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Changes in Jail Inmates' Community Connectedness across the Period of Incarceration

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Abstract

Jails bring inmates into proximity with one another and separate them from the community. Because inmates' connectedness to one another and to the community influences post-release functioning, understanding risk factors for maladaptive shifts in connectedness may inform interventions. The current study examined changes in jail inmates' ($N=203$) connectedness to the community at large and to the criminal community, and predictors of individual differences in changes over time. Connectedness to both communities did not change on average during incarceration, but younger and less guilt-prone inmates increased more in connectedness to the criminal community than older and more guilt-prone inmates, suggesting connectedness interventions should target individuals exhibiting this constellation of attributes.

Keywords

community connectedness; incarceration; self-expansion

By design, jails bring offenders into close *physical* proximity with one another and separate them from the community at large. But, do inmates also become *psychologically* more connected to the criminal community and less connected to the community at large during incarceration in jail? The possibility of such psychological shifts in connectedness during incarceration is important to evaluate, as recent research shows inmates' community connectedness affects post-release functioning. Specifically, increased connectedness to the criminal community just prior to release predicts recidivism in the first-year post-release, whereas increased connectedness to the community at large predicts positive community adjustment (e.g., employment, residential stability) during the first-year post-release (Folk et al. 2016). Surprisingly limited research examines how inmates' connectedness to these communities changes during incarceration. Understanding how connectedness changes

during incarceration—and for whom—may afford strategies to promote adaptive changes in community connectedness and inform correctional policy and practice.

What is Community Connectedness?

The concept of community connectedness is largely drawn from social connectedness research, and informed by social identity theories from psychology. Social connectedness is a broad construct that captures a sense of “interpersonal closeness to the social world in toto” (Lee, Draper, and Lee 2001:310). Social identity theories posit that social connections are significant and integral features of the self (Tajfel 1981; Turner and Oakes 1989) that influence behaviors, attitudes, and perceptions (Hogg 2003).

Particularly relevant to the current investigation is the social identity process of including others in the self, a principle fundamental to the self-expansion model (Aron et al. 2013). The self-expansion model asserts humans are motivated to increase their efficacy in the world and one way they do this is taking on the resources, perspectives, and identities of others through a process known as including others in the self. Theoretical and empirical work have expanded from focusing on inclusion of a single other in the self (Aron, Aron, and Smollan 1992) to include groups of individuals such as racial ingroups (Tropp and Wright 2001) and families (Uleman et al. 2000). Just as one can take on the resources, identities, and perspectives of a close other or group, one can also take them on for a larger entity such as a community (Mashek, Cannaday, and Tangney 2007). The inclusion of *community* in self is an explicit extension of self-expansion theory.

Individuals are seldom connected to one community at a time, however. It is possible to feel simultaneously connected to multiple communities (Deaux 1993; Roccas and Brewer 2002). A student, for example, might feel simultaneously connected to the Hispanic community and to her college community. Inmates are distinctly positioned to feel connected to two communities: the criminal community and the community at large (Mashek et al. 2006). Rather than considering connectedness to these two communities as opposite ends of one continuum, these variables capture distinct chunks of variance that may change independently and differentially. Connectedness to the criminal community is statistically orthogonal to connectedness to the community at large among inmates ($r = -.01$; Mashek et al. 2006), allowing for consideration of independent changes.

How Might Community Connectedness Change During Incarceration?

Community connectedness is one form of social identity. Although social identities are often conceptualized as stable, durable, and permanent (e.g., Ethier and Deaux 1994), there is significant theoretical recognition in both psychology and sociology that social identity may change. In psychology, social identity theory and related empirical research suggest changes can occur in one’s social identity following a reshuffling of internal priorities or alterations in the external environment (Deaux 1993; Ethier and Deaux 1994).

Numerous psychological and sociological theories attempt to explain how, when, and why criminal identities develop and change. The integrated psychosocial model of criminal social identity (IPM-CSI; Boduszek, Dhingra, and Debowska 2016) suggests criminal social

identity emerges following an identity crisis which results in weak societal bonds and peer rejection, exposure to a criminal/antisocial environment through criminal peer associations, need for criminal group identification to protect self-esteem, and moderating personality traits such as extroversion. Relatedly, in sociology, social relations research suggests relationships are weakened by instability such as changes in situations (Putnam 1993). Furthermore, deprivation and importation theories suggest incarceration-specific (e.g., stigmatizing effects of legal processing) and pre-incarceration individual difference (e.g., education) factors, respectively, are critical to understanding variations in assimilation within the criminal community (c.f. Thomas 1977). Taken together, these theories suggest that with significant environmental change, such as incarceration, certain aspects of social identity, including community connectedness, may change over time; these changes are likely influenced by individual differences in both pre-incarceration characteristics and experiences during incarceration.

