ABSTRACT

Title of Dissertation: A LIFE COURSE ANALYSIS OF THE RELATIONSHIP BETWEEN MILITARY SERVICE AND CRIMINAL BEHAVIOR

Leana Cristine Allen, Doctor of Philosophy, 2000

Dissertation Directed By: Professor John H. Laub
Department of Criminology and Criminal Justice

Throughout U.S. history, the military has served as one of the largest employers and educators of young men and women. As such, it has had a great influence in the lives of a large proportion of the U.S. population. Despite the potential impact of military service in later life, little research attention has focused on this topic, particularly in criminology. The few studies that have examined the relationship between military service and criminal behavior tend to have ignored pre-military characteristics, and results vary depending on the time period during which the sample served in the military. This study applies a life course framework to the question of how military service influences later criminal behavior. The main purpose of this research is to determine whether military service changes existing trajectories of criminal behavior and/or whether the military provides another setting for the continuation of pre-military behavior patterns. Other important considerations include selection into the military, the

timing of military service in an individual's life, and the historical context of service. For example, do those who enter the military at an earlier age experience greater change in criminal behavior than those who enter later in life? Additionally, does the influence of military service on criminal behavior differ by historical context?

To address these questions, this study uses four data sets; three birth cohorts (1942, 1945, and 1949) and the National Longitudinal Survey of Youth. Men in these samples served during different historical periods from the beginning of the Vietnam War to the early period of the all-volunteer force. Statistical methods were used to account for potential differences in selection and the presence of unobserved heterogeneity. Results suggest that there is an important influence of military service on later criminal behavior, but the specific direction of the effect depends on the historical period in which service occurred. In particular, serving in the military during the Vietnam era was related to reduced offending, and service during the volunteer era was related to increased offending. These results were significant even after controlling for race, education, socioeconomic status, age, and prior criminal behavior patterns.

A LIFE COURSE ANALYSIS OF THE RELATIONSHIP BETWEEN MILITARY SERVICE AND CRIMINAL BEHAVIOR

by

Leana Cristine Allen

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Advisory Committee:

Professor John H. Laub, Chair/Advisor
Professor Doris L. MacKenzie
Professor Raymond Paternoster
Professor David Segal
Assistant Professor Robert Brame

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TABLE OF CONTENTS

LIST OF TABLES

TABLE OF FIGURES

Chapter 1. Introduction

The military currently employs about 1.5 million men and women on active duty (Department of Defense, 1999). In addition to the number of people actively serving, the American population includes nearly 25.6 million veterans, and almost 80 percent of those veterans have wartime experience (Department of Veterans Affairs, 1998). Throughout history, the military has been one of the largest employers and educators of young adults (Evans, Felson, and Land, 1978; Sampson and Laub, 1996), and it has played an important role in the lives of a large proportion of the population. Elder and Hareven (1993) describe the military as a setting for dramatic life change because it draws large numbers of individuals from diverse communities, separating them from civilian society and from the influence of family and friends. For some individuals, the military may offer the opportunity to escape from disadvantaged environments by providing job training and educational opportunities. For others, training and combat experiences may produce psychological and behavioral dysfunction. The change engendered by military service may have effects in a variety of domains, including family, education, employment, and criminal behavior.

As the large number of veterans in the population have entered later life stages, Elder and Clipp (1988) note that "surprisingly little is known about the short-term and enduring influences of military experience" (p. 133). Very few researchers have examined the influence of military service on behavior, especially criminal behavior. Criminological theory and research suggest two possible relationships between military experience and offending. One theoretical explanation focuses on social selection (also referred to as population heterogeneity). Social selection reflects the idea that some

individuals develop a greater likelihood to commit crime during childhood, and this propensity remains stable throughout the life course (Nagin and Paternoster, 1991; Wright, Caspi, Moffitt, and Silva, 1999). With reference to military service, the social selection argument would suggest that serving in the military does not change behavior. Rather, it provides a different environment for people to display their propensity. On the other hand, a social causation (or state dependence) explanation would argue that experiences throughout life change an individual's propensity to commit crime (Nagin and Paternoster, 1991; Wright et al., 1999). This argument would suggest that serving in the military may produce genuine behavioral change. Some evidence also suggests that neither perspective completely accounts for criminal behavior and that these two discrete explanations may operate simultaneously (Sampson and Laub, 1993; Wright et al., 1999).

While limited evidence in favor of each of these positions exists, an overview of the available literature concerning military service reveals that neither explanation is consistently supported. Some authors have found that post-service criminal behavior is mainly due to a predisposition to criminality, suggesting a social selection process (see Hakeem, 1946; Nace, O'Brien, Mintz, Beam, and Meyers, 1978; Worthington, 1978), and others have found support for a social causation argument. Among those finding an influence of military service on behavior, some research suggests that individuals with military experience are more likely to commit crimes (see Boulanger, 1986; Cronin, 1995; Dubanoski and McIntosh, 1984). There are also studies that find military service to be beneficial in later life (see Elder and Hareven, 1993; Sampson and Laub, 1996). The inconsistency of these findings may be due to a number of factors, including

whether the authors were able to capture characteristics that existed prior to entering the military (e.g., prior antisocial behavior or criminal record) or the nature of the military experience (e.g., combat or noncombat). Additionally, the type of influence that military service has on behavior appears to vary over time. Whereas some research indicates that military service during World War II had a beneficial influence in individual lives (e.g., Sampson and Laub, 1993, 1996), service during later times may have had a detrimental impact (e.g., Boulanger, 1986; Laufer, Yager, Frey-Wouters, and Donnellan, 1981).

Very little research has looked at the relationship between military service and criminal behavior in the context of an individual's life. Most studies have involved cross-sectional analyses, often with little consideration of an individual's experiences or behavior prior to entering the military. For this reason, it is difficult to determine whether social selection, social causation, or both processes account for criminal behavior by those with military experience. The issues involved in the study of military experience and criminal behavior suggest the need to turn to a life course perspective. The life course framework allows an analysis of the influence of life events both over the course of an individual's life as well as within and across the changing historical context (Elder, Modell, and Parke, 1993). The life course perspective also necessitates a longitudinal, dynamic analysis (George, 1993). The use of longitudinal data, including information about behavior during childhood or adolescence, while in military service, and after leaving the military, allows a better consideration of whether an underlying criminal predisposition exists and/or whether life events influence behavior.

The life course perspective also points to the importance of the timing of life events and the historical context of those events (Elder and Caspi, 1990). Elder and

Hareven (1993) note that the influence of a particular event depends on the life stage or age at which it is experienced. Some researchers argue that certain life events are ordered according to social norms about age-appropriate roles and behavior. Disorder in life transitions or the occurrence of transitions at inappropriate ages may have negative effects on later life outcomes. For example, a number of studies find that those who enter the military later in life, after the establishment of social ties to work and family, experience greater interruptions in their lives (Elder and Hareven, 1993; Pavalko and Elder, 1990; Sampson and Laub, 1996). In contrast, those who enter early are positioned to take advantage of the benefits of military service without suffering great disruption to their life course. Because of this, any analysis of the influence of military service on behavior must consider the timing of service in an individual's life.

In addition to timing in individual lives, life course theory also focuses on the timing of events within a particular historical and social context. Over the past century, the military establishment has undergone sweeping change, from peace to war-time mobilization, from racial segregation through integration, from a male-only force to the inclusion of females even in combat roles. Public perceptions, acceptance, and approval of the military and of military service have also changed over the years. Because of this, the effect of military service in the lives of individuals may have also changed. For example, Cohen and colleagues (1995) note that research results indicate a beneficial effect of military experience on education for veterans prior to Vietnam, but the effect becomes negative for those who served during or after Vietnam. Teachman and Call (1996) find a similar effect on earnings for a cohort of Vietnam veterans. Angrist and Kreuger (1994) also report that while World War II veterans have higher earnings and

lower unemployment than nonveterans, Vietnam veterans suffer economic disadvantages compared to their nonveteran peers. This difference in the influence of military service may also occur with criminal behavior as reflected in the inconsistent pattern of results from previous research examining the relationship between military experience and criminal behavior. During the World War II era, when individual service and the military as an institution were generally respected (Moskos, 1976), research indicates that men may have used military service as a means of escape from disadvantage and delinquency (e.g., Sampson and Laub, 1993, 1996). However, during the Vietnam War, when military service was unpopular and was "forced" on a large number of men and actively avoided by many (Moskos, 1976; Smith, 1971), veterans appeared more likely to become involved in criminal behavior (e.g., Boulanger, 1986; Laufer et al., 1981; Yager, Laufer, and Gallops, 1984). Thus, any analysis of the influence of military service on criminal behavior must also account for the historical and social context of that service.

This study looks to the life course perspective to help guide an examination of the relationship between military experience and criminal behavior at different stages of an individual's life and throughout history. To examine whether crime by those with military experience is due to a criminal predisposition or to some influence of military service or to both processes, this study will examine longitudinal data following both military and non-military individuals over their life course, from childhood to adulthood. Additionally, the data represent multiple cohorts of individuals who were born during different time periods and who served in the military in very different historical times. These analyses will focus on military service in the context of

individual lives as well as the differing influence of the military over time. This type of analysis based on a life course perspective will provide a better understanding of the relationship between military experience and criminal behavior.

Chapter 2. Military Service and Criminal Behavior

Research examining the influence of military service on criminal behavior has revealed no consistent effect. Some studies find a beneficial impact of military service, others find a detrimental influence, and still others report no effect. The question then, is what accounts for these different results. Criminology has generally turned to two possible explanations, social selection (or population heterogeneity) and social causation (or state dependence). The social selection/population heterogeneity position generally argues that military service will have no causal influence on criminal behavior. The social causation/state dependence position would argue that military service may change an individual's criminal propensity and behavior.

The social selection (Wright et al., 1999) or population heterogeneity (Nagin and Paternoster, 1991) position suggests that behavior at any point in time results from an underlying propensity to engage in that behavior. Some researchers argue that this propensity is established early in life and is either stable or highly correlated over time (Nagin and Paternoster, 1991). Since this propensity is stable throughout life, individuals should also display continuity in behavior over time. In support of this position, a large body of research finds that antisocial, aggressive, or criminal behavior is remarkably stable throughout an individual's life, beginning in childhood and continuing through the life course (Gottfredson and Hirschi, 1990). According to the social selection argument, this continuity should also include the period of time during military service. For example, Sampson and Laub (1993) find that compared to nondelinquents, delinquents are more likely to be involved in problem behavior during a variety of periods throughout life, including military service.

The social selection or population heterogeneity explanation, therefore, suggests that military service itself has no impact on behavior. Rather, individuals who enter the military bring with them whatever underlying propensity or predisposition for criminal behavior that developed early in life. The military is just another setting for propensity to be displayed. Thus, according to this argument, a higher rate of crime by those with military experience is due to a higher concentration of individuals with a high propensity for crime. For example, Evans and colleagues (1978) contend that crime is likely to be a problem for the military establishment, because military service attracts those segments of society that tend to have higher rates of crime in the civilian world as well. Historically, those who enter the military, particularly enlisted personnel, are mostly young, single, minimally educated males from the lower or lower-middle class (Bryant, 1979). Additionally, because of the inherently violent nature and purpose of the military, it may attract those young males who are more aggressive than their peers (Bryant, 1979). Gimbel and Booth (1996) suggest that men with a biological or behavioral predisposition to aggression were more likely to be selected for combat assignments during Vietnam. An alternative selection possibility is that the military may attract those with a lower propensity to commit crime because of its structured and disciplined environment. This may be especially true during the all-volunteer era in which individuals choose military service rather than being involuntarily drafted. In this case, there may be a lower proportion of delinquent individuals in the military compared to the general population.

In contrast to the social selection position, some view criminal behavior as a result of dynamic factors operating throughout the life course (Sampson and Laub,

1993). This social causation or state dependence position suggests that an individual's criminal propensity may change throughout life as a result of certain events or transitions (Nagin and Paternoster, 1991; Wright et al., 1999). Events, such as military service, may create a turning point in the life course of some individuals. From this perspective, military experience may have either a beneficial or a detrimental influence on an individual's criminal behavior. Military service may, as Sampson and Laub (1993) find, serve as a settling influence, strengthening an individual's bonds and decreasing criminal tendencies. For example, the bridging hypothesis, as proposed by Browning and colleagues (1973), suggests that the military provides a bridge between adolescent and adult roles, during which individuals learn important skills for adult life. This bridge may be especially important for minorities and women who may not otherwise have the opportunity to gain the skills necessary for later life (Browning et al., 1973; Gade, Lakhani, and Kimmel, 1991). In contrast, the military may increase an individual's criminal propensity through a variety of mechanisms, including the strain of military life, the aggressive nature of military culture, or combat training and experience (Bohannon, Drosser, and Lindley, 1995; Bryant, 1979).

Typically, criminological research has pitted these two explanations against each other in an attempt to provide support for one process over the other. Recently, however, Wright and colleagues (1999) suggest that this method may be inappropriate and that both processes may be occurring simultaneously. For example, their research finds support for both causation and selection in that social bonds in part reflect an underlying propensity for criminal behavior and in part cause crime. Similarly, Sampson and Laub (1993) find that for some individuals there is continuity in criminal

behavior throughout the time spent in the military and for others the military serves as a beneficial factor in the life course. They conclude that "it is not inconsistent that the military can serve to turn some men's lives around, even as it disrupts other men's lives or provides yet another setting for some men to continue their deviant behavior" (p. 222). This suggests that research should acknowledge and examine the possibility that both selection and causation processes are at work both for different groups of individuals as well as within individual lives.

The social selection and social causation processes as they relate to criminal behavior have received much attention. However, the process relating to military service has yet to be adequately addressed. Few studies have examined the influence of military service on behavior, and most of this research has not looked at crime. Of those authors who have tried to determine the influence of military service on criminal or violent behavior, many do not attempt to distinguish behavior that appears to be due to a predisposition from behavior resulting from military experience. Very few studies have included a measure of problem behavior or criminal record prior to entering the military. The best studies, in terms of distinguishing social selection from social causation, have looked at military service in a life course context, including behavior across an individual's life. While these studies tend to find a beneficial effect of military experience, other research produces contradictory results.

In addition to the inability of studies to conclusively answer the question of selection or causation or both, research results from studies examining the influence of military experience on criminal behavior tend to vary depending on the time period during which the subjects served (See Appendix A). Most studies using samples of men

who served during World War II find that military service either has no relationship to or has a beneficial influence on later criminal behavior (see Hakeem, 1946, Sampson and Laub, 1996). Those studies of individuals who served during or after the Vietnam War have tended to find a criminogenic effect of the military, particularly in terms of violent behavior (see Allen, 1998; Boulanger, 1986; Cronin, 1995; Dubanoski and McIntosh, 1984). Though the failure to include controls for pre-military behavior is a pervasive problem in the research, there does appear to be a relationship between historical period of service and the impact of the military on later life outcomes. These studies suggest that while service prior to Vietnam had a beneficial impact on behavior and other outcomes, military experience during more recent times may increase criminal behavior.

World War II and Korea

In general, studies using samples of individuals who served during World War II or Korea concluded that the amount of crime in the military during this time was much less than that in civilian society (MacCormick and Evjen, 1946). At its peak strength during World War II, less than one percent of the military population was incarcerated for offenses committed while in military service, a slightly lower percentage than the number incarcerated in the civilian population (MacCormick and Evjen, 1946). During this period, some men with criminal records were allowed to serve in the military, and Shattuck (1945) found that these men performed just as well as soldiers without a criminal background. More specifically, a follow-up of individuals released from Illinois penitentiaries to serve during the war showed that they experienced generally

satisfactory adjustment to the military lifestyle (Mattick, 1954; McCallum, 1946). In fact, one study found that the recidivism rate for men paroled into the Army during this time was less than the rate for those paroled into civilian life (Bryant, 1979).

Several studies report that between 70 and 95 percent of military personnel confined during this period of time had committed purely military offenses, such as absence without leave (Boshes and Hermann, 1947; MacCormick and Evjen, 1946). On the one hand, this suggests that a large proportion of those in confinement were not criminally inclined. However, these offenses may also be an indication of an underlying propensity. MacCormick and Evjen (1946) found that nearly 60 percent of military prisoners they surveyed had at least one prior arrest, and one third of the prisoners had three or more prior arrests as civilians. These studies tend to suggest that offenses committed during service were a continuation of pre-service behavior. Additionally, in a longitudinal study of delinquents and nondelinquents, Sampson and Laub (1993) found that individuals who served during this period either continued their previous behavior patterns or experienced positive change in their life course.

In one of the more detailed studies conducted in the 1940s, Hakeem (1946) used a sample of new admissions to state prisons to compare men who had served in the military during World War II to men who had no military experience. This comparison focused on prior criminal record and current offense information. Hakeem (1946) found that the majority of incarcerated men with military experience had a criminal record prior to entering the military, and this group looked similar to the group of incarcerated men who had not served in the military. This result suggests that criminal behavior after military service was, for the most part, a continuation of behavior patterns existing

before the men entered the military. Men with and without military experience were also similar in terms of the type of offense(s) they had committed that resulted in incarceration. Incarcerated men who had served during World War II were no more likely to have committed violent or property crimes compared to men with no military experience.

The two most sophisticated studies of men who were eligible to serve during World War II indicated that military service did not contribute to later criminal behavior (Hakeem, 1946; Sampson and Laub, 1993). Other, more descriptive studies, provided support for this argument (see Boshes and Hermann, 1947; MacCormick and Evjen, 1946). The majority of research conducted with men who served during this time period identified benefits associated with military service. In general, criminal behavior among military individuals was either no different or somewhat less likely compared to the non-military population (See Appendix A). Service during this time period may provide another arena for the continuation of previous criminal behavior for those with a predisposition to delinquency. Additionally, if there was an impact of military service on criminal behavior during this period, it appears to have been in the direction of beneficial life change (Sampson and Laub, 1993).

Vietnam

While only a few studies have examined the relationship between military service and criminal behavior during World War II, a great deal of research interest has focused on Vietnam veterans (Moskos, 1976). Some researchers assumed that veterans would be alienated from conventional norms and prone to violence because of their

military experience, and others believed that Vietnam veterans would experience no special problems because of their service. Results of research with samples of individuals who served during the Vietnam War reflect this confusion in the potential influence of military service, providing somewhat mixed results. In general, however, these studies found no beneficial influence of military service, and in some cases, there was evidence of a detrimental effect (See Appendix A).

Research during this time period has looked at a number of factors, including attitudinal changes in those who enter military service, combat experience, and the role of post-traumatic stress disorder. In a study of servicemen during the early 1970s, most respondents reported that they had been active and aggressive since childhood and had not experienced any change in their attitudes, values, or behavior as a result of their training (Cockerham, 1973). Other studies reported that individuals who served in the military during the Vietnam War, particularly in combat, were more likely to develop post-traumatic stress disorder, which may lead to more aggressive and violent behavior. Shaw and colleagues (1987) identified the features of PTSD as including explosive, aggressive reactions to certain situations. The authors also reported that combat stress was related to the development of PTSD and possibly related to aggressive behavior among veterans (Shaw et al., 1987).

In addition to this research, some studies have looked specifically at the relationship between military experience, especially combat experience, and later violent behavior among veterans. Boulanger (1986) reported that even more than ten years after military service, combat veterans were more violent than noncombat veterans, having been involved in more fights and having used weapons more often.

Studies of criminal behavior as measured by arrest rates also found that veterans with combat experience tended to commit more violent crimes than noncombat veterans (Boulanger, 1986; Laufer et al., 1981; Resnick, Foy, Donohoe, and Miller, 1989; Penk, Robinowitz, Roberts, Patterson, Dolan, and Atkins, 1981; Yager et al., 1984). In a longitudinal study of individuals who had committed index or serious offenses, Rand (1987) found that a large majority of men who served in Vietnam did not have an official criminal record until after they had entered the military. Yesavage (1983) stated that "the violent reactions of Vietnam veterans appear to be something learned in Vietnam rather than long-standing personality traits" (p. 384).

The apparent criminogenic effect of military service during the Vietnam War on later life outcomes may be due to a variety of factors, one of which may be the extensive use of drugs by servicemen during this period. Stanton (1976) noted that, in addition to alcohol, both marijuana and heroin were readily available, inexpensive, and very potent in southeast Asia during the war, and large numbers of servicemen were using all three. In 1971, therapists at a clinic in the San Francisco area noted the emergence of the "G.I. Junkie", men returning from Vietnam addicted to heroin (Gay, Winkler, and Newmeyer, 1971). Politicians and the general public during this time were concerned that men were being exposed to drugs for the first time when they arrived in Vietnam. However, research indicated that use and addiction in Vietnam were predicted by pre-service drug use and other behavior problems, including arrests (Goodwin, Davis, and Robins, 1975; Robins, 1994; Robins, Davis, and Goodwin, 1974; Robins, Helzer, and Davis, 1975). Although drug use among servicemen increased near the end of the war, Stanton (1976) suggests that this trend mirrored a similar trend in the U.S.

Thus, this apparent increase may merely be a result of the induction of more men who had begun to use drugs prior to service.

Despite suggestions that drug use among servicemen in Vietnam did not differ from drug use in the general population, some research has indicated a relationship between military service, drug use, and adjustment problems later in life (Robins et al., 1975; Robins, 1993). For example, Stanton (1976) suggests that service in Vietnam may have resulted in unemployment and other negative outcomes, because the American public came to view military service as synonymous with drug abuse. Additionally, Robins and colleagues (1975) found that the relationship between drug use (both before and during Vietnam) and later problems (e.g., unemployment, divorce, and arrests) was contingent on the continuation of drug use upon return from overseas. While these results may help to explain the negative effect of military service during this time for some individuals, Robins and colleagues (1974) note that only a small proportion of veterans continued their drug use after military service.

In general, research looking at samples of individuals who served in the military during the Vietnam War era tends to have found a detrimental effect of military and combat experience on behavior (See Appendix A). In particular, these studies found that Vietnam veterans were more likely to engage in criminal behavior, especially violence, over long periods of time after their service compared to individuals who did not serve in the military. This appears to be especially true for veterans with combat experience or with a history of drug use before, during, and after their service. However, some of this research is limited in terms of generalizability, focusing on institutionalized veterans who may be more likely to engage in problem behavior. As Yesavage (1983)

notes, the question of whether this criminal behavior is the result of combat experiences, drug use, or predisposing factors remains unanswered.

Post-Vietnam

Little research has looked at the influence of military service in the period of time since the Vietnam War. In a study of high school seniors, Bachman and colleagues (1999) found that drug use decreased more among people who entered the military compared to those going to college or starting a full-time job. This study suggested a potentially beneficial influence of military service, but most studies of men who served during this time indicate increases in criminal behavior, particularly violence (See Appendix A). Though not looking specifically at offending, Stretch and colleagues (1996) found that soldiers deployed during the Persian Gulf War (1991) experienced greater feelings of hostility than individuals in the civilian population. However, the authors point to the possibility that individuals with certain problematic psychological traits are more likely to serve in the military.

The difficulty in differentiating a causal influence of military service from the self-selection of aggressive or criminal individuals into the military is apparent in much of the research in this area. However, one study of individuals incarcerated in state and federal correctional facilities during the early 1990s notes that inmates with military experience tended to have their first officially recorded offense after they had entered the military (Allen, 1998). Additionally, controlling for predisposing factors (as represented by age at first arrest), this study found that individuals with military experience were more likely to have been incarcerated for a violent offense. In a similar study in the late 1990's, Mumola (2000) found that veterans were less likely to have a

prior criminal record but were more likely to have committed a violent offense. This suggests that criminal behavior among individuals with military experience was not necessarily due to a criminal predisposition or self-selection.

Most studies of individuals with military experience after the Vietnam War have tended to focus on domestic violence. Some studies that only looked at military couples reported that the rate of spousal or family violence among military families is higher than the rate for civilian families reported in other studies of domestic violence (Bohannon et al., 1995; Dubanoski and McIntosh, 1984). Bohannon and colleagues (1995) have suggested that these higher rates of violence may be due to the stresses of a military lifestyle, which lead to conflict within the home and violent methods of resolving that conflict. In a study directly comparing military and civilian families, Cronin (1995) also found that spousal violence was more frequent among military couples. Despite the apparent influence of military service on violence, Cronin (1995) also noted that these studies have difficulty determining whether the military environment leads to violence or whether the military attracts individuals who are predisposed to violence.

Though research with samples of individuals who served in the military after the Vietnam War were relatively consistent in demonstrating a negative effect of military service on criminal behavior, the overall picture across all time periods is inconclusive (See Appendix A). As demonstrated by this review, it is difficult to draw conclusions from the extant literature about the influence of military service on criminal behavior. Nearly all of these studies, regardless of the type of sample, are inadequate for the purpose of distinguishing whether there is a causal effect of military service on behavior

or whether the military attracts those predisposed to criminal or violent behavior. Many authors have failed to consider behavior prior to entering the military in their analyses (Yager, 1976). Ignoring the possibility of predisposing characteristics creates difficulty in conclusively determining whether criminal behavior is the result of military training or a predisposition to criminality, and this issue is unlikely to be resolved with cross-sectional studies. Sampson and Laub (1996) suggest that an examination of the influence of military service in the life course requires the use of longitudinal analysis, including factors related to the selection into, behavior and experience during, discharge from, and long-term behavior after military service. Very little research, however, has looked at any effects of military service over the life course, especially in relation to criminal behavior.

In addition to the failure to consider pre-military behavior, research results also vary depending on the type of sample used (See Appendix A). Most studies of men who served during or shortly after World War II found either no evidence that military experience increased the likelihood of criminal behavior or found a beneficial impact of military service. However, research conducted with men who served during or after the Vietnam War has tended to find a significant detrimental effect of military experience. This trend in research results suggests that the influence of military service may have changed over time, depending on larger social or historical forces. The problems with existing research point to the need for a life course framework, which would allow researchers to put military service in the context of an individual's life as well as in the context of historical and social change.

Chapter 3. Life Course Theory

The difficulty in deriving conclusions from the existing research on military experience suggests that a life course perspective, which takes into account the stability and change of behavior throughout life and the changing historical and social context, may help to provide an answer. Compared to the methods in most previous studies on this subject, life course theory provides a more appropriate method of determining whether the military attracts individuals predisposed to criminal behavior, whether the military exerts some beneficial or detrimental influence in individual lives, or whether both processes are occurring. Additionally, the life course framework recognizes that the influence of life events on behavior may differ depending on the historical time and place in which individuals are located.

Elder (1995) describes the life course as a series of interrelated trajectories and transitions. Trajectories are long-term patterns or sequences of behavior that continue over long periods of an individual's life, like career or crime trajectories (Elder et al., 1993; Sampson and Laub, 1992). Transitions, or short-term changes in the life course, are marked by specific life events and may or may not alter these trajectories (Sampson and Laub, 1992). There are many transitions that may occur in the life course, including graduating from school, starting a first job, getting married, or entering the military. While some transitions involve little change in social roles, others, like joining the military, place individuals in a new social context with new roles and responsibilities (Elder et al., 1993). Depending on how an individual responds to these changes, certain transitions or events in the life course may be viewed as turning points that alter trajectories. Clausen (1998) defines a turning point as a time that an individual's life

changed direction, including changes in attitudes or beliefs, personal development, or the reorientation of priorities or activities. The life course perspective tries to understand the consequences of transitions and turning points for other transitions and for later life outcomes.

Elder (1999, 1998, 1995; Elder and Caspi, 1990) identifies several important principles of the life course perspective; the principle of linked lives, the principle of human agency, the principle of timing in lives, and the principle of historical time and place. The concept of linked lives suggests that people's lives are interdependent through a variety of shared relationships (Elder, 1999, 1998). Thus, events in one person's life may have consequences both in their own later life as well as in other people's lives. The principle of human agency reflects the role of choice in the life course. Within the opportunities and constraints provided by the historical and social context of life, individuals are able to choose their actions and directions (Elder, 1999, 1995). The two principles most relevant to the study of military service in the life course are those of timing in lives and historical time and place.

Elder (1999) comments that the influence of transitions or life events depends on when they occur in the life course (the principle of timing in lives). Hogan and Astone (1986) contend that a variety of events mark the transition to adulthood, including the completion of education, full time employment, marriage, and possibly military service. These and other events tend to be ordered by societal norms about what behaviors are appropriate or inappropriate at different periods of life. Therefore, life events may be defined as "on-time" or "off-time" depending on the age at which an individual makes those transitions. Additionally, a series of events may occur in an ordered or disordered

pattern. For example, Call and Teachman (1996) argue that the normative sequence of events in the transition to adulthood involves the completion of school, entrance into a full time job, and marriage. Transitions that occur on-time (at an appropriate age) or that occur in a normative sequence may be beneficial in the life course. However, some authors argue that because social institutions are strongly age-graded, individuals may experience difficulty in attempting to match off-time transitions to successful progress through social institutions such as schools (Call and Teachman, 1996). The lack of fit between the transitions that actually occur in an individual's life and what is expected by social institutions may produce negative consequences for the life course and later events and outcomes. Thus, transitions may produce beneficial or detrimental effects by being in or out of line with societal norms and expectations.

The historical context of life events is also an important consideration in the life course framework (Elder, 1999). Life course researchers argue that individual lives are inherently tied to and shaped by the historical context of events (Mayer and Tuma, 1990). Elder and Caspi (1990) note that each individual's unique behavior is partially reflective of the unique social and historical world in which that person lives as determined by when they were born. For example, many people alive during the Great Depression experienced great economic hardship, whereas those born during World War II may have heard stories about the Depression but did not experience it first-hand. Since social behavior occurs in particular times and places, Elder and colleagues (1993) note the importance of accounting for historical factors in the study of development. Laub and Sampson (1995) also suggest that individual behavior can only be understood in the specific historical context in which it occurs. Likewise, the influence of military

service on behavior can only be understood in its specific historical context. Though the life course perspective appears to have much to offer to the study of events in individual lives, few studies have used a longitudinal, life course framework to examine the relationship between military service and criminal behavior over the life course, and even fewer have considered the role of historical context.

Military Service in Individual Lives

In a life course perspective, military service is an important life event that typically occurs during the transition to adulthood. For some individuals, the military may merely provide another setting for the continuation of previous behavior patterns. In this case, though entering the military is a transition, it does not change the trajectory of behavior. For others, military service, especially if it is compulsory, may function as a turning point by altering trajectories in either a beneficial or a detrimental way (Call and Teachman, 1996). Some individuals may view the military as an opportunity for achievement and as a way to escape disadvantaged backgrounds. In other cases, military service may disrupt life course trajectories, resulting in negative consequences, possibly including problems with marriages or jobs, the stress of service or combat, and increased aggression.

Many factors may be responsible for any turning point in the life course engendered by military service. Hollingshead (1946) contends that recruits enter military service with a civilian reference and a set of values incompatible with military objectives. For this reason, entry into the military involves a reeducation process in which individuals learn military norms and the military lifestyle. Elder (1999) describes

three possible reasons that the military may have a beneficial influence in life; the military encourages social independence, provides time away from the pressures of the transition to adulthood, and allows for a broader range of perspectives and experiences. Browning and colleagues (1973) also suggest that the military may provide a beneficial environment, especially for disadvantaged groups like women and minorities. They contend that the military provides job training and other educational benefits that may not be as readily accessible to these groups in civilian society.

