

# IMPLICIT CRIMINAL IDENTITY AND AGE

## Implications for Criminal Persistence and Desistance

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The present study examines the relations between self-reported explicit criminal identity (ECI) and implicit criminal identity (ICI); that is, the cognitive association between the self-concept and the category of criminal represented in implicit (i.e., nonconscious) memory, and the relation of implicit and explicit identities to age. One hundred six adult participants from the Newark, New Jersey, community participated in the experiment; 39% reported a justice-involvement experience defined as having been arrested, convicted, and/or incarcerated. The experiment was a Justice Involvement (categorical variable)  $\times$  Age (continuous variable) between-participants design using computer-based reaction time tasks. The findings supported the hypotheses that (a) while both ICI and ECI are related to justice involvement, they are uncorrelated with each other; (b) ICI increases with age; and (c) ECI decreases with age. The findings suggest that implicit social cognitions have promise in explaining persistence and desistance over and above conscious identity-based attitudes and beliefs.

**Keywords:** criminal identity; implicit social cognition; age–crime; implicit associations test; desistance

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### INTRODUCTION

Criminal identity is thought to be one of the drivers of criminal participation (Brezina & Topalli, 2012; Little, 1990; Shover, 1996), and the shedding or replacement of the criminal identity is believed to be necessary for long-term desistance (Christian, Veysey, Herrschaft, & Tubman-Carbone, 2009; Farrall & Calverley, 2005; Giordano, Cernkovich, & Rudolph, 2002; Maruna, 2001; Paternoster & Bushway, 2009; Sommers, Baskin, & Fagan, 1994; Stevens, 2012). These studies underscore the theoretical importance of cognitions, especially

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how “criminals” perceive themselves, their roles, and identities. This is not just an exercise in theory development. In fact, the critical importance of cognitions is reflected in many commonly used criminal justice procedures. For example, the Level of Service Inventory–Revised (LSI-R; Andrews & Bonta, 2000), arguably the most commonly used risk assessment in U.S. criminal justice settings today, measures offender attitudes and orientations (i.e., criminogenic thinking) and finds that this domain is one of the “big four” predictors of negative justice outcomes (Andrews & Bonta, 2003). Not surprisingly, therefore, cognitive behavioral treatment, focused to a large degree on changing problematic cognitions, is hailed as an effective evidence-based intervention for justice populations (e.g., Milkman & Wanberg, 2007). These practices reflect an assumption that individuals’ cognitions, including those related to identity, as well as peer associations and behaviors, are under the control of the individual and therefore can be changed by force of will.

Notwithstanding the above research and practice, the relative importance of cognitions, especially identity, over the life course has not received substantial attention. With few exceptions, such as Shover (1996), studies focused on identity or other cognitions do not address the question of whether there is a developmental or otherwise age-related relation between cognition and age. What we know about age-graded criminality focuses largely on offending rates and to a lesser degree on age-graded activities and roles (for a full discussion, see Laub & Sampson, 2003). These studies consistently demonstrate two facts: (a) crime rates increase dramatically during adolescence and decline precipitously after age 17 (Farrington, 1986), and (b) for a small subset of individuals, crime begins at an early age and persists across the life course (see Moffitt, 1993).

Consistent with what is known about the age–crime relation, as youth age and assume other activities and statuses, such as employment and marriage, criminal involvement declines (Laub & Sampson, 2003). To the degree that the cessation of criminal/delinquent behavior often occurs in tandem with the assumption of roles and role-related behaviors, perception of self (i.e., identity) is also likely to change. Interviewed active and reformed criminals and current and formerly incarcerated participants often openly report how their self-concept played a role in their participation in crime (e.g., Brezina & Topalli, 2012) and/or their desistance from crime, often described as assuming a replacement identity (e.g., Maruna, 2001). These identity processes can be observed in age-related transitions (e.g., Shover, 1996) as well as in non-age-specific identity transformations (e.g., Giordano et al., 2002). For example, Shover (1996), a proponent of the importance of identity in criminal behavior, was interested in understanding how the age–crime curve manifested in the “careers” of thieves.

