



Published in final edited form as:

Criminology. 2018 February ; 56(1): 191–224. doi:10.1111/1745-9125.12167.

THE ROLE OF TURNING POINTS IN ESTABLISHING BASELINE DIFFERENCES BETWEEN PEOPLE IN DEVELOPMENTAL AND LIFE-COURSE CRIMINOLOGY*

JOHN H. BOMAN IV, THOMAS J. MOWEN

Bowling Green State University

Abstract

Turning points, between-person differences, and within-person changes have all been linked to desistance from crime. Nevertheless, the means through which between-person differences are frequently captured in life-course criminology makes them intertwined with, and perhaps confounded by, turning points in life. We propose that a new way of capturing the between-person effect—the baseline between-person difference—could benefit theoretically informed tests of developmental and life-course issues in criminology. Because they occur at one time point immediately preceding a turning point in life, we demonstrate that baseline between-person differences establish meaningful theoretical connections to behavior and the way people change over time. By using panel data from the Serious and Violent Offender Reentry Initiative, we estimate models capturing within-person change and baseline between-person differences in social bonds (family support) and differential association (peer criminality) at the time of release from prison. The results demonstrate that baseline levels of family support protect people from postrelease substance use but not from crime. Baseline between-person differences and within-person changes in peer criminality, however, are robustly related to crime and substance use. Collectively, baseline between-person differences seem critical for behavior and within-person change over time, and the results carry implications for reentry-based policy as well as for theory testing in developmental criminology more broadly.

Keywords

baseline between-individual differences; within-individual change; developmental/life course; reentry; social learning/social control

Life-course criminology is focused on the importance of transitions and turning points in understanding the process of desistance into, and across, adulthood (Laub and Sampson,

*Additional supporting information can be found in the listing for this article in the Wiley Online Library at <http://onlinelibrary.wiley.com/doi/10.1111/crim.2018.56.issue-1/issuetoc>.

Direct correspondence to John H. Boman IV, Department of Sociology, Bowling Green State University, 240 Williams Hall, BGSU, Bowling Green, OH 43403 (jboman@bgsu.edu).

SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article at the publisher's web site:

Appendix A: Construction of the Dependent Variables

Appendix B: Missing Data

Appendix C: Estimates of “Traditional” Between-Person Differences

2003). From this perspective, turning points serve as “changes in life history that separate the past from the present” (Sampson and Laub, 1993: 304). Turning points set into motion events that impact experiences across the life course that can “push” individuals into crime and encourage recidivism or “pull” individuals out of criminality and encourage desistance. Although there is some subjectivity, prosocial turning points often include pivotal life experiences such as marriage, military service, employment, educational achievements, and parenthood (Laub, Nagin, and Sampson, 1998; Sampson, Laub, and Wimer, 2006; Warr, 1998). On the other hand, turning points can also create a negative ripple effect that can “knife off” future opportunities (Moffitt, 1993). Even though individual pathways into and out of desistance vary, commonly cited negative events that may contribute to recidivism often include divorce, unemployment, arrest, and incarceration (Bersani and Doherty, 2013; Sampson and Laub, 1997).

Within the reentry literature, the findings from prior work have shown that both families and peers can usher in turning points (see Western et al., 2015: 1523). Although family support often serves as a protective factor, peer influence can serve as a risk factor (see Wright et al., 2001). Returning men and women who experience family support tend to experience more positive reentry outcomes (Ekland-Olson et al., 1983; Phillips and Lindsay, 2011; Shapiro and Schwartz, 2001), thereby contributing to the process of desistance from criminal offending and substance use postrelease (Naser and La Vigne, 2006; Visser and Travis, 2003). At the same time, returning individuals who can avoid negative peer influence tend to enjoy more positive reentry outcomes (Breese, Ra’el, and Grant, 2000; Polaschek et al., 2005; also see Western et al., 2015: 25–7). From a life-course perspective, changes in family support and peer criminality may serve as catalysts for longer term behavioral changes for returning individuals. Nevertheless, scholarship in which the respective roles of family and peers over time for returning individuals are fully assessed is underdeveloped because, as we argue, of a lack of attention provided to the unique contributions of 1) within-person change over time, 2) between-person baseline differences, and 3) the joint influence of within-person change and between-person differences.

By drawing on concepts from developmental research, life-course theory, and the reentry literature, we seek to unravel and re-explore the current understanding of how a protective factor (family support) and a risk factor (criminal peers) influence reentry outcomes. Although within-person change and between-person differences are explicitly central to developmental perspectives of crime (Laub and Sampson, 2003), in both theory and research, it is also strongly suggested that baseline levels of family support and peer criminality should condition the impact of within-person changes of the respective constructs on behavior. For instance, if an individual has high levels of baseline family support, there is little reason to think that a small decrease over time would be as detrimental as it would be for a person who began with minimal baseline levels. Alternatively, an increase in peer criminality for an individual who already had deviant peers is fundamentally different than it would be for someone who had no deviant peers at the baseline measure. By accounting for these developmentally oriented and theoretically meaningful processes, traditional and developmental theories of crime would be more precisely examined not only within the context of reentry but also within the larger scope of causal studies in criminology.

Through the use of four waves of panel data from the Serious and Violent Offender Reentry Initiative Multi-site Evaluation (SVORI), we draw on developmental interpretations of social control (Hirschi, 1969) and differential association (Sutherland, 1947) theories to emphasize the independent and interdependent nature of within-person change and between-person baseline differences in research on reentry. To test these ideas, we employ cross-lagged dynamic panel data models (Williams, Allison, and Moral-Benito, 2017), a technique that serves as the ideal vehicle through which to expand the discussion on why interactions of within-person change and between-person differences at baseline are central to developmental theories of crime generally and the reentry time-frame specifically.

SOCIAL CONTROL, DIFFERENTIAL ASSOCIATION, AND REENTRY IN THE LIFE COURSE

The classic formulation of Hirschi's (1969) social control theory is focused on between-individual differences by comparing individuals "with" strong bonds to those "without" (e.g., Krohn and Massey, 1980). As Hirschi's focus was on amounts of bonds in a cross-sectional framework (see Agnew, 1991), the theory closely fits in with the idea of between-person differences. Although some results are mixed (e.g., Giordano, Cernkovich, and Pugh, 1986; Kandel and Davies, 1991), the findings from other research tend to support the notion that those who are more bonded to various elements of society offend less (e.g., Cernkovich and Giordano, 2001) and use fewer drugs (e.g., Akers and Lee, 1999; see Jensen and Brownfield, 1983). Nevertheless, in the reentry context, between-person differences are better established, particularly in the realm of family (see Mowen and Visser, 2015). Specifically, those who have high levels of family support tend to experience more successful reentry outcomes (Shapiro and Schwartz, 2001) because the family provides the returning person with the ability to form close bonds to prosocial persons (Phillips and Lindsay, 2011).

Much like social control, the "classic" viewpoint of differential association is focused on between-person differences. Indeed, people with higher levels of deviant associates do behave more criminally than do those who have primarily normative associates (e.g., Akers et al., 1979; Pratt et al., 2010). In the reentry context, researchers have also established that higher levels of criminal peers between people relate to higher levels of offending and reincarceration. By using both qualitative and quantitative methods, Breese, Ra'el, and Grant (2000) and Polaschek and colleagues (2005) have established a positive relationship between levels of peer criminality and recidivism.

With an increasing focus on developmental and life-course research in the 1980s and 1990s spurred by scholars like Elder (1975) and Blumstein and colleagues (e.g., 1986; Blumstein, Cohen, and Farrington, 1988), researchers began exploring the notion of within-person change in social bonds and differential association. Since then, within-person change, which primarily refers to changes within an individual that occur across time and impact some form of behavior (commonly recidivism or desistance), has become central to scholars (e.g., Farrington, 1998; Loeber, 1982; Piquero, Farrington, and Blumstein, 2007; Sampson, Laub, and Wimer, 2006) and is frequently investigated in criminological literature (see Farrington,

2005; Loeber et al., 2003). In the context of social control (Hirschi, 1969; Sampson and Laub, 1993), social bonds do change as people age, and in turn, these changes impact criminality (Cernkovich and Giordano, 2001; Schroeder, Higgins, and Mowen, 2015; Schroeder and Mowen, 2014). Additionally, researchers have comprehensively evaluated how within-person changes in bonds directly and indirectly relate to behavior and recidivism. As just one specific example, moving from being married to being divorced is associated with increased criminality, in part, as a result of decreases in mechanisms of informal social control across time (Bersani and Doherty, 2013). Clearly, understanding within-person changes across time is valuable within the developmental context and carries important implications for social control theory.

Within-person change is also central to differential association and learning perspectives in the developmental and life-course framework. Although the most frequently researched differential associates are peers and friends, researchers have established that the identity of differential associates can, and does, change over time. During infancy and childhood, a child's main influence comes from primary caregivers (most often parents; Darling and Steinberg, 1993). Nevertheless, once the transition from late childhood to emerging adolescence begins, peers replace caregivers as the primary source of social influence (Buhrmester, 1996). Partially as a result of turning points like marriage, childbirth, and assuming a full-time job, peers are slowly replaced by spouses and family members as the primary source of influence beginning in early adulthood. Because parents and family members are traditionally perceived differently than peers in regard to their ability to influence criminality (e.g., Warr, 2002), the variations in the identities of the primary differential associates imply considerable within-person change over time.

From the perspective of both theoretical traditions, within-person changes are much more straightforward than between-person differences. Within-person changes demonstrate how a person's levels of bonds or criminally inclined friends vary over a set amount of time and, through longitudinal modeling, how this change impacts behavior. Nonetheless, between-person differences are conceptualized in different ways. Although we elaborate on this further in the next section of this study, a common way that between-person differences are captured is through averaging the between-person differences that exist at multiple points in time. As a result, this practice obscures and detracts from what can be derived from theoretically informed hypotheses.

In lieu of using between-person differences via the means through which they are commonly used in criminological applications, we propose another avenue through which to capture the between-individual effect: the *baseline between-person difference*. A baseline between-person difference is a developmentally focused snapshot of a theoretical characteristic that exists immediately prior to a turning point. The baseline difference is distinct from a between-person difference because it exists at only one point in time immediately prior to a transition in life. For example, and in the context of this study, an important turning point in life is release from prison. The baseline between-person difference is established prior to release. From the respective viewpoints of social control and differential association theories, levels of family support and peer criminality are reified immediately prior to release because the individual becomes forced to rely on his or her instantaneous level of

family support or deviant peer associations for assistance. Because the baseline between-individual difference is drawn from only one time point, it avoids the combining procedure inherent in traditional between-person differences, thereby allowing for a clearer and more straightforward interpretation of the contributions of theoretical constructs.

BEYOND INDEPENDENT WITHIN- AND BETWEEN-PERSON EFFECTS

Distinguishing traditional between-person differences from baseline between-person differences in longitudinal studies is only the “first step” in developing more precise tests of theory in developmental and life-course criminology. In fact, we believe two steps are necessary. In this section, we elaborate on how the concept of between-person differences is theoretically different from the notion of baseline between-person differences. Next, we discuss why life-course interpretations of social control and differential association theories insinuate that within-person change should not just independently, but instead interdependently, relate to behavior in conjunction with baseline differences between persons.

ISSUE 1: DELINEATING BETWEEN-PERSON DIFFERENCES FROM BASELINE BETWEEN-PERSON DIFFERENCES

Although they both are indicators that describe differences between people, the concept of between-person differences is distinct from the notion of baseline between-person differences in the developmental and life-course context. The first concept—between-person differences—implies an over time, multiwave process where differences between people are averaged across the number of waves available (e.g., Bersani and Doherty, 2013). This procedure is most common in the context of mixed-effects models (Rabe-Hesketh and Skrondal, 2012; see an example by Mowen and Brent, 2016:639). Although aggregating between-person differences across multiple time points can be useful, it is an entirely different theoretical concept than baseline between-person differences. That is, even though between-person differences insinuate a longitudinal process, the concept of a baseline between-person difference draws on a person’s level of a theoretically relevant construct at a critical juncture in his or her life.