Conversely, some researchers suggest that military service may have a detrimental influence in life. Possible reasons for this negative effect include the interruption of existing social roles (Sampson and Laub, 1996), teaching individuals to solve conflict aggressively and with weapons (Hakeem, 1946), and introducing stresses unique to the military, such as separation from family (Bohannon et al., 1995). Some men must also serve in combat situations, which could result in later problems like post-traumatic stress disorder (Shaw et al., 1987). Some authors suggest that individuals in the military who are trained in the use of weapons and in hand-to-hand combat may respond aggressively or violently to conflict or provocation outside of the military environment (Bryant, 1979; Dubanoski and McIntosh, 1984; Hakeem, 1946). Additionally, Cohen and colleagues (1992) note that the benefits associated with military service (and possibly responsible for its beneficial effect) have declined over time, possibly resulting in a declining or negative effect of military experience. Little research has examined the influence of military service in a life course framework, and most of that research has included factors other than criminal behavior, such as marriage, education, and employment.

Marriage

Several studies have examined the impact of military service on marital relationships during World War II and the Vietnam War. After World War II, the divorce rate for individuals who served in the military increased dramatically (Elder, 1999; Pavalko and Elder, 1990). A closer look at those with military experience reveals that the likelihood of divorce differed depending on when that service occurred in an individual's life (Elder, 1987). Those who entered at an early age tended to delay marriage until during or after their service (Elder and Hareven, 1993). For these individuals, there was little disruption in their lives. On the other hand, those who entered later in life were more likely to have already married, and these men experienced a greater disruption in their social relationships (Elder, 1987). Pavalko and Elder (1990) also note that couples that married prior to military mobilization did not expect the separation and stress associated with military service during wartime. For this reason, service may have created more difficulties in these relationships, resulting in a greater likelihood of divorce. Hogan (1978) also notes that while military service increased the likelihood of a disordered transition to adulthood for all individuals, this was especially true for those who served in the military during World War II. This increased likelihood of disorder in life events was the mechanism which increased the likelihood of divorce for individuals who served in the military (Hogan, 1978).

Though military service appears to have increased marital instability for some individuals during World War II, Call and Teachman (1996) argue that the same is not true for service during the Vietnam War. In a longitudinal study of men living in the state of Washington and in the high school classes of 1966 and 1967, these authors

found that service during the Vietnam War did not significantly alter the process of family formation (Call and Teachman, 1996). However, military service in certain circumstances did influence the probability that a first marriage ended in divorce. Divorce rates among men who married prior to entering the military were higher than for those who waited until during or after their service to marry. Call and Teachman (1996) argue that the difference in results between this study and studies of World War II veterans may be due to the fact that service in Vietnam typically occurred early in the life course prior to the establishment of marital and family ties. However, service in World War II occurred later for some individuals and may have disrupted already established roles.

Education

Education and job training are two aspects of military service that may provide a beneficial influence in the life course. Though Sharp and Krasnesor (1968) found that individuals who entered the military were more educationally disadvantaged than those who did not serve, the educational benefits associated with military service may reduce this disadvantage. For example, at the end of World War II, the GI Bill offered servicemen a variety of benefits, including money for education, on-the-job training, and home loans, to enhance their readjustment to the civilian world (Cohen et al., 1992). Elder and Caspi (1990) report that the military increased educational achievement for some men who served during World War II. Sampson and Laub (1996) also demonstrated the relationship between military service and educational achievement among men who served during World War II and the Korean War. However, Elder

(1987) argues that the beneficial influence of military service depends on its timing in an individual's life. For example, the G. I. Bill during World War II provided more opportunity for those who entered the military at an early age, because those men were better able to take advantage of the educational benefits and to complete their education after their service. Late entrants were more likely to experience disruptions in their education and derived less advantage from the available benefits (Elder, 1987).

Research has also demonstrated that the influence of military experience on education depends on the historical period. Sampson and Laub (1996) and Elder and Caspi (1990) suggest that service during World War II provided a number of benefits to servicemen, especially educational opportunities and vocational training. While these benefits appear beneficial in the lives of men who served in the military during World War II and Korea, Cohen and colleagues (1995) report that these benefits declined during and after the Vietnam War. These authors found that individuals who served both during Vietnam and during the all-volunteer era achieved less education than their nonveteran peers (see also Xie, 1992). Thus, timing in individual lives and in history are important predictors of educational achievement among servicemen.

Employment

Several authors have suggested that military service, because it occurs during the transition to adulthood, may influence later career development and occupational achievement. Looking at the Terman sample of highly able youth (born between 1908 and 1910, serving in the military prior to World War II), Elder (1998) reports that military service had important consequences for later success. This result is also

apparent in studies of men who served during World War II and the Korean War. In studies of the Oakland Growth sample (average birth year of 1920) and the Berkeley Guidance sample (average birth year of 1928), Elder (1998, 1987) found that the military served as an opportunity to escape from the disadvantage of growing up during the Great Depression. Additionally, the timing of military service was an important determinant of its influence, such that those who entered early, soon after high school, were more successful after leaving the military (Elder, 1987). Sampson and Laub (1996) also looked at a group of men who served during or soon after World War II and found that military service increased later socioeconomic achievement primarily through G. I. Bill training.

Studies examining the relationship between military experience and occupational achievement tend to find that the benefits of military service are greatest for those who entered the military early in life. For those who entered later in life, military service tended to disrupt established career patterns and later socioeconomic achievement (Elder, 1987; Sampson and Laub, 1996). During the World War II era, the amount of socioeconomic inequality that existed between servicemen prior to their service diminished to insignificance by late adulthood (Elder, 1987). Elder (1987) argues that the difference in achievement by timing of military service is due to the ability of younger recruits to take advantage of educational opportunities provided by the G. I. Bill upon leaving military service. Older recruits, on the other hand, have generally completed their education and established careers prior to entering the military. Sampson and Laub (1996) also found that, for delinquents who entered military service, early entry, overseas service, and G. I. Bill training combined to

provide a beneficial influence on later socioeconomic achievement. Achievement among nondelinquents, however, was most strongly predicted by educational attainment, apparently following "a more traditional or 'normal' status attainment process" (Sampson and Laub, 1996: 363).

Similar to research examining educational attainment, studies looking at socioeconomic achievement among servicemen during the Vietnam War found that military service was not as beneficial as it was during earlier times. Cohen and colleagues (1992) report that veterans did not achieve the same level of occupational prestige as nonveterans during the same period. Angrist and Krueger (1994) also found that Vietnam-era veterans had lower earnings and higher unemployment rates than nonveterans. Additional results suggest that the relationship between military experience and lower occupational attainment was the result of lower educational attainment among veterans (Cohen et al., 1992; Cohen et al., 1995). Cohen and colleagues (1995) describe a number of changes in military pay and benefits between World War II, the Vietnam War, and the present (e.g., decreasing G. I. Bill benefits) that may account for the change in the influence of military service.

Criminal Behavior

Only a few studies have examined military service and criminal behavior in a life course perspective (Rand, 1987; Sampson and Laub, 1993, 1996). Sampson and Laub (1993) examined military experience among boys who were sampled in the Glueck's (1950) Unraveling Juvenile Delinquency study and many of whom served in the military. Sheldon and Eleanor Glueck collected longitudinal data on a matched

sample of delinquents and nondelinquents born between 1924 and 1932. These boys reached adulthood between 1942 and 1950, and a majority of the men in this sample served in the military during the late stages of World War II or the Korean War (Glueck and Gleuck, 1968). In a reanalysis of these data, Laub and Sampson (1995) found a great deal of continuity in offending from childhood to adulthood, including offenses during military service. More of those defined as delinquent in childhood were charged while in the military compared to nondelinquents. Delinquents were also much more likely to commit serious and frequent offenses and to receive a dishonorable discharge (Sampson and Laub, 1993). In addition to the striking continuity of behavior through military service, there were also cases in which the military was described as a beneficial turning point in life. Laub and Sampson (1995) conclude that, for some men in the Glueck sample, the military had a positive impact, helping them to overcome childhood disadvantage (for specific examples, see Laub and Sampson, 1993).

Rand (1987) also looked at the influence of military service on desistance in the 1945 Philadelphia birth cohort in terms of official records. Boys in this sample reached adulthood (age 18) in 1963, during the early stages of the Vietnam War. This study included longitudinal data on all boys who were born in Philadelphia in 1945 and who were still living there between their 10^{th} and 17^{th} birthdays. About ten percent of these boys were selected to be interviewed in a study following them until the age of 30 (see Wolfgang et al., 1987). In her study, Rand (1987) included only those boys who had committed index or serious offenses. In terms of desistance, there was no significant difference in age at last offense for nonwhites, but white men with military experience stopped offending (in terms of official records) two years earlier than whites who did

not serve in the military. Despite this apparent beneficial effect of military service, a large majority of the sample did not have their first official record for a serious offense until they were in or had left the military. Rand's (1987) study also showed that the seriousness of offending for those who served in the military increased after their service, but this difference was not significant. In general, this study appears to indicate little influence of military service on later criminal behavior.

In a study of men who served in the military during the Vietnam War, Robins (1994, 1993) and her colleagues (1975, 1974) also found a relationship between military service and later offending. The authors interviewed a sample of enlisted men one year after their return from Vietnam. At later follow-ups, the men were matched to a group of men who were eligible for the draft but had not served in the military. These studies generally found that while there was more drug use among servicemen during the Vietnam War than expected, very few men continued their use when they returned (Robins, 1994, 1993; Robins, et al., 1974; Robins, et al., 1975). Both military factors and pre-service behavior predicted continued drug use after Vietnam (Robins et al., 1975). Additionally, there was a strong relationship between drug use before and during military service and later arrests, but it was contingent upon the continued use of drugs after service. This series of studies suggests a complicated picture of the relationship between military service and later criminal behavior. Pre-service characteristics and behavior were important predictors of later drug use which predicted arrests, but military factors also exerted an influence on whether men continued to use drugs.

Bachman and colleagues (1999) also examined the relationship between military service and drug use from a life course perspective. These authors used longitudinal

data derived from the Monitoring the Future (MTF) survey over two decades (cohorts of 1976-1995) to look at changes in drug use after entering the military and across historical periods. For a number of different high school graduating classes, the MTF surveyed subjects during their senior year and at a one or two-year follow-up. This study found that the prevalence of drug use decreased after entering military service, and there was more of a decline for individuals who entered the military compared to those who started a full-time job or who began college. Additionally, the pattern of drug use changed over time (Bachman et al., 1999). Despite a secular trend toward declining drug use throughout the period of time in this study, declines among the military group resulting from the adoption of a zero-tolerance policy were even more pronounced.

In these few studies that have looked at the influence of military service in a life course framework, there was some indication that military experience affects later life events and outcomes, including marital relationships, education, employment, and criminal behavior. Additionally, the timing of events in the individual life course and the historical timing of events appear to be important factors in determining the influence of military service. In terms of individual lives, Elder (1987) comments that events that delay family, education, and career appear to be less costly than events that disrupt established patterns. Thus, the military may have a more beneficial effect in the life course for those who enter early compared to those who enter later in life. There is also evidence that the influence of military service may vary depending on the particular historical context, but little research has addressed this issue. Though the studies of military service and criminal behavior demonstrate some differences in the relationship depending on the time period, authors have not considered the reasons for

these differences. The timing of events, both in the individual life course and in a historical context, is an important factor in determining what influence those events have in the life course. This may be especially true for military experience, since the military establishment and military service are continually changing.

Military Service Throughout History

The meaning of service in the military has been highly variable throughout history. Servicemen have had different experiences depending on when they served, what type of unit or specialty they were assigned to, and whether they served in a combat situation. The relationship between military and civilian society has also changed. In looking at how military service has changed over time, Moskos (1971) identified specific periods in history characterized by certain attitudes and experiences within the military and in society. These distinct periods include World War II, the Korean War (identified as the period from 1950 to the middle 50s), the Cold War (from the mid 1950s to the early 1960s), and Vietnam (the period during the Vietnam War, 1964-1973). Since Moskos (1971) published his chapter, one additional period may be added, the period of time from the end of the Vietnam War when the U.S. turned to the all-volunteer military (referred to as Post-Vietnam). Across these different time periods, Moskos (1971) suggests that the military mission and organization, the experiences of those who serve, the convergence or divergence of military and civilian society, and society's attitudes toward military service have differed greatly.

In the early part of the 1900s, the U.S. military operated on a mobilization model, maintaining a very small force during peacetime and expanding during conflict

by taking men from civilian jobs (Segal, 1989). Members of the military were generally young, single males who viewed service as a short-term obligation (Moskos, 1971; Segal, 1989). The first draft was enacted in 1917 during World War I but expired at the end of the war (Segal, 1989). From that time until 1940, military service was strictly volunteer, most servicemen were career soldiers, and the military was a self-contained and separate entity from civilian society (Moskos, 1971). In the years leading up to World War II, the military constituted less than one percent of the male labor force in the United States (Moskos, 1971).

As U.S. involvement in World War II expanded, the military began to change. The size of the military swelled to about 20 percent of the labor force (Moskos, 1971). The Selective Service System (the draft), which required all men to register for service, was initiated in 1940 (Smith, 1971), and individuals who served during this time were mostly drafted or draft-induced volunteers rather than career soldiers (Moskos, 1971). Military service was viewed as a necessary, short-term interruption to education, jobs, and relationships, and men were expected to leave their civilian lives and serve during wartime, later returning to pick up where they had left off (Moskos, 1976; Segal, 1989; Segal and Segal, 1983).

World War II may be characterized by strong public support for U.S. involvement and by positive attitudes toward the military and individual service (Moskos, 2000). Moskos (1971) argues that strong national unity during this period developed after the Japanese attack on Pearl Harbor and led to positive views of military service and little criticism of the military. Public opinion polls during this period indicated that the amount of dissent with military strategy and leadership

declined over the course of the war, and presidential popularity, also an indicator of public approval, remained high (Smith, 1971). At the end of World War II, only about 15 percent of the public disagreed with U.S. involvement (Smith, 1971). In a study of the number of individuals attempting to evade their availability for service, Smith (1971) found that evasiveness decreased during World War II, suggesting that the military as an organization and military service enjoyed a high degree of legitimacy during this time.

Though high public approval of the military seems to be the most probable response during wartime, Moskos (1971) suggests that the highly positive regard for the military during World War II was atypical of the public's historically ambivalent view of the military. Public sentiment during the Korean War may have been more typical. Opinion polls indicated that evasion of military service and public dissent with military strategy increased slightly over the period of the Korean War while presidential popularity and the legitimacy of military service declined (Smith, 1971). Smith (1971) and Moskos (1971) characterize the Korean War as a "limited war" during which there was some political and social controversy about the role of the military in international conflict. During this time, Moskos (1976) suggests that military organization began to appear more similar to civilian structures.

The Korean War eventually resulted in a stalemate with no clear victor (Moskos, 1971). After the conclusion of the Korean War, the size of the military declined, returning to less than five percent of the labor force (Moskos, 1971). During this period, there was growing controversy about military leadership and the role of the military in foreign policy. However, criticism of the military was mild, and the military institution

was still relatively highly regarded (Moskos, 1971). Racial integration, which was begun during the war and preceded the civil rights movement in the U.S., appeared to be successful with little racial conflict, especially compared to the problems experienced in civilian society (Moskos, 1971, 1976; Segal, 1989). Additionally, increasing technology during this time resulted in a greater proportion of men assigned to technical and electronic specialties and increases in entrance standards (Moskos, 1971). Whereas soldiers had previously been viewed solely as specialists in violence, servicemen were increasingly expected to be technologically skilled (Moskos, 2000; Segal, 1989). With this focus on technology and the increasingly bureaucratic style of management, the military organization appeared to be converging with civilian social structures (Moskos, 1971, 1976) and job skills learned in the military were transferable to the civilian world (Teachman and Call, 1996). However, the mild criticism during this period became much more severe upon U.S. involvement in Vietnam, and the trend toward convergence with civilian society appeared to reverse.

Compared to previous time periods, Kaylor and colleagues (1987) note that the Vietnam War was different, because it lasted longer than any other war and was the first to end with an American loss. The Vietnam era was characterized by strong negative opinion about the military and individual service (Moskos, 1971). During this period, the public began to question the legitimacy of the military, and several highly controversial issues were raised, including atrocities committed by soldiers against the Vietnamese people, increasing racial conflict in the military, the inequality of the draft, and high levels of drug abuse among military personnel in Vietnam (Moskos, 1971; Segal, 1989). In general, poor men were more likely to be found unqualified for service,

but among those who were qualified, lower SES men were more likely to be drafted, to serve in combat units, and to be wounded or killed (Gimbel and Booth, 1996; Segal, 1989). There were also criticisms that the draft was racially biased, but research indicates that the overrepresentation of African-Americans was due to their lower socioeconomic status (Segal, 1989).

During the Vietnam War, military leaders emphasized combat troops more than technical specialists, and the Selective Service System began recruiting individuals from a wider social base than previously (Moskos, 1971). As a result, entrance standards declined, and many college students and graduates received deferments (Moskos, 1971; Sharp and Krasnesor, 1968). By the end of the 1960s, student deferments had been reduced, and the national draft lottery was established in 1970 to try to reduce existing disparities in the draft system (Segal, 1989). Dissent and evasiveness increased greatly during this time to a point even higher than that during the Korean War (Smith, 1971). The perceived legitimacy of the military establishment declined sharply, and the public expressed great disapproval for compulsory military service (Segal, 1989; Smith, 1971).

Since the end of the Vietnam War, the military has experienced radical change. The draft ended in 1973, and the military turned to an all-volunteer force (Cohen et al., 1995; Segal, Burns, Falk, Silver, and Sharda, 1998; Segal and Segal, 1983). In the first few years, the civilian economy was poor, and the military offered competitive salaries (Segal, 1989). By the end of the 1970s, however, military pay had fallen behind civilian employment, resulting in an immediate decline in recruiting and the acceptance of individuals with less than a high school education (Moskos, 1976; Segal, 1989;

Teachman and Call, 1996). Also during the 1970s, the number of women in the military and the variety of jobs women were able to perform increased dramatically, resulting in some tension in the traditionally male organization (Segal and Segal, 1983). These initial problems of transferring to a volunteer military became less serious over time. Since 1976, the quality of recruits has increased (Moskos, 1976), and women now constitute about 14 percent of the military population. Cohen and colleagues (1995) note that the G.I. Bill of World War II and Vietnam was discontinued in 1976 and replaced with programs providing less support for veterans. However, Moskos (1976) suggests that the ability to receive a free education for serving in the military was and is one of the major motivations for youth to join.

During the post-Vietnam period of the all-volunteer force, public attitudes may be best characterized as ambivalent. Moskos (2000) suggests that the military is less salient to the general population (see also Williams, 2000). With the advent of the all-volunteer force, the military has moved toward increasing similarity to and integration with civilian society (Moskos, Williams, and Segal, 2000). Modern military personnel are suggested to be more concerned with salary and benefits than with service, and military organization is somewhat civilianized (Segal and Segal, 1983). Gade and colleagues (1991) describe the current military as "an occupational alternative for a self-selected, subpopulation of young men and women" (p. 253). Despite the apparent similarity of military and civilian work environments, some aspects of military service will always be divergent from civilian society (Moskos, 1988). Segal and Segal (1983) argue that this is because the military is the only institution responsible for the "management of large-scale, organized, legitimate violence on behalf of the state" (p.

161). Therefore, while military and civilian society may be overlapping in many areas, the main function of the military, to fight wars, will always be distinct.

Though the basic elements of the military and of military service have not changed over the years, public opinion, military structure (especially in terms of race and gender), technology, and many other factors have changed (Gade et al., 1991; Williams, 2000). Individuals who served during World War II returned home as heroes. While they may have experienced some difficulty in returning to their civilian lives, they did not face the widespread public disapproval that was common after the Vietnam War. These differences in how the military is viewed, both as an institution and in individual lives, may have an impact on how individuals behave during and after their service. Some may experience beneficial changes in their lives, while service is a negative influence for others. Thus, the changing military must be considered when trying to understand its influence in people's lives.

Chapter 4. The Present Study

Based on previous research, the current study will examine the relationship between military service and criminal behavior in a life course framework. Life course theory provides three general areas of inquiry. The main purpose of this study is to examine continuity and change in criminal behavior before, during, and after service in the military. Specifically, this study will determine whether military service increases or decreases criminal behavior and/or whether the military provides another setting for the continuation of previous patterns of behavior. A second area of interest is how the timing of military service influences an individual's criminal behavior. For example, do those who enter at an earlier age experience greater or more positive change in their criminal behavior than those who enter later in life? Third, this study will look at military service during several different time periods to determine whether the influence of military service on criminal behavior differs by historical context.

Because life course theory focuses on interrelated trajectories and transitions across the life course and the impact of certain events on later life outcomes (Elder, 1995), analyses must embrace a dynamic, longitudinal framework (George, 1993; Sampson and Laub, 1992). Elder and Caspi (1990) describe two methods of life course analysis using longitudinal data. The first, called the outcome model, examines many potentially important antecedent variables and their influence on specific outcomes. The second model, referred to as an event design, begins with a particular life event and prospectively examines its consequences for later life. Both models have potential problems; the outcome design may not adequately explore historical factors, and the event design may ignore important variables existing prior to the specific event (Elder

and Caspi, 1990). This study will use longitudinal data in a combination of these two designs, examining the influence of antecedent variables on a specific event (military service) and the consequences of both those variables and military experience on later life outcomes, specifically criminal behavior.

Some existing life course analyses have followed this combination method using birth cohorts, a group of individuals born in the same year. Individuals in the same birth cohort enter the social world at approximately the same time and experience the same historical events at the same age. Single birth cohort analysis, therefore, examines the differential effect of the same historical event on individuals or groups (Elder, 1999). To place behavior in context and to allow generalizations across time, Elder (1999) suggests that a comparison of at least two birth cohorts is necessary. In addition to combining the outcome and event designs, this study will examine multiple birth cohorts to determine whether the influence of military service in the life course changes over time.

As demonstrated in previous chapters, existing research has provided conflicting results on the effect of military service, finding both beneficial and criminogenic effects on criminal behavior as well as finding that the military provides an environment for the continuation of prior criminal behavior patterns (See Appendix A). This study will examine the potentially varied effects of military service on criminal behavior. The primary question is whether military service changes offending patterns. Life course theory and research suggest that joining the military may act as a turning point, altering trajectories. Serving in the military may reform some individuals and lead them to

decrease their offending or to desist altogether. On the other hand, individuals may become more criminal, initiating or increasing their offending.

The specific hypotheses in this study examine whether the influence of military service differs in different circumstances. According to the life course perspective, the influence of military service on criminal behavior may be dependent on a number of factors, including prior behavior patterns, the timing of service in an individual's life, and historical context. The first hypothesis focuses on the potential influence of self-selection. Assuming the social selection argument to be true, life events like military service should not change behavior (Nagin and Paternoster, 1991; Wright et al., 1999). Rather, criminal behavior should continue across a variety of different domains. In this way, offending at all times is merely an expression of an individual's underlying propensity. Any perceived influence of military service observed while testing the main hypothesis would be spurious due to the military's differential selection of individuals with particularly high or particularly low propensity. In other words, military service may appear to be related to decreased offending because individuals with a predisposition to criminal behavior (indicated by a criminal record) are excluded from service. On the other hand, military recruiters may seek out those with a predisposition to aggression because those individuals are perceived to make better soldiers. This may lead to an apparent negative influence of military service.

Underlying propensity for criminal behavior may be captured in a variety of ways, one of which is to look at prior offending. Nagin and Paternoster (1991) comment that the relationship between previous criminal behavior and later offending is one of the most consistently demonstrated relationships in criminology. Since prior

delinquency is an important predictor of future criminal behavior (Nagin and Paternoster, 1991), it will be an important control variable in determining the true effect of military service on later criminal behavior. Propensity for criminal behavior may be indicated by other factors as well, and these additional variables that may reflect an individual's criminal predisposition will also be examined. This study hypothesizes that, even controlling for underlying propensity by including measures of prior behavior patterns and other characteristics, military service will maintain a significant influence on later offending, whether it reduces or increases criminal behavior.

Another important factor in determining the influence of a certain event (military service) is the timing of that event in an individual's life. Some life course research has found that early entry into the military provides a beneficial influence in life, whereas late entry disrupts already established life patterns and provides a negative influence (Elder, 1998; 1987). This study hypothesizes that the timing of military service will play an important role in determining the influence that service has on later offending. Early entry into the military positions individuals to take advantage of related employment and educational opportunities and to escape from early disadvantage and delinquency. It follows that delinquents who enter the military at an early age will reduce or discontinue their offending behavior (nondelinquents who enter early will continue to be nondelinquent). On the other hand, late entry disrupts existing social networks and draws individuals who are no longer in a position to take advantage of the benefits associated with military service. Delinquents who enter later in life may continue their offending, and nondelinquents may initiate criminal behavior.

Finally, the influence of military service on criminal behavior may depend on the historical context of that service. According to previous life course research, military experience during World War II exerts a beneficial influence in life. The same should be true of criminal behavior. For individuals who served during World War II or Korea, military service will exert a beneficial influence on their delinquent behavior. In other words, while nondelinquents who enter the military will continue their nondelinquent behavior, delinquents who serve in the military will either reduce their offending or desist altogether. However, service during Vietnam may have the opposite effect. In this case, delinquents will continue or increase their delinquent behavior, and nondelinquents who served during this time may begin offending. For individuals who served during more recent times, little research exists to guide predictions. However, it seems reasonable that the apparent negative influence of military service during the Vietnam War will continue into more recent times. Additionally, history may interact with the individual timing of military service. This study hypothesizes that the historical context of military service will be important in determining the influence of service on later criminal behavior.

Chapter 5. Methods

In a life course analysis of the influence of military service on criminal behavior, this study will include multiple cohorts of individuals and a comparison of those who have and have not served in the military. Several criteria determined the selection of data for this study. First, the data must be longitudinal in nature, capturing information at a variety of points in an individual's life. Second, the data must include information about military service and criminal behavior. Specifically, the data must provide information on the timing of events, denoted either by the year, age, or range of ages at which an event occurred. For military service, dates or ages should be provided for both the beginning and ending of that service. Third, the data must cover different historical periods and should be reasonably comparable in methodology (e.g., variables, procedure, etc.). This will allow a clearer determination of the effect of historical period because differences in the methodology of data collection and variable measurement will be minimized (Teachman and Call, 1996).

Four cohorts meeting these criteria were selected for analysis. Each data set is longitudinal, containing at least two waves of information and providing measures of childhood and adolescent delinquent behavior, adult offending, military experience, and a variety of other factors. Additionally, the information provided is specific with regard to the timing of events, especially concerning military service. Finally, these cohorts span several decades in an effort to determine whether the influence of military service changes over time. The four cohorts used in this study are Lyle Shannon's 1942 and 1949 Racine, Wisconsin birth cohorts (see Shannon, 1994), the 1945 Philadelphia birth

cohort (Wolfgang, Figlio, and Sellin, 1994), and the National Longitudinal Survey of Youth (Center for Human Resource Research, 1995).

Subjects

The four cohorts selected for this study cover the period of time from just prior to the Vietnam War to the early part of the all-volunteer force. The oldest cohort (those born in 1942) reached the age of 18 in 1960, and the youngest group of subjects (born in 1963) reached the age of 18 in 1981 (see Table 1). The two cohorts in Lyle Shannon's study of delinquency in Racine, Wisconsin served immediately before and during the Vietnam War (see Shannon, 1994). The males selected into the 1945 Philadelphia birth cohort follow-up also served during the Vietnam War (see Wolfgang et al., 1994). Finally, the sample of men and women in the National Longitudinal Survey of Youth were eligible to serve in the military after the end of the draft and during the transition to an all-volunteer force (see Cohen et al., 1995) .

Juvenile Delinquency and Adult Crime: Racine, Wisconsin

In 1977, Lyle Shannon began collecting data from three birth cohorts in Racine, Wisconsin (see Shannon, 1994). These cohorts included individuals born in Racine in 1942, 1949, and 1955. Both juvenile and adult police contact data were collected for the members of each cohort in 1977 when the 1942 cohort was 35, the 1949 cohort was 28, and the 1955 cohort was 22 years old. Additionally, a subset of individuals from the 1942 and 1949 cohorts were interviewed, and researchers collected information about a wide variety of socio-demographic characteristics, including military service, marriage,

and employment.[1] A total of 332 individuals were interviewed from the 1942 cohort, and 554 were interviewed from the 1949 cohort. Since individuals in these two cohorts experienced different historical events at different periods in their lives, each cohort will be analyzed separately.

Subjects in the 1942 cohort were very young children during World War II and the Korean War and reached adulthood (the age of eighteen) in 1960, before the beginning of the Vietnam War (See Table 1). Thus, they grew up during the 1950s, a period of relative economic prosperity and stability. Those who entered the military served immediately prior to and during the Vietnam conflict. Of the 332 subjects in the 1942 cohort who were interviewed, nearly half were male (n = 155). Among the men in this cohort, about 40 percent had active-duty military experience, and most of those (nearly 80 percent) entered military service before the start of the Vietnam War in 1964. None of the female cohort members served in the military, so females were excluded from this cohort.

Subjects in the 1949 cohort were born at the beginning of the Korean War, and they turned eighteen in 1967, after the Vietnam War had begun (See Table 1). These individuals experienced the 1950s during their early childhood and went through adolescence during the more tumultuous period of the 1960s. Of the 554 individuals who were interviewed, about half were male (n = 278). Only two females in this cohort served in the military. As in the previous cohort, this number was inadequate for

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[1] Since the 1955 cohort was not interviewed (see Shannon, 1994), no information was available about military service, and this cohort was excluded from the study.

statistical analyses, so females were also excluded from this cohort. Additionally, because of missing data, 35 cases were excluded from the analyses, resulting in a sample of 243 men. Nearly 40 percent of the men in this cohort had active-duty military experience, and more than 80 percent of those who served entered the military between 1967 and 1969. This period of time corresponds to the dramatic build-up of forces in Southeast Asia around the time of the Tet Offensive in 1968.

Philadelphia Birth Cohort, 1945

In what has been called "the first American birth cohort study in the area of criminology" (Wolfgang et al., 1987: 1), researchers collected and analyzed official records of the delinquent careers of a cohort of boys. The criteria for selection into the birth cohort are that the boys must have been born in Philadelphia in 1945 and that they must have been residents of Philadelphia between their tenth and seventeenth birthdays (see Wolfgang, Figlio, and Sellin, 1972, for details). The data collected for boys in the original cohort consisted solely of official records, but a smaller sample was later interviewed and followed until their thirtieth birthday (see Wolfgang et al., 1987, for details). The resulting group of boys selected for interviews was described as "a 10 percent random sample of the entire cohort with no demonstrable biases" (Wolfgang et al., 1987: 7).

Although 975 men were selected to be interviewed, only 566 (less than 60 percent) were actually interviewed (Wolfgang et al., 1987). Wolfgang and colleagues (1987) note that nonwhites, those in the lower socioeconomic group, and offenders were somewhat underrepresented in the interview data. The data from 565 of these follow-up

interviews will be used in combination with the official crime data from the original cohort study (one case was excluded because of missing military data). Men in this cohort were born in 1945 and reached adulthood (their eighteenth birthday) in 1963, at the early stages of the Vietnam War (See Table 1). They grew up during the prosperous 1950s and reached late adolescence and early adulthood during the 1960s. In this cohort, 272 men (about 48 percent of the interviewed group) served on active duty in the military, and most men who served in the military (more than 90 percent) began their service before 1966.