The studies’ findings described above are based on how current or former justice-involved people describe their criminal careers and/or their pathways to desistance. They are based on research participants’ self-characterization and reflect a conscious thought process about the self. These participant responses are often made upon thoughtful reflection and, therefore, are explicit identity-based cognitions. Adding to the existing literature, we propose to investigate implicit identity-based cognitions (i.e., those outside of conscious awareness) as a possible additional factor to explain persistence and desistance over the life course. Notwithstanding the importance of understanding the conscious thoughts and the link between explicit beliefs and attitudes and behavior, little to nothing is known about how justice-related experiences influence identity-based mechanisms that operate outside of conscious awareness. Given what is known about implicit social cognitions (ISCs) generally, it

is possible that what happens nonconsciously may be as, or even more, important than what individuals report with respect to persistence and desistance. Specifically, the present research will examine the relation of justice involvement and age to explicit criminal identity (ECI) and to implicit criminal identity (ICI), or the cognitive association between the self-concept and criminality represented in implicit memory.

### **ICI AND ISC THEORY**

Social psychologists have proposed ISC theories to explain a wide range of human social behavior that falls outside of conscious awareness and conscious control (for review, see Gawronski & Payne, 2010). ISC theories generally hypothesize that social beliefs are driven (a) by implicit processes that are automatically activated outside of individuals' conscious awareness, inaccessible to introspection, and absent of motivational control; and (b) by explicit processes that are rooted in conscious awareness, introspection, and motivational control. The latter is consistent with the criminology literature on identity that assumes that justice-involved individuals are (a) aware of and can reflect on the effect of past criminal experiences on their identity (i.e., conscious awareness and introspection), and (b) willing to accurately report their criminality beliefs (i.e., motivational control). However, ISC theorists challenge these assumptions, particularly as they relate to identity processes in individuals who are stigmatized (i.e., negatively evaluated by self and others). Even if justice-involved individuals are motivated to disavow their negative identities as the identity transformation literature would suggest, they may not be aware of the subtle and pernicious ways in which their justice-involved experiences (e.g., being arrested, convicted, or incarcerated) shape their identity and thus are unable to report such effects. The essential question, then, is, can implicit identity processes and methods reveal what individuals are unaware of or may want to hide?

A central assumption of ISC is that past experiences can have automatic and nonconscious effects on the organization of beliefs in memory (Greenwald & Banaji, 1995). A single significant experience or a series of related experiences can mentally link previously unrelated beliefs. When a person has a justice-related experience (e.g., arrest, conviction, incarceration), an association is established in implicit memory between the self-concept and the group category "criminals." Again, we refer to this implicit social cognitive process as an ICI (Rivera & Veysey, 2016, 2017). Moreover, even when an ICI is represented in memory, an offender may be motivated to minimize such an association when they reflect on a self-report questionnaire or during an interview (Schnabel & Asendorpf, 2010). In contrast to an ICI, we refer to this controlled and conscious social cognitive process as an ECI.

In addition to the above group effects, ISC measures have utility in assessing individual differences in implicit identities and self-concepts (e.g., implicit self-stereotyping; Laws & Rivera, 2012; Lun, Sinclair, & Cogburn, 2009). Such research is consistent with social identity theory, which posits that while people acknowledge their categorical affiliation with their social groups, there is considerable variability in the extent to which they assign significance and meaning of their group membership and related attributes to their self-concept (Tajfel & Turner, 1986). Among justice-involved people, individual differences in ICI might help researchers to further understand important cognitive and developmental criminality processes.

### THE RELATION OF IMPLICIT AND EXPLICIT CRIMINAL IDENTITIES

ISC theories hypothesize that experience will have a nonconscious effect linking the self-concept with previously unrelated groups and their associated attributes. Based on recent studies (Rivera & Veysey, 2016, 2017), persons with one or more substantial justice experiences (i.e., arrest, conviction, and/or incarceration) have a relatively strong ICI compared with persons without such experiences due to the theoretical nonconscious mental association between self and the category criminal. Consistent with research in the field noted earlier, persons with justice experience are also likely to report a self-association with criminal identity.

At the same time, the prominence or strength of both the explicit and implicit criminal identity is predicted to vary within individuals with criminal experience. That is, regardless of the severity of the interactions with the justice system, the strength of association of the self to the criminal identity is predicted to vary among individuals partially due to other competing identities (e.g., business leader, teacher) and social factors (e.g., high social economic status, strong social network) that reflect individuals' ability to resist the assumption of negative identities (Rivera & Veysey, 2016). As has been demonstrated in non-criminal justice contexts, the strength of association is also likely to vary by social interaction and across contexts (e.g., Devos & Banaji, 2003; Schnabel & Asendorpf, 2010).