Baseline differences between people closely link to the notion of turning points across the life course. When a meaningful life event occurs, contemporaneous levels of numerous theoretical constructs become immediately important to an individual. For example, an individual may be forced to rely on his or her family to provide emotional and resource-based support during the unexpected turning point of being arrested. In this case, existing levels of family support become immediately important for an individual’s ability to navigate the legal process and cope with possible criminal penalties. As a result of the potential for long-term effects of this turning point (e.g., incarceration), levels of family support immediately prior to arrest establish a baseline that could be potentially meaningful for the remainder of the individual’s life course, thereby possibly influencing many different outcomes.

The difference between a “traditional” between-person difference and a baseline between-person difference is presented in figure 1. As shown, the traditional approach averages the

between-person differences that exist at each wave and, in the process, has completely missed the fact that an important turning point has occurred prior to wave 2. Because of the aggregating procedure inherent with the traditional between-person difference, the wave containing the turning point is combined with every other wave. The use of this approach results in a conglomerated between-person effect containing the average between-person difference regardless of whether the distinct time points occur in conjunction with, or separate from, (a) life transition(s). On the other hand, baseline between-person differences (see the bottom of figure 1) capture the between-individual effect at the time just before a turning point. This process provides a measure of the between-person difference at only one wave—a time point that naturally occurs immediately prior to a critical juncture in a person's life.

As a result of the established importance of turning points (Laub and Sampson, 2003; Moffitt, 1993; Warr, 1998) and because any turning point could potentially carry long-term implications for an individual, we believe that baseline differences between people should be regarded as a separate and theoretically important between-person difference to criminologists. Without a baseline level through which to provide situational context, between-person differences represent a longitudinal process that carries a somewhat imprecise meaning for crime theory and criminal behavior. The averaging process inherent to the traditional between-person difference introduces a considerable amount of conceptual imprecision because it represents a somewhat arbitrary combination of effects that could otherwise be seen as distinct. This is exacerbated by the fact that the time period over which the traditional between-person difference is calculated may itself contain turning points. Therefore, the traditional between-person difference may be confounded by suppressed baseline between-person differences that exist in conjunction with turning points. If so, then theoretical processes that should be distinct would be combined, thus, masking over substantively meaningful baseline differences that could influence other between-person differences as well as crime itself. Instead, baseline between-person differences provide for a clearer window through which to see the between-person effect.

ISSUE 2: INDEPENDENCE AND INTERDEPENDENCE

A heightened focus on *baseline* between-person differences provides additional context in understanding the impact of within-person change on crime. Within-person changes in various theoretical constructs will likely have differing impacts on behavior depending on the individual's baseline level of such constructs. For instance, minor decreases in family support after release from prison will be less meaningful for someone with high baseline levels of family support than for someone with low levels. And minor decreases in one's level of peer deviance after release from prison could have different behavioral implications for someone who has high baseline levels of peer deviance relative to someone who has low levels. In both scenarios, the within-person changes and baseline differences are interdependent on one another. As such, the independent effects of within-person changes and baseline between-person differences should be understood with the mindset that their impact on crime may be interdependent on one another in the form of a multiplicative interaction.

The independent and interdependent nature of within- and baseline between-person differences in social bonds and differential association is not well understood in the context of reentry specifically or in the larger scope of crime generally (see several notable exceptions by Cullen [1994], Krohn and colleagues [2014], and Wright and colleagues [2001]). Nevertheless, the results of qualitative research on the reentry process strongly suggest that within-person change and baseline between-person differences should be important for both family support and peer criminality. For instance, Western and colleagues (2015:1536) described the reentry challenges during the first week out of prison for a young man named Damian. For Damian, the “biggest challenge was staying away from old friends who remained involved in local gangs. He spent most of his first week after release with family.” Although Damian was struggling to cope with high levels of delinquent peers, he could still rely on his family for support, implying that he had high enough family support at the time of release to thwart increases in peer deviance after release. If he had low levels of baseline family support, he well may have experienced strong within-person increases in criminal peers, which in turn could have increased his likelihood for recidivism.

The story told in the qualitative analysis of Western and colleagues (2015) has been echoed by other researchers. By using interviews with individuals recently released from prison, Phillips and Lindsay (2011:147) highlighted the narrative of one person who faced rejection from his family. As a result, he turned back to his friends: “I called my friends and that was bad. I don’t know anyone who doesn’t hustle [make money illegally]. That’s how I was brought up. Everyone uses [drugs]. So they gave me money and one thing led to another.” Again, we observed in this example that having low baseline levels of family support can potentially be met with increases in contacts with criminal peers after release (see further results that support this possibility by Bahr et al., 2010).

These findings regarding independence and interdependence firmly demonstrate that baseline levels of one theoretical construct could easily have interactive effects with (an)other theoretical construct(s). As such, the potential ways through which within- person change and baseline between-person differences might impact reentry outcomes are numerous, especially considering that the within-person change and baseline between-person components of each theoretical measure could exert both significant independent (i.e., main effects) and interdependent (i.e., interactive) effects.

To speak to the larger criminological research, moving toward a more advanced understanding of independence and interdependence in the effects of within-person change and baseline between-person differences must become a priority. Although interdependence has been discussed before in the context of turning points (e.g., Wright et al., 2001), the concept of the baseline between-person difference represents a different way of thinking about how a turning point can contribute to within-person change. In the viewpoint of the argument we advance, interactivity among constructs of various theoretical traditions represents an area of research primed for advancements in theoretical knowledge.

To bolster this observation, researchers studying social control and differential association theories have challenged the state of knowledge on both theories. From the social control standpoint, Scheff (2000:84) argued that there is “[n]o doubt [that] some of what we think

we know [about bonds] may not be the case.” In speaking to differential association and social learning theories, Warr (2002:88–9) argued that the term “peer influence” is a catch-all phrase that “hide[s] an appalling lack of knowledge on how peers promote delinquency.” Although neither Scheff nor Warr were speaking specifically to the concept of baseline between-person differences, they both implied the need for advancements in knowledge of how bonds and peers relate to crime. Even though there are certainly many potential solutions to the problems they identified, the concept of the baseline between-person difference represents one potential solution as it is a comprehensive concept. Although baselines and within-person changes may be capable of independently advancing knowledge on bonds and differential association, their necessary interrelatedness bears heavily on the developmental and life-course perspective on crime. Their interconnectedness to turning points further establishes the context through which a meaningful event (e.g., release from prison) might begin the process of within-person change. In the context of both Scheff’s and Warr’s statements, a more advanced understanding of the nature of independence and interdependence of within-person change and baseline between-person differences would help resolve notable shortcomings in the context of control and learning theories.

In returning now to the main goals of this article, we observe that reentry serves as the ideal vehicle through which to begin this conversation on independence and interdependence in earnest. Although many turning points might establish a meaningful baseline (e.g., marriage, arrest, illness/injury, or the onset of crime), release from prison represents one of the more fundamental and concrete turning points a person can experience. This time of transition comes with significant changes in an individual’s lifestyle as he or she must reestablish old relationships, form new relationships, and face challenges associated with finding housing and employment (Davis, Bahr, and Ward, 2013; Travis, 2005). The clarity of this turning point aids in the formation of meaningful baselines that serve as the contextual starting point through which within-person change can be understood. As individuals reenter society, they often rely on family members for support (Phillips and Lindsay, 2011; Uggen, Manza, and Behrens, 2004) and tend to return to the same neighborhoods (Kubrin and Stewart, 2006) where they may share acquaintances with criminally prone peers (see Visher and Travis, 2003), meaning that levels of family support and peer criminality are established as clear baselines immediately prior to release. As such, reentry should serve as the ideal means through which to explore how baseline between-person differences and within-person changes in theoretically grounded constructs relate to crime and substance use in both independent and interdependent ways.

CURRENT STUDY

By drawing on developmental and life-course interpretations of social control (Hirschi, 1969) and differential association (Sutherland, 1947) theories, within-person changes in bonds (i.e., family support) and differential associations (i.e., criminal peers) should affect recidivism across time. Moving beyond within-person change and traditional perspectives of between-person differences, however, turning points in life establish baseline differences between people that could be substantively important for short- and long-term behavioral outcomes. To build the discussion on how within-person change and baseline between-person differences may be meaningful for behavior, our goal with this research is to examine

how within-person changes and baseline between-person differences in family support and peer criminality are 1) independently (through main effects) and 2) interdependently (through multiplicative interactions) important for offending and substance use during reentry.

By referencing arguments made during the introduction of this article, we offer three hypotheses for this study. First, our theoretical expectations lead us to hypothesize that both baseline between-person differences and within-person changes in (H1A) family support and (H1B) peer criminality will be empirically distinct and significantly related to criminal offending and substance use. Then, by extending into the argument of how baseline levels of theoretically informed constructs can impact the effects of within-person change over time, we also expect that (H2A) baseline between-person differences in family support will condition the effect of within-person changes in family support on postrelease crime and substance use. Similarly, we expect that (H2B) baseline levels of peer criminality will interact with within-person changes in criminal peers over time. Because of the intertwined nature of family and friends during reentry (e.g., Bahr et al., 2010; Phillips and Lindsay, 2011; Western et al., 2015), we also expect that (H3A) high baseline levels of family support will weaken the detrimental effect of within-person increases in peer criminality over time. Finally, we anticipate (H3B) the negative effect of leaving prison with high baseline levels of peer criminality to be mitigated by within-person increases in family support over time.

METHOD

DATA

Data for this project are drawn from all four waves of the SVORI data set. SVORI, a federally funded initiative aimed at understanding factors relating to reentry success, was collected between 2004 and 2007 across 14 different states (Lattimore and Steffey, 2010). The overall goal of the SVORI evaluation was to examine the extent to which enhanced reentry programs like risk assessment, reentry planning, community-based resources, mental health and substance abuse treatment, and individualized supervision plans related to reintegration. Of the total sample of 1,697 males, approximately half were randomly assigned to participate in SVORI programming. The SVORI sample is similar in composition to the broader incarcerated population during the sampling timeframe (Lattimore and Steffey, 2010).

At each wave, interviewers asked respondents about meaningful factors in their lives, including measures tapping the dimensions of family support, peer criminality, criminal offending, and substance use. The first of the four waves of SVORI data was collected while respondents were still incarcerated (approximately 30 days prior to release). This wave serves as the time point through which baseline between-person differences are established. Waves 2, 3, and 4 were collected approximately 3, 9, and 15 months after release, respectively. Although a 15-month follow-up does partially restrict our ability to capture longer term desistance, the SVORI data do allow for a detailed examination into a particularly important timeframe of reentry when individuals are still adjusting to life outside of prison (Visher and Travis, 2011).

DEPENDENT VARIABLES

To examine the impact of family support and criminal peers on reentry outcomes, we rely on two indices encompassing criminal offending and substance use at waves 2, 3, and 4. To account for *criminal offending*, each respondent was asked a series of questions capturing whether (1 = yes; 0 = no) he had 1) committed a property crime, 2) sold an illegal substance, 3) committed assault, 4) committed battery, and 5) carried a weapon in an illegal manner. To account for severity of these behaviors, we weighted individual crime items based on the precedent established by Wolfgang and colleagues (1985). Each item was assigned a different weight (property crime = 2.88; selling drugs = 8.53; assault = 9.29; battery = 7.29; illegally carrying a weapon = 4.64).

After accounting for severity, the items were summed to create an index where higher scores capture a wider variety of offending. To correct for skewness in this outcome, the forthcoming results comprise a transformation of this variable via the natural log.¹ The overall mean for this logged measure is 1.288 with a standard deviation (SD) of 1.394 (range 0–3.515). The within-person standard deviation is 1.032, meaning that individuals report varying levels of offending across time. Descriptive statistics for all measures can be found in table 1.

To account for substance use, we rely on 11 questions asked of respondents concerning their use of a wide variety of substances postrelease. Respondents could respond “yes” or “no” to questions asking whether they had used 1) alcohol (a parole violation), 2) marijuana, 3) hallucinogens, 4) heroin, 5) inhalants, 6) methadone, 7) cocaine, 8) sedatives, 9) opiates, 10) amphetamines, or 11) other stimulants illegally. Although some substances (e.g., methadone) can be medically prescribed, SVORI researchers also asked respondents whether they had used any of the substances in a manner not directed by a physician to ensure that these items captured illicit substance use. As a result of using items that capture the respondent’s use of a variety of substances over a set period of time, this outcome is a measure of *polysubstance use* (see Conway et al., 2013). We use this terminology when describing this dependent variable from this point forward.