National Longitudinal Survey of Youth

The National Longitudinal Survey of Youth (NLSY) is a panel survey that has been conducted annually since 1979 (Cohen et al., 1995). Two samples were originally selected. The first was designed to be representative of non-institutionalized, civilian youths who were born between 1957 and 1964 and lived in the United States in 1979 (Center for Human Resources Research, 1995). The second sample was drawn from Department of Defense rosters and was designed to represent individuals who were born between 1957 and 1961 and who were serving in the military in September of 1978 (Center for Human Resources Research, 1995). The first interviews were conducted with both samples in 1979 when subjects were between 14 and 22 years old, and subjects were interviewed yearly until 1994. However, most of the military sample was dropped in 1985, leaving only 201 members of the original group. For this reason, most analyses will focus on information collected at waves prior to 1985.

There were a total of 12,686 individuals (from both the civilian and military samples) selected to participate in the survey. For the purpose of comparability across the cohorts, females (about half of the original group) were excluded from the initial analyses, resulting in a sample of 5,281 males. The measures of criminal behavior available in the NLSY were gathered in 1980 and refer primarily to offenses committed within the previous year (1979). Because this study is interested in the influence of military service on later offending, proper temporal order requires that service must have begun prior to the offending that occurred in 1979. Thus, all those with military service who entered the military after 1978 were excluded from the sample. The civilian comparison group consists of the civilian sample originally selected by the NLSY. However, some men in this sample were identified as having entered the military at a later point (after 1980). These subjects were excluded from the analysis because their later service may contaminate the military/civilian comparison. This provides a sample of 515 men with active-duty military service and 4,055 men with no military experience. The men in this sample were born between 1957 and 1963 and grew up during the period of the Vietnam War (See Table 1). These subjects reached adulthood between 1975 and 1981, after the end of the Vietnam War. Thus, the men were eligible to enter the armed forces (18 years old) after the end of the draft and during the early period of the all-volunteer force.

Variables

Demographic Characteristics

Previous criminological research has indicated that a number of factors are important correlates of criminal behavior, including gender, age, race, education, socioeconomic status, and family background (see Hindelang, 1981; Nagin and Paternoster, 1991). In the cohorts selected for analysis, a number of variables describe these demographic characteristics (See Table 2). In this study, gender is a constant. Because the military is predominantly a male institution (especially during the periods of time covered by these cohorts) and because the minute number of females with military experience in the birth cohorts prohibits statistical comparisons, this study only compared men across the samples. Age is also a constant for the three birth cohorts because all members of each cohort were born in the same year. There is variation in age for the NLSY, however. For this cohort, age is measured in 1980 when subjects provided information about their involvement in criminal behavior during the previous year. On average, men in the NLSY were about 20 years old when they were interviewed in 1980.

Race is another important correlate of criminal behavior (see Hindelang, 1981). Since each data set measured race somewhat differently, the categories for each sample were collapsed into a dichotomous measure of White and Non-White. In the two Racine cohorts, the original categories were "White", "Black", and "Latino". In the 1942 cohort, more than 90 percent of the sample was classified as White, and Non-White men comprised less than 10 percent of the sample. More than 80 percent of the 1949 cohort was categorized as White. In the 1945 Philadelphia birth cohort, researchers

measured race as White (about 80 percent of the sample) and Non-White (about 20 percent of the sample). The original racial categories used in the NLSY were "Hispanic", "Black", and "Non-Hispanic/Non-Black". When these categories were collapsed, about 61 percent of the sample was classified as White (the "Non-Hispanic/Non-Black" group), and 39 percent of the sample was classified as Non-White.

Researchers also suggest that educational experiences play an important role in criminal behavior (see Hirschi, 1969). In all four cohorts, education was measured as the highest grade of school that a subject completed. In the two Racine cohorts, completion of vocational school, nursing school, or junior college was considered equivalent to completing some college. Men in both the 1942 and 1949 birth cohorts completed an average of about 14 years of school, and more than 90 percent of the men graduated from high school. The education variables in the Philadelphia birth cohort and the NLSY do not make any distinction between attending college or attending other types of schools (e.g., vocational, nursing, or junior college). Men in the Philadelphia birth cohort completed about 13 years of school, and about 80 percent of the men graduated from high school. Men in the NLSY completed about 10 years of school, and about 71 percent of men old enough to have completed high school had a high school diploma or GED.

In addition to education, research proposes socioeconomic status of both individuals and neighborhoods as an important correlate of criminal behavior (see Sampson, 1986). The four cohorts vary in their measurement of socioeconomic status. In the two Racine cohorts, the researchers collected information about characteristics of

the census block in which a subject lived during childhood and adolescence (see Shannon, 1994). These characteristics include the average value of owner-occupied housing, average rent, the percent of units lacking plumbing, the percent of units that were renter-occupied, and the percent of units that were classified as overcrowded. Based on these criteria, blocks were then rank-ordered on a scale of 1 to 26, with 1 representing a low SES area and 26 representing a high SES area. This variable represents an aggregate measurement of the socioeconomic status of each subject's neighborhood. Shannon (1991; 1994) divided these rankings into five categories representing inner city areas, transitional areas, stable or middle class residential neighborhoods, peripheral middle class neighborhoods, and high SES neighborhoods. In the 1942 cohort, the average neighborhood SES score was about 9, and about 45 percent of the men grew up in inner city or transitional neighborhoods. In the 1949 cohort, the average neighborhood SES score was about 10, and about 43 percent of the men in this cohort were raised in either inner city or transitional neighborhoods.

In the Philadelphia birth cohort and the NLSY, SES was represented with a variable measuring income. Wolfgang and colleagues collected information about yearly family income level when the men were adolescents (about the 1950s). Subjects were grouped into five categories: 1) less than $4,000, 2) between $4,001 and $4,500, 3) between $4,501 and $5,783, 4) between $5,784 and $6,779, and 5) more than $6,779. The majority of men in this cohort (about 61 percent) fell into the two highest categories. The mean family income for this cohort was estimated to be about $5,860

per year.[2] Socioeconomic status in the NLSY was measured in two ways. The first variable was a continuous measure of yearly income in 1979. The average yearly income for men in this sample was about $16,000. To enhance comparability across cohorts, a categorical variable was also created. Both the Racine cohorts and the Philadelphia cohort had SES variables that were broken down into five categories, and each category included roughly 20 percent of the cohort. Economic research examining issues of poverty and income inequality also frequently uses quintiles to categorize income (see Bernstein, McNichol, Mishel, and Zahradnik, 2000). For these reasons, the measure of income in the NLSY was also broken down into five categories with roughly 20 percent of the men in each category. While these variables are not directly comparable across cohorts, the scale (a value of 1 representing the lowest SES and a value of 5 representing the highest SES) provided a ranking of SES that could be compared.

Military Characteristics

In each data set, there were a number of variables characterizing military service (See Table 3). While the available measures varied across the samples, each data set included the essential variables indicating whether an individual served on active duty and when that service occurred. Analyses in this study focused on those men who

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[2] This calculation assumes that all cases fall at the midpoint of the interval, that cases in the lowest interval fall at $4,000, and that cases in the highest interval fall at $6,780.

indicated that they had served on active-duty in the military.[3] In all four cohorts, military service was measured as a dichotomous variable with 0 representing no service and 1 representing service on active duty. In the first Racine birth cohort (1942), nearly 40 percent of the men were identified as having had active duty military service. Of the men included in the 1945 Philadelphia birth cohort, about 48 percent served on active duty in the military. In the 1949 Racine birth cohort, almost 37 percent served in the military. About 11 percent of the men included in the NLSY sample served on active duty in the military. It should be noted that while the proportion of the birth cohorts who served in the military may be generalized to a similar population of men born during these years, the selection process for the NLSY does not allow generalization to the wider population. In particular, since the civilian and military samples of the NLSY were selected independently, it is impossible to generalize from these data what percentage of the total population served in the military during the all-volunteer period (See Appendix B for specific information about the number of people serving on active-duty by year).

The timing of military service in an individual's life is also important for this study. Variables indicating the timing of service included year of entry into the military,

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[3] Some men were identified as having served in the National Guard or reserves. The nature of this type of service is different from active-duty military service in terms of both the type and consistency of training as well as the lifestyle surrounding service. For this reason, service in the National Guard or reserves was not treated as active-duty military service.

age of entry, and length of military service (See Table 3). Men in the three birth cohorts were about 19 years old when they entered military service. The average year of entry was about 1961 for the first Racine cohort, 1964 for the Philadelphia cohort, and 1968 for the later Racine cohort. On average, men in the NLSY sample entered the military in 1977 at an average of about 18 years old. As the average age of entering military service appears to have declined slightly from the Vietnam period to the present, the length of military service has increased slightly. For all three cohorts that served during the Vietnam War, the average length of military service was less than three years. Men from the NLSY sample, with military experience during the all-volunteer period, served an average of more than three years.

Additional variables that may be relevant to the analyses in this study were available for specific data sets. The two Racine birth cohorts included a variable indicating whether an individual was drafted. For the 1942 cohort, about 4 percent of the men were drafted. The numbers were much higher for the 1949 cohort, in which about 12 percent of the men were drafted. In the NLSY, a variable indicated whether the men participated in an ROTC program. Fewer than one percent of the men in this sample participated in such a program.

Measures of Criminal Behavior

The measurement of criminal behavior differed across the four cohorts (See Table 4). The Racine cohorts and the Philadelphia birth cohort recorded official measures of offending in terms of police contacts for which there was an official record (Shannon, 1994; Wolfgang et al., 1972). The National Longitudinal Survey of Youth

only recorded self-reported measures of certain types of offenses. While the procedures differed slightly, the variables developed for this study were roughly comparable across cohorts. In the two Racine birth cohorts, the offense information included police contacts for very minor infractions, including traffic violations, public order offenses, and status offenses such as running away and truancy, as well as more serious violent and property offenses. In these cohorts, a very large proportion of the men (more than 80 percent) had a record of a police contact. Since traffic violations were not included in any of the other samples, any contact for a traffic offense was excluded. Additionally, contacts that were not identified as involving a specific offense were excluded (this included a small number of cases with missing information and contacts designated as involving "suspicion"). This resulted in measures of offending that were more comparable with the other data sets.

For the three birth cohorts, researchers collected detailed information on every police contact, including the type of offense, the age at which the contact occurred, and characteristics of the incident and victim. Based on this information, a number of specific variables were constructed (see Table 4). First, the data provided a count of the total number of police contacts for all non-traffic offenses. Additional variables counted the number of police contacts for violent offenses (murder, rape and other sexual offenses, robbery, and assault), for property offenses (theft, larceny, burglary, auto theft, and property destruction), and for public order and status offenses (disorderly conduct, liquor violations, vagrancy, etc.). Within each of these offense types, police contacts were divided into those that occurred when the subject was a juvenile and those that occurred during adulthood. Adulthood was defined as the period of time from the age of

18 until the end of the follow-up period (35 for the 1942 Racine cohort, 30 for the Philadelphia cohort, and 27 for the 1949 Racine cohort).[4]

In the birth cohorts, the first offending measures involved police contacts for any non-traffic offense (see Table 4). In the 1942 Racine cohort, about 42 percent of the men had at least one police contact as a juvenile, and about 29 percent had a police contact as an adult. This cohort averaged about one adult police contact for a non-traffic offense. In the Philadelphia cohort, about 31 percent of the men came into contact with the police as juveniles, and about 23 percent had a police contact as an adult. This cohort averaged slightly less than one adult police contact. In the 1949 Racine cohort, 51 percent of the men came into contact with the police as juveniles, and about 33 percent had a police contact as adults. Men in this cohort averaged more than one adult police contact for non-traffic offenses.

The number of official police contacts dropped considerably when looking specifically at violent and property offending (see Table 4). Less than five percent of each cohort came into contact with police as juveniles for a violent offense. About seven percent of each cohort had a police contact as an adult, and each cohort averaged a very small number of adult contacts for violent offenses. With respect to property offenses, about 17 percent of the 1942 cohort, 11 percent of the 1945 cohort, and 27

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[4] Police contacts for men with military service were examined individually to ensure proper temporal order. For these men, adult police contacts were defined as those contacts which occurred after the age of 18 and after entry into the military. This only affected the offending breakdown for a very small number of men.

percent of the 1949 cohort had at least one police contact as a juvenile. Less than ten percent of each cohort had an adult police contact. Additionally, the average number of adult contacts for property offenses was very small for each cohort.

The bulk of the contacts recorded in the birth cohorts were for minor status and public order offenses. This was reflected in the higher proportion of each cohort experiencing police contacts for these offenses. About 37 percent of the early Racine cohort, 25 percent of the Philadelphia cohort, and 46 percent of the later Racine cohort had a juvenile police contact. Smaller proportions of each group had a public order contact as an adult (27 percent of the 1942 cohort, 16 percent of the 1945 cohort, and 31 percent of the 1949 cohort). Additionally, the average number of adult contacts was slightly higher for public order offenses (about one for both Racine cohorts and less than one for the Philadelphia cohort).

Information about criminal behavior in the NLSY was not as detailed as the information provided in the birth cohorts (See Table 4). During the 1980 survey, interviewers asked subjects how many times they had been involved in certain behaviors during the previous year (in all cases, this period of time occurred after the men had entered military service). For the offending variables in this cohort, a very small number of men (less than 5 percent) reported a very large number of offenses. These extreme outliers may influence the results obtained in this study. For this reason, the distribution of the offending variables in the NLSY was truncated at 10 offenses.[5]

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[5] Analyses will also be conducted with cutoff points at 50 and 100 to determine whether the results are sensitive to this choice.

Two variables captured the number of times an individual reported having been stopped by the police for anything other than a traffic offense. Since this variable measured self-reported police contacts for any offense other than a traffic violation, it provided a measure comparable to the measure of police contacts for non-traffic offenses in the birth cohorts. In the NLSY, about 20 percent of the men reported having been stopped by police as juveniles, and about 19 percent reported having been stopped in the year prior to the interview. These men reported an average of less than one police contact in the prior year.

In addition to information about police stops, additional variables were constructed in the NLSY to measure self-reported violent, property, and drug offenses (See Table 4). Violent offenses were defined as those behaviors involving a physical assault, including physically attacking another person, using force to obtain something, and physically fighting with another person. These questions corresponded roughly to the measures of assault and robbery included in the birth cohorts. With this measure, about 45 percent of the men reported having committed a violent offense in the previous year, and they reported an average of more than one offense during that time. The variable measuring property offenses was created from questions about theft, motor vehicle theft, and breaking and entering, corresponding to similar measures of theft, motor vehicle theft, and burglary included in the birth cohorts. About 47 percent of the men in the NLSY reported having committed a property offense in the previous year,

and they reported an average of about two offenses during that year.[6] Information about public order offenses was not available in the NLSY, however there was a great deal of information about drug offenses, which were not recorded in the birth cohorts. A variable reflecting drug offenses was created from questions about selling marijuana and selling other drugs. About 16 percent of the men in the NLSY reported a drug offense in the previous year, and they reported an average of about one offense during that year.

Validity of Offending Measures

In this study, the validity of the measures of criminal behavior was determined in two ways. The first method was to compare the distribution of offenses in this study to the distributions reported in prior studies with the same cohorts. The second method was to demonstrate that these measures of criminal behavior were related in the expected directions to known correlates of crime. These correlates included race, education, socioeconomic status, and prior criminal behavior. Additionally, age was included as an important correlate for the NLSY.

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[6] Involvement in criminal behavior appears to be much higher in the NLSY compared to the birth cohorts. The difference is partially due to the use of self-reports, which reveal more offenses than official records (see Hindelang, Hirschi, and Weis, 1981). Additionally, the measures of violent and property offending include some less serious offenses (e.g., fighting) which may not be completely captured in the official records of police contacts in the birth cohorts.

Shannon (1998) reported that men in the complete 1942 Racine birth cohort averaged about 1.4 adult police contacts. In this study, the subset of men in the 1942 cohort who were interviewed averaged about one adult contact. This average was slightly smaller than that reported by Shannon (1998) due to the exclusion of police contacts for traffic offenses. In looking more specifically at police contacts for Part I offenses (defined as including theft, auto theft, assault, burglary, robbery, and murder), the entire birth cohort averaged about 0.1 adult contacts (Shannon, 1998). These Part I offenses correspond to the measures of violent and property contacts used in this study. The subset of interviewed men averaged about 0.1 contacts for violent offenses and 0.1 adult contacts for property offenses. According to these comparisons, the sample and measures used in this cohort appear to be similar to existing descriptions of the same cohort.

In addition to the similarity to existing accounts, the measures of adult offending used in the 1942 cohort were related to known correlates of crime in the expected directions (See Table 5). Non-White men had more adult police contacts than White men for all offense types. Men with higher levels of education and from higher SES neighborhoods had fewer adult police contacts across offense types. The number of juvenile police contacts was positively and significantly correlated with all measures of adult police contacts. For all of these correlates, relationships not identified as statistically significant at the .05 level were nearly significant ($p < .10$). According to these analyses, adult police contacts in the 1942 Racine birth cohort were valid measures of criminal behavior.

Wolfgang and colleagues (1972) report that about 35 percent of the original 1945 Philadelphia birth cohort had a juvenile police contact compared to 31 percent of the follow-up sample with a juvenile contact in this study. As Wolfgang, Figlio, and Sellin (1987) describe, the follow-up sample slightly underrepresented offenders, so the follow-up sample should identify fewer men with a police contact and a smaller number of contacts per person. Wolfgang and colleagues (1987) find that about 47 percent of the 975 men in their follow-up sample had a police contact at any point compared to about 41 percent of the sample of 565 men who were interviewed. Similarly, about 30 percent of the initial follow-up sample had an adult police contact compared to about 23 percent of the men in the sample used in this study, and the follow-up sample averaged about 1.2 adult contacts compared to an average of 0.9 adult contacts in this study (Wolfgang et al., 1987). Though the sample of interviewed men appears to have been somewhat less involved in offending, these results suggest that the measures of police contacts used in this study were valid compared to previous studies.

In the Philadelphia cohort, the correlates of crime were all significantly related to the measures of adult police contacts in the expected directions (See Table 6). Non-White men had significantly more adult contacts than White men for all four offense types. Education and socioeconomic status were both negatively and significantly correlated with the measure of adult contacts for all offense types. Additionally, men with a greater number of juvenile police contacts had more adult police contacts as well. These analyses suggest that the measures of adult police contacts in the 1945 Philadelphia cohort were valid indicators of later criminal behavior.

The 1949 Racine cohort in this study was a subset of men from the original birth cohort who were interviewed. Shannon (1998) reported that men in the full cohort averaged about 1.4 adult contacts per person compared to about 1.5 adult contacts reported in this study. The full cohort also averaged about 0.1 adult contacts for Part I offenses (defined as theft, auto theft, assault, burglary, robbery, and murder; see Shannon, 1998). This description of Part I offenses corresponds to the measures of adult police contacts for violent and property offenses in this study (averages of 0.2 and 0.1, respectively). The sample and measures used in this study for the 1949 cohort appear to be similar to those described in prior studies with this cohort.

In addition to their similarity to existing accounts, the measures of adult police contacts were also significantly related to known correlates of crime in the expected directions (See Table 7). Non-White men had more police contacts for all types of offenses. Higher levels of education and higher SES were both negatively correlated with all four measures of adult police contacts. Finally, men with more juvenile police contacts also had significantly more adult contacts for all offense types. Again, any relationships not reported to be statistically significant were nearly so ($p < .10$). In the 1949 Racine cohort, the measures of adult contacts appear to be valid based on comparisons to existing descriptions of this cohort and to known correlates of crime.

Rather than using official records of police contacts, the NLSY measured offending through self-reports. In the NLSY, the relationships between criminal behavior and known correlates of crime were generally as expected with the exception of race (See Table 8). There was no significant difference between White and Non-White men in terms of the number of self-reported police contacts or violent offenses,

and White men reported significantly more property and drug offenses than Non-White men. This may be an artifact of self-report studies, which have found little evidence of racial differences in offending (see, for example, Hindelang, et al., 1981). Aside from the lack of expected racial differences, other known correlates were related to offending in the expected directions. With respect to age, older men had fewer offenses. Higher levels of education and higher SES were consistently, negatively correlated with self-reported police contacts and violent, property, and drug offenses. Finally, men who were stopped by police as juveniles had significantly more later police contacts and more violent, property, and drug offenses. One additional important correlation was the relationship between self-reported police contacts and offending. Men who reported being stopped by police more often also reported significantly more violent, property, and drug offenses. In these comparisons, the measures of later offending appear to be valid.

Chapter 6. Results

This study presented a number of related hypotheses about the possible influence of military service on criminal behavior throughout the life course. Based on previous research and theory, the main research question asked whether military service would have an effect on later criminal behavior. However, it is also important to consider whether prior criminal behavior (i.e., pre-military behavior) influences the relationship between military service and subsequent criminal activity. The first hypothesis argued that the effect of military service would be apparent even when analyses accounted for prior criminal behavior and for differences in selection into the military. Two additional hypotheses addressed the life-course concepts of the timing of military service in an individual's life and in history. This study proposed that men who entered the military later in life would experience more negative consequences. Furthermore, it is argued that the influence of military service on later criminal behavior has changed over time, from positive during World War II to negative during the Vietnam era and more recent times. Since this is primarily an exploratory study, analyses will use two-tailed significance tests.

The Influence of Military Service

The main question in this study asked whether military service functions as a turning point in offending, having some influence on later criminal behavior. To answer this question, analyses will focus on adult offending as captured in each data set. First, bivariate analyses will compare adult offending for men who served in the military and men who did not serve. In the birth cohorts, these measures included a dichotomous

variable indicating whether the individual had a police contact as an adult and a continuous variable reflecting the number of adult contacts. In the birth cohorts, the adult period included police contacts occurring between the ages of 18 and the end of the follow-up period (35 for the 1942 cohort, 30 for the 1945 cohort, and 28 for the 1949 cohort). For men who served in the military, adult included those police contacts that occurred after the age of 18 and after joining the military. For the NLSY, comparable variables indicated whether the individual committed an offense during the year prior to the interview and the number of offenses committed during that time (in all cases, this year occurred after military service had begun). In addition to overall offending, some research has suggested that military service may have an impact on certain types of offenses, such as violent or drug offenses (see, for example, Boulanger, 1986; Robins, 1994). For this reason, analyses will also examine specific offense types (violent, property, and public order or drug offenses) as well as overall measures of crime. Bivariate analyses will compare the two groups in terms of the percent with at least one adult offense and the number of adult offenses for each group.[7]

Multivariate analyses will add relevant control variables to determine whether the relationship between military service and later criminal behavior was spurious. The selected control variables are suggested by criminological research to be important predictors of criminal behavior (see, for example, Nagin and Paternoster, 1991). The

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[7] Traditional t-tests for the difference between two means assume linearity, which is not true with count data. Correct t-ratios will be derived from single variable negative binomial regression models.

control variables were roughly comparable across the cohorts. Race was a dichotomous variable with categories of White and Non-White (0 = White, 1 = Non-White). Education was measured as a continuous variable, reflecting the highest grade of school completed. The measure of socioeconomic status was somewhat different across cohorts. In the Racine cohorts, SES was reflected in an aggregate measurement of the socioeconomic status of the neighborhood in which the subjects grew up. In the Philadelphia cohort and the NLSY, SES was captured in a variable measuring family income. In the NLSY, age at the 1980 interview was also included as a control variable. For the three birth cohorts, age was a constant so it was not included in the analyses.

The first multivariate analyses will estimate logistic regression models predicting the likelihood of an adult offense. The dependent variable in these models was dichotomous with a value of 0 representing no offenses or police contacts and a value of 1 representing at least one offense/contact. Separate models will be estimated for each offending variable described previously (non-traffic, violent, property, and public order or drug offenses). For ease of interpretation, the regression coefficients from logistic regression analyses may be transformed into probabilities according to the following formula (see Menard, 1995):

$$p(y=1) = \frac{e^{(\alpha+\beta_1 x_1+\beta_2 x_2+\ldots+\beta_k x_k)}}{1+e^{(\alpha+\beta_1 x_1+\beta_2 x_2+\ldots+\beta_k x_k)}}$$

This equation reflects the probability of having an adult contact or offense. Since this study is interested in comparing those with and without military experience, separate probabilities will be computed for the military and non-military groups using the mean values of each of the control variables. With these probabilities, a relative risk value may be calculated according to the following formula:

$$RR = \frac{p(y=1 \mid x=1)}{p(y=1 \mid x=0)}$$

In this formula, the numerator indicates the probability of an adult offense/contact for the military group, and the denominator is the probability for the non-military group. This relative risk may be interpreted as how much more or less likely the military group is to be involved in adult offending compared to the non-military group.

Though these models are useful in predicting the likelihood of being involved in offending (participation), Gardner and colleagues (1995) suggest that reducing analyses to the prediction of a bivariate dependent variable wastes information and reduces statistical power. Since the original offending variables in these data are counts of the number of offenses for each subject, other models may provide a better picture of the influence of military service on offending behavior. The first potential modeling strategy uses ordinary least squares regression to predict the number of adult offenses. While this model will predict the number of adult offenses committed, some authors argue that using OLS with event count data results in model misspecification for two main reasons (see Gardner et al., 1995). First, an OLS model may result in the prediction of negative and non-integer values, which are not possible in data where the dependent variable is a count of the number of offenses. Second, variances in count data are heteroscedastic, which results in distortion of the standard errors of the regression estimates. Using OLS, the standard errors are almost always estimated to be smaller than their true values, which inflates the test value for hypothesis testing (Gardner et al., 1995). This may result in inaccurate conclusions about the relationships in the data.

More appropriate models for count data should be based on the realities of that data, taking into account the requirement that predictions be positive, integer values

(Gardner et al., 1995). Count data models assume that events are generated by some underlying probability process. Barron (1992) describes the Poisson process as the most basic probability process in which events occur "at random". Poisson count models assume that events occur at a constant rate within a given period of time and that events are independent of each other (Barron, 1992). The Poisson probability distribution is denoted in the following equation (see Land, McCall, and Nagin, 1996: 389):

$$\Pr(Y = y) = \frac{e^{-\lambda}\lambda^{y}}{y!}$$

Cameron and Trivedi (1986) state that "this is a one-parameter distribution with mean and variance of Y equal to λ" (p. 31). Incorporating independent variables, the predicted count (λ) may be calculated with the following formula (see Cameron and Trivedi, 1986: 31):

$$\lambda = e^{\alpha+\beta_1 x_1+\beta_2 x_2+\ldots+\beta_n x_n}$$

Poisson models are more appropriate than OLS for count data because they meet the requirement that predicted values are non-negative, and they allow for the heteroscedasticity inherent in count data (Gardner et al., 1995). Though Poisson models are more appropriate, the model is restrictive because of the assumptions of the probability distribution. One assumption derived from the Poisson model is that the expected value (mean) and variance will be equal. This does not allow for the possibility of overdispersion in the data, which occurs when the variance is greater than the mean. Barron (1992) suggests that overdispersion may result when the occurrence of one event influences later events (state dependence) or when there is unobserved heterogeneity, both of which may be a reality in criminal event data. The data in this

study are clearly overdispersed, because the variance exceeds the mean for all of the offending variables (See Table 4). Overdispersion in count data leads to an underestimation of the parameter variances in the Poisson model, which inflates the t-ratios and may lead to inaccurate conclusions about any relationships in the data (Gardner et al., 1995).

This study will use two methods for dealing with overdispersion in count data; an overdispersed Poisson model and the negative binomial model. By adding a scale parameter to the Poisson model (referred to as ϕ), the t-ratios may be corrected for the underestimation of the parameter variances (Gardner et al., 1995). This scale (or dispersion) parameter is "a squared deviation of a score from its expected value, divided by what would be that score's variance assuming that the standard Poisson model were true" (Gardner et al., 1995: 397). Gardner and colleagues (1995) suggest that the use of the overdispersed Poisson model is justified when there is only "modest" overdispersion in the data. This model is more efficient than OLS and produces robust estimators and unbiased standard errors if the assumptions of the Poisson model are valid (Barron, 1992). However, the assumptions of the Poisson model are still problematic, especially with offending data. Barron (1992) argues that the assumption that events occur at a constant rate is unrealistic. Additionally, the Poisson model does not include an error term, requiring an assumption that the rate of events is completely determined by the observed covariates. In other words, the Poisson model does not allow for unobserved heterogeneity, which is also unrealistic, especially in social science data.

Another alternative for dealing with overdispersion in count data is the negative binomial model. The negative binomial is described as a form of the Poisson regression

model that includes a random component reflecting uncertainty about the true rate at which events occur for each individual (Gardner et al., 1995). This uncertainty may be caused by a number of factors, including unobserved heterogeneity or omitted/unobserved predictors. The negative binomial model can account for both of these possibilities (Barron, 1992). Specifically, the negative binomial is considered a compound Poisson distribution that allows λ to vary randomly according to the gamma probability distribution (Cameron and Trivedi, 1986). The negative binomial model is a maximum likelihood procedure based on the following equation (see Cameron and Trivedi, 1986; Land et al., 1996):

$$\Pr[Y_t = y_t] = \frac{\Gamma\left(y_i + \frac{1}{\alpha}\right)}{\Gamma(y_i + 1)\Gamma\left(\frac{1}{\alpha}\right)}\left(\frac{\frac{1}{\alpha}}{\frac{1}{\alpha} + \lambda_i}\right)^{\frac{1}{\alpha}}\left(\frac{\lambda_i}{\frac{1}{\alpha} + \lambda_i}\right)^{y_i}$$

This equation is derived from the assumption that the error term is gamma distributed with a mean of 1 and a variance of α (Land et al., 1996). The predicted number of offenses (λ) may be calculated with the same equation used in Poisson regression.

Gardner, Mulvey, and Shaw (1995) argue that it would be highly unusual in social science data to not have unexplained variation. The negative binomial explicitly models this unexplained variation (error) as an unobserved random variable. In the negative binomial, this variable is assumed to be gamma distributed, so it will be referred to as gamma. This parameter reflects the unobserved variation or heterogeneity between individuals that is unexplained by the variables in the model (Long, 1997). Since the error is explicitly modeled in the negative binomial, this strategy is able to control for unobserved heterogeneity. The negative binomial model is more flexible

than the Poisson model and more realistically fits the process generating the data. Gardner and colleagues (1995) suggest that this model provides a better account of the probability distribution underlying count data and that it more accurately characterizes the uncertainty in prediction that occurs in social science data.

For this study, a logistic regression model will be estimated to predict whether an event occurred. Additionally, the OLS, overdispersed Poisson, and negative binomial models will be estimated to predict the number of events that occurred. With a few minor differences in the significance of the parameter estimates (these are expected because of the characteristics of each model), the OLS, Poisson, and negative binomial models produced similar results. As explained above, the negative binomial model is the most appropriate model for criminal event data because the data are overdispersed, events are unlikely to occur at a constant rate, and it is unrealistic to believe that there is no unobserved variation in the data. For these reasons, the negative binomial results will be reported in the main tables for this study.

