

The Pennsylvania State University

The Graduate School

College of the Liberal Arts

**MILITARY SERVICE AND SPECIALIZATION
IN CRIMINAL VIOLENCE**

A Thesis in

Crime, Law, and Justice

by

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Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Arts

December 2014

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ABSTRACT

I use data from a nationally representative sample of U.S. inmates in state and federal prisons to show that prisoners with military experience are more likely than non-veterans to have been incarcerated for violent crime than for non-violent crime. The effect of veteran status persists despite controls for known correlates of enlistment. Furthermore, the effect of veteran status cannot be attributed to combat experience, post-traumatic stress disorder, or alcoholism. Nor is it the case that veterans' higher rates of incarceration for violent crime are an outgrowth of their more extensive criminal histories, as only a small proportion of the veterans in this study committed crime during adolescence, and—compared to non-veterans—virtually none of them engaged in violent crime as minors. Thus, it appears that the effect of military service on violence is a consequence of military socialization. Alternative interpretations are discussed.

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INTRODUCTION

The idea that military experience can be criminogenic has a long history. Since the Civil War, various groups have campaigned for the conditional pardon of incarcerated military veterans (e.g., Abbott, 1918; Rosenbaum, 1939). Hakeem (1946:122) summarizes the platform of such groups as “the notion that the veteran is not fully responsible for his criminal deeds in the same sense that others are—‘he has been made that way by his experience in the service.’” As recently as 2009, the Supreme Court echoed this sentiment in their ruling on *Porter v. McCollum*, in which they granted habeas corpus relief to George Porter, a veteran of the Korean War who had been convicted of double murder (Hawkins, 2009). Despite its longevity and intuitive appeal, only a few scholars have empirically studied the “military experience causes violence” hypothesis, which has elsewhere been described as the “violent veteran” hypothesis (Archer and Gartner, 1976).

In this study, I rely on a nationally representative sample of prison inmates to examine whether military veterans are more likely than non-veterans to have a history of incarceration for violent crime rather than non-violent crime. I also explore the extent to which this relationship can be attributed to combat exposure, selection into the military, post-traumatic stress disorder (PTSD), and alcoholism. Rather than examine whether veterans are more likely than non-veterans to commit acts of violence or to engage in crime generally, the current research explores whether incarcerated veterans are more likely to *specialize* in serious violent crime. Thus, the focus of this study is whether offenders with a history of military service show a preference for violence that significantly distinguishes them from offenders who did not serve in the military.

There are advantages and disadvantages to this approach. For instance, I am not able to investigate the effects of veteran status on criminal behavior since that would require a non-criminal comparison group. Instead I focus on specialization in violent crime. For this purpose a non-criminal comparison group is unnecessary. Moreover, the literature on the criminogenic effects of military service has yet to examine specialization as an outcome. Because the inmate sample contains extensive details on each respondent's penal history, it is particularly well-suited for exploring their criminal repertoire. An additional advantage of the current study is that the data includes several thousands of cases involving serious forms of violent behavior (e.g., rape, homicide). Because this type of behavior is extremely rare among members of the general population, studies using sampling frames that allow for comparisons with a non-criminal control group often cannot focus on truly serious violent behavior.

Though research has yet to explore whether military service is associated with specialization in violent crime, a number of studies have investigated whether military experience is associated with subsequent violent behavior. One indication that military experience might be related to violent behavior comes from recent data on the U.S. inmate population. In reports detailing the characteristics of military veterans serving time in State and Federal prisons, the U.S. Department of Justice (Mumola, 2000; Noonan and Mumola, 2007) found that veterans were overrepresented among offenders serving time for a violent offense. Moreover, veterans were more likely to have victimized relatives, women, and children under the age of 12 (Mumola, 2000). A similar trend appears among inmates held in military prison. In 2004, roughly half of all military prisoners had been incarcerated for violent crimes (Noonan and Mumola, 2007).

In accordance with the Department of Justice's finding that incarcerated veterans victimized relatives, women, and children at higher rates than other violent offenders (Mumola, 2000), researchers have shown that spousal abuse is much more prevalent in military families than civilian families (Bohannon, Dosser, and Lindley, 1995; Cronin, 1995; Dubanoski and McIntosh, 1984; Heyman and Neidig, 1999; Rentz et al., 2006). However, the research on whether child abuse is more common in military families has produced more mixed results (see Rentz et al., 2006 for a review), though a number of studies have found suggestive evidence that child maltreatment may be more prevalent (Dubanoski and McIntosh, 1984; Gessner and Runyan, 1995; Herman-Giddens and Vitaglione, 2005; but see Raiha and Soma, 1997). While useful for descriptive purposes, the information presented in many of these articles—as well as the U.S. Department of Justice's inmate reports—primarily comes from bivariate analyses and comparisons between prevalence rates. Without proper statistical analysis to account for confounding variables, it is difficult to get a sense of the relationship between being a veteran and engaging in violent behavior.

In a cross-sectional analysis of data from the NLSY79, Crutchfield and Pitchford (1997) found an unanticipated positive relationship between military experience and a composite measure of assault and robbery. However, this study did not account for an important feature of military service: self-selection, or the fact that people can volunteer to participate in the armed forces. Selection effects can greatly distort attempts to examine the consequences of military service. For example, it is plausible that aggressive people may be especially inclined to join the military. Thus, the observation that people

who join the military are more likely to engage in violent behavior may simply reflect the fact that those people were violent long before they entered the military.

To address selection bias and evaluate the consequences of military service, the research designs most commonly used are longitudinal studies, Heckman two-step models, and instrumental variable analysis. With longitudinal data, researchers have access to information on respondent characteristics prior to their military service. Such information can be used to control for pre-military differences that could influence post-military outcomes, such as criminal behavior during adolescence. Next, Heckman models function by estimating two separate regression equations. The first equation models selection into a particular condition (e.g., military enlistment), and then uses these results to adjust the second equation, which models the effect of the condition on a particular outcome (e.g., violent crime). Finally, in an attempt to approximate the “random assignment” framework used in experiments, instrumental variable analysis exploits sources of exogenous variation that randomly expose individuals to different experiences. To perform this type of analysis, researchers rely on an instrument that is (1) randomly assigned, and (2) related to condition X , but not related to outcome Y except through X (Firebaugh, 2008:155). The main instrument used to investigate the effects of military experience is date of birth. Clearly, the calendar date on which someone is born is both randomly assigned and directly unrelated to criminal behavior. Researchers have identified two ways that date of birth can influence military experience: (1) by coming of

age during a period of heavy military combat, and (2) by increasing the likelihood of induction via a draft lottery system.¹

The small handful of studies in this area that do attempt to address selection bias have generated mixed findings on the relationship between military service and violent behavior. Using longitudinal data from two birth cohorts of men who were of draft-eligible age during the Vietnam War, Bouffard (2003) found that military experience was associated with a decrease in general offending, but was unrelated to serious violent crime. In a different study of veterans from the same era, Bouffard (2005) analyzed one wave of the NLSY79 using a Heckman model. She found that Vietnam veterans were more likely to report committing assault, but the effect only applied to Hispanics, lower-class respondents, and respondents who had been arrested as juveniles. However, the key variable in her selection model for predicting military enlistment—the “instrument” that must be directly related to selection but otherwise only indirectly related to violent behavior through military enlistment—was “whether one of the individual’s parents had military service” (Bouffard, 2005: 290). As mentioned previously, domestic violence is more common in military families; insofar as children who are exposed to violence in the home are at greater risk for engaging in violent behavior themselves (e.g., Felson and Lane, 2009; Moffitt, 1993; Widom, 1989), then having military veterans as parents may also be indirectly related to later violent behavior through exposure to domestic violence.

¹ During the late 1960s and early 1970s, the U.S. government instituted a draft lottery system that randomly selected men for conscription based on their date of birth (for a review, see Lindo and Stoecker, 2014). Before the program was discontinued, the U.S. government ran three lotteries from 1969 until 1971. Each year that the lottery was active, men who had turned 18 that year received a random number based on their date of birth. Using the lottery system, the military conscripted young men until they had reached their annual manpower requirements.

In other words, it is reasonable to question the validity of Bouffard's (2005) instrumental variable, and therefore the extent to which her Heckman model dealt with selection.

With date of birth as an instrumental variable, Rohlfs (2010) found that cohorts of African-American Vietnam veterans who served during high-combat periods were more likely to report greater involvement in violent crime, though this effect did not hold for white veterans. Three other studies in this area have used an instrumental variable approach with data from countries that once employed a draft lottery system (Galiani, Rossi, and Schargrodsky, 2010; Lindo and Stoecker, 2014; Rohlfs, 2005). The results of these studies have been mixed. Rohlfs (2005) found that military service was unrelated to incarceration. Using data from Argentina's draft lottery, Galiani et al. (2010) found that military service increased involvement in financially motivated crime, but had no effect on violence. Finally, Lindo and Stoecker (2014) found that white Vietnam veterans were significantly more likely to be incarcerated for violent crimes, but the effect was not found for African-Americans.

In summary, the literature on military service and violent behavior indicates that the two are (sometimes) related, though a portion of this relationship may be spurious. However, it is less clear exactly *how* the two are related. For instance, does military service only increase violent behavior if the veteran has been exposed to combat? To what extent is this relationship mediated by PTSD or alcoholism? If military experience is occasionally criminogenic, does it lead veterans to engage in higher rates of crime generally or violence specifically? To get a better handle on these issues, the current study examines violent behavior and military service from a life course perspective.

VIOLENT BEHAVIOR AND MILITARY SERVICE: LIFE COURSE PERSPECTIVES

Life course theory analyzes individual-level social phenomena by focusing on the interrelationship between social structure, personal biography, and historical time (Elder et al., 2003; Mills, 1959). The life course perspective is useful for thinking about the effect of military service on later violent behavior because it explicitly draws attention to the complex relationship between childhood experiences and later life outcomes. That is, do early life experiences "program" people to experience particular outcomes in adulthood? To what extent do events in adulthood have the power to redirect people's lives? In other words, the life course perspective highlights the tension between stability and change in human behavior. For researchers interested in explaining violence in adulthood, one's perspective on this issue determines "where" one looks for answers. For example, if violence in adulthood is mainly a consequence of having a terrible childhood, then it may not be useful to examine whether military service plays a role in violent behavior. Indeed, developmental criminologists such as Gottfredson and Hirschi (1990) and Moffitt (1993) argue that the fundamental causes of criminal behavior take root in early childhood. If these theorists are correct, then one's predisposition toward violent behavior crystalizes long before one is old enough to enter the armed forces.