To account for differences in the various substances used, we weighted the individual items by using the precedent set by Pandina, White, and Yorke (1981). These weights, which are conceptually similar to those of Wolfgang and colleagues (see 1985), are designed to capture the severity of different substances by accounting for the fact that various substances have much different effects on the user. The weights used on the specific items were alcohol = .358, marijuana = .617, hallucinogens = .909, heroin = .976, inhalants = .969, methadone = .976, cocaine = .946, sedatives = .882, opiates = .976, amphetamines = .863, and other stimulants = .863 (see Pandina, White, and Yorke, 1981: 14).²

¹-To ensure that results were robust to various constructions of the crime outcome, we replicated the forthcoming analyses by using an unweighted variety index as well as a scale constructed from a totally different set of items. Regardless of the outcome, the substantive findings were the same. For more information on this process, we encourage the reader to see appendix A of the online supporting information. Additional supporting information can be found in the listing for this article in the Wiley Online Library at <http://onlinelibrary.wiley.com/doi/10.1111/crim.2018.56.issue-1/issuetoc>.

²-Although the weights developed by Lu (1974) and popularized by Pandina, White, and Yorke (1981) have been used several times in research (e.g., Brown et al., 1998; Bry, McKeon, and Padina, 1982; White, 1992), we explored other variants of the polysubstance use outcome to ensure validity in results. Specifically, we replicated results by using an unweighted variety index and by using a series of

After the application of the weights, the 11 items were summed together to create an index of polysubstance use. This measure, which is logged to correct for skewness, is constructed so that higher values indicate more extensive use of the various intoxicants. The transformed measure of polysubstance use has a mean of .669, an overall standard deviation of .607, a within-person standard deviation (.486) that demonstrates that meaningful change is occurring over time, and ranges from 0.000 to 2.336. The average over time correlation between the crime and polysubstance outcomes is $r = .49$.

TIME-VARIANT VARIABLES

By respectively drawing on social control (Hirschi, 1969) and differential association (Sutherland, 1947) theories, our key independent variables in this study are family support and criminal peers, both of which contain a time-variant component drawn from waves 2, 3, and 4 (described here) and a time-invariant component used to establish baselines drawn from wave 1 (described in the next section). To capture the time-variant, within-individual measure of change in *family support*, respondents were asked three opinion-based questions that are similar to other items used in research on reentry and family (e.g., Mowen and Visser, 2015). The three items read as follows: 1) "I feel close to my family," 2) "I want family in my life," and 3) "My family supports me." Measured along a 4-point Likert scale ("strongly disagree" [coded 1] to "strongly agree" [coded 4]), the returning person's responses were summed so that higher values indicate higher levels of family support. This scale has an overall mean of 7.039, a within-individual standard deviation of 1.696, and ranges from 0 to 9 (see table 1). The averaged Cronbach's reliability across all waves is $\alpha = .753$.

To capture the time-variant, within-individual measure of change in *criminal peers*, we draw from three measures asked of each respondent in the postrelease waves. Respondents were asked to report whether any of their close friends 1) were incarcerated, 2) had assaulted someone, or 3) sold drugs since the previous interview. Binary responses (1 = "yes" and 0 = "no") were summed to create a scale where higher scores indicate higher levels of peer criminality. The overall mean of this measure is 2.089 with a within-individual standard deviation of 1.152 and a range from 0 to 3.

In following prior studies, we control for several theoretically and pragmatically important time-varying measures (see table 1). The results of prior research demonstrate that married individuals often have greater access to resources (Travis, 2005), thereby promoting more positive reentry outcomes. Therefore, to account for *marital status*, we created two dummy coded variables indicating that an individual was "single" or "divorced" ("married" contrast). Overall, 72.7 percent of the sample is single, 16.5 percent are divorced, and 10.8 percent are married (see table 1). The findings reported in prior literature also highlight the importance of employment during the process of reintegration (Bahr et al., 2010; Skardhamar and Savolainen, 2014). We control for *employment* by including a binary

more contemporary weights that we established based on the Drug Enforcement Administration's drug schedule. The results reported in this study were substantively identical to the results from the other variations of this outcome (see the results for the other outcomes in appendix A in the online supporting information).

variable indicating whether each individual is employed at each wave (“not employed” contrast). The overall mean is .663, with a standard deviation of .472.

TIME-INVARIANT VARIABLES

The time-invariant variables are shown at the bottom of table 1. Concurrent with our hypotheses, we include time-invariant, baseline, between-individual components of family support and criminal peers in models. These measures are drawn from wave 1 (right before release). To account for baseline levels of *family support*, we draw data from the following questions asking reentering persons to respond to statements about family support prior to release. The items asked the individuals to consider whether 1) “I feel close to my family,” 2) “I want family in my life,” and 3) “My family supports me.” Like the time-variant component, these items were summed to create a scale with higher values representing higher levels of family support. This scale has an overall mean of 7.065, a standard deviation of 1.731, ranges from 0 to 9, and scales consistently ($\alpha = .772$).

To capture the baseline between-individual measure of *criminal peers*, we draw from three measures asked of each respondent at wave 1 prior to release. Respondents were asked whether they had a close friend who was 1) ever incarcerated, 2) ever convicted of a crime, or 3) ever had a drug or alcohol problem. Each response was binary (1 = “yes”; 0 = “no”), and items were summed to create a baseline peer criminality index ($M = 2.486$, $SD = .952$, range 0–3).

Although we discuss the use of these measures at greater length in the Analytical Strategy section, we include lagged measures of the outcomes (criminal offending and polysubstance use). These measures are identical to the dependent variables, even though they were designed to capture crime and polysubstance use immediately prior to incarceration (both measures are logged and weighted in the same manner as previously described for the outcome measures). To capture the *lagged measure of criminal offending*, respondents were asked whether they had 1) committed a property crime, 2) sold an illegal substance, 3) committed assault, 4) committed battery, and 5) carried a weapon illegally. This measure has a mean of 2.119, a standard deviation of 1.236, and ranges from 0.000 to 3.426. To capture *lagged polysubstance use*, respondents were asked whether they had used 1) alcohol, 2) marijuana, 3) hallucinogens, 4) heroin, 5) inhalants, 6) methadone, 7) cocaine, 8) sedatives, 9) opiates, 10) amphetamines, or 11) other stimulants illegally. This index has a mean of 1.274, a standard deviation of .559, and ranges from 0.000 to 2.336.

To account for *age*, we include a variable representing the respondent’s age at wave 1. This measure has a mean of 29.47 (the median is 28.00), a standard deviation of 7.291, and ranges from 18 to 69. The results of prior work also show that reentry experiences and outcomes vary by race (Wehrman, 2010). Therefore, to account for differing reentry outcomes by *race*, we include two dummy variables representing whether the individual is Black (53.2 percent of the sample) or other race (12.4 percent of the sample), and we use White as the contrast group (34.4 percent of the sample).

Because individuals who are incarcerated for longer terms may experience more difficulty reintegrating than those incarcerated for shorter terms (Travis, 2005), we also control for

length of incarceration. This variable is measured as the total number of days each individual was incarcerated. This measure has a mean of 917.3 days (about 2.5 years), a standard deviation of 932.4, and ranges from 44 to 9,486 days. Despite the SVORI sample containing only severe and violent offenders who are probably more “at risk” than most, there are still between-person variations in risk level within these data. To account for the person’s level of risk, we include a variable representing the total number of *prior convictions* each respondent reported. The average number of prior convictions is 5.97 with a standard deviation of 8.27 and ranges from 1 to 90. As both length of incarceration and number of prior convictions are skewed, we use their natural logarithms in the analysis.

As a result of previously observed differences in correctional outcomes based on the type of crime for which a person was convicted (e.g., Durose, Cooper, and Snyder, 2014), we also control for whether the respondent was convicted of a *violent crime* (16.8 percent of the sample), a *drug crime* (21.0 percent of the sample), or a *property crime* (11.4 percent of the sample). Captured by binary measures, these three types of convictions are contrasted against those who reported they were convicted of some “other” kind of offense. Additionally, because having criminally inclined family members can impact crime (e.g., Farrington, Lambert, and West, 1998; Lyngstad and Skardhamar, 2016), we further protect against spuriousness by including a variable indicating whether the respondent had a family member who had ever been incarcerated (1 = “yes”; 0 = “no”). Nearly 75 percent of the men in the sample reported having a family member who met this criterion.

Although the findings from peer-reviewed research (Wallace et al., 2016) and federal reports (Lattimore and Visher, 2009) comprising the SVORI data set demonstrate few differences between SVORI participants and nonparticipants, we control for whether the individual was identified as a *SVORI participant* by including a dummy variable (“1” = SVORI participant; “0” = nonparticipant). As shown in table 1, 54 percent of the sample were SVORI program participants.

MISSING DATA

Like nearly all large-scale, panel data sets, there are missing data present in the SVORI data set. Of the 1,697 individuals in the original sample at wave 1, the current analysis includes a total of 962 respondents. Although this represents approximately 43 percent attrition, the findings from prior work with the SVORI data—including a federally funded evaluation by the Urban Institute (Lattimore and Steffey, 2010)—demonstrate that respondents within the sample at wave 4 do not significantly differ from the sample at wave 1 in any meaningful capacity. Nevertheless, to reconfirm these findings, we estimated a series of *t* tests that compared our target respondents with those who dropped out across the measures used in this analysis. No *t* value reached statistical significance, supporting the assumption that the data are missing at random as well as prior findings from SVORI primary investigators (Lattimore and Steffey, 2010; Lattimore and Visher, 2009) and researchers (Stansfield et al., 2017; Wallace et al., 2016). Furthermore, to ensure that results were not being affected by patterns of missingness, we performed an identical series of analyses to those described in the next section using full-information maximum likelihood (FIML) imputation, the preferred method of imputing missing values in cross-lagged dynamic panel data models

(Moral-Benito, Allison, and Williams, 2017; Williams, Allison, and Moral-Benito, 2017). The results were substantively identical regardless of sample size. Despite the similarity, we chose to keep the models as conservative as possible by presenting results with 962 persons. We encourage the reader to see appendix B of the online supporting information for a detailed description of how missing data patterns were accounted for in this study (the results from imputed models are also presented in the online supporting information).

ANALYTIC STRATEGY

To gain an understanding of the time-variant (within-person) and time-invariant (baseline between-person) effects of family support and criminal peers on criminal offending and polysubstance use after release from prison, we use a cross-lagged dynamic panel data model (see Allison, 2015). This method is similar to a mixed- or a fixed-effects model but with key advantages necessary in the context of the current research. First, researchers have long established that often the best predictor of future behavior is past behavior. This ideology was succinctly summarized 30 years ago when Gottfredson and Hirschi (1987) reported on a conference presentation given by Matsueda (1986), who concluded that “delinquent behavior is determined largely by previous delinquent behavior” (see Gottfredson and Hirschi, 1987: 592; also Matsueda, 1982, 1989). From a modeling perspective, this refers to a lagged measure of the dependent variable. Despite the substantive need to use prior behavior as a predictor of later behavior, lagged measures of the dependent variable cannot be included in fixed- or mixed-effects models because the lagged outcomes are not independent of the error terms of the other predictor variables in the equation (see Achen, 2001; Allison, 2015; Johnson, 2005; Raudenbush and Bryk, 2002). A cross-lagged dynamic panel model—a somewhat new statistical approach—overcomes this issue by estimating a series of progressive chained equations over time to satisfy the assumption of independence. Therefore, a major strength of dynamic panel data models to criminological research generally, and this project specifically, is that they can validly include a lagged measure of the dependent variable without violating independence assumptions (Williams, Allison, and Moral-Benito, 2017).