Racine 1942

In the first Racine birth cohort (1942), there appears to be no difference between the military and non-military groups with respect to later criminal behavior (See Table 9). About 32 percent of the non-military group and 25 percent of the military group had at least one police contact as an adult, and the difference between the groups was not statistically significant ($\chi^2 = 0.963$, $p = .33$). Additionally, there was no significant difference between the military and non-military groups in the average number of police contacts recorded after the age of 18. Both groups averaged about one adult police

contact for a non-traffic offense ($t = -0.99$, $p = .32$). These analyses suggested that the military and non-military groups had approximately the same pattern of adult offenses.

To examine the possibility that military service may influence crime-specific behavior, additional bivariate analyses focused on police contacts for violent, property, and public order offenses individually (See Table 9). Results from these analyses were similar to those obtained in the analysis of overall offending. Less than ten percent of each group had an adult police contact for a violent offense, and the difference between the groups was not statistically significant ($\chi^2 = 0.724$, $p = .40$). Additionally, both groups averaged very few contacts for violent offenses ($t = -0.82$, $p = .41$). For property offenses, less than ten percent of each group had an adult contact ($\chi^2 = 0.724$, $p = .40$), and both groups averaged less than one contact ($t = -0.83$, $p = .41$). A larger proportion of each group appears to have been involved in public order offenses. In both the military and non-military groups, more than 20 percent of the men had at least one adult contact for a public order offense, and the difference between the groups was not statistically significant ($\chi^2 = 0.634$, $p = .43$). Additionally, both groups averaged less than one contact for a public order offense, and there was no significant difference between the groups ($t = -0.83$, $p = .41$). Based on the bivariate results from this cohort, it appears that there was no difference in adult offending between the military and non-military groups, regardless of the type of offense considered.

Multivariate regression models were also estimated, each focusing on a different type of offense (all non-traffic, violent, property, and public order). The first regression models focused on police contacts for all non-traffic offenses (See Table 10). In both the logistic and the negative binomial regression models, the control variables had the

expected (though not all statistically significant) effects suggested by criminological research (see Nagin and Paternoster, 1991). Controlling for race, education, and SES, military service had a negative but not significant influence on overall offending. Serving in the military did not significantly affect either the likelihood of an adult contact (b = -0.559, t = -1.36) or the number of police contacts for non-traffic offenses (b = -0.478, t = -1.55). These results suggest that there was little influence of military service on later criminal behavior in this cohort in terms of overall offending.

To assess whether the influence of military service in this cohort was crime-specific the same regression models were estimated for violent, property, and public order contacts. These models produced similar results as the model predicting overall offending (See Table 11). Throughout all of these models, the effect of military service was negative but not significant. Controlling for race, education, and SES, military service had no significant influence on the likelihood of an adult police contact for a violent offense (b = -0.972, t = -1.17) or the number of adult contacts for violent offenses (b = -0.643, t = -1.05). In the models predicting police contacts for property offenses, there was also no significant influence of military service on the likelihood of an adult contact (b = -0.805, t = -1.08) or the number of contacts (b = -0.704, t = -0.96). Finally, there was also no influence of military service in the models predicting adult police contacts for public order offenses (b = -0.479, t = -1.13 for logistic regression model; b = -0.423, t = -1.36 for negative binomial model). Overall, these results indicate that military service had no influence on later criminal behavior in this cohort, regardless of the type of offense considered.

Philadelphia 1945

In the 1945 Philadelphia birth cohort, the first bivariate analyses examined overall adult offending with the number of police contacts for any non-traffic offense. In this cohort, there was no difference between the military and non-military groups in terms of adult offending (See Table 12). About 26 percent of the non-military group and 20 percent of the military group had at least one adult contact for a non-traffic offense, and this difference was not statistically significant ($\chi^2 = 2.443$, $p = .12$). There was also no difference in the average number of adult contacts ($t = -1.77$, $p = .08$). Based on these results, there appears to be no difference in later overall offending by military service.

To determine whether the influence of military service was crime-specific, the military and non-military groups were also compared in terms of violent, property, and public order offenses (See Table 12). Less than ten percent of each group had a police contact for a violent offense, and the difference between the groups was not statistically significant ($\chi^2 = 0.266$, $p = .61$). There was also no significant difference between the groups in the number of contacts for violent offenses ($t = -0.74$, $p = .46$). For property offenses, about six percent of the military group and ten percent of the non-military group had an adult contact, and this difference was not significant ($\chi^2 = 3.017$, $p = .08$). Additionally, the military and non-military groups both averaged very few adult contacts for property offenses ($t = -1.72$, $p = .09$). Finally, about 20 percent of the non-military group and only 13 percent of the military group had an adult contact for a public order offense ($\chi^2 = 4.334$, $p < .05$). The non-military group also averaged nearly twice as many adult contacts for public order offenses ($t = -2.17$, $p < .05$). Based on the

bivariate results from this cohort, it appears that the only difference in adult offending was specific to public order offenses.

Multivariate regression models predicting adult offending were also estimated for this cohort, including race, education, and socioeconomic status as control variables. The first models focused on police contacts for all non-traffic offenses (See Table 13). In both models, the control variables generally had the expected effects. In contrast to the bivariate results, once control variables were accounted for, there was a significant positive influence of military service on adult offending. Controlling for race, education, and SES, men who served in the military were significantly less likely to have an adult contact ($b = -0.649$, $t = -2.95$). When the regression coefficients were translated into predicted probabilities at the mean levels of the control variables, the probability of an arrest was 0.15 for those with military service and 0.25 for those without military service. The relative risk of having an adult contact was about 1.7 times greater for men with no military experience. Serving in the military also significantly reduced the number of police contacts for non-traffic offenses ($b = -0.709$, $t = -3.22$). Using the regression equation and the mean levels of the control variables, the predicted number of adult contacts for the military group was 0.31, and the predicted number of contacts for the non-military group was 0.64. In this cohort, military service appears to have reduced the number of adult contacts for non-traffic offenses by about half.

Additional models predicted police contacts for specific offense types (See Table 14). In the models predicting contacts for violent offenses, the effect of military service was not significant. Controlling for race, education, and SES, military service

had no significant effect on either the likelihood of an adult police contact (b = -0.352, t = -1.00) or the number of contacts for violent offenses (b = -0.407, t = -1.26). In the models predicting police contacts for property offenses, being in the military significantly reduced the likelihood of an adult contact (b = -0.703, t = -1.97). When the regression coefficients were converted to probabilities at mean levels of the other variables, the probability of an arrest for a property offense was 0.03 for those who served in the military and 0.05 for those who did not serve. These probabilities were very low, but holding race, education, and SES constant, the relative risk of an adult contact for a property offense was nearly twice as high for men with no military experience. Military service also reduced the number of adult contacts for property offenses (b = -0.651, t = -1.92), and this effect was nearly significant (p = .06).

In the model predicting the likelihood of an adult contact for a public order offense, the effect of military service was negative and nearly significant (b = -0.528, t = -1.71). Military service also significantly reduced the number of police contacts for public order offenses (b = -0.688, t = -2.96). At the mean levels of the other variables, the predicted average number of contacts was 0.15 for the military group and 0.31 for the non-military group. In this cohort, military service appears to have reduced the predicted number of police contacts for public order offenses by about 50 percent. These results suggest that military service had an important influence on later criminal behavior in this cohort, specifically for property and public order offenses. Men who served in the military appear to have been less involved in later offending as measured by official records. The only exception was violent offenses, for which there was no influence of military service.

Racine 1949

In the 1949 Racine birth cohort, the bivariate analyses indicated no differences in adult offending between the military and non-military groups (See Table 15). Less than 40 percent of each group had at least one adult police contact for a non-traffic offense, and this difference was not statistically significant ($\chi^2 = 0.886$, $p = .35$). Though the non-military group averaged nearly twice as many adult contacts, the difference between the groups was not statistically significant ($t = 0.52$, $p = .60$). These results suggest that there was no difference between the groups in terms of their involvement in adult offending as measured by non-traffic police contacts.

Additional bivariate analyses focused specifically on police contacts for violent, property, and public order offenses (See Table 15). Less than ten percent of each group had an adult police contact for a violent offense, and the difference between the groups was not statistically significant ($\chi^2 = 0.410$, $p = .52$). Also, the average number of contacts for violent offenses was very small for both groups ($t = -0.67$, $p = .50$). Less than ten percent of each group had at least one adult contact for a property offense, and this difference was not statistically significant ($\chi^2 = 0.656$, $p = .42$). There was also no significant difference between groups in the average number of adult police contacts recorded ($t = -0.85$, $p = .40$). A larger proportion of each group was involved in public order offenses. About 34 percent of the military group and 30 percent of the non-military group had an adult police contact for a public order offense, and the difference was not statistically significant ($\chi^2 = 0.386$, $p = .53$). Additionally, both groups averaged about one contact for a public order offense ($t = 0.24$, $p = .81$). Based on these

analyses, there did not appear to be a significant difference in offending patterns between the two groups.

As with the previous cohorts, multivariate regression models were estimated to predict adult offending with military service, and race, education, and SES were included as control variables. The dependent variables for the first two models were measures of police contacts for all non-traffic offenses (See Table 16). In these models, the control variables had the expected effects on adult offending. Controlling for race, education, and SES, military service did not significantly affect the likelihood of an adult contact ($b = 0.017$, $t = 0.05$). However, serving in the military significantly reduced the number of adult contacts for non-traffic offenses ($b = -0.606$, $t = -1.98$). At the mean levels of the control variables, the predicted number of adult contacts was 0.94 for the non-military group and 0.51 for the military group. According to these results, military service appears to have reduced the predicted number of contacts by nearly 50 percent.

Multivariate regression models were also estimated to predict adult police contacts for violent, property, and public order offenses (See Table 17). Controlling for race, education, and SES, military service did not significantly predict either the likelihood of an adult police contact for a violent offense ($b = -0.640$, $t = -1.10$) or the number of contacts ($b = -0.945$, $t = -1.14$). Similarly, in the models predicting police contacts for property offenses, the effect of military service was not significant in either model ($b = -0.667$, $t = -1.20$ for logistic regression model; $b = -1.024$, $t = -1.54$ for negative binomial model). Finally, controlling for race, education, and SES, military service also did not significantly influence the likelihood of an adult contact for a public

order offense (b = -0.096, t = -0.31). However, serving in the military significantly reduced the number of police contacts for public order offenses (b = -0.609, t = -2.03). The predicted number of public order contacts was 0.73 for the non-military group and 0.40 for the military group. For public order offenses, military service appears to have reduced the number of later police contacts by about 45 percent. Results from these models suggest that, in this cohort, there was no influence of military service on adult offending, with the possible exception of public order offenses. The difference in the significance of the military service parameter for the same offense types is problematic. There is no particular reason to believe that military service should only influence prevalence or only incidence. For this reason, conclusions must be delayed until additional analyses are performed.

National Longitudinal Survey of Youth

Unlike the measures used in the previous cohorts, offending in the National Longitudinal Survey of Youth is measured through self-reports. The first two variables provided self-reports of whether a subject was stopped by police for a non-traffic offense within the previous year and how many times they were stopped. These variables approximated similar information in the birth cohorts about police contacts for non-traffic offenses. About 15 percent of the military group and 20 percent of the non-military group reported having been stopped by police for something other than a traffic offense in the previous year (See Table 18). The difference between the groups was not large, but it was statistically significant ($\chi^2 = 6.348$, $p < .05$). Additionally, men with no

military experience reported significantly more police contacts than the military group ($t = -2.50$, $p < .05$).

Additional bivariate analyses examined self-reported violent, property, and drug offenses (See Table 18). Approximately 45 percent of both the military and non-military groups reported being involved in a violent offense in the previous year, and the difference between the groups was not statistically significant ($\chi^2 = 0.714$, $p = .40$). Both groups also reported an average of more than one violent offense in the previous year ($t = 0.85$, $p = .39$). The results were similar for property offending. About 47 percent of each group reported having committed a property offense in the previous year ($\chi^2 = 0.088$, $p = .77$), and both groups reported an average of nearly two property offenses ($t = 0.02$, $p = .99$). A different picture emerges, however, when looking at measures of drug offenses. About 21 percent of the military group and only 15 percent of the non-military group reported being involved in a drug offense in the previous year ($\chi^2 = 10.068$, $p < .01$). Additionally, men in the military group reported significantly more drug offenses ($t = 3.51$, $p < .001$). Bivariate analyses with this cohort suggest that the military and non-military groups had similar patterns of offending, with the exception of drug offenses.

The next step was to estimate multivariate regression models to determine the influence of military service on later offending, controlling for other relevant factors. Since this cohort included men born in different years, age in 1980 (the year of the interview) was included as an additional control variable. The first set of regression models focused on self-reported police contacts within the previous year (See Table 19). In these models, there was no effect of military service. Having served in the

military did not significantly influence either the likelihood of being stopped by police (b = -0.208, t = -1.46) or the number of police contacts (b = -0.211, t = -1.62).[8]

Regression models were also estimated to predict specific offense types (See Table 20). Despite the nonsignificant bivariate results, the influence of military service was significant in the multivariate equations predicting violent offending. Controlling for race, education, SES, and age, military service significantly increased the likelihood of committing a violent offense in the previous year (b = 0.452, t = 4.30). When the regression coefficients were translated into probabilities at the mean levels of the control variables, the probability of committing a violent offense was 0.54 for the military group and 0.43 for the non-military group. The relative risk of committing a violent offense was about 1.3 times greater for an individual with military service compared to someone without military experience. Military service also significantly increased the number of violent offenses (b = 0.302, t = 4.22). Using the regression equation and the mean levels of the control variables, the predicted number of violent offenses was 1.69 for the military group and 1.25 for the non-military group. In this case, military service appears to have increased violent offending by about 26 percent.

In the models predicting property offenses, military service also had a significant effect (See Table 20). Military service significantly increased the likelihood of having committed a property offense (b = 0.305, t = 2.93). At the mean levels of the

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[8] For all of the models in this section, the distribution of offenses was truncated at 10. Additional models were estimated using cut-off points of 50 and 100. This did not change any of the results.

control variables, the predicted probability of committing a property offense was 0.53 for the military group and 0.46 for the non-military group. The relative risk of committing a property offense was about 1.2 times greater for men with military service. Serving in the military also significantly increased the number of self-reported property offenses ($b = 0.237$, $t = 2.92$). At the mean values of the control variables, the predicted number of property offenses was 2.18 for the military group and 1.72 for the non-military group. In this cohort, military service appears to have increased property offending by nearly 30 percent.

Military service was also influential in the models predicting drug offenses (See Table 20). Controlling for relevant variables, men with military experience were more likely to report having committed a drug offense in the previous year, and this effect was nearly significant ($b = 0.241$, $t = 1.85$). Serving in the military also significantly increased the number of drug offenses reported ($b = 0.335$, $t = 1.97$). Using the regression equation and the mean levels of the control variables, the predicted number of drug offenses was 0.72 for the non-military group and 1.00 for the military group. Military service appears to have increased the average number of drug offenses reported by nearly 40 percent. In this cohort, military experience appears to have had an important influence on later offending, especially violent, property, and drug offenses.

Accounting for the Influence of Selection

In trying to answer the general question regarding the influence of military service, results suggest that, for three of the four cohorts, military service may have influenced later criminal behavior. In two of the birth cohorts, military service reduced

later offending, and in the NLSY, serving in the military increased later criminal behavior. However, neither military service nor criminal behavior are random events. Therefore, it is possible that the influence of military service on later offending was spurious due to other factors related to selection. There are two ways in which selection may be playing a role. First, adult offenders typically have a record of prior criminal behavior. Thus, adult offending may merely be a continuation of prior offending. Second, factors that influence who eventually serves in the military may account for the effect of military service observed in previous analyses.

One potential confounding factor in predicting adult offending is juvenile offending. Nagin and Paternoster (1991) comment that continuity in offending as evidenced by the relationship between past and future criminal behavior has been consistently documented in criminological research. Because of this, it is possible that adult offending is merely a continuation of prior behavior rather than an effect of military service. An extension of the main hypothesis suggests that, even after accounting for continuity in criminal behavior, military service will still influence later offending. To test this hypothesis, the military and non-military groups will be compared in terms of the proportion of nonoffenders, juvenile only offenders, continuous offenders, and adult only offenders. Additionally, multivariate analyses will estimate the influence of military service on later offending with a control for prior offending. For the birth cohorts, prior offending was measured as the number of juvenile police contacts for non-traffic offenses. For the NLSY, the control variable was dichotomous, indicating whether the men reported being stopped by the police as juveniles. Similar to analyses with the main hypothesis, logistic regression models will

be estimated predicting the likelihood of an adult police contact. Three additional models (OLS regression, Poisson count models, and negative binomial count models) will be estimated predicting the number of adult police contacts. These models will predict overall offending (non-traffic offenses) as well as violent, property, and public order or drug offending.

The second potential confounding influence is selection into military service. There may be important differences between the people who do and do not eventually serve in the military. The military may actively recruit or exclude certain people based on characteristics that are related to criminal behavior (e.g., aggression, poor school performance, dropping out of high school, etc.). This may be especially true during the period of the all-volunteer force, but throughout history, men have volunteered for service. In addition to the selection related to volunteerism, some research suggests that the draft may have differentially selected certain groups of men for service (e.g., poor, less educated, and minorities; see, for example, Gimbel and Booth, 1996). In this study, analyses will include control variables that may account for these selection differences.

Racine 1942

In the 1942 Racine birth cohort, 49 percent of the non-military group and 43 percent of the military group had no police contacts as either juveniles or adults (See Table 21). Additionally, similar proportions of each group continued their offending, having police contacts during both the juvenile and adult periods. Compared to the non-military group, a larger proportion of the military group only had police contacts as juveniles, and a smaller proportion only had contacts as adults ($\chi^2 = 5.359$, $p = .15$).

These bivariate analyses suggest that men with military experience were most likely to either discontinue their offending as adults or to continue their offending into adulthood as opposed to initiating offending as adults.

Prior offending was an important variable in multivariate regression models predicting adult police contacts. The first models predicted adult contacts for non-traffic offenses with military service, race, education, SES, and the number of juvenile police contacts (See Table 22). In previous analyses, military service was related to a reduction in later offending, but the effect was not significant. However, adding a variable measuring prior criminal behavior changed these conclusions for some models. As expected, men with more juvenile police contacts were also significantly more likely to have an adult contact ($b = 0.207$, $t = 2.51$) and to have more police contacts ($b = 0.155$, $t = 3.33$). Controlling for prior police contacts and other relevant variables, the effect of military service on the likelihood of an adult contact was not significant ($b = -0.594$, $t = -1.40$). Military service did, however, significantly reduce the number of adult contacts for non-traffic offenses when the number of prior police contacts were held constant ($b = -0.664$, $t = -2.06$). At the mean levels of the control variables, the predicted number of adult contacts was 0.73 for the non-military group and 0.38 for the military group. In this model, military service appears to have reduced the number of non-traffic contacts by about 48 percent.

Adding a variable measuring juvenile police contacts to regression models predicting adult contacts for violent, property, and public order offenses did not change the effect of military service (See Table 23). In all of the models, having more juvenile police contacts significantly increased later offending. Controlling for prior criminal

behavior and other relevant variables, military service did not significantly influence adult police contacts for violent offenses (b = -1.182, t = -1.33 for logistic regression model; b = -1.261, t = -1.86 for negative binomial model). There was also no significant influence of military service on contacts for property offenses (b = -0.993, t = -1.23 for logistic regression model; b = -0.770, t = -0.99 for negative binomial model) or on adult contacts for public order offenses (b = -0.495, t = -1.15 for logistic regression model; b = -0.543, t = -1.64 for negative binomial model). In this cohort, it appears that there was continuity in offending, but with one exception, military service did not significantly influence later criminal behavior.

To address the issue of selection into the military for this cohort, analyses examined a variable indicating whether the men had been drafted. To control for selection, this variable should be included in the multivariate regression models. However, only six men in this cohort were drafted, and all six served in the military. This distribution does not provide enough variability for these models, so these six cases were examined individually. All six were white, and all but one man had completed at least a high school education. Among these men, neighborhood SES varied widely from the lowest possible score to high SES scores. Three men had a record of juvenile police contacts, and two of those had adult contacts, none of which were for violent or property offenses. Among these six men, adult criminal behavior (or lack thereof) appeared to be mainly a continuation of prior behavior, and there did not appear to be any major differences between the men who were drafted and other men who served in the military.

Philadelphia 1945

The pattern of offending in the 1945 Philadelphia birth cohort appears to be similar to that described for the 1942 cohort (See Table 24). In terms of continuity in offending, the majority of both groups had no police contacts during either the juvenile or adult period. Additionally, equal proportions of the military and non-military groups had police contacts as both juveniles and adults. However, there was also change in offending. Compared to men with no military experience, a larger proportion of the military group had only juvenile police contacts, and a smaller proportion had only adult contacts ($\chi^2 = 6.751$, $p = .08$). These analyses suggest that police contacts that occurred after entering the military were more likely to be a continuation of prior behavior patterns than the initiation of offending.

In analyses of the main hypothesis with the Philadelphia birth cohort, military service significantly reduced police contacts for non-traffic, property, and public order offenses. When juvenile police contacts were included in the models, the influence of military service remained significant, and the magnitude of the effect increased slightly across nearly all of the models. The first multivariate regression models in this section analyzed overall offending as measured by adult police contacts for all non-traffic offenses (See Table 25). In these models, men with more juvenile contacts were significantly more likely to have an adult contact ($b = 0.269$, $t = 3.85$) and to have more contacts ($b = 0.200$, $t = 3.45$). Holding prior behavior constant, men who served in the military were significantly less likely to have an adult police contact compared to the non-military group ($b = -0.665$, $t = -2.93$). At mean levels of the independent variables, the probability of an adult contact was 0.15 for the military group and 0.25 for the non-

military group, corresponding to a relative risk nearly 1.7 times greater for men with no military service. Military service also significantly reduced the number of police contacts for non-traffic offenses (b = -0.814, t = -3.40). The predicted average number of police contacts was 0.27 for the military group and 0.60 for the non-military group. Military service appears to have reduced the predicted number of contacts by more than 50 percent.

Additional multivariate regression models were estimated to predict police contacts for violent, property, and public order offenses (See Table 26). Across all of these models, there was a significant influence of juvenile police contacts on later offending. In the models predicting contacts for violent offenses, military service did not significantly influence either the likelihood of an adult police contact (b = -0.403, t = -1.11) or the number of contacts (b = -0.367, t = -1.14). However, the effect of military experience was statistically significant in the models predicting property offenses. Controlling for juvenile police contacts, serving in the military significantly reduced the likelihood of an adult contact for a property offense (b = -0.858, t = -2.25). When the coefficients were converted into probabilities at the mean levels of the other variables, the predicted probability of an arrest was 0.02 for the military group and 0.05 for the non-military group. Though the probability of a police contact was very low for both groups, the relative risk was more than two times greater for the non-military group. The effect of military service on the number of adult contacts was also negative (b = -0.634, t = -1.79), and it was nearly significant (p = .07). At the mean levels of the control variables, the predicted average number of contacts was 0.07 for the military

groups and 0.13 for the non-military group. Both values were very low again, but the predicted number of contacts was nearly twice as high for the non-military group.

There was also a significant influence of military service in the models predicting contacts for public order offenses. Men who served in the military were significantly less likely to have an adult police contact (b = -0.810, t = -3.10). At the mean levels of the other variables in the model, the probability of an adult contact was 0.09 for men with military service and 0.18 for men with no military service. The relative risk of an adult contact for a public order offense was two times greater for men who did not serve in the military. Military service also significantly reduced the number of adult contacts for public order offenses (b = -0.726, t = -2.80). At the mean levels of the control variables, the predicted average number of police contacts was 0.14 for men with military service and 0.29 for men with no military service. Military service appears to have reduced the predicted number of police contacts by more than 50 percent. In this cohort, it appears that military service had an important influence on later offending, even when the models included a control for prior criminal behavior.[9]

Additional models were estimated to incorporate a control for selection into the military. Sampson and Laub (1996) and Gimbel and Booth (1994) find that IQ may be an important predictor of serving in the military. A measure of IQ was available for the 1945 Philadelphia birth cohort, and military service and IQ test scores were

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[9] The apparent reduction in offending in this cohort may be due to decreased time at risk for the military group. A sensitivity analysis was conducted to take into account differences in time at risk. The results did not change.

significantly related. Men who served in the military had a significantly lower IQ score than men in the non-military group ($t = 2.735$, $p < .01$). However, IQ had no significant impact on adult offending when it was included in the multivariate regression models. Additionally, adding IQ to these models did not change the effects of any of the other variables. Controlling for prior criminal behavior, selection into the military, and other relevant variables, serving in the military reduced later police contacts for non-traffic, property, and public order offenses.

Racine 1949

In the 1949 Racine birth cohort, the military and non-military groups have different patterns of offending (See Table 27). About 47 percent of the non-military group and only 30 percent of the military group had no police contacts during either the juvenile or adult period. Compared to men with no military experience, men who served in the military were more likely to be juvenile only offenders or to have police contacts during both periods. Fewer members of the military group only had police contacts as adults ($\chi^2 = 12.502$, $p < .01$). These analyses suggest that men who served in the military were most likely to either discontinue their offending in adulthood or to continue their prior behavior.

Both military service and juvenile police contacts influenced later offending in multivariate regression models. In previous analyses, military service appears to have influenced non-traffic and public order contacts. Adding a control for juvenile police contacts did not change these results. The first regression models focused on adult police contacts for non-traffic offenses (See Table 28). Controlling for the number of

juvenile police contacts, military service had no influence on the likelihood of an adult contact (b = -0.497, t = -1.39) but significantly reduced the number of adult police contacts for non-traffic offenses (b = -0.927, t = -2.97). At the mean levels of the control variables, the predicted average number of adult contacts was 0.34 for men who served in the military and 0.87 for men who did not serve in the military. Military service appears to have reduced the predicted police contacts for non-traffic offenses by more than 50 percent.

Additional regression models were estimated to predict police contacts for violent, property, and public order offenses (See Table 29). In the models predicting contacts for violent offenses, military service had no significant influence on either the likelihood of an adult contact (b = -1.088, t = -1.60) or the number of adult police contacts (b = -1.114, t = -1.59). Military service also had no significant influence on the likelihood of an adult contact for a property offense (b = -0.919, t = -1.53). However, serving in the military significantly reduced the number of contacts for property offenses (b = -1.512, t = -2.03). At the mean levels of the control variables, the predicted number of property offenses was 0.10 for the non-military group and 0.02 for the military group. Both groups were predicted to averaged a very small number of adult contacts, but the predicted number of contacts were 80 percent lower for men with military service.

In the models predicting contacts for public order offenses (See Table 29), serving in the military reduced the likelihood of an adult contact (b = -0.655, t = -1.60), and this effect was nearly significant. Military service also significantly reduced the number of adult contacts for public order offenses (b = -0.842, t = -2.67). At the mean

levels of the control variables, the predicted average number of police contacts for public order offenses was 0.31 for men who served in the military and 0.72 for men who did not serve in the military. Military service reduced the predicted number of police contacts for public order offenses by more than 50 percent. In this cohort, military service appears to have had an important and beneficial effect on later offending, especially for public order offenses.[10]

In addition to the importance of military service and juvenile police contacts, a variable was added to these models to attempt to account for selection into the military. As in the 1942 cohort, a variable was available indicating whether the men had been drafted (all of the men who were drafted eventually served in the military). Draft status had no significant influence on adult police contacts in any of these models, and adding this variable did not change the effects of any other variables. With controls for prior offending, selection, and other relevant variables, military service significantly reduced later non-traffic, property, and public order contacts. Moreover, these results maintained when controlling for unobserved heterogeneity.

National Longitudinal Survey of Youth

In the NLSY, the military and non-military groups were compared in terms of the continuity or change in their criminal behavior (See Table 30). A similar and large

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[10] The apparent reduction in offending in this cohort may be due to decreased time at risk for the military group. A sensitivity analysis was conducted to take into account differences in time at risk. The results did not change.

proportion of both groups reported no police contacts as either juveniles or adults. Compared to the non-military group, fewer men with military service reported a police contact during both periods. A larger proportion of men with military service were either juvenile only or adult only offenders ($\chi^2 = 44.038$, $p < .01$). These analyses suggest that, while the majority of men reported no offense, military service during this period was associated with change in behavior more than continuity in offending.

In previous multivariate analyses with the NLSY, military service increased later violent, property, and drug offenses. Additional multivariate regression models were estimated to control for prior criminal behavior. A dichotomous variable was included to indicate whether the men had been stopped by the police as a juvenile. The first models focused on self-reported contact with the police (See Table 31). As expected, having been stopped as a juvenile significantly increased adult police contacts in these models. Controlling for juvenile police contacts, military service had no significant effect on later self-reported police contacts. In particular, controlling for prior offending, race, education, SES, and age, military service had no significant effect on either the likelihood of a self-reported police contact ($b = -0.262$, $t = -1.58$) or the number of self-reported police contacts ($b = -0.254$, $t = -1.89$).[11]

Additional analyses focused on self-reported violent, property, and drug offenses (See Table 32). In the models predicting violent offending, military service

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[11] For all of the models in this section, the distribution of offenses was truncated at 10. Additional models were estimated using cut-off points of 50 and 100. This did not change any of the results.

significantly increased self-reported offenses. Controlling for juvenile police contacts and other relevant variables, men who served in the military were significantly more likely to report a violent offense within the previous year ($b = 0.471$, $t = 4.41$). At the mean levels of the other variables, the predicted probability of having committed a violent offense was 0.55 for men who served in the military and 0.43 for men who did not serve. The relative risk of committing a violent offense was about 1.3 times greater for men with military experience. Military service also significantly increased the number of violent offenses reported ($b = 0.346$, $t = 4.76$). At the mean levels of the control variables, the predicted average number of offenses was 1.70 for men with military service and 1.20 for men without military service. Military service appears to have increased the predicted number of violent offenses reported by more than 40 percent.

Military service also had a significant influence on self-reported property offenses (See Table 32). Men with military experience were significantly more likely to report committing a property offense in the previous year ($b = 0.318$, $t = 3.02$). At the mean levels of the control variables in the model, the predicted probability of a property offense was 0.54 for the military group and 0.46 for the non-military group. The relative risk of committing a property offense was about 1.2 times greater for men with military experience. Serving in the military also significantly increased the number of self-reported property offenses ($b = 0.231$, $t = 2.98$). The predicted number of offenses was 2.06 for the military group and 1.64 for the non-military group, corresponding to an increase of about 25 percent in the number of property offenses.

Additional models predicted self-reported drug offenses (See Table 32). Men who served in the military were significantly more likely to report having committed a drug offense ($b = 0.259$, $t = 1.95$). At the mean levels of the control variables, the predicted probability of committing a drug offense was 0.18 for men with military service and 0.15 for men with no military service. The relative risk of committing a drug offense was about 1.2 times greater for men who served in the military. Controlling for juvenile police contacts, men who served in the military also reported significantly more drug offenses ($b = 0.245$, $t = 2.10$). At the mean levels of the control variables, the predicted average number of drug offenses was 0.85 for men with military experience and 0.66 for men with no military experience. Military service increased the number of drug offenses by nearly 30 percent. In this cohort, it appears that military service had an important influence on later offending, even controlling for prior behavior patterns.

