

# THE INTERSECTIONALITY OF SEX, RACE, AND PSYCHOPATHOLOGY IN PREDICTING VIOLENT CRIMES

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The present study used data on prisoners to advance our understanding of the joint effects of sex, race, and psychopathology, specifically antisocial personality disorder (APD) and Psychopathy, on criminal violence. The sample comprised 3,525 male and 1,579 female inmates between the ages of 18 and 45 years who were incarcerated in state prisons in Wisconsin at the time of data collection. Multivariate analyses were used to examine all sex–race–psychopathology combinations. The findings indicate that Black males and females with comorbid APD and Psychopathy were more likely to commit violent crime than similarly situated White males. While gendered patterns of aggression may characterize males and females in the aggregate, the present study clearly highlights the importance of considering sex/race subgroups when examining the relationship between psychopathology and violent crime.

**Keywords:** antisocial personality disorder; Psychopathy; sex, race; violence

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There are a number of important sociodemographic categories (e.g., sex, race) and psychological factors (e.g., diagnoses like antisocial personality disorder [APD] and Psychopathy) that are associated with criminal violence (Crocker et al., 2005; Hemphill, Hare, & Wong, 1998; Hodgins, Lapalme, & Toupin, 1999; Robins & Regier, 1991; Salekin, Rogers, & Sewell, 1996; Serin, Peters, & Barbaree, 1990; Steadman et al., 1998; Swanson et al., 2002). Generally, research in this area has been either descriptive, focused on uncovering developmental pathways, identifying psychological and neurobiological underpinnings, or, to a limited extent, epidemiological (MacDonald & Iacono, 2006). However, these studies have been undertaken as if the effects of sex, race, and psychopathology can be separated and examined independently. As a result, they do not acknowledge the distinct life experiences of sex/race subgroups and how they differentially shape the prevalence and correlates of these factors.

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## PRIOR RESEARCH ON SEX, RACE, AND VIOLENT BEHAVIOR

Much of our thinking and practice related to violent behavior is based on a series of truisms that emerge from criminological research. The first truism is that the male rate of violent offending is higher than that of females (Holmes, 2010; Steffensmeier, Schwartz, Zhong, & Ackerman, 2005; Steffensmeier, Zhong, Ackerman, Schwartz, & Agha, 2006). This is supported by both official and research-derived data. Using the 2010 Federal Bureau of Investigation (FBI) Uniform Crime Reports combined with U.S. Census data, violent crime arrest rates are 264.37 for males and 61.15 for females.<sup>1</sup> Data from a study by Lauritsen, Heimer, and Lynch (2009) indicate male rates of aggravated assault are 7 per 1,000 whereas female rates are 2 per 1,000. Similarly, for robbery, male rates are 4 per 1,000 and female rates are 0.8 per 1,000 (Lauritsen et al., 2009). These data show that males commit a disparate amount of violent crime.

A second truism is that rates of violent offending among Blacks are higher than those of Whites (Sampson, Morenoff, & Raudenbush, 2005; Steffensmeier, Feldmeyer, Harris, & Ulmer, 2011). For instance, Steffensmeier et al. (2011) present rate ratios of Black/White involvement in violent crime. These ratios clearly demonstrate the disproportionate involvement of Blacks in homicide (11.7), robbery (15.25), and aggravated assault (5.13). In addition, Sampson and colleagues (2005) show that the likelihood of engaging in violent offending is 85% higher for Blacks than for Whites. Again, data support this axiomatic finding.

Despite the enduring quality of these truisms, a number of studies challenge the utility of using aggregate demographic measures. Instead, they suggest that ignoring race and sex subgroup distinctions obscures important differences in patterns and etiological understandings of crime. For example, when interactions between sex and race are considered, noted disparities in violent offending are less apparent (Baskin & Sommers, 1998). Specifically, Black females often demonstrate higher rates of violent offending than White males and females (Baskin & Sommers, 1998; Laub & McDermott, 1985; Wilbanks, 1982; Zahn & Riedel, 1988). These findings suggest that sex alone does not account for variations in criminal violence and that there may be subgroup differences that must be parsed.<sup>2</sup>

Similarly, recent research on racial disparities in violent offending call into question the use of aggregate race measures as to do so obscures important distinctions. For that matter, Steffensmeier and colleagues (2011) convincingly argue that the designation of "Black" itself is problematic. They argue that there is a "growing bifurcation in Black America" (Steffensmeier et al., 2011, p. 235) between those who reside in neighborhoods characterized by severe cultural, social, and economic disadvantage and those who migrated out to middle-class areas. This split in "Black America" suggests that differential neighborhood experiences and discrepant exposure to risk and protective factors (Sampson et al., 2005) render the aggregate category, "Black," of limited utility for understanding criminal offending patterns. Furthermore, those like Sampson (2012) contend that not only is there a "racial divide" *within* the Black population (Steffensmeier et al., 2011) but that one also exists *among* the poor. It is maintained that significant differences in the quantity and quality of distress, cognitive inequality, and spatial segregation exist between poor Blacks and poor Whites and that this disparity also affects involvement in criminal offending (Sampson, 2012). Therefore, this suggests that criminal violence is not distributed equally across race categories but may be subject to intra- and intergroup variation in neighborhood context.

These studies (Sampson et al., 2005; Steffensmeier et al., 2011) suggest that the experiences of *all* Blacks or of *all* women, for instance, are not homogeneous. Much the same can be said for Whites and males. As the confluence of sex and race is an important marker of social differentiation using broad race and sex categories may mask distinctive subgroup patterns of offending. Consequently, a more nuanced understanding of criminal violence requires that we disaggregate these variables and construct relevant offender subgroups that can then be examined in interaction with other theoretically and empirically relevant factors.

### PRIOR RESEARCH ON APD AND PSYCHOPATHY

One important factor that receives attention for its relationship to violent offending is psychopathology, specifically, the diagnostic syndromes of APD and Psychopathy (DeLisi, 2009; Douglas, Vincent, & Edens, 2006; Z. Walsh & Kosson, 2007). APD is commonly characterized as a history of conduct disorder (CD) commencing prior to age 15 and continuing into adulthood (*Diagnostic and Statistical Manual of Mental Disorders* [4th ed.; *DSM-IV*]; American Psychiatric Association [APA], 2000). Psychopathy is best described as a combination of antisocial traits and behaviors and is distinguished by a variety of interpersonal and affective symptoms such as callousness, shallow affect, pathological lying, superficial charm, and manipulateness (Hare, 2003).