In contrast to a wealth of relevant theory, there is a dearth of research on changes in community connectedness among jail inmates. The present study addresses this knowledge gap by examining how, on average, connectedness to the community at large and to the criminal community changes over the course of incarceration. Research to date has primarily focused on changes in inmates' social networks (Kreager et al. 2015), demonstrating incarceration's collateral social consequences (Scroggins 2012; Walters 2003; Wildeman 2010). Because relationships with friends, peers, and neighbors often end during incarceration, inmates likely become less connected to the community at large over the period of incarceration. In the wake of the dissolution of prior connections, the fundamental human need to belong (Baumeister and Leary 1995) may propel inmates to connect with those around them, particularly during a stressful life event such as incarceration. This need to form social connections with other inmates (Sykes 1958) - coupled with prisonization effects (Clemmer 1940; Wheeler 1961), whereby individuals entering incarceration become more integrated into the criminal subculture (Collica 2010; Copes, Brookman, and Brown 2013; Innes 1997; Mitchell, Fahmy, Pyrooz, and Decker 2017; Trammell 2009) - may lead inmates to become more connected to the criminal community during incarceration.

What Predicts Individual Changes in Community Connectedness During Incarceration?

In addition to mean level changes in community connectedness, of interest are individual differences in the direction and magnitude of change. Some inmates may be more vulnerable to prisonization effects relative to others, whereas others may become more connected to the community at large due to factors such as contact with members of the community at large through participation in programs. Researchers have yet to examine predictors of individual differences in change. We explore a range of potential predictors, including demographic, criminal justice, mental health, and personality characteristics. Although some of these analyses are exploratory, these factors were carefully selected based on theory for a suite of papers examining individual differences in changes during incarceration (see Tangney et al. 2016 for a complete review).

Method

Participants and Procedures

Participants were 203 pre- and post-trial county jail inmates who participated in a larger on-going longitudinal study in the mid-Atlantic region of the United States (Tangney, Mashek, and Stuewig 2007). Eligible inmates were: (a) sentenced to 4 months or more or arrested and held on at least one felony charge other than a probation violation, without bond or bond greater than or equal to \$7,000; (b) assigned to the jail's medium or maximum security "general population"; (c) proficient in English or Spanish (5%); and (d) at least 18 years old.

Time 1 – Initial Jail Incarceration.

Shortly after assignment to the jail's general population, eligible inmates were presented with a description of the study. Inmates who consented to participate completed 4 to 6 sessions of face-to-face interviews and computer-based questionnaires. Sessions lasted between 45 and 90 minutes and participants received \$15 to \$18.

Of the inmates invited to participate, 74% agreed and provided permission for study personnel to access criminal justice and medical records. Of those who agreed, 86% ($n = 539$) remained at the jail long enough to complete portions of the initial assessment (1–3 weeks) relevant to the current study. At intake 5% ($n = 25$) of interviews were discarded based on the Inconsistency and Infrequency validity scales from the Personality Assessment Inventory (PAI; Morey 1991) and interviewer judgment, 1% ($n = 6$) were not included in the current sample because they were incarcerated the entire year before intake, and 11% ($n = 58$) did not complete the community connectedness assessment due to not completing the full interview, leaving a sample size of 450 at Time 1.

Time 2 – Just Prior to Release or Transfer.

Inmates in jail for 6 weeks or more were eligible to complete an assessment prior to release into the community or transfer to another correctional facility. This assessment included many of the intake assessments and typically lasted 1 to 2 hours; participants received \$25.

Of the 415 participants who were eligible for a Time 2 assessment, 304 (73%) were re-interviewed. Most missed interviews were due to correctional staff not alerting the research team before eligible participants were released or transferred. Of those re-interviewed, 90 (30%) were missing the measure of community connectedness, typically because they were interviewed greater than two weeks after their release or transfer and their current level of community connectedness would not reflect their level of connectedness at the jail. The PAI was used for validity checks and 2% ($n = 5$) of interviews were discarded; 2% ($n = 6$) of participants were incarcerated the full year before Time 1 and were not included in analyses. This yielded a sample of 203 participants.

