.

Additional work in this vein would also bolster and further shape policy lessons. Kennedy (2009) recently argued that policy and interventions aimed at reducing serious crime through deterrence must acknowledge that crime is often a collective behavior. The current findings underscore the notion that group processes are an important topic for discussion among policymakers, even if they are selectively focused on chronic or habitual offenders. But, the results also suggest that a focus on companions when developing policy should be sensitive to the different roles peers can have. To specifically combat chronic offenders, interventions should not be oriented around curbing peer influence; instead, success may emerge from focusing on limiting offender convergence spaces or developing a law enforcement campaign that characterizes group offending as more risky. This may simply push chronic offenders toward solo offending, but if group offending actually makes offending easier or broadens opportunities, then curtailing it could potentially limit the amount of offending overall. Of course, such policies hinge on the point just made—future work should focus on illuminating the meaning and purpose of co-offending for chronic offenders.

The data used for this investigation carry a number of benefits, particularly the rare ability to empirically distinguish between peer influence and co-offending. They also had the unique characteristic of following subjects past the juvenile years. This stands out among other investigations of co-offending, the great bulk of which focus on adolescence (Piquero et al. 2007). Even with such positive attributes, however, the data also have limitations worthy of note. First, the sample itself is limited. Because it is a cohort, some scholars may question how extreme the chronic offenders truly are (DeLisi 2001). The individuals identified as chronic offenders did have more serious criminal histories, both in terms of frequency and crime type, but they were not severely violent and also demonstrated a trend toward desistence in young adulthood. Other research has used these data to identify chronic offenders (D'Unger et al. 1998) and extant work has recognized that chronic offenders do decline in their offending over time (Ezell and Cohen 2005). Even so, it would be interesting to replicate the analyses here with an offender-based sample in order to confirm if the same findings emerge with truly severe offenders who persist well into older adulthood. Moreover, it is a somewhat old data set. Even though it carries the rare benefit of following individuals into young adulthood, it is possible that historical effects colored the results. For instance, despite the consistent finding that delinquency is modally a group phenomenon, Stolzenberg and D'Allesio (2008) recently found that 2002 National Incident Based

Reporting System (NIBRS) data did not support this premise. This suggests that replication attempts should also focus on more current datasets.

Second, the measures in the data also have some limitations. The peer influence measure arguably captures this specific mechanism more readily than would a measure of exposure to deviant peers (which could reflect many processes), but it would still be worthwhile to replicate the analysis here with other variants of a peer influence measure. Doing so would address the possibility that chronic offenders might simply be less willing to admit that they offend because of their peers as opposed to other reasons. Next, the data on offending and whether an offense was committed alone or with others were derived from official records. The limitations of using official records as source of offending information are well known; still, it is important to acknowledge that because this investigation measured co-offending, the data are potentially vulnerable to the "group hazard hypothesis" (Erikson 1971). Hindelang (1976) argued that law enforcement records are more likely to capture group than solo offending, potentially overestimating the relative frequency of co-offending. Still, this investigation (1) was less interested in the raw values of the co-offending proportions than it was in comparing them across offender types, and (2) there is no reason to suspect that the group hazard would be differentially more or less likely by offender type.

Finally, future research would benefit greatly from narrative data. Although the peer influence variable captures a specific process, the co-offending measure can reflect a number of mechanisms. It would be quite informative to have self-reported information on the reason/reasons why offenders act with companions over the life course. This is not an easy task, since few extant longitudinal data sets contain self-report information, let alone have questions about the pattern and meaning of group offending with other individuals. Perhaps this will be rectified as more scholars recognize that co-offending is a key attribute of the criminal career, as well as another facet of the "deviant peers" discussion (Piquero et al. 2007).

Appendix

Trajectories of Co-Offending Over Time
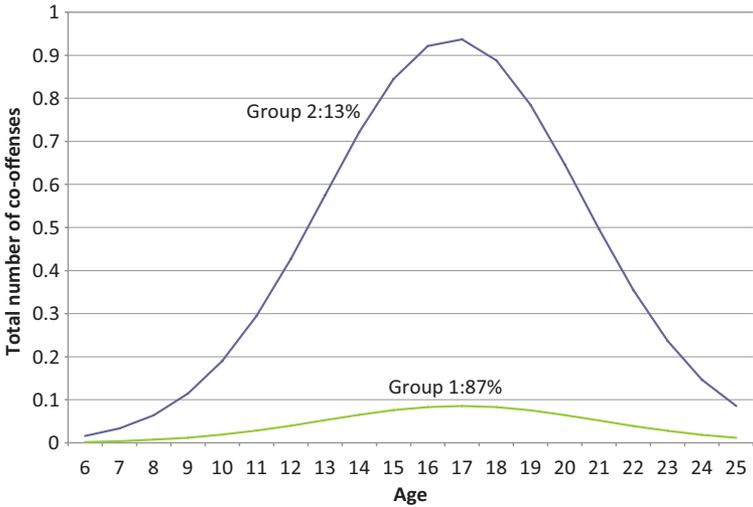
Note. One hundred percent of the individuals who were assigned to the nonchronic (overall) offending pathway (i.e., Group 1 in the measures section) were assigned to group 1 in the co-offending trajectory analysis. Approximately 90 percent of the individuals assigned to the chronic offending pathway were assigned to group 2 in the co-offending trajectory analysis (i.e., 10 percent of the chronic offenders were assigned to group 1 for the co-offending trajectory analysis). This pattern explains why the portion of the sample assigned to each group is extremely similar, but not identical, to the sample distribution across group membership for the overall offending trajectories.