Analogous to research on sex, race, and violent offending, there are also a number of truisms that emerge from studies on the relationship between these sociodemographic categories and both APD and Psychopathy. For instance, it is widely accepted that males and females differ in terms of type and age of onset with regard to certain precursor psychological syndromes, such as CD, oppositional defiant problems, and attention-deficit hyperactivity. Typically, females are considered less likely to develop these syndromes and when they do, it is later in onset (Cohen et al., 1993; Maughan, Pickles, Rowe, Costello, & Angold, 2000; Moffitt, Caspi, Rutter, & Silva, 2001). Also, males and females are viewed as experiencing “different environmental risks” that then lead to “different mental health outcomes” (Zahn-Waxler, Shirtcliff, & Marceau, 2007, p. 11.3), including the specific diagnoses of APD and Psychopathy. Thus, males are more likely to be diagnosed with externalizing disorders (e.g., APD and Psychopathy) that are then related to physical aggression toward others. Females are more likely to be diagnosed with internalizing disorders (e.g., depression, anxiety) where aggression is more indirect or self-inflicted (Baskin, Sommers, Tessler, & Steadman, 1989; Vincent, Grisso, Terry, & Banks, 2008).

Nonetheless, these truisms, like those in criminology, are minimized when examining extreme offenders who fall into the specific diagnostic categories of APD and Psychopathy (DeLisi, 2009; Douglas et al., 2006; Harris, Skilling, & Rice, 2001; Z. Walsh & Kosson, 2007). Unlike their limited prevalence in the general population, APD and Psychopathy are prominent diagnoses within correctional settings (Hare, 1998; Shipley & Arrigo, 2001). In addition, their base rates among inmates are significantly higher than they are in the general population. Whereas community base rates for Psychopathy in the United States are estimated to be 1% to 3% for males and less than that for females (Dolan, 2004; Hare, 2003; Nicholls & Petrila, 2005; A. Walsh & Wu, 2008), they are 15% to 30% for males and 7.5% to 17.4% for females in correctional settings (Cale & Lilienfeld, 2002; Vitale, Smith, Brinkley, & Newman, 2002; Warren et al., 2003).

Similarly, APD is found to be more prevalent among correctional inmates. While 3% of males and 1% of females in the general population meet diagnostic criteria (Rogstad & Rogers, 2008; Sylvers, Brennan, Lilienfeld, & Alden, 2010), some studies report that between 50%-80% of male and 40%-60% of female inmates in the United States have APD (Peaslee, Fleming, Baumgardner, Silbaugh, & Thackney, 1992; Shipley & Arrigo, 2001). However, it is important to note that recent research fails to find meaningful differences based on sex (Black, Gunter, Loveless, Allen, & Sieleni, 2010), and one study finds that 56% of female inmates are diagnosed with APD, a percentage only slightly lower than that of males (Salekin et al., 1996).

Unlike what we know about sex-psychopathology differences, research on race and the diagnostic categories of APD and Psychopathy is limited. In terms of APD, the Environmental Catchment Area (ECA) study indicates that there are no significant racial differences in the prevalence of APD (Robins & Regier, 1991). Using ECA data, Robins, Tripp, and Przybeck (1991) find that the lifetime prevalence rate of APD for Blacks is 3.9% and for Whites is 3.7%. Similarly, the National Comorbidity Study shows odds ratios as 1.0 for Whites and 0.89 for Blacks (Kessler et al., 1994). Youman, Drapalski, Stuewig, Bagley, and Tangney (2010) also report racial convergence in APD among correctional inmates. Unfortunately, base rate comparisons of Psychopathy among Whites and Blacks are unavailable for both the general and correctional populations. However, recent research shows that Blacks and Whites do not differ in consequential ways in terms of the levels of psychopathic traits (Edens & Cahill, 2007; Singh, Grann, & Fazel, 2011), regardless of study and/or setting (Skeem, Edens, Camp, & Colwell, 2004).

All in all, these data suggest that the pervasiveness of APD and Psychopathy among prison inmates and the relative overlap across sex and race warrants closer examination. This is especially important as both clinical and social science research document high rates of comorbidity between these syndromes and criminal violence (Fridell, Hesse, Jaeger, & Kühlnhorn, 2008; Vitale, MacCoon, & Newman, 2011). However, only a few studies have examined the extent to which this relationship is influenced by race and sex (Z. Walsh & Kosson, 2007) and none have explored how intrarace and intrasex variations predict violent offending among inmates with these diagnoses. Thus, we are left wondering whether our current knowledge applies to offenders at the extreme end of the continuum.

In recognizing the intersectionality of sex and race, the present study uses data on prison inmates in an attempt to advance our understanding of these intricate and intrinsic relationships. It looks at the joint effects of sex, race, and psychopathology, specifically APD and Psychopathy, on criminal violence. In this way, prevention and intervention efforts can be developed that better target developmental trajectories, maintenance patterns, and desistance pathways that may be specific to particular sex/race subgroups and for those with APD and/or Psychopathy.

## METHOD

### PARTICIPANTS

Participants were 1,079 female and 3,525 male offenders from multiple correctional institutions located in Wisconsin. All participants were between the ages of 18 and 45 because

Psychopathy and impulsive behavior have been found to change with advancing age (Hare et al., 1990). In addition, a prescreen of institutional files was used to exclude individuals who had performed below the fourth-grade level on a standardized measure of reading or math achievement, who scored below 70 on a brief measure of IQ (Zachary, 1986), or who had diagnoses of schizophrenia, bipolar disorder, or psychosis, not otherwise specified. The intelligence cutoff and exclusion of major psychopathology were used primarily to reduce the contribution of these extraneous influences on the assessment.

## PROCEDURE

Individuals meeting the inclusion criteria were invited to participate in an ongoing study. All participants provided written informed consent according to procedures approved by the University of Wisconsin–Madison Human Subjects Committee. Inmates were called to a private office and completed a semistructured life history interview with a trained interviewer. Following the interview, the interviewer reviewed the institutional file to corroborate information provided during the interview and record official encounters with the criminal justice system. The combination of interview and file information was used to rate Psychopathy and APD, quantify years of education (1–18 years), and document the number of types of crimes.

## MEASURES

### Diagnostic Assessments

*Psychopathy Checklist–Revised (PCL-R).* PCL-R (Hare, 2003) ratings were completed using information from prison files and a semistructured interview that lasted approximately 60 min. Based on information gathered from the interview and file review, the 20 items of the PCL-R were rated 0, 1, or 2, reflecting the degree to which a characteristic was present: significantly (2), moderately (1), or not at all (0). The potential range of PCL-R scores was 0 to 40. As recommended by the manual, participants scoring 30 or more on the PCL-R were classified as psychopathic.<sup>3</sup> Interrater reliability (intraclass correlation) for PCL-R total score based on 532 dual ratings was .96.

*APD symptoms.* Participants were also assessed for an APD diagnosis during the same interview and file review used in the PCL-R assessment, using specific questions and information concerning a variety of antisocial behaviors (e.g., burglary, physical cruelty to animals, vandalism). Following the *DSM-IV* criteria, a diagnosis of APD was given if there was evidence of CD prior to age 15 and sufficient adult antisocial symptoms. CD consists of an ongoing pattern of behavior that violates the rights of others or age-appropriate societal norms (APA, 2000). Diagnostic criteria require demonstration of disruptive behaviors in at least three of the four following areas: aggression to people and animals, destruction of property, deceitfulness or theft, and antisocial behavior (e.g., violations of rules or status violations; APA, 2000). Along with CD, three or more of the following adult symptoms must be present: repeatedly performing acts that are grounds for arrest, repeated lying or conning, impulsiveness, aggressiveness, reckless disregard for the safety of self or other, consistent irresponsibility, and lack of remorse. Interrater reliability (intraclass correlation) for APD diagnosis based on 535 dual ratings was .93.



