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Individual Differences in the Criminogenic Effects of Discrimination: An Exploration of the Role of Impulse Control and Callous-Unemotional Traits

Toni Walker

Louisiana State University and Agricultural and Mechanical College

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**INDIVIDUAL DIFFERENCES IN THE CRIMINOGENIC
EFFECTS OF DISCRIMINATION: AN EXPLORATION OF THE
ROLE OF IMPULSE CONTROL AND CALLOUS-
UNEMOTIONAL TRAITS**

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
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Doctor of Philosophy

in

The Department of Psychology

by
Toni Walker
B.S., University of Pittsburgh, 2015
M.A., Louisiana State University, 2019
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ABSTRACT

The association between perceived discrimination and engagement in criminal offending has been well studied, especially in samples of minority (predominantly Black, Hispanic, and Latino) adolescents. Several theories have been developed (Social Schematic Theory) and adapted (General Strain Theory) in an attempt to explain how harmful, discriminatory experiences may have an effect on an individual's behavior. There may be variability in how an individual responds to perceived discrimination, however, but the moderating role of personality characteristics has not been explored. Impulse control and callous-unemotional (CU) traits are both established predictors of offending and may also relate to the mechanisms that theories propose to explain the relationship between discrimination and offending. The purpose of the current study was to explore the relationship between major discrimination events and day-to-day discriminatory experiences and offending in an ethnically diverse sample of young adult males (N = 899) and to consider the potential moderating role of impulse control and CU traits. Perceived discrimination was positively associated with self-reported offending this relationship was found irrespective of the young adult's race or ethnicity. Further, evidence of moderation by CU traits and impulse control was found in the prediction of official arrests, such that the relationship between perceived discrimination and the likelihood of arrest was negative for young adult males with elevated CU traits and those with higher levels of impulse control. The findings have implications for informing theories of crime, culturally competent treatment, and a greater understanding of the public health risks of discrimination.

INTRODUCTION

Negative Impact of Discrimination

The deleterious effects of discrimination on physical and mental health outcomes in various marginalized groups have been well studied (Brown et al., 2000; Carter et al., 2017, 2019; Everette et al., 2016; Lee & Ahn, 2012; Pascoe & Richman, 2009). These experiences of discrimination can range from everyday microaggressions (Nadal et al., 2016) to overt racist interactions (Jones et al., 2016). In their systematic review, Goosby et al., (2018) document the health inequalities faced by Black people resulting from stressful reactions to interpersonal discrimination over the lifetime. Notably, exposure to increased levels of stress hormones in utero, higher stress response activation as evidenced by cortisol production, higher allostatic load, elevated risk of chronic disease, and manifestations of illness in adulthood were all linked to interpersonal discrimination (Goosby et al., 2018). A meta-analysis of 134 studies across races and ethnicities, Pascoe and Richman (2009) highlighted that perceived discrimination was related to poorer mental health (e.g., depressive symptoms, psychological distress, general well-being, post-traumatic stress symptoms) and physical health (e.g., cardiovascular disease, hypertension, diabetes, general indicators of health); further, increased discrimination experiences were also correlated with heightened physiological stress responses, participation in unhealthy behaviors (i.e. alcohol and substance abuse), and a reduction in positive health habits. Findings from the aforementioned meta-analytic studies suggest that discrimination may have the strongest impact on mental health outcomes compared to physical health outcomes, with effects sizes for the association between experience of discrimination and mental health problems generally being around $r=.20$ across different racial and ethnic groups (Carter et al., 2019; Pascoe & Richman, 2009). Similarly, Paradies et al., (2015) found a stronger mean

weighted effect size for the association between racism and overall negative mental health ($r = -.23$) and all individual mental health outcomes (ranging from $r = -.16$ to $r = -.34$) compared to that of overall positive mental health ($r = -.13$; individual outcomes ranging from $r = .00$ to $r = -.19$) and overall physical health ($r = -.09$; individual outcomes from $r = .00$ to $r = -.13$) in their meta-analysis of 293 studies with a 309,687 participants.

One consequence of experiences with or perceptions of discrimination that has emerged over the past several decades is increased engagement in criminal behavior. In racial and ethnic minorities, in particular, perceived racial discrimination in children and adolescents has emerged as a risk factor for engaging in criminal behavior in both the short term and even into adulthood (Burt, Lei, & Simmons, 2017; Caldwell et al., 2004; Estrada-Martínez et al., 2012; Evans et al., 2016; Martin et al., 2011; McCord & Ensminger, 2003). Specifically, Perez et al., (2008) examined the effects of Hispanic adolescents' perceptions of their teacher's prejudicial attitudes towards Hispanics on offending and found that these perceptions increased the likelihood of violent delinquency. Experiences of discrimination were also positively related to delinquency and alcohol use one year later in a sample of immigrant youth in Israel (Walsh et al., 2018). This effect has been more extensively researched in Black youth. Incarcerated Black youth's perceptions of racial discrimination were the strongest predictor of self-reported delinquency above and beyond other well-known predictors of antisocial behavior, such as childhood traumatic events and trauma symptoms (Kang & Burton, 2014). Perceptions of discrimination may not only play a role in the frequency of delinquent acts but also their onset. Simons et al., (2003) examined this relationship in youth who had not previously reported delinquent behavior and found that experiences of racial discrimination at one time point predicted delinquent

behavior at the next follow-up two years later, accounting for other risk factors such as ineffective parenting and affiliation with deviant peers.

The association between discrimination and criminal behavior in adolescents does not appear to be limited to a single ethnic or racial group but is found in Black youth (Unnever et al., 2017) and Latinx adolescents and young adults (Isom Scott, 2020). Also, for Black and Hispanic youth, discrimination does not necessarily need to be directly experienced but can be anticipated and still be associated with violent delinquency (Herda & McCarthy, 2018). Many of the aforementioned studies focused their analyses on childhood and late adolescence, a critical period for identity development, including ethnic identity development. However, it is not unreasonable to assume that the impact of racism and discrimination can continue well into adulthood. New life experiences encountered in emerging adulthood (i.e., employment, higher education, independent living, adult responsibilities, etc.) might produce more situations in which one may encounter discrimination. In support of this possibility, incidents of interpersonal racial discrimination reported by Black young adults (ages 18 to 20) were positively associated ($r = .12, p < .01$) with their engagement in street crime in young adulthood (ages 20 to 23; Burt et al., 2017).

Most studies that investigate the effects of discrimination on offending either limit their sample to one particular minority group or incorporate participants of various races but use White participants as a reference group. However, research has documented a link between criminality and perceptions of Anti-White bias as well (Isom Scott & Stevens Andersen, 2020). Overall Anti-White discrimination predicted serious offending in White 18-year-olds while accounting for other common neighborhood and familial correlates of crime (Isom Scott & Stevens Andersen, 2020). This effect was largely driven by perceptions of everyday Anti-White

Bias ($IRR = 3.20, p < .05$), or being treated differently because of their race or ethnicity, as opposed to perceptions of police injustice ($IRR = 1.82, ns$). This association was further amplified by their level of anger, such that White Americans who perceive anti-White bias and scored higher on a measure of trait anger were more likely to engage in serious offending compared to those who were less angry. However, there are also some differences between the correlates of perceived discrimination across ethnic and racial groups. That is, perceptions of police injustice were positively associated with criminal behavior in Black adolescents but were negatively related to criminal behavior in White adolescents (Isom Scott & Grosholtz, 2019). In contrast, experiencing microaggressions significantly predicted offending in White adolescents but not Black adolescents (Isom et al, 2019).

Theories on Discrimination as a Criminogenic Risk Factor

General Strain Theory. As a result of these consistent findings linking perceived discrimination with criminal behavior, there have been several theories proposed to explain this association, at least for persons from ethnic and racial minority groups. The most commonly used theory is through General Strain Theory (GST), whereby experiencing discrimination is viewed as a particular form of strain for persons who identify with racial and ethnic minority groups (Kaufman et al., 2008). GST refers to strains as a disconnect between how others are treating an individual and how that individual would like to be treated, which can be objective or subjective. This can manifest in the form of the inability to achieve positively valued goals, the loss of positively valued stimuli (e.g., death of a friend), the presentation of negatively valued or aversive stimuli (e.g., physical assaults and verbal insults), and the blocking of goals (e.g., failure to achieve justice; Agnew, 1992, 2001). These events produce negative feelings of anger and frustration which can increase the likelihood of an individual engaging in criminal behavior as a

reaction to these negative emotions. Past studies have shown that certain types of strains are related to delinquency and more recent versions of GST have attempted to summarize the features of those strains that are more specifically related to criminal propensity. Agnew (2001) summarizes four characteristics of strains based on the literature, including those that are: perceived as unjust, high in magnitude, associated with low social control (e.g., erratic and excessive parental discipline, homelessness), and create pressure or incentive to engage in criminal behavior (e.g., bullying by peers). Strains that are characterized by these features are likely to lead to criminal behavior because they produce feelings of anger, reduce the perceived consequences of engaging in criminal behavior, and influence an individual's view of crime as an effective way to address the strain.

Agnew (2001) argues that the strain of experiencing prejudice and discrimination likely leads to crime because these experiences encompass all of these features of criminogenic strain. That is, the very nature of individual and systemic discrimination is rooted in the unjust treatment of a group of individuals, and this tends to occur in higher magnitude in marginalized groups as opposed to more dominant groups (Lee et al., 2019). Depending on the perpetrator of the discrimination, minorities may feel blocked from opportunities that are available to other individuals which can produce feelings of injustice. The centrality of the strain to the individual can also increase the magnitude; thus, experiences of discrimination that threaten one's identity (i.e., their race or ethnicity) and impede upon one's basic human rights can be perceived as higher in magnitude. When one feels discriminated against, especially on an institutional or systemic level, their attachment to those institutions may diminish and provide some incentive or pressure to violate social norms and engage in crime. Delinquency may result from experiencing

or perceiving discrimination as a retaliatory response against the perpetrator (Simons et al., 2003).

Research has tested potential mediators of the link between perceived discrimination and criminal behavior that would be consistent with GST. A cross-sectional study of 385 middle school students (60% White, 30% Black, 5% Hispanic, 3% Asian, 2% Multicultural) reported that Black and other minority youth were more likely to report engaging in delinquency than White youth. For Hispanic and Asian youth, this relationship was fully accounted for by the control variables (e.g., prior misbehavior, sex, living in a female-led household). However, for Black youth, the greater level of delinquency was mediated by experiencing racial microaggressions but not general stressors (De Coster & Thompson, 2017). Further, the results suggested that racial microaggressions indirectly influenced engagement in delinquency through experiencing general stresses and anger, consistent with the GST. Unnever et al. (2009) also reported that African-American adolescents who perceived racial discrimination and had weaker social bonds (attachments to parents and school) were especially at risk for involvement in delinquency. Further, a study from the same sample reported that anger and hostile views of relationships partially explained the risk of perceived discrimination on violent delinquency (Simons et al., 2006). Other studies have also supported the mediating role of anger in explaining the link between discrimination on criminal behavior, consistent with the GST (De Coster & Thompson, 2017; Perez et al., 2008).