Both military service and prior criminal behavior played important roles in predicting later offending in this cohort. An additional variable was added to these models in an attempt to control for selection into the military. In this cohort, a dichotomous variable captured whether men had ever participated in an ROTC program. Participation in ROTC was not significantly related to military service in this cohort ($\chi^2 = 0.443$, $p = .51$). When this variable was added to the models, it did not influence later criminal behavior and did not change the effects of any other variables in the models. After taking into consideration juvenile police contacts, selection into the military, and other relevant variables, military service increased violent, property, and drug offending.

The NLSY is a probability sample, which raises the issue of weighting in multivariate regression models. The analyses presented in this section describe how military service and later criminal behavior were related in this sample. However, some groups in the population were oversampled in the NLSY (e.g., Hispanics, African-Americans and the economically disadvantaged, see Center for Human Resource Research, 1995). Thus, the probability of being selected into the sample was not the same for all members of the population. To be able to make estimates of the relationship between military service and offending in the population, analyses must account for these differences. Sampling weights were available representing an estimate of the number of people in the population that each case represents (Center for Human Resource Research, 1995). The sample weights were normed by dividing the weight for each subject by the average weight for the sample as a whole. These normed weights were used in weighted regression models (logistic regression, OLS, and overdispersed Poisson) for all four offense types. Military service, age, race, education, SES, and prior offending were included as independent variables. The influence of military service on later police contacts and violent offenses did not change in terms of either the magnitude or the significance (See Appendix C). However, the significant effect on later property and drug offenses was not significant in the weighted models, and the magnitude of the effect decreased. Thus, it appears that the relationship between military service and later violence is robust, but the influence of military service on property and drug offenses may only be true in this sample.

The Timing of Military Service in the Life Course

Another important issue in examining the influence of military service in the life course is the timing of that service. The timing of service may change the way that military experience influences behavior (see, for example, Elder, 1999). For those who enter early, military service occurs at an opportune time in their life course and may have a beneficial influence on criminal behavior. However, late entrants may experience disruptions in their life course. There is no real guideline in existing research that defines what constitutes early versus late entry. Elder (1987) characterized timing with three groups (early, on-time, and late), and Sampson and Laub (1996) only used two groups. In this study, the actual age of entry into the military was available for all men with military service. Based on the distribution of this variable, men with military experience were separated into early and late-entry groups. For all cohorts, the mean and median age of entry were the same. Additionally, it was determined that men who entered at the mean age of entry should not be considered "late-entrants." For these reasons, the cut-off point to separate the groups was defined as the age at the 75th percentile of the distribution. The actual age at this point differed for each cohort. Men who entered the military before or at this point were classified as "early entrants", and men who entered after that age were classified as "late entrants".

Distinguishing the average age of entry for each cohort allows for the impact of historical forces. The average age of entry has changed over time. Likewise, conceptions of early and late entry have also changed. In the 1942 Racine cohort, the age of entry ranged from 17 to 24, with a mean and median of 19 (the standard deviation was 2.13). The 75th percentile for this distribution corresponded to an age of

21. The range of ages varied more widely for the 1945 Philadelphia cohort (17-27). Both the mean and median age for this cohort were 19 (with a standard deviation of 1.58), and the 75th percentile fell at the age of 20. The 1949 Racine cohort had a similar distribution for age of entry, with a range from 17 to 24. The median and mean for this cohort were both 19 (with a standard deviation of 1.34), and the 75th percentile fell at the age of 19. Finally, the distribution of age at entry was more compact for the NLSY with a range from 17 to 21. Both the mean and median were 18 (with a standard deviation of 0.89), and 19 fell at the 75th percentile.

To test the hypothesis that the timing of military service is influential in later offending, preliminary bivariate analyses will compare the early and late entrants in terms of both the percent with an adult police contact and the number of adult contacts. These analyses will focus on police contacts for non-traffic, violent, property, and public order offenses. Multivariate analyses will also examine how the timing of military service influences later offending. Timing in these analyses was measured as a dichotomous variable with a value of 0 representing early entrants and a value of 1 representing late entrants. Since this variable only applied to men who actually served in the military, the non-military group will be excluded from these analyses. In this section, a logistic regression model will be estimated to predict whether an adult offense/contact occurred for men with military experience. Additionally, an OLS regression model, an overdispersed Poisson model, and a negative binomial model will be estimated among men with military experience to predict the number of adult contacts/offenses. All of these models will be estimated for each of the offense types

and will include the dichotomous measure of timing in addition to the control variables used in previous models.

One problem with estimating these models only among men who served in the military is the issue of selection into the military. In addition to controlling for juvenile criminal behavior, models were estimated to attempt to account for other selection factors. An additional variable was examined for each cohort to determine whether specific selection differences were responsible for any effects identified in the models. For the Racine cohorts, a dichotomous variable identified whether the men were drafted. For the Philadelphia cohort, a continuous measure of IQ was available. For the NLSY, a dichotomous variable represented whether the men participated in ROTC. These variables provide some indication of selection differences in military service and may help in the analysis of whether selection differences are driving the results.

Racine 1942

In the 1942 Racine cohort, 61 men were identified as having military service. Of these, 13 men were classified as late entrants (defined as after the age of 21 for this cohort). These two groups were compared in terms of adult offending (See Table 33). About 25 percent of both early and late entrants had an adult police contact for a non-traffic offense ($\chi^2 = 0.020$, $p = .89$). There was also no significant difference between the groups in terms of the number of adult contacts ($t = -0.11$, $p = .91$). The results were similar when specific offense types were considered (See Table 33). Less than ten percent of each group had an adult contact for a violent offense, and this difference was not statistically significant ($\chi^2 = 0.272$, $p = .60$). The two groups were also similar in the

average number of contacts for violent offenses (t = 0.52, p = .61). For property offenses, less than ten percent of each group had an adult contact (χ^2 = 0.272, p = .60), and there was no difference between the groups in terms of the number of adult contacts (t = 0.46, p = .64). A larger proportion of each group had an adult contact for a public order offense; about 25 percent of the early-entry group and 15 percent of the late-entry group (χ^2 = 0.535, p = .47). There was also no significant difference between the groups in the average number of contacts for public order offenses (t = -0.69, p = .49). Among those who served in the military, the bivariate results indicated no significant influence of the timing of that service on later offending.

Previous analyses with the 1942 Racine cohort found no influence on military service, regardless of the type of offense considered and whether prior contacts were controlled. Analyses of the timing hypothesis continued to support those conclusions. The first models predicted adult contacts for non-traffic offenses among those who served in the military (See Table 34). In these models, the timing of service did not significantly influence either the likelihood of an adult contact for a non-traffic offense (b = -0.294, t = -0.30) or the number of contacts (b = -1.060, t = -1.22). Similarly, the timing of military service did not influence adult contacts for violent, property, or public order offenses (See Table 35).[12] Late entry had no significant effect on the

[12] For the models predicting violent and property offenses with the 1942 Racine cohort, there was not enough variability in the non-zero cases to justify models predicting the number of adult contacts. One man each had one, two, and three violent contacts. Two

likelihood of an adult contact for either violent offenses (b = 1.021, t = 0.43) or for property offenses (b = 0.343, t = 0.19). There was also no effect of timing in the models predicting either the likelihood of a police contact for a public order offense (b = -1.474, t = -1.14) or the number of contacts (b = -0.338, t = -1.98). In this cohort, it appears that military service in general and the timing of military service had no influence on later criminal behavior under any circumstances.

These models were estimated only for men with military service, so selection differences may be important in these analyses. The variable representing draft status is one way to examine selection, but there were only six men in this sample who were drafted. This number was not large enough to use this variable in the models, so the six men were compared individually in terms of timing and adult offending. Four of the six men were classified as late entrants. Only two of these men had an adult contact, and all of the recorded contacts were for public order offenses. Of the two men with adult police contacts, one entered the military early, and one entered late. From these comparisons, there appears to be no relationship between timing of service and later offending for men who were drafted. Thus, a conclusion that late entry has no influence on later criminal behavior appears to be true, regardless of selection.

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men had two and one man had four property contacts. For these two offense types, only logistic regression models were estimated.

Philadelphia 1945

In the 1945 Philadelphia birth cohort, the average age of entry into military service was about 19 (both the median and the mean), and the 75th percentile corresponded to an age of 20. Of the 271 men with military service, 52 (nearly 20 percent) joined the military after the age of 20 (late-entrants). In terms of adult offending, there were significant differences between the early and late-entry groups (See Table 36). About 23 percent of the early-entrants and only eight percent of the late-entrants had at least one adult contact for a non-traffic offense ($\chi^2 = 6.318$, $p < .05$). The early entry group also averaged significantly more contacts ($t = -2.34$, $p < .05$). Bivariate analyses for specific offense types with this cohort produced similar results with the exception of violent offenses (See Table 36). Less than ten percent of each group had an adult contact for a violent offense ($\chi^2 = 0.152$, $p = .70$), and both groups averaged very few adult contacts ($t = -0.91$, $p = .36$). For property offenses, about seven percent of the early-entrants and none of the late-entrants had an adult police contact ($\chi^2 = 4.037$, $p < .05$). Since the late entry group had no contacts, men who entered early averaged more contacts for property offenses, but this difference was not statistically significant ($t = -0.04$, $p = .97$). In terms of public order offenses, about 16 percent of the early-entrants and only two percent of the late-entrants had an adult contact ($\chi^2 = 6.913$, $p < .01$). The early entry group also averaged a greater number of adult police contacts ($t = -2.13$, $p < .05$). These bivariate analyses suggest that late entry reduced later contacts for non-traffic, property, and public order offenses.

Bivariate analyses with this cohort found a relationship between the timing of military service and later offending. However, multivariate analyses found little

relationship between the timing of service and later criminal behavior when relevant variables were controlled. The first models predicted police contacts for non-traffic offenses (See Table 37). Late entry into the military had no significant effect on the likelihood of an adult police contact (b = -0.842, t = -1.40). Additionally, the timing of military service did not significantly influence the number of adult police contacts for non-traffic offenses (b = -0.869, t = -1.63). Models predicting police contacts for specific offenses produced similar results (See Table 38). Late entry into the military had no significant effect on the likelihood of an adult contact (b = 0.474, t = 0.62) or the number of contacts for violent offenses (b = -0.213, t = -0.27). Similarly, the timing of military service had no significant effect on adult police contacts for property offenses (b = -24.304, t = -0.01 for logistic regression model; b = -15.219, t = -0.01 for negative binomial model) or on adult contacts for public order offenses (b = -1.852, t = -1.75 for logistic regression model; b = -1.761, t = -1.69 for negative binomial model).

Because these models were only estimated for the military group, issues of selection must be addressed. As in previous analyses with this cohort, a variable measuring IQ was added to these models. IQ did not significantly predict adult police contacts among men with military service. Additionally, adding this variable did not change the effects of any other variables in the models. Once selection and other relevant variables were accounted for, timing of military service had no effect on later criminal behavior in this cohort.

Racine 1949

Men in the 1949 Racine cohort joined the military at an average of 19 years old, and this was also the age at the 75th percentile. Of the 89 men with military service, 67 were considered early-entrants, and 22 men were late-entrants. These groups differed on some measures of adult offending (See Table 39). About 43 percent of the early-entrants and only 18 percent of the late-entrants had an adult contact for a non-traffic offense ($\chi^2 = 4.473$, $p < .05$). The early entrants also averaged more non-traffic contacts ($t = -1.93$, $p = .06$). Additional analyses examined police contacts for specific offense types. For violent offenses, less than ten percent of each group had an adult police contact ($\chi^2 = 0.063$, $p = .80$). There was also no difference between the groups in the number of police contacts ($t = -0.28$, $p = .78$). About eight percent of early entrants, compared to none of the late entrants had an adult property contact, but this difference was not statistically significant ($\chi^2 = 1.740$, $p = .19$). The difference between the groups in terms of the number of contacts was also not significant ($t = -0.03$, $p = .98$). More than twice as many men in the early entry group had an adult contact for a public order offense, and this difference was nearly significant ($\chi^2 = 3.153$, $p = .08$). The early entry group also averaged a greater number of contacts ($t = -1.71$, $p = .09$). These results suggest that there was some relationship between the timing of military service and later offending for non-traffic and public order offenses.

While the bivariate analyses found a relationship between the timing of service and later offending, this relationship disappeared in multivariate analyses. Among men with military experience, the timing of military service did not affect contacts for non-traffic offenses (See Table 40). Controlling for relevant variables, late entry did not

affect either the likelihood of an adult police contact (b = -1.518, t = -1.76) or the number of contacts for non-traffic offenses (b = -0.676, t = -1.14). Analyses predicting police contacts for specific offenses produced similar results (See Table 41).[13] Among men with military experience, late entry into the military had no significant effect on the likelihood of an adult contact for either violent offenses (b = 0.097, t = 0.08) or for property offenses (b = -25.100, t = -0.01). Finally, there was also no significant influence of late entry into the military on adult police contacts for public order offenses (b = -1.124, t = -1.35 for logistic regression model; b = -0.580, t = -0.85 for negative binomial model). A variable indicating whether the men were drafted was also added to these models to attempt to control for selection. Draft status had no influence on later police contacts in any of the models. Additionally, adding this variables did not change the effects of any of the other variables. After accounting for prior criminal behavior, selection, and other relevant variables, late entry into the military had no influence on later criminal behavior.

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[13] In the models predicting contacts for violent and property offenses with the military group in the 1949 Racine cohort, there was too little variation in the non-zero cases to justify models predicting the number of contacts. For both violent and property offenses, four men had one adult contact and one man had two contacts. Only logistic regression models were presented for these two offense types.

National Longitudinal Survey of Youth

Men in the NLSY who served in the military joined at an average of 18 years old, and the 75th percentile corresponded to an age of 19. Of the 515 men with military experience, 66 (about 13 percent) were identified as late entrants. These two groups looked similar in terms of police contacts and violent offenses (See Table 42). About 15 percent of each group reported having been stopped by police in the previous year, and this difference was not statistically significant ($\chi^2 = 0.002$, $p = .96$). There was also no significant difference between the groups in terms of the number of times they reported being stopped by the police ($t = 0.03$, $p = .98$). About half of each group reported a violent offense ($\chi^2 = 0.734$, $p = .39$). Additionally, both groups reported an averaged of more than one violent offense ($t = 0.55$, $p = .58$).

Bivariate analyses found significant differences between the groups, however, for property and drug offenses (See Table 42). About 49 percent of the early-entrants and only 36 percent of the late entrants reported a property offense within the previous year ($\chi^2 = 3.814$, $p = .05$), and the early entrants reported about twice as many property offenses as the late entrants ($t = -2.20$, $p < .05$). In terms of drug offenses, about 23 percent of the early entry group and nine percent of the late entry group reported at least one offense in the previous year ($\chi^2 = 6.447$, $p < .05$). Men who entered early also averaged significantly more drug offenses ($t = -2.47$, $p < .05$). These analyses indicate a relationship between the timing of service and later criminal behavior specifically for property and drug offenses.

Though bivariate analyses found a relationship between the timing of service and later criminal behavior for specific offense types, timing did not influence later

offending in multivariate analyses. The first analyses focused on self-reported police contacts within the previous year (See Table 43). In a logistic regression model predicting the likelihood of a self-reported police contact, late entry into the military had no significant effect (b = 0.067, t = 0.17). Late entry also had no significant influence on the number of self-reported police stops (b = 0.037, t = 0.10). Models predicting more specific offenses found similar results (See Table 44). Late entry into the military did not significantly influence either the likelihood of a violent offense within the previous year (b = 0.360, t = 1.24) or the number of self-reported violent offenses (b = 0.161, t = 0.89). There was also no effect of the timing of military service on self-reported property offenses within the previous year (b = -0.447, t = -1.54 for logistic regression model; b = -0.449, t = -1.57 for negative binomial model) or on drug offenses (b = -0.903, t = -1.95 for logistic regression model; b = -0.827, t = -1.66 for negative binomial model). In general for this cohort, it appears that the influence of military service does not translate to an influence of the timing of that service.

To account for possible selection differences in who serves in the military, an additional variable was considered. In the NLSY, this variable measured whether the men participated in an ROTC program. To control for selection, this variable should be included in the models. However, only four men who participated in ROTC eventually served in the military. This distribution was too highly skewed to include the variable in the analyses so the four men with ROTC were examined individually. Of these four men, two entered the military early, and two were classified as late entrants. Two men reported violent offenses, and only one man reported property offenses. Of the two men with violent offenses, one entered the military early and one entered late. The man who

reported property offenses entered early. There was no other offending reported by the four men who participated in ROTC and who served in the military. Among these men, there appear to be no differences between early and late entrants. The conclusion that timing of military service has no influence on later offending appears to be true regardless of selection and controlling for other relevant variables.

Chapter 7. The Historical Context of Military Service

Differences in results from prior research and differences observed in this study suggest that the influence of military service has changed over time. This study proposed that the influence of military service would depend on the historical context in which it occurred. Specifically, whereas previous research has indicated that service during World War II and Korea had a beneficial influence in men's lives, service during Vietnam and more recent times was hypothesized to exert a more criminogenic influence. In other words, men would begin or increase their offending after military service. Results from this study reveal a somewhat different story. In the cohorts that served during Vietnam, it appears that military service reduced later police contacts. However, service during the volunteer period of the military appears to have increased some types of later offending.

To examine the issue of historical context, the analyses conducted with each data set individually will be compared to assess the similarities and differences across cohorts. Teachman and Call (1996) suggest that separating analyses by historical period uses any change in the character of military service over time to make inferences about perceived effects. Because other factors were accounted for in the analyses, differences in the results may be attributed to the different historical periods during which the samples were eligible to serve in the military. Among the cohorts included in this study, there were two general periods of service; the Vietnam-era and the all-volunteer period. In previous analyses in this study, the three Vietnam-era cohorts consistently indicated that military experience was related to reduced offending for a variety of offense types and controlling for prior criminal behavior. The NLSY, representing the all-volunteer

period, suggested that military experience was related to increased violent, property, and drug offending. These results suggest that there was a difference between the Vietnam-era and the Volunteer-era in terms of the influence that military service had on later offending.

To more closely examine these differences by historical period, the first analyses will combine the three Vietnam cohorts, comparing the results from this larger sample to the results from the NLSY.[14] Finally, all of the cohorts will be combined into one overall sample, and analyses with this sample will also include a control for history and will examine the interaction between history and military service. The merging of these individual samples required some minor changes in variable measurement. First, the measurement of criminal behavior differed across the samples. Measures of drug offenses were only included in the NLSY and measures of public order offenses were only available in the birth cohorts, so these analyses will focus on the three offense types that were available for all samples; non-traffic, violent, and property offenses.

Across the cohorts included in this study, there were some differences in the data collection. In the three birth cohorts, criminal behavior was indicated with official records, and self-reports were used in the NLSY. Since self-reports tend to capture more offenses (Hindelang et al., 1981), any historical analysis with a combined sample may

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[14] The 1942 Racine cohort indicated no significant effect of military service on later police contacts. However, the effect was consistent across all of the models, indicating a reduction in later police contacts. For this reason, merging the 1942 cohort with the other cohorts that did find an effect of military service was justified.

find that the number of offenses increased over time, because the later information was gathered through self-report surveys. To control for this, a variable was created indicating whether criminal behavior was measured through self-report. Additionally, the follow-up period differed across the three birth cohorts (follow-up until the age of 35 in the 1942 Racine cohort, 30 in the 1945 Philadelphia cohort, and 27 in the 1949 Racine cohort). To eliminate any potential impact of the follow-up period, any contacts recorded after the age of 27 were dropped for the 1942 and 1945 cohorts. Very few contacts occurred after this age, so very few men were affected by this change. Existing variables also required some changes. The variable measuring juvenile offending was continuous in the birth cohorts but dichotomous in the NLSY. For this reason, the juvenile offending information in all of the cohorts was collapsed into a dichotomy indicating whether the men had a police contact as a juvenile.

An additional change in the variables was related to socioeconomic status, because it was measured differently in different samples. To be able to combine the samples, socioeconomic status must be measured similarly across the cohorts. The most basic measurement occurred in the Philadelphia cohort where SES was measured in five categories that were intended to divide the sample into roughly equally sized groups (i.e., 20 percent in each group; see Wolfgang et al., 1987). In the two Racine cohorts, the SES of the neighborhood was coded, and Shannon (1994) provided a coding scheme for placing the SES scores into five groups. When this coding scheme was used, the five groups were roughly equally sized. Because these three cohorts used measures that were broken down roughly into quintiles and because economic research examining issues of poverty and income inequality often uses quintiles (see Bernstein, et al., 2000), it was

determined that the measure of income in the NLSY should also be constructed in this way. Thus, the continuous measure of annual income was divided into five categories with roughly 20 percent of the men in each category.

Comparing the Vietnam and Volunteer Eras

The first step in analyzing potential historical differences in the influence of military service was to compare all of the Vietnam-era cohorts to the NLSY. The three birth cohorts were combined into a Vietnam-era sample of 963 men born between 1942 and 1949 (See Table 45). About 18 percent of the sample was non-white. The men in this sample completed an average of about 13 years of education, and about 86 percent graduated from high school. About 44 percent of the men served in the military, entering at an average of about 19 years old and serving an average of less than three years. About 38 percent of men in this sample had a juvenile police contact. Less than 30 percent had an adult contact for any non-traffic offense, and the men averaged about one adult contact. Fewer than ten percent of the men had an adult contact for a violent offense, and they averaged very few contacts. About eight percent of the sample had an adult contact for a property offense, and they also averaged less than one property contact. This combined sample will be compared with the NLSY, representing the Volunteer-era, which has been described previously (also see Table 45).

These samples were compared in terms of adult offending for three offense types; non-traffic, violent, and property offenses (See Table 46). In the Vietnam-era sample, a slightly higher percentage of the non-military group had an adult contact for a non-traffic offense, but this difference was not significant ($\chi^2 = 1.897$, $p = .17$). The

non-military group also had nearly twice as many adult police contacts as the military group ($t = -1.70$, $p = .09$). In the Volunteer-era sample, the difference between the groups in terms of the percentage with an adult contact was small but statistically significant ($\chi^2 = 6.348$, $p < .05$). The non-military group also averaged slightly more non-traffic contacts ($t = -2.50$, $p < .05$). For both groups, a comparison of the absolute numbers seems to indicate that the military group was less involved in later offending represented by police contacts for non-traffic offenses.

In both the Vietnam and Volunteer samples, the military and non-military groups appear to be similar in terms of violent and property offending (See Table 46). In the Vietnam-era sample, less than ten percent of both the military and non-military groups had a violent offense, and the difference between the groups was not significant ($\chi^2 = 0.446$, $p = .50$). Also, the number of violent offenses was very small for both groups ($t = -0.73$, $p = .16$). A significantly smaller percentage of the military group had an adult property offense ($\chi^2 = 4.786$, $p < .05$), and the military group committed fewer offenses than the non-military group ($t = -2.17$, $p < .05$). In the Volunteer sample, the military and non-military groups had similar patterns of violent and property offending. Nearly half of each group had a violent offense ($\chi^2 = 0.714$, $p = .40$), and both groups averaged about one offense ($t = 0.85$, $p = .39$). There was also no significant difference between the military and non-military groups in terms of either the percent with a later property offense ($\chi^2 = 0.088$, $p = .77$) or the average number of later property offenses ($t = 0.02$, $p = .99$). The bivariate analyses generally indicate that the military was less involved in offending in terms of overall non-traffic offenses. Though there was no difference between the groups in the Volunteer-era sample for violent and property

offenses, the military group was less involved in property offending during the Vietnam period.

In both samples, multivariate analyses were estimated to predict adult offending while controlling for important variables, including race, education, SES, and having a juvenile police contact.[15] The first models for both samples predicted adult contacts for non-traffic offenses (See Table 47). In the Vietnam-era sample, military service significantly reduced both the likelihood of an adult police contact for a non-traffic offense ($b = -0.556$, $t = -3.30$) and the number of contacts ($b = -0.751$, $t = -4.63$). At mean levels of the control variables, the predicted probability of an adult contact was 0.26 for the non-military group and 0.17 for the military group (a relative risk 1.5 times greater for the non-military group). The predicted number of adult contacts was 0.61 for the non-military group and 0.29 for the military group (corresponding to a 50 percent reduction in offenses for the military group). In the Volunteer sample, military experience had a negative but not significant effect on adult contacts for non-traffic offenses once relevant variables were controlled ($b = -0.220$, $t = -1.36$ for logistic regression model; $b = -0.207$, $t = -1.59$ for negative binomial model). While military experience appears to be related to reduced police contacts in the Vietnam-era sample, there was no relationship in the Volunteer-era sample.

[15] Analyses with the Volunteer-era sample basically replicate previous analyses for the NLSY with the exception that the grouped SES variable was used. For this reason, results presented in these tables may differ slightly from those presented earlier.

Additional regression models were estimated to predict adult violent offenses, and military service had different effects depending on the sample (See Table 48). In the Vietnam-era sample, military service reduced the likelihood of an adult violent offense, but the effect was not statistically significant (b = -0.393, t = -1.37). Serving in the military also reduced the number of adult violent offenses, and this effect was statistically significant (b = -0.642, t = -2.10). At the mean levels of the control variables, the predicted number of offenses was 0.05 for the non-military group and 0.03 for the military group. In the Volunteer-era sample, on the other hand, military service appears to have increased later violent offending. Serving in the military increased both the likelihood of a violent offense (b = 0.356, t = 3.44) and the number of offenses (b = 0.270, t = 3.78). For this sample, the predicted probability of a violent offense was 0.44 for the non-military group and 0.53 for the military group, and the relative risk of an offense was 1.2 times greater for men with military experience. The predicted number of offenses was 1.21 for the non-military group and 1.58 for the military group, corresponding to a 31 percent increase in offending for men who served in the military. In analyses with violent offenses, it appears that military service was related to decreased offending in the Vietnam-era sample and increased offending during the volunteer period.

The same appears to be true when looking at property offenses (See Table 49). In the Vietnam-era sample, military service significantly reduced both the likelihood of a property offense (b = -0.883, t = -3.12) and the average number of property offenses (b = -0.805, t = -2.87). At the mean levels of the control variables, the predicted probability of a property offense was 0.05 for the non-military group and 0.02 for the

military group. These probabilities are very small, but they correspond to a relative risk about 2.5 times higher for men who did not serve in the military. The predicted number of property offenses was 0.09 for the non-military group and 0.04 for the military group. Though the predicted number of offenses was very small for both groups, the military group was predicted to commit more than 50 percent fewer property offenses. In the Volunteer-era sample, however, military service was related to increased property offending. Controlling for relevant variables, serving in the military significantly increased the likelihood of a property offense ($b = 0.214$, $t = 2.10$). At the mean levels of the control variables, the predicted probability of a property offense in the volunteer-era sample was 0.46 for the non-military group and 0.52 for the military group. These probabilities correspond to a very weak relative risk of a property offense only 1.1 times higher for men with military experience. The effect of military experience on the number of offenses was also positive and nearly significant ($b = 0.139$, $t = 1.84$). Similar to the analyses with violent offenses, it appears that military service was related to reduced property offending during the Vietnam period and increased offending during the all-volunteer period.[16]

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[16] One potential explanation for the difference in the influence of military service across historical period may be the composition of the samples used in this study. The three cohorts representing Vietnam-era service came from relatively urban, stable populations (i.e., the samples included men who were born in the area and lived there through most of their lives). In contrast, the NLSY includes both individuals who lived in one particular area and those who relocated frequently. Additionally, the NLSY sample

In tests of the previous hypotheses, analyses included variables to examine the possible influence of selection differences in who eventually joins the military. The inclusion of these variables had no real influence and did not change the impact of military service in any of the analyses. There was also no variable available in all four cohorts that would potentially reflect selection differences. For these reasons, these analyses did not attempt to control for selection beyond the use of the negative binomial model. Since this model explicitly models error, it accounts for unobserved heterogeneity unrelated to the variables already included in the model. The influence of the timing of military service on later offending was also not examined with these combined samples, because timing appeared to have no impact in previous analyses.

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came from both urban and rural areas. Thus, the analyses may be capturing differences in criminal behavior between urban and rural locations. Additional models were estimated with the NLSY adding a dichotomous variable that indicated whether the subjects resided in an urban or rural area at age 14. Clearly, this is not the best variable to assess this important question. Nonetheless, while place at age 14 had a significant influence on later criminal behavior (i.e., men who grew up in urban areas reported significantly more offenses), the influence of military service remained significant. Serving in the military significantly increased both the likelihood of a later offense and the number of offenses reported, even controlling for race, education, SES, age, prior criminal behavior, and urban/rural residence at age 14.

Controlling for Historical Period

The final analyses in this study were conducted with the entire sample, which combined both the Vietnam and Volunteer-era samples. The complete sample included 5,533 men who were born between 1942 and 1964 (See Table 45). About 36 percent of the sample was non-white. The men completed an average of almost 11 years of education, and about 75 percent of the men graduated from high school. Nearly 17 percent of the entire sample served in the military, entering at an average of almost 19 years old and serving about three years. In terms of criminal behavior, about 23 percent of the men had a juvenile police contact. About 20 percent had an adult contact for a non-traffic offense, and the men averaged less than one contact. Almost 40 percent of the men had an adult violent offense, averaging slightly more than one offense. Also, about 40 percent of the sample had an adult property offense, and the men averaged more than one offense.

The purpose of combining the samples was to use statistical techniques to further examine how the effect of military service has changed over time. With this combined sample, multivariate regression models were estimated to predict adult police contacts and violent and property offenses. Self-reporting, race, education, SES, and any juvenile police contact were included as control variables, Additionally, year of birth was included as a control for historical period. Finally, a product term (military service * year of birth) was added to examine the possibility of an interaction between military service and historical period.

The first models to examine the interaction focused on adult police contacts (See Table 50). In these models, the effect of the interaction term was statistically significant

(b = 0.039, t = 2.21 for logistic regression model; b = 0.035, t = 2.46 for negative binomial model). The predicted probability of a police contact and the predicted number of contacts were calculated for every birth year between 1940 and 1965 and for the military and non-military groups separately. These birth years included all of those present in the four cohorts in this study. Figure 1 displays the predicted probabilities calculated from the logistic regression model. This figure indicates that the probability of an adult police contact for men with military experience remained about the same throughout this historical period. Over the same period of time, the probability of a police contact decreased for the non-military group. The probability of a contact was higher for the non-military group for birth years from 1940 to about 1960. For men born after the 1950s (eligible for service in the late 1960s and early 1970s), the probability of a contact was the same whether or not they served in the military.

Figure 2 shows a similar pattern for the predicted number of later police contacts. The predicted number of contacts for the military group remained at about the same level throughout this historical period while the number of contacts declined for the non-military group. Prior to birth years in the 1950s, the military group had fewer contacts. For men born after that time, the number of police contacts appears to converge for the military and non-military groups. Adding the interaction to this model produced results that conform to the conclusions reached when comparing the Vietnam-era and the Volunteer-era samples. Men who served during the period of the Vietnam War appear to be less involved in later violent offending, and men who served during the volunteer period appear to be more involved. Over time, however, the difference between the two groups has decreased.