*Welsh Anxiety Scale.* Participants completed the Welsh Anxiety Scale (Welsh, 1956), a 39-item, true/false, questionnaire that assesses neurotic anxiety. Scores range from 0 to 39 and higher scores on this measure indicate higher anxiety. This measure has been used in previous research to control for differences in anxiety between males and females. In the field of Psychopathy, it has been useful in distinguishing subtypes of offenders (Gray, 1987; Lilienfeld, 2003; Newman, MacCoun, Vaughan, & Sadeh, 2005; Quay, 1988). Consequently, the effect of anxiety on violence was included as a control variable in the regression models. Median split (median = 13.00) was used to distinguish low and high anxiety groups.

### **Criminal Record: Violent Crimes**

The combination of the PCL-R interview and file information was used to quantify the occurrence and types of violent crimes. Violent crimes comprised murder, robbery, assault, weapons possession, and kidnapping. Prevalence was measured as a dichotomous variable (1 = *yes, committed a violent crime*; 0 = *no, never committed a violent crime*) and the number of types of violent crimes (i.e., violent crime versatility) was a continuous measure reflecting the number of types of violent crimes (0-5) committed in the offender's lifetime.

### **DATA ANALYSIS**

To examine the intersectionality of sex, race, and psychopathology on violent crimes, we ran two types of regression models. One used logistic probability models/regressions to examine the likelihood of committing a violent crime. The other used ordinary least squares (OLS) regression to estimate the impact of these factors on violent crime versatility. Sex and race were dichotomous variables (1 = *male*, 0 = *female*; 1 = *Black*, 0 = *White*). Due to the extremely low number of Hispanic inmates in the sample ( $n = 35$ ), only White and Black offenders were included in the analyses. Last, a few covariates, such as age and level of education, were included in the models to control for potential demographic differences.

As mentioned above, one analysis estimated the likelihood of committing a violent crime. Initially, a baseline model was used that included only demographic and psychopathology main effect variables. Using simple dummy variables, the second model estimated the effect of two-way interactions for sex and race and APD and Psychopathy. To determine whether and to what degree the sex–race–psychopathology triads had a statistically significant effect on the likelihood of committing a violent crime, a fully specified model with triple interactions was estimated. The other analysis estimated violent crime versatility. A series of OLS regression models were estimated to determine whether and the extent to which sex, race, and psychopathology interactions exerted a significant influence on violent crime versatility (i.e., the number of types of violent crimes committed).

## **RESULTS**

### **SAMPLE CHARACTERISTICS**

The sample comprised 1,079 female (23.4%) and 3,525 male (76.6%) respondents (Table 1). The majority of participants was White (59.6%) and in their late 20s (median age = 29 years old). A total of 2,544 respondents (56.3%) were diagnosed with APD, and

**TABLE 1: Descriptive Statistics (n = 4,604).**

	<i>M</i>	<i>Median</i>	<i>Range</i>	<i>Sample (%)</i>
Age	29.73	29.00	18-45	
Education (years)	10.71	11.00	1-18	
Sex				
Male				76.56
Female				23.44
Race				
White				59.58
Black				40.42
APD				56.30
Male				61.60
Female				38.90
White				56.30
Black				54.40
Psychopathy				19.72
Male				23.12
Female				8.62
White				19.54
Black				19.99
Any violent crime				66.83
Male				71.43
Female				51.81
White				61.57
Black				74.58
Mean number of types of violent crimes	1.37			
Male	1.50			
Female	0.92			
White	1.12			
Black	1.74			

Note. APD = antisocial personality disorder. Violent crime category comprised murder, robbery, assault, weapons, and kidnapping.

908 inmates (19.7%) were classified as Psychopaths. Of the 4,604 individuals in the study, 66.8% committed at least one violent crime in their lifetime. The average number of different violent crimes committed (i.e., violent crime versatility) was 1.37. Assault (50.5%) and weapons possession (41.9%) were the violent crimes most frequently committed by the respondents. Only 13.2% and 5.4% committed homicide or kidnapping, respectively. Approximately, 26% of the sample committed robbery (see Table 1).

Male,  $t(4,602) = 12.17, p = .00$ , and Black respondents,  $t(4,602) = 9.28, p = .00$ , were significantly more likely to commit a violent crime than female and White respondents, respectively. In addition, males were significantly more associated with APD,  $t(4,513) = 13.18, p = .00$ , and Psychopathy,  $t(4,602) = 10.60, p = .00$ , than females. Whites and Blacks did not differ significantly on APD or Psychopathy.

#### SEX AND RACE INTERACTIONS

The data in Table 2 show that for APD and Psychopathy, there were no significant race effects. Males, regardless of race, were significantly more likely to be diagnosed with APD and as Psychopaths (APD + Psychopathy) than their female counterparts,  $t(4,602) = 10.38$ ,

**TABLE 2: Bivariate Statistics for Sex and Race Interactions ( $n = 4,604$ ).**

	Sample (%)	APD (% Within Group)	Psychopathy (% Within Group)	Violent Crime (% Within Group)	Number of Types of Violent Crime ( $M$ )
White male	46.63	61.70	22.50	66.00	1.23
Black male	29.93	61.40	24.09	79.90	1.92
White female	12.95	36.60	8.89	45.64	0.70
Black female	10.49	41.70	8.28	59.42	1.18

Note. APD = antisocial personality disorder.

$p = .00$ . With regard to violent crime, there were significant sex and race differences. Regardless of race, males were significantly more likely than females to commit violent crime as well as more types of violent crimes,  $t(4,602) = 14.10$ ,  $p = .00$ . Black males had significantly higher rates of violence than all other subgroups,  $t(4,602) = 12.51$ ,  $p = .00$ , and Black females were significantly more likely to commit violence than White female respondents,  $t(1,077) = 4.54$ ,  $p = .00$ .

#### SEX, RACE, AND PSYCHOPATHOLOGY INTERACTIONS

The data in Table 3 show the bivariate results for the influence of sex–race–psychopathology on violent crime. In light of the large number of subgroup comparisons, we simplify matters by reporting only the corresponding group comparisons (e.g., White males with APD + Psychopathy are compared with Black males, White females, and Black females with APD + Psychopathy; White males with APD only are compared with Black males, White females, and Black females with APD only). The data indicate a number of important findings within each sex, race, and psychopathology subgroup.<sup>4</sup>

First, regardless of sex and race, there was no significant difference in the prevalence of violent crime within the APD and Psychopathy (APD + Psychopathy) subgroup. In contrast, analyses for violent crime versatility revealed that Black males diagnosed with APD and Psychopathy committed significantly more types of violent crimes than all other comparable subgroups ( $p = .00$ ). However, there was no significant difference between White males and Black females within the APD + Psychopathy subgroup.