While the GST has largely been used to explain the link between discrimination and crime for persons of color, Isom Scott and Stevens Anderson (2020) proposed that the experience of racial discrimination reported by White people could also be conceptualized as a particular form of strain experienced by those in the majority group. This strain is the perceived

change or threat to the status quo that positions them at higher levels of power and privilege in society. This status threat is manifested as perceptions of anti-White bias or reverse discrimination. They cite work from Berbrier (2000) explaining that claims of anti-White bias or reverse racism stem from policies meant to provide equitable opportunities for minorities that were historically only available for White people. Consistent with GST, status threat "...involves both the presence of aversive stimuli (i.e., discrimination) and the failure to achieve highly-valued conventional success goals (i.e., the sense of aggrieved entitlement to the American Dream)" (Isom Scott & Stevens Andersen, 2020, p. 3).

Social Schematic Theory. Another theory that attempts to explain the link between discrimination and criminal behavior is the Social Schematic Theory of Offending (SST; Burt, 2017). This theory explains the criminogenic effects of racial discrimination through social psychological processes that result from an individual's negative social interactions with their environment. This theory first recognizes work that shows that the propensity to engage in crime can result from "...developmental adaptations to harsh, unpredictable environments" (Burt, 2018, p. 14). Being a member of a racial or ethnic minority group in America can expose an individual to such harsh and unpredictable environments through the effects of institutional and interpersonal racism. SST proposes that individuals exposed to these types of environmental conditions develop cognitive schema that shape their future perceptions of and interactions with the social environment. Burt (2018) specifies three such problematic cognitive schema: delayed rewards rarely or inequitably materialize; the world is a hostile and unpredictable place; and social rules and punishments do not apply equally to everyone. These social schemas are used to guide future behaviors and interactions with others. Hostile views of relationships, immediate gratification, and disengagement from conventional norms are social schemas that increase the

likelihood that an individual will engage in criminal behavior by interpreting situations as justifying or even requiring an act of law violation (Simons & Burt, 2011; Burt & Simons, 2015). Preliminary studies of this theory have shown that all three of these social schemas are intercorrelated and load onto a higher-order construct defined as a criminogenic knowledge structure (Simons & Burt, 2011). It is through this knowledge structure that SST proposes experiences of racial discrimination influence criminality.

Several studies, using a sample (n = 897) of Black youth from the Family and Community Health Study (FACHS), who lived in Iowa and Georgia and who were followed from late childhood to emerging adulthood, have supported the SST. That is, the cumulative effects of interpersonal racial discrimination experienced in childhood and early adolescence were both, directly and indirectly, related to crime in adolescence and adulthood through the proposed criminogenic knowledge structures (Burt et al., 2017). Further, higher criminogenic knowledge structures reduced the individual's involvement in supportive relationships and institutions, which Burt (2018) suggests is evidence that maintaining these schemas is "...not conducive to successful or positive experiences in the school, on the job, or in one's relationship" which can perpetuate environments that foster a criminogenic lifestyle (Burt, 2018, p. 18). In summary, the SST proposes that persons who experience interpersonal racial discrimination are likely to develop a knowledge structure that relationships are hostile and untrustworthy, rewards should be pursued immediately and not delayed, and conventional norms are unfair and should not be followed. These knowledge structures then increase the risk of criminal behavior.

The development of this criminogenic knowledge structure may contribute to a self-fulfilling prophecy, particularly when it comes to stereotypes faced by minorities. A self-

fulfilling prophecy is when “a false definition of the situation evoking a new behavior which makes the originally false conception come true” (Merton, 1948, p. 195). For example, Unnever (2014) posits that belief in racist stereotypes can lead to offending for Black people if they internalize the stereotype as self-identity, if negative emotions that result from racist stereotypes reduce their self-regulatory resources to cope, and if the stereotypes lead to weaker bonds with conventional institutions. Unnever (2014) tested this in a sample of Black adults in the U.S. and found that experiencing racial discrimination and internalizing the racist stereotype that Black people are violent led to more feelings of anger and depression, as well as more self-reported arrests. While it may seem as though minorities are conforming to the racist stereotypes that underly the discrimination they face, this work underscores the necessity of looking at how these criminogenic outcomes develop from the harmful effects of discrimination and disadvantage.

Individual Differences

In sum, perceived discrimination has been linked to criminal behavior and several theories proposing mechanisms to account for this link have been proposed, each with some empirical support. However, many of these proposed mechanisms can also be influenced by individual differences in the person. That is, certain personality characteristics that may be at least partially independent of the exposure to discrimination may make some people more susceptible to anger and hostility or to developing a hostile attribution bias to social relationships. Such individual differences may increase or diminish (i.e., moderate) the influence of discrimination on others. While such moderators have not been extensively tested, two personality characteristics that could play such a role due to their link to the proposed mechanisms from the GST and SST are impulse control and callous-unemotional (CU) traits.

Impulse Control. Individuals with problems with impulse control may have particular difficulty regulating their emotions, including the negative emotions that result from experiences of discrimination. The construct of impulsivity has had varied definitions depending on the theoretical perspective, but it can be conceptualized as an individual difference that is “...an aspect of disinhibition [and]...an immediate reaction to stimuli, unplanned reaction on the spur of the moment or with no regard for its consequences...” (Bakshani, 2014, p.2; American Psychiatric Association, 2013). Impulse control, or lack thereof, has been implicated as a risk factor in a variety of psychiatric disorders but shows particular robustness in predicting externalizing problems (Chamorro et al., 2012; Ray et al., 2016), including criminal behavior (Gottfredson & Hirschi, 1990; Pratt & Cullen, 2000).

A key component of GST theory is that strains, such as perceived discrimination can lead to negative emotional states, such as anger, which then leads to criminal behavior. Past research has linked impulse control, measured in several different ways, to problems in emotional regulation in a number of studies of adults. For example, delayed discounting (i.e., the preference for immediate rewards over larger, delayed rewards) was associated with different aspects of emotion regulation ($r = -.49$ to $-.60$; Malesza, 2019). Additionally, in a sample of young adults ages 18 to 29, participants who scored higher on emotion dysregulation tended to also have higher scores on measures of impulsivity ($r = .24$ to $.27$, $p < .001$; Schreiber et al., 2012). This link between impulse control and problems regulating emotion has been shown specifically for problems regulating anger and hostility. Specifically, impulsivity was positively associated with negative emotionality ($r = .36$, $p < .001$) in a community sample of adults (Herman et al., 2018). Similarly, impulsivity was associated with hostility ($r = .38$, $p < .001$) and aggressive outbursts ($r = .26$, $p < .001$) in a sample of undergraduate students (Stanford et al., 1995). Wilkowski and

Robinson (2008) used experimental methods in a small sample ($n = 106$) of undergraduate students and reported that problems inhibiting responses to hostile words were associated with trait anger. Similar results were found in a sample of adult violent offenders where trait anger and laboratory measures of inhibitory control were negatively correlated ($r = -.47, p < .01$; Lievaart et al., 2018).

Thus, research suggests that individuals with lower levels of impulse control, or more impulsivity, are more prone to experience anger and have less control over their emotions. As result, impulse control could be an important moderator for how individuals respond to discrimination. That is, GST posits that the primary mechanism explaining how perceived discrimination leads to criminal behavior is through higher levels of anger and hostility. It is possible that the relationship between perceived discrimination and offending may be stronger for impulsive individuals who are more likely to experience anger and hostility. However, this possibility has not been tested to date.

Callous-Unemotional Traits. Another personality trait that can influence a person's level of emotional reactivity is callous-unemotional (CU) traits. CU traits are considered the “affective component” of the construct of psychopathy in adults (Hare & Neuman, 2008) and when studied in children and adolescents, they delineate a unique group of youth with conduct problems who show reduced emotional reactivity (see Frick et al., 2014a; Frick & White, 2008 for reviews). For example, children and adolescents elevated on CU traits show blunted emotional responsiveness to provocation (Kimonis et al., 2008), induced stress (Stadler et al., 2011), and emotional cues in others (Loney et al., 2003; Truedsson et al., 2019).

Similarly, in adult samples, the affective dimension of psychopathy has been characterized by hyporesponsivity to emotional stimuli (Vaidyanathan et al., 2011; Venables et

al., 2015). In a community sample of adults, Hyde et al., (2014) showed that psychopathy and Antisocial Personality Disorder (APD) had divergent relationships with negative emotionality, whereby APD was associated with increased negative emotionality and psychopathy was associated with less negative emotionality, after accounting for their shared variance. Further, they showed that it was the callous-unemotional dimension of psychopathy that largely accounted for this negative association with negative emotional reactivity. Similarly, in a sample of undergraduate students, the CU dimension of psychopathy was negatively related to problems regulating emotions ($r = -.29, p < .001$), whereas the impulsivity dimension was positively related to a measure of emotion dysregulation ($r = .36, p < .001$; Preston & Anestis, 2020). In summary, it appears that the CU dimension of psychopathy, but not other dimensions of psychopathy, is related to fewer problems regulating emotions and as such, may make persons with these traits less susceptible to responding to environmental stressors, such as perceived discrimination, with elevated negative emotionality (Pardini et al., 2007). Thus, in the context of GST, these personality traits may decrease the association between perceived discrimination and criminal behavior.

Also, research on youth with elevated CU traits suggests that they are less likely to show hostile attributional biases than other children with conduct problems (Frick et al., 2003). Unfortunately, the relationship between hostile attributions and CU traits has not been studied extensively in adults and the few available findings have been mixed. One study of undergraduate students ($N = 137$) reported results somewhat consistent with child samples, in that the CU dimension of psychopathy (but not other dimensions of psychopathy) had a negative (albeit nonsignificant) relationship with a hostile attribution bias, whereas other dimensions of psychopathy had significant positive associations with such a cognitive style (Law &

Falkenbach, 2018). In contrast, a study of incarcerated adults (N = 150) reported that all dimensions of psychopathy, including the CU dimension, were positively associated with hostile attributions with similar magnitudes (Vitale et al., 2005). While these mixed findings make strong conclusions impossible, there is at least some suggestive evidence that the CU dimension of psychopathy, but not other dimensions, are less likely to experience a hostile attribution bias. Based on the SST, this again could lead persons elevated on CU traits to be less likely to respond to perceived discrimination in a way that leads to criminal behavior. Again, however, this possibility has not been directly tested.