The final longitudinal sample was 69% male; 44% Black, 38% White, 9% Hispanic, 9% other or mixed race/ethnicity. Mean age at Time 1 was 33 years ($SD = 10$) with a range of 18 to 69 years. There were no differences between those with and without Time 2 data on gender, race, age, or community connectedness at Time 1.

Time 3 – Post-transfer, Pre-release from Secondary Correctional Facility.

At Time 2, 92 participants were released to the community and 111 were transferred to another correctional facility. Inmates transferred to other correctional facilities were eligible for another assessment prior to release (Time 3). This session lasted 1 to 2 hours; participants received \$25.

Of the 107 participants who were eligible for a Time 3 assessment (four remain incarcerated), 69 (64%) were re-interviewed. Most interviews missed were due to correctional staff not alerting researchers before release of participants or due to facility distance (> 600 miles) from the researchers. Of those re-interviewed, 20 (30%) participants were missing the community connectedness measure, generally because interviews were greater than two weeks after release. One person was removed based on PAI validity checks, leaving 48 (70%) with valid Time 2 and 3 data. Individuals with and without Time 3 data did not differ on gender, race, age, or community connectedness at Times 1 or 2.

Measures

Community connectedness was assessed using the Inclusion of Community in Self (ICS) scale (Mashek et al. 2007; Figure 1). The ICS is administered through a face-to-face interview. For each target (i.e., community at large, criminal community), a single-item pictorial measure consisting of six pairs of overlapping circles was presented. Participants were told the circle on the left represents themselves, while the circle on the right represents the target community; the interviewer asked the participant to circle the picture that best describes her or his relationship with the target community. The community at large was defined as “all the people in your town, city, or county; people in general; people who live on the outside and who do not commit crimes.” The criminal community was defined as “people who commit crimes whether they are in jail, prison, or living on the outside.”

The ICS is reliable and valid in college and inmate samples (Mashek et al. 2006; 2007). Construct validity was demonstrated among college students, with moderate correlations with relevant facets of Obst, Smith, and Zinkiewicz’s (2002) Psychological Sense of Community scale: *ties and friendship* ($r = .39$), *support* ($r = .28$), *belonging* ($r = .27$), and *conscious identification* ($r = .45$). Connectedness to the community at large positively correlated with self-reported helping behaviors (e.g., picked up a piece of garbage on the sidewalk and threw it away) and negatively with antisocial behavior (e.g., deliberately damaged someone’s property). The connectedness to the community at large item also demonstrated discriminant validity with minimal correlations on agreeableness and impression management.

Further indication of validity was evidenced in Time 1 of the current study. Connectedness to the community at large correlated positively with kindness/generosity and correlated negatively with antisocial behavior, whereas connectedness to the criminal community correlated positively with criminogenic cognitions and negatively with character strengths. Neither item correlated with conceptually irrelevant factors such as mania. Folk et al.’s (2016) analysis of Time 2 provides evidence for the ICS’s predictive validity. Pre-release connectedness to the criminal community predicted recidivism during the first year post-

release; pre-release connectedness to the community at large predicted positive community adjustment during the first year post-release (Folk et al. 2016).

Given the ICS is derived from the Inclusion of Other in Self (IOS) Scale (Aron et al. 1992), it is notable the IOS demonstrates test-retest reliability, and discriminant, predictive, and convergent validity. Evidence indicates the IOS fluctuates over time. For example, a mindfulness intervention for couples increased closeness (Carson et al. 2007). Relatedly, changes in closeness mediated the relationship between forgiveness and well-being (Bono, McCullough, and Root 2008); of relevance is that closeness (measured partly by the IOS) changed over time and in meaningful ways. Connectedness is not static.

Predictors of Change.

Predictors of change assessed at Time 1 include demographics, criminal justice factors, moral emotions and cognitions, mental health, and personality characteristics. Coding of predictors parallels Tangney and colleagues (2016).

Demographic predictors

included *sex, age, race, education, and pre-incarceration residential stability*. For race, we compared Black ($n = 90$) and White ($n = 78$) participants; other groups were too small for meaningful comparisons. Education reflected years of school completed ($M = 11.6$, $SD = 2.1$, *range* = 5–19 years). Residential stability reflected the number of places participants lived the year before incarceration (*range* = 0 to 7). Homeless individuals were assigned an 8 since this is a mobile living situation. The average was 1.9 places ($SD = 2.0$); 53% lived in one place.