Stability

Gottfredson and Hirschi's (1990) general theory of crime represents one of the most prominent examples of a criminological theory that locates the etiology of antisocial behavior in childhood. According to this theory, human beings are inherently self-

interested creatures that are naturally drawn toward hedonistic, antisocial behavior. The main reason that crime is not utterly ubiquitous is that most children are socialized at very young ages to curb their antisocial impulses. However, when parents fail to “monitor, recognize, and correct evidence of antisocial behavior,” the result is that children develop low levels of self-control (Gottfredson and Hirschi, 1990). The main cause of antisocial behavior is low self-control, or “the tendency to pursue short-term, immediate pleasures” (Gottfredson and Hirschi, 1990: 140). The stability of low self-control—the fact that it forms early and persists into adulthood—is key to their theory: “stability lies at the heart of the concept of self-control” (Hirschi and Gottfredson, 2000: 58). In brief, poor parenting leads to under-socialized children who do not know how to delay gratification; in turn, these children develop into antisocial adults with poor impulse control.

Terrie Moffitt’s (1993) dual taxonomy of criminal offenders is another influential criminological theory that focuses on the stability of antisocial behavior. Moffitt (1993) proposes that criminals can be broadly classified into two types: (1) an extremely large group of adolescent-limited (AL) offenders who commit a sizable amount of trivial crimes during adolescence, but cease offending once they transition to young adulthood; and (2) a small group of life-course-persistent (LCP) offenders who initiate antisocial behavior at a very young age, commit a high frequency of crimes, engage in the most serious forms of crime, and either never desist from crime, or desist at very old ages. Beginning with the AL offenders, Moffitt argues that relatively minor forms of antisocial behavior are “ubiquitous” during adolescence because of a mismatch between the timing of physical maturity (i.e., puberty) and the modern definition of adulthood. In order to

appropriate the trappings of maturity, adolescent-limited offenders commit minor status offenses, though they quickly age out of criminal behavior as they transition into adulthood. Adolescent-limited offenders are normal, “hell-raising” teenagers who eventually mature into law-abiding adults.

In contrast to AL offenders, the LCP offenders “engage in antisocial behavior of one sort or another at every stage of life” (Moffitt, 1993: 676). Similar to Gottfredson and Hirschi (1990), Moffitt argues that for these offenders, “a theory of antisocial behavior must locate its causal factors early in their childhoods and must explain the continuity in their troubled lives” (Moffitt, 1993: 674). While Moffitt acknowledges the importance of quality parental socialization, she theorizes that the key causes of the LCP offenders’ persistent antisocial behavior are “neuropsychological deficits” stemming from low-level brain damage, congenital disabilities, and birth defects. While children born with extremely severe developmental problems (e.g., mental retardation, Down syndrome, etc.) are easily identified as requiring special accommodations, children with minor or moderate neuropsychological deficits are more likely to go untreated. If such children are born into lower-class families that have little familiarity with mental health issues and limited financial resources, treatment is especially unlikely.

Left untreated, children with neuropsychological deficits have higher rates of learning disabilities, hyperactivity disorders, and impulse-control problems (Moffitt, 1993). Such temperament and behavioral problems alone can lead to antisocial behavior by limiting opportunities for educational attainment, quality employment, and prosocial peer relationships. What's more, when these problems—which are actually symptomatic of underlying cognitive and emotional deficits—are interpreted as flaws in the child's moral

character, this places undue strain on the child's relationship to his or her primary caretakers, school teachers, and peers. Strained social relationships may compound the child's neuropsychological problems and further promote antisocial behavior. In some cases, this strain may lead to parental maltreatment, as frustrated parents lash out against their "problem" children (Teichner and Golden, 2000). As Moffitt (1993: 682) observes, a combination of parental abuse and neuropsychological limitations is strongly related to an increase in aggressive and physically violent behavior. In sum, neuropsychological deficits emerge during the earliest phases of biological and social development for LCP offenders. These early-life disadvantages provoke negative reactions from the environment, which exacerbates the child's problematic tendencies and further promotes antisocial behavior. As the LCP child proceeds through life with few life skills, limited social support, and a history of bad behavior, they become ensnared in an antisocial trajectory.

In accordance with the general theory of crime (Gottfredson and Hirschi, 1990) and the life-course-persistent taxon (Moffitt, 1993), there is a substantial body of evidence confirming that the onset of antisocial behavior takes place early in childhood. As predicted, parental socialization and developmental deficits are among the strongest predictors of violence and delinquency in children. For instance, children raised with little parental supervision are prone to delinquent behavior (Farrington et al., 2002; Farrington and Loeber, 1999; Loeber and Stouthamer-Loeber, 1986; McCord, 1979; Smith and Stern, 1997). Moreover, children raised by parents who engage in crime are at great risk for developing antisocial tendencies (e.g., Farrington and Loeber, 1999; Loeber and Stouthamer-Loeber, 1986; Patterson, DeBaryshe, and Ramsey, 1989). Using

longitudinal data from roughly 600 families with a 5-month-old child, Tremblay et al. (2004) examined how parental characteristics and family factors influenced the child's physically aggressive behavior until age 3 and a half years. The results of their study indicated that children born to mothers who had previously participated in antisocial behavior during high school displayed significantly higher rates of violent behavior. Early-onset physical aggression is especially problematic, as it serves as one of the most consistent predictors of violence and antisocial behavior throughout the life course. For example, White et al. (1990) found that children who were aggressive and disobedient at age 3 were at increased risk of arrest as teenagers. Importantly, longitudinal studies of violence and aggression indicate that late-onset violent behavior is extremely rare (Barker et al., 2007; Brame, Nagin, and Tremblay, 2001; Brody et al., 2003; NICHD Early Child Care Research Network, 2004; van Lier et al., 2009). The evidence from these studies suggests that physical aggression either develops early in life or it does not occur at all.

There is also strong support for the role of biosocial factors in the development of persistent antisocial behavior in young children. In line with Moffitt's (1990) focus on neuropsychological deficits, the general hypothesis of much of the biosocial evidence is that bad brains lead to bad behavior (Raine, 2013). For example, children with a history of extreme temper tantrums were found to be significantly more likely to engage in violent behavior during adolescence (Hagan and Foster, 2001). Cognitive deficits appear to play a role in antisocial behavior, as numerous studies have shown that children suffering from low intelligence are at heightened risk for subsequent delinquency and criminal involvement (e.g., Farrington, 1992, 1992b; Farrington, 1994; Farrington and Loeber, 1999; Farrington, Ttofi, and Coid, 2009; Lipsey and Derzon, 1998). For instance,

children with low intelligence measured at age 3 (Stattin and Klackenber-Larsson, 1993) and age 4 (Schweinhart et al., 1993) were at significantly higher risk for criminal involvement as adults. Finally, longitudinal research has shown that early-onset hyperactivity and attention disorders often predate aggressive and delinquent behavior during adolescence. Bor, McGee, and Fagan (2004) found that children struggling with "problems of attention and restlessness" at age five were substantially more likely to participate in delinquency at age 14. Relying on the ratings of kindergarten teachers, Nagin and Tremblay (2001) found that children who were hyperactive and defiant at age 6 were most likely to exhibit persistent violent behavior through age 15.

Regarding the stability of aggression, a number of recent studies have found evidence that aggressive behavior has a genetic component (e.g., Moffitt, 2005; Simons et al., 2011). For example, biobehavioral research has identified the genes MAOA, DRD4, and 5-HTT as playing important roles in the regulation of neurotransmitters that are directly linked to violent behavior. Though human beings all share virtually identical genetic material, there are slight variations across individuals in the structure of certain genes, a phenomenon known as "genetic polymorphism" (Simons et al., 2011). The basic argument proposed by research in this field is that some people are genetically predisposed to aggressive behavior, and when these people encounter stressful environments they are at a much greater risk for reacting violently. The fact that genes are inherited from one's primary caretakers can compound this problem, as "parents transmit to their child a genetic liability for aggression and simultaneously provide an environment of violent, abusive maltreatment that is symptomatic of that parents' genetic liability for aggression" (Moffitt, 2005: 538). This observation is one explanation of the

intergenerational transmission of violence thesis, which proposes that abusive parents raise children who are themselves more likely to become abusive parents, who in turn raise future generations of abusive parents, etc. (Jaffee et al., 2004; Shanahan and Macmillan, 2008).

Selection

Given the theoretical and empirical evidence concerning the tendency for early-life adversity to culminate in later-life antisocial behavior, it is reasonable to question whether experiences that occur at the end of adolescence—such as joining the military—can have a meaningful impact on violent behavior. Indeed, one would expect that for people with low self-control, life-course-persistent offenders, or people who are genetically susceptible to aggression, military service would have little direct effect on one's predisposition toward violence. If veterans appear to be more violent than nonveterans, the best explanation may be that violent people are simply more attracted to military service than non-violent people. The evidence from the literature on the early-initiation and persistence of aggression suggests that selection effects may account for much of the apparent effect of military experience on later antisocial behavior.

Confounding Factors for Enlistment and Violence. If the social forces that compel people to join the military are largely the same as those that predispose people to commit violent crime, then it is plausible that any observed link between violent behavior and military service may be spurious. To investigate this possibility, I turn to a brief review of research on the characteristics of individuals who voluntarily enlist in the military. It is

noteworthy that many of the strongest predictors of military enlistment are also associated with violent behavior.

Relative to the general U.S. population, military recruits are disproportionately comprised of men (Bachman et al., 2000; Bray et al., 1990; Segal et al., 1999), African-Americans (Bachman et al., 2000; Bray et al., 1990; Eitelberg et al., 1984; Gorman and Thomas, 1993; Segal et al., 1999), and individuals from Southern states (Bachman et al., 2000; Bray et al., 1990). Research on violent crime has identified similar variations by sex, race, and region. Men are more violent than women (e.g., Archer, 2004; Griffin et al., 2000; Felson, 1996; U.S. Department of Justice, 2009). A considerable body of evidence indicates that African-Americans have higher rates of violent crime than whites (e.g., Bureau of Justice Statistics, 2005; Hawkins et al., 2000; Sampson and Lauritsen, 1994, 1997). Criminologists have linked race differences in violent crime to African-Americans' higher exposure to gun-related violence (Felson and Painter-Davis, 2012; Felson and Pare, 2010a, 2010b; Felson et al., 2008) and greater tendency to violently resist assault (Anderson, 1999; Baumer et al., 2003). Finally, Southern states have long experienced the highest homicide rate in the country (Cohen and Nisbett, 1996; Hackney, 1969). Regional variation in homicide rates have been attributed to the greater presence of African-Americans in the South (Hackney, 1969), the presence of a residual "frontiersman" mentality / honor culture that promotes self-help violence (Black, 1983; Cohen and Nisbett, 1994), and the greater tendency for Southerners to own and carry firearms (Felson and Pare, 2010a, 2010b).