While CU traits may be associated with characteristics that may reduce the influence of perceived discrimination on criminal behavior, their interpersonal style may still be highly predictive of serious violence and other criminal behavior. That is, reviews of research in both adults (Leistico et al., 2008) and children and adolescents (Frick et al., 2014a) suggest that CU traits are highly related to criminal behavior, and in particular, to patterns of offending that are more serious, persistent, and resistant to deterrence. However, theories to explain this link have focused on the reduced emotional reactivity in persons high on CU traits, which leads to their deficits in empathy and guilt and which in turn makes them more likely to act in ways that harm others (Frick et al., 2014b). Based on this research, it seems clear that persons with elevated CU traits are highly likely to engage in serious criminal behavior, but this may be unrelated to their experience of discrimination and the person's response to this discrimination (e.g., anger, hostile cognitive schema). Again, this possibility would make these traits a potential moderator for the association between discrimination on criminal behavior. That is, perceived discrimination may be less associated with criminal behavior in persons high on CU traits because they are more likely to show such behavior irrespective of their experience of discrimination.

Statement of the Problem

In sum, research shows that engagement in criminal behavior is a well-documented consequence of perceptions of and experiences with discrimination. This association has been reported across a wide range of ethnic and racial groups. Several theories have been proposed to explain how discrimination affects one's criminal propensity. General strain theory explains the association through the negative emotionality (e.g., anger) that results from strain associated with the discriminatory experiences. The Social Schematic Theory proposes that experiences of racial discrimination lead to the development of specific social schemas (hostile views of relationships) by repeated exposure to the hostile, unpredictable nature of their environment, which then makes criminal behavior more likely. Importantly, individual differences, such as the person's impulse control and CU traits, can influence a person's susceptibility to these proposed processes that link racial discrimination to criminal behavior. Specifically, impulse control is associated with less negative emotions, such as anger and hostility, and better emotion regulation. Therefore, individuals with less impulse control are more likely to experience the negative emotions associated with perceived discrimination as theorized by GST, and in turn, they may be more likely to engage in criminal behavior after experiencing discrimination than individuals with more impulse control. Conversely, individuals with elevated CU traits are less responsive to emotional stimuli and are less likely to make hostile attributions. Further, they are more likely to violate the rights of and cause harm to others, irrespective of their experience of discrimination. As a result, individuals high on CU traits may be more likely to engage in criminal behavior, regardless of whether they experience discrimination or not. Thus, both impulse control and CU traits could moderate the link between perceived discrimination and criminal behavior, but this possibility has not been directly tested to date.

To address this limitation, the current study tested whether impulse control and CU traits moderated the association between perceived discrimination and offending in a sample of young adults who were at risk for showing criminal behavior. In this study, we tested the following hypotheses:

1. Perceived discrimination would be associated with criminal behavior, and this would not be moderated by the racial and ethnic identity of the individual. That is, perceptions of racial discrimination were predicted to be positively associated with criminal behavior, whether assessed as self-report or as official arrests, for White, Black, and Latino young adults.
2. Impulse control was predicated to moderate the relationship between discrimination and criminal behavior, such that the association would be stronger for young adults with lower levels of impulse control, as illustrated in Figure 1.
3. CU traits were also predicted to moderate the relationship between discrimination and criminal behavior, such that the association would be stronger for young adults at lower levels of CU traits, as illustrated in Figure 2.

METHODS

Participants

Participants were 927 young adult males who are participating in the Crossroads Study, an ongoing longitudinal study of persons who had committed a crime of moderate severity as a juvenile in Orange County, CA ($n = 419$), Jefferson Parish, LA ($n = 95$), and Philadelphia, PA ($n = 413$). Participants were initially recruited for the study after their first arrest when they were adolescents. They were eligible for the Crossroads Study if they were English speakers, were arrested for an offense of moderate severity, and were between the ages of 13 and 17 at the time of their first arrest. At the start of the study, the mean age of participants was 15.29 ($SD = 1.29$). The current analyses used data from the 84-month follow-up when the participants were young adults between the ages of 20 and 24 years old. The sample is primarily Latino ($n = 420$; 45.6%) and Black ($n = 347$; 37.5%) with a smaller proportion identifying as White ($n = 142$; 14.5%) and Other (2.4%). The 927 participants represent a 77% retention rate at the 84-month follow-up from the initial 1,216 participants. For the current study, participants who were missing ratings of discrimination ($N = 6$) were removed from the analyses. Additionally, participants who identified as Biracial, Multiracial, Asian American, or Native American ($N = 22$) were excluded from these analyses due to the low rate of endorsement, which prevented us from considering this group separately. This led to a final sample of 899 young adults.

Procedures

The Institutional Review Board at all three institutions (i.e., University of California, Irvine, Temple University, and Louisiana State University) approved the study procedures. Informed consent was obtained from each participant before interviews were conducted.

Participants were informed that participation was entirely voluntary, would not influence their involvement in any legal proceedings, and that they were able to withdraw from the study at any time without penalty. Participants were informed that the research project had obtained a Privacy Certificate from the Department of Justice, which protected their data from being subpoenaed for use in legal proceedings.

All data collection was done by interviews, which included the measures used in the current study, as well as other assessment information. The interviews lasted on average approximately 2-3 hours and were administered using a secured computer-based program on a laptop. Data collection was completed prior to the start of the COVID-19 pandemic. As a result, participants were able to select their preferred location to complete the interviews, often at the youth's home, a local restaurant, a public library, at the respective team's university, or in a secure facility if a participant was incarcerated at the time of the follow-up interview. Finally, if participants moved too far to conduct in-person interviews, phone interviews were completed. Participants were compensated \$140 for completing interviews.

Measures

Self-Reported Offending. The 24-item revised version of the Self-Report of Offending Scale (SRO; Huizinga et al., 1991) was used to measure participants' self-reported engagement in illegal behavior. Participants reported whether or not they engaged in a variety of offenses over the past two years, and if so, how many times. The SRO uses dichotomous scoring (yes/no) to measure which behaviors were reported to have been displayed over the two-year period. The SRO variety score ($M = 1.09$, $SD = 2.02$) was used to evaluate the number of different crimes (i.e., offense types) that the participant endorsed over the past two years, irrespective of frequency. This method is often preferred over the frequency score because the variety score is

less prone to recall errors, especially when the offense is frequently committed, such as selling drugs and this method is less influenced by frequent but less severe types of offending (Hindelang et al., 1981; Thornberry & Krohn, 2000). The variety score is correlated with other measures of seriousness and frequency of antisocial behavior, including official arrests (Monahan & Piquero, 2009). Internal consistency was good for all offenses ($\alpha = .80$), but questionable for violent offenses only ($\alpha = .62$ in the current sample).

Official Arrests. Official records gathered from the Department of Probation at each site were used to obtain data on arrests over the past two years. Information was gathered about any official arrests and the number and types of offenses, including probation violations. Of the current sample, 18.8% ($N = 169$) had an arrest on their record within the previous two years.

Discrimination. Perceptions of discrimination were assessed with a 19-item measure of lifetime and daily experiences of discrimination (Williams et al., 1997). Eight items assessing experiences of daily discrimination asked participants to report the frequency with which are treated with less courtesy or respect, are threatened or harassed, or whether people act as if they are afraid of them on a 4-point Likert scale ranging from 1 '*Never*' to 4 '*Often*'. Items were summed to create a total score with higher scores indicating more daily experiences of discrimination. This variable was not specific to a particular reason for the discrimination therefore, it reflects more general perceived discrimination. Daily discrimination demonstrated strong internal consistency ($\alpha = .88$) in the current sample.

The 11 items assessing major lifetime discriminatory events were revised to ask about these experiences within the last two years. These included asking whether the participant had been unfairly fired, not hired for a job, denied a bank loan, or stopped by police, amongst others. If the item was endorsed, the participant would indicate the reason for the discrimination out of

several options including race, ethnicity, gender, age, religion, physical appearance, sexual orientation, class/economic status, and other (for which they could provide their own response). For the current study, this variable was confined only to events for which racial and ethnic identity were endorsed as the reason for the event because of the low rates of endorsement for discrimination due to gender (0.9%), age (7%), religion (0.3%), physical appearance (10.5%), sexual orientation (0.3%), and class/SES (1.9%). These items were coded into a dichotomous (yes/no) score indicating whether the participant reported experiencing a discriminatory event due to their race or ethnicity ever and another score for endorsement of discrimination over the past two years. Of the current sample, 27.6% ($N = 248$) reported some form of racial or ethnic discrimination within the past two years. Perceptions of discrimination measured with this scale have shown positive bivariate and predictive relationships with self-reported general offending, violent offenses, and nonviolent offenses in various minority samples (Gao & Wong, 2018; Jones & Greene, 2016; Massarwi & Khoury-Kassabri, 2016; Simons et al., 2006). The measure of experiences of discrimination over the past two years demonstrated good internal consistency ($\alpha = .71$) in the current sample.

Callous-Unemotional Traits. CU traits were measured using the Inventory of Callous Unemotional Traits (ICU; Frick, 2004), which is a 24-item scale assessing the callousness, unemotional, and uncaring dimensions of CU traits. Participants use a 4-point Likert scale from 0 (*Not at all true*) to 3 (*Definitely true*) to rate how well each statement describes them. This scale contains an equal number of items worded in the callous (e.g., *I do not feel remorseful when I do something wrong*) and non-callous direction (e.g., *I am concerned about the feelings of others*) with the latter reverse coded such that higher sum scores indicate higher levels of CU traits. Two items (e.g., *What I think is right or wrong is different from what other people think* and *I do not*

let my feelings control me) have consistently shown low internal consistency and were removed from the calculation of the total score, resulting in a 22-item scale. This measure has been subjected to much psychometric work and has demonstrated a positive association with delinquency, arrest, aggression, and antisocial behavior, and negative associations with prosocial beliefs, internalizing symptoms, and emotional reactivity in incarcerated and community samples from childhood through young adulthood (Byrd et al., 2013; Cardinale & Marsh, 2020; Essau et al., 2006; Kahn et al., 2013; Kimonis et al., 2008). Internal consistency was strong ($\alpha = .81$) in this sample.

Impulse Control. The Weinberger Adjustment Inventory (WAI; Weinberger & Schwartz 1990) is a measure of self-restraint and emotional distress. The impulse control subscale, one of four constructs that make up self-restraint, was used in the current study to assess the participant's impulse control. This scale is composed of 8 items (e.g., *I stop and think things through before I act*) rated on a 5-point Likert scale from 1 (*False*) to 5 (*True*). Negatively worded items were recoded so that higher scores indicated more impulse control. This subscale has shown significant relationships with distress in clinical and non-clinical samples of children and adults (Weinberger, 1997). In samples similar to the current study, impulse control predicted more self-reported offending (Fine et al., 2016; Walters & DeLisi, 2015). Internal consistency for this scale was good ($\alpha = .78$).