The second consideration concerns how between-individual differences and within-individual changes are modeled together. Although powerful tools for criminologists to examine change across time, fixed-effects models fail to model important between-individual differences as they are focused only on within-individual changes. As we have argued, this presents a significant limitation to life-course and developmental criminology. When we use the current study’s goals as an example, an increase in peer criminality for someone who has high baseline levels of criminal peers is qualitatively different than a similar increase for someone who has no criminal peers at baseline. Necessarily, a fixed-effects model would fail to account for these baseline between-individual differences. Additionally, mixed-effects models carry their own set of limitations in the context of developmental and life-course criminology. Although they can be used to estimate both levels of effects (within-person change and between-person differences), mixed models are susceptible to issues of endogeneity (Rabe-Hesketh and Skrondal, 2012). Furthermore, the between-individual effect is often an aggregate measure representing multiple points of

within-individual change (Osgood, 2009), therefore combining a series of dynamic processes into a single, static measure of between-person differences (refer to figure 1).

In a resolution to the shortcomings of both fixed- and mixed-effects models, a key advantage to the cross-lagged dynamic approach is that it can estimate a fixed-effects model while concurrently including time-variant, between-individual differences (see Allison, 2015; Williams, Allison, and Moral-Benito, 2017). Consequentially, the cross-lagged dynamic panel model can simultaneously 1) include a lagged measure of the dependent variable, 2) estimate important between-individual baseline differences, and 3) capture within-individual change.

Specifically, the cross-lagged dynamic panel data model allows for the $t-1$ measure of the dependent variable to influence the time-variant effects directly in the equation while estimating strictly exogenous independent effects on y (that is, exogenous effects without the effect of $t-1$). The cross-lagged approach, as used in this study, uses the equation

$$y_{it} = \lambda y_{it-1} + x_{it}\beta + w_i\delta + \alpha_i + \varepsilon_t + v_{it}$$

where baseline between-person differences are captured in the time-invariant vector w_i .

In this equation, y_{it-1} represents the lagged outcome for person i at time t , x_{it} is a vector of the sequentially exogenous components (the within-person change portions) of the independent variables, w_i is a vector of time-invariant exogenous measures (including the baseline levels of family support and criminal peers drawn from wave 1), δ is a constant that represents the unit of time (which always takes a value of “1”), α_i represents the fixed effect at each wave and freely co-varies with all time-varying exogenous (strictly exogenous as well as sequentially exogenous) measures, ε_t captures unobserved similarity across waves, and v_{it} is the time-variant error across persons.

As a type of structural approach, traditional model fit indices (the root mean square error of approximation [RMSEA] and Bentler’s comparative fit index [CFI]) are the most appropriate way of assessing closeness of model fit to the data. As Williams, Allison, and Moral-Benito (2017:17) noted, χ^2 values are often less than ideal for assessing goodness of fit because “it may be hard to find any reasonably parsimonious model that yields a p -value greater than .05.” Accordingly, and following the recommendation of Williams and colleagues, the χ^2 statistics we report compare the estimated models with saturated models. In the case of these comparison tests, higher p values for the χ^2 statistics indicate better fitting models (see Williams, Allison, and Moral-Benito, 2017: 17). A nonsignificant χ^2 value would indicate the ideal scenario where the estimated model fits the data as closely as a saturated model (see Williams, Allison, and Moral-Benito, 2017:17–8, for a discussion on goodness of fit in cross-lagged dynamic panel models).

As our key theoretical argument is that baseline, between-individual differences in family support and criminal peers will likely interact with within-individual changes in family support and criminal peers, we estimate a series of dynamic cross-lagged panel data models for both the criminal offending and polysubstance use outcomes in a model-building

procedure. In each model, the within-person change effects are level 1 components and the baseline between-person differences are level 2 components. In model 1, we include all independent measures in a full model. In model 2, we introduce a cross-level interaction term encompassing baseline, between-individual differences in family support (level 2) acting in conjunction with within-individual changes in family support (level 1). In model 3, we replace that interaction with another interaction that assesses the impact of baseline between-individual differences in criminal peers (level 2) with within-individual changes in criminal peers (level 1). To examine how criminal peers and family support interact, model 4 presents a multiplicative interaction capturing baseline levels of family support (level 2) alongside within-individual changes in criminal peers (level 1). Finally, model 5 estimates an interaction capturing baseline levels of criminal peers (level 2) in conjunction with within-individual changes in family support (level 1). All interactions are products of grand-mean-centered measures of family support and peer criminality.

RESULTS

PRELIMINARY FINDINGS

Prior to presenting results from multivariate models, we discuss some basic, but informative, preliminary results. A visual depiction presented in figure 2 demonstrates the extent of within-person changes over time for our key predictors. As shown, few people in our sample failed to experience within-person change in levels of family support or peer criminality from waves 1 to 4. Overall, approximately 5 and 13 percent of people failed to experience any change in family support and peer criminality, respectively. Although it was also uncommon for people to experience only increases over time in family support (11 percent of people) or criminal peers (7 percent), it was even more rare for people to experience only decreases (nobody for family support and 5 percent for peer criminality). Instead, the “mixed changes over time” portion of figure 2 demonstrates that it was extraordinarily common for people to experience both increases and decreases in family support (84 percent) and criminal peers (75 percent) over the four waves of data. As such, wave-to-wave within-person change is common,³ meaning this analysis should be able to inform how baseline between-person differences may interdependently relate to within-person change.

In addition to examining the extent to which within-person change was occurring, we estimated a series of mixed-effects models to compare the traditional between-person difference with the baseline between-person difference. These models, which can be seen in full detail in appendix C of the online supporting information, demonstrated two key things. First, the use of a traditional between-person difference for family support and peer criminality introduces several violations of basic assumptions of regression, including issues regarding temporal order, error independence, equality, and endogeneity. Second, and perhaps more importantly, a comparison of results produced by traditional and baseline between-person differences demonstrates that the two techniques produce substantively different findings for key theoretical variables. The forthcoming multivariate results using a baseline between-person difference avoid these statistical violations, and thus, they are more

³The most common change between any pair of time points was a two-unit increase/decrease in family support (a 20 percent change based on a 0- to 9-point metric) and a one-unit increase/decrease in criminal peers (a 25 percent change based on a 0-3-point metric).

likely to produce precise estimates of key theoretical predictors. We encourage the reader to refer to the online supporting information for a more detailed comparison of the two techniques.

CRIMINAL OFFENDING RESULTS

The first series of cross-lagged dynamic models regress criminal offending onto family support, peer criminality, and other predictors (see table 2). The main effects model (see model 1) shows evidence of close fit to the data based on the RMSEA and CFI. Despite the closeness of fit, neither the baseline between-person difference nor the within-person change components of family support reach statistical significance, failing to support H1A (change, however, is close to being significant [$p = .07$]). Nevertheless, the baseline between-individual differences and within-individual change components of criminal peers both significantly relate to criminal offending, strongly supporting H1B. Substantively, this finding reveals that between-individual differences in family support prior to release fail to relate significantly to criminal offending postrelease after accounting for the influences of the other covariates in the model. Furthermore, within-individual changes in family support also do not relate to decreases in offending across time. On the other hand, individuals with higher levels of peer criminality prior to release *and* individuals who report increases in peer criminality across time both report higher levels of criminal offending than do their counterparts. Control variables also indicate that criminal offending prior to incarceration is significantly and positively associated with criminal offending postrelease. In addition, younger individuals commit significantly more crime after release than do older individuals. And those who have reported more prior convictions are significantly more likely to engage in criminal offending after release.

Model 2 introduces an interaction term that represents the product of baseline family support in conjunction with changes in family support. The main effects in model 2 remain substantively similar to those in the prior model. Nevertheless, the interaction term fails to reach significance, failing to support H2A and suggesting that baseline between-individual differences in family support fail to condition the effect of changes in family support on criminal offending postrelease.

Model 3 introduces a term capturing baseline between-individual differences in criminal peers interacting with within-individual changes in criminal peers. Again, the main effects of the independent variables remain substantively identical to prior models. This interaction term, however, also fails to reach significance, suggesting that baseline between-individual differences in criminal peers are independent from within-individual changes in peer criminality for criminal offending after release (and failing to support H2B).

To examine how peer criminality and family support interact, model 4 introduces an interaction term capturing baseline between-individual differences in family support with within-individual changes in criminal peers. This interaction term fails to reach significance, failing to support H3A and suggesting that the detrimental impact of increases in peer criminality on criminal offending is not offset by baseline between-individual differences in family support.

Finally, model 5 introduces an interaction term capturing baseline between-individual differences in criminal peers with within-individual changes in family support. Even though the main effect of within-person change in family support is not statistically significant (the p value is, however, still below .10), this interaction is statistically significant and negative in direction (supporting H3B). This finding reveals that increases in family support across time help to offset the impact of baseline between-individual differences in peer criminality on offending. Put differently, although persons with higher baseline levels of peer criminality are more likely to offend after release, their offending is significantly reduced if they experience increases in family support across time. As such, within-person increases in family support seem important for offending because they reduce the harmful, baseline effect of criminal peers on crime.

POLYSUBSTANCE USE RESULTS

A similar set of models in table 3 is used to examine relationships among the same predictors and the outcome of polysubstance use. In the main effects model (model 1), which again shows evidence of extremely close fit to the data based on the RMSEA and CFI, baseline between-individual differences in family support significantly relate to polysubstance use postrelease. The direction suggests that lower levels of baseline family support are related to higher levels of polysubstance use over time. Nevertheless, within-individual changes in family support are not significantly related to polysubstance use postrelease, providing only partial support to H1A. In turning to the measures of peer criminality, both levels of effects are significantly associated with polysubstance use in a positive direction, supporting H1B. This finding reveals that higher baseline levels of peer criminality *and* increases in peer criminality over time independently relate to higher levels of postrelease polysubstance use. Although the respondent's prior use of various intoxicants is unrelated to future polysubstance use, employment is significantly associated with decreased polysubstance use, Black respondents' use is significantly less than that of Whites, and shorter sentences, higher numbers of prior convictions, and previously being convicted of a property crime are all associated with significantly higher amounts of polysubstance use after release.

Model 2 introduces a term capturing baseline between-individual differences in family support interacting with within-individual changes in family support. Although the main effects are substantively similar to those in model 1, the interaction term fails to reach significance, leading to the rejection of H2A. This findings reveals that increases in family support over time do not condition the protective effect between high baseline levels of family support and polysubstance use.

Model 3 introduces an interaction term capturing baseline levels of criminal peers alongside over time changes in peer criminality. Again, the effects of the independent variables remain substantively similar, and the interaction term fails to reach levels of statistical significance (failing to support H2B). Accordingly, baseline differences in criminal peers between people do not seem to condition increases or decreases in peer criminality across time in the context of polysubstance use.

Next, an interaction term capturing baseline levels of family support and changes in peer criminality is introduced (model 4). Again, the main effects seem consistent with prior models. The interaction fails to reach significance, leading to a rejection of H3A and suggesting that baseline between-individual differences in family support and within-individual changes in criminal peers are independent in their effects on polysubstance use.

Finally, model 5 introduces an interaction term capturing baseline between-individual differences in criminal peers and within-individual changes in family support. The result of this interaction, like that of the prior analysis with criminal offending, is statistically significant and negative (supporting H3B). Again, statistical significance is reached in this interaction despite the main effect of within-person change in family support not reaching statistical significance. This finding reveals that over time changes in family support condition the relationship between baseline levels of criminal peers and polysubstance use postrelease. Specifically, increases in family support across the reentry timeframe significantly reduce the detrimental effect of high levels of criminal peers at baseline. We now turn our attention to placing results into the specific context of reentry literature and into the broader context of developmental and life-course criminology.⁴

DISCUSSION AND CONCLUSION

In a developmental and life-course framework, the goal of this project was to explore the possibility of both within-person change and between-person differences at baseline for markers of social bonds and differential association during the period of reentry. With control variables in place for prior behavior, the results from a series of cross-lagged dynamic panel models demonstrate that baseline between-person differences and within-person change both carry important independent and interdependent meanings for crime and polysubstance use during the reentry process. In this section, we review the implications of findings for reentry before discussing how this research fits into the broader context of life-course criminology.