Second, Black males with APD only were significantly more likely to commit a violent crime as well as a greater number of violent crime types than all other similar subgroups ( $p = .00$ ). Again, there were no significant differences in these outcomes between White males and Black females within this subgroup. The White male APD subgroup, however, was more likely to be involved (i.e., prevalence) and versatile in the commission of violence offenses than White females ( $p = .01$ ).

Third, there was no significant difference in the prevalence of violent crime within the Psychopathy-only subgroup. With regard to violent crime versatility within this subgroup, the only significant differences were between Black males and White females (Black males committed more types of violent crimes,  $p = .01$ ). Last, within the subgroup with neither APD and/or Psychopathy, Black males were significantly more likely to commit a violent crime ( $p = .00$ ) as well as a greater number of violent crime types ( $p = .00$ ) than all other similar subgroups. Similar to previous findings, there were no significant differences in outcomes between Black females and White males.



**TABLE 3: Bivariate Statistics for Sex, Race, and Psychopathology Interactions (n = 4,515).**

	Sample (%)	Violent Crime (% Within Group)	Number of Types of Violent Crime (M)
White male APD + Psychopathy	9.62	81.04	1.83
White male APD only	18.72	67.05	1.22
White male Psychopathy only	0.74	73.53	1.56
White male neither	16.88	55.98	0.90
Black male APD + Psychopathy	6.43	87.84	2.53
Black male APD only	11.73	83.52	1.95
Black male Psychopathy only	0.72	84.85	2.10
Black male neither	10.71	71.20	1.50
White female APD + Psychopathy	0.96	72.73	1.14
White female APD only	3.61	53.01	0.87
White female Psychopathy only	0.20	55.56	0.87
White female neither	7.71	40.56	0.56
Black female APD + Psychopathy	0.76	94.29	1.91
Black female APD only	3.43	69.62	1.41
Black female Psychopathy only	0.11	60.00	1.75
Black female neither	5.76	52.08	0.94

Note. APD = antisocial personality disorder.

#### MULTIVARIATE PREDICTORS OF VIOLENCE

Hierarchical logistic regression analyses were performed to test the effects of the interactions among sex, race, and psychopathology on the prevalence of violence. Each model included controls for age, education, and level of anxiety. The results from the baseline model (Model 1, Table 4) indicate that the sex, race, and psychopathology variables have significant independent effects on the likelihood of engaging in violent crime. Specifically, Black offenders were more than twice as likely to commit violence than White inmates, and males were 1.81 times more likely than females to commit a violent crime. Inmates assessed as Psychopaths or having APD were 1.95 and 1.70 times more likely to have engaged in a violent crime than their control counterparts, respectively. Offenders classified as low anxious were more likely to commit violence than high anxious offenders (odds ratio = 1.26).

Model 2 reports the results of the sex–race and APD–Psychopathy interactions on the prevalence of violent crime outcome. As shown in Table 4, the effects of education and anxiety remained consistent from Model 1 to Model 2. All three psychopathology categories exerted statistically significant positive effects on the likelihood of committing a violent crime. As compared with offenders with no APD or Psychopathic diagnosis, inmates with APD + Psychopathy (odds ratio = 3.24), APD only (odds ratio = 1.67), and Psychopathy only (odds ratio = 1.92) were more likely to commit violent crime. The results for the sex–race dyads demonstrate the importance of subgroup analyses. Compared with White males, Black male offenders were more than twice as likely to commit a violent crime and White female inmates half as likely to commit violence. However, there was no statistically significant difference between White male and Black female offenders in the prevalence of violent crime.

Model 3 reports the effects of sex–race–psychopathology interactions on the prevalence of violent crime. Again, the effects of education and low anxiety on the prevalence

**TABLE 4: Hierarchical Logistic Regression for the Likelihood of Committing a Violent Crime.**

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
	<i>Odds Ratio</i>	<i>95% CI for Odds Ratio</i>	<i>Odds Ratio</i>	<i>95% CI for Odds Ratio</i>	<i>Odds Ratio</i>	<i>95% CI for Odds Ratio</i>
Age	1.00	[0.953, 1.01]	1.00	[0.992, 1.01]	1.00	[0.992, 1.01]
Education	0.90***	[0.862, 0.941]	0.90***	[0.857, 0.935]	0.89***	[0.856, 0.934]
Anxiety (1 = low)	1.26**	[1.00, 1.46]	1.27**	[1.10, 1.46]	1.27**	[1.11, 1.47]
Sex (1 = male)	1.81***	[1.55, 2.12]				
Race (1 = Black)	2.08**	[1.80, 2.40]				
Psychopathy (1 = yes)	1.95***	[1.58, 2.40]				
APD (1 = yes)	1.70***	[1.46, 1.98]				
Black male			2.20***	[1.85, 2.62]		
Black female			1.07	[0.859, 1.34]		
White female			0.59***	[0.486, 0.726]		
APD + Psychopathy			3.24***	[2.58, 4.05]		
APD only			1.67***	[1.43, 1.95]		
Psychopathy only			1.92*	[1.09, 3.38]		
WM APD only					0.50***	[0.380, 0.661]
WM Psychopathy only					0.61	[0.265, 1.38]
WM neither					0.33***	[0.251, 0.441]
BM Psychopathy + APD					1.82**	[1.19, 2.79]
BM APD only					1.36	[0.971, 1.89]
BM Psychopathy only					1.38	[0.459, 4.13]
BM neither					0.70*	[0.499, 0.925]
WF Psychopathy + APD					0.70	[0.337, 1.46]
WF APD only					0.31***	[0.208, 0.450]
WF Psychopathy only					0.35	[0.091, 1.33]
WF neither					0.19***	[0.141, 0.266]
BF Psychopathy + APD					4.35*	[1.02, 18.56]
BF APD only					0.63*	[0.416, 0.955]
BF Psychopathy only					0.91	[0.092, 9.01]
BF neither					0.30***	[0.215, 0.423]
Psuedo- $R^2$	.130		.130		.133	

Note. CI = confidence interval; APD = antisocial personality disorder; WM = White male; BM = Black male; WF = White female; BF = Black female; Model 1 = main effects only; Model 2 = two-way interactions (sex–race and APD–Psychopathy); Model 3 = three-way interactions (sex–race–diagnostic disorders). Reference group for Model 2 = White male; neither APD nor Psychopathy. Reference group for Model 3 = White male APD + Psychopathy. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

of violent crime remained consistent. As compared with the White male APD + Psychopathy subgroup, Black male (odds ratio = 1.82), and perhaps most importantly, Black female (odds ratio = 4.35) offenders in the comparable subgroups were significantly more likely to commit violent crime. With the exception of the Black female APD + Psychopathy subgroup, all other Black female, White male, and White female subgroups were less likely to commit a violent crime than the White male APD + Psychopathy subgroup. However, Black male offenders diagnosed with APD or Psychopathy were more likely to commit violence.<sup>5</sup>