Given this variability and what is known about implicit and explicit identity processes, ICI and ECI are likely to be derived from different sources. Reflecting findings from other implicit cognition studies of stigmatized groups (Devos & Banaji, 2003), individuals carrying stigmatizing labels are likely to underreport or minimize their association with the stigmatized group, while implicit associations are difficult to conceal. This suggests that explicit reporting of self-related attitudes and beliefs may be independent, or partially independent, of implicit attitudes and beliefs. As is the case with ISC studies, the correlation between ICI and ECI is predicted to be low or nonexistent (Greenwald, Poehlman, Uhlmann, & Banaji, 2009).

### THE PRESENT RESEARCH

Following the ISC theories and criminology research reviewed above, we will test three predictions. The first prediction is related to the nonrelation of ECI to ICI, and the second and third involve the relation of age to ICI and to ECI, respectively.

**Prediction 1:** ICI will not be related to ECI, regardless of participants' justice-involvement experiences.

A consistent finding in the ISC literature is that indirect and direct measures of socially sensitive beliefs about the self tend to be unrelated. On one hand, indirect (implicit) measures tend to capture the automatic activation of a mental representation; that is, this basic cognitive process occurs in the absence of conscious thought. On the other hand, direct (explicit) measures capture this mental representation after motivational control intervenes. Thus, the correlation between explicit and implicit processes as assessed by direct and indirect measures, respectively, tend be minimal or null, and this is particularly true for stigmatized identities such as criminal. Therefore, we predict that ICI will be unrelated to ECI (regardless of past criminal experiences and age).

**Prediction 2:** Older justice-involved participants will have stronger ICIs than younger justice-involved participants.

Cognitive psychology research has established that past experiences influence memory, even when these effects occur outside conscious awareness (Greenwald & Banaji, 1995). Moreover, subtle and overt environmental cues that remind individuals of their past experiences can maintain and even strengthen the automatic activation of mental representations and their associations (Greenwald & Banaji, 1995). This suggests that older justice-involved individuals' ICIs will be stronger than those of younger individuals, because they are chronically reminded of their criminal past.

**Prediction 3:** Older justice-involved participants will have weaker ECIs than younger justice-involved participants.

Most crimes are committed by persons in their late teens and early twenties. Because these individuals tend to desist from crime as they age, they may simultaneously be motivated to distance themselves from a criminal identity (i.e., as they age, they might tell themselves, "That was my past. I am no longer that person."). According to ISC theories, such a response is a function of an explicit conscious control process, and thus, ECIs of older adults are predicted to be less than those of younger adults.

To test Predictions 1 to 3, we recruited a sample of adult participants from the Newark, New Jersey, community who varied in both their justice involvement and age. Participants completed an Implicit Association Test (described below) to measure an ICI. In addition, we used a self-report questionnaire to measure ECI, past criminal experiences, and age.

## METHOD

### PARTICIPANTS AND DESIGN

We used G\*Power to calculate an a priori power analysis. The analysis using a medium effect size, alpha of .05, power of .80, and two main predictors yielded a minimum sample size of 68. Participants for the study were recruited using flyers posted on the campus and in the areas surrounding the university. The flyers stated that the purpose of the study was to examine "identity and experiences" and participants would be compensated US\$20 for their time. Table 1 describes the present sample's background and demographic characteristics. Of the 106 participants, 52% were male. Participants' age ranged from 18 to 70 years ( $M = 33.4$ ,  $SD = 13.7$ ). Fifty percent were African American/Black, 18% were Hispanic/Latino(a), 15% were White, 8% were Asian or Pacific Islander, 6% were multiracial, 2% were Native American, and 2% did not indicate an ethnic-racial identity. Half were currently employed, and 40% had a household income of US\$40,001 or more. Of the 41 (39%) participants who reported an experience with the criminal justice system, 90% reported having been arrested, 61% had been convicted of at least one crime, and 59% had been incarcerated. Sixty-five (61%) did not report a justice-involved experience. The experiment was a Justice Involvement (categorical variable)  $\times$  Age (continuous variable) between-participants design.

### PROCEDURE

A research assistant informed participants that the study's purpose was to examine "people's social and cognitive beliefs." As part of a larger study on identity and experiences, participants completed the measures of ICI followed by ECI, and then a background and demographics questionnaire that included the measure of past justice-involved experiences. After the session, all participants were fully debriefed and remunerated.