The tendency to enlist in the military also varies by socioeconomic status (SES), family structure, and intellectual ability. Military recruits are significantly more likely to

come from low SES families (Bachman et al., 2000; Bray et al., 1990; Elder et al., 2010; Gorman and Thomas, 1993; Hosek, 1986; Kelty, Kleykamp, Segal, 2010; Kleykamp, 2006; Wright et al., 2005), large families (Hosek et al. 1986), to be raised by divorced parents (Bachman et al. 2000; Elder et al. 2010; Kelty et al. 2010), and to suffer from intellectual ability and reduced academic performance (Bachman et al., 2000; Elder et al., 2010; Gorman and Thomas, 1993; Hosek et al., 1986; Kelty et al., 2010; Wright et al., 2005). Many of these characteristics have also been identified as risk factors for violent behavior among adults. Lower class individuals are more likely to be involved in violent crimes, both as offenders and victims (Anderson, 1999; Baumer et al., 2003; Bellair and McNulty, 2005; Farrington, 1989; Felson et al., 2008; Lee, Maume, and Ousey, 2003). Even controlling for family SES, children raised in large families (i.e., 5 or more children) were significantly more likely to be convicted of a violent crime as an adult (Farrington, 1989). According to Farrington (2006: 20), children raised in such families often experience lower-quality parenting and greater levels of strain related to residential overcrowding. Also, several studies have found that children raised in single-parent homes are more likely than those raised in two-parent homes to engage in aggressive and violent behavior (Bellair and McNulty, 2005; Felson et al., 2008; Griffin et al., 2000; Vaden-Kiernan et al., 1995). In addition, longitudinal evidence suggests that adolescents with below-average intelligence are more likely to participate in violent crime as adults (Farrington, 1989).

Ethnographic evidence suggests that the desire to “escape” from domestic conflict may motivate the decision to enlist. Consider the following excerpts from the life history narratives collected by Laub and Sampson (2003):

Henry was unable to get along with either his mother or his stepfather, and he selected the service as an 'out' for his problems (p. 125).

One former delinquent wanted to join the Marines to get away from his father, and he was so desperate to do so that he signed up under another name (p. 50).

Moreover, there is evidence that adolescents who engage in antisocial behavior are more likely to enlist in the military. Youth who participate in serious physical fighting (Elder et al., 2010; Johnson and Kaplan, 1991), who were arrested as juveniles (Johnson and Kaplan, 1991; Wright et al., 2005), and who score high in "dehumanization" (i.e., mean-spirited, lack empathy) (Bachman et al., 2000) are all significantly more likely to enlist. Again, several of these factors have also been linked to violence during adulthood. Children raised by parents who are cold and rejecting (McCord, 1979) or physically abusive (e.g., Felson and Lane, 2009; Widom, 1989) are at significantly greater risk for engaging in violent crime as adults. Similarly, delinquency and aggression during adolescence is a strong predictor of violent crime among adults (e.g., Farrington, 1989a, 1989b; Huesmann, Eron, and Lefkowitz, 1984; Olweus, 1979).

Continuity in Antisocial Behavior. In line with the evidence that aggressive and delinquent behavior during adolescence increases the probability of enlistment, studies of the criminogenic effects of military service have found varying levels of support for the role of selection. Selection effects appear to play a role in antisocial behavior that occurs during military service. Sampson and Laub (1996) found that WWII veterans with criminal pasts were more likely to get arrested while in the military. Using a small convenience sample of Vietnam veterans who had killed others while in combat, Yager (1975: 257) found that veterans who had been arrested prior to joining the military were

more likely to have engaged in “close-range acts of violence against persons that were judged to be unnecessary from a military point of view.” In a similar analysis using a convenience sample of hospitalized Vietnam veterans, Fontana and Rosenheck (1993) found that veterans who volunteered for service were more likely to have participated in “excessively violent or brutal” wartime behaviors, such as torturing prisoners or harming civilians.

More recent research has directly shown the importance of accounting for pre-military factors when attempting to isolate the effect of military service on later-life consequences. Among a sample of Vietnam veterans, Fontana and Rosenheck (2005) found that pre-military experiences and behavior exerted the largest effects on post-military antisocial tendencies. MacManus et al. (2012) produced a similar finding among British veterans of the Iraq war. After controlling for a variety of confounders—including combat experience—MacManus et al. (2012) found that pre-military antisocial behavior was a robust predictor of both alcohol abuse and participating in fights that required hospitalization.

Selection and Combat Exposure. Beyond the evidence that certain kinds of people self-select into military service, research has also shown that similar processes influence whether a veteran will participate in combat roles. Vietnam veterans who experienced sexual abuse as a child, grew up in unstable families, or who were hospitalized for psychiatric problems prior to service entry were significantly more likely to perform combat duties within the military (Fontana and Rosenheck, 1993). Wilson (1995) found that in the Vietnam War, enlisted or drafted soldiers who served in combat units were significantly more likely to have come from lower SES families (also see Wright et al.,

2005: 59). The relationship between class of origin and combat assignment is likely due to the lower aptitude scores of disadvantaged veterans, as Gimbel and Booth (1996) found a powerful negative relationship between each veteran's Armed Forces Qualification Test score and their probability of being assigned to combat duty.

There is also evidence that selection effects play a role in whether a veteran will actually be exposed to combat. After analyzing a 2003 sample of UK soldiers who served during the Iraq war, MacManus et al. (2012) found that pre-enlistment antisocial behavior was significantly associated with both having a combat role and discharging a weapon during direct combat. Using a sample of over 2,000 Vietnam veterans, Gimbel and Booth (1994, 1996) found that veterans who got into trouble in school (e.g., fighting, truancy, general misconduct, expulsion/suspension) were significantly more likely to experience combat.

Finally, research has shown that pre-service characteristics condition the consequences of combat exposure. For instance, Fontana and Rosenheck (2005) initially found a significant association between combat exposure and subsequent antisocial behavior, but once the authors included controls for PTSD and pre-military antisocial behavior, combat exposure was no longer related to post-military antisocial behavior. Gimbel and Booth (1994) showed that combat experience significantly increased involvement in antisocial behavior, but roughly one-third of this association was due to pre-existing antisocial tendencies. Moreover, Vietnam veterans who were exposed to combat and had a history of antisocial behavior had the highest rates of post-military offending (Gimbel and Booth, 1994). Even the development of combat-induced post-traumatic stress disorder is influenced by selection effects, as several studies have shown

that a host of pre-service vulnerabilities increase the likelihood that a veteran will develop PTSD and participate in combat (for a review, see Fontana and Rosenheck, 1993).

Summary: Stability and Selection. In summary, developmental theorists such as Gottfredson and Hirschi (1990) and Moffitt (1993) argue that the determinants of violent and antisocial behavior emerge during the beginning of childhood and persist into adulthood. This ontogenetic perspective suggests that individual differences in aggression stabilize long before people are old enough to join the military. Consequently, military experience can only minimally influence violent behavior. Insofar as veterans appear to be more violent than non-veterans, it is because aggressive people are attracted to military service. Numerous studies confirm the plausibility of this explanation. Most of the established predictors of military enlistment are also associated with later violent behavior. Indeed, the evidence even indicates that selection effects can account for some proportion of the association between combat experience, PTSD, and later antisocial behavior.

Change

A different line of research in the life course tradition argues that while childhood factors have a powerful influence on adult outcomes, people can undergo profound changes long after adolescence has ended. Elder et al. (2003: 11) reference the malleability of human character by noting that “development does not end at age 18. Adults can and do experience fundamental changes that are developmentally

meaningful.” When applied to criminological research, the impermanence of behavioral patterns is most commonly evoked by scholars who seek to explain desistance, or the process of discontinuing criminal activity. In direct relation to the present research, Laub and Sampson (2003) have shown that participation in the military during WWII encouraged a proportion of former delinquents to cease offending. Though criminal desistance is not a focus of the current study—nor could it be, given that the analysis relies on an inmate sample—the theoretical implications of desistance research lend plausibility to the notion that an individual's predisposition toward antisocial behavior can change during adulthood. By extension, if adult experiences can reduce criminal behavior, they also have the power to increase criminal behavior.

Desistance. Discontinuity in criminal activity has been attributed to both internal and external sources of influence. Internally, the process of ceasing involvement in antisocial behavior may be driven by changes in one's subjective experience of crime. Peggy Giordano has applied a symbolic interactionist perspective to study how emotions and identity influence criminal behavior (Giordano, 2010; Giordano, Cernkovich, Rudolph , 2002; Giordano, Schroeder, Cernkovich, 2007). Emotion is relevant to criminological theory in part because it can influence the motivation to commit crime. For instance, some people commit crime because it is exciting and enjoyable, and this emotional experience contributes to their continued involvement in a criminal lifestyle (Giordano et al., 2007). Other people feel compelled to engage in crime because of negative emotions, such as anger. While emotions can motivate offenders to persist in criminal behavior, changes in the emotional consequences of crime can motivate criminals to cease

offending. Giordano et al. (2007) refer to this as “emotional mellowing,” or the “diminution” of emotional associations. For example, criminals may desist once they no longer experience offending as fun or thrilling. Similarly, offenders who are hot-tempered and react violently to stressful situations may eventually develop strategies for managing their anger (Giordano et al., 2007). Positive emotions grounded in social interactions with noncriminal others can be especially transformative, and may even provide so-called “hooks for change” that greatly encourage desistance from criminal behavior (Giordano et al., 2002). For instance, falling in love with a noncriminal partner can serve as a powerful motivation for ceasing involvement in crime. In addition, there is evidence that becoming a parent can reduce criminal behavior (Kreager, Matsueda, and Erosheva, 2010).