Although both baseline between-person differences and within-person changes in peer criminality were consistently predictive of offending and polysubstance use after release from prison, various effects for family support were observed. Even though within-person changes in family support were close to reaching significance in their main effects for criminal offending (the p value was .07), such changes did not approach significance for polysubstance use. Meanwhile, baseline differences did significantly relate to polysubstance use, collectively indicating a considerable level of complexity in how family support relates to postrelease behavior. Although it shares a nuanced relationship with crime and polysubstance use, the fact that family support seems to make a difference for behavior provides a reason to revisit findings from other studies that question its contribution during reentry (e.g., Mowen and Visher, 2015). In short, these findings reveal that when family

⁴To explore the possibility that there may be a conditional relationship between our key variables and enhanced treatment, we estimated an identical series of models (unreported) that interacted family support and peer criminality with participation in the SVORI program. No interaction approached significance, indicating that SVORI programming was not influencing family support or peer criminality in a manner that influenced behavior. We thank an anonymous reviewer for suggesting these relationships be explored.

support does exert a significant or marginally significant, independent effect on behavior, it serves as a protective factor (see supporting results by Ekland-Olson et al., 1983; Naser and La Vigne, 2006; Phillips and Lindsay, 2011; Shapiro and Schwartz, 2001). Even though family support seems to protect persons, the results from the baseline and within-person change components consistently demonstrate that having criminally prone peers is a robust risk factor. When we look at the entirety of the independent effects of family support and peer criminality in this study, it is clear to us that peer criminality is a robust and consistent predictor of illicit behavior during reentry. In fact, given the consistent findings across models, the results seem to suggest that peer criminality may predict offending more than family support protects from it during the reentry process.

Despite the importance of baseline, between-person differences in family support and within-person change and baseline differences in peer criminality, it is noteworthy that the baseline-change interactions in family support and peer criminality were both respectively nonsignificant. In other words, baseline levels of family support do not condition the impact of change in family support over time on criminal offending or polysubstance use, and in a similar fashion, baseline levels of peer criminality fail to condition within-person changes in peer criminality over time. In regard to the lack of the interaction for family support, it is noteworthy that mean levels of family support were high despite the fact that most people experienced increases and decreases in family support over time (see the descriptive statistics in table 1 and within-person changes in figure 2). Collectively, this may have limited the variance of the interaction, thereby leaning the term toward nonsignificance. As such, future researchers using different measurement methods that allow for more variability should consider attempting to replicate this finding. When we focus on the baseline-change interaction for peer criminality, it is clear to us that baseline levels of peer criminality are critical for offending and polysubstance use during reentry. Furthermore, increases in peer criminality over time are equally critical for behavior. Nevertheless, these two effects are not interdependently meaningful for postrelease criminal behavior or polysubstance use.

Despite the nonsignificant interactions of baseline levels and within-person change in family support and peer criminality, the concept of these interactions being possible and substantively important for the etiology of criminal behavior rests on strong theoretical ground. It makes considerable sense to expect that baseline levels of any particular theoretical construct after a turning point in life may condition the way that within-person change over time affects behavior. Although these interactive effects were not observed for the baseline-change interactions for the respective constructs of family support and peer criminality, it should be noted that our empirical focus only lies in how variables derived from two theories relate to offending during the specific time of reentry. Accordingly, researchers drawing on different research questions and goals should strongly consider including interactions like these in future developmental research.

When we used another type of cross-level interaction, we also examined the interdependent effect of baseline levels of family support with within-person changes in criminal peers. This interaction was also not significant, suggesting that having low levels of family support at baseline do not necessarily mean that a person's criminal offending or polysubstance use will be affected by immediate increases in peer criminality. Although family support is well

established as being meaningful for desistance processes during reentry (e.g., Naser and La Vigne, 2006; Visher and Travis, 2003; cf. Mowen and Visher, 2015), further developing the knowledge on how baseline levels of family support work interdependently with change in peer criminality for offending and polysubstance use over time seems imperative, especially considering that the nonsignificance of this interaction contradicts the results of prior research that demonstrate that criminal peers may step in to fill the gap left by a lack of family support (Phillips and Lindsay, 2011: 147).

The fourth interaction—the baseline peer criminality and within-person change in family support interaction—was statistically significant for both criminal offending and polysubstance use. This result indicates that the criminogenic effect of having criminally prone peers at the time of release from prison can be offset by increases in family support over the reentry time period. This finding is particularly noteworthy considering that within-person increases in family support were not robustly related to either crime or polysubstance use. Thus, instead of within-person increases in family support playing a critical independent role during the reentry process, its contribution is much more poignant from an interactive, interdependent perspective (see Wright et al., 2001; cf. Mowen and Visher, 2015). That is, it becomes apparent how important within-person increases in family support are to returning persons only after accounting for baseline between-person differences in peer criminality. In this case, then, it seems that a substantively meaningful within-person effect would have been entirely missed if not considered in the context of offsetting the effects of a baseline between-person difference. Collectively, this finding supports the notion that within-person changes are highly contingent on baseline between-person differences that are reified immediately prior to a turning point in life.

These findings also pertain to policy. Prior to discussing policy recommendations, however, this study carries several limitations (see the following pages) that make policy recommendations tenuous. Suggestions for criminal justice practice are also always at their strongest after replication. Therefore, we encourage future scholars to conduct research to reinvestigate these recommendations. With this noted, two things could be implied from this study. First, our findings make it seem imperative that policy makers and practitioners place considerable effort into decreasing people's levels of peer criminality as much as possible while in prison. Although some programs include a peer component (e.g., see Silva and Hartney, 2012), the findings reported by the National Institute of Justice (2002: 2) demonstrated that nearly three quarters of state corrections agencies have programs in place to help incarcerated men and women “maintain supportive family relationships.” Although family will almost certainly continue to carry an important role in future programming, our results allude to the possibility that policy makers and practitioners may be currently underemphasizing peers as an effective strategy through which to influence postrelease behaviors. When we draw on this observation, there are several potential means through which peer-based components could be incorporated into existing programs. For instance, incentives could be given to those who do not correspond with criminally inclined friends or to those who keep negative peer influences off visitation lists. Alternatively, or additionally, avoiding deviant friends while incarcerated could be used as a factor in parole decision-making. Despite the means through which it is done, practitioners should be working to

fracture and break apart friendships that persons have with criminal peers during the period of time they are in prison.

A second policy implication based on this significant interaction term is that it may make considerable sense to encourage persons who are about to be released to increase postrelease levels of family support over time, although perhaps for different reasons than current policies might expect. Instead of exerting a straightforward independent effect on crime and polysubstance use, increases in family support seem to condition away the baseline criminogenic effect of deviant peers for both criminal offending and substance use. When we consider the strength of the effect of baseline levels of criminal peers in this study, we find that having the knowledge that increases in family support could reduce this harmful effect over time could prove to be extraordinarily valuable if this finding can be replicated.

Therefore, when we step away from reentry-based findings, we observe that this study carries larger implications for research in the area of life-course criminology. First, and perhaps most importantly, baseline between-person differences are conceptually distinct from traditional between-person differences. Based on a comparison of the two methods of capturing the between-person effect, it is clear that the traditional between-person difference is not just substantively, but also empirically, different than the baseline between-person difference (see the online supporting information). Instead of averaging between-person effects over time as would be the case in the traditional between-person approach, the baseline between-person difference—when used with a turning point in life (like release from prison)—is more precise and more meaningful.

To build on this point, we find that baseline differences—in addition to being significantly related to each outcome in different ways—are empirically distinct from within-person change consistently throughout this analysis. This result highlights one of the main issues in using a single coefficient to represent each theoretically informed independent variable. The use of this approach, which is extremely common with mixed-effects models (the “most popular approach to longitudinal data analysis” [Allison, 2015: np]), results in having one coefficient that represents the combined contribution of the variable’s within-person change and between-person difference (either traditional or baseline) components. To build on our results and on other scholars’ arguments (Bersani and Doherty, 2013; Osgood, 2009), then, we would have suffered a tremendous loss of valuable theoretical knowledge and policy-based recommendation ability if only one coefficient had been used to represent the respective effects of “family support” and “peer criminality.”⁵ Perhaps most importantly, the conceptual clarity in, and comprehensiveness of, the concept of baseline between-person differences has made the use of two distinct effects for each measure straightforward.

When we extend beyond how baseline between-person differences are conceptually distinct from within-person change, we find that a second implication for life-course criminology is focused on the interdependence of effects. Although only one interaction reached statistical significance, the notion that there may be interactive relationships among the within-person change and baseline between-person difference components of theoretically informed

⁵ Findings relevant to this statement are available in appendix C of the online supporting information

variables is valuable. The awareness of possible interactivity carries the advantage of establishing theoretical comprehensiveness by expanding on the well-received notion that the best explanation of crime may stem from an integrated theoretical context (e.g., Braithwaite, 1993; Elliott, Ageton, and Canter, 1979; Sampson and Laub, 1994; Thornberry, 1987; Wolfgang and Ferracuti, 1967).

To expand on the notion of theoretical integration, it is worth emphasizing that we have designed this study to follow others by treating family support as a marker of social bonds (e.g., Mowen and Visher, 2015). Nevertheless, this measure applies to more than just social control theory. Because the measure of family support directly taps a person's support mechanisms, it fits clearly into the social support perspective introduced by Cullen (1994) and into the closely related notion of differential coercion and social support introduced by Colvin, Cullen, and Vander Ven (2002). As integrated concepts, both theoretical perspectives hinge on the belief that "social support prevents crime" while being compatible with differential association (see Colvin, Cullen, and Vander Ven, 2002: 25). As such, the results in this study support Cullen's and Colvin and colleagues' perspectives resulting from the theories' incredible flexibility. Going beyond this, however, the relevance of findings to the support-based constructs underscores the notion that baseline between-person differences can advance the understanding of more recent, "integrated" theories as well as that of more "traditional" theories like social control (Hirschi, 1969) and differential association (Sutherland, 1947). Consequentially, the baseline between-person difference seems to carry the advantage of being applicable to a wide array of criminological theories from viewpoints of both independence and interdependence.

A third observation, which is closely tied to the second, is focused on the new technique of dynamic cross-lagged panel data modeling. By drawing on the three-decade-long history of cross-lagged modeling in criminology (e.g., Matsueda, 1989), the cross-lagged dynamic panel model made it easy to capture baseline between-person differences, within-person change, and interactions between the two components. Furthermore, the use of this longitudinal modeling strategy controlled for prior crime (which remained significant) and polysubstance use (which was not significant) without violating assumptions of independence. Overall, this tool has proven to be extremely flexible and thorough, meaning that it could potentially become a valuable technique through which to explore issues relevant to developmental and life-course criminology.

Despite some valuable techniques and findings, our study carries several important limitations. First, the SVORI data contain a selective sample of only male offenders in several states who are classified as high risk. Despite the demographics of the sample closely representing the larger male prison population in terms of ethnicity, race, and socioeconomic status (see Beck and Harrison, 2006), it may be difficult to assume that the persons in the SVORI data represent the larger population undergoing reentry in the United States. There is also ample evidence that females have higher levels of relationship quality compared with men (Boman et al., 2012; Brendgen et al., 2001; also see Giordano, Cernkovich, and Pugh, 1986), meaning that the results in this study may not be applicable to women undergoing the reentry process.

Second, it could be that the SVORI programming that was assigned to approximately half of the persons in the sample could have affected our results, particularly the lack of a significant lagged substance use effect. Although we attempted to control for this by including whether the person underwent SVORI programming and investigating interactions between the program and our key variables (see footnote 3), we cannot dismiss the possibility that suppressed effects of the programming could have influenced the relationship of other predictors' effects on postrelease crime and polysubstance use. This limitation may be somewhat tempered by findings from follow-up investigations in which it was suggested that significant behavioral effects of SVORI programming were brief (Lattimore and Visser, 2013).

Third, there are limitations within the measures of peer criminality. The three items we use fail to capture the proportion of one's friends who are deviant. Instead, they more precisely capture whether a person had at least one friend who was criminally involved at each point in time. We also cannot account for measures of peer offending that come directly from the friend's self-reports. This poses a problem because respondents are not necessarily correct in perceiving whether a friend has offended (e.g., Boman and Ward, 2014). Instead, respondents generally tend to err on the side of their own behavior (e.g., Young et al., 2014), meaning the coefficients of peer criminality in this study could have been artificially inflated as a result of recall error. Although corrections for perceptual inaccuracy exist in the structural context (see Matsueda, 1982; also Boman, Rebellon, and Meldrum, 2016; Rebellon and Modecki, 2014; Young et al., 2014), researchers have yet to establish how these methods may apply to peer measures that are separated into distinct effects of change and baseline differences (see Boman et al., 2014). Having the knowledge of how to account for perceptual inaccuracy in this context would be useful. We believe that the data used by Weerman and Smeenk (2005) and others (e.g., Young et al., 2014) would be ideal to provide a solution to this issue.