**TABLE 1: Characteristics of Sample Participants (*N* = 106)**

Variables	Frequency (%)	<i>M (SD)</i>
Justice involvement		
No	65 (61.3)	
Yes	41 (38.7)	
Arrested	37 (90.2)	
Convicted	25 (61.0)	
Incarcerated	24 (58.5)	
Age		33.4 (13.7)
Gender		
Male	55 (51.9)	
Female	50 (47.2)	
Other	1 (.9)	
Ethnicity		
African American/Black	53 (50.0)	
Hispanic/Latino(a)	19 (17.9)	
White	16 (15.1)	
Asian or Pacific Islander	8 (7.5)	
Multiracial	6 (5.7)	
Native American	2 (1.9)	
Other	2 (1.9)	
Employment Status		
Employed	53 (50.0)	
Unemployed	53 (50.0)	
Household income (US\$)		
0-20,000	31 (29.3)	
20,001-40,000	32 (30.2)	
40,001-60,000	13 (12.2)	
60,001-80,000	11 (10.4)	
80,001-100,000	5 (4.7)	
100,001 or more	14 (13.2)	

Note. Frequencies and proportions are a function of the complete sample, with one exception. Frequencies and proportions for those arrested, convicted, or incarcerated are a function of justice-involved participants only.

## MEASURES

### Justice-involved experience

Participants were asked if they had ever been arrested, convicted, and/or incarcerated. We defined a justice-involved participant as an individual who responded affirmatively to having one or more of these experiences. These participants were then asked to briefly describe their experience, and this information was used to confirm the previous questions. Non-justice-involved participants were those who did not have any of these experiences.

### ICI

An ICI is a cognitive association between the self-concept and criminality that is represented in memory. We measured ICI with a Single-Category Implicit Association Test (SC-IAT; Karpinski & Steinman, 2006). The SC-IAT uses reaction times when classifying semantic stimuli to measure the mental associations with a single target category (in this case, criminal). In the SC-IAT, semantic stimuli (words) that represent self, others, and

criminal randomly appeared one after the other centered on the computer screen. Simultaneously, category labels were positioned on the top left and top right sides of the screen. For half of the task, participants were instructed to use the “A” key to classify “self” and “criminal” words (i.e., “self+criminal”) and the “K” key to classify “other” words. In the other half of the task, the key assignment was reversed. Participants used the “A” key to classify “other” and “criminal” words (i.e., “other+criminal”) and the “K” key to classify “self” words. The order of the two tasks was counterbalanced between participants. For each task, participants first read a set of instructions then completed 17 practice trials followed by 68 critical trials.

For each trial, the target word remained on the screen until participants responded, but not longer than 1,500 milliseconds (ms). If participants failed to respond within 1,500 ms, a reminder to “Please respond more quickly!” appeared for 500 ms. Following each response, participants were given feedback regarding the accuracy of their response. A green “O” in the center of the screen appeared for 150 ms following correct responses; a red “X” in the center of the screen appeared for 150 ms following incorrect responses.

The SC-IAT semantic stimuli for the three categories were words related to (a) the self (I, me, my, mine, self); (b) others (they, them, their, theirs, others) [“self” and “others” words were used in prior studies (e.g., Laws & Rivera, 2012)]; and (c) criminal (criminal, felon, lawbreaker, offender, convict, delinquent, prisoner). The criminal words were pretested with a separate adult sample ( $N = 48$ ) that rated the words and a set of criminal-unrelated words on a 7-point scale from *Not at all related to criminality* to *Completely related to criminality*. The criminality word stimuli, on average, were strongly related to criminality,  $M = 6.17$ ,  $p < .001$ , Cohen’s  $d = 3.22$  (large effect size; compared with a neutral mid-point).

### **ECI**

Participants were asked to self-report the extent to which they associate themselves with the seven criminal words in the SC-IAT on a 7-point scale ranging from *Not all characteristic of me* to *Extremely characteristic of me*.

### **DATA SCORING**

The SC-IAT was scored in accordance with established procedures (Greenwald, Nosek, & Banaji, 2003; Karpinski & Steinman, 2006). A SC-IAT score is the difference in standardized reaction times between the self+criminal trials and other+criminal trials. A relatively high SC-IAT score indicates faster reaction times when self-word stimuli are paired with criminal-word stimuli than when other-word stimuli are paired with criminal-word stimuli. Thus, a high SC-IAT score indicates a relatively strong ICI. Similarly, the self-report measure of ECI was scored such that a higher score indicates a stronger ECI.