Criminal justice predictors.

Jail staff assessed *prior jail experience* at booking; 86% ($n = 168$) had one or more prior experience(s). *Time incarcerated* was calculated as days incarcerated before the Time 2 interview ($M = 217.5$, $SD = 107.1$, *range* = 48 – 556).

Treatment and services enrollment—while incarcerated was collected from the jail's administrative database. Jail records indicated access to requested treatment and services. Attendance and completion were not available. Treatment and services included psycho-educational (e.g., anger management), substance use (e.g., AA), other support groups (e.g., health support), and forensic mental health services (e.g., medication groups). Most participants (82.9%) enrolled in at least one treatment or service.

Pre-Release.—About half ($n = 92$) of the participants were released to the community (pre-release group) and half ($n = 111$) were transferred to another facility to serve their sentence (pre-transfer group).

Perceived Innocence.—Inmates were asked to describe the nature and circumstances surrounding their current offense(s). Two research assistants independently rated responses for inmates' self-perceived innocence where 1 = *complete guilt for all current charges*, 2 = *guilt for some, not all current charges*, 3 = *an unknowing participant in a crime*, 4 = *legal*

behavior similar to current charges but exaggerated or misconstrued as criminal, and 5 = *complete innocence of all charges*. Inter-rater reliability was good ($\rho_2 = 0.90$; Youman 2010).

Moral emotions and cognitions predictors.

Guilt- and Shame-Proneness.—The Test of Self-Conscious Affect for Socially Deviant Populations (TOSCA-SD; Hanson and Tangney 1996) is a scenario-based measure. Participants rate how likely they are to feel or react to 13 scenarios on a 5-point scale (1 = *not at all likely* to 5 = *very likely*). Shame and guilt scales were created by averaging their respective items across scenarios. Each scale was residualized to account for the other (e.g., “shame-free guilt”). The TOSCA-SD has demonstrated reliability and validity in studies of prison inmates (Hanson and Tangney 1996) and was reliable in the current sample (Guilt $\alpha = .80$; Shame $\alpha = .71$). Tangney et al. (2011) present support for the Time 1 validity of TOSCA-SD.

Criminal Thinking.—The Criminogenic Cognitions Scale (CCS; Tangney et al. 2002) is a 25-item measure tapping notions of entitlement, failure to accept responsibility, short-term orientation, insensitivity to the impact of crime, and negative attitudes toward authority. Items were rated on a 4-point scale from 1 = *strongly disagree* to 4 = *strongly agree*, and averaged to create a total criminogenic cognitions score. Tangney et al. (2012) present evidence for the Time 1 reliability (Cronbach’s $\alpha = .72$) and validity of the CCS.

Mental health and personality predictors.

Psychopathy.—The Psychopathy Checklist-Revised: Screening Version (PCL-R:SV; Hart, Cox, and Hare 1995) comprises 12 items rated on a 3-point scale (0 = *does not apply*, 1 = *applies somewhat*, 2 = *definitely applies*). Items are summed to yield two factors and a total score. Factor 1 reflects affective and interpersonal features of psychopathy; Factor 2 reflects social deviance features. A randomly selected 52 cases showed high interrater reliability, ICC = .89.

Mental Health.—The PAI (Morey 1991) is a self-report measure of psychopathology and personality traits. Respondents indicated their agreement with 344 statements on a 4-point scale ranging from 1 = *false, not at all true* to 4 = *very true*. For this study, three clinical scales were utilized: depression (DEP), anxiety (ANX), and borderline personality disorder features (BOR). Scales demonstrated good reliability (DEP $\alpha = .89$; ANX $\alpha = .89$; BOR = .89), consistent with the standardization sample (Morey 1991) and correctional samples (Edens and Ruiz 2005).

Substance Dependence.—The Texas Christian University Correctional: Residential Treatment Form, Initial Assessment (TCU-CRTF; Simpson and Knight 1998) assessed symptoms of substance dependence during the year before incarceration. Four substance dependence scales were created to assess dependence on alcohol (17 items), marijuana (8 items), opiates (18 items), and cocaine (14 items). Responses ranged from 0 = *never* to 4 = *7 or more times*. Scales included items assessing the DSM-IV (American Psychiatric Association 2000) substance dependence domains. For domains with multiple items,

responses were averaged and a total score was computed by taking the mean across the seven domains (six for marijuana-withdrawal is not a criterion). Cronbach's alpha was high for all dependence scales (.92 to .99). The highest score among the subscales ($M = 1.7$, $SD = 1.5$) was used as the index of substance dependence severity.