Fourth, there are several other limitations in the measures used in this study. The polysubstance use outcome contains drug measures that are also crimes, perhaps contributing to a moderate similarity between the measures. The independent variables also contain subjectivity in how they could be interpreted. To provide one example, a respondent "wanting" to have his family in his life is not a direct indicator that his family *is* in his life. Because some variables were captured with only several items, similar issues could have limited the variance within various indices and scales. Variability was also inherently limited in several items as a result of the nature of the sample (e.g., most people had a family member who was incarcerated). Additionally, people choose their friends but not their families. We lack a way of capturing this selection effect in this analysis (see Young, 2011). In a similar vein, the median age for persons in our sample is 28 years old, an age where the peer effect is decreasing (Warr, 2002), meaning the findings, and policy recommendations, may vary in a sample that uses younger or older offenders. Collectively, the limitations in the measures bolster the observation that this study is not a full test of either Hirschi's (1969) or Sutherland's (1947) theories or how they may apply to Cullen's (1994) and Colvin, Cullen, and Vander Ven's (2002) concept of social support.

Fifth, and bearing on the recognition that protective and risk factors may be independently and interdependently meaningful for behavior, it is important to note that we have captured only one protective factor (family support) and one risk factor (criminal peers) in this study. The reality is that family and friends represent only a portion of the many potential protective and risk factors for persons undergoing reentry (see Bahr et al., 2010), meaning we fall far short in this analysis of providing a full test of how protection and risk may relate to turning points, baseline differences, and change over time. Despite some limitations, however, our findings still carry important implications for both reentry research and the broader scope of developmental and life-course criminology by demonstrating a newer viewpoint as to how turning points, baseline between-person differences, and within-person change may be interrelated.

There is considerable conceptual and applicative merit of capturing within-person change in conjunction with baseline between-person differences. Nevertheless, release from prison serves as a conceptually distinct life event from many other occurrences (e.g., arrest, childbirth, and marriage). Because criminologists have encountered considerable difficulties in definitively concluding how major turning points like marriage incite desistance (e.g., Giordano, Cernkovich, and Holland, 2003; Laub and Sampson, 1993; Lyngstad and Skardhamar, 2013; Warr, 1998; see also Sampson and Laub, 2005, and Robins, 2005: 64), it is noteworthy that marriage, as well as many other on-time and precocious turning points like arrest, victimization, childbirth, military service, the acquisition of criminal peers, and the onset of crime (to name only a few), clearly fit into the context of a baseline between-person difference. Although traditional between-person differences may be useful in certain capacities, baseline between-individual differences provide a methodologically and theoretically precise way to understand short- and long-term behavioral changes based on events that alter a person's life-course. And despite the strong foundational understanding of how many different types of turning points can incite behavioral change, the notion of independence and interdependence of within-person change and baseline between-person differences provides a comprehensive means for investigating how turning points can impact future behavior in the context of developmental and life-course criminology.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

The authors would like to thank Marv Krohn, Helene Raskin White, Co-Editor Brian Johnson, and four anonymous reviewers for their comments and efforts in improving this article. We also appreciate useful comments from Ryan Schroeder, Christy Visher, Dan O'Connell, Kim Henry, Steve Belenko, Steve Martin, John Brent, Bryan Miller, and John Stogner on the more technical aspects.

Biography

John H. Boman, IV is an assistant professor at Bowling Green State University in the Department of Sociology. His research is focused on the roles of interpersonal influences, in particular, on peers and friends and on crime, deviance, and substance use over the life course.

Thomas J. Mowen is an assistant professor in the Department of Sociology at Bowling Green State University. His current research interests include reentry and the causes and consequences of punishment on families and youth.

REFERENCES

- Achen Christopher H. 2001 Why lagged dependent variables can suppress the explanatory power of other independent variables. Presented at the annual meetings of the American Political Science Association. <https://www.princeton.edu/csdp/events/Achen121201/achen.pdf>.
- Agnew Robert. 1991 A longitudinal test of social control theory and delinquency. *Journal of Research and Crime and Delinquency* 28:126–56.
- Akers Ronald L., Krohn Marvin D., Lonn Lanza-Kaduce, and Marcia Radosevich. 1979 Social learning and deviant behavior: A specific test of a general theory. *American Sociological Review* 44:636–55. [PubMed: 389120]
- Akers Ronald L., and Lee Gang. 1999 Age, social learning, and social bonding in adolescent substance use. *Deviant Behavior* 20:1–25.
- Allison Paul D. 2015 Don't put lagged dependent variables in mixed models. *Statistical Horizons*. 6 2 <http://statisticalhorizons.com/lagged-dependent-variables>.
- Bahr Stephen, Harris J. Lish, Fisher James K., and Anita Armstrong. 2010 Successful reentry: What differentiates successful and unsuccessful parolees? *International Journal of Offender Therapy and Comparative Criminology* 54:667–92. [PubMed: 19638473]
- Beck Allen J., and Harrison Paige M.. 2006 Prisoners in 2005. Washington, DC: Bureau of Justice Statistics, Office of Justice Programs <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=912>.
- Bersani Bianca E., and Elaine Eggleston Doherty. 2013 When the ties that bind unwind: Examining the enduring and situational processes of change behind the marriage effect. *Criminology* 51:399–433.
- Blumstein Alfred, Cohen Jacqueline, and Farrington David P.. 1988 Criminal career research: Its value for criminology. *Criminology* 26:1–35.
- Blumstein Alfred, Cohen Jacqueline, Roth Jeffrey A., and Visher Christy A.. 1986 *Criminal Careers and "Career Criminals."* Washington, DC: National Academy Press.
- Boman IV, John H, Krohn Marv D., Gibson Chris L., and Stogner John M.. 2012 Investigating friendship quality: An exploration of self-control and social control theories' friendship hypotheses. *Journal of Youth and Adolescence* 41:1526–40. [PubMed: 22367018]
- Boman IV, John H, Rebellon Cesar J., and Meldrum Ryan C.. 2016 Can item-level error correlations correct for projection bias in perceived peer deviance measures? A research note. *Journal of Quantitative Criminology* 32:89–102.
- Boman IV, John H, and Ward Jeffrey T.. 2014 Beyond projection: Specifying the types of peer delinquency misperception at the item and scale levels. *Deviant Behavior* 35:555–80.
- Boman IV, John H, Young Jacob T. N., Julie Marie Baldwin, and Meldrum Ryan C.. 2014 Specifying the sources of misperceptions of peer deviance: A tale of two levels. *Criminal Justice and Behavior* 41:91–113.
- Braithwaite John. 1993 Beyond positivism: Learning from contextual integrated strategies. *Journal of Research in Crime and Delinquency* 30:383–99.
- Breese Jeffrey R., Ra'el Khaz, and Grant G. Kathleen. 2000 No place like home: A qualitative investigation of social support and its effects on recidivism. *Sociological Practice: A Journal of Clinical and Applied Research* 2:1–21.
- Brendgen Mara, Markievicz Dorothy, Anna Beth Doyle, and Bukowski William M.. 2001 The relations between friendship quality, ranked-friendship preference, and adolescents' behavior with their friends. *Merrill-Palmer Quarterly* 47:395415.
- Brown Sandra, Myers Mark G., Lippke Linna, Tapert Susan F., Stewart David G., and Vik Peter W.. 1998 Psychometric evaluation of the customary drinking and drug use record (CDDR): A measure of alcohol and drug involvement. *Journal of Studies on Alcohol* (July):427–38. [PubMed: 9647425]

- Bry Breanna H., Patricia McKeon, and Pandina Robert J.. 1982 Extent of drug use as a function of number of risk factors. *Journal of Abnormal Psychology* 91:273–9. [PubMed: 7130523]
- Buhrmester Duane. 1996 Need fulfillment, interpersonal competence, and the developmental context of friendship In *The Company They Keep: Friendships in Childhood and Adolescence*, eds. Bukowski William M, Newcomb Andrew F., and Hartup Willard W.. New York: Cambridge University Press.
- Cernkovich Stephen A., and Giordano Peggy C.. 2001 Stability and change in antisocial behavior: The transition from adolescence to early adulthood. *Criminology* 39:371410.
- Colvin Mark, Cullen Francis T., and Vander Ven Thomas. 2002 Coercion, social support, and crime: An emerging theoretical consensus. *Criminology* 40:19–41.
- Conway Kevin P., Vullo Genevive C., Nichter Brandon, Wang Jing, Compton Wilson M., Iannotti Ronald J., and Simons-Morton Bruce. 2013 Prevalence and patterns of polysubstance use in a nationally representative sample of 10th graders in the United States. *Journal of Adolescent Health* 52:716–23. [PubMed: 23465320]
- Cullen Francis T. 1994 Social support as an organizing concept for criminology. *Justice Quarterly* 11:527–59.
- Darling Nancy, and Steinberg Lawrence. 1993 Parenting style as context: An integrative model. *Psychological Bulletin* 113:487–96.
- Davis Celeste, Bahr Stephen J., and Ward Carol. 2013 The process of offender reintegration: Perceptions of what helps prisoners reenter society. *Criminology & Criminal Justice* 4:446–69.
- Durose Matthew, Cooper Alexia D., and Snyder Howard N.. 2014 *Recidivism of Prisoners Released in 30 States in 2005: Patterns from 2005 to 2010*. Washington, DC: Bureau of Justice Statistics.
- Ekland-Olson Sheldon, Supancic Michael, Campbell James, and Lenihan Kenneth J.. 1983 Post-release depression and the importance of familial support. *Criminology* 21:253–75.
- Elder Glen H. 1975 Age differentiation and the life course. *Annual Review of Sociology* 1:165–90.
- Elliott Delbert S., Ageton Suzanne S., and Canter Rachelle J.. 1979 An integrated theoretical perspective on delinquent behavior. *Journal of Research in Crime and Delinquency* 16:3–27.
- Farrington David P. 1998 Individual differences in offending In *The Handbook of Crime and Punishment*, ed. Tonry Michael. New York: Oxford University Press.
- Farrington David P. 2005 Introduction to integrated and developmental and life-course theories of offending In *Integrated Developmental & Life-Course Theories of Offending*, ed. Farrington David P.. New Brunswick, NJ: Transaction.
- Farrington David P., Lambert Sandra, and West Donald J.. 1998 Criminal careers of two generations of family members in the Cambridge Study in Delinquent development. *Studies on Crime and Crime Prevention* 7:85–106.
- Giordano Peggy C., Cernkovich Steven A., and Holland Donna D.. 2003 Changes in friendship relations over the life course: Implications for desistance from crime. *Criminology* 41:293–328.
- Giordano Peggy C., Cernkovich Stephen A., and Pugh MD. 1986 Friendships and delinquency. *American Journal of Sociology* 91:1170–202.
- Gottfredson Michael R., and Hirschi Travis. 1987 The methodological adequacy of longitudinal research on crime. *Criminology* 25:581–614.
- Hirschi Travis. 1969 *Causes of Delinquency*. Berkeley: University of California Press.
- Jensen Gary F., and Brownfield David. 1983 Parents and drugs: Specifying the consequences of attachment. *Criminology* 21:543–54.
- Johnson David. 2005 Two-wave panel analysis: Comparing statistical methods for studying the effects of transitions. *Journal of Marriage and Family* 67:1061–75.
- Kandel Denise, and Davies Mark. 1991 Friendship networks, intimacy, and illicit drug use in young adulthood: A comparison of two competing theories. *Criminology* 29:441–69.
- Krohn Marvin D., Lizotte Alan J., Bushway Shawn D., Schmidt Nicole M., and Phillips Matthew D.. 2014 Shelter during the storm: A search for factors that protect at-risk adolescents from violence. *Crime & Delinquency* 60:379–401.
- Krohn Marvin D., and Massey James L.. 1980 Social control and delinquency behavior: An examination of the elements of the social bond. *The Sociological Quarterly* 4: 529–43.