In the models predicting later violent offenses (See Table 51), the parameter reflecting the interaction term was statistically significant (b = 0.054, t = 2.41 for logistic regression model; b = 0.045, t = 2.22 for negative binomial model). Both the predicted probability of a later violent offense and the predicted number of offenses were calculated using birth years from 1940 to 1965 and the mean levels of the control variables. Figure 3 presents the predicted probability of a violent offense for the military and non-military groups across these birth years. The probability of an offense increased for both groups during this time period. The military group had a lower probability than the non-military group for men born before the 1950s (eligible for service in the late 1960s). After that time, the predicted probability of a violent offense was higher for the military group. Figure 4 depicts a similar story for the predicted number of violent offenses. The military group had fewer average offenses until birth years in the 1950s. After that time, the number of offenses was higher for the military group and increased dramatically.

In the models predicting property offenses (See Table 52), the interaction parameter was statistically significant (b = 0.075, t = 3.44 for logistic regression model; b = 0.068, t = 3.23 for negative binomial model). The predicted probability of a property offense and the predicted number of offenses were calculated for the military and non-military groups using the mean levels of the control variables and birth years from 1940 to 1965. Figure 5 depicts the predicted probabilities for the military and non-military groups. Both groups appear to have increasing probabilities of property offenses over successive cohorts. As suggested by previous analyses, men who served in the military were less likely to have a property offense for birth years prior to about

1955 (eligible for military service in about 1973). After that time, those with military experience had a greater probability of a later property offense. Figure 6 presents a similar pattern for the predicted number of property offenses. For the non-military group, the number of offenses increased over time. Additionally, the number of offenses for the military group increased dramatically. Comparatively, the military group had fewer offenses than the non-military group until birth years in the mid-1950s (eligible for service at the end of the Vietnam War). After that time, men who served in the military had more property offenses. From these results, it appears that the influence of military service changed around the end of the Vietnam War and the beginning of the all-volunteer period.

Chapter 8. Discussion and Conclusions

The relationship between military service and later criminal behavior is a topic that has not received much research attention. Moreover, existing studies have produced conflicting results. While some research finds a beneficial impact of military experience on later criminal behavior, other studies find that serving in the military may increase offending. Still others find that military experience itself does not impact offending. Rather, in these studies, the military serves as another setting for the continuation of existing behavioral patterns. There are a number of factors that have rarely been considered that may explain the differences in results, including potential differences between individuals who do and do not serve in the military, prior criminal behavior, and historical differences in the characteristics of military service. This study attempts to account for these factors by incorporating a life-course framework with the topic of military service and criminal behavior. This framework emphasizes continuity and change in behavior, the timing of life events, and the importance of historical context.

Drawing on previous research and life-course theory, this study asked whether military service would have an influence on later criminal behavior. Three hypotheses specified the nature of this relationship. One hypothesis addressed the life-course focus on continuity and change in behavior. There is a large body of criminological research demonstrating striking continuity in criminal behavior. This study hypothesized that, while there is continuity in behavior, military service would still have an important influence on later offending. The second hypothesis focused on the timing of military service, suggesting that military experience would have a more detrimental effect on offending for individuals who entered later in life. The final hypothesis proposed that

the historical context of military service would also determine its influence on offending. In particular, this hypothesis stated that military service during World War II and Korea would be beneficial in an individual's life, but service during Vietnam and more recent times would have a negative influence.

For this study, four cohorts of men, representing different historical periods, were selected to test these hypotheses. Three birth cohorts (born in 1942, 1945, and 1949) consisted of men who were eligible for military service around the time of the Vietnam War. The National Longitudinal Survey of Youth included men who were born between 1957 and 1963 and who were eligible for service during the early years of the all-volunteer period. Each cohort was first analyzed individually to determine the influence of military service on later criminal behavior. A number of analytical strategies were used in this study. In particular, negative binomial modeling strategies were used to most appropriately reflect the data on the number of police contacts or offenses committed. Additionally, this model incorporates an error term which may reflect unobserved heterogeneity or the dependence of events (see Barron, 1992; Gardner et al., 1995).

The main purpose of this study was to examine continuity and change in criminal behavior related to military experience. The first hypothesis stated that military service would influence later criminal behavior. Analyses examined the effect of military experience on later offending in general and on specific offense types. While the 1942 Racine cohort provided no initial evidence that military service significantly influenced later offending of any type, the effect of service was consistently negative suggesting a reduction in offending. For the 1945 Philadelphia and 1949 Racine birth

cohorts, service in the military was consistently and usually significantly related to reduced offending for all offense types. In the NLSY, military service increased later criminal behavior, specifically violent, property, and drug offenses. A preliminary conclusion based on these analyses is that serving in the military had an effect on later criminal behavior, but the specific effect depended on the cohort. Before accepting this conclusion, however, there are a number of additional factors that must be considered.

One very important element in examining how military service may change criminal behavior is an individual's behavior prior to entering the military. Prior criminal behavior has not always been included in earlier studies but must be considered to determine the true influence of military service. This study hypothesized that there would be both continuity in criminal behavior and significant change in later offending due to military experience. Analyses with these cohorts supported this hypothesis. Prior criminal behavior had a significant influence on later offending throughout this study. In addition to continuity in offending, however, military service was related to change in criminal behavior. Serving in the military was consistently related to reduced offending for all offense types and across all three birth cohorts. For these samples of men who were eligible to serve in the military during the Vietnam War, this study concluded that prior criminal behavior and military service both have independent effects on later offending. In particular, military service appears to have been a beneficial impact in these men's lives by reducing later criminal behavior.

In the NLSY, a different story emerges. There was no effect of military service on later police contacts as reported by men in this sample. However, serving in the military increased self-reported violent, property, and drug offending. With the specific

offense types, there were independent effects of both prior offending and military service. The initial conclusion that military service during the volunteer period increased later criminal behavior was supported by analyses for this hypothesis. There is one caveat that must be addressed with this sample. As a probability sample, analyses with the NLSY must use a weighting strategy to make inferences about the population. When the weighting strategy was used in this study, the significant effect of military service on property and drug offending disappeared. Importantly, military service still significantly increased violent offending.

Additional analyses in this section attempted to account for the potential influence of differential selection into military service. Studies have indicated that there are differences between men who join the military and men who do not serve (see for example, Gimbel and Booth, 1996; Segal et al., 1998). It may be that these differences are the reason for the perceived influence of military service on later offending. In each cohort, a variable was identified that may reflect selection, and incorporating this variable into the analyses did not change any of the results or conclusions. However, the available variables were not ideal for addressing this issue, which is one of the main limitations of this study. While the negative binomial model is able to control for unobserved heterogeneity by explicitly modeling the error term, there may be additional factors at work. Future research must focus on finding information that adequately distinguishes between men who enter the military and men who do not. The conclusions in this study must remain preliminary until analyses are able to account for selection and determine whether the effect of military service remains significant.

The life-course framework provided two additional hypotheses addressing the timing and historical context of military service. The first of these hypotheses suggested that late-entry into the military would increase later offending because military service interrupted existing trajectories. Results from this study failed to support this hypothesis. In fact, the effect of late entry was more likely to be negative, suggesting reduced offending. While previous research has indicated that the timing of service is important (Elder, 1987; Pavalko and Elder, 1990; Sampson and Laub, 1996), this study of men who served during and after the Vietnam War generally found no evidence that late-entry had an influence on criminal behavior. It is possible that late-entry is detrimental for certain outcomes like marriage, education, and employment, but the interruption of a criminal career may have no effect or be beneficial.

Finally, the influence of military service on later criminal behavior was hypothesized to depend on the historical context in which it occurred. In particular, the Vietnam War was proposed to be a kind of turning point in the relationship between military service and later criminal behavior. Service that occurred prior to the Vietnam War was expected to be beneficial in the life course and to reduce offending, and service during or after Vietnam was expected to increase later criminal behavior, especially violent and drug offenses. Analyses in this section combined the Vietnam-era cohorts and compared them to the Volunteer-era cohort. Additionally, all four cohorts were combined to examine the interaction between military service and historical context. In general, the idea that the influence of military service would differ by historical period was supported. However, the observed differences did not conform entirely to the hypothesized differences. Contrary to popular belief, to previous

research, and to the expectations of this study, military service during the period of the Vietnam War generally reduced offending. Increased criminal behavior was only apparent for service during the early period of the all-volunteer force. One reason that this study contradicts previous research may be that many earlier studies finding increased violent offending among Vietnam veterans focused on institutionalized samples (see Penk et al., 1981; Resnick et al., 1989; Yesavage, 1983). In a longitudinal study similar to this one, Rand (1987) found no difference in offending between military and nonmilitary individuals and found some evidence of a reduction in criminal behavior.

In addition to the general conclusion that military service does influence later offending, there appears to be strong evidence that historical context plays an important role in the specific direction of that influence. In fact, historical context may help explain all of the results in this study in terms of changes specifically in the military over time or changes in society as a whole. In terms of criminal behavior, what appears to be the major determining factor in the influence of military service in this study is the change to the all-volunteer force. The difference in the influence of military service across different periods (from a beneficial effect during the Vietnam era to a detrimental effect during the volunteer period) may be due to changes in the benefits associated with military service, the structure of the military as an institution, and the characteristics of those men who serve. Changes in society as a whole may also be important, including an overall increase in crime and the view of the military.

Previous research has indicated that the influence of military service on later life outcomes has changed over time (see Angrist and Krueger, 1994; Cohen et al., 1995).

For example, men who served during World War II experienced greater educational and occupational attainment (Elder, 1998; Elder and Caspi, 1990; Sampson and Laub, 1996), but service during the Vietnam era was related to educational and socioeconomic deficits (Angrist and Krueger, 1994; Cohen et al., 1992). Cohen and colleagues (1995) argue that this shift from a positive to a negative effect was due to changes in the benefits associated with military service. The shifting benefits associated with military service may also determine its effect on criminal behavior. The original G.I. Bill, introduced during World War II, provided large numbers of servicemen with job counseling and placement, training, loans, and education (Segal, 1989). These benefits may be responsible for the generally beneficial outcomes associated with military service during this period, including reduced criminal behavior. Criminological research has demonstrated that higher levels of education and stable employment are related to reduced offending (see National Research Council, 1993; Sampson and Laub, 1993). Thus, providing service-members with these opportunities through military service should also be related to reduced offending, especially for individuals who would not otherwise have these opportunities. Between World War II and the Vietnam War, G.I. Bill benefits did not change, but opportunities for civilians were increasing during this period (Cohen et al., 1995). While service-members were still receiving educational assistance and job training, they were receiving fewer benefits relative to the civilian population. This may explain why military service during the Vietnam War was related to reduced educational and occupational attainment (see Cohen et al., 1992). In terms of criminal behavior, the fact that benefits were relatively less than the civilian population may not be as important. Rather, delinquents who entered military service were still

provided with opportunities to increase their education and to gain valuable job skills, and this may account for the reduction in offending associated with military service during this period.

In 1976, during the early part of the volunteer period, the G.I. Bill was discontinued and replaced with the Veteran's Educational Assistance Program (Segal, 1989). This program was quite different from the G.I. Bill, because it focused solely on education, provided less money for education, and required service-members to choose to participate at enlistment and to contribute their own money (Cohen et al., 1995). VEAP was unpopular and difficult for many service-members to afford, so fewer people participated than had used the G.I. Bill benefits (Cohen et al., 1995). This may have contributed to a general reduction in the beneficial outcomes associated with military service, particularly in terms of criminal behavior. The opportunity to use any educational benefit was only offered once (at the time of enlistment), and many people could not afford to participate. Thus, only a minority of veterans were able to take advantage of the opportunity to increase their education. Additionally, job training, counseling, and placement were available through the G.I. Bill (Segal, 1989) but not through VEAP. During the volunteer period, fewer benefits were available to the military population compared to dramatic increases in federal aid for education in the civilian population (Cohen et al., 1995).

In addition to changes in the benefits associated with military service, the structure of the military organization has also changed. Until the all-volunteer period, military service was generally viewed as a brief interruption to "normal" life (Moskos, 1976; Segal, 1989; Segal and Segal, 1983). Though some events that occur during

military service may produce substantial problems in later life (e.g., PTSD, educational or employment deficits), it may have been easier to make a distinction between behavior that was acceptable during war-time (e.g., violence) but unacceptable in the civilian world. Through the Vietnam-era, military service was seen as a "time-out", after which veterans would resume their lives where they had left off (Segal, 1989). This view of military service has also changed over time.

The all-volunteer force was initiated on a labor force model (Segal et al., 1998), and military service became more of a professional and occupational choice (Segal, 1989). Military service is now thought of in similar terms as civilian jobs and is integrated into a person's life over the long term (Segal, 1989). Compared to the Vietnam-era and earlier periods, it may be more difficult for service-members to separate military training and values from the rest of their life. Dubanoski and McIntosh (1984) suggest that men learn to be violent through military training and that violence carries over into their everyday life and how they handle conflict (see also Bryant, 1979; Hakeem, 1946). Military service as a "time-out" from life may produce continuity in criminal behavior across domains. On the other hand, service as an occupation may be related to increased offending, because service-members integrate military-specific behavior and attitudes into the rest of their lives.

Changes in the demographic structure of the military may also be relevant in understanding the difference in the influence of service on later criminal behavior. During World War II, Angrist and Krueger (1994) note that almost 75 percent of eligible men served in the military, and the military during this period represented the general population. In contrast, the representativeness of the military during the

Vietnam War is a very controversial topic. While some authors suggest that the draft during the Vietnam War overrepresented African-American and lower class men (see Angrist and Krueger, 1994; Gimbel and Booth, 1996), others find that servicemen during this time were generally representative of the U.S. population (Mazur, 1995). In fact, Segal and colleagues (1998) suggest that the draft was close to equal opportunity despite a slight tendency to underrepresent upper-class men.

With the change to the all-volunteer force in 1973, military service became less relevant to the bulk of the U.S. population (Moskos, 2000). According to Teachman and Call (1996), between ten and 15 percent of eligible cohorts of young men were serving in the military after the Vietnam War. During the first few years of the all-volunteer period, the military disproportionately attracted African-Americans and individuals from the lower class (Segal et al., 1998). The beginning of the volunteer force coincided with a declining U.S. economy and high youth unemployment, so the military was able to successfully compete for recruits (Segal, 1989). Within a few years, however, military pay was falling behind civilian occupations, and the military experienced a recruiting shortfall (Segal, 1989). The quality of recruits declined, and the military began accepting individuals with lower scores on mental aptitude tests and who did not have a high school degree (Teachman and Call, 1996). Segal and colleagues (1998) suggest that the military became the employer of last resort for people unemployable in civilian jobs. With the change to the all-volunteer period, the military began to look substantially different from the general population of civilians.

The demographic structure of the military has grown increasingly different from the general population over the period of time used in this study. This suggests that

selection differences may account for the change in the influence of military service on later criminal behavior. While analyses in this study attempted to account for selection, further research is required. It may be that some factor related to selection would explain the observed relationships between military service and later offending, but this factor was not measured in the cohorts used in this study. Ideally, data should include a wide variety of childhood and adolescent characteristics that may be related to service in the military, including scores on qualifying tests, perceptions of the military, intentions to join the military, and aggression (see Gimbel and Booth, 1996; Segal et al., 1998). This type of information would provide a better indication of selection differences and would allow appropriate modeling strategies to examine the influence of military service controlling for selection.

In addition to changes in the military over time, there have also been changes in society as a whole. One of the most important changes is the dramatic increase in crime from the late 1960's through the 1970's and peaking in 1981 (LaFree, 1999). It is not surprising, therefore, to see increased criminal behavior during later cohorts. The historical analyses in this study demonstrated that criminal behavior increased across the period of time from the beginning of the Vietnam War into the era of the all-volunteer force. Despite this general increase in offending over time, this study also indicated different patterns depending on whether the men had served in the military. For men who served in the military, there was a more dramatic increase in terms of both violent and property offenses. Thus, it appears that serving in the military had an influence above and beyond the expected secular increase in crime.

The view of military service in the general population has also changed over time. The military has often been perceived as an effective means of reforming delinquents, because it removes people from criminogenic environments and teaches responsibility and discipline (Elder, 1998; Sampson and Laub, 1993). During World War II, military service was admired and even recommended as a way of straightening out troubled youths, and some prison inmates were even paroled into the Army (Mattick, 1954). Segal and colleagues (1998) point out that enlistment was viewed as a way of avoiding prosecution or punishment for criminal behavior. In addition to the possibility that military service did teach discipline and responsibility, the public's view of the military as a good experience for young men may have also created a self-fulfilling prophecy. As the Vietnam War progressed, however, the public began to view the military in a more negative light. Atrocities committed in Vietnam, racial tension among service-members, and the perceived inequality of the draft contributed to this negative image (Segal, 1989). Additionally, military service during the Vietnam War became synonymous with drug use (Cohen et al., 1992; Stanton, 1976). The end of the Vietnam War and the return of these veterans was followed closely by the introduction of the all-volunteer force. The negative impression of military service may have carried over into the early years of the volunteer period, and individuals who served may also have been viewed negatively.

Results from this study lead to a general conclusion that the influence of military service on later offending has changed over time. Whereas serving in the military during the Vietnam era appeared to reduce offending, service during the volunteer period may have increased criminal behavior. There are a number of potential

explanations for these results. Men who were able to take advantage of generous benefits during World War II and Vietnam may have been able to increase their educational and occupational status and reduce their offending. However, these benefits have declined into the volunteer period, and fewer service-members have taken advantage of them. Additionally, the demographic distribution of the military has changed considerably, which may account for the differences in results. Since the beginning of the volunteer force, the role of women in the military has expanded, but little research has focused on how service may differentially impact the lives of men and women (Segal, 1999). Future research should address how service is experienced by men and women and how those different experiences influence later behavior. Finally, changes in U.S. society, including a general increase in offending and changing views of the military, may help explain the change in the influence of military service.

The main limitation in this study is the inability to determine the mechanism responsible either for the decrease or increase in criminal behavior during a particular time period or for the change in how military service influences behavior. Most importantly, across the cohorts, there is little information available about the specific characteristics of military service, such as benefits, training, rank, specialty, or branch of service. In the birth cohorts, this study suggested that there was both continuity and change in offending behavior. It is important to determine who continues their criminal trajectories and who desists, and data reflecting participation in educational or job training programs through the military would be useful. Additionally, it would be very important in the Vietnam cohorts to know whether the men served in a combat situation, and how combat experience is related to later offending.

Another important area for future research is the issue of selection. Research is able to address who enters the military, and some data are available to determine whether military service is linked to later criminal behavior. However, there are no data available that combines information regarding selection into the military with later life outcomes. These data may be especially relevant for the volunteer force where service is a choice for all service-members. It is essential to determine whether the military is attracting individuals who are predisposed to criminal behavior, particularly violence as suggested by this study. This study was unable to adequately answer this question. Future studies must be conscious of the potentially important role that selection plays and must systematically gather information to address this issue. Such information might include childhood and adolescent problem behavior, school experiences, and family characteristics as well as measures of attitudes toward and intentions to join the military.

Though this study was described as an exploratory analysis of the relationship between military service and later criminal behavior, some important conclusions have emerged. Results have suggested that both continuity and change in criminal behavior occur over the life course. Additionally, the change in behavior engendered by military service differed depending on historical context. Consistent with life course principles, this study points to the importance of historical time and place in determining the influence of events in later life. Future studies that attempt to explore the relationship between military service and later life outcomes must account for the particular historical context in which that service occurred. The military has changed dramatically, and those changes determine how service impacts individual lives.

Appendix A: Table of Results from Previous Studies

Article	Sample	Control for Prior Behavior	Influence of Military Service
Studies with World War II or Korean War Sample			
Boshes & Hermann (1947)	Naval offenders	No	None
Chappell (1947)	Naval offenders	No	---
Hakeem (1946)	Male prison inmates	No	None
MacCormick & Evjen (1946)	Military and civilian	No	Reduced Criminal Behavior
Rand (1987)	Birth cohort of men in Philadelphia	No	None
Sampson & Laub (1996)	Cohort of men in Boston	Yes	Reduced Criminal Behavior
Studies with Vietnam-Era Sample			
Barrett et al. (1996)	Male Army veterans	Yes	Increased Violence
Boulanger (1986)	Men of the Vietnam generation	Yes	Increased Criminal Behavior
Brady & Rappoport (1973)	Veterans and civilians	No	Increased Approval of Violence
Jordan et al. (1992)	Veterans and spouses	No	Increased Violence
Nace et al. (1978)	Veterans in drug treatment centers	Yes	None
Penk et al. (1981)	Male veterans in drug/alcohol program	Yes	Increased Criminal Behavior

Appendix A, continues.

Appendix A, continued.

Article	Sample	Control for Prior Behavior	Influence of Military Service
Studies with Vietnam-Era Sample (continued)			
Resnick et al. (1989)	Veterans applying for psychiatric services	Yes	Increased Criminal Behavior
Robins et al. (1971)	Enlisted Army men leaving Vietnam	Yes	None
Robins et al. (1975)	Enlisted Army men leaving Vietnam	Yes	None
Shaw et al. (1987)	Incarcerated and unincarcerated veterans	No	None
Worthington (1978)	Male Army veterans	No	None
Yager (1976)	Male active-duty combat veterans	Yes	Increased Violence
Yager et al. (1984)	Draft-eligible men	Yes	Increased Criminal Behavior
Yesavage (1983)	Male veterans in psychiatric unit	Yes	Increased Violence
Studies with Combined Sample (Vietnam-Era and Later)			
Allen (1998)	Federal and State prison inmates, 1991	Yes	Increased Violence
Mumola (2000)	Federal and state prison inmates, 1996	No	Increased Violence
Petrik et al. (1983)	Veterans in a psychiatric unit	No	None

Appendix A, continues.

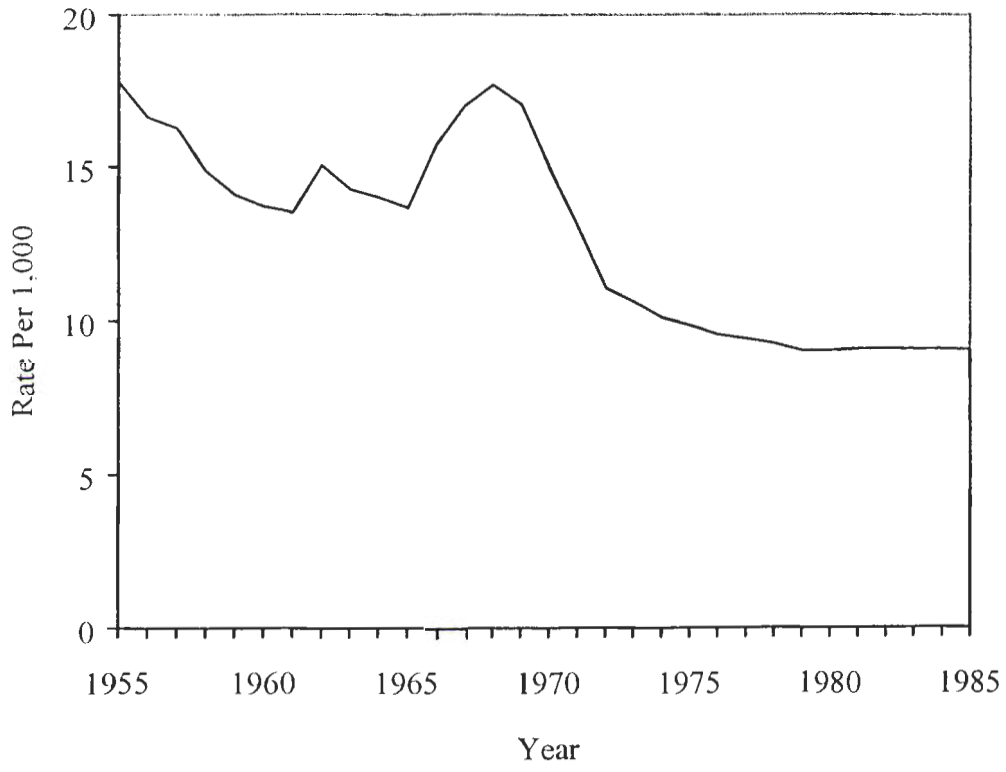
Appendix A, continued.

Article	Sample	Control for Prior Behavior	Influence of Military Service
Studies with Post-Vietnam Sample			
Bachman et al. (1999)	Monitoring the Future	Yes	Reduced Drug Use
Bohannon et al. (1995)	Military couples	No	Increased Criminal Behavior
Cronin (1995)	College students	No	Increased Violence
Dubanoski & McIntosh (1984)	Child abuse cases in Hawaii, 1978-81	No	Increased Criminal Behavior
Stretch et al. (1996)	Active-duty, National Guard and reserves	No	Increased Dysfunction

Appendix B: Rate of Active-Duty Military Service per 1,000 Population by Year

Figure B1 depicts the rate of active-duty military service per 1,000 population for every year between 1955 and 1985. Population information was obtained from the U.S. Census Bureau (1996), and the number of individuals on active-duty was obtained from the Department of Defense (1999). The Vietnam War occurred between 1964 and 1973, and the transition to the all-volunteer force occurred in 1973. In 1955, there were 2,953,107 individuals on active-duty military service (Department of Defense, 1999). The rate of military service generally declined across the next thirty years with the exception of the dramatic build-up of manpower during the Vietnam War. At its peak in 1968, more than 3.5 million individuals served on active-duty. After the Vietnam War, the rate of military service declined again, and in 1985, about 2.2 million individuals were serving on active-duty.

Figure B1: Rate of Active-Duty Military Service per 1,000 Population by Year.



Appendix C: Differences in the Magnitude and Significance of Effects

Offense Type	Not Weighted		Weighted	
	b	t-ratio	b	t-ratio
Police Contact				
Military Service	-0.262	-1.58	-0.380	-1.55
Any Juvenile Contact	2.893	31.21 ***	3.047	32.20 ***
Violent				
Military Service	0.471	4.41 ***	0.494	3.28 ***
Any Juvenile Contact	0.929	11.87 ***	0.713	9.26 ***
Property				
Military Service	0.318	3.02 ***	0.136	0.90
Any Juvenile Contact	0.877	11.29 ***	0.935	11.85 ***
Drug				
Military Service	0.259	1.95	-0.052	-0.27
Any Juvenile Contact	1.187	13.20 ***	1.242	14.01 ***

Tables

Table 1: Age of Individuals in Each Cohort During Historical Events.

Historical Event	Racine (1942)	Philadelphia (1945)	Racine (1949)	NLSY (1957-63)
World War II Begins (1940)				
G.I. Bill (1944)	2			
World War II Ends (1945)	3			
Korean War (1950-1953)	8 – 11	5 – 8	1 – 4	
Vietnam War Begins (1964)	22	19	15	1 – 7
Tet Offensive (1968)	26	23	19	5 – 11
Vietnam War Ends (1973)	31	28	24	10 – 16
End of the Draft (1976)	34	31	27	13 – 19
Persian Gulf War (1991)	49	46	42	28 – 34

Table 2: Variables Describing Demographic Characteristics.

Variables	Racine (1942)	Philadelphia (1945)	Racine (1949)	NLSY (1957-1963)
Sample Size (N)	155	565	243	4,570
Age[a]	N/A	N/A	N/A	19.63 (2.28)
Race				
White	92.3%	79.8%	80.7%	60.6%
Non-White	7.7%	20.2%	19.3%	39.4%
Education				
Highest Grade Completed[a]	13.55 (1.80)	13.18 (2.65)	13.85 (1.91)	10.37 (2.08)
High School Graduate	93.5%	80.4%	94.2%	71.3%[b]
Socioeconomic Status				
Area SES[a]	9.08 (5.95)		10.38 (6.72)	
Yearly Income[a]		$5,855.80 (887.09)		$16,093.19 (13,508.69)

[a]Mean values with standard deviations in parentheses.

[b]This variable indicates the percent with a high school diploma or GED among those men old enough to have completed high school.

Table 3: Variables Measuring Characteristics of Military Service.

	Racine (1942)	Philadelphia (1945)	Racine (1949)	NLSY (1957-1963)
Sample Size	155	565	243	4,570
Active-Duty Military Service	39.4%	48.0%	36.6%	11.3%
Year of Entry[a]	1961.48 (2.13)	1964.33 (1.58)	1967.98 (1.35)	1976.60 (1.01)
Age of Entry[a]	19.48 (2.13)	19.33 (1.58)	18.99 (1.34)	18.52 (0.89)
Length of Service[a]	2.91 (1.65)	2.83 (1.40)	2.78 (1.13)	3.24 (1.29)
Drafted	3.9%	N/A	12.4%	N/A
Participated in ROTC	N/A	N/A	N/A	0.6%

[a]Mean values with standard deviations in parentheses.

Table 4: Variables Measuring Criminal Behavior.

	Racine (1942)	Philadelphia (1945)	Racine (1949)	NLSY (1957-1963)
Sample Size	155	565	243	4,570
Non-Traffic Police Contacts/Stops				
Percent with Juvenile	41.9%	30.6%	51.4%	20.2%[a]
Percent with Adult	29.0%	23.2%	33.3%	19.1%[a]
Number of Adult Contacts[b]	1.03 (2.41)	0.88 (2.80)	1.47 (4.26)	0.53[a] (1.68)
Violent Offenses				
Percent with Juvenile	4.5%	3.2%	4.5%	N/A
Percent with Adult	7.1%	7.6%	7.0%	44.9%[a]
Number of Adult Violent[b]	0.14 (0.56)	0.15 (0.67)	0.18 (1.20)	1.35[a] (2.92)
Property Offenses				
Percent with Juvenile	17.4%	10.8%	26.7%	N/A
Percent with Adult	7.1%	8.0%	7.4%	47.0%[a]
Number of Adult Property[b]	0.12 (0.51)	0.24 (1.27)	0.14 (0.62)	1.81[a] (2.88)
Public Order or Drug Offenses[c]				
Percent with Juvenile	36.8%	25.5%	45.7%	N/A
Percent with Adult	26.5%	16.3%	31.3%	16.1%[a]
Number of Adult Offenses[b]	0.75 (1.74)	0.32 (0.94)	1.12 (3.27)	0.77[a] (2.26)

[a]These values reflect self-reported offenses within the past year (1979).

[b]Mean values with standard deviations in parentheses.

[c]In this section, variables for the birth cohorts reflect public order offenses, and variables for the NLSY reflect drug offenses.

Table 5: Validity of Offending Measures, Racine 1942

Correlates	Number of Adult Police Contacts			
	Non-Traffic	Violent	Property	Public Order
Race				
White[a]	0.63 (1.59)	0.05 (0.30)	0.06 (0.30)	0.52 (1.35)
Non-White[a]	5.75 (4.73)	1.17 (1.40)	0.83 (1.40)	3.58 (3.09)
	$t = -3.731^{**}$	$t = -2.754^{*}$	$t = -1.898$	$t = -3.412^{**}$
Education[b]	-0.168^{*}	-0.153	-0.144	-0.161^{*}
SES[b]	-0.308^{***}	-0.226^{**}	-0.226^{**}	-0.278^{***}
Juvenile Contacts[b]	0.244^{**}	0.200^{*}	0.193^{*}	0.222^{**}

[a]Mean values with standard deviations in parentheses.

[b]Pearson correlation.

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Table 6: Validity of Offending Measures, Philadelphia 1945.