Race/Ethnicity. Participants' self-reported race/ethnicity was coded as separate dichotomous variables for White, Latino, and Black. Endorsement (1) indicates that the participant identifies as that race or ethnicity (e.g., Black). Non-endorsement (0) indicates that the participant identifies as a member of another race or ethnicity (e.g., not Black). Of the current

sample, 38.6% self-identified as Black or African American, 46.7% identified as Latino, and 14.7% identified as White.

Analytic Plan

Prior to testing the main study variables, their associations with SES (monthly income) were tested to determine if it needed to be controlled in the tests of the study hypotheses. Income was not significantly correlated with any of the main study variables except for CU traits and thus, was not included in the analyses. To test the first hypothesis that perceived discrimination would be associated with offending, and that this relationship would not be moderated by self-reported race/ethnicity, several multiple regression analyses were run. Negative binomial regressions were utilized when predicting self-reported offending due to this variable being measured as a count that is highly skewed with an overdispersed distribution of “0” values. Binary logistic regressions are utilized to predict discrete outcome variables that are dichotomized and, as such, were used to predict official arrests. It is suggested that for each independent variable included in the logistic regression, there should be a minimum of 10 cases for the least common outcome (Stotlzfus, 2011), which was satisfied in the current sample.

To test the first hypothesis that delinquency would be associated with discrimination, and this would not be moderated by race/ethnicity, a hierarchical regression procedure was used. All continuous variables were mean-centered based on the means of the sample and an interaction term was created with the mean-centered variables. In the first step, self-reported delinquency or official arrests were independently regressed on race/ethnicity. Race/ethnicity was coded as a dichotomous variable with a score of 1 indicating endorsement of that race or ethnicity. Variables for Black and Latino were included in the analyses with White as the comparison group. Racial discrimination and daily discrimination were added to separate regressions in the

second step. In the third step, the two interaction terms between each race/ethnicity and perceived discrimination were added.

To test the second hypothesis that impulse control would moderate the positive relationship between offending and perceived discrimination, another series of hierarchical negative binomial and binary logistic regressions were run. In the first step, the main effects of perceived discrimination and impulse control were included as predictors of self-reported delinquency in the negative binomial regressions and official arrests in the logistic regressions. In the second step, an interaction term between impulse control and perceived discrimination was added to the regression model. If, as predicted, a significant interaction emerged, the form of the interaction will be tested using Hayes (2017) PROCESS procedure. This method uses the regression equation from the full sample to estimate the conditional effects of the independent variable on the dependent variable at three values of the moderator (0, 1 SD above mean, and 1 SD below mean). Racial discrimination and daily discrimination were included as predictors in separate hierarchical regression analyses. Further, separate regressions were run for overall self-reported delinquency, self-reported violent delinquency, and arrests.

The third hypothesis that the effects of perceived discrimination on criminal offending would be moderated by CU traits was tested with similar hierarchical regression procedures were run, as were used to test the second hypothesis, replacing impulse control with CU traits.

RESULTS

Preliminary Analyses

Table 1 reports the descriptive statistics for all study variables and correlations among the main study variables. Black participants were more likely to report both forms of discrimination. For major racial discrimination, a comparison between groups led to a significant chi-square, $\chi(2) = 52.74, p < .001$, suggesting a significant difference between races in the report of racial or ethnic discrimination ($\phi = .24, p < .001$), with 40.6% of Black participants, 21.7% of Latino participants, and 12.1% of White participants reporting having experienced racial or ethnic discrimination in the past two years. For daily discrimination, a one-way ANOVA also revealed a statistically significant difference between groups ($F(2, 895) = 4.895, p = .008$) with an effect size of $\eta^2 = .011$. A Tukey posthoc test revealed that Black participants ($M = 13.48, SD = 5.72, p = .009$) reported significantly more daily discrimination than White participants ($M = 11.89, SD = 4.76$). The difference in daily discrimination between Black and Latino participants ($M = 12.69, SD = 5.01, p = .098$) was marginal and there was no statistically significant difference between the White and Latino groups ($p = .274$).

As displayed in Table 1, racial and ethnic discrimination was significantly positively associated with overall self-reported offending ($r = .07, p = .032$) and violent self-reported offending ($r = .08, p = .019$), but not arrests ($r = .01, p = .765$). Similarly, daily discrimination was significantly associated with overall self-reported offending ($r = .23, p < .001$) and violent offending ($r = .23, p < .001$). Daily discrimination was not significantly associated with arrests ($r = -.01, p = .750$).

Both impulse control and CU traits were significantly associated with racial discrimination ($r = -.08, p = .014$; $r = .07, p = .037$) and daily discrimination ($r = -.26, p < .001$; $r = .18, p < .001$), respectively. Impulse control was significantly, negatively correlated with overall ($r = -.28, p < .001$) and violent ($r = -.19, p < .001$) self-reported offending, but was not significantly associated with arrests ($r = -.05, p = .207$). CU traits demonstrated significant positive relationships with overall ($r = .18, p < .001$), violent ($r = .15, p < .001$) self-reported offending, and arrests ($r = .17, p < .001$).

Discrimination and Criminal Behavior

The first hypothesis stated that discrimination would be positively associated with criminal behavior, both measured by self-report and arrests, and that this relationship would not be moderated by race. The results of the hierarchical negative binomial regressions testing the relationship with self-reported offending are presented in Tables 2 through 5. As demonstrated in step 1 of Table 2, Black participants were less likely to report overall self-reported offending ($B = -.28, p = .044$) compared to White participants, whereas the association between Latino ethnicity and offending was nonsignificant ($B = -.15, p = .245$). When racial discrimination was added, it also was significantly and positively associated with self-reported offending ($B = .37, p < .001$) but none of the interactions between race/ethnicity and discrimination reached significance in the third step, as predicted by hypothesis one. Similar results were found when daily discrimination ($B = .08, p < .001$) was used in the hierarchical regression models predicting self-reported delinquency, as seen in Table 3.

Table 1. Correlations and descriptive statistics for main study variables.

	1	2	3	4	5	6	7	8	9
1. Racial Discrimination	-								
2. Daily Discrimination	.36***	-							
3. Impulse Control	-.08*	-.26***	-						
4. CU Traits	.07*	.18***	-.32***	-					
5. Offending	.07*	.23***	-.28***	.19***	-				
6. Violent Offending	.08*	.23***	-.19***	.15***	.83***	-			
7. Arrests	.01	-.01	-.05	.17***	.15***	.13***	-		
8. Black	.23***	.09**	.08*	.07*	-.04	-.01	.11**	-	
9. White	-.14***	-.08*	-.07*	-.13***	.04	.02	-.11**	-.33***	-
10. Latino	-.12***	-.03	-.03	.02	.01	-.01	-.02	-.74***	-.39***
Mean	.28	12.88	28.36	18.82	1.09	.32	-	-	-
Standard Deviation	.45	5.29	7.14	8.62	2.02	.80	-	-	-

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

When using violent self-reported delinquency (Tables 4 - 5) and official arrests (Tables 6 – 7) as the dependent variables, different results emerged. For violent offending, race/ethnicity did not emerge as significant predictors in the first step but both racial ($B = .47, p = .002$) and daily ($B = .10, p < .001$) discrimination emerged as significant main effects at the second step. Again, no interactions between discrimination and race-ethnicity emerged in the third step. In contrast, in the tests of the associations between discrimination and official arrests, race/ethnicity were significant predictors, but discrimination was not and there were no significant interactions. Specifically, Black participants were 3.31 times more likely and Latino participants were 2.24 times more likely to be arrested than their White counterparts.

Given the unexpected differences between the findings for self-reported offending and arrests, especially in their associations with discrimination, posthoc analyses were run to further examine the associations among perceived discrimination, race, and arrests. For self-reported offending, all measures of discrimination were associated with offending behavior for all racial and ethnic groups. Within Black participants, self-reported offending was significantly positively associated with both racial ($r = .17, p = .002$) and daily ($r = .19, p < .001$) discrimination but only daily discrimination was associated with self-reported offending in White ($r = .32, p < .001$) and Latino ($r = .26, p < .001$) participants. Further discrimination was unassociated with arrests in White (r 's ranging from .10 - .12) and Latino participants (r 's ranging from .02 - .03), whereas daily discrimination was significantly negatively correlated with arrests ($r = -.13, p = .039$) for Black participants.

Table 2. Associations between racial discrimination, race, and overall self-reported offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	.08	.05	(-.01, .17)	1.08	.085	899
	Black	-.28	.14	(-.55, -.01)	.76	.044	
	Latino	-.15	.13	(-.42, .11)	.86	.245	
Step 2	Intercept	.21	.12	(-.02, .44)	1.23	.078	899
	Racial Discrimination	.37	.11	(.17, .58)	1.45	.000	
	Black	-.41	.14	(-.69, -.13)	.67	.005	
	Latino	-.18	.13	(-.45, .08)	.83	.174	
Step 3	Intercept	.21	.13	(-.04, .45)	1.23	.094	
	Racial Discrimination	.35	.33	(-.31, 1.01)	1.42	.299	
	Black	-.54	.17	(-.86, -.22)	.68	.001	
	Latino	-.12	.15	(-.41, .17)	.89	.405	
	Discrimination x Black	.29	.37	(-.44, 1.02)	1.34	.436	
	Discrimination x Latino	-.27	.37	(-.99, .47)	.77	.476	

Table 3. Associations between daily discrimination, race, and overall self-reported offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	.08	.05	(-.01, .17)	1.08	.085	899
	Black	-.28	.14	(-.55, -.01)	.76	.044	
	Latino	-.15	.13	(-.42, .11)	.86	.245	
Step 2	Intercept	.24	.12	(.10, .479)	.127	.041	898
	Daily Discrimination	.08	.01	(.06, .09)	1.08	.000	
	Black	-.38	.14	(-.67, -.11)	.68	.007	
	Latino	-.21	.14	(-.48, .06)	.81	.119	
Step 3	Intercept	.24	.12	(.01, .48)	1.28	.042	
	Daily Discrimination	.09	.02	(.05, .15)	1.10	.000	
	Black	-.37	.14	(-.65, -.08)	.69	.011	
	Latino	-.22	.14	(-.49, .05)	.80	.113	
	Discrimination x Black	-.03	.03	(-.09, .02)	.97	.251	
	Discrimination x Latino	-.02	.03	(-.07, .04)	.99	.578	