Desistance has also been linked to a variety of social factors that are external to the individual. In their age-graded theory of informal social control, Sampson and Laub (1990: 611) argue that above and beyond an individual’s upbringing or antisocial background, involvement in adult institutions (e.g., marriage, employment, the military) has the power to influence criminal behavior. As the name of their theory suggests, these institutions exert informal social control over their members that can impact antisocial behavior in three ways: (1) changes in routine activities, (2) fostering identity transformation, and (3) increasing stakes in conformity. For example, a newly employed man may find it is no longer convenient to spend several hours each night drinking with his friends, so he greatly reduces the amount of time he spends in bars. As a result of this change in his routine activities, he gets into far fewer bar fights. Similarly, a recently married woman may demonstrate her new-found “stake in conformity” when she stops

smoking marijuana because she does not want to disappoint her husband. Finally, a former juvenile delinquent may distance himself from his past mistakes by embracing his new identity as a soldier in the Army. Indeed, the authors have found substantial support for the idea that adult offenders are more likely to desist from crime when they develop strong bonds to institutions (e.g., Laub and Sampson, 2003; Sampson and Laub, 1990, 1996).

In both quantitative (Sampson and Laub, 1996) and qualitative (Laub and Sampson, 2003) research, the authors have directly applied this theory to explain how military service during WWII served as a "turning point" in the lives of previously aggressive or antisocial males. The military achieves this effect by acting as a "bridging environment" that "changes routine activities, provides direct supervision and social support, and allows for the possibility of identity change" (Laub and Sampson, 2003: 50). The military can reduce antisocial behavior simply by geographically relocating people to less criminogenic environments. Aside from the immediate benefit of say, leaving a high-crime neighborhood, military relocation also impacts antisocial behavior by forcing recruits to sever ties with delinquent peers. Just as Warr (1998) found that marriage reduced criminal offending by dramatically reducing the amount of time that offenders spent socializing with delinquent peers, Laub and Sampson (2003) make a similar argument with military enlistment.

In addition, the military can reduce antisocial behavior by fostering identity transformation. As recruits enter the military, they are socialized into a radically different social world, where "past accomplishments and past deficits alike have diminished influence" (Laub and Sampson, 2003: 49). They describe this as the "knifing off" of past

experiences (see also Brotz and Wilson, 1946; Janowitz, 1972), a process that provides recruits with a second chance for forming a pro-social identity.

Sampson and Laub (1996) also draw attention to the powerful opportunities generated by the G.I. Bill of Rights. By equipping veterans with a variety of social resources, the military actively incentivized a law-abiding lifestyle. As a direct result of the G.I. Bill, returning WWII veterans were able to afford a college education and to purchase their own homes. Similarly, the military itself offered veterans an avenue to develop job skills through in-service training. Men with little education and few financial resources were given a leg up by their membership in the armed forces. Rather than return to a criminal lifestyle, many formerly delinquent veterans were able to transform themselves into members of the middle-class.

In summary, the work of criminologists such as Giordano (2010) and Sampson and Laub (1996) have provided ample evidence that criminogenic childhood experiences do not necessarily lead to antisocial trajectories in adulthood. Despite the powerful influence of early-life circumstances, emotionally salient events and participation in adult institutions can redirect antisocial youth onto new life paths. As stated previously, the current research relies on a sample of incarcerated offenders, and therefore lacks the non-offender comparison group necessary to explore the possibility that military experience might reduce criminal activity. However, the desistance literature demonstrates the underlying plasticity of antisocial behavior. From this perspective, it is plausible that military service could influence later criminal violence.

Negative Turning Points. Given that (1) antisocial behavior patterns are subject to change after adolescence, and (2) membership in the military can act as a source of this change, it is reasonable to examine whether military experience can increase violent behavior. In contrast to the work of Sampson and Laub (1996; see also Laub and Sampson, 2003), who present WWII-era military service as a positive turning point in the lives of former delinquents, a different approach is to frame military experience as a negative turning point. From this viewpoint, veterans may become predisposed to aggressive behavior as a result of military socialization processes and the psychological strain of combat exposure.

It is possible that the military increases violent behavior by enculturating veterans with attitudes that encourage aggression. All military recruits must go through basic training, which has been described as “the military’s agency for primary socialization” (Arkin and Dobrofsky, 1978). Some military scholars have argued that during boot camp, an enormous amount of psychological value is placed on masculinity and aggression (Shatan, 1973). Later scholars have referred to this as the “masculine warrior” paradigm, wherein “the military still views itself as the instrument of national power whose combat mission, performed by masculine warriors, characterizes its very existence and meaning” (Dunivin, 1994: 537). In addition, anecdotal evidence suggests that the military's preoccupation with aggression has occasionally manifested in brutal initiation rituals for new recruits. Eisenhart (1975), a military scholar and himself a former marine, insinuates that extreme forms of verbal and physical abuse were common boot camp experiences during the Vietnam War.

There is some empirical evidence that military socialization may predispose veterans to violent behavior. Using longitudinal data on a sample of 1,200 German youth to control for pre-enlistment personality traits and selection into the military, Jackson et al. (2012) found that the basic training experience produced long-term reductions in “agreeableness,” a composite measure of personality traits related to aggression, empathy, trust of others, modesty, and honesty. These results are congruent with the idea that even fairly mundane military experiences can habituate veterans to a hostile interpersonal style. When military socialization is combined with actual involvement in military violence, research indicates that this may lead some veterans to internalize violence as a legitimate means of conflict resolution. For instance, Ball-Rokeach (1972) proposed that when people engage in legitimate forms of violence, they become comfortable with acts of aggression and less likely to think of their own behavior as violent. Using qualitative data, Laub and Sampson (2003: 231) describe how one of their respondents (“Carlo”) had grown accustomed to violent behavior during his service in WWII, and was later arrested for domestic violence.

Exposure to military combat has been linked to a variety of negative outcomes, including antisocial behavior. For instance, Elder (1986) found that combat veterans were the least likely to benefit from military service, and Gimbel and Booth (1994) found that veterans who experienced combat were significantly more likely to engage in violent and unlawful behavior. Across the literature on the consequences of combat experience, the main explanation for the ill effects of combat exposure is that veterans who witness or participate in armed conflict may develop post-traumatic stress disorder (PTSD), which has been shown to increase aggression (for a review, see Beckham, Moore, and

Reynolds, 2000). In particular, the “hyperarousal” symptoms associated with PTSD (e.g., reduced emotional control, exaggerated startle response, hypervigilance) have been linked to violent behavior (MacLean and Elder, 2007; Savarese et al., 2001). As one might imagine, there is a substantial body of research linking combat deployment to PTSD (e.g., CDC, 1988; Cesur et al., 2013; Davidson et al., 1990; Fear et al., 2010; Stretch, 1985). Even controlling for pre-military vulnerabilities associated with PTSD, Fontana and Rosenheck (1993) found that combat experience had a direct effect on the development of PTSD. Combat veterans had higher rates of “hyperarousal” symptoms than non-veterans (Yager, Laufer, Gallops, 1984), and veterans with these symptoms were significantly more likely to engage in domestic violence (Savarese et al., 2001; Taft et al., 2005). Combat veterans suffering from PTSD were also found to engage in higher rates of interpersonal violence more generally (Beckahm et al., 1997). In brief, combat exposure is a major risk factor for PTSD, which in turn is a risk factor for violent and aggressive behavior.

Combat experience might also indirectly affect violent behavior by leading to an increase in alcohol consumption. For example, veterans who experienced combat are also more likely to abuse alcohol (Boscarino, 1981; CDC, 1988; Fear et al., 2010; Killgore et al., 2008; Wilk et al., 2010; Yager, Laufer, Gallops, 1984). Some researchers have argued that the relationship between combat exposure and increased alcohol abuse is mediated by the presence of PTSD (McFall et al., 1992; Yehuda and McFarlane, 1995). Laub and Sampson's (2003: 120, 232, 241) life history narratives provide qualitative evidence linking military service, combat, and alcohol abuse. Furthermore, a large body of evidence has linked alcohol intoxication to violent behavior (e.g., Felson, Teasdale, and

Burchfield, 2008; Newcomb and McGee, 1989; White et al., 1999; White et al., 2002). For instance, Felson and Staff (2010) found that alcohol intoxication increases confrontational acts of violence. These authors theorize that intoxication increases this form of aggression by rendering people less concerned with the consequences of violent behavior. In sum, participation in military combat may influence violent behavior by placing veterans at increased risk for alcohol abuse.

Summary: Changes in Aggression. In summary, life course criminologists such as Giordano (2010) and Laub and Sampson (2003) emphasize the variable nature of antisocial behavioral patterns. This sociogenetic perspective argues that experiences in adulthood can have far-reaching consequences for individual tendencies to engage in acts of violence or aggression. Evidence from the literature on desistance indicates that emotionally salient life events and participation in adult institutions can compel adults with a history of antisocial behavior to discontinue their involvement in criminal activity. In contrast, there is also evidence that experiences in adulthood can increase antisocial tendencies. Applied to the current study, it is plausible that military service may promote violent behavior by subjecting veterans to socialization processes that legitimize aggression, or by eliciting maladaptive responses to the stress of combat exposure.

CURRENT STUDY

The present study builds on this previous body of work by examining the relationship between veteran status and incarceration for violent crime versus non-violent crime. To

be clear, the focus of this study is *not* whether military veterans commit more crime than non-veterans, or whether veterans engage in more acts of violence than non-veterans. Rather, the current research investigates whether military veterans demonstrate a significant preference for violent crime over other types of crime. The analysis benefits from a large sample ($n > 18,000$) that is nationally representative of its target population and allows for comparisons with a non-veteran control group. While previous studies of the criminogenic effects of military service focused on non-violent crime or relatively minor forms of violent behavior (e.g., fist fights), the present study concentrates on serious violent offenders. The inmate survey collected information about respondents' age at entry into the military, era of service, military branch membership, and combat exposure. Furthermore, the survey gathered retrospective data about the respondents' childhood and adolescence, which can be used to control for pre-military characteristics related to both violence in adulthood and selection into the military. In contrast to past research that was generally unable to explore the mechanisms by which military service influenced violent behavior, the data used in the current study contains measures of post-traumatic stress disorder and alcoholism, both of which have been theorized to mediate the link between military experience and violent behavior.