Correlates	Number of Adult Police Contacts			
	Non-Traffic	Violent	Property	Public Order
Race				
White[a]	0.42 (2.68)	0.05 (0.33)	0.08 (0.60)	0.30 (0.64)
Non-White[a]	2.68 (4.99)	0.54 (1.28)	0.89 (2.46)	0.82 (1.57)
	$t = -4.755^{***}$	$t = -4.123^{***}$	$t = -3.498^{***}$	$t = -4.102^{***}$
Education[b]	-0.260^{***}	-0.239^{***}	-0.166^{***}	-0.231^{***}
SES[b]	-0.225^{***}	-0.217^{***}	-0.189^{***}	-0.207^{***}
Juvenile Contacts[b]	0.480^{***}	0.428^{***}	0.362^{***}	0.373^{***}

[a]Mean values with standard deviations in parentheses.

[b]Pearson correlations.

$^{***}p < .001$.

Table 7: Validity of Offending Measures, Racine 1949

Correlates	Number of Adult Police Contacts			
	Non-Traffic	Violent	Property	Public Order
Race				
White[a]	0.88 (2.75)	0.06 (0.31)	0.09 (0.38)	0.69 (2.22)
Non-White[a]	3.89 (7.47)	0.70 (2.62)	0.34 (1.17)	2.87 (5.62)
	$t = -2.721^{**}$	$t = -1.687$	$t = -1.473$	$t = -2.607^{*}$
Education[b]	-0.285^{***}	-0.116	-0.126^{*}	-0.292^{***}
SES[b]	-0.254^{***}	-0.157^{*}	-0.143^{*}	-0.233^{***}
Juvenile Contacts[b]	0.509^{***}	0.361^{***}	0.277^{***}	0.441^{***}

[a]Mean values with standard deviations in parentheses.

[b]Pearson correlations.

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Table 8: Validity of Offending Measures, NLSY 1957-1963.

Correlates	Number of Adult Offenses			
	Police Contacts	Violent	Property	Drug
Race				
White[a]	0.53 (1.69)	1.35 (2.33)	1.96 (3.00)	0.89 (2.44)
Non-White[a]	0.51 (1.68)	1.36 (2.23)	1.59 (2.68)	0.58 (1.93)
	t = 0.449	t = -0.190	t = 4.341***	t = 4.774***
Age[b]	-0.027	-0.125***	-0.108**	0.039**
Education[b]	-0.042**	-0.139***	-0.077***	0.014
SES[b]	-0.021	-0.036*	0.036*	-0.030*
Prior Offending				
None[a]	0.16 (0.82)	1.09 (2.00)	1.46 (2.54)	0.57 (1.93)
Juvenile Contact[a]	1.96 (2.96)	2.41 (2.97)	3.23 (3.63)	1.57 (3.14)
	t = -18.226***	t = -12.787***	t = -14.004***	t = -9.267***
Police Contacts[b]	---	0.244***	0.249***	0.199***

[a]Mean values with standard deviations in parentheses.

[b]Pearson correlations.

*p < .05; **p < .01; ***p < .001.

Table 9: Adult Police Contacts in the Military and Non-Military Groups, Racine 1942.

	Military (n = 61)	Non-Military (n = 94)
Percent with Adult Non-Traffic Contact	24.6%	31.9%
	$\chi^2 = 0.963$	
Number of Adult Non-Traffic Contacts	0.82[a] (2.19)	1.16[a] (2.55)
	t = -0.99	
Percent with Adult Violent Contact	4.9%	8.5%
	$\chi^2 = 0.724$	
Number of Adult Violent Contacts	0.10[a] (0.47)	0.16[a] (0.61)
	t = -0.82	
Percent with Adult Property Contact	4.9%	8.5%
	$\chi^2 = 0.724$	
Number of Adult Property Contacts	0.10[a] (0.54)	0.14[a] (0.50)
	t = -0.83	
Percent with Adult Public Order Contact	23.0%	28.7%
	$\chi^2 = 0.634$	
Number of Adult Public Order Contacts	0.62[a] (1.59)	0.84[a] (1.84)
	t = -0.83	

Note: All chi-square values have one degree of freedom.

[a]Mean values with standard deviations in parentheses.

Table 10: Regression Models Predicting Adult Police Contacts for Non-Traffic Offenses, Racine 1942.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std.Error	t-ratio
Constant	2.552	12.828	1.66	2.641	1.220	2.16 *
Military Service	-0.559	0.572	-1.36	-0.478	0.309	-1.55
Non-White	2.164	8.706	2.58 **	1.603	0.371	4.32 ***
Education	-0.204	0.086	-1.84	-0.169	0.090	-1.87
SES	-0.081	0.922	2.12 *	-0.083	0.035	-2.34 *
Gamma	---	---	---	2.999	0.910	3.30 **

Note: n = 155 for these models.

*p < .05; **p < .01; ***p < .001.

Table 11: Regression Models Predicting Adult Police Contacts for Specific Offenses, Racine 1942.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses						
Constant	1.287	3.621	0.44	2.007	2.486	0.81
Military Service	-0.972	0.378	-1.17	-0.643	0.612	-1.05
Non-White	3.188	24.239	3.37 ***	2.891	0.766	3.78 ***
Education	-0.314	0.731	-1.42	-0.350	0.191	-1.83
SES	-0.021	0.979	-0.26	-0.033	0.082	-0.40
Gamma	---	---	---	0.583	0.938	0.62
Property Offenses						
Constant	2.256	9.545	0.82	2.703	2.926	0.92
Military Service	-0.805	0.447	-1.08	-0.704	0.735	-0.96
Non-White	1.396	4.039	1.68	1.494	0.812	1.84
Education	-0.291	0.748	-1.39	-0.300	0.218	-1.37
SES	-0.148	0.862	-1.69	-0.183	0.103	-1.77
Gamma	---	---	---	2.272	2.263	1.00
Public Order Offenses						
Constant	2.695	14.806	1.70	2.310	1.286	1.80
Military Service	-0.479	0.619	-1.13	-0.423	0.310	-1.36
Non-White	2.453	11.623	2.91 **	1.486	0.379	3.92 ***
Education	-0.246	0.782	-2.12 *	-0.174	0.094	-1.85
SES	-0.057	0.945	-1.47	-0.061	0.037	-1.65
Gamma	---	---	---	2.384	0.832	2.87 **

Note: n = 155 for these models.

*p < .05; **p < .01; ***p < .001.

Table 12: Adult Police Contacts in the Military and Non-Military Groups, Philadelphia 1945.

	Military (n = 271)	Non-Military (n = 294)
Percent with Adult Non-Traffic Contact	20.3%	25.9%
	$\chi^2 = 2.443$	
Number of Adult Non-Traffic Contacts	0.61[a] (2.20)	1.12[a] (3.23)
	t = -1.77	
Percent with Adult Violent Contact	7.0%	8.2%
	$\chi^2 = 0.266$	
Number of Adult Violent Contacts	0.11[a] (0.48)	0.18[a] (0.81)
	t = -0.74	
Percent with Adult Property Contact	5.9%	9.9%
	$\chi^2 = 3.017$	
Number of Adult Property Contacts	0.17[a] (1.01)	0.30[a] (1.46)
	t = -1.72	
Percent with Adult Public Order Contact	12.9%	19.4%
	$\chi^2 = 4.334^*$	
Number of Adult Public Order Contacts	0.23[a] (0.76)	0.41[a] (1.07)
	t = -2.17*	

Note: All chi-square values have one degree of freedom.

[a]Mean values with standard deviations in parentheses.

*$p < .05$.

Table 13: Regression Models Predicting Adult Police Contacts for Non-Traffic Offenses, Philadelphia 1945.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std.Error	t-ratio
Constant	2.515	12.367	3.39 ***	3.359	0.711	4.73 ***
Military Service	-0.649	0.523	-2.95 **	-0.709	0.220	-3.22 **
Non-White	1.149	3.155	3.90 ***	1.400	0.308	4.55 ***
Education	-0.283	0.754	-5.22 ***	-0.315	0.058	-5.47 ***
SES	-0.033	0.968	0.28	0.016	0.123	0.13
Gamma	---	---	---	4.373	0.622	7.03 ***

Note: n = 565 for these models.

**p < .01; ***p < .001.

Table 14: Regression Models Predicting Adult Police Contacts for Specific Offenses, Philadelphia 1945.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses						
Constant	0.238	1.269	0.19	1.330	0.983	1.35
Military Service	-0.352	0.703	-1.00	-0.407	0.324	-1.26
Non-White	2.102	8.183	4.70 ***	1.910	0.420	4.55 ***
Education	-0.265	0.767	-2.88 **	-0.310	0.069	-4.46 ***
SES	-0.052	0.949	-0.30	-0.100	0.153	-0.65
Gamma	---	---	---	1.409	0.680	2.07 *
Property Offenses						
Constant	3.308	27.328	2.55 *	2.532	1.038	2.44 *
Military Service	-0.703	0.495	-1.97 *	-0.651	0.339	-1.92
Non-White	1.393	4.025	3.19 **	1.385	0.517	2.68 **
Education	-0.436	0.647	-4.26 ***	-0.303	0.084	-3.62 ***
SES	-0.220	0.802	-1.24	-0.225	0.157	-1.44
Gamma	---	---	---	4.543	1.647	2.76 **
Public Order Offenses						
Constant	0.767	2.153	0.74	2.073	0.719	2.88 **
Military Service	-0.528	0.590	-1.71	-0.688	0.233	-2.96 **
Non-White	0.137	1.147	0.29	0.895	0.306	2.92 **
Education	-0.237	0.789	-3.25 **	-0.259	0.051	-5.04 ***
SES	0.061	1.063	0.34	-0.011	0.118	-0.10
Gamma	---	---	---	1.938	0.643	3.02 **

Note: n = 565 for these models.

*p < .05; **p < .01; ***p < .001.

Table 15: Adult Police Contacts in the Military and Non-Military Groups, Racine 1949.

	Military (n = 90)	Non-Military (n = 154)
Percent with Adult Non-Traffic Contact	37.1%	31.2%
	$\chi^2 = 0.886$	
Number of Adult Non-Traffic Contacts	0.92[a] (1.78)	1.78[a] (5.16)
	t = 0.52	
Percent with Adult Violent Contact	5.6%	7.8%
	$\chi^2 = 0.410$	
Number of Adult Violent Contacts	0.07[a] (0.29)	0.25[a] (1.49)
	t = -0.67	
Percent with Adult Property Contact	5.6%	8.4%
	$\chi^2 = 0.656$	
Number of Adult Property Contacts	0.07[a] (0.29)	0.18[a] (0.74)
	t = -0.85	
Percent with Adult Public Order Contact	33.7%	29.9%
	$\chi^2 = 0.386$	
Number of Adult Public Order Contacts	0.72[a] (1.41)	1.34[a] (3.96)
	t = 0.24	

Note: All chi-square values have one degree of freedom.

[a]Mean values with standard deviations in parentheses.

Table 16: Regression Models Predicting Adult Police Contacts for Non-Traffic Offenses, Racine 1949.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	3.887	48.764	3.22 **	6.487	1.145	5.67 ***
Military Service	0.017	1.017	0.05	-0.606	0.306	-1.98 *
Non-White	0.504	1.655	1.30	0.919	0.361	2.55 *
Education	-0.327	0.721	-3.77 ***	-0.453	0.081	-5.61 ***
SES	-0.024	0.976	-0.98	-0.044	0.021	-2.07 *
Gamma	---	---	---	2.701	0.600	4.50 ***

Note: n = 243 for these models.

*p < .05; **p < .01; ***p < .001.

Table 17: Regression Models Predicting Adult Police Contacts for Specific Offenses, Racine 1949.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses						
Constant	2.576	13.144	1.24	4.650	2.471	1.88
Military Service	-0.640	0.527	-1.10	-0.945	0.830	-1.14
Non-White	0.944	2.570	1.53	1.932	0.771	2.51 *
Education	-0.365	0.694	-2.28 *	-0.512	0.191	-2.68 **
SES	-0.056	0.946	-1.05	-0.062	0.065	-0.96
Gamma	---	---	---	7.676	3.707	2.07 *
Property Offenses						
Constant	1.880	6.554	0.99	2.786	2.361	1.18
Military Service	-0.667	0.513	-1.20	-1.024	0.666	-1.54
Non-White	0.225	1.252	0.36	0.668	0.775	0.86
Education	-0.297	0.743	-2.07 *	-0.335	0.179	-1.87
SES	-0.029	0.971	-0.64	-0.036	0.056	-0.63
Gamma	---	---	---	7.711	7.260	1.06
Public Order Offenses						
Constant	4.187	65.825	3.38 ***	6.233	1.133	5.50 ***
Military Service	-0.096	0.908	-0.31	-0.609	0.300	-2.03 *
Non-White	0.458	1.581	1.17	0.902	0.342	2.63 **
Education	-0.348	0.706	-3.91 ***	-0.458	0.081	-5.69 ***
SES	-0.030	0.970	-1.19	-0.037	0.021	-1.76
Gamma	---	---	---	2.378	0.563	4.22 ***

Note: n = 243 for these models.

*p < .05; **p < .01; ***p < .001.

Table 18: Self-Reported Offenses in the Military and Non-Military Groups, NLSY 1957-63.

	Military (n = 515)	Non-Military (n = 4,055)
Percent with Police Contact	15.0%	19.6%
	$\chi^2 = 6.348^{*}$	
Number of Police Contacts	0.42[a] (1.56)	0.54[a] (1.70)
	$t = -2.50^{*}$	
Percent with Violent Offense	46.6%	44.6%
	$\chi^2 = 0.714$	
Number of Violent Offenses	1.42[a] (2.39)	1.34[a] (2.28)
	$t = 0.85$	
Percent with Property Offense	47.6%	46.9%
	$\chi^2 = 0.088$	
Number of Adult Property Contacts	1.76[a] (2.79)	1.82[a] (2.89)
	$t = 0.02$	
Percent with Drug Offense	21.0%	15.5%
	$\chi^2 = 10.068^{**}$	
Number of Adult Public Order Contacts	1.17[a] (2.81)	0.72[a] (2.18)
	$t = 3.51^{***}$	

Note: All chi-square values have one degree of freedom.

[a]Mean values with standard deviations in parentheses.

$^{*}p < .05$; $^{***}p < .001$.

Table 19: Regression Models Predicting Self-Reported Police Contacts Within the Previous Year, NLSY 1957-63.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	-0.130	0.878	-0.36	0.449	0.322	1.40
Military Service	-0.208	0.812	-1.46	-0.211	0.130	-1.62
Non-White	-0.115	0.891	-1.43	-0.116	0.072	-1.60
Education	-0.054	0.947	-1.91	-0.049	0.025	-2.01 *
SES	-0.003	0.997	-1.06	-0.003	0.003	-1.20
Age	-0.033	0.968	-1.27	-0.024	0.023	-1.04
Gamma	---	---	---	4.091	0.277	14.76 ***

Note: n = 4,570 for these models.

*p < .05; ***p < .001.

Table 20: Regression Models Predicting Self-Reported Offenses Within the Previous Year, NLSY 1957-63.

	Logistic Regression (D.V. = Any Offense)			Negative Binomial (D.V. = Number of Offenses)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses						
Constant	2.881	17.832	9.71 ***	2.276	0.236	9.65 ***
Military Service	0.452	1.571	4.30 ***	0.302	0.072	4.22 ***
Non-White	0.084	1.088	1.30	0.019	0.041	0.47
Education	-0.095	0.909	-4.15 ***	-0.058	0.015	-3.88 ***
SES	-0.007	0.993	-2.67 **	-0.004	0.002	-2.37 *
Age	-0.107	0.899	-5.02 ***	-0.071	0.014	-5.15 ***
Gamma	---	---	---	3.481	0.310	11.21 ***
Property Offenses						
Constant	1.666	5.291	5.73 ***	2.272	0.256	8.86 ***
Military Service	0.305	1.357	2.93 **	0.237	0.081	2.92 **
Non-White	-0.132	0.876	-2.07 *	-0.169	0.054	-3.12 **
Education	-0.001	0.999	-0.03	-0.002	0.018	-0.09
SES	0.006	1.006	2.66 **	0.004	0.002	2.45 *
Age	-0.095	0.909	-4.51 ***	-0.087	0.018	-4.93 ***
Gamma	---	---	---	4.156	0.518	8.02 ***
Drug Offenses						
Constant	-2.204	0.110	-5.58 ***	-0.874	0.521	-1.68
Military Service	0.241	1.273	1.85	0.335	0.170	1.97 *
Non-White	-0.241	0.786	-2.75 **	-0.425	0.123	-3.47 ***
Education	-0.014	0.986	-0.47	-0.035	0.041	-0.86
SES	-0.001	0.999	-0.17	-0.004	0.004	-0.99
Age	0.039	1.040	1.39	0.058	0.038	1.53
Gamma	---	---	---	12.114	0.885	13.69 ***

Note: n = 4,570 for these models.

*p < .05; **p < .01; ***p < .001.

Table 21: Offending Pattern by Military Service, Racine 1942.

	Military (n = 61)	Non-Military (n = 94)
Percent with a Police Contact		
Neither Juvenile nor Adult	42.6%	48.9%
Juvenile Only	32.8%	19.2%
Both Juvenile and Adult	18.0%	17.0%
Adult Only	6.6%	14.9%
	$\chi^2 = 5.359$	

Note: Chi-square value has three degrees of freedom.

Table 22: Regression Models Predicting Adult Police Contacts for Non-Traffic Offenses and Controlling for Prior Criminal Behavior, Racine 1942.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	2.106	8.215	1.34	2.330	1.225	1.90
Military Service	-0.594	0.552	-1.40	-0.644	0.312	-2.06 *
Non-White	2.438	11.450	2.84 **	1.709	0.392	4.36
Education	-0.208	0.812	-1.83	-0.170	0.090	-1.89
SES	-0.059	0.943	-1.50	-0.074	0.036	-2.07 *
# of Juvenile Contacts	0.207	1.230	2.51 *	0.155	0.047	3.33 **
Gamma	---	---	---	2.558	0.793	3.23 **

Note: n = 155 for these models.

*p < .05; **p < .01.

Table 23: Regression Models Predicting Adult Police Contacts for Specific Offenses and Controlling for Prior Criminal Behavior, Racine 1942.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses						
Constant	0.395	1.484	0.13	1.335	2.737	0.49
Military Service	-1.182	0.307	-1.33	-1.261	0.679	-1.86
Non-White	3.747	42.394	3.45 ***	3.217	0.830	3.88 ***
Education	-0.312	0.732	-1.36	-0.345	0.203	-1.70
SES	0.020	1.020	0.23	-0.023	0.088	-0.26
# of Juvenile Contacts	0.252	1.287	2.02 *	0.259	0.091	2.84 **
Gamma	---	---	---	0.457	0.675	0.68
Property Offenses						
Constant	1.784	5.954	0.60	1.697	2.982	0.57
Military Service	-0.993	0.370	-1.23	-0.770	0.776	-0.99
Non-White	1.858	6.411	2.02 *	2.162	0.877	2.47 *
Education	-0.320	0.726	-1.44	-0.306	0.216	-1.42
SES	-0.117	0.890	-1.24	-0.133	0.099	-1.35
# of Juvenile Contacts	0.278	1.320	2.61 **	0.273	0.116	2.36 *
Gamma	---	---	---	1.652	1.684	0.98
Public Order Offenses						
Constant	2.387	10.881	1.49	2.237	1.298	1.72
Military Service	-0.495	0.610	-1.15	-0.543	0.331	-1.64
Non-White	2.623	13.777	3.05 **	1.545	0.415	3.73 ***
Education	-0.247	0.781	-2.11 *	-0.182	0.096	-1.91
SES	-0.042	0.959	-1.06	-0.060	0.037	-1.62
# of Juvenile Contacts	0.132	1.141	1.64	0.114	0.055	2.06 *
Gamma	---	---	---	2.231	0.760	2.94 **

Note: n = 155 for these models.

*p < .05; **p < .01; ***p < .001.

Table 24: Offending Pattern by Military Service, Philadelphia 1945.

	Military (n = 271)	Non-Military (n = 294)
Percent with a Police Contact		
Neither Juvenile nor Adult	57.9%	59.2%
Juvenile Only	21.8%	15.0%
Both Juvenile and Adult	12.2%	12.9%
Adult Only	8.1%	12.9%
	$\chi^2 = 6.751$	

Note: Chi-square value has three degrees of freedom.

Table 25: Regression Models Predicting Adult Police Contacts for Non-Traffic Offenses and Controlling for Prior Criminal Behavior, Philadelphia 1945.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	1.358	3.888	1.71	2.051	0.783	2.62 **
Military Service	-0.665	0.514	-2.93 **	-0.814	0.239	-3.40 ***
Non-White	1.084	2.956	3.54 ***	1.355	0.303	4.47 ***
Education	-0.221	0.802	-3.98 ***	-0.260	0.059	-4.39 ***
SES	0.010	1.010	0.08	0.117	0.119	0.99
# of Juvenile Contacts	0.269	1.309	3.85 ***	0.200	0.058	3.45 ***
Gamma	---	---	---	3.701	0.534	6.94 ***

Note: n = 565 for these models.

*p < .05; **p < .01.

Table 26: Regression Models Predicting Specific Offenses and Controlling for Prior Criminal Behavior, Philadelphia 1945.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses						
Constant	-1.153	0.316	-0.87	-0.510	1.095	-0.47
Military Service	-0.403	0.668	-1.11	-0.367	0.320	-1.14
Non-White	2.054	7.799	4.46 ***	1.912	0.418	4.57 ***
Education	-0.184	0.832	-1.91	-0.198	0.070	-2.85 **
SES	0.012	1.012	0.07	-0.006	0.150	-0.04
# of Juvenile Contacts	0.177	1.194	2.87 **	0.111	0.036	3.06 **
Gamma	---	---	---	1.174	0.617	1.90
Property Offenses						
Constant	1.505	4.504	1.08	0.616	1.201	0.51
Military Service	-0.858	0.424	-2.25 *	-0.634	0.353	-1.79
Non-White	1.297	3.658	2.82 **	1.468	0.581	2.52 *
Education	-0.331	0.718	-3.11 **	-0.194	0.103	-1.88
SES	-0.135	0.874	-0.72	-0.139	0.179	-0.77
# of Juvenile Contacts	0.267	1.306	3.90 ***	0.131	0.055	2.39 *
Gamma	---	---	---	4.538	1.802	2.52 *
Public Order Offenses						
Constant	0.608	1.837	0.68	0.954	0.821	1.16
Military Service	-0.810	0.445	-3.10 **	-0.726	0.259	-2.80 **
Non-White	0.723	2.061	2.04 *	0.830	0.316	2.63 **
Education	-0.229	0.795	-3.65 ***	-0.200	0.058	-3.42 ***
SES	0.130	1.139	0.92	0.041	0.121	0.34
# of Juvenile Contacts	0.321	1.379	4.64 ***	0.153	0.054	2.83 **
Gamma	---	---	---	2.323	0.663	3.50 ***

Note: n = 565 for these models.

*p < .05; **p < .01; ***p < .001.

Table 27: Offending Pattern by Military Service, Racine 1949.

	Military (n = 89)	Non-Military (n = 154)
Percent with a Police Contact		
Neither Juvenile nor Adult	30.3%	46.8%
Juvenile Only	32.6%	22.1%
Both Juvenile and Adult	33.7%	21.4%
Adult Only	3.4%	9.7%
	$\chi^2 = 12.502^{**}$	

Note: Chi-square value has three degrees of freedom.

$^{**}p < .01$.

Table 28: Regression Models Predicting Police Contacts for Non-Traffic Offenses and Controlling for Prior Criminal Behavior, Racine 1949.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	1.993	7.338	1.46	4.398	1.196	3.68 ***
Military Service	-0.497	0.608	-1.39	-0.927	0.312	-2.97 **
Non-White	0.278	1.320	0.62	0.700	0.338	2.07 *
Education	-0.222	0.801	-2.33 *	-0.336	0.084	-3.98 ***
SES	-0.022	0.978	-0.80	-0.037	0.022	-1.69
# of Juvenile Contacts	0.359	1.432	4.74 ***	0.171	0.041	4.20 ***
Gamma	---	---	---	2.175	0.506	4.30 ***

Note: n = 243 for these models.

*p < .05; **p < .01.

Table 29: Regression Models Predicting Adult Police Contacts for Specific Offenses and Controlling for Prior Criminal Behavior, Racine 1949.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses						
Constant	0.823	2.277	0.36	2.151	2.757	0.78
Military Service	-1.088	0.337	-1.60	-1.114	0.700	-1.59
Non-White	0.675	1.964	1.00	1.122	0.739	1.52
Education	-0.266	0.766	-1.55	-0.375	0.209	-1.79
SES	-0.058	0.944	-1.05	-0.052	0.063	-0.82
# of Juvenile Contacts	0.189	1.208	3.42 ***	0.200	0.065	3.09 **
Gamma	---	---	---	3.252	1.605	2.03 *
Property Offenses						
Constant	0.423	1.527	0.20	0.790	2.383	0.33
Military Service	-0.919	0.399	-1.53	-1.512	0.744	-2.03 *
Non-White	0.026	1.026	0.04	-0.173	0.729	-0.24
Education	-0.211	0.810	-1.40	-0.253	0.171	-1.48
SES	-0.026	0.974	-0.57	-0.030	0.052	-0.58
# of Juvenile Contacts	0.126	1.134	2.61 **	0.360	0.123	2.92 **
Gamma	---	---	---	4.214	2.382	1.77
Public Order Offenses						
Constant	2.390	10.913	1.71	4.315	1.241	3.48 ***
Military Service	-0.655	0.519	-1.77	-0.842	0.315	-2.67 **
Non-White	0.198	1.219	0.44	0.759	0.338	2.24 *
Education	-0.249	0.780	-2.54 *	-0.341	0.088	-3.89 ***
SES	-0.031	0.969	-1.07	-0.035	0.022	-1.59
# of Juvenile Contacts	0.347	1.415	4.74 ***	0.136	0.038	3.54 ***
Gamma	---	---	---	2.177	0.515	4.23 ***

Note: n = 243 for these models.

*p < .05; **p < .01; ***p < .001.

Table 30: Offending Pattern by Military Service, NLSY 1957-1963.

	Military (n = 515)	Non-Military (n = 4,055)
Percent with a Police Contact		
Neither Juvenile nor Adult	74.4%	73.0%
Juvenile Only	10.7%	7.4%
Both Juvenile and Adult	4.9%	13.4%
Adult Only	10.1%	6.2%
	$\chi^2 = 44.038^{**}$	

Note: Chi-square value has three degrees of freedom.

$^{**}p < .01$.

Table 31: Regression Models Predicting Self-Reported Police Stops Controlling for Prior Behavior, NLSY 1957-1963.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	-2.965	0.052	-6.63 ***	-2.317	0.363	-6.39 ***
Military Service	-0.262	0.770	-1.58	-0.254	0.134	-1.89
Non-White	-0.041	0.960	-0.43	-0.070	0.075	-0.94
Education	-0.013	0.987	-0.37	-0.013	0.027	-0.46
SES	0.001	1.001	0.28	-0.000	0.003	-0.11
Age	0.037	1.038	1.16	0.035	0.025	1.40
Any Juvenile Contact	2.893	18.047	31.21 ***	2.507	0.091	27.42 ***
Gamma	---	---	---	2.917	0.193	15.10 ***

Note: n = 4,570 for these models.

*p < .05; **p < .01.

Table 32: Regression Models Predicting Self-Reported Offenses Controlling for Prior Criminal Behavior, NLSY 1957-1963.

	Logistic Regression (D.V. = Any Offense)			Negative Binomial (D.V. = Number of Offenses)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses						
Constant	2.320	10.176	7.64 ***	1.968	0.201	9.78 ***
Military Service	0.471	1.602	4.41 ***	0.346	0.073	4.76 ***
Non-White	0.111	1.117	1.69	0.026	0.043	0.60
Education	-0.085	0.919	-3.68 ***	-0.062	0.015	-4.02 ***
SES	-0.006	0.994	-2.27 *	-0.003	0.002	-1.94
Age	-0.094	0.910	-4.37 ***	-0.063	0.014	4.51 ***
Any Juvenile Contact	0.929	2.532	11.87 ***	0.671	0.050	13.35 ***
Gamma	---	---	---	2.981	0.179	16.67 ***
Property Offenses						
Constant	1.104	3.016	3.70 ***	1.667	0.218	7.64 ***
Military Service	0.318	1.374	3.02 **	0.231	0.078	2.98 **
Non-White	-0.113	0.893	-1.75	-0.147	0.048	-3.07 **
Education	0.011	1.011	0.48	0.010	0.017	0.58
SES	0.007	1.007	3.11 **	0.005	0.002	3.00 **
Age	-0.083	0.920	-3.86 ***	-0.074	0.016	-4.55 ***
Any Juvenile Contact	0.877	2.404	11.29 ***	0.750	0.053	14.05 ***
Gamma	---	---	---	4.043	0.299	13.51 ***
Drug Offenses						
Constant	-3.280	0.038	-7.89 ***	-1.683	0.370	-4.55 ***
Military Service	0.259	1.296	1.95	0.245	0.117	2.10 *
Non-White	-0.214	0.807	-2.38 *	-0.233	0.081	-2.89 **
Education	0.006	1.006	0.20	0.001	0.027	0.02
SES	0.001	1.001	0.31	0.000	0.003	0.08
Age	0.065	1.067	2.25 *	0.058	0.025	2.26 *
Any Juvenile Contact	1.187	3.277	13.20 ***	1.073	0.077	13.97 ***
Gamma	---	---	---	9.894	0.734	13.49 ***

Note: n = 4,570 for these models.
*p < .05; **p < .01; ***p < .001.

Table 33: Adult Offending by Timing of Military Service, Racine 1942.

	Early Entry (n = 48)	Late Entry (n = 13)
Percent with Adult Non-Traffic Contact	25.0%	23.1%
	$\chi^2 = 0.020$	
Number of Adult Non-Traffic Contacts	0.85[a] (2.35)	0.69[a] (1.55)
	t = -0.11	
Percent with Adult Violent Contact	4.2%	7.7%
	$\chi^2 = 0.272$	
Number of Adult Violent Contacts	0.08[a] (0.45)	0.15[a] (0.55)
	t = 0.52	
Percent with Adult Property Contact	4.2%	7.7%
	$\chi^2 = 0.272$	
Number of Adult Property Contacts	0.10[a] (0.59)	0.08[a] (0.28)
	t = 0.46	
Percent with Adult Public Order Contact	25.0%	15.4%
	$\chi^2 = 0.535$	
Number of Adult Public Order Contacts	0.69[a] (1.70)	0.38[a] (1.12)
	t = -0.69	

Note: All chi-square values have one degree of freedom.

[a]Mean values with standard deviations in parentheses.

Table 34: Regression Models Predicting Adult Police Contacts for Non-Traffic Offenses with Timing of Service, Racine 1942.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	1.107	3.025	0.37	3.234	3.170	1.02
Late Entry	-0.294	0.745	-0.30	-1.060	0.869	-1.22
Non-White	2.480	11.941	1.93	1.554	0.673	2.31 *
Education	-0.167	0.846	-0.75	-0.268	0.236	-1.14
SES	-0.069	0.933	-1.05	-0.087	0.064	-1.35
# of Juvenile Contacts	0.195	1.215	1.38	0.180	0.094	1.92
Gamma	---	---	---	2.054	1.569	1.31

Note: n = 61 for these models.

*p < .05; **p < .01.