Table 4. Associations between racial discrimination, race, and self-reported violent offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-1.01	.17	(-1.34, -.68)	.32	.000	899
	Black	-.17	.20	(-.57, .22)	.84	.388	
	Latino	-.15	.20	(-.53, .24)	.86	.456	
Step 2	Intercept	-1.08	.17	(-1.30, -1.03)	.31	.000	899
	Racial Discrimination	.47	.15	(.17, .76)	1.60	.002	
	Black	-.33	.21	(-.74, .08)	.72	.115	
	Latino	-.19	.20	(-.57, .20)	.83	.339	
Step 3	Intercept	-1.09	.19	(-1.45, -.73)	.34	.000	
	Racial Discrimination	.51	.46	(-.38, 1.41)	1.67	.259	
	Black	-.50	.25	(-.99, -.01)	.61	.046	
	Latino	-.09	.22	(-.52, .34)	.91	.676	
	Discrimination x Black	.29	.51	(-.71, 1.28)	1.33	.575	
	Discrimination x Latino	-.41	.51	(-1.42, .60)	.66	.424	

Table 5. Associations between daily discrimination, race, and self-reported violent offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-1.01	.17	(-1.34, -.68)	.32	.000	899
	Black	-.17	.20	(-.57, .22)	.84	.388	
	Latino	-.15	.20	(-.53, .24)	.86	.456	
Step 2	Intercept	-1.06	.17	(-1.4, -.72)	.35	.000	898
	Daily Discrimination	.10	.01	(.07, .12)	1.10	.000	
	Black	-.33	.21	(-.74, .08)	.72	.114	
	Latino	-.22	.20	(-.62, .18)	.80	.279	
Step 3	Intercept	-1.09	.18	(-1.45, -.74)	.34	.000	
	Daily Discrimination	.13	.03	(.07, .20)	1.14	.000	
	Black	-.26	.22	(-.69, .17)	.77	.239	
	Latino	-.18	.21	(-.60, .23)	.83	.374	
	Discrimination x Black	-.05	.04	(-.12, .03)	.95	.227	
	Discrimination x Latino	-.03	.04	(-.11, .04)	.97	.420	

Table 6. Association between racial discrimination, race, and arrests.

Binomial Logistic Regression		Coefficient	S.E.	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Black	1.20	.33	3.31	.000	788
	Latino	.81	.31	2.24	.014	
Step 2	Black	1.23	.34	3.41	.000	
	Latino	.82	.33	2.26	.013	
	Racial Discrimination	-.11	.20	.89	.578	
Step 3	Black	1.16	.34	3.19	.001	
	Latino	.95	.38	2.59	.012	
	Racial Discrimination	.48	.49	1.61	.336	
	Discrimination x Black	-1.36	.79	.26	.08†	
	Discrimination x Latino	-.84	.79	.43	.289	

Table 7. Association between daily discrimination, race, and arrests.

Binomial Logistic Regression		Coefficient	S.E.	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Black	1.20	.33	3.31	.000	788
	Latino	.81	.31	2.24	.014	
Step 2	Black	1.21	.34	3.36	.000	
	Latino	.81	.33	2.26	.013	
	Daily Discrimination	-.01	.02	.99	.507	
Step 3	Black	1.20	.34	3.32	.000	
	Latino	.80	.33	2.22	.016	
	Daily Discrimination	.06	.06	1.06	.275	
	Discrimination x Black	-.12	.06	.89	.063†	
	Discrimination x Latino	-.05	.06	.96	.461	

Moderating Role of Impulse Control

The results of the hierarchical negative binomial regressions testing the interaction between impulse control and discrimination in their associations with criminal behavior are provided in Tables 8 to 11. For the analyses using self-reported offending, both discrimination and impulse control were generally associated with offending, although this only approached significance for racial discrimination in predicting overall offending. Contrary to predictions, no significant interactions emerged for these associations with self-reported offending. However, for predicting arrests (Tables 12 and 13), no main effects emerged for discrimination and impulse control but there was a significant interaction between daily discrimination and impulse control ($B = -.01, p = .039$). The form of this interaction was explored using Hayes (2017) PROCESS macros and presented in Figure 1. As noted in Figure 1, regardless of the level of discrimination, people with low impulse control were more likely to get arrested and, contrary to predictions, daily discrimination was not associated with the likelihood of arrest for individuals with low impulse control ($B = .01, p = .610$). However, for those with high impulse control, experiencing discrimination was negatively associated with the likelihood of being arrested ($B = -.06, p = .047$).

Table 8. Association between racial discrimination, impulse control, and self-reported offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-.11	.06	(-.23, .00)	.90	.058	898
	Racial Discrimination	.20	.10	(-.01, .40)	1.22	.061‡	
	Impulse Control	-.07	.01	(-.09, -.06)	.93	.000	
Step 2	Intercept	-.11	.06	(-.22, .01)	.90	.893	
	Racial Discrimination	.13	.11	(-.09, .34)	1.23	.057‡	
	Impulse Control	-.08	.01	(-.09, -.06)	.93	.000	
	Discrimination x Impulse Control	.01	.02	(-.02, .04)	1.01	.700	

Table 9. Association between daily discrimination, impulse control, and self-reported offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-.09	.05	(-.19, .01)	.91	.067	898
	Daily Discrimination	.06	.01	(.04, .07)	1.06	.000	
	Impulse Control	-.06	.01	(-.08, -.05)	.94	.000	
Step 2	Intercept	-.10	.05	(-.19, .01)	.91	.062	
	Daily Discrimination	.05	.01	(.04, .07)	1.06	.000	
	Impulse Control	-.06	.01	(-.08, -.05)	.94	.000	
	Discrimination x Impulse Control	.00	.00	(-.00, .00)	1.00	.724	

Table 10. Association between racial discrimination, impulse control, and self-reported violent offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-1.36	.09	(-1.54, -1.19)	.26	.000	898
	Racial Discrimination	.34	.15	(.05, .63)	1.40	.022	
	Impulse Control	-.07	.01	(-.09, -.05)	.94	.000	
Step 2	Intercept	-1.38	.09	(-1.56, -1.20)	.25	.000	
	Racial Discrimination	.40	.16	(.09, .71)	1.49	.011	
	Impulse Control	-.07	.01	(-.10, -.05)	.93	.000	
	Discrimination x Impulse Control	.02	.02	(-.02, .06)	1.02	.274	

Table 11. Association between daily discrimination, impulse control, and self-reported violent offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-1.34	.08	(-1.49, -1.19)	.26	.000	898
	Daily Discrimination	.08	.01	(.05, .10)	1.08	.000	
	Impulse Control	-.05	.01	(-.07, -.03)	.95	.000	
Step 2	Intercept	-1.34	.08	(-1.5, -1.2)	.26	.000	
	Daily Discrimination	.08	.01	(.06, .11)	1.09	.000	
	Impulse Control	-.05	.01	(-.07, -.03)	.95	.000	
	Discrimination x Impulse Control	.00	.00	(-.00, .01)	1.00	.446	

Table 12. Association between racial discrimination, impulse control, and arrests.

Binomial Logistic Regression		Coefficient	S.E.	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Impulse Control	-.02	.01	.99	.214	788
	Racial Discrimination	.04	.04	1.04	.838	
Step 2	Impulse Control	-.01	.01	.99	.541	
	Recent Discrimination	.02	.20	1.02	.937	
	Discrimination x Impulse Control	-.02	.03	.98	.431	

Table 13. Association between daily discrimination, impulse control, and arrests.

Binomial Logistic Regression		Coefficient	S.E.	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Impulse Control	-.02	.01	.98	.158	788
	Daily Discrimination	-.01	.02	.99	.483	
Step 2	Impulse Control	-.02	.01	.98	.133	
	Daily Discrimination	-.02	.02	.98	.208	
	Discrimination x Impulse Control	-.01	.02	.99	.039	

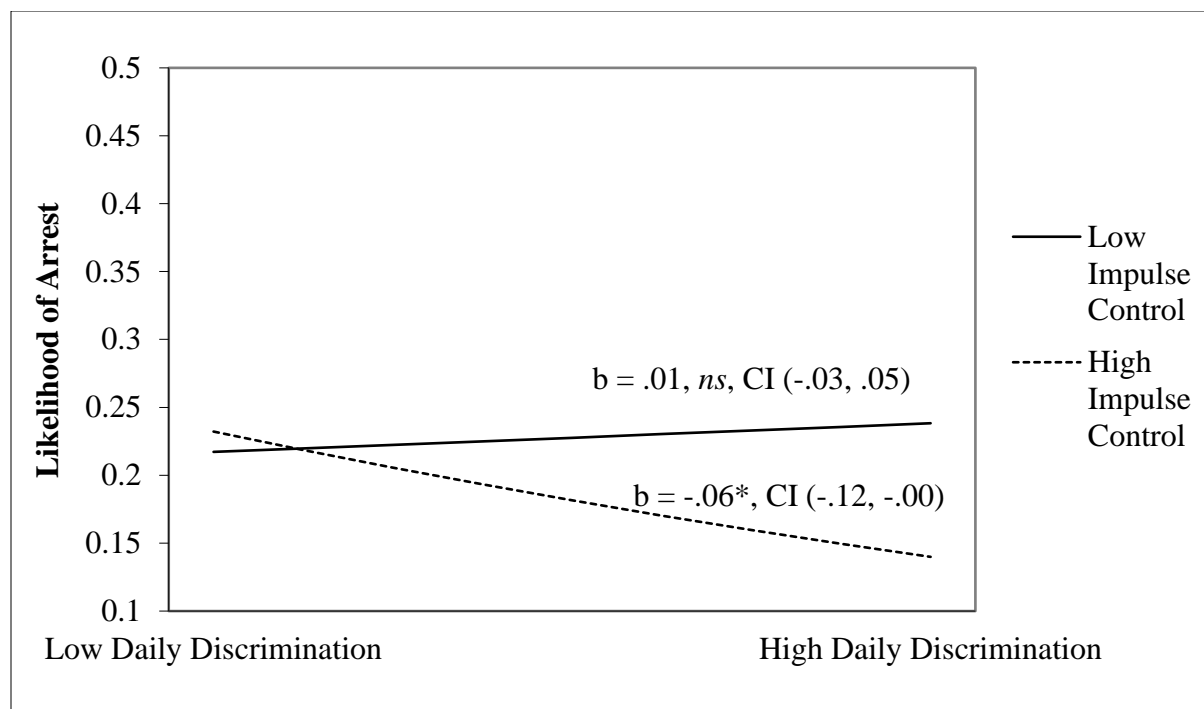


Figure 1. Impulse control moderates the relationship between daily discrimination and arrest.