Results

Mean Level Changes in Community Connectedness

We first used pair-samples t-tests to examine whether average levels of community connectedness changed during incarceration.

Times 1 to 2.—Table 1 summarizes changes in community connectedness between Time 1 (shortly upon incarceration) and Time 2 (just prior to transfer or release). The average length of incarceration was 7.03 months ($SD = 3.01$ months, $range = 1.27$ to 18.20 months). There were no mean changes in connectedness to the community at large or to the criminal community.

Times 2 to 3.—To what degree does this finding generalize beyond the initial jail incarceration and beyond a single jail setting? Of those with Time 2 ICS scores, we collected data from 48 individuals before they were released to the community from the second correctional facility (Time 3) following an additional period of incarceration ($M = 23.65$ months, $SD = 17.20$ months, $range = 1.57$ to 85.07 months). Again, connectedness to the community at large and the criminal community did not change, on average, over time at subsequent correctional facilities (Table 2).

Individual Differences in Changes in Community Connectedness

The t-tests reported above make clear that, on average, connectedness to neither the community at large nor the criminal community change significantly over the course of incarceration. We next examined the degree to which there are individual differences in changes in community connectedness by assessing stability correlations between the community connectedness variables. Correlations between Times 1 and 2 community connectedness were modest, indicating substantial individual variability in change (see Table 1). Specifically, connectedness to the community at large was only moderately stable over the course of incarceration, $r(203) = .31$, $p < .001$, as was connectedness to the criminal community, $r(203) = .36$, $p < .001$. These moderate correlations suggest individuals do change and in various ways.

Both forms of community connectedness demonstrated substantial stability from Times 2 to 3 (see Table 2). In fact, the stability across this time period was notably higher than the stability across the initial period of incarceration at the intake facility.

Predictors of Individual Differences in Changes in Community Connectedness

Plan of analysis.

We next sought to identify variables that could predict whose connectedness changed over the course of incarceration. To test predictors of change, we created difference scores (Time

2 – Time 1) for the two community connectedness variables. To examine how 19 predictors related to changes in both community connectedness measures, we conducted hierarchical linear regressions using the change score as the criterion. Initial level of community connectedness was included as a control in each regression analysis¹ (the right-most column in Table 1 presents the coefficient of Time 1 connectedness on the difference score). For example, to determine whether age predicts changes in connectedness to the criminal community, Time 1 connectedness to the criminal community was entered as a control, age was entered as a predictor, and the difference score reflecting changes in connectedness to the criminal community served as the dependent variable. Predictors of individual differences in changes in community connectedness were only analyzed for Times 1 to 2 due to insufficient sample size at Time 3.²

As in Tangney et al. (2016), to better understand the pattern of significant effects, we created subgroups based on the independent variable of interest post-hoc to examine mean difference scores for descriptive purposes. This allowed us to investigate the direction and size of changes for relevant subgroups, for example, to understand if one group increases while the other decreases or if both change in the same direction but one group changes more. For dichotomous predictors that yielded a significant finding in Table 3, we examined mean difference scores for each group (e.g., males, females). For continuous variables that yielded a significant finding in Table 3, mean difference scores are reported for the upper and lower third of the sample.

Findings.

Among the demographic predictors, race significantly predicted changes in connectedness to the community at large (Table 3). Black participants tended to increase in connectedness to the community at large during incarceration ($M = 0.13$, $SD = 1.90$), whereas White participants tended to decrease ($M = -0.42$, $SD = 1.62$). Gender, age, education, and residential stability prior to incarceration were not associated with changes in connectedness to the community at large.

Regarding connectedness to the criminal community, age was the only significant demographic predictor. Using a tertiary split, older individuals (i.e., 37 years and older) tended to decrease more in connectedness to the criminal community ($M = -0.32$, $SD = 1.86$), than younger individuals (i.e., 25 years or younger), who tended to increase ($M = 0.28$, $SD = 1.92$). Gender, race, education, and residential stability prior to incarceration were not associated with changes in connectedness to the criminal community.

Of the criminal justice predictors, pre-release status predicted changes in connectedness to the community at large. Individuals released directly from local jail (pre-release sample) tended to exhibit minimal changes in connectedness to the community at large ($M = 0.01$,

¹This addresses regression to the mean, whereby during repeated measurements, relatively high or low observations on the first measurement are likely to be followed by less extreme scores upon subsequent measurement (Fitzmaurice 2001).