## **RESULTS**

### **EFFECT OF JUSTICE-INVOLVEMENT EXPERIENCES ON ICI AND ECI (PREDICTION 1)**

ICI and ECI scores were subjected to two, separate one-way ANOVA tests with justice involvement as a quasi-independent variable. Before proceeding to the results of Prediction 1, it is worth reporting that justice-involved participants had relatively strong ECIs when compared with non-justice-involved participants ( $M_{\text{justice-involved}} = 2.72$  vs.

**TABLE 2: Summary of Intercorrelations, Means, and Standard Deviations for Measured Variables as a Function of Justice Involvement**

Variable	1	2	3	M	SD
1. Age	—	-.35*	.44**	38.31	12.38
2. ECI	-.02	—	-.13	2.72	1.63
3. ICI	-.18	-.04	—	0.08	0.42
<i>M</i>	30.40	1.36	-.10	—	
<i>SD</i>	13.78	.61	.26	—	

Notes. Justice-involved participants' ( $n = 41$ ) data are presented above the diagonal, and non-justice-involved participants' ( $n = 65$ ) data are presented below the diagonal. Higher ECI and ICI scores indicate stronger identities. ECI = explicit criminal identity; ICI = implicit criminal identity.

\* $p < .05$ . \*\* $p < .01$ .

**TABLE 3: Predictors of Explicit and Implicit Criminal Identity**

Predictor	Criminal identity					
	Explicit			Implicit		
	$\Delta R^2$	$\beta$	SE	$\Delta R^2$	$\beta$	SE
Model 1	.31***			.08*		
Age		-.15	.08		.11	.09
Justice involvement		.57***	.08		.23*	.09
Model 2	.04*			.11***		
Age × Justice Involvement		-.25*	.10		.42***	.11

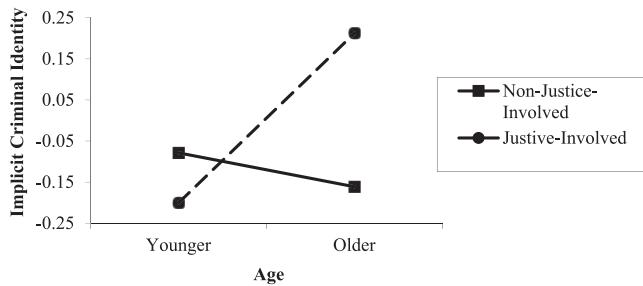
\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

$M_{\text{non-justice-involved}} = 1.36$ ,  $F(1, 104) = 36.99$ ,  $p < .001$ , Cohen's  $d = 1.10$  (large effect size). Furthermore, justice-involved participants had relatively strong ICIs when compared with non-justice-involved participants ( $M_{\text{justice-involved}} = .08$  vs.  $M_{\text{non-justice-involved}} = -.10$ ),  $F(1, 104) = 8.07$ ,  $p = .005$ , Cohen's  $d = .51$  (medium effect size; Rivera & Veysey, 2017; see Table 2 for means, standard deviations, and correlations within groups).

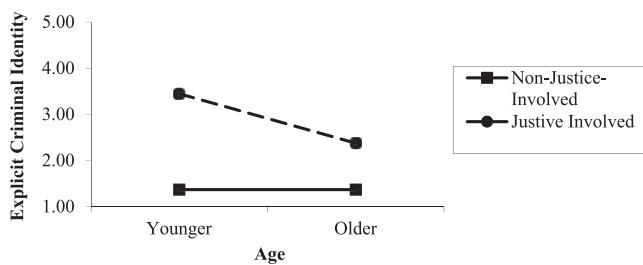
To examine the relation between ICIs and ECIs as a function of participants' justice involvement (Prediction 1), we ran a hierarchical regression analysis in which ECIs were regressed on justice involvement (coded 0 = no experience, 1 = experience) and ICIs (standardized scores) in the first model, and their two-way interaction term in the second model (following Aiken & West, 1991; see Table 3). The Justice Involvement × ICI interaction was not significant,  $\Delta F(1, 102) = .22$ ,  $R^2 = .002$ ,  $p = .63$ . As predicted, regardless of their justice involvement, participants' ICIs did not covary with their ECIs,  $\beta_{\text{justice-involved}} = -.13$ ,  $\beta_{\text{non-justice-involved}} = -.04$ ,  $ps > .40$ .