- Kubrin Charis E., and Stewart Eric A.. 2006 Predicting who reoffends: The neglected role of neighborhood context in recidivism studies. *Criminology* 44:165–97.
- Lattimore Pamela K., and Steffey Danielle M.. 2010 *The Multi-Site Evaluation of SVORI: Methodology and Analytic Approach* (Document 230424). Washington, DC: U.S. Department of Justice.
- Lattimore Pamela K., and Visher Christy A.. 2009 *Multi-Site Evaluation of SVORI: Summary and Synthesis*. Raleigh, NC: RTI International.
- Lattimore Pamela K., and Visher Christy A.. 2013 The impact of prison reentry services on short-term outcomes: Evidence from a multisite evaluation. *Evaluation Review* 37:247–313.
- Laub John H., Nagin Daniel S., and Sampson Robert J.. 1998 Trajectories of change in criminal offending: Good marriages and the desistance process. *American Sociological Review* 63:225–38.
- Laub John H., and Sampson Robert J.. 1993 Turning points in the life course: Why change matters to the study of crime. *Criminology* 31:301–25.
- Laub John H., and Sampson Robert J.. 2003 *Shared Beginnings, Divergent Lives: Delinquent Boys to Age 70*. Cambridge, MA: Harvard University Press.
- Loeber Rolf. 1982 The stability of antisocial and delinquent child behavior: A review. *Child Development* 53:1431–46. [PubMed: 6756808]
- Loeber Rolf, Farrington David P., Magda Stouthamer-Loeber Terrie E. Moffitt, Caspi Avshalom, Helen Raskin White Evelyn H. Wei, and Beyers Jennifer M.. 2003 The development of male offending: Key findings from fourteen years of the Pittsburgh Youth Study In *Taking Stock of Delinquency: An Overview of Findings from Contemporary Longitudinal Studies*, eds. Thornberry Terence P. and Krohn Marvin D.. New York: Kluwer.
- Lu KH 1974 The indexing and analysis of drug indulgence. *The International Journal of the Addictions* 9:785–804. [PubMed: 4448559]
- Lyngstad Torkild Hovde, and Skardhamar Torbjørn. 2013 Changes in offending around the time of marriage. *Journal of Research in Crime and Delinquency* 50: 608–15.
- Lyngstad Torkild Hovde, and Skardhamar Torbjørn. 2016 Family formation and crime: What role of the family network? *Advances in Life Course Research* 28:41–51.
- Matsueda Ross L. 1982 Testing control theory and differential association: A causal modeling approach. *American Sociological Review* 47:489–504.
- Matsueda Ross L. 1986 The dynamics of belief and delinquency. Presented at the annual meetings of the American Sociological Association.
- Matsueda Ross L. 1989 The dynamics of moral beliefs and minor deviance. *Social Forces* 68:428–57.
- Moffitt Terrie E. 1993 Adolescence-limited and life-course-persistent and adolescence-limited antisocial behavior: A developmental taxonomy. *Psychological Review* 100:674–701. [PubMed: 8255953]
- Moral-Benito Enrique, Allison Paul and Williams Richard. 2017 Dynamic panel data modeling using maximum likelihood: An alternative to Arellano-Bond. Submitted for publication. http://www3.nd.edu/~rwilliam/dynamic/Benito_Allison_Williams.pdf.
- Mowen Thomas J., and Brent John. 2016 School discipline as a turning point: The cumulative effect of suspension on arrest. *Journal of Research in Crime and Delinquency* 53:628–53.
- Mowen Thomas J., and Visher Christy A.. 2015 Drug use and crime after incarceration: The role of family support and family conflict. *Justice Quarterly* 32:337–59.
- Naser Rebecca, and La Vigne Nancy G.. 2006 Family support in the prisoner reentry process. *Journal of Offender Rehabilitation* 43:93–106.
- National Institute of Justice. 2002 *Services for Families of Prison Inmates*. Washington, DC: National Institute of Corrections, U.S. Department of Justice <http://static.nicic.gov/Library/017272.pdf>.
- Osgood D Wayne. 2009 Statistical models for life events and criminal behavior In *Handbook of Quantitative Criminology*, eds. Piquero Alex R. and Weisburd David. New York: Springer.
- Pandina Robert J., White Helene Raskin, and Yorke Joseph. 1981 Estimation of substance use involvement: Theoretical considerations and empirical findings. *The International Journal of the Addictions* 16:1–24.

- Phillips Lindsay A., and Lindsay Mary. 2011 Prison to society: A mixed methods analysis of coping with reentry. *International Journal of Offender Therapy and Comparative Criminology* 55:136–54. [PubMed: 19841048]
- Piquero Alex R., Farrington David, and Blumstein Alfred. 2007 *Key Issues in Criminal Career Research: New Analyses of the Cambridge Study in Delinquent Development*. Cambridge, U.K: Cambridge University Press.
- Polaschek Devon L., Wilson Nick J., Townsend Marilyn R., and Daly Lorna R.. 2005 Cognitive-behavioral rehabilitation for high-risk violent offenders: An outcome evaluation of the violence prevention unit. *Journal of Interpersonal Violence* 20:1611–27. [PubMed: 16246920]
- Pratt Travis C., Cullen Francis T., Sellers Christine S., Winfree L. Thomas Jr., Madensen Tamara D., Daigle Leah E., Fearn Noelle E., and Gau Jacinta M.. 2010 The empirical status of social learning theory: A meta-analysis. *Justice Quarterly* 27:765–802.
- Rabe-Hesketh Sophia, and Skrondal Anders. 2012 *Multilevel and Longitudinal Modeling Using Stata*, 3rd ed. College Station, TX: Stata Press.
- Raudenbush Stephen W., and Bryk Anthony S.. 2002 *Hierarchical Linear Models: Applications and Data Analysis Methods*, 2nd ed. London, U.K.: Sage.
- Rebellion Cesar J., and Modecki Kathryn L.. 2014 Accounting for projection bias in models of delinquent peer influence: The utility and limits of latent variable approaches. *Journal of Quantitative Criminology* 30:163–86.
- Robins Lee N. 2005 Explaining why arrests end for serious juvenile offenders: Comments on the Sampson and Laub study. *The ANNALS of the American Academy of Political and Social Science* 602:57–72.
- Sampson Robert J., and Laub John H.. 1993 *Crime in the Making: Pathways and Turning Points Through Life*. Cambridge, MA: Harvard University Press.
- Sampson Robert J., and Laub John H.. 1994 Urban poverty and the family context of delinquency: A new look at structure and process in a classic study. *Child Development* 65:523–40. [PubMed: 8013238]
- Sampson Robert J., and Laub John H.. 1997 A life-course theory of cumulative disadvantage and the stability of delinquency In *Developmental Theories of Crime and Delinquency*, ed. Thornberry Terence P.. New Brunswick, NJ: Transaction.
- Sampson Robert J., and Laub John H.. 2005 A life-course view of the development of crime. *The ANNALS of the American Academy of Political and Social Science* 602: 12–45.
- Sampson Robert J., Laub John H., and Wimer Christopher. 2006 Does marriage reduce crime? A counterfactual approach to within-individual causal effects. *Criminology* 44:465–508.
- Scheff Thomas J. 2000 Shame and the social bond: A sociological theory. *Sociological Theory* 18:84–99.
- Schroeder Ryan D., Higgins George E., and Mowen Thomas J.. 2015 Maternal attachment trajectories and criminal offending by race. *American Journal of Criminal Justice* 39:155–71.
- Schroeder Ryan D., and Mowen Thomas J.. 2014 Parenting style transitions and delinquency. *Youth & Society* 46:228–54.
- Shapiro Carol, and Schwartz Meryl. 2001 Coming home: Building on family connections. *Corrections Management Quarterly* 5:52–61.
- Silva Fabiana, and Hartney Christopher. 2012 *Evaluation of the Insight Prison Project*. Washington, DC: National Council on Crime and Delinquency.
- Skardhamar Torbjørn, and Savolainen Jukka. 2014 Changes in criminal offending around the time of job entry: A study of employment and desistance. *Criminology* 52:263–91.
- Stansfield Richard, Mowen Thomas J., O'Connor Thomas, and Boman John H.. 2017 The role of religious support in reentry: Evidence from the SVORI data. *Journal of Research in Crime and Delinquency* 54:111–45.
- Sutherland Edwin H. 1947 *Principles of Criminology*, 4th ed. Philadelphia, PA: Lippincott.
- Thornberry Terence P. 1987 Toward an interactional theory of delinquency. *Criminology* 25:863–92.
- Travis Jeremy. 2005 *But They All Come Back: Facing the Challenges of Prison Reentry*. Washington, DC: The Urban Institute Press.

- Uggen Christopher, Manza Jeff, and Behrens Angela. 2004 "Less than the average citizen": Stigma, role transition, and the civic reintegration of convicted felons In *After Crime and Punishment: Pathways to Offender Reintegration*, eds. Maruna Shadd and Immariageon Russell. Portland, OR: Willan.
- Visher Christy A., and Travis Jeremy. 2003 Transitions from prison to community: Understanding individual pathways. *Annual Review of Sociology* 29:89-113.
- Visher Christy A., and Travis Jeremy. 2011 Life on the outside: Returning home after incarceration. *The Prison Journal* 91:102S-19S.
- Wallace Danielle, Fahmy Chantal, Cotton Lindsay, Jimmons Charis, Rachel McKay Signey Stoffer, and Syed Sarah. 2016 Examining the role of familial support during prison and after release on post-incarceration mental health. *International Journal of Offender Therapy and Comparative Criminology* 60:3-20. [PubMed: 25156422]
- Warr Mark. 1998 Life course transitions and desistance from crime. *Criminology* 36:183-216.
- Warr Mark. 2002 *Companions in Crime: The Social Aspects of Criminal Conduct*. Cambridge, U.K.: Cambridge University Press.
- Weerman Frank M., and Smeenk Wilma H.. 2005 Peer similarity in delinquency for different types of friends: A comparison using two different measurement methods. *Criminology* 43:499-523.
- Wehrman Michael M. 2010 Race, concentrated disadvantage, and recidivism: A test of interaction effects. *Journal of Criminal Justice* 38:538-44.
- Western Bruce, Braga Anthony A., Davis Jaclyn, and Sirois Catherine. 2015 Stress and hardship after prison. *American Journal of Sociology* 120:1512-47.
- White Helene Raskin. 1992 Early problem behavior and later drug problems. *Journal of Research in Crime and Delinquency* 29:412-29.
- Williams Richard, Allison Paul, and Moral-Benito Enrique. 2017 Xtdpml: Linear dynamic panel-data estimation using maximum likelihood and structural equation modeling. Submitted for publication. <https://www3.nd.edu/~rwilliam/dynamic/SJPaper.pdf>.
- Wolfgang Marvin E., and Ferracuti Franco. 1967 *The Subculture of Violence: Towards an Integrated Theory in Criminology*. London, U.K.: Tavistock.
- Wolfgang Marvin E., Figlio Robert M., Tracy Paul E., and Singer Simon I.. 1985 *National Survey of Crime Severity (NCJ-96017)*. Washington, DC: U.S. Government Printing Office.
- Wright Bradley E. Entner, Caspi Avshalom, Moffitt Terrie E., and Silva Phil A.. 2001 The effects of social ties on crime vary by criminal propensity: A life-course model of interdependence. *Criminology* 39:321-2.
- Young Jacob T. N. 2011 How do they "end up together"? A social network analysis of self-control, homophily, and adolescent relationships. *Journal of Quantitative Criminology* 27:251-73.
- Young Jacob T. N., Rebellon Cesar J., Barnes JC, and Weerman Frank M.. 2014 Unpacking the black box of peer similarity in deviance: Understanding the mechanisms linking personal behavior, peer behavior, and perceptions. *Criminology* 52:60-86.