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

Notes

1. Of course, the discussion of chronic offenders is also central to crime policy. The majority of states now have some form of habitual offender laws aimed at identifying and selectively enhancing sanctions for chronic offenders.
2. Data are available for the 1942 cohort through age 32, but for consistency across subjects, we only look at offending data through age 25. There is also a later cohort (1955), but information on the extent of peer influence is drawn from the interview data, which are only available for the 1942 and 1949 cohorts.
3. A subset of individuals from the 1942 and 1949 cohorts were interviewed while young adults; it is for these subjects that the data had information on the self-reported reason for offending behavior.
4. In order to check the robustness of the findings, we re-estimated all of the measures and models when excluding traffic offenses, largely because they are arguably quite minor (i.e., is a person with 5 traffic offenses really a chronic offender?), but also because they do not necessarily lend themselves to co-offending in the same way as other crimes. Recoding the data in this way logically reduced the number of subjects who qualify as chronic offenders across all three operationalizations, but the regression results are fully consistent, thereby underscoring the results from the main models.
5. It is important to note that the portions of samples comprised of chronic offenders range considerably across studies. This variation is likely due to many factors, such as the operationalization of chronic offending, whether the sample is a general cohort or offender based, as well as the age of the subjects under consideration. For instance, Wolfgang et al. (1972) noted that approximately 6 percent of the Philadelphia birth cohort had five or more police contacts by age 18, whereas Piquero et al. (2007) note that almost 13 percent of the Cambridge male cohort had at least 5 convictions by young adulthood. If one shifts the denominator to the individuals in each cohort who offended at least once, as is the case

in the current investigation, these proportions shift to 18 percent and 32 percent, respectively. Thus, the amount of chronic offending in this sample is relatively consistent with other well-established data sets often used to study this outcome.

6. The group labeled ''chronic offenders'' demonstrates a tendency to reduce offending dramatically by young adulthood. For some scholars, this may not coincide with the conception of chronic offenders. Other scholars have considered trajectories that demonstrate trends toward desisting to still be ''chronic'' (D'Unger et al. 1998; Ezell and Cohen 2005), but we certainly recognize that in the Racine data the chronic pathway does not sustain high offending into adulthood. Thus, the findings should be qualified accordingly and readers should take a broad view of the results that reflects all three outcome measures.

7. This proportion calls into question the notion that group offending is normative. But, scholars make this assertion with regard to juvenile delinquency, not in reference to offending over the life course. In this sample, for example, the average proportion of co-offenses to all offenses from ages 12 to 17 is approximately .60.

8. In this way, the data are arguably even able to separate leisure time with peers as a criminogenic risk (e.g., Osgood et al. 1996) from peer influence.

9. The first two modes are estimated in STATA, but because a subject's probability of trajectory group assignment is not 100 percent, the logistic regression for model 3 was estimated in SAS, using the proc traj program (Nagin 2005). By estimating the logit model simultaneously with the estimation of the trajectories, we were able to account for the possibility that subjects' could be assigned to more than one group. For analyses conducted outside of proc traj, subjects would be assigned to the group in which they had the greatest probability of being placed. For example, if an individual's probability of being included in the chronic group was 80 percent, we would assign him or her to that group using a traditional regression analysis. There would be a 20 percent chance of him or her being assigned to the nonchronic offender group, however. The logistic regression analysis conducted in proc traj accounts for this pattern and provides a more precise understanding of how covariates influence group assignment (Nagin 2005).

10. Of course, the fact that the proportion of co-offending does not differentiate chronic from nonchronic offenders does not mean that other co-offending patterns do not differ between the two offender types. As a first example, supplemental analyses indicated that chronic offenders—regardless of which of the three measures is employed—tend to have, on average, fewer accomplices than do nonchronic offenders. For instance, for the 15+ operationalization, chronic offenders averaged 2.57 co-offenders per group offense, whereas the

nonchronics averaged 4.18 accomplices per co-offense ($P < .01$). Second, we also completed supplementary analyses that speak to the different pathways co-offending can take over time. Recent work by McGloin et al. (2008) demonstrated that despite the general trend for co-offending to mimic the age−crime curve, there are significant variations in individual-level co-offending trajectories over time. Thus, we determined whether there was a systematic difference in co-offending pathways over time for chronic and nonchronic offenders by completing a joint trajectory analysis (see Brame, Nagin, and Tremblay 2001; Nagin 2005). This analysis provided the likely co-offending trajectory until the age of 25 for subjects conditional upon their assignment to either the chronic or nonchronic offending class. The results suggest that a two-group model best fit the data and that co-offending curves for chronic and nonchronic offenders largely "matched" their overall offending trajectories. In other words, the nonchronic offenders tend to exhibit low and flat co-offending rates over time, whereas the chronic offenders engage in higher rates of co-offending (counts, not proportions) generally, and also show a growth in this rate from onset to age 18, at which point it begins to decline. The appendix includes a graph of the co-offending trajectories.

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