#### EFFECT OF JUSTICE-INVOLVEMENT EXPERIENCES ON THE RELATION BETWEEN PARTICIPANTS' AGE AND THEIR ICIS VERSUS ECIS (PREDICTIONS 2 AND 3)

To test the hypothesized relations between participants' age and their ICIs versus ECIs as a function of justice involvement, we ran two hierarchical regression analyses in which ICI and ECI were regressed on justice involvement (coded 0 = no experience, 1 = experience)

**Figure 1: Implicit Criminal Identities as a Function of Justice Involvement and Age**

Note. Higher implicit criminal identity scores indicate stronger identities.

**Figure 2: Explicit Criminal Identities as a Function of Justice Involvement and Age**

Note. Higher explicit criminal identity scores indicate stronger identities.

and age (standardized scores) in the first model, and their two-way interaction term in the second model. When ICI was the outcome variable, the regression yielded a significant Justice Involvement  $\times$  Age interaction,  $\Delta F(1, 102) = 14.09, R^2 = .11, p < .001, \beta = .42$  (see Figure 1). Consistent with Prediction 2, older justice-involved participants had stronger ICIs than younger justice-involved participants,  $\beta = .44, p = .004$ . However, among non-justice-involved participants, the relation between age and ICI was not statistically significant,  $\beta = -.17, p = .15$ .

Last, when ECI was the outcome variable, the regression yielded a significant Justice Involvement  $\times$  Age interaction,  $\Delta F(1, 102) = 5.77, R^2 = .03, p = .01, \beta = -.24$  (see Figure 2). Consistent with Prediction 3, older justice-involved participants had weaker ECIs than younger justice-involved participants,  $\beta = -.35, p = .02$ . However, among non-justice-involved participants, the relation between age and ECI was not significant,  $\beta = -.01, p = .90$ .

## DISCUSSION

The present application of ISC theory and measurement to criminal identity as a function of age is among the first of its kind. As such, the experimental procedures use a step-by-step method to investigate three fundamental questions related to ICI, ECI, and the relation of ICI to ECI, which provides the groundwork for the age-related analyses that are the primary focus of this study. After confirming that persons with justice experiences are indeed more likely to self-categorize as criminal and likewise have a stronger ICI compared with those

without such experiences, the first step was to investigate the relation between an implicit identity and an explicit one. One might anticipate that these two constructs should be highly correlated. However, the ISC literature suggests otherwise. In studies of implicit identities that are highly stigmatized, nonconscious associations to groups and group attributes are either weakly or not correlated with those reported through survey and/or interviews (i.e., explicitly stated; Devos & Banaji, 2003). In this study, too, implicit and explicit criminal identities are uncorrelated among all participants and as a function of criminal justice involvement.

The fact that both ICI and ECI are associated with justice experience (Rivera & Veysey, 2017) but are uncorrelated with each other begs the question of whether ICI and ECI might predict the same or different outcomes. To be clear, this study is not longitudinal, nor does it contain measures of actual behavior (see Rivera & Veysey, 2017). Therefore, this study cannot answer fundamental questions about the predictive association of either implicit or explicit identity to future criminal behavior. What we speculate is based on other studies of ISC. Measures of individual differences, such as those that tap into identity processes, are in fact predictive of actual behavioral outcomes. For example, strong implicit associations predict relevant performance outcomes by gender and race/ethnicity (e.g., academic performance) as well as health and psychological well-being outcomes (Laws & Rivera, 2012; Nock et al., 2010). Finally, in a convincing demonstration of the predictive validity of ISC measures, namely the IAT, a meta-analysis of 122 research reports ( $N = 14,900$ ) yielded an average  $r = .27$  for the prediction of behavioral, judgment, and physiological measures (Greenwald et al., 2009). Especially relevant to the present research, when the studies focused on socially sensitive topics such as stigma and stereotypes, the predictive power of ISC measures was significantly greater than that of self-report measures. Altogether, the above research suggests that ISC measures have stronger, and at times exclusive, predictive utility than measures of explicit social cognition (e.g., self-report measures) when they measure stigma-based identities and their underlying processes and relevant behavioral outcomes.