Table 5 reports the results of the series of OLS regression models estimated to examine whether the sex–race–psychopathology interactions helped to explain the number of types of violent crimes committed (i.e., violent crime versatility). The results are consistent with

**TABLE 5: Hierarchical OLS Regression for Violent Crime Versatility.**

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
	<i>B</i>	<i>95% CI for Odds Ratio</i>	<i>B</i>	<i>95% CI for Odds Ratio</i>	<i>B</i>	<i>95% CI for Odds Ratio</i>
Age	0.002	[-0.003, 0.007]	0.002	[-0.003, -0.007]	0.001	[-0.003, 0.006]
Education	-0.064***	[-0.085, 0.044]	-0.068***	[-0.088, -0.047]	-0.069***	[-0.089, -0.048]
Anxiety (1 = low)	0.137***	[0.071, 0.203]	0.136***	[0.070, 0.202]	0.136***	[0.071, 0.202]
Sex (1 = Male)	0.437***	[0.348, 0.505]				
Race (1 = Black)	0.646***	[0.580, 0.712]				
Psychopathy (1 = yes)	0.551***	[0.463, 0.638]				
APD (1 = Yes)	0.345***	[0.271, 0.419]				
Black male			0.701***	[0.626, 0.777]		
Black female			0.138*	[0.027, 0.249]		
White female			-0.333***	[-0.435, -0.231]		
APD + Psychopathy			0.883***	[0.789, 0.976]		
APD only			0.322***	[0.247, 0.398]		
Psychopathy only			0.438***	[0.181, 0.695]		
WM APD only					0.583***	[-0.706, -0.460]
WM Psychopathy only					-0.352	[-0.746, 0.042]
WM neither					-0.853***	[-0.980, -0.726]
BM Psychopathy + APD					0.760***	[0.602, 0.919]
BM APD only					0.187**	[0.052, 0.322]
BM Psychopathy only					0.244	[-0.191, -0.679]
BM neither					-0.240**	[-0.378, -0.103]
WF Psychopathy + APD					-0.645***	[-0.976, -0.313]
WF APD only					-0.885***	[-1.08, -0.695]
WF Psychopathy only					-1.07**	[-1.74, -0.400]
WF neither					-1.16***	[-1.31, -1.01]
BF Psychopathy + APD					0.125	[-0.243, 0.494]
BF APD only					-0.330**	[-0.527, -0.134]
BF Psychopathy only					0.064	[-0.930, 10.06]
BF neither					-0.781***	[-0.944, -0.619]
Pseudo- <i>R</i> <sup>2</sup>	.220		.220		.233	

Note. OLS = ordinary least squares; CI = confidence interval; APD = antisocial personality disorder; WM = White male; BM = Black male; WF = White female; BF = Black female; Model 1 = main effects only; Model 2 = two-way interactions (sex-race and APD-Psychopathy); Model 3 = three-way interactions (sex-race-diagnostic disorders). Reference group for Model 2 = White male; neither APD nor Psychopathy. Reference group for Model 3 = White male APD + Psychopathy.

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

the prevalence findings reported above. Sex, race, and psychopathology are positively related to violent crime versatility. Black male and female offenders committed a significantly greater number of violent crime types than their White male counterparts. Again, the

**TABLE 6: The Influence of AGG-CD on the Likelihood of Committing a Violent Crime.**

	<i>Model 1</i>		<i>Model 2</i>	
	<i>Odds Ratio</i>	<i>95% CI for Odds Ratio</i>	<i>Odds Ratio</i>	<i>95% CI for Odds Ratio</i>
Age	0.998	[0.988, 1.01]	0.998	[0.988, 1.01]
Education	0.842***	[0.808, 0.878]	0.871***	[0.835, 0.909]
Anxiety	1.29***	[1.13, 1.48]	1.34***	[1.17, 1.53]
Psychopathy (1 = <i>Psychopath</i> )			2.99***	[2.45, 3.63]
Black male AGG-CD	2.70***	[2.02, 3.62]	3.36***	[2.50, 4.51]
Black female AGG-CD	1.78*	[1.09, 2.89]	2.22**	[1.37, 3.62]
White female AGG-CD	0.813	[0.498, 1.33]	1.03	[0.633, 1.69]
Pseudo- <i>R</i> <sup>2</sup>	.05		.09	

Note. AGG-CD = aggressive conduct disorder; CI = confidence interval; reference group for Models 1 and 2 = White male with AGG-CD.

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

Black male APD + Psychopathy and Black male APD-only subgroups had significantly higher violent crime versatility scores than the White male APD + Psychopathy group. Although not statistically significant, the direction of the Black female APD + Psychopathy coefficient suggests that as compared with the White male APD + Psychopathy group, they were more likely to have committed a variety of violent crimes.<sup>6</sup>

#### SUPPLEMENTAL ANALYSIS: DIFFERENTIATING SEX–RACE SUBGROUPS

It is somewhat surprising that Black females diagnosed with APD and Psychopathy were comparably violent and criminally versatile as their male counterparts. To begin to understand this effect, analyses were conducted to determine whether sex–race subgroups were differentiated by patterns of childhood antisocial behaviors. The list of 15 behaviors that define CD includes two distinct dimensions of antisocial behavior, one involving interpersonal aggression and the other, destruction of property and covert actions. Scales based on these two dimensions were used in the analyses. First, aggressive CD (AGG-CD) comprised the seven behavioral CD criteria that define aggression toward people and animals (bullying, fighting, use of a weapon, physical cruelty to people or animals, theft involving direct confrontation, and sexual coercion). Second, antisocial CD (ANT-CD) comprised the eight criteria related to destruction of property and covert actions (intentionally destructive fire setting or other deliberate destruction of another's property; breaking and entering, conning others, and theft without confrontation; staying out or often stays out at night despite parental prohibitions, beginning before age 13 years, has run away from home overnight at least twice while living in parental or parental surrogate home—or once without returning for a lengthy period—and, is often truant from school, beginning before age 13 years).

Hierarchical logistic regression analyses (Table 6) were performed to test the effects of sex, race, and AGG-CD on the prevalence of violence. Each model included controls for age, education, and level of anxiety. As compared with the White male AGG-CD subgroup,

**TABLE 7: The Influence of AGG-CD on Violent Crime Versatility.**

	<i>Model 1</i>		<i>Model 2</i>	
	<i>B</i>	<i>95% CI</i>	<i>B</i>	<i>95% CI</i>
Age	-0.001	[-0.006, 0.004]	-0.001	[-0.006, 0.004]
Education	-0.119***	[-0.140, -0.097]	-0.084***	[-0.105, -0.063]
Anxiety	0.159***	[0.088, 0.231]	0.180***	[0.112, 0.248]
Psychopathy (1= <i>Psychopath</i> )			0.867***	[0.780, 0.952]
Black male AGG-CD	0.668***	[0.541, 0.795]	0.875***	[0.752, 0.998]
Black female AGG-CD	0.326**	[0.082, 0.519]	0.540***	[0.307, 0.773]
White female AGG-CD	-0.311*	[-0.583, -0.039]	-0.086	[-0.345, 0.174]
Pseudo- <i>R</i> <sup>2</sup>	.06		.15	

Note. AGG-CD = aggressive conduct disorder; CI = confidence interval; reference group for Models 1 and 2 = White male with AGG-CD.