After offering a general description of the inmate sample, I begin with my analysis by exploring how factors from the subjects' childhood and adolescence influence selection into the military. I then explore the bivariate relationship between veteran status and whether the respondent has ever been incarcerated as an adult for a violent crime. In subsequent models, I introduce controls for combat exposure, background characteristics, correlates of selection into the military, and measures of violent and antisocial behavior

during adolescence. In the final model, I include measures of PTSD and alcoholism, which are theorized to mediate the link between military experience and violent crime.

Following the previous literature, I expect to find substantial differences in the background characteristics of veterans and non-veterans. I hypothesize that veteran status will be significantly related to my dependent variable at the bivariate level, but that this association will be attenuated by controls for selection. The remaining link between military experience and incarceration for violent crime will be mediated by the effects of PTSD and alcohol abuse.

DATA AND METHODS

The data were based on the 2004 Survey of State and Federal Correctional Facilities (U.S. Department of Justice, 2007). Computer-assisted personal interviews were conducted at 287 state prisons and 39 federal prisons. Stratified random sampling was used to select prison facilities based on the size of the facility's inmate population relative to the national inmate population, census region, state population, and whether the prison housed male or female inmates. The original sample included 18,185 cases (14,499 state inmates and 3,686 federal inmates). To account for the complex survey design, I weighted the data using Stata 12's *svy* command (Statacorp, 2009). After applying the design weights, the 14,499 state inmate sample represented 1,226,175 state inmates—the total number of inmates in state prisons at year end 2003. Similarly, the weighted version of the 3,686 federal inmate sample represented 129,299 federal inmates, or the total number of inmates in federal prisons as of January 3, 2004. Prior to case deletion, the original sample represented 1,355,404 inmates in state and federal prisons.

To handle missing data, I performed multiple imputation via the ICE procedure (van Buuren et al., 1999). The ICE procedure deploys sequential chained multivariate regression to impute missing values assumed to be missing-at-random (Royston, 2009: 466). I used all of the variables to generate 5 imputed datasets and then imported the data into Stata 12's MI format, which allowed me to run statistical models with multiply imputed data.

For this analysis, my dependent variable represents whether the inmate has ever been incarcerated as an adult for a violent crime. Using a life history calendar, the inmate survey asked the prisoners to list every time they had ever been incarcerated. For every period of incarceration, the survey asked inmates whether they were sentenced as a juvenile or an adult, and to describe the primary offense for which they were serving time. In instances where the inmate had been incarcerated for multiple crimes, I classified the reason for incarceration based on the offense which garnered the longest sentence. The survey researchers recorded the type of crime from a list of over 80 different offense codes. If the offense involved interpersonal violence (e.g., rape, assault, homicide) or coercion predicated on the threat of violence (e.g., kidnapping, robbery), I classified the crime as "violent." All violent crimes were coded as 1, and all other crimes were coded as 0. The dependent variable in this analysis thus reflects the inmate's entire adult prison record up to and including their most recent offense.

My independent variables were created based on the inmate's response to two questions: (1) "Did you ever serve in the U.S. Armed forces?"; and (2) "During your time in the military, did you see combat in a combat or line unit?" Inmates who had never served in the U.S. military were classified as *non-veterans*. Inmates who had served in

the military but who had not experienced combat were coded as *veterans*. Finally, inmates who had served in the military and experienced combat were classified as *combat veterans*.

It is worth mentioning a brief note about time-order. As with any analysis that attempts to isolate cause and effect, it is crucial that my independent variable occur before my dependent variable. In other words, if inmates experience military service *after* being incarcerated for a violent offense, then it makes little sense to use “violent prison record” to study the impact of military service on violent crime. Fortunately, the U.S. military conducts background checks on potential recruits and does not admit violent felons. It is possible that some veterans found ways to subvert the background check and successfully enlist despite their violent criminal history. During times of war, the military has granted moral waivers for certain types of offenders in order to draw manpower from the criminal population (Laub and Sampson, 2003). However, it is reasonable to assume that the majority of seriously violent criminals would be detected during the early stages of recruitment, would not be granted moral waivers, and would not go to great lengths to sneak into the military.

My mediating variables are measures of post-traumatic stress disorder and alcoholism. Inmates were asked, “Have you ever been told by a mental health professional, such as a psychiatrist or a psychologist, that you have post-traumatic stress disorder?” The binary variable *PTSD* is coded 1 for prisoners who answered “yes” to this question. The inmate survey also presented inmates with the CAGE instrument, a four-item scale designed to measure alcoholism. The CAGE scale asks inmates, “In your entire life, have you ever: felt you should cut down on drinking; felt annoyed with people

criticizing your drinking; felt guilty about your drinking; had a drink first thing in the morning?” Every time an inmate answered “yes” to a CAGE-question, they received a single point. Thus, the *CAGE* variable is a continuous measure ranging from 0 (no symptoms of alcoholism) to 4 (multiple symptoms of alcoholism).

I created a variety of control variables to account for the confounding influences of basic demographic factors, childhood and adolescent correlates of military enlistment, and antisocial behavior during adolescence. To control for each respondent’s sex, I coded all male inmates as 1 and all female inmates as 0. I also created four mutually exclusive race/ethnicity dummy variables: non-Hispanic White (reference group), non-Hispanic Black, Hispanic, and non-Hispanic other race. To account for each inmate’s age at the time of the survey, I subtracted their year of birth from the year that the survey was given (e.g., an inmate born in 1970 who was interviewed in 2004 would be coded as 34 years old).² The variable *education* is a continuous measure that represents the highest year of schooling attended.

To capture whether the respondent had been sexually or physically abused as a child, I relied on questions in which respondents were asked about victimization experiences prior to incarceration. For sexual abuse, inmates were asked whether anyone had “ever pressured or forced you to have any sexual contact against your will.” As a follow-up

² I experimented with different coding schemes for age, including a variable for “age at last arrest.” I computed the inmates’ age at the time of their last arrest by subtracting their reported year of arrest from the year of their interview; I then subtracted this value from their self-reported age at the time of the interview. For example, an inmate arrested in 1990 who was interviewed in 2004 would have been arrested 14 years prior; if the inmate was 40 years old at the time of the interview, then they would have been 26 years old at the time of arrest. For 61 inmates, their response on the “age at last arrest” variable produced estimates that were too small to be credible; consequently, these 61 cases were removed from the sample. Though I ultimately chose not to use this variable for my final analyses, I felt it best to purge the sample of the 61 unreliable cases.

question, inmates were asked whether the event occurred “before or after you were 18 years old.” Based on their responses to these questions, I classified inmates as *never sexually abused* (reference), *sexually abused as minor*, and *sexually abused as adult*. The purpose of this control variable is to capture adverse civilian experiences that may have contributed to the respondent’s decision to enlist in the military. Consequently, if the inmates experienced sexual abuse both before and after they were 18 years old, I included them in the “abuse as a minor” category.

Inmates were asked a similar question regarding whether they had “ever been physically abused.” Inmates who answered no to this question were then asked whether anyone had ever “pushed, grabbed, slapped, kicked, bit or shoved you? Hit you with a fist? Beat you up? Choked you? Used a weapon, for example, a gun, knife, rock or other object, against you?” As a follow-up question, inmates were asked whether the event occurred “before or after you were 18 years old.” Based on their responses to these questions, I classified inmates as *never physically abused* (reference), *physically abused as minor*, and *physically abused as adult*. Following the same logic as before, if the inmates experienced physical abuse both before and after they were 18 years old, I included them in the “abuse as a minor” category.

In order to measure whether the respondent has a learning disability, I coded responses to the question, “Do you have a learning disability, such as dyslexia or attention deficit disorder?” On the measure *learning disability*, prisoners who answered yes to this question were coded as 1, and respondents who answered no were coded as 0.

I created a series of control variables to capture different dimensions of each respondent’s family environment. The survey asked inmates, “While you were growing

up, did any of your parents or guardians ever receive welfare or public assistance, for example, AFDC, food stamps, Medicaid, or WIC?” For the variable *family on welfare*, inmates who answered yes to this question were coded as 1, and inmates who answered no were coded as 0. Respondents were asked, “When you were growing up, who did you live with most of the time?” For the variable *two-parent home*, inmates who answered “both parents (including one step-parent)” were coded as 1, while all other respondents were coded as 0. The variable *number of siblings* is a continuous measure based on the inmate’s response to the question: “How many brothers and sisters have you had?”

If an inmate completed 12 or more years of education, or received their GED, the respondent was given a 1 for *high school graduate* and a 0 otherwise. Inmates who indicated that they received their GED in prison were given a 0. Thus, the variable *high school graduate* only represents those inmates who completed their GED or received their high school diploma prior to incarceration.

Though the survey does not ask inmates whether they voluntarily enlisted in the military or were drafted, I used each respondent’s date of birth to measure whether the respondent was 18 or older while the draft was still active. Because the U.S. discontinued the draft by 1974 (Flynn, 1998), respondents born prior to 1956 would have been eligible to be drafted. For the variable *draft eligible*, all respondents born before 1956 were coded as 1, while all respondents born during or after 1956 were coded as 0.

The survey also asked respondents whether they were born in the United States. Inmates born outside of the U.S. were asked if they are currently American citizens. For the variable *non-citizen*, respondents who answered no to both questions were given a 1, and all other respondents were given a 0.

Inmates were also asked about their antisocial behavior during adolescence. In order to measure whether the respondent had been incarcerated as a juvenile, I took a similar approach to the coding scheme for creating my dependent variable. Inmates who had never been incarcerated as a juvenile were coded as *no juvenile record* (reference group). Among inmates who had served time as juveniles, I distinguished between those who had ever been incarcerated for violent crime—*violent juvenile record*—and those who had only been incarcerated for non-violent crime—*non-violent juvenile record*. Given the current study’s focus on incarceration for violent crime, if the inmates had been incarcerated as a juvenile for both violent and non-violent crime, I included them in the “violent juvenile record” category. The variable *juvenile probation* is a continuous measure based on the prisoner’s response to the question: “How many times were you placed on probation as a juvenile?” Finally, in order to capture whether the respondent associated with violent peers during adolescence, I classified each respondent based on their response to the question, “While growing up, did you have friends you hung around with who engaged in activities such as mugging, robbing, or extorting money from people?” For the variable *violent peers*, inmates who answered yes to this question were coded as 1, while inmates who answered no to this question were coded as 0.