Extending these general findings of implicit and explicit identities to criminal identity, we may predict that ICI is related to a “vulnerability” or risk of continued criminal behavior particularly within specific social contexts and/or social networks above and beyond ECI. It is important to note here that implicit identity does not lead inevitably to a given behavior but only increases the probability of its occurrence. Even when a strong implicit mental association exists (e.g., ICI), individuals continue to exert agency over their decisions and may choose their actions when the opportunity and motivation for self-regulation exist (see Gawronski & Bodenhausen, 2011). For example, in studies of implicit bias, persons with strong implicit prejudice measured by an IAT may also report low levels of bias and behave in nondiscriminatory ways (Dasgupta & Rivera, 2006). This may also operate in a criminal identity. Individuals may maintain a strong implicit association with a criminal identity but report a substantial change in both identity and behavior (Maruna, 2001).

The primary goal of this research was to investigate the relation of age to both ICI and ECI. We expected that ICI would increase across age groups while ECI would decrease. The data supported our hypotheses in both cases. Consistent with prior research on formerly incarcerated individuals’ postrelease experiences and on correctional policies, individuals with criminal pasts have difficulty shedding their criminal labels even while they are actively involved in identity transformation processes (Visher & Travis, 2003). This is often

the case because legislation and common practices both restrict opportunities and, at the same time, continuously remind the individual of his or her past life. From an ISC standpoint, these constant reminders serve to reinforce the ICI, theoretically ever strengthening it over the life course. Conversely, and consistent with the desistance literature, people can and do relinquish criminal lifestyles and identities for other conventional ones (Maruna, 2001) and even in the absence of a replacement self (Paternoster & Bushway, 2009). Our findings support this notion as well. As demonstrated in this study, older people consciously disavow criminal identity (i.e., ECI) presumably as they assume other socially acceptable roles/identities.

Finally, this study leaves some critical questions unanswered. First, this study cannot answer the key question of whether ICI is, in fact, related to criminal persistence or desistance. As hinted above, future research should attend to the behavioral consequences of ICI through longitudinal designs that assess ICI and behavior over time. As stated above, if ICI behaves like other implicit measures, it should predict actual criminal behavior above and beyond what a justice-involved person explicitly says. Second, this work is based on the theory that any criminal experience is sufficient to link in implicit memory the self with the category “criminal.” As a general test, we were not interested in specific crime types and, therefore, did not collect information on specific crimes or the dates of the criminal experience(s). However, it is possible that the strength of ICI (and ECI) may vary depending on the type of crime. For example, those who have been convicted of sex crimes, registered as a sex offender, and exposed to much greater surveillance arguably have more frequent reminders or cues that would make their criminal identity prominent in their conscious and nonconscious memory. Similarly, we did not distinguish between the nature of the criminal experiences of arrest, conviction, and/or incarceration. It is also possible that ICI (and ECI) may vary depending on the degree of criminal involvement, including the number of arrests, convictions, and incarcerations or the depth of involvement (e.g., one arrest vs. one arrest with one incarceration). Finally, we used age as a proxy for persistence/desistance processes. As we did not collect information on the dates of participants’ criminal involvement, we cannot distinguish between an older participant with a recent arrest from an older participant with an arrest decades in the past. Each one of these limitations presents an opportunity to extend the current line of research.

## CONCLUSION

Based on a rigorous experimental design, this study of age and ICI is the first of its kind and represents the potential for groundbreaking advances in our understanding of persistence and desistance from criminal activity, particularly in regard to age-graded experiences. In all other work, be it studies of macro-level correlations, individual-level reports, network analyses, or redemption narratives, there are challenges in measurement and operationalization. Each one of these types of studies contributes to our understanding and, at the same time, leaves many questions unanswered. The current project is based on experimental procedures that are not dependent on self-report. The unique contribution of the ISC methodology is that it taps unconscious processes that commonly are related to behavior and health outcomes. At the most fundamental level, these implicit associations are the micro-mechanisms that drive individual behaviors. It may be argued that the strength of these associations is what makes individuals within stigmatized groups behave differently.

While a preliminary step, the results from the study begin to shift our thinking about aging, crime, criminality, and how people with criminal pasts change. The results confirm previous findings of individuals' willingness to report a "criminal" identity, while challenging the notion that an explicit identity is the most valid measure of this identity. More importantly, explicit and implicit criminal identities vary by age, suggesting different mechanisms may be operating in the persistence and desistance processes. The theory and methodology underpinning this study has great potential for investigating some of the most perplexing problems in criminology today.

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