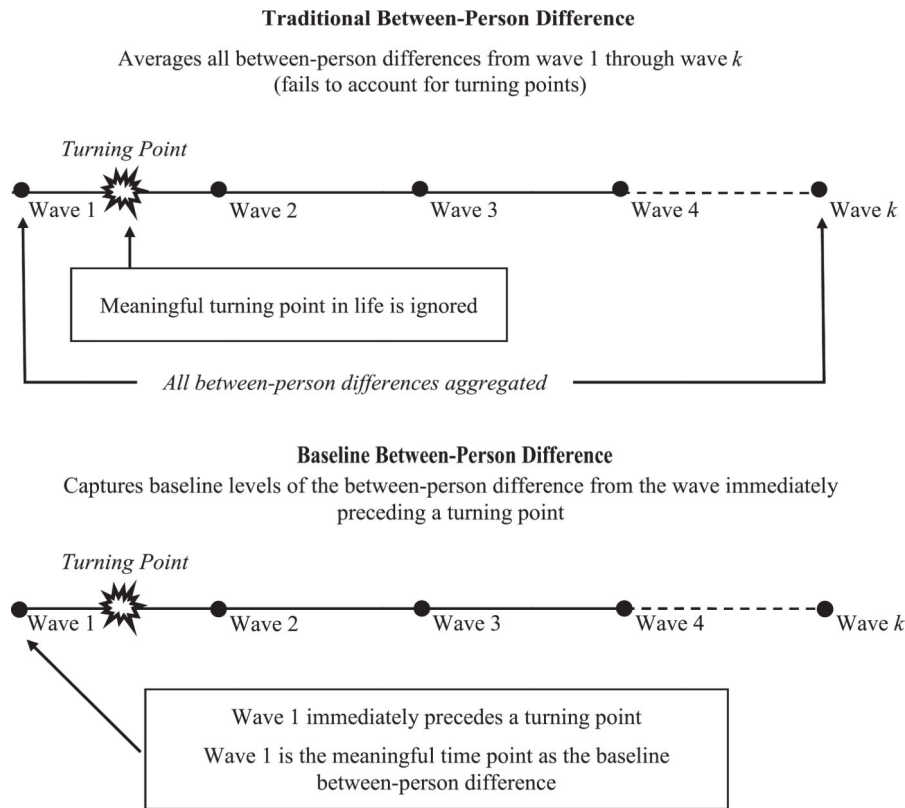


Figure 1. Conceptual Difference Between the Traditional Between-Person Difference and the Baseline Between-Person Difference

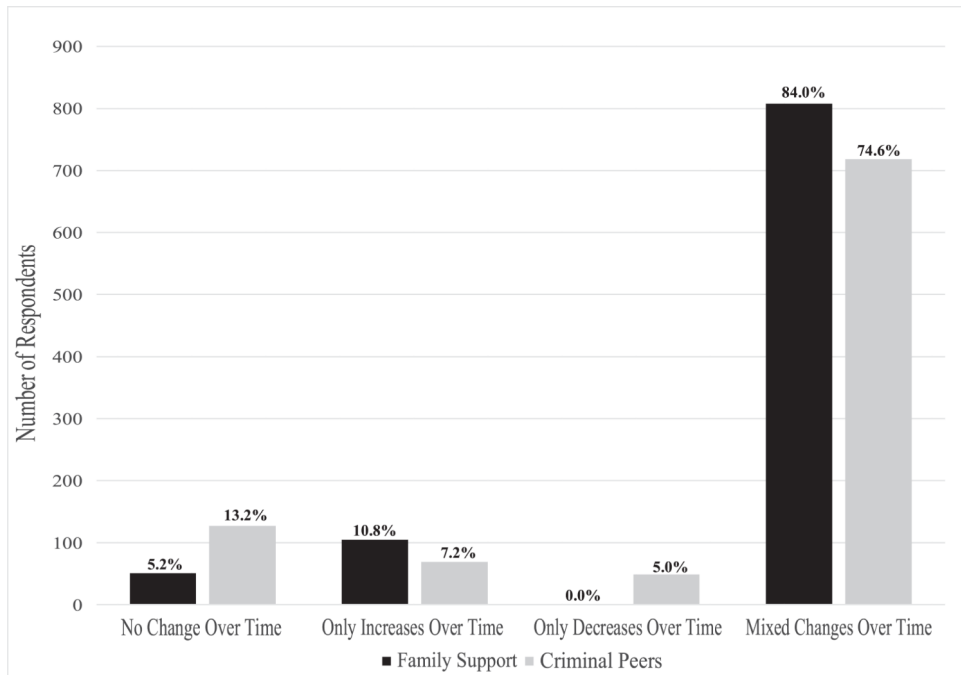


Figure 2.
Within-Person Change Over Time from Waves 1 to 4 in Family Support and Peer Criminal Peers ($N = 962$)

Table 1.SVORI Sample Descriptives ($N = 962$)

Variable	Mean	SD	Range	SD _{WITHIN}
Dependent Variables				
Criminal offending (n. log)	1.288	1.394	0–3.515	1.032
Polysubstance use (n. log)	.669	.607	0–2.336	.486
Time Variant Variables				
Family support change	7.039	1.696	0–9	.911
Criminal peers change	2.089	1.152	0–3	.621
Divorced (married contrast)	.165	.371	0, 1	.137
Single (married contrast)	.727	.445	0, 1	.138
Employment	.663	.472	0, 1	.291
Time Invariant Measures				
Family support baseline	7.065	1.731	0–9	—
Criminal peers baseline	2.486	.952	0–3	—
Lagged criminal offending	2.119	1.236	0–3.426	—
Lagged substance use	1.274	.559	0–2.336	—
Age	29.470	7.291	18–69	—
Black (White contrast)	.532	.499	0, 1	—
Other race (White contrast)	.124	.330	0, 1	—
Length of incarceration	917.300	932.350	44–9,486	—
Prior convictions	5.967	8.258	1–90	—
Violent conviction (other contrast)	.168	.374	0, 1	—
Drug conviction (other contrast)	.210	.407	0, 1	—
Property conviction (other contrast)	.114	.318	0, 1	—
Family incarceration	.747	.434	0, 1	—
SVORI participant	.540	.499	0, 1	—

ABBREVIATIONS: N. log = natural log; SD = standard deviation; SVORI = Serious and Violent Offender Reentry Initiative.

Table 2. Cross-Lagged Dynamic Panel Data Models Assessing Criminal Offending Postrelease ($N = 962$)

Variable	Model 1			Model 2			Model 3			Model 4			Model 5		
	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p
Independent Variables															
Family support															
Baseline	-.035	.023		-.037	.024		-.033	.023		-.034	.023		-.032	.023	
Change	-.064	.035		-.065	.035		-.066	.035		-.065	.035		-.064	.036	
Criminal peers															
Baseline	.121	.037	***	.114	.041	***	.138	.044	***	.122	.038	***	.132	.038	***
Change	.102	.051	*	.107	.048	*	.104	.048	*	.105	.051	*	.103	.051	*
Control Measures (Time Variant)															
Divorced	-.227	.313		-.219	.314		-.217	.313		-.219	.317		-.197	.310	
Single	.010	.372		.042	.374		-.001	.371		.058	.376		-.002	.364	
Employment	-.064	.102		-.069	.101		-.057	.101		-.074	.102		-.069	.101	
Control Measures (Time Invariant)															
Lagged criminal offending index	.063	.029	*	.064	.030	*	.064	.030	*	.064	.030	*	.063	.030	*
Age	-.022	.008	**	-.022	.008	**	-.023	.008	**	-.022	.008	**	-.023	.008	**
Black	-.042	.087		-.045	.087		-.027	.088		-.049	.087		-.043	.087	
Other race	.016	.109		.013	.109		.012	.109		.010	.109		.016	.109	
Length of incarceration	-.044	.038		-.044	.038		-.041	.038		-.045	.038		-.039	.038	
Prior convictions	.146	.050	**	.146	.050	**	.145	.048	**	.146	.048	**	.144	.048	**
Violent conviction	-.011	.089		-.010	.089		-.014	.089		-.012	.089		-.019	.089	
Drug conviction	-.003	.091		-.005	.091		-.005	.090		-.007	.091		.020	.090	
Property conviction	.180	.102		.182	.102		.187	.102		.178	.102		.171	.102	
Family incarceration	.011	.076		.012	.076		.001	.077		.013	.076		-.006	.076	
SVORI participant	-.109	.064		-.105	.064		-.111	.064		-.107	.064		-.110	.064	
Family Baseline × Family Change	—	—		-.006	.019		—	—		—	—		—	—	
Peers Baseline × Peers Change	—	—		—	—		.057	.064		—	—		—	—	
Family Baseline × Peers Change	—	—		—	—		—	—		-.002	.032		—	—	
Peers Baseline × Family Change	—	—		—	—		—	—		—	—		-.068	.030	*

Variable	Model 1			Model 2			Model 3			Model 4			Model 5		
	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p
Fit Indices															
χ^2 (Model vs. Saturated)	58.827		*	60.760		*	60.305		*	62.174		*	61.855		*
Root mean square error of approx. (RMSEA)	.023			.022			.022			.023			.023		
Comparative fit index (CFI)	.970			.971			.971			.968			.969		

ABBREVIATIONS: Coef. = coefficient; SE = standard error; SVORI = Serious and Violent Offender Reentry Initiative.

* p .05

** p .01

*** p .001 (two-tailed).

Table 3. Cross-Lagged Dynamic Panel Data Models Assessing Polysubstance Use Post-Release (*N* = 962)

Variable	Model 1			Model 2			Model 3			Model 4			Model 5		
	Coef.	SE	<i>p</i>	Coef.	SE	<i>p</i>	Coef.	SE	<i>p</i>	Coef.	SE	<i>p</i>	Coef.	SE	<i>p</i>
Independent Variables															
Family support															
Baseline	-.015	.007	*	.017	.008	*	-.015	.007	*	-.015	.007	*	-.016	.007	*
Change	-.013	.010		-.012	.010		-.013	.010		-.013	.010		-.013	.011	
Criminal peers															
Baseline	.037	.013	**	.037	.013	**	.042	.015	**	.037	.013	**	.040	.013	**
Change	.053	.015	***	.053	.015	***	.053	.015	***	.053	.015	***	.054	.015	***
Control Measures (Time Variant)															
Divorced	.005	.094		.003	.094		.006	.094		.003	.094		.003	.093	
Single	.075	.112		.063	.112		.073	.113		.074	.112		.067	.110	
Employment	-.091	.031	**	-.085	.030	**	-.090	.031	**	-.091	.031	**	-.091	.031	**
Control Measures (Time Invariant)															
Lagged polysubstance use index															
Age	.004	.024		.004	.024		.005	.024		.004	.024		.001	.024	
Black	-.003	.003		-.003	.003		-.003	.003		-.003	.003		-.003	.003	
Other race	-.087	.029	**	-.085	.029	**	-.084	.029	**	-.087	.029	**	-.088	.029	**
Length of incarceration	-.041	.037		-.039	.037		-.042	.037		-.042	.037		-.042	.037	
Prior convictions	-.032	.013	*	-.033	.013		-.031	.013		-.032	.013		-.031	.013	
Violent conviction	.091	.016	***	.091	.016	***	.091	.016	***	.091	.016	***	.091	.016	***
Drug conviction	.027	.030		.028	.030		.027	.030		.027	.030		.025	.030	
Property conviction	.032	.031		.033	.031		.032	.031		.033	.031		.039	.031	
Family incarceration	.081	.035	*	.080	.035	*	.083	.035	*	.082	.035	*	.080	.035	*
SVORI participant	-.030	.026		-.029	.026		-.032	.026		-.030	.026		-.033	.026	
Family Baseline × Family Change	-.038	.022		-.041	.022		-.038	.022		-.038	.022		-.038	.022	
Peers Baseline × Peers Change	—	—		.008	.006		—	—		—	—		—	—	
Family Baseline × Peers Change	—	—		—	—		.011	.019		—	—		—	—	
Peers Baseline × Family Change	—	—		—	—		—	—		.001	.009		—	—	
Peers Baseline × Family Change	—	—		—	—		—	—		—	—		-.021	.009	*

Variable	Model 1			Model 2			Model 3			Model 4			Model 5		
	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p
Fit Indices															
χ^2 (Model vs. Saturated)	55.121		*	57.856		*	55.501			54.604			55.621		
Root mean square error of approx. (RMSEA)	.021			.021			.019			.019			.019		
Comparative fit index (CFI)	.980			.982			.984			.985			.984		

ABBREVIATIONS: Coef. = coefficient; SE = standard error; SVORI = Serious and Violent Offender Reentry Initiative.

* p .05

** p .01

*** p .001 (two-tailed).