I also created a variety of veteran-specific measures to capture different aspects of military service. For descriptive purposes, I excluded all non-veteran inmates from the sample before calculating the statistics shown in Table 2. To calculate the veteran’s age at time of entry, I subtracted each veteran’s year of birth from their year of entry (e.g., an inmate born in 1950 who enlisted in 1970 would have an entry age of 20 years). Following the age threshold established by Elder (1986), I classified veterans based on

whether they were under 21 at entry (*early entry*—coded as 1) or 21 or older at enlistment (*late entry*—coded as 0). I created a series of dummy variables representing which branch of the military the veteran served in: Army, Navy, Marines, Air Force, and other (i.e., Coast Guard / Army Reserve). I also classified each veteran based on the conditions of their discharge: Honorable, Other than honorable, Dishonorable, and other. I created a *career length* variable by calculating the difference between each veteran's date of entry and date of discharge; after rounding, this variable represents how many years each veteran served in the military. By combining “career length” with “year of entry,” I was able to classify veterans based on their *era of service*. Drawing on the dates of U.S. military conflict outlined in Torreon (2012), I classified veterans as *WWII* (December 1941 – December 1946), *Korean War* (June 1950 – January 1955), *Vietnam War* (August 1964 – May 1975), *Persian Gulf War* (August 1990 – April 1991) and *Iraq War* (August 2001 through 2009). If the inmate served in the military during a period of war, I classified them based on that period. Inmates whose military career spanned multiple conflicts were coded according to their first period of conflict. If an inmate served in the military while the U.S. was not engaged in military conflict, their era of service was coded as *Peacetime Only*.

In supplementary analyses that use age at entry, service branch, and era of service as predictor variables, I changed the coding structure to allow for comparisons with the non-veteran control group. For these analyses, non-veterans were coded as 0, and each veteran category was coded as a dummy variable.

A correlation matrix containing all predictor variables and the dependent variable can be found in the appendix.

RESULTS

Table 1 contains descriptive statistics for the full sample of 18,124 inmates. Roughly half (53%) of the inmates in the sample have—at some point—been incarcerated as an adult for violent crime. Around 9% of inmates (n = 1,659) have served in the U.S. military. Among incarcerated veterans, 20.4% (n = 338) experienced armed combat. Put differently, combat veterans constitute about 2% of the final sample, non-combat veterans represent 7%, and non-veterans make up the remaining 91%.

The inmate sample is overwhelmingly comprised of males (93.2%). Most of the inmates are either non-Hispanic black (40.7%) or non-Hispanic white (34.5%). The average inmate has roughly an 11th grade education, with only 38.4% of prisoners having completed their GED or received their high school diploma prior to incarceration. While sexual abuse before the age of 18 was rare (5.6%), one in five inmates (20.1%) reported that they were physically abused as minors. The majority of inmates were never incarcerated as juveniles (81.6%), though a small proportion had served time for non-violent offenses (13.6%), and a minority of inmates had been incarcerated as juveniles for violent crime (4.8%).

Table 1: Sample Characteristics

Variable	%
Prison Record (Violent)	52.8
Military Experience	
Veteran	9.2
Non-Veteran	90.8
Sex	
Female	6.8
Male	93.2
Race/Ethnicity	
Black	40.7
Hispanic	18.9
Other Race	5.9
White	34.5
Age	$\bar{x} = 35.6$
Education	$\bar{x} = 10.8$
Enlistment Factors	
No sexual abuse	91.7
Sex abuse (minor)	5.6
Sex abuse (adult)	2.7
No physical abuse	50
Physical abuse (minor)	20.1
Physical abuse (adult)	29.9
Learning Disability	12.5
Family on Welfare	36.6
Two-Parent Home	44.8
Number of Siblings	$\bar{x} = 4.4$
High School Graduate	38.4
Draft Eligible	13.0
Non-Citizen	1.8
Served Time (Juvenile)	
No	81.6
Yes, non-violent	13.6
Yes, violent	4.8
Juvenile Probation	$\bar{x} = 0.4$
Violent Peers (youth)	17.3
CAGE Score	$\bar{x} = 1.0$
PTSD	5.5
(n = 18,124)	

Table 2: Veteran Characteristics

Variable	%
Age at Entry	
Under 21	85.8
21 or older	14.2
Combat Experience	20.4
Service Branch	
Army	54.0
Navy	21.1
Marines	14.3
Air Force	8.8
Other	1.8
Discharge	
Honorable	60.8
Other than honorable	27.3
Dishonorable	6.1
Other	5.8
Entry Year	
1940 - 1949	1.1
1950 - 1959	5.4
1960 - 1969	18.6
1970 - 1979	36.4
1980 - 1989	27.4
1990 - 2001	11.1
Discharge Year	
1940 - 1949	1.1
1950 - 1959	3.2
1960 - 1969	11.1
1970 - 1979	32.6
1980 - 1989	30.9
1990 - 2003	21.1
Career Length (Years)	$\bar{x} = 3.9$
Era of Service	
Peacetime Only	41.5
WWII	0.6
Korean War	2.4
Vietnam War	38.7
Persian Gulf War	14.0
Iraq War	2.8
(n = 1,659)	

As can be seen in Table 2, most veterans were under the age of 21 (85.8%) when they enlisted. The majority of veterans served in the Army (54%) and the Navy (21.1%). Though they eventually ended up in prison, most veterans (60.8%) reported leaving the military with an honorable discharge, while roughly one-third of the sample received

either a dishonorable discharge (6.1%) or an other than honorable discharge (27.3%). The most common decade for entering the military was the 1970s (36.4%), followed by the 1980s (27.4%). It is noteworthy that the majority of veterans in this sample (41.5%) did not serve during a period of armed conflict, though many did serve during the Vietnam War (38.7%). On average, imprisoned veterans served in the military for slightly less than 4 years.

**Table 3: Logistic Regression Predicting
"Ever Served in the Armed Forces?" (N =
18,124)**

Variable	b-coeff	O.R.
Male	2.70***	14.88
Black	-0.42***	0.66
Hispanic	-1.34***	0.26
Other race	-0.08	0.92
Education	0.08***	1.08
Sexual Abuse (as minor)	0.52***	1.68
Sexual Abuse (as adult)	0.22	1.25
Physical Abuse (as minor)	0.36***	1.43
Physical Abuse (as adult)	0.31***	1.36
Learning disability	-0.26*	0.77
Welfare	-0.11	0.89
Two-parent home	0.07	1.07
Number of siblings	0.04**	1.04
High School Graduate	1.44***	4.22
Draft eligible	1.57***	4.81
Non-Citizen	-0.40	0.67
Non-violent juvenile record	-0.49**	0.61
Violent juvenile record	-1.20***	0.30
Juvenile probation record	-0.40***	0.67
Violent peers	-0.27*	0.76

* = $p < 0.05$

** = $p < 0.01$

*** = $p < 0.001$

The results from the logistic regression model predicting military enlistment can be found in Table 3. As was expected, many of these selection variables do significantly predict enlistment. Inmates born before 1956 were substantially more likely to have served in the military, though it is unclear whether this finding reflects the higher rate of enlistment among older cohorts, or the direct effects of military conscription. In general, the results from this analysis indicate that veteran inmates come from more socially privileged backgrounds than nonveteran inmates. Relative to inmates who did not enlist, veteran inmates are better educated and disproportionately white. Veteran inmates are less likely to have a learning disability, and are substantially less likely to have engaged in crime or violence during adolescence. This is not altogether surprising, given the military's aptitude requirements and prohibitive stance on recruiting individuals with criminal records (e.g., Eitelberg et al., 1984; Laub and Sampson, 2003; Sampson and Laub, 1996). Despite these apparent advantages, incarcerated veterans are more likely than non-veterans to have experienced physical and sexual abuse as minors, and tend to come from slightly larger families. Overall, the majority of evidence from this analysis suggests that many veterans were *not* significantly more predisposed to violent behavior than non-veterans.

Model 1 in Table 4 presents the bivariate relationship between veteran status and whether the inmate has ever served time in prison as an adult for a violent crime. The results from this analysis confirm that imprisoned veterans are significantly more likely than non-veterans to have been incarcerated (previously or currently) for a violent crime. In the absence of control variables, the odds that an incarcerated veteran has ever served a sentence for violent crime are 43% greater than that of a non-veteran.

Table 4: Logged Odds for Logistic Regression using Veteran Status to Predict "Ever Incarcerated as an Adult for a Violent Crime" (N = 18,124)

Variable	Model 1	Model 2	Model 3	Model 4
Veteran	0.36***	---	---	---
Veteran (Non-Combat)	---	0.42***	0.36***	0.35***
Combat Veteran	---	0.16	0.08	0.04
Male	---	---	1.00***	1.01***
Black	---	---	0.17**	0.17**
Hispanic	---	---	-0.08	-0.08
Other race	---	---	0.32**	0.32**
Age	---	---	0.01**	0.01**
Education	---	---	-0.02	-0.02
Sexual Abuse (as minor)	---	---	0.57***	0.55***
Sexual Abuse (as adult)	---	---	0.34**	0.32**
Physical Abuse (as minor)	---	---	0.53***	0.53***
Physical Abuse (as adult)	---	---	0.10*	0.10*
Learning disability	---	---	0.08	0.07
Welfare	---	---	0.13**	0.13**
Two-parent home	---	---	0.07*	0.07
Number of siblings	---	---	0.01	0.01
High School Graduate	---	---	-0.15**	-0.15**
Draft eligible	---	---	0.25**	0.25**
Non-Citizen	---	---	-0.04	-0.04
Non-violent juvenile record	---	---	0.17**	0.17**
Violent juvenile record	---	---	0.68***	0.68***
Juvenile probation record	---	---	-0.00	-0.00
Violent peers	---	---	0.56***	0.56***
CAGE score	---	---	---	-0.01
PTSD	---	---	---	0.19*

* = $p < 0.05$

** = $p < 0.01$

*** = $p < 0.001$

In Model 2, I additionally control for combat exposure. It is noteworthy that veterans who experienced combat are not significantly different from non-veterans, while veterans who did not witness combat are more likely than non-veterans to have served time in prison for violence. Compared to non-veterans, veterans who were not exposed to combat

face 52% greater odds of having served time in prison for violent crime. Upon performing a Wald test to check for differences between the two veteran effects, I found statistically significant differences between the effect of being a combat veteran and the effect of being a non-combat veteran: $F(1, 224.5) = 4.80$; $p\text{-value} = 0.029$. That is, combat exposure does distinguish between the two groups of veterans, but it is only the non-combat veterans who are associated with higher rates of imprisonment for violent crime.