²Analyses were also conducted using Full Information Maximum Likelihood with MPlus statistical software (Muthén and Muthén 1998-2012) to handle missing data. Results were similar to those presented; no meaningful changes in significance were present for mean level change or individual difference in change analyses. No non-significant results became significant, or vice versa. For simplicity, analyses using listwise deletion in SPSS are presented in text.

$SD = 1.78$), whereas individuals transferred to another correctional facility (pre-transfer sample) tended to decrease in connectedness to the community at large ($M = -0.22$, $SD = 1.72$). Prior jail experience, length of incarceration, treatment and services enrollment, and perceived innocence were not associated with changes in either form of community connectedness.

Guilt-proneness was the only moral emotion or cognition related to changes in community connectedness. Individuals higher in guilt-proneness³ tended to decrease in connectedness to the criminal community ($M = -0.41$, $SD = 2.03$) compared to individuals lower in guilt-proneness, who tended to increase ($M = 0.27$, $SD = 1.81$). Shame-proneness and criminogenic cognitions were unrelated to changes in either form of community connectedness.

Depression and borderline personality disorder (BPD) features were the only mental health or personality factors related to changes in community connectedness. Individuals who were more depressed (T score ≥ 64), tended to decrease in connectedness to the community at large ($M = -0.33$, $SD = 1.82$) compared to less depressed participants (T ≤ 50 , $M = 0.18$, $SD = 1.69$). Similarly, individuals high in BPD symptoms (T ≥ 71), tended to decrease in connectedness to the community at large ($M = -0.07$, $SD = 1.70$) compared to those low in BPD symptoms (T ≤ 55 , $M = 0.11$, $SD = 1.44$). Psychopathy, anxiety, and substance dependence were not associated with changes in community connectedness.

Benjamini-Hochberg Correction.

A Benjamini-Hochberg (B-H) correction (Benjamini and Hochberg 1995) was applied to control for familywise error. This procedure has greater power and stability in power as the number of comparisons increases compared to the Bonferroni (Williams, Jones, and Tukey 1999). Separate B-H corrections were conducted for each community. The predictors remaining significant were age and guilt-proneness predicting decreases in connectedness to the criminal community over the period of initial incarceration.

Discussion

On average, inmates' connectedness to the community at large and to the criminal community did not change over the period of jail incarceration. No changes were observed during initial incarceration (average incarceration about 7 months), nor for a subset of participants transferred to other correctional facilities (average subsequent incarceration about 2 years).

The consistency in both forms of community connectedness were largely generalizable across demographic and criminal justice characteristics. Regardless of gender, education, and residential stability prior to incarceration, on average, inmates evidenced no significant change in connectedness to either community during incarceration. This countered our hypotheses that connectedness to the community at large would decrease and connectedness

³Since guilt-proneness is a residualized score, to remove variance associated with shame-proneness, the values used to create the tertiary split were: ≤ -1.0 and below = low, -1.0 to $.35$ = midrange, $.35$ and above = high.

to the criminal community would increase. The lack of change in connectedness to the criminal community is consistent, however, with the stability of in-group ties, a component of criminal identity assessed in a related study (Walters 2003).

When presented with largely null findings, it is natural to question the study's measures and procedures: Was this a fair test of the hypotheses? Specifically, (1) Was the study adequately powered?; (2) Was the time between assessments sufficiently long to detect change?; and (3) Do single item measures of community connectedness have sufficient reliability and validity?

First, we were adequately powered (above 0.80) to detect medium effects for changes between Times 1 and 2, as well as Times 2 to 3, with $\alpha = .05$. Second, it is unlikely that incarceration was too brief for change to occur, as the average was seven months (range 1 to 18 months) to their Time 2 interview. Some participants were incarcerated 24 additional months (range 1 month to 7 years) between Time 2 and 3 interviews. Moreover, time incarcerated was unrelated to changes in community connectedness between Times 1 and 2. Lastly, the ICS has demonstrated concurrent, discriminant, and predictive validity, and test-retest reliability. Further, the stability correlations, particularly between Time 2 and 3, were substantial, suggesting the ICS captures reliable meaningful variance. This lends confidence to our finding of no mean level changes in community connectedness during incarceration.