Note: * $p < .05$ ** $p < .01$ *** $p < .001$, ns = nonsignificant

Moderating Role of CU Traits

Tables 14 to 17 present the results of the negative binomial testing of the interaction between CU traits and discrimination in their association with criminal behavior. Both CU traits and discrimination were associated with overall and violent self-reported offending. Contrary to the hypothesis, no significant interactions emerged for self-reported offending. For official arrests (Tables 18 and 19), there was a significant main effect for CU traits but not for daily or racial discrimination. However, there were significant interactions between both racial and daily discrimination and CU traits. Similar to impulse control, the forms of the interactions were probed using Hayes (2017) PROCESS macros and are presented in Figures 2 and 3. For the interaction shown in Figure 2, racial discrimination was not significantly associated with the likelihood of being arrested for either low ($B = .52$, $p = .084$) or high ($B = -.33$, $p = .185$) levels

of CU traits. As represented in Figure 3, individuals with elevated CU traits were more likely to get arrested regardless of discrimination, and daily discrimination was negatively associated with the likelihood of getting arrested at high levels of CU traits ($B = -.05, p = .033$). Daily discrimination was not associated with the likelihood of getting arrested for those low on CU traits ($B = .02, p = .357$).

Table 14. Association between racial discrimination, CU traits, and self-reported offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-.04	.06	(-1.5, .07)	.96	.442	899
	Racial Discrimination	.22	.10	(.02, .42)	1.24	.034	
	CU Traits	.04	.01	(.03, .06)	1.04	.000	
Step 2	Intercept	-.04	.06	(.07, .58)	.958	.446	
	Racial Discrimination	.22	.11	(.01, .42)	1.24	.040	
	CU Traits	.04	.01	(.03, .05)	1.04	.000	
	Discrimination x CU Traits	.00	.01	(-.02, .02)	1.00	.941	

Table 15. Association between daily discrimination, CU traits, and self-reported offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-.04	.05	(-.14, .06)	.96	.417	898
	Daily Discrimination	.07	.01	(.05, .08)	1.06	.000	
	CU Traits	.04	.01	(.02, .05)	1.04	.000	
Step 2	Intercept	-.04	.05	(-.13, .06)	.96	.458	
	Daily Discrimination	.07	.01	(.05, .08)	1.07	.000	
	CU Traits	.04	.01	(.02, .05)	1.04	.000	
	Discrimination x CU Traits	-.00	.00	(-.00, .00)	.999	.564	

Table 16. Association between racial discrimination, CU traits, and self-reported violent offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-1.32	.09	(-1.49, -1.15)	.268	.000	899
	Racial Discrimination	.34	.15	(.05, .63)	1.40	.020	
	CU Traits	.04	.01	(.03, .06)	1.04	.000	
Step 2	Intercept	-1.31	.09	(-1.48, -1.14)	.269	.000	
	Racial Discrimination	.32	.15	(.02, .62)	1.38	.037	
	CU Traits	.04	.01	(.02, .06)	1.04	.000	
	Discrimination x CU Traits	.01	.02	(-.03, .04)	1.01	.710	

Table 17. Association between daily discrimination, CU traits, and self-reported violent offending.

Negative Binomial Regression		Coefficient	S.E.	95% CI	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	Intercept	-1.32	.08	(-1.47, -1.17)	.27	.000	898
	Daily Discrimination	.09	.01	(.06, .11)	1.09	.000	
	CU Traits	.03	.01	(.02, .05)	1.03	.000	
Step 2	Intercept	-1.32	.08	(-1.47, -1.17)	.267	.000	
	Daily Discrimination	.09	.01	(.07, .12)	1.09	.000	
	CU Traits	.04	.01	(.02, .05)	1.04	.000	
	Discrimination x CU Traits	-.00	.00	(-.00, .00)	.999	.444	

Table 18. Association between racial discrimination, CU traits, and arrests.

Binomial Logistic Regression		Coefficient	S.E.	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	CU Traits	.05	.01	1.05	.000	788
	Racial Discrimination	-.01	.20	.99	.962	
Step 2	CU Traits	.06	.01	1.07	.000	
	Racial Discrimination	.10	.20	1.10	.626	
	Discrimination x CU Traits	-.05	.02	.95	.026	

Table 19. Association between daily discrimination, CU traits, and arrests.

Binomial Logistic Regression		Coefficient	S.E.	Exp(B)	<i>p value</i>	<i>n</i>
Step 1	CU Traits	.05	.01	1.05	.000	788
	Daily Discrimination	-.02	.02	.98	.228	
Step 2	CU Traits	.05	.01	1.05	.000	
	Daily Discrimination	-.01	.02	.99	.542	
	Discrimination x CU Traits	-.00	.00	.99	.031	

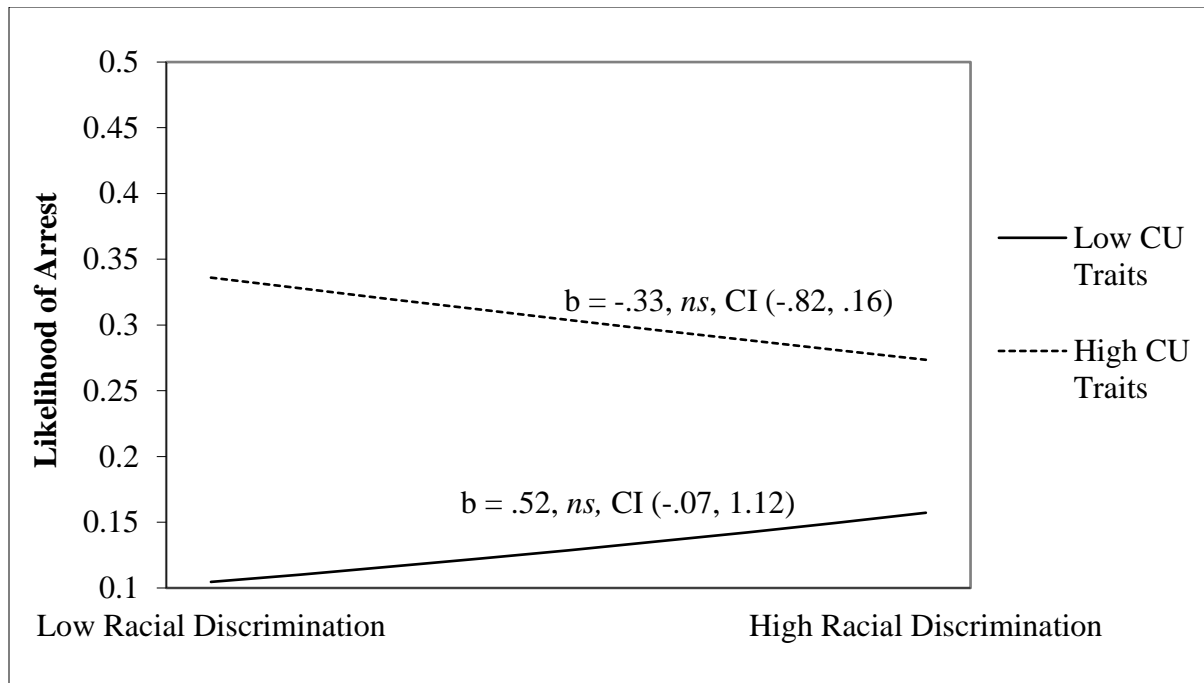


Figure 2. CU traits moderate the relationship between racial discrimination and arrest.

Note: * $p < .05$ ** $p < .01$ *** $p < .001$, ns = nonsignificant

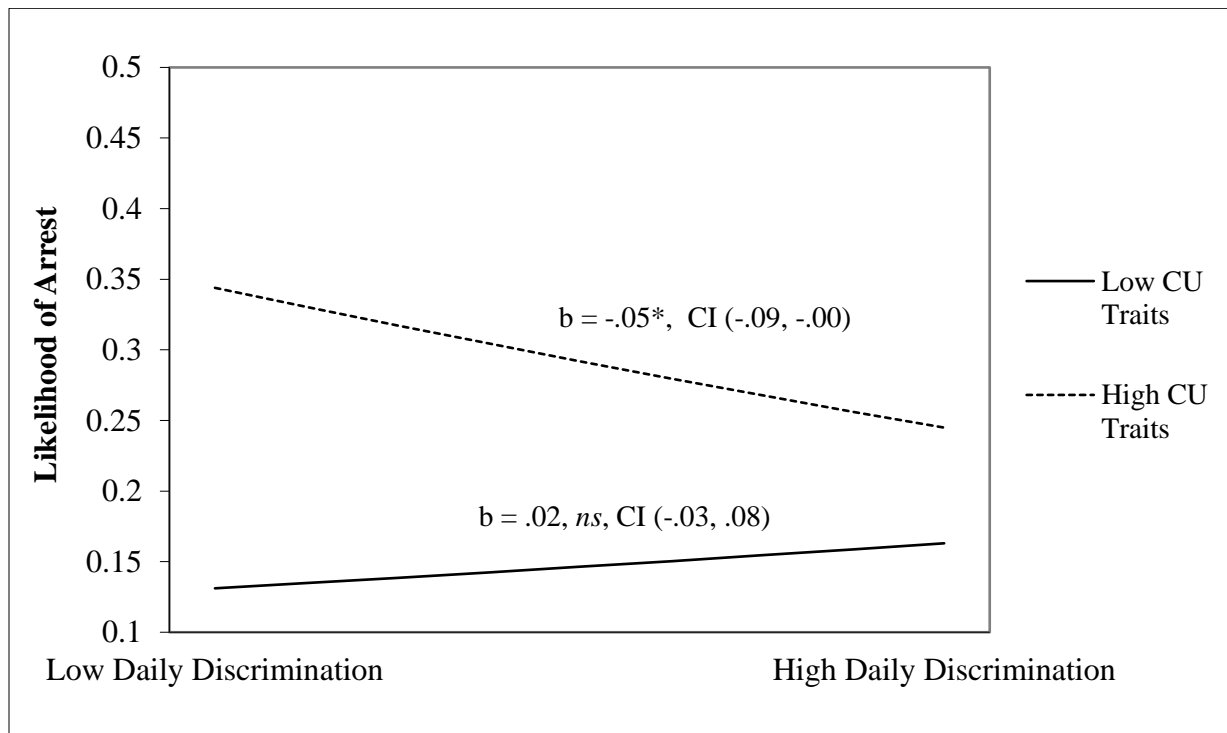


Figure 3. CU traits moderate the relationship between daily discrimination and arrest.