Model 3 introduces control variables for sociodemographic factors, selection into the military, and violent/criminal behavior during adolescence. These additional controls do shrink the effect size for the military service variables, but the reduction in size is minor and mainly impacts the effect of being a combat veteran. In addition, the effects of the control variables are generally as expected. For example, the odds that a male inmate has a violent prison record are 170% higher than that of a female inmate. Relative to white inmates, black prisoners and "other race" prisoners are more likely to have been incarcerated as an adult for violent crime. Inmates who were sexually or physically abused as minors are substantially more likely to have a violent prison record. Educational achievement appears to be a protective factor, as respondents who graduated from high school or received their GED are significantly less likely to have served a prison term as an adult for violent crime. Also, respondents who were incarcerated for violence as juveniles are significantly more likely to have been incarcerated as adults for violence; compared to inmates who were never incarcerated during adolescence, inmates with a violent juvenile prison record have 97% greater odds of having been imprisoned as an adult for violent crime.

Finally, Model 4 includes measures of PTSD and alcoholism. Inmates suffering from post-traumatic stress disorder are more likely to have been incarcerated as an adult for a violent crime, though the effect is not especially strong. The odds that a prisoner with PTSD will have a violent prison record are about 20% higher than that of an inmate without PTSD. The CAGE alcoholism measure is not a significant predictor of whether an inmate has a violent prison record. The inclusion of these variables does not meaningfully alter the effect of either type of veteran status.

Supplementary Analysis

In supplementary analyses, I examined the effects of age at entry, branch of service, and era of service. Past research indicates that the consequences of military service may vary based on timing of entry (e.g., Elder, 1986; Sampson and Laub, 1996). Some military scholars (e.g., Arkin and Dobrofsky, 1978; Eisenhart, 1975) have argued that the military's preoccupation with masculinity and aggression guides the socialization of new recruits across all branches of service. Other research has suggested that the effects of military service may be limited to the specific historical period in which it occurred (e.g., Laub and Sampson, 2003; Teachman and Call, 1996).

The results from the supplementary analyses can be found in the appendix. The findings for the effect of age at entry are in Table 5, branch of service in Table 6, and era of service in Table 7. Wald tests revealed that none of the different categories of military experience (e.g., entry age, branch membership, service era) produced statistically distinct effects. Notably, all of the branches of military service were positively and significantly related to incarceration for violence versus other crime.

DISCUSSION

The results from this analysis indicate that among incarcerated offenders, military veterans are significantly more likely than non-veterans to have served time as an adult for violent crime rather than non-violent crime. In other words, inmates with a history of military service are more likely to *specialize* in violent crime than inmates without military experience. This finding is notable in part because the veterans in this sample generally came from more socially advantaged backgrounds than other inmates. Relative to non-veteran inmates, incarcerated veterans had significantly higher levels of education, were disproportionately white, and were less likely to have been diagnosed with a learning disability. Simply looking at their statistical profile prior to entering the military, these inmates did not seem as though they were headed down a violent trajectory. Most important, however, is the fact that the military veterans engaged in substantially less crime and violence as juveniles than the non-veterans. This suggests that the effect of veteran status is not the result of more criminally violent respondents self-selecting into military service. Even as adults, roughly one out of three of the veterans in this inmate sample were serving time for their very first offense (Noonan and Mumola, 2007). While selection bias cannot be totally ruled out, it is noteworthy that the effect of veteran status remains despite the inclusion of 14 established correlates of self-selection into military service. The relationship between veteran status and having a violent prison record also cannot be attributed to the deleterious effects of combat exposure, as combat veterans are just as likely as non-veterans to have been incarcerated for violence. Indeed, it is only those veterans who did *not* witness combat who have higher rates of specialization in violence. Introducing additional controls for post-traumatic stress disorder and

alcoholism did not meaningfully alter these findings, though they marginally mediate the small effect of combat experience.

Unfortunately, the results of the present analysis cannot demonstrate why incarcerated veterans are significantly more likely than non-veteran inmates to specialize in violent crime. Instead, perhaps the most relevant findings from this study are those that disconfirm plausible explanations of how military service might lead to such specialization.

Foremost among these is the finding that combat experience was unrelated to whether veterans had ever been incarcerated for violent crime. That is, while non-combat veterans appear to specialize in violent crime, combat veterans show no such preference. It is possible that combat exposure inhibits specialization in violent crime by causing veterans to find violence less palatable, particularly if the veteran is wounded (see Laub and Sampson, 2003: 229). Alternatively, this finding may reflect unmeasured differences in pre-service criminality between combat veterans and non-combat veterans. Recall that pre-enlistment antisocial behavior has been shown to predict selection into combat roles and to increase the probability of combat exposure (Gimbel and Booth, 1994, 1996; MacManus et al., 2012). The authors suggest that while antisocial tendencies likely lead some of these men to voluntarily seek out combat duty, selection effects in the military job assignment process also channeled problematic recruits away from technical or administrative positions and into combat roles. These authors operationalized pre-military antisocial behavior through measures of deviant—though not illegal—behavior, such as whether the respondent skipped class or generally misbehaved in school. Though the current study controlled for official measures of adolescent crime, the inmate survey did

not ask respondents whether they engaged in problem behavior or relatively minor acts of delinquency. Because the inmate data cannot account for differences in juvenile problem behavior that did not result in arrest, it is possible that unobserved heterogeneity in antisocial tendencies during adolescence played a role in whether veterans were exposed to combat. If the combat veterans in the current sample had higher levels of unmeasured antisocial tendencies than non-combat veterans, then they may have been prone to engage in a variety of criminal acts rather than violence specifically. For instance, veterans with low self-control may have been more likely to serve in combat roles, experience combat, and to engage in many different types of crime. In other words, it may be that combat exposure appears to inhibit specialization in offending because some of the people who ended up in combat roles were already inclined to participate in a wide array of antisocial behaviors. Insofar as this is true, then one might expect combat veterans to engage in more crime generally than non-veterans. However, in analyses not shown, I found that combat veterans were incarcerated significantly fewer times than non-combat veterans, and that combat veterans were not significantly different from non-combat veterans regarding the amount of time they spent in prison for non-violent crimes.

Theoretically, combat experience should have a direct effect on the development of mental illness and substance abuse, which in turn would have more proximate effects on violent behavior. In results not shown, combat veterans were significantly more likely to suffer from post-traumatic stress disorder (PTSD). While inmates diagnosed with PTSD were more likely to have a violent prison record, including this measure—as well as a measure of alcoholism—had virtually no impact on the model. In brief, the correlation

between military experience and specialization in violent criminal behavior does not appear to be the result of military combat, PTSD, or alcoholism.

The results are most consistent with the idea that military socialization increases aggression. Starting with the boot camp experience, new recruits enter into an institution that is largely defined by the legitimation of violence as a form of conflict resolution. Depending on the historical context, some recruits may even be physically and emotionally abused at the hands of boot camp officers (Eisenhart, 1975). Though it is difficult to empirically measure socialization, Jackson et al.'s (2012) finding that basic military training was linked to long-term reductions in agreeableness among German military recruits provides support for the idea that military socialization may increase aggressive behavior by nurturing a hostile social orientation. It is reasonable to think that the same social and psychological processes designed to transform civilians into soldiers might occasionally have criminogenic effects. In addition, because all veterans are subject to some form of military socialization, this explanation would account for the finding that inmates from all branches of the military are more likely than non-veterans to have been incarcerated as an adult for acts of violence.

On the other hand, the notion that military socialization may sometimes breed violent criminal tendencies must be tempered by recognizing that the military also socializes its members to value pro-social attitudes such as self-discipline, honor, and teamwork. Furthermore, if basic training significantly increased violent tendencies, then one might expect to see high rates of antisocial behavior among active duty military personnel. However, the incarceration rate for military prisons is low (Mumola, 2000). Thus, if

military socialization does influence violent behavior, it seems to only influence a small minority of soldiers.

The present study represents the first attempt to empirically investigate whether military veterans demonstrate a preference for violent crime over other types of crime. Based on the results of this research, it appears that when military veterans commit criminal offenses, they are significantly more likely than non-veterans to commit acts of violence. While I have interpreted these results as evidence that the military experience increases veterans' acceptance of violent behavior, it is equally valid to conclude that military service decreases the appeal of non-violent crimes such as theft and illicit drug use. Determining which of these two interpretations is most suitable is largely a theoretical issue. To this end, the "specialization in violence" interpretation is most grounded in theory. It is undeniable that violence is a fundamental feature of military institutions. In combination with past evidence regarding the association between military service and violent crime, the clear conceptual link between military service and violence supports the interpretation that military experience influences specialization in violent crime.

The current research is not without its limitations. Perhaps the main limitation of this study is its reliance on inmate data. This type of data makes it difficult to generalize the results to the greater population of criminal offenders. For instance, some criminals are simply never prosecuted. In addition, sentencing research indicates that legally irrelevant personal characteristics (e.g., gender, age, race) influence the probability of conviction and incarceration among defendants charged with identical crimes (e.g., Spohn, 2000; Ulmer, 2012). Applied to the current study, it is possible that veteran status may

influence sentencing decisions. Disparate sentencing practices may be an issue for the present study if military veterans are punished differently than non-veterans, though it is unclear how this might affect the results of the current research. For example, if judges only show leniency toward veterans guilty of non-violent crimes, then this might exaggerate the presence of violent offenders in state and federal prisons. On the other hand, if veterans in general are more likely to receive leniency from judges, then the estimates would not be biased

Aside from the problem of generalizability, the data is also limited by measurement issues concerning key aspects of military service and attitudes toward violence. Specifically, the current study suffers from the survey's measure of combat exposure and difficulty in capturing the method by which respondents entered into the military. Research on the effects of combat experience emphasizes the need to distinguish between "necessary and appropriate" acts of military violence (Fontana and Rosenheck, 1993: 482) and exposure to morally abhorrent or excessively brutal acts of violence. Furthermore, this line of research also calls for continuous measures that differentiate witnessing military violence from participating in military violence (see Keane et al., 1989; Laufer et al., 1981). In light of this standard for quantifying combat exposure, the binary variable used in the current study may be too coarse to adequately measure combat experience. It is unfortunate that the inmate survey did not explicitly ask veterans whether they voluntarily enlisted or were conscripted, as I was unable to directly assess whether method of entry influenced the results. However, I was able to partially account for method of entry by controlling for whether the respondent was of draft-eligible age during periods of active U.S. conscription. Additionally, in results not shown, I reran the

analyses after limiting the sample to inmates who entered the military after the draft had been deactivated. Even when the sample consists of volunteer recruits, the same substantive story emerged.