Thus, we have confidence in the null findings. The next question to ask, then, is what do these null findings suggest about extant theory regarding the impact of incarceration on social connections? As noted in the introduction, theories from both psychology and sociology suggest that changes in the external environment – such as incarceration – can lead to changes in social identities (e.g., Boduszek et al. 2016; Clemmer 1940; Thomas 1977). Yet, frankly, these null results call into question key assumptions about these theories. It may be that social identities are stable, durable, and permanent (e.g., Ethier and Deux 1994) than these theorists imagined, or that more nuanced theorizing is needed regarding whose connectedness changes and in what ways. After all, the observed equivalent means across time belie tremendous variance at the individual level. It is not that there was no change – it is that people changed in many ways. Analysis of means is too blunt a tool to detect the subtleties of change in social connection over the course of incarceration.

Individual Differences in Change

The current study investigated a wide range of predictors of change and of note, several factors were significant predictors prior to a B-H correction—race, pre-release status, depression, BPD features; these should be considered in future investigations. Results suggest there are multiple factors relevant to individual differences of change. For example, individuals transferred to other correctional facilities may be at-risk for weakening connections with the community at large. However, only age and guilt-proneness significantly predicted changes in connectedness to the criminal community following correction for familywise error.

Regarding age, younger inmates became more connected to the criminal community, whereas older individuals became less connected. Younger inmates are undergoing a period

of identity exploration and consolidation and have more malleable identities (Erikson 1963; Waterman 1982). Results may also be related to the age-crime curve, which demonstrates crime peaks in early adulthood and naturally declines with age (Farrington 1986). Stakes in conformity (e.g., employment) also increase with age, and therefore younger inmates may have less interest in avoiding crime and criminal peers as compared to established individuals who peaked in their criminal careers and have more to lose.

Regarding guilt-proneness, inmates who were less guilt-prone tended to become more connected to the criminal community during incarceration, relative to those more guilt-prone. Except for inmates wrongfully imprisoned, all inmates share the history of having committed a crime. Inmates low in guilt-proneness are apt to feel little remorse for their crime, and may in fact feel pride in aspects of their criminal career and identity. This may facilitate bonding with other inmates. Those high in guilt-proneness, in contrast, are apt to feel remorse and regret for their crime, particularly when they perceive their crime and/or its consequences harmed others (Tangney et al. 2007). Just as guilt-prone inmates are apt to view their own crimes negatively, they may be likewise apt to disapprove of others' crimes. The commonalities of crimes committed and incarceration, therefore, could serve as a basis for social bonding. A guilt-prone person would presumably eschew including other criminals in the self.

Limitations

Although the results of this study hold implications for understanding how jail inmates' connectedness to two different communities change during incarceration, it has several limitations. The first pertains to the single-item measures of community connectedness. Although single-item measures are not optimal for assessing change, the overlapping circles method is widely used in research to assess connectedness and prospectively predict relationship outcomes including the dissolution/continuance of relationships. Of note, the IOS scale, from which the ICS scale was derived, has outperformed substantiated, multi-item measures of closeness in predicting outcomes such as relationship breakup (Aron et al. 1992). In addition, the ICS has been validated using Times 1 and 2 data from the current offender sample (Folk et al. 2016; Mashek et al. 2006; Mashek et al. 2007), as well as among college students (Mashek et al. 2007). The concurrent, discriminant, and predictive validity, and the test-retest reliability of the ICS suggest these items capture reliable and meaningful variance.

Regarding generalizability, despite diversity on factors such as ethnicity and criminal record, the sample consists of general population jail inmates charged with felonies and housed in a single mid-Atlantic jail. We did, however, have a smaller sample of inmates who were transferred to other correctional facilities, including prisons. This sub-sample allowed us to replicate the lack of mean level changes in community connectedness across the period of incarceration, but the small sample with Times 2 and 3 data prohibited an in-depth analysis of predictors of changes in community connectedness. Future research is needed to generalize these findings to other high-risk samples.

The limitations described are tempered by several methodological strengths. The intuitive nature of the overlapping circles measure, its accessibility to individuals with limited literacy skills and its demonstrated utility across different contexts makes it well suited for use with inmates. More importantly, this study's methodological rigor is enhanced by its longitudinal design and utilization of both self-report and official records.

Clinical and Policy Implications

If the goal is for individuals who served their time to productively reconnect with society, one approach is developing policies and interventions that reduce connectedness to the criminal community and enhance connectedness to the community at large. As demonstrated by Folk et al. (2016), connectedness to the criminal community predicts subsequent re-offense one year post-release, whereas connectedness to the community at large predicts positive community adjustment. Results demonstrate there is some natural change during incarceration that varies across individuals. Without intervention, however, inmates' community connectedness is unlikely to change.