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

Black male and female offenders in the comparable subgroups were more likely to commit violent crime. Importantly, the differential effect of AGG-CD for Black males and females relative to their White male counterparts was sustained even when controlling for the influence of Psychopathy on the likelihood of committing a violent crime (Model 2).

Table 7 reports the results of the series of OLS regression models estimated to examine whether the sex–race–AGG-CD interactions helped to explain violent crime versatility. The results are consistent with the prevalence findings reported above. Sex, race, and AGG-CD are positively related to violent crime versatility. Black male and female offenders high on AGG-CD committed a significantly greater number of violent crime types than their White male counterparts even when controlling for the effect of Psychopathy. Finally, to distinguish the effect of the AGG-CD component from the ANT-CD component, the same models were run with ANT-CD, instead of AGG-CD, sex, and race on the prevalence of violence and violent crime versatility (results not shown). The results were essentially the same as reported above but with one key difference. While the Black male ANT-CD subgroup was more than 3 times more likely than their White male counterparts to commit violent crime (prevalence of violence), the Black female ANT-CD subgroup was not statistically different from the White male ANT-CD group. These outcomes were the same for the violent crime versatility analyses. Only AGG-CD significantly differentiated Black females from White males. However, both components of CD (ANT-CD and AGG-CD) distinguished Black males from White males.

## DISCUSSION

Most studies of violent criminal offending are undertaken in either psychology or criminology. Each of these disciplines produces independent and distinct bodies of theoretical, empirical, and practical knowledge. Psychological research in this area generally

focuses on the etiology, measurement, stability, and treatment of various syndromes and traits that are associated with violent offending. Thus, the emphasis of psychological research is on individual differences, mostly at the level of the offender and sometimes in the context of his or her family. Criminological research is concerned with the causes, patterns, and correlates of such behavior at more mezzo and macro levels. Accordingly, criminology often emphasizes the relationship of peer groups, community institutions, and cultural norms to violent behavior. Consequently, the contributions of psychology and criminology to our understanding of the nature of violent offending and their prescriptions for prevention and intervention largely remain parallel rather than integrated.

Recently, research has emerged that joins the overlapping interests of these two disciplines. One approach is concerned with the relationship of social constructs, including sociodemographic, structural, and contextual variables, to psychopathology and offending behavior (Lynam et al., 2000; Silver, 2000; Z. Walsh & Kosson, 2007). These studies find that sociodemographic factors and neighborhood context, for instance, moderate the relationship between psychopathology and violent offending.

A second approach is rooted in developmental and life course studies that suggest that violent offending occurs due to an interaction of individuals with certain criminal potentialities and environments that are conducive to such crime (Farrington, Coid, & West, 2009; Farrington, Ullrich, & Salekin, 2010; Lynam et al., 2000; Odgers et al., 2009; Piquero et al., 2012). This research focuses on identifying the mechanisms through which neighborhood-level factors affect the development, maintenance, and cessation of antisocial trajectories from childhood onward. These studies find that children in hyperdisadvantaged communities are exposed to more aggressive trajectories earlier in life and remain on them for longer periods of time than children from other neighborhoods.

The present study contributes to this growing literature by examining the intersectionality of sex, race, psychopathology, and violent behavior within a large sample of male and female prison inmates. The focus on inmates is particularly useful in that base rates of psychopathology and violent offending are higher than would be in a community sample. As a result, we were able to disaggregate key constructs so that a more nuanced picture of these relationships emerged.

#### SUMMARY OF KEY FINDINGS

We began this article by separately identifying several truisms that inform criminological and psychological work on the correlates of violent criminal behavior. We then explored whether these general rules held for a sample of male and female prison inmates from southern Wisconsin. Using hierarchical regressions, we systematically examined the impact of sex, race, and psychopathology on the prevalence and versatility of violent offending.

At first glance, simple univariate analyses supported the truisms identified in prior research. First, in the present study, criminal violence was more prevalent (likely) and versatile among males as compared with females. Second, we found that Blacks also were more likely to commit violent crime as well as be more crime versatile than Whites. And, third, regardless of sex or race, having either APD or Psychopathy explained more violent offending than having neither of these diagnoses.

Much like previous work, when more complex relationships between sex and race were examined, some of these truisms did not hold up. Beginning with two-way interactions, the



present study found that while Black males continued to display a greater prevalence for violence and violent versatility, Black females resembled White males in these characteristics. Although some criminologists recognize the importance of race in violent offending, to date, the comparisons have only been intrasex, that is, Black females are more likely to commit violent crime than their White *female* counterparts (Ageton, 1983; Laub & McDermott, 1985; Simpson, 1991). However, the present study unpacked these relationships further and in comparing all sex and race combinations underscored the importance of the intersection of race *and* sex for violent offending.

Additional analyses indicated that the similarity between White males and Black females became attenuated at the multivariate level. Once psychopathology, specifically the *confluence* of APD and Psychopathy, was added into the equation, a clear race effect was noticed. Black males and females with comorbid APD and Psychopathy were more likely to commit violent crime than similarly situated White males. This finding runs counter to much of the research that suggests that females with Psychopathy and/or APD are less aggressive than their male counterparts (Mulder, Wells, Joyce, & Bushnell, 1994) or that their aggression is more relational (e.g., gossiping, social exclusion) than it is violent (Hare, 1991; Moretti, Holland, & McKay, 2001; Vitale et al., 2002). While gendered patterns of aggression may characterize males and females in the aggregate, the present study clearly highlights the importance of considering sex/race subgroups when examining the relationship between psychopathology and violent crime.

In general, the same pattern that was uncovered for involvement in violent offending also existed for violent crime versatility. In addition, White female prison inmates were less likely to commit violent crime and/or be versatile in their offending patterns than Black females and all males. Again, the present study demonstrated the importance of intersectionality in advancing our understanding of violent offending, both in terms of sex and race as well as for particular combinations of psychopathology.