Regrettably, the absence of attitudinal measures makes it difficult to empirically verify whether military veterans hold more favorable attitudes toward violence. Future research in this area should explore whether military veterans differ from non-veterans in their tendency to view violence as an appropriate means of resolving personal dilemmas.

Unobserved differences between incarcerated veterans and non-veterans may also be a contributing factor in my analysis. Though I attempted to thoroughly control for pre-service factors that are known correlates of military enlistment and adult violence, it is possible that unmeasured factors account for some proportion of the effect of veteran status. However, one advantage of using inmate data is that the nature of the sample aids in controlling for unmeasured causes of criminal behavior. To the extent that there are general causes of crime (e.g., low self-control, genetic predisposition to anti-social behavior, etc.), these factors have less of an influence when all the respondents are convicted felons. In other words, while selection bias may still be a problem for my analysis, the all-criminal sample and extensive controls help to minimize this bias.

The results of my analysis may also reflect the difficulties that some veterans face while attempting to readjust to civilian life. In particular, veterans of the Vietnam War have faced considerable difficulties upon returning to civilian society. For example, Laufer and Gallops (1985) found that Vietnam veterans were significantly more likely than nonveterans to experience divorce. While Sampson and Laub (1996) and Laub and Sampson (2003) point to the G.I. Bill as a powerful resource for increasing WWII

veterans' access to higher education, Teachman and Call (1996: 27) note that the G.I. Bill was terminated in the mid-1970s.³ While it was still active, the G.I. Bill did not have the same impact on Vietnam veterans as it had on WWII veterans. In stark contrast to Sampson and Laub's (1996) research, Teachman and Call (1996: 27) come to the conclusion that "net of differences on observed and unobserved background characteristics, veterans of the Vietnam era have less education, lower status jobs, and make less money than non-veterans." Because military service often occurs during a stage of life when most people are accumulating professional experience, returning veterans often face problems securing quality employment (Mayer, 1988). Drawing a similar conclusion about the relationship between employment earnings and conscription, Galiani et al. (2010) found that conscripted Argentinian males were more likely to engage in financially-motivated crime.

If the costs of military service have come to outweigh the benefits for veterans (Teachman and Call, 1996), the disruptive effects of military experience could lead veterans to engage in antisocial behavior. Indeed, insofar as returning veterans experience difficulties in participating in education, employment, and marriage, control theorists would predict much higher rates of criminal activity during veterans' re-entry to society (see Hirschi, 1969; Laub and Sampson, 2003). One shortcoming of this explanation, however, is that it is not clear how difficulties adjusting to civilian life would specifically translate into greater specialization in *violent* antisocial behavior. Given that incarcerated veterans victimized female relatives at higher rates than non-veterans (Mumola, 2000), it

³ Between 1976 and 1987, veterans were eligible for the Veterans Educational Assistance Program (VEAP), which operated on a reimbursement system that required veterans to initially pay for their education. A different version of the G.I. Bill was later re-instituted in 1985.

is possible that problems with readjustment could produce high levels of marital conflict that eventually erupt into violence. However, additional research is needed to investigate how the stress of re-entry might influence violent behavior.

Conclusion

Among U.S. inmates, prisoners with military experience are more likely than non-veterans to have been incarcerated for violence. The effect of veteran status on specialization in violence does not appear to be due to selection, as veteran inmates engaged in substantially less violent crime during adolescence than non-veterans. Furthermore, the effect of veteran status cannot be ascribed to combat exposure, post-traumatic stress disorder, or alcoholism. In fact, veterans with combat experience do not exhibit higher levels of specialization in violence than non-veterans. Future research should investigate the possibility that selection into combat duty is associated with versatility in offending.

Why are veterans more likely to commit violent crime than other crime? Based on the findings from the current study, it may be that the effect of veteran status reflects a greater acceptance of violent behavior among members of the armed forces. Insofar as the military socialization process rewards aggression and legitimates the use of violent force as a means of conflict resolution, military service may foster a predilection for violent forms of antisocial behavior.

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APPENDIX

Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Prison Record (Violent)	1	1.00																											
Veteran (Non-Combat)	2	0.07	1.00																										
Combat Veteran	3	0.02	-0.04	1.00																									
Early Entry	4	0.07	0.80	0.40	1.00																								
Late Entry	5	0.02	0.33	0.15	-0.04	1.00																							
Male	6	0.20	0.12	0.07	0.13	0.04	1.00																						
Black	7	0.07	-0.03	-0.03	-0.04	-0.01	0.07	1.00																					
Hispanic	8	-0.07	-0.10	-0.04	-0.10	-0.03	0.01	-0.39	1.00																				
Other race	9	0.03	0.01	0.01	0.01	0.02	-0.03	-0.20	-0.12	1.00																			
Age	10	0.02	0.24	0.17	0.26	0.13	-0.03	-0.07	-0.07	-0.01	1.00																		
Education	11	-0.06	0.15	0.12	0.16	0.11	-0.07	0.03	-0.20	0.02	0.12	1.00																	
Sexual Abuse (as minor)	12	0.04	0.01	-0.01	0.00	0.02	-0.19	-0.08	-0.03	0.03	-0.02	0.00	1.00																
Sexual Abuse (as adult)	13	-0.04	-0.03	-0.03	-0.04	-0.01	-0.37	-0.06	-0.04	0.04	0.03	0.02	-0.07	1.00															
Physical Abuse (as minor)	14	0.00	-0.02	-0.01	-0.02	-0.01	-0.15	-0.01	-0.07	0.03	0.01	0.00	0.03	0.20	1.00														
Physical Abuse (as adult)	15	0.12	0.02	-0.01	0.02	0.00	0.06	-0.05	-0.03	0.01	-0.10	-0.03	0.18	-0.02	-0.32	1.00													
High School Graduate	16	-0.08	0.20	0.12	0.21	0.11	-0.10	-0.09	-0.11	0.02	0.16	0.59	0.02	0.05	0.01	-0.05	1.00												
Draft eligible	17	0.04	0.18	0.19	0.22	0.10	0.01	-0.07	-0.04	0.00	0.70	0.08	-0.02	-0.02	-0.04	-0.04	0.10	1.00											
Welfare	18	0.07	-0.07	-0.05	-0.08	-0.03	0.01	0.19	-0.03	0.02	-0.22	-0.13	0.04	0.01	0.04	0.11	-0.19	-0.15	1.00										
Two-parent home	19	-0.03	0.07	0.05	0.08	0.03	0.00	-0.21	0.07	0.00	0.20	0.13	-0.04	-0.01	-0.02	-0.09	0.15	0.15	-0.30	1.00									
Number of siblings	20	0.04	-0.01	-0.01	-0.02	-0.02	0.02	0.14	0.11	0.02	0.11	-0.17	0.02	0.01	0.01	0.01	-0.14	0.04	0.15	-0.05	1.00								
Learning disability	21	0.04	-0.03	-0.03	-0.04	-0.01	0.02	-0.06	-0.04	0.02	-0.04	-0.13	0.07	0.04	0.03	0.08	-0.10	-0.04	0.08	-0.04	0.02	1.00							
Non-Citizen	22	-0.03	-0.01	-0.01	-0.01	0.01	-0.02	-0.07	0.10	0.06	0.03	0.04	-0.01	-0.01	-0.02	-0.01	0.05	0.03	-0.05	0.05	-0.01	-0.01	1.00						
Non-violent juvenile record	23	0.07	-0.05	-0.04	-0.06	-0.02	0.11	0.03	-0.02	0.00	-0.07	-0.09	0.00	-0.02	0.03	0.07	-0.15	-0.02	0.10	-0.09	0.02	0.05	-0.02	1.00					
Violent juvenile record	24	0.08	-0.05	-0.02	-0.05	-0.02	0.08	0.04	0.01	0.01	-0.10	-0.04	0.00	-0.03	0.02	0.06	-0.09	-0.05	0.07	-0.06	0.01	0.02	-0.01	-0.07	1.00				
Violent peers	25	0.14	-0.05	-0.04	-0.06	-0.02	0.09	0.11	0.00	0.00	-0.18	-0.06	0.02	-0.01	0.08	0.11	-0.11	-0.10	0.16	-0.12	0.02	0.02	-0.02	0.12	0.15	1.00			
Juvenile probation record	26	0.07	-0.08	-0.05	-0.08	-0.05	0.14	0.01	-0.01	0.01	-0.18	-0.11	-0.01	-0.02	0.03	0.10	-0.17	-0.10	0.14	-0.10	0.01	0.07	-0.03	0.31	0.21	0.18	1.00		
CAGE score	27	0.03	0.05	0.00	0.05	0.00	0.02	-0.11	-0.05	0.04	0.06	-0.04	0.04	0.07	0.14	0.04	-0.01	0.00	0.03	-0.01	0.01	0.05	-0.04	0.03	0.01	0.07	0.06	1.00	
PTSD	28	0.03	0.01	0.10	0.06	0.01	-0.15	-0.07	-0.04	0.04	0.02	0.04	0.15	0.17	0.08	0.06	0.05	0.00	0.01	-0.02	-0.01	0.10	-0.01	0.00	0.00	0.01	0.01	0.07	1.00

Table 5: Logged Odds for Logistic Regression (N = 18,124)

Variable	
Early (Non-Combat)	0.39***
Early (Combat)	0.03
Late (Non-Combat)	0.15
Late (Combat)	0.10

* = $p < 0.05$

** = $p < 0.01$

*** = $p < 0.001$

Note: Coefficients from full model.
Controls not shown.

Table 6: Logged Odds for Logistic Regression (N = 18,124)

Variable	
Army	0.30**
Navy	0.35*
Marines	0.37*
Air Force	0.45*
Other	1.14***

* = $p < 0.05$

** = $p < 0.01$

*** = $p < 0.001$

Note: Coefficients from full model.
Controls not shown.

Table 7: Logged Odds for Logistic Regression (N = 18,124)

Variable	
Peace Time	0.27**
WWII	0.84
Korean War	0.86*
Vietnam War	0.23*
Gulf War	-0.17
Iraq War	0.78

* = $p < 0.05$

** = $p < 0.01$

*** = $p < 0.001$

Note: Coefficients from full model.
Controls not shown.