Programs such as Impact of Crime (Folk et al. 2016) aim to increase feelings of guilt and responsibility for one's actions through raising awareness of the impact of crime on victims and the community, facilitate interactions between offenders and community members, and allow offenders to give back to the community through community service. Although studies such as the current one may point to areas of intervention, the best way to further test these ideas is by conducting experiments whereby interventions are designed to more specifically affect change in connectedness and then evaluated on both short- and long-term outcomes.

Summary

Although the current study found no evidence for increases in connectedness to the criminal community, there was also no evidence for a rehabilitative effect (i.e., no increase in connectedness to community at large). Inmates do not enter jail and have experiences sufficient to foster connectedness with the community at large. This is problematic if our correctional system truly desires to rehabilitate individuals, as connectedness to the community at large prior to incarceration is directly related to how well individuals function in the community upon release (Folk et al. 2016). Equally problematic is that younger and less guilt-prone inmates are particularly likely to become more psychologically connected to the criminal community. Given the link between pre-release connectedness to the criminal community and recidivism (Folk et al. 2016), identifying ways to prevent this assimilation is likely a worthwhile target for intervention.

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Figure 1.
Inclusion of Community in Self Scale.

Table 1.

Changes in Community Connectedness over the Course of Incarceration

	Time 1 <i>M</i> (SD)	Time 2 <i>M</i> (SD)	Difference <i>M</i> (SD)	95% I	<i>t</i> -value	Cohen's <i>d</i>	Correlation between Time 1 & 2	<i>T1</i> predicting difference score β
Connectedness to Community at Large	2.60 (1.57)	2.45 (1.44)	-0.15 (1.77)	-.09 - .40	1.23	0.10	.31***	-.64***
Connectedness to Criminal Community	2.86 (1.77)	2.81 (1.70)	-0.05 (1.95)	-.22 - .32	0.36	0.03	.36***	-.59***

Note.

 $p < .001$; Time 1 = Initial incarceration; Time 2 = Pre-Release/Pre-Transfer; *d* was calculated using the formula t_c (see Dunlap et al. 1996) because simulations show the least distortion in estimating *d*. $N = 203$

Table 2.
Changes in Community Connectedness over the Course of Incarceration Following Transfer

	Time 2 <i>M</i> (SD)	Time 3 <i>M</i> (SD)	Difference <i>M</i> (SD)	95% CI	<i>t</i> -value	Cohen's <i>d</i>	Correlation between Time 2 & 3	T2 predicting difference score β
Connectedness to Community at Large	2.34 (1.27)	2.28 (1.54)	-0.06 (1.49)	-.38 - .50	0.29	0.05	.45**	-.39**
Connectedness to Criminal Community	2.83 (1.85)	2.53 (1.64)	-0.30 (1.43)	-.12 - .72	1.43	0.17	.67***	-.52***

Note.

 $p < .001$

**
 $p < .01$; Time 2 = Pre-Transfer; Time 3 = Pre-Release; d was calculated using the formula t_c (see Dunlap et al. 1996) because simulations show the least distortion in estimating d.

$N = 48$

Table 3.

Predictors of Individual Differences in Change in Community Connectedness

	Connectedness to Community at Large β	Connectedness to Criminal Community β
Demographic Factors		
Gender (Male)	.086	.063
Age	-.053	-.166 **
Race (Black)	.148 **	-.039
Education	-.022	-.013
Residential Stability	-.028	-.005
Criminal Justice Factors		
First Jail Experience	.075	.082
Length of Incarceration	.001	.043
Pre-Release (vs. Pre-Transfer)	.112 *	-.104
Treatment and Services Enrollment	-.029	-.097
Moral Emotion and Cognition Factors		
Guilt-Proneness	.095	-.171 **
Shame-Proneness	-.015	.008
Criminogenic Cognitions	.096	.056
Mental Health and Personality Factors		
PCL:SV Factor 1	.081	.021
PCL:SV Factor 2	.035	.035
Borderline Features	-.139 *	-.011
Depression Symptoms	-.165 **	-.062
Anxiety Symptoms	-.029	-.021
Substance Dependence	-.094	-.009

Notes.

**
 $p < .01$ *
 $p < .05$; Standardized beta coefficients are given; PCL:SV=Psychopathy Check List: Screening Version.