#### THE CONTRIBUTION OF COMORBIDITY

The significant effect of comorbid psychopathology cannot be understated as it appears to differentiate an extreme and distinct subgroup of violent offenders. For that matter, comorbidity is often considered an important and discriminating feature in the development of psychopathology (Achenbach, 1990; Loeber & Keenan, 1994). It is often linked to increase severity in symptoms and outcomes (Angold, Costello, & Erkanli, 1999). Often, APD and Psychopathy are considered the same but a body of research has emerged that suggests that they are two different disorders with distinct underlying etiological mechanisms (Hare, 2003; Hare et al., 1990; Patrick, 1994). Therefore, it became important for the present study to see whether the disparities in violent offending were driven by one disorder alone or whether the combination of APD and Psychopathy produced a significant difference that may represent a distinct and additive risk factor for violent offending.

Results strongly point to the added impact of comorbidity. Here, we found that the Psychopathy and APD group differed from the others in terms of the severity and versatility of their violent offending by a margin of almost two to one. Thus, the confluence of these two syndromes seemed to elevate the violent tendencies present in each alone.

Importantly, the simultaneous addition of sex and race to the analysis further contributes to the literature and signifies the first attempt to assess whether the differential relationships observed in the APD and Psychopathy subgroup are affected by particular sex–race

combinations. The comorbidity of these two syndromes with violent offending was more strongly manifest in Black males and females. Therefore, the question remains: “How can we explain the finding that Black males and, particularly, Black females with comorbid APD and Psychopathy are significantly more violent and more versatile in their offending?”

#### THE IMPACT OF PSYCHOSOCIAL FACTORS ON THE INTERSECTIONALITY OF SEX, RACE, PSYCHOPATHOLOGY, AND VIOLENT OUTCOMES

We began to explore this question by looking at whether childhood experience, specifically the presence of CD, was differentially distributed by sex–race. We chose this strategy as many studies suggest that a diagnosis of CD signals the potential for negative outcomes in adulthood, including criminality and violent behavior (Copeland, Miller-Johnson, Keeler, Angold, & Costello, 2007; Kim-Cohen et al., 2003; Salekin, Neumann, Leistico, DiCicco, & Duros, 2004; Simonoff et al., 2004) and that having CD is the strongest predictor of adult APD. For that matter, the *DSM-IV* (APA, 2000) requires the presence of CD for a diagnosis of APD. Recent research on developmental trajectories suggests that a diagnosis of CD increases the chance of adult violent offending. Furthermore, there is substantial concurrence in the psychological and criminological literatures that the most persistent and severe offenders were also the most disruptive earlier in their childhood and youth (Loeber, Burke, & Pardini, 2009; Loeber & Farrington, 2001).

Thus far, research in the area has only painted very broad brushstrokes regarding male, female, White, Black differences. In terms of the prevalence of CD, it appears to be lower for females (APA, 2000; Cale & Lilienfeld, 2002; Kim-Cohen et al., 2003; Maughan et al., 2000; Washburn et al., 2007) and Blacks (Coid et al., 2002; Costello, Keeler, & Angold, 2001; Nock, Kazdin, Hiripi, & Kessler, 2007; Robins & Regier, 1991; cf. Bird et al., 2001; Lahey et al., 1995). Furthermore, the association between CD and violence is greater for males than for females (Kratzer & Hodgins, 1997). However, no study has explored these associations by looking at the range of sex–race subgroups. Thus, the focus on aggregate sociodemographic categories may obscure a more useful understanding of the relationship between psychopathology and violent behavior.

In addition to examining sex–race subgroups, the present study also divided CD into two subfactors: antisocial and aggressive. Much like APD, current thinking indicates that CD is a heterogeneous syndrome with each subtype having common and subtype-specific constellations of correlates and outcomes (Frick et al., 1991; Tackett, Krueger, Iacono, & McGue, 2005). Therefore, we wanted to see whether a subtype of CD predicted violent offending and whether there were any sex–race effects. The current results indicated that Black males and females with a history of childhood AGG-CD, controlling for Psychopathy in adulthood, were more likely than their White counterparts to commit violent crime and more violently versatile. It appears that AGG-CD may explain the more serious offending trajectory of the Black males and females in our sample. Although these effects remain significant despite controlling for Psychopathy, Psychopathy remained an important predictor of violence as this diagnosis accounted for a large percentage of the variance in the model. However, despite the contribution of Psychopathy, the AGG-CD effects were significant above and beyond this, again, indicating that this specific early childhood syndrome is important.

One explanation for this unique effect may be found in developmental and life course research that pinpoints a number of distinct antisocial pathways with varying ages of onset

and possibilities for desistance (see Mulvey et al., 2004, for a review). The pathways leading to adult violent offending are shown to be associated with predisposing genetic and environmental antecedents that have been found *not* to vary across sex (Moffitt & Caspi, 2001; Nicholls, Odgers, & Cooke, 2007). Many of the antecedents that have been identified are also those who are most *concentrated* in neighborhoods characterized by hyperdisadvantage (Z. Walsh et al., 2012). Although children from all neighborhoods may be subjected to neuropsychological deficits, physical abuse, negative school experiences, deviant and or violent peers, or grow up in families with parental antisociality, inconsistent discipline, or financial instability, those who grow up in hyperdisadvantaged neighborhoods experience more of these predictors in ways that interact synergistically and with the greatest detriment.

As has already been discussed, Blacks in the United States are more likely than Whites to be isolated in these hyperdisadvantaged communities (Sampson & Wilson, 1995; Steffensmeier et al., 2011). Recent data indicate that 66% of Black children grow up in hyperdisadvantaged communities as compared with 6% of Whites (Sharkey, 2009). This suggests that the social environments in which Blacks find themselves are phenomenologically different than those of Whites and that Black children are at a heightened risk for neighborhood-based influences on antisocial trajectories (Sampson & Lauritsen, 1997), particularly those associated with maladaptive aggression (DeCarlo, 2012). These same children are also at greater risk for the neuropsychological and genetic factors that make them vulnerable (Turner, Hartman, & Bishop, 2007). The adverse effects of these combined susceptibilities have been shown to be related to more aggressive and chronic pathways (Leventhal & Brooks-Gunn, 2003; Sampson, 2003; Sampson, Sharkey, & Raudenbush, 2008) that begin at an early age and disproportionately affect Blacks in the United States of both sexes (Chauhan, Reppucci, & Turkheimer, 2009; Odgers et al., 2009). To illustrate this point, our results indicate that women are not *generally* more violent than men. However, the confluence of race, that is, neighborhood disadvantage, and psychopathology position women above the sex normative expectations for violence.

It is important to note that most youth, even in hyperdisadvantaged communities, transition out of early antisocial behaviors (Broidy et al., 2003). However, it is possible that those with comorbid AGG-CD are unable to take advantage of whatever opportunities for positive socialization may exist in their communities. As a result, they enter and remain on an obstinate developmental trajectory of antisocial and violent behavior. Given these circumstances, it should come as little surprise that the present study found that the relationship between comorbid psychopathology and violent offending was the strongest for Black males and females and that the trajectory of AGG-CD signaled what became a long and prolific career in violent behavior.