Note: * $p < .05$ ** $p < .01$ *** $p < .001$, ns = nonsignificant

DISCUSSION

As one of the many detrimental physical and mental health consequences of experiencing discrimination, engagement in criminal behavior has emerged as a concerning outcome, especially for individuals from marginalized groups. In the current study, we tested two potential moderators to the association between experiencing discrimination and engaging in criminal behavior (i.e., impulse control and CU traits) in an ethnically diverse sample of young adults. As predicted from past research, young adults who reported more discrimination based on their race and ethnicity and who reported more frequent daily experiences of discrimination in the past two years reported engaging in more offending behavior (Caldwell et al., 2004; Isom, 2016). The findings for self-reported delinquency are consistent with a large amount of past research on adolescents (Simons et al., 2003; Martin et al., 2011; Pérez et al., 2008; Unnever et al., 2017; Walsh et al., 2019), providing support to the notion that the criminogenic effect of discrimination extends beyond childhood and adolescence. This relationship was found for both general self-reported delinquency and when limited to self-reported violent offenses only. Further, not only was offending positively related to racial and ethnic discrimination but also to the frequency of daily discrimination that was not specific to racial and ethnic discrimination. This adds to past research that has historically focused on the criminogenic outcomes of perceptions of race- or ethnicity-based discrimination or microaggressions in racially or ethnically homogenous samples and highlights the unique stressors that people of color experience.

Black young adults in the current study reported experiencing more discrimination than White and Latino young adults, with White people reporting the least amount of discrimination. This is consistent with racial differences in reports of discrimination in past research. For example, a study by Grollman (2012) in a community sample of Black, Latino/a, and White

adolescents and young adults, reported a higher rate of self-reported racial discrimination for Black (odds ratio = 2.70) and Latino/a (odds ratio = 1.44) participants than White participants. Regarding the frequency of racial discrimination, Lee et al., (2019) reported that 69.45% of Black participants reported experiencing racial discrimination from time to time or regularly compared to 45.02% of Hispanic and 29.61% of White participants, with Pacific Islanders reporting the highest frequencies (71.43%). When responses were dichotomized, more Black participants reported experiencing discrimination in their lifetime (72.62%) than any other race or ethnicity. For major discrimination, 48.9% of Black people reported experiencing major lifetime discrimination compared to 30.9% of White adults (Kessler et al., 1999).

Consistent with past research (Tobler et al., 2013), we found no differences across racial and ethnic groups in the association between perceived discrimination and criminal behavior. This is also in line with the lack of ethnic differences in the relationship between discrimination and mental health found in Pascoe and Richman's (2009) meta-analysis. Thus, our results, and those of others, support a negative influence of perceived discrimination in White adults, as well as in adults of color. This finding does not necessarily mean that the experience of discrimination is the same for dominant and marginalized groups. While they may perceive discrimination due to their race on an interpersonal level, White people cannot be subject to racism on a systemic or institutional level due to their position as a dominant group in society (Beatty Moody et al., 2021). Isom Scott (2020) explains that perceived discrimination against White persons in the United States may result from perceived threats to their power and privilege as a dominant group in society. Thus, white supremacy and systemic racism which keeps people of color in marginalized positions in society and susceptible to discrimination also upholds the positions of power and privilege for White people that, when "threatened", could be interpreted as

discrimination and bias. At times when there appears to be an increase in racial progress, beliefs of anti-White bias also increase, especially for those who believe in the current status hierarchy which keeps White people in positions of privilege (Norton & Sommers, 2011; Wilkins & Kaiser, 2014).

How questions related to discrimination were asked and the response options provided were strengths of the current study based on the literature on measuring discrimination. In our study, as in much past research, racial and ethnic discrimination was positively endorsed when participants reported it as a reason for major discrimination events, though they had the option to select other reasons as well. For daily discrimination, participants were asked to choose the *main reasons* for discrimination. However, research suggests that people may have difficulty determining the reasons for discrimination particularly if they identify with multiple historically disadvantaged statuses (Gayman & Barragan, 2013; Grollman, 2012; 2014; Harnois, 2014). Further, people from multiple disadvantaged statuses can experience discrimination simultaneously from multiple systems (e.g., gendered racism) in ways that are not captured by most measures of discrimination (Harnois et al., 2020). Lastly, the way people understand their identities and interpret their experiences may be context-dependent and occur within multiple systems, making it difficult to ascertain a single reason. To illustrate these problems in measuring discrimination, Harnois et al., (2020) used cognitive interviews with 23 racial and ethnic minority adults to assess whether participants experienced difficulty identifying a single main reason for discrimination and whether their responses to the measure of everyday discrimination aligned with the qualitative description of their experiences. About 42% of the sample either reported frustration with choosing one reason for discrimination or reported that they adjusted their initial response to fit what the measure asked of them. Based on qualitative

interviews conducted with the participants, the authors found that the sources of difficulty in identifying a reason for discrimination included participants experiencing multiple discrimination, intersectional discrimination being the combination of two disadvantaged identities (e.g., angry Black woman stereotype), and the contextual specificity of the situation making the reason for the discrimination vary across contexts. This difficulty resulted in some misalignment between their responses to the main reason for discrimination on the measure and their described daily experiences, notably when other reasons aside from race/ethnicity were reported as the main reason but they discussed racial discrimination in their interview. In line with the recommendations provided in the aforementioned study, the current study specified a time frame (the past two years), allowed for the identification of separate reasons for each major discrimination item, and allowed participants to select multiple reasons for both the major discrimination and everyday discrimination items. With the specific time frame, the accuracy of recall of the event and reason for the discrimination was hopefully improved and the ability to report multiple reasons for discrimination allows the participants' responses to better capture how multiple statuses influence their perception and interpretation of the experience (Harnois et al., 2020). Thus, compared to studies assessing discrimination with measures that require participants to choose a single reason for their mistreatment or that do not specify a reason at all, the results of the current study may better reflect the complex discriminatory experiences of the participants, especially those with multiple historically disadvantaged statuses.

In addition to the lack of racial or ethnic differences, the level of impulse control and CU traits did not influence the relationship between perceived discrimination and increased self-reported offending as predicted. However, our results did demonstrate independent effects of discrimination, impulsivity, and CU traits with self-reported offending. Thus, perceived racial

and general discrimination were associated with offending regardless of the young adult's level of impulse control and CU traits. Further, both impulse control and CU traits were such strong predictors of offending that it did not matter whether the individual reported experiencing discrimination or not. These findings support past research that demonstrates the effects of these individual influences on criminal behavior, specifically that individuals who are impulsive and those with elevated CU traits tend to engage in more self-reported offending, and importantly, more severe forms of offending (Bechtold et al., 2013; Frick et al., 2014a; Kahn et al., 2013; McMahon et al., 2010; Ray et al., 2016; Vazsonyi et al., 2017).

In contrast, there was evidence for the moderation of the ethnicity and personality factors on the effects of perceived discrimination on official arrests. At the trend level, perceived racial discrimination was inversely associated with official arrests only for Black young adults with discrimination being *less* strongly associated with the likelihood of arrest for Black adults. This finding is somewhat surprising and should be interpreted cautiously because it was not predicted and only approached significance. However, research has shown that Black people tend to report more discrimination from police, less satisfaction with the police, and hold beliefs of the justice system being illegitimate, at least compared to White people (Henry & Franklin, 2019; Rodriguez, 2008; Weelock et al., 2019). It may be the case that, because of these experiences with and attitudes towards law enforcement, those who experience high levels of discrimination can adjust their behavior to avoid interacting with these agencies and, in turn, also avoid arrest. The current study also reported results that could support these racial disparities in justice system contact. Black young adults were less likely to report engaging in criminal behavior but were over three times more likely to get arrested relative to White young adults. Latino young adults did not significantly differ from Whites in their offending, but they were over two times more

likely to get arrested. Black and Latino young adults did not report more violent offending than White young adults, therefore their higher rates of arrest do not appear to be due to them committing more serious, violent offenses that increase the likelihood of arrest. This pattern of results could be reflective of the disproportionate minority contact present in multiple stages of the justice system for adolescents (Piquero, 2008) and mixed samples (Kochel et al., 2011; Lytle, 2014), though there seems to be more evidence of disparate rates in earlier stages of juvenile justice processing, such as at the point of initial formal processing (Zane & Pupo, 2021). Notably, in the current sample, Padgaonkar et al., (2021) also reported that Black and Latino youth were at a greater risk of being formally processed after the initial arrest, even after controlling for the nature of the charge and amount of offending before arrest. While the racial growing literature on disproportionate minority contact typically focuses on the juvenile justice system, this early contact with the system puts persons of color at risk for future involvement in the justice system, thus continuing the trend of racial disparities in the adult criminal justice system (Barnes et al., 2015; Kovera, 2019). Recent studies have reported rates of arrest as great as seven times higher for Black compared to White young adults (Schleiden et al., 2019). Consequently, if minorities feel as though they are disproportionately targeted by police or subject to inequitable treatment while in the justice system, this may lead to more perceptions of racial and ethnic discrimination and perpetuate disproportionate risk for offending (Rocque, 2011).

In addition to these moderating effects of race on discrimination's association with official arrests, the current results also support moderation by certain personality characteristics. Discrimination was negatively associated with the likelihood of getting arrested for young adults with more impulse control and those with elevated CU traits. Impulse control, or impulsivity, is a

dimension of personality that may impact one's proclivity to engage in antisocial behavior (Cauffman et al., 2005; Higgins et al., 2013) and how someone responds to perceived discrimination (Latzman et al., 2013). Further, impulse control has been shown to be related to the ability to properly regulate and tolerate emotions such as anger (Zapolski et al., 2020), a proposed mechanism by which perceive discrimination relates to offending according to GST (Agnew, 2013). Thus, while those who perceive more discrimination may still experience negative feelings as a result of the strain, as proposed by GST, young adults with better self-control may be able to better moderate their impulses or behavior to choose non-criminal coping methods or if they do offend, to avoid arrest. A moderated mediation model was beyond the scope of this study due to the cross-sectional nature; however, future studies should further explore whether impulse control directly impacts the indirect relationship of discrimination with the risk of being arrested through its effects on anger.

Importantly, young adults with elevated CU traits had a higher risk of arrest regardless of perceived discrimination; however, at high levels of CU traits, daily discrimination was associated with a lower likelihood of getting arrested when they perceived more frequent discrimination. There is a possibility of regression to the mean, however, since these individuals never come close to the rates of arrest of those with lower levels of CU traits. Alternatively, like individuals with more impulse control, individuals with elevated levels of CU traits may be more socially adept and able to moderate their likelihood of getting arrested when they experience discrimination and learn to distrust the criminal justice system. Some research has explored how individuals can alter their offending to minimize the risk of detection or arrest, including reducing the number of crimes committed in a specific period, committing less serious crimes, and adjusting crimes to a different place or time (Jacobs, 2010; Moeller et al., 2016). Perhaps

those with CU traits, who have proven to be more adept at social manipulation, can utilize these methods of evading detection by police. However, the results do suggest that for individuals with elevated CU traits who are at high risk for engaging in antisocial behavior (Kahn et al., 2013), experiencing discrimination does not provide added risk for offending. As such, they may be less influenced by the mechanisms proposed by GST and SST than individuals who have lower or normative levels of these traits.