#### LIMITATIONS AND CONCLUSION

Some might consider these findings to support recent assertions that individuals, like those in our sample, personify “the pejorative essence of antisocial behavior” (DeLisi, 2009, p. 257) and that their behavior represents “the sordid essence that intrinsically defines violating the rights of others” (DeLisi, 2009, p. 268). This is not the case. It is important that we be very clear as to the implications of the present study. We are arguing that there is nothing *intrinsic* about the relationship between psychopathology and violent crime or its interaction with sex and race. We maintain that the relationship is best understood in terms of the

intersectionality of sex, race, and psychopathology *with* the hyperconcentration of disadvantage that distinguishes Black male and female inmates from other sex–race subgroups of offenders. Unfortunately, the present study did not have data to empirically demonstrate that the particular participants in our sample differed in terms of community context from their White counterparts. However, we do know that the majority of Black inmates in our study came from Milwaukee, Wisconsin, which ranks 14th in midwestern cities in the rate of neighborhood disadvantage (Hyneck, Sparkman, & Storch, 2002). We know from prior research (Sommers & Baskin, 1992) that violent street crime is differentially distributed with a disproportionate amount occurring in Black neighborhoods. Nonetheless, it is important for future research to include community context variables, particularly measures of disadvantage, so as to avoid “perpetuating the individualistic fallacy” (Silver, 2000, p. 449) that is so pervasive in research on violence by people with psychopathological disorders.

While the present study identified AGG-CD as a pathway to adult violent offending, there is some research that suggests a comorbid role for psychopathic traits in children (Fontaine, McCrory, Boivin, Moffitt, & Viding, 2011; Frick, Cornell, Barry, Bodin, & Dane, 2003). Unfortunately, the present study did not have access to data on the incidence of these traits in childhood and adolescence for the members of our sample. Such information would have allowed us to address whether the unique role of comorbidity had early roots and whether this had sex–race effects. Nonetheless, many studies demonstrate the stability of psychopathic traits from childhood into the adult years (Blonigen, Hicks, Krueger, Patrick, & Iacono, 2006; Neumann, Wampler, Taylor, Blonigen, & Iacono, 2011; Piquero et al., 2012), especially for the most chronic and violent offenders (Brandt, Kennedy, Patrick, & Curtin, 1997; Edens, Skeem, Cruise, & Cauffman, 2001; Forth, Hart, & Hare, 1990; Forth & Mailloux, 2000; Frick et al., 2003; Lynam et al., 2009; Salekin et al., 2004; Toupin, Mercier, Dery, Cote, & Hodgins, 1995). Thus, future work should examine the presence of comorbid AGG-CD and psychopathic traits, as it may be an important pathway leading to chronic and persistent violent offending continuing into adulthood, for males and females, while at the same time taking into consideration how this pathway may be conditioned by sex–race interactions.

Our finding of a strong relationship between comorbid psychopathology and violent offending for Black female inmates as compared with White males and females is notable in light of the overall literature that points to sex differences in the development of antisocial behavior and violence (Wareham & Boots, 2011). Unlike prior research, the present study did not rely on a community sample where base rates of psychopathology and offending are low. Instead, it explored these relationships among a large number of known violent offenders, across and within race and sex categories. As a result, we were able to parse out the unique effects of sex and race, and when combined with criminological theory, we offered a contextualized explanation for these findings in which the racial disparities in psychopathology and violence that we observed are tied to the differential spatial distribution of Black and White neighborhoods.

Following from the explanation offered in the present study is the position that improvements in community environments may have a “causal impact on better health and behavioral outcomes related to violence” (Sampson, 2003, p. S55), a proposition that receives widespread empirical support (Katz, Kling, & Liebman, 2001; Ludwig, Duncan, & Hirschfield, 2001). Future research can assist in this effort by using an approach that integrates the findings from psychological research about individual differences with those of criminology, particularly in its focus on community mechanisms.

## NOTES

1. The authors acknowledge the limitations of using arrest data. Nonetheless, these limitations do not detract from the argument that there are wide gaps in violent offending rates based on sex as they have been corroborated in a wide variety of studies using different techniques (Lauritsen et al., 2009; Steffensmeier, Zhong, Ackerman, Schwartz, & Agha, 2006).

2. It is important to note here that, like Sampson, Morenoff, and Raudenbush (2005), this article takes the position that race is a social construct that represents a particular arrangement of lived experiences and does not hold any etiological weight in terms of offending behavior.

3. Although a cut score of 30 has been established for defining a categorical diagnosis of Psychopathy in men, investigators have failed to agree upon a well-defined cut score for female inmates (cut scores from 24 to 30 have been applied). We used a cut score of 30 for multiple reasons. First, our view is that a lower cutoff score is too nonspecific, at least for use within correctional settings. To a great extent, there is evidence that antisocial personality disorder (APD) and Psychopathy overlap. By utilizing a cutoff score of 30 on the Psychopathy Checklist-Revised (PCL-R), we take a conservative approach in an attempt to develop distinct subgroups (i.e., APD with and without Psychopathy). Furthermore, the research with women indicates that Psychopathy assessments with females serve to confirm their low risk and are associated with a continuum of antisocial behavior that generally parallels with males (Vitale & Newman, 2001). Second, Hare (2003) reports that approximately 7.5% of female offenders and 15% of male offenders meet the diagnostic cutoff on the PCL-R (i.e., scores > 29). In the present sample, 8.6% of women meet the 30 or above criteria for the PCL-R, well within the range of base rates for Psychopathy in female offenders.

4. Given that criminal versatility is included in the assessment of Psychopathy (PCL-R Item 20), there is the potential for criterion contamination in predicting violent crimes. To examine this issue, we reran the analysis eliminating the criminal versatility item from the PCL-R total score and used a new cutoff score of 27. All results from the simple interactions to multivariate analyses remained significant. The strength of the odds ratios did weaken slightly (e.g., likelihood for committing a violent crime in Black female APD + Psychopathy drops from 4.35 to 2.89). Thus, regardless of the inclusion or exclusion of PCL-R criminal versatility item, the effects conceptually remain the same reducing the above-mentioned psychometric concern.

5. Additional analyses were performed with alternate reference groups. The statistically significant results were fairly identical to those reported in the model discussed above. For example, when the reference group for Model 3 was White males with APD only, Black females with APD + Psychopathy were 8.54 times more likely to commit a violent crime than White males with APD only. However, there was no statistically significant difference between White males and Black females when both were APD only. In contrast, the odds ratios for White females with APD only was 0.68 and White females with neither was 0.38. Regardless of subgroup classification, Black males were significantly more likely to commit a violent crime compared with White males with APD. Finally, very similar results were attained when the reference group for Model 3 was White males with Psychopathy.

6. When White males with APD only was the reference group for Model 3, the only significant results were that Black females with APD + Psychopathy had a higher number of violent crimes than White males with APD only and all Black male subgroups committed a significantly higher number of types of violent crimes. When the reference group for Model 3 was White males with Psychopathy only, the Black female APD + Psychopathy and all Black male subgroups (except the no diagnosis group) committed a significantly higher number of types of violent crimes.

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