Limitations

While this study has its strengths, the results should be interpreted within the context of several limitations as well. First, and perhaps most importantly, is the way that race and ethnicity were defined. Consistent with the approach outlined in the U.S. Office of Management and Budget Directive Number 15, participants were provided with five options for race (Black or African American, American Indian/Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, and White) and two options for ethnicity (Hispanic/Latino and non-Hispanic/Latino). Some scholars have raised concerns about this method of measuring race and ethnicity despite it being the standard for NIH-funded research. Namely, significant rates of mismatch were found between this NIH measure and participants' self-identified race and ethnicity via an open-ended question (44% mismatch for race; Eisenhower et al., 2013). This discrepancy was largely due to missing data and disproportionate poor agreement for certain groups (i.e., Latinos, Cape Verdeans, and African Americans), which may reflect a lack of representation of certain groups on the measure. For example, the options for ethnicity do not capture ethnic variability in groups outside of Hispanic and Latinos (e.g., Black Americans, Caribbean Americans, African Americans), nor is the variability within the Latino racial category adequately captured (e.g., Cuban, Haitian, Puerto Rican, Mexican). Thus, when using measures such as this that require

participants to self-report their identity within the constraints of pre-defined groups, the collected data ignores sociocultural variation in experiences with discrimination both between and within groups of diverse individuals (Brown & Donato, 2013; Seaton et al., 2013). Further, misclassification of individuals may occur if individuals are forced to choose an option that does not reflect their self-identified identity. One way to overcome this limitation is to allow for self-reported responses to open-ended questions about race and ethnicity (Winker, 2004). While this may present a challenge for coding widely variable responses, it may allow researchers to capture nuanced experiences with discrimination that are typically overlooked. Further, using self-reported racial and ethnic identity may contribute to different results than when measuring race ascribed by another individual. If participants are reporting on their experiences of discrimination from others for a particular reason (e.g., race), then perhaps future studies should ask participants to report on how others perceive their racial or ethnic identity.

Another limitation of our study is the cross-sectional design, which does not allow for inferences about a predictive relationship between discrimination and offending to be made. While we proposed a specific causal ordering in the current analyses (perceived discrimination leading to criminal behavior), other directions of causality are possible. For example, criminal behavior may lead to greater perceived discrimination through increased contact with police and others in the justice system. In support of this, while African-American men experience high rates of discrimination regardless of whether they have had contact with the criminal justice system, those who have been involved with the justice system report experiences of discrimination more frequently than those who have not been involved (Taylor et al., 2018). It is also plausible that discrimination may reduce one's ability to control impulses, leading to an increased likelihood of antisocial outcomes (Gibbons et al., 2012). Additionally, while it was

hypothesized that the moderators would influence the nature of the relationship between discrimination and criminal behavior through their influence on theorized mechanisms, directly testing a moderated mediation model is not recommended using cross-sectional data (Maxwell & Cole, 2007; O’Laughlin et al., 2018). Thus, future studies should utilize longitudinal data to examine the predictive relationship of discrimination on criminal offending from adolescence into adulthood or across adulthood, including direct tests of hypothesized mechanisms.

Additionally, using a sample of young adult males who identified as Black, White, and Latino and who have had previous contact with the justice system limits the generalizability of the results. As noted above, justice-system involvement may influence experiences with and perceptions of discrimination. Further, individuals who identified as Biracial, Multiracial, Asian, and American Indian were excluded from the current study due to low endorsement rates which prevented us from focusing on their experiences with perceived discrimination. Biracial and multiracial adults are a largely understudied population and may have unique perspectives that need to be further investigated, as they may report different forms, sources, and effects of discrimination as members of multiple racial and ethnic groups (Christophe et al., 2021). Thus, replication in community samples and samples with diverse ethnic identities, as well as diversity in gender identity and sexual orientation, is warranted, with attention paid to the effects of intersecting identities on the perception of discrimination.

The measure used in our study also did not provide an exhaustive list of the types of discriminatory events or experiences one can have. For instance, the measure only asks about certain events and interactions that may be interpreted as discriminatory but does not account for anticipatory or vicarious discrimination that may be experienced. Anticipated discrimination from the police has been found to have a strong association with violent offending in recent

research, suggesting that direct experiences should not be the only form of discrimination explored (Herda & McCarthy, 2018). Additionally, individuals may experience the effects of racism on a larger, institutional level which was not captured by current measures. Due to the low rates of endorsement of other reasons for major discrimination (i.e., gender, age, sexual orientation, religion), we were unable to analyze the associations and independent effects of the different forms on criminal offending and arrests. While there is some evidence that discrimination due to one's ethnic or racial identity may have the strongest negative effects on mental and physical health compared to other reasons (Bucchianeri et al., 2014; Grollman, 2012), it is still possible that other types of discrimination could add to these negative effects. In sum, there are countless ways to measure experiences of discrimination that may influence the effects on certain outcomes. Future research should account for different methods of experiencing discrimination (direct vs. vicarious), forms, sources, and frequency of discrimination on criminogenic outcomes to determine if there are differences in their effects on the individual.

Relatedly, although the Everyday Discrimination Scale has demonstrated good psychometric properties (Kessler, 1999; Krieger et al., 2005; Shariff-Marco et al., 2011), its measurement invariance has been called into question. For the widely used nine-item scale, Harnois et al., (2019) and Bastos and Harnois (2020) found that the scale lacked equivalence across racial and ethnic groups for both race-based and general discrimination in samples of adults who identified as either non-Hispanic White, African American, Hispanic/Latino, and Asian. The specific items that were non-equivalent across racial and ethnic groups varied in the two studies (Harnois et al., 2019; Bastos & Harnois, 2020). Kim et al., (2012) used a 6-point Likert response scale for the 9-item measure in a sample of 10,656 adults and found strong

measurement invariance across groups for the scale, but item 7 (i.e., “People act as if they are better than you are”) had lower intercepts for Hispanic/Latino and Asian groups compared to White and Black groups, suggesting that compared to other racial or ethnic groups, Hispanic/Latino and Asian groups need lower levels of the underlying discrimination construct to obtain higher scores on this particular item. Lewis et al., (2012) conducted a Differential Item Functioning analysis in 3,925 U.S. women and found that three items functioned differently across racial and ethnic groups. One item (“You receive poorer service in restaurants or stores”) was more likely to be endorsed by Black women than Hispanic, Caucasian, and Japanese women. White women were less likely to endorse “People act as if you are dishonest” than Black women, and Hispanic women were more likely to endorse “You are treated with less courtesy” compared to Black women. However, the racial and ethnic groups did differ in their report of everyday discrimination even when accounting for the item differences. Despite the wide use of this measure, it was originally derived based on qualitative interview data from Black and African American women in the U.S. and Netherlands; thus the items might reflect experiences unique to these populations. These findings across samples suggest that some caution in interpretation is warranted, given that certain items may function differently in one racial or ethnic group compared to another and that experiences of discrimination may be different across groups.

Additionally, our results may be impacted by the way the criminal behavior outcomes were measured. Official arrest records measured any arrest over the past two years and were not a measure of frequency or variety of arrests, whereas the self-reported offending outcomes measured the variety of offenses over the two-year time period. Therefore, the different results across these outcomes may be due at least in part to the different ways of defining criminal

behavior. It should be noted as well that one measure, violent self-reported offending, had low internal consistency. This is likely due to the very low base rate of endorsement of most of these items in our sample, but it does suggest that results using this measure should be interpreted with caution.

A final limitation is that the current sample's racial and ethnic breakdown was confounded by geographic region, with the majority of the Black sample residing in Philadelphia, PA, and the majority of the Latino sample residing in Orange County, CA. This may lead to some of the race effects also reflecting differences in geographic regions.

Summary and Conclusions

The overall findings support past empirical work showing that the effects of discrimination go beyond the well-studied physical and mental health outcomes. Consistent with past research, perceived racial and ethnic discrimination and frequency of day-to-day experiences of discrimination in young adulthood are related to self-reported criminal offending. In this ethnically diverse sample of young adults, this relationship was found regardless of self-identified race or ethnicity. Further, there was no observed effect of individual differences, including impulse control and CU traits, on the discrimination and self-reported offending relationship. These results support growing research on the detrimental effects that perceived discrimination can have on the person and society in general and provides further context for theories of crime. For official arrests, ethnicity, CU traits, and impulsive control did influence the association between discrimination and arrests. That is, for Black adults, those with elevated CU traits, and those with more impulse control, more perceived discrimination led to a reduced risk of being arrested. This interaction was not expected and, as a result, needs to be replicated before conclusive statements can be made. However, these provocative findings suggest that, for

individuals with these characteristics, discrimination may lead the person to be better able to avoid detection for their criminal behavior. Again, while such a conclusion awaits replication, our results suggest that self-reported criminal behavior and official arrests may have different associations with perceived discrimination that need to be considered in future research.

APPENDIX. IRB APPROVAL



TO: Frick, Paul Joseph
LSUAM | Col of HSS | Psychology

FROM: Alex Cohen
Chair, Institutional Review Board

DATE: 08-Jan-2021

RE: 3650

TITLE: Crossroads: Formal versus informal
processing in the juvenile justice system

New Protocol/Modification/Continuation: Continuation

Review Type: Expedited Review

Risk Factor: Minimal

Review Date: 08-Jan-2021

Status: Approved

Approval Date: 08-Jan-2021

Approval Expiration Date: 07-Jan-2022

Re-review frequency: (annual unless otherwise stated)

Number of subjects approved: 151

LSU Proposal Number: 48962-1

By: Alex Cohen, Chairman

Continuing approval is **CONDITIONAL** on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.

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VITA

Toni M. Walker earned a Bachelor of Science in Psychology with a minor in Administration of Justice from the University of Pittsburgh. Her interest in predictors of engagement in delinquency across adolescence into young adulthood led to her to pursue a Clinical Psychology at Louisiana State University, where she assisted in managing a multisite longitudinal study following adolescents after their first arrest. She is currently pursuing her Doctor of Philosophy in Clinical Psychology under the mentorship of Dr. Paul Frick. Toni hopes to use her research and clinical experience to help provide evidence-based psychological and forensic evaluations of justice-involved youth.