Table 35: Regression Models Predicting Adult Police Contacts for Specific Offense with Timing of Military Service, Racine 1942.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses[a]						
Constant	9.277	10689.316	1.08	---	---	---
Late Entry	1.021	2.776	0.43	---	---	---
Non-White	2.466	11.775	1.51	---	---	---
Education	-1.006	0.366	-1.35	---	---	---
SES	-0.195	0.823	-0.81	---	---	---
# of Juvenile Contacts	0.159	1.172	0.52	---	---	---
Gamma	---	---	---	---	---	---
Property Offenses[a]						
Constant	2.224	9.244	0.32	---	---	---
Late Entry	0.343	1.409	0.19	---	---	---
Non-White	1.015	2.759	0.55	---	---	---
Education	-0.463	0.629	-0.87	---	---	---
SES	-0.037	0.964	-0.26	---	---	---
# of Juvenile Contacts	0.308	1.361	1.49	---	---	---
Gamma	---	---	---	---	---	---
Public Order Offenses						
Constant	-0.147	0.863	-0.04	5.631	3.616	1.56
Late Entry	-1.474	0.229	-1.14	-0.338	0.170	-1.98
Non-White	3.174	23.903	2.20 *	1.815	0.884	2.05 *
Education	-0.096	0.908	-0.42	-0.012	0.305	-0.04
SES	-0.044	0.957	-0.66	-0.045	0.070	-0.64
# of Juvenile Contacts	0.262	1.300	1.73	0.168	0.082	2.05 *
Gamma	---	---	---	1.370	1.153	1.19

Note: n = 61 for these models.

[a]The distribution of non-zero cases for these dependent variables did not justify the use of models predicting the number of adult contacts.

*p < .05; **p < .01; ***p < .001.

Table 36: Adult Offending by Timing of Military Service, Philadelphia 1945.

	Early Entry (n = 219)	Late Entry (n = 52)
Percent with Adult Non-Traffic Contact	23.3%	7.7%
	$\chi^2 = 6.318^*$	
Number of Adult Non-Traffic Contacts	0.74[a] (2.43)	0.08[a] (0.27)
	$t = -2.34^*$	
Percent with Adult Violent Contact	7.3%	5.8%
	$\chi^2 = 0.152$	
Number of Adult Violent Contacts	0.12[a] (0.52)	0.04[a] (0.19)
	$t = -0.91$	
Percent with Adult Property Contact	7.3%	0.0%
	$\chi^2 = 4.037^*$	
Number of Adult Property Contacts	0.21[a] (1.12)	0.00[a] (0.00)
	$t = -0.04$	
Percent with Adult Public Order Contact	15.5%	1.9%
	$\chi^2 = 6.913^*$	
Number of Adult Public Order Contacts	0.28[a] (0.83)	0.02[a] (0.14)
	$t = -2.13^*$	

Note: All chi-square values have one degree of freedom.

[a]Mean values with standard deviations in parentheses.

$^*p < .05$.

Table 37: Regression Models Predicting Adult Police Contacts for Non-Traffic Offenses with Timing of Military Service, Philadelphia 1945.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	1.693	5.436	1.04	1.355	1.252	1.08
Late Entry	-0.842	0.431	-1.40	-0.869	0.535	-1.63
Non-White	1.285	3.615	3.01 **	1.089	0.318	3.42 ***
Education	-0.304	0.738	-2.33 *	-0.230	0.097	-2.38 *
SES	0.030	1.030	0.16	0.092	0.122	0.75
# of Juvenile Contacts	0.229	1.257	2.43 *	0.157	0.034	4.57 ***
Gamma	---	---	---	3.179	0.884	3.60 ***

Note: n = 271 for these models.

*p < .05; **p < .01; ***p < .001.

Table 38: Regression Models Predicting Adult Police Contacts for Specific Offenses with Timing of Military Service, Philadelphia 1945.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses[a]						
Constant	-0.874	0.417	-0.34	-1.014	2.337	-0.43
Late Entry	0.474	1.606	0.62	-0.213	0.775	-0.27
Non-White	2.194	8.971	3.17 **	1.792	0.612	2.93 **
Education	-0.295	0.745	-1.42	-0.212	0.178	-1.19
SES	0.112	1.119	0.41	0.009	0.190	0.05
# of Juvenile Contacts	0.263	1.301	2.70 **	0.190	0.048	3.93 ***
Gamma	---	---	---	0.568	0.389	1.46
Property Offenses[a]						
Constant	-2.950	0.052	-1.02	-1.771	2.742	-0.65
Late Entry	-24.304	0.000	-0.01	-15.219	1217.314	-0.01
Non-White	1.142	3.133	1.65	1.046	0.632	1.66
Education	-0.051	0.950	-0.22	-0.061	0.208	-0.29
SES	0.055	1.057	0.19	0.046	0.228	0.20
# of Juvenile Contacts	0.253	1.288	2.77 **	0.183	0.060	3.06 **
Gamma	---	---	---	4.325	2.182	1.98 *
Public Order Offenses						
Constant	-0.582	0.559	-0.30	-0.085	1.630	-0.05
Late Entry	-1.852	0.157	-1.75	-1.761	1.039	-1.69
Non-White	0.750	2.117	1.42	0.646	0.429	1.51
Education	-0.222	0.801	-1.43	-0.198	0.126	-1.57
SES	0.245	1.278	1.09	0.160	0.154	1.04
# of Juvenile Contacts	0.353	1.423	3.49 ***	0.195	0.042	4.60 ***
Gamma	---	---	---	0.991	0.416	2.38 *

Note: n = 271 for these models.

*p < .05; **p < .01; ***p < .001.

Table 39: Adult Offending by Timing of Military Service, Racine 1949.

	Early Entry (n = 67)	Late Entry (n = 22)
Percent with Adult Non-Traffic Contact	43.3%	18.2%
	$\chi^2 = 4.473^*$	
Number of Adult Non-Traffic Contacts	1.12[a] (1.96)	0.32[a] (0.78)
	t = -1.93	
Percent with Adult Violent Contact	6.0%	4.6%
	$\chi^2 = 0.063$	
Number of Adult Violent Contacts	0.07[a] (0.32)	0.05[a] (0.21)
	t = -0.28	
Percent with Adult Property Contact	7.5%	0.0%
	$\chi^2 = 1.740$	
Number of Adult Property Contacts	0.09[a] (0.34)	0.00[a] (0.00)
	t = -0.03	
Percent with Adult Public Order Contact	38.8%	18.2%
	$\chi^2 = 3.153$	
Number of Adult Public Order Contacts	0.87[a] (1.56)	0.27[a] (0.70)
	t = -1.71	

Note: All chi-square values have one degree of freedom.

[a]Mean values with standard deviations in parentheses.

$^*p < .05$.

Table 40: Regression Models Predicting Adult Police Contacts for Non-Traffic Offenses with Timing of Military Service, Racine 1949.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	6.469	644.839	2.03 *	5.939	1.618	3.67 ***
Late Entry	-1.518	0.219	-1.76	-0.676	0.594	-1.14
Non-White	0.038	1.039	0.04	-0.698	0.460	-1.52
Education	-0.548	0.578	-2.32 *	-0.461	0.134	-3.45 ***
SES	-0.053	0.948	-0.98	-0.051	0.026	-1.94
# of Juvenile Contacts	0.297	1.346	3.15 **	0.103	0.024	4.35 ***
Gamma	---	---	---	1.150	0.554	2.07 *

Note: n = 89 for these models.

*p < .05; **p < .01; ***p < .001.

Table 41: Regression Models Predicting Adult Police Contacts for Specific Offenses with Timing of Military Service, Racine 1949.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses[a]						
Constant	9.607	14868.498	1.73	---	---	---
Late Entry	0.097	1.102	0.08	---	---	---
Non-White	-0.186	0.830	-0.14	---	---	---
Education	-1.063	0.345	-2.24 *	---	---	---
SES	0.038	1.039	0.41	---	---	---
# of Juvenile Contacts	0.074	1.077	0.86	---	---	---
Gamma	---	---	---	---	---	---
Property Offenses[a]						
Constant	7.759	2342.561	1.47	---	---	---
Late Entry	-25.100	0.000	-0.01	---	---	---
Non-White	-1.076	0.341	-0.76	---	---	---
Education	-0.825	0.438	-1.92	---	---	---
SES	-0.026	0.974	-0.29	---	---	---
# of Juvenile Contacts	0.093	1.097	1.15	---	---	---
Gamma	---	---	---	---	---	---
Public Order Offenses						
Constant	7.094	1204.717	2.16 *	5.297	1.921	2.76 **
Late Entry	-1.124	0.325	-1.35	-0.580	0.682	-0.85
Non-White	-0.333	0.717	-0.38	-0.507	0.501	-1.01
Education	-0.610	0.543	-2.49 *	-0.437	0.160	-2.73 **
SES	-0.051	0.950	-0.94	-0.033	0.029	-1.12
# of Juvenile Contacts	0.273	1.314	3.17 **	0.088	0.028	3.12 **
Gamma	---	---	---	1.068	0.535	2.00 *

Note: n = 89 for these models.

[a]The distribution of non-zero cases for these dependent variables did not justify the use of models predicting the number of adult contacts.

*p < .05; **p < .01; ***p < .001.

Table 42: Adult Offending by Timing of Military Service, NLSY 1957-1963.

	Early Entry (n = 449)	Late Entry (n = 66)
Percent with Police Contact	14.9%	15.2%
	$\chi^2 = 0.002$	
Number of Police Contacts	0.43[a] (1.60)	0.35[a] (1.32)
	t = 0.03	
Percent with Violent Offense	45.9%	51.5%
	$\chi^2 = 0.734$	
Number of Violent Offenses	1.42[a] (2.40)	1.44[a] (2.33)
	t = 0.55	
Percent with Property Offense	49.2%	36.4%
	$\chi^2 = 3.814$	
Number of Property Offenses	1.88[a] (2.90)	0.94[a] (1.67)
	t = -2.20*	
Percent with Drug Offense	22.7%	9.1%
	$\chi^2 = 6.447$*	
Number of Drug Offenses	1.30[a] (2.95)	0.32[a] (1.38)
	t = -2.47*	

Note: All chi-square values have one degree of freedom.

[a]Mean values with standard deviations in parentheses.

*$p < .05$.

Table 43: Regression Models Predicting Self-Reported Police Stops with Timing of Military Service, NLSY 1957-1963.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	-1.089	0.337	-0.36	-0.315	2.677	-0.12
Late Entry	0.067	1.069	0.17	0.037	0.366	0.10
Non-White	0.329	1.390	1.14	0.466	0.259	1.80
Education	-0.012	0.988	-0.10	-0.010	0.102	-0.10
SES	0.002	1.002	0.10	0.000	0.016	0.02
Age	-0.040	0.961	-0.30	-0.041	0.119	-0.35
Any Juvenile Contact	1.213	3.364	4.19 ***	1.241	0.251	4.95 ***
Gamma	---	---	---	3.838	0.892	4.30 ***

Note: n = 515 for these models.

***p < .001.

Table 44: Regression Models Predicting Self-Reported Offenses with Timing of Military Service, NLSY 1957-1963.

	Logistic Regression (D.V. = Any Offense)			Negative Binomial (D.V. = Number of Offenses)		
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Violent Offenses						
Constant	4.321	75.264	1.98 *	2.886	1.356	2.13 *
Late Entry	0.360	1.433	1.24	0.161	0.180	0.89
Non-White	0.262	1.300	1.21	0.118	0.136	0.87
Education	-0.262	0.770	-2.90 **	-0.140	0.055	-2.54 *
SES	-0.018	0.982	-1.30	-0.010	0.009	-1.13
Age	-0.070	0.932	-0.73	-0.048	0.061	-0.79
Any Juvenile Contact	1.095	2.989	4.08 ***	0.714	0.154	4.63 ***
Gamma	---	---	---	3.154	0.646	4.88 ***
Property Offenses						
Constant	2.514	12.354	1.19	2.732	1.581	1.73
Late Entry	-0.447	0.640	-1.54	-0.449	0.285	-1.57
Non-White	-0.018	0.982	-0.08	-0.085	0.164	-0.52
Education	-0.058	0.944	-0.67	-0.029	0.068	-0.42
SES	-0.027	0.973	-1.92	-0.016	0.011	-1.39
Age	-0.079	0.924	-0.84	-0.080	0.069	-1.15
Any Juvenile Contact	0.496	1.642	1.96 *	0.492	0.177	2.79 **
Gamma	---	---	---	3.798	1.122	3.38 ***
Drug Offenses						
Constant	3.259	26.024	1.28	4.565	2.317	1.97 *
Late Entry	-0.903	0.405	-1.95	-0.827	0.499	-1.66
Non-White	-0.039	0.962	-0.14	-0.074	0.229	-0.32
Education	-0.127	0.881	-1.21	-0.112	0.091	-1.23
SES	0.013	1.013	0.90	0.011	0.012	0.87
Age	-0.152	0.859	-1.34	-0.152	0.097	-1.56
Any Juvenile Contact	0.936	2.550	3.46 ***	0.791	0.262	3.02 **
Gamma	---	---	---	11.790	2.686	4.39 ***

Note: n = 515 for these models.

*p < .05; **p < .01; ***p < .001.

Table 45: Variables Describing the Vietnam-Era, Volunteer-Era, and Combined Samples.

Variables	Vietnam-Era (n = 963)	Volunteer-Era (n = 4,570)	Combined Sample (n = 5,533)
Demographic Characteristics			
Non-White	18.0%	39.4%	35.6%
Years of School[a]	13.41 (2.38)	10.37 (2.08)	10.90 (2.42)
Graduated High School	86.0%	71.3%[b]	74.5%
Military Characteristics			
Military Service	43.7% (n = 421)	11.3% (n = 515)	16.9% (n = 936)
Year Entered[a]	1964.69 (2.55)	1976.60 (1.01)	1971.24 (6.22)
Age Entered[a]	19.28 (1.63)	18.52 (0.89)	18.86 (1.33)
Years Served[a]	2.83 (1.39)	3.24 (1.29)	3.06 (1.35)
Measures of Offending			
Juvenile Contact	37.7%	20.2%	23.3%
Adult Contact	26.0%	19.1%	20.3%
Number of Adult Contacts[a]	0.96 (2.99)	0.52 (1.68)	0.58 (1.55)
Adult Violent	6.5%	44.9%	38.2%
Number of Adult Violent[a]	0.13 (0.78)	1.35 (2.29)	1.14 (2.15)
Adult Property	7.6%	47.0%	40.1%
Number of Adult Property[a]	0.18 (0.95)	1.81 (2.8)	1.53 (2.72)

[a]Mean values with standard deviations in parentheses.

[b]Among men old enough to have completed high school.

Table 46: Adult Offending in the Military and Non-Military Groups for Vietnam and Volunteer-Era Samples.

	Vietnam-Era		Volunteer-Era	
	Military (n = 421)	Non-Military (n = 542)	Military (n = 515)	Non-Military (n = 4,055)
Percent with Adult Contact	23.8%	27.7%	15.0%	19.6%
	$\chi^2 = 1.897$		$\chi^2 = 6.348^*$	
Number of Adult Contacts[a]	0.65 (1.90)	1.20 (3.60)	0.42 (1.56)	0.54 (1.70)
	t = -1.70		t = -2.50*	
Percent with Adult Violent	5.9%	7.0%	46.6%	44.6%
	$\chi^2 = 0.446$		$\chi^2 = 0.714$	
Number of Adult Violent[a]	0.09 (0.40)	0.17 (0.98)	1.42 (2.39)	1.34 (2.28)
	t = -0.73		t = 0.85	
Percent with Adult Property	5.5%	9.2%	47.6%	46.9%
	$\chi^2 = 4.786^*$		$\chi^2 = 0.088$	
Number of Adult Property[a]	0.12 (0.75)	0.22 (1.08)	1.76 (2.79)	1.82 (2.89)
	t = -2.17*		t = 0.02	

Note: All chi-square values have one degree of freedom.

[a]Mean values with standard deviations in parentheses.

*$p < .05$.

Table 47: Regression Models Predicting Adult Non-Traffic Offenses for Vietnam and Volunteer-Era Samples.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Vietnam-Era Cohort (n = 963)						
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	1.362	3.904	2.19 *	2.396	0.600	3.99 ***
Military Service	-0.556	0.573	-3.30 ***	-0.751	0.162	-4.63 ***
Non-White	0.948	2.581	4.37 ***	1.173	0.199	5.88 ***
Education	-0.184	0.832	-4.50 ***	-0.224	0.041	-5.50 ***
SES	-0.171	0.843	-2.30 *	-0.177	0.068	-2.61 **
Juvenile Contact	1.224	3.401	7.20 ***	1.284	0.165	7.77 ***
Gamma	---	---	---	3.345	0.361	9.27 ***
Volunteer-Era Cohort (n = 4,570)						
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	-2.534	0.079	-9.18 ***	-1.908	0.228	-8.37 ***
Military Service	-0.220	0.803	-1.36	-0.207	0.130	-1.59
Non-White	-0.040	0.961	-0.42	-0.066	0.074	-0.89
Education	0.017	1.017	0.73	0.016	0.018	0.85
SES	-0.003	0.997	-0.09	-0.007	0.025	-0.27
Juvenile Contact	2.883	17.868	31.25 ***	2.488	0.090	27.58 ***
Gamma	---	---	---	2.915	0.194	15.03 ***

*p < .05; **p < .01; ***p < .001.

Table 48: Regression Models Predicting Adult Violent Offenses for Vietnam and Volunteer-Era Samples.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Vietnam-Era Cohort (n = 963)						
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	-0.487	0.614	-0.44	0.273	1.106	0.25
Military Service	-0.393	0.675	-1.37	-0.642	0.305	-2.10 *
Non-White	1.845	6.328	5.45 ***	2.033	0.357	5.69 ***
Education	-0.219	0.803	-2.94 **	-0.255	0.074	-3.43 ***
SES	-0.109	0.897	-0.84	-0.154	0.135	-1.14
Juvenile Contact	0.809	2.246	2.69 **	1.000	0.316	3.17 **
Gamma	---	---	---	3.332	1.019	3.27 **
Volunteer-Era Cohort (n = 4,570)						
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	1.250	3.490	6.79 ***	1.225	0.121	10.09 ***
Military Service	0.356	1.428	3.44 ***	0.270	0.071	3.78 ***
Non-White	0.107	1.113	1.63	0.021	0.044	0.47
Education	-0.161	0.851	-10.15 ***	-0.112	0.011	-10.12 ***
SES	-0.022	0.978	-0.97	-0.008	0.016	-0.49
Juvenile Contact	0.945	2.574	12.11 ***	0.702	0.051	13.80 ***
Gamma	---	---	---	2.929	0.173	16.96 ***

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

Table 49: Regression Models Predicting Adult Property Offenses for Vietnam and Volunteer-Era Samples.

	Logistic Regression (D.V. = Any Contact)			Negative Binomial (D.V. = Number of Contacts)		
Vietnam-Era Cohort (n = 963)						
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	0.830	2.293	0.78	0.619	0.982	0.63
Military Service	-0.883	0.414	-3.12 ***	-0.805	0.281	-2.87 **
Non-White	1.133	3.105	3.54 ***	1.314	0.449	2.93 **
Education	-0.299	0.742	-4.14 ***	-0.257	0.077	-3.31 ***
SES	-0.167	0.846	-1.35	-0.126	0.137	-0.92
Juvenile Contact	1.564	4.778	5.02 ***	1.551	0.342	4.53 ***
Gamma	---	---	---	3.535	1.384	2.55 *
Volunteer-Era Cohort (n = 4,570)						
Variables	b	Exp(b)	t-ratio	b	Std. Error	t-ratio
Constant	0.018	1.018	0.10	0.729	0.132	5.54 ***
Military Service	0.214	1.239	2.10 *	0.139	0.076	1.84
Non-White	-0.131	0.877	-2.04 *	-0.163	0.049	-3.36 ***
Education	-0.052	0.950	-3.39 ***	-0.048	0.011	-4.23 ***
SES	0.080	1.083	3.55 ***	0.061	0.017	3.69 ***
Juvenile Contact	0.895	2.447	11.55 ***	0.776	0.054	14.26 ***
Gamma	---	---	---	3.957	0.294	13.45 ***

*p < .05; **p < .01; ***p < .001.

Table 50: Regression Models Predicting Adult Contacts for Non-Traffic Offenses in Combined Sample (n = 5,533).

Predicting Likelihood of Adult Contact			
Variables	b	Exp(b)	t-ratio
Constant	0.650	1.916	0.56
Self-Report	0.212	1.236	0.71
Military Service	-2.454	0.086	-2.62 **
Year of Birth	-0.041	0.960	-1.94
Interaction (Military Service * Year of Birth)	0.039	1.040	2.21 *
Non-White	0.145	1.156	1.70
Education	-0.062	0.940	-2.68 **
SES	-0.028	0.972	-0.94
Juvenile Contact	2.550	12.807	31.61 ***
Predicting Number of Adult Contacts			
Variables	b	Std. Error	t-ratio
Constant	1.181	0.882	1.34
Self-Report	0.219	0.241	0.91
Military Service	-2.187	0.746	-2.93 **
Year of Birth	-0.040	0.016	-2.43 *
Interaction (Military Service * Year of Birth)	0.035	0.014	2.46 *
Non-White	0.142	0.069	2.05 *
Education	-0.058	0.018	-3.23 **
SES	-0.034	0.024	-1.42
Juvenile Contact	2.280	0.080	28.43 ***
Gamma	3.157	0.180	17.49 ***

*p < .05; **p < .01; ***p < .001.

Table 51: Regression Models Predicting Adult Violent Offenses in Combined Sample (n = 5,533).

Predicting Likelihood of Adult Violent Offense			
Variables	b	Exp(b)	t-ratio
Constant	-4.217	0.015	-3.83 ***
Self-Report	1.311	3.710	4.41 ***
Military Service	-2.683	0.068	-2.12 *
Year of Birth	0.062	1.064	3.23 **
Interaction (Military Service * Year of Birth)	0.054	1.055	2.41 *
Non-White	0.197	1.218	3.07 **
Education	-0.120	0.887	-5.76 ***
SES	-0.043	0.958	-1.90
Juvenile Contact	0.934	2.545	12.38 ***
Predicting Number of Adult Violent Offenses			
Variables	b	Std. Error	t-ratio
Constant	-3.175	0.785	-4.05 ***
Self-Report	1.306	0.245	5.32 ***
Military Service	-2.257	1.159	-1.95
Year of Birth	0.047	0.014	3.45 ***
Interaction (Military Service * Year of Birth)	0.045	0.020	2.22 *
Non-White	0.070	0.044	1.59
Education	-0.085	0.014	-5.71 ***
SES	-0.022	0.016	-1.40
Juvenile Contact	0.708	0.049	14.53 ***
Gamma	2.844	0.143	19.82 ***

*p < .05; **p < .01; ***p < .001.

Table 52: Regression Models Predicting Adult Property Offenses in Combined Sample (n = 5,533).

Predicting Likelihood of Adult Property Offense			
Variables	b	Exp(b)	t-ratio
Constant	-3.709	0.025	-3.47 ***
Self-Report	1.785	5.960	6.38 ***
Military Service	-4.099	0.017	-3.30 ***
Year of Birth	0.032	1.033	1.68
Interaction (Military Service * Year of Birth)	0.075	1.078	3.44 ***
Non-White	-0.057	0.945	-0.91
Education	-0.046	0.955	-2.29 *
SES	0.057	1.059	2.59 **
Juvenile Contact	0.954	2.596	12.75 ***
Predicting Number of Adult Property Offenses			
Variables	b	Std. Error	t-ratio
Constant	-3.540	0.845	-4.19 ***
Self-Report	1.583	0.240	6.59 ***
Military Service	-3.758	1.213	-3.10 **
Year of Birth	0.041	0.014	2.83 **
Interaction (Military Service * Year of Birth)	0.068	0.021	3.23 **
Non-White	-0.114	0.047	-2.45 *
Education	-0.026	0.016	-1.66
SES	0.046	0.016	2.83 **
Juvenile Contact	0.785	0.050	15.71 ***
Gamma	4.022	0.224	17.99 ***

*p < .05; **p < .01; ***p < .001.

Figures

Figure 1. Predicted Probability of Adult Police Contact by Military Service.

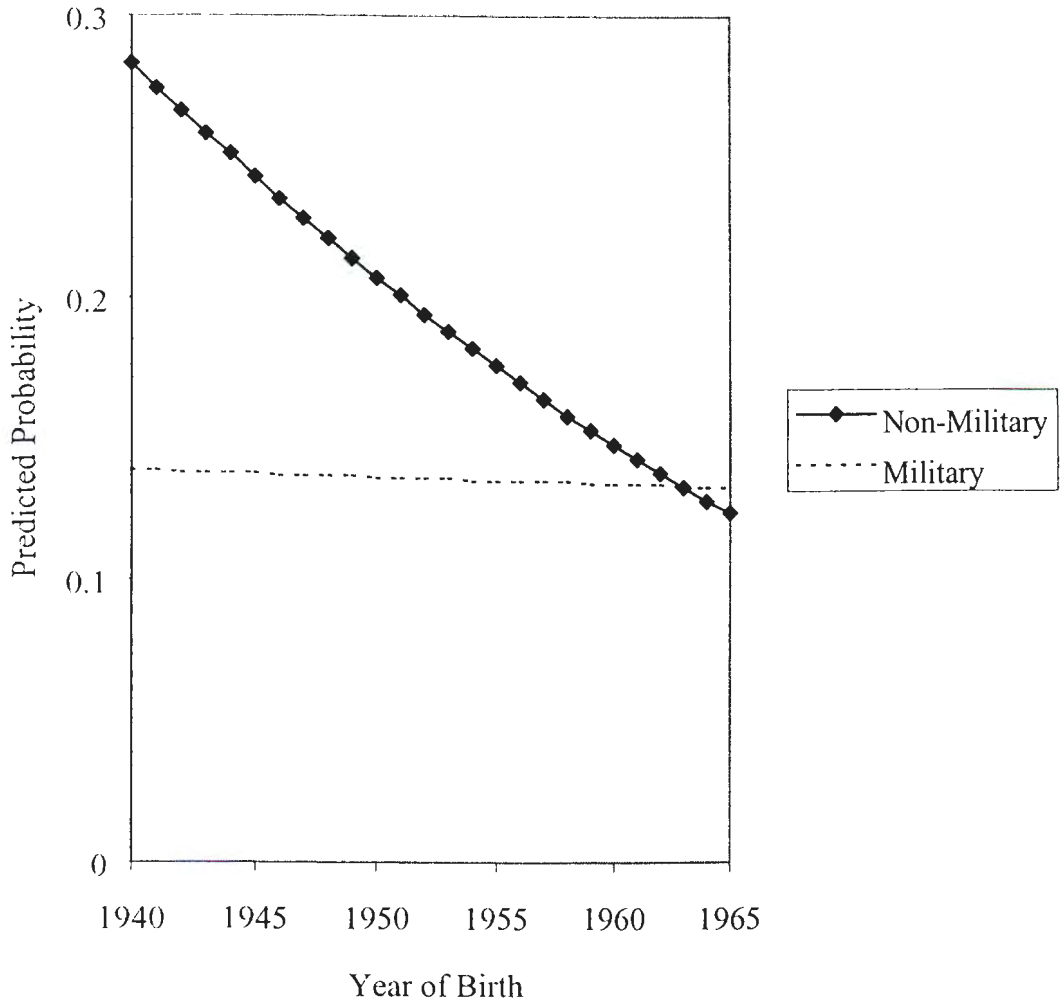


Figure 2. Predicted Number of Adult Police Contacts by Military Service.

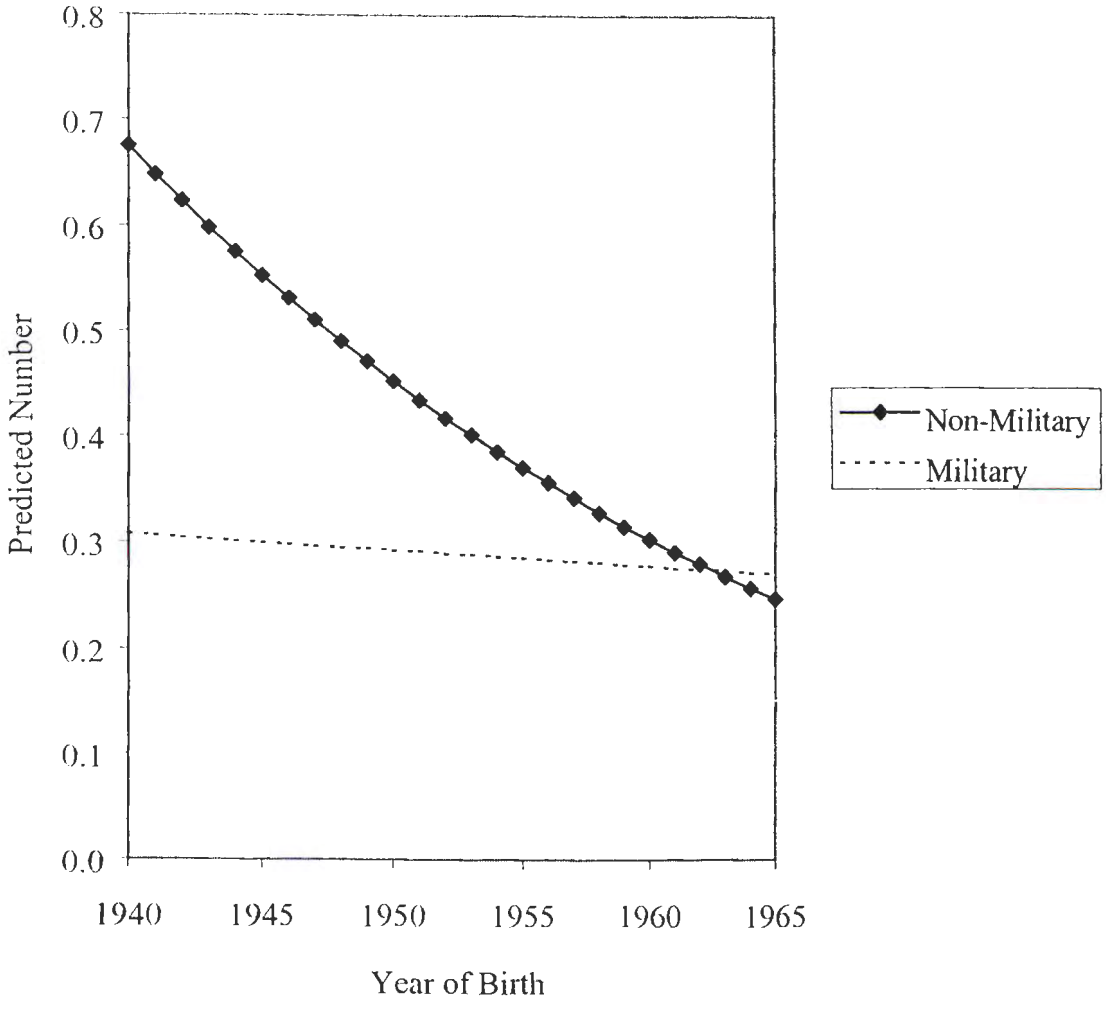


Figure 3. Predicted Probability of Adult Violent Offense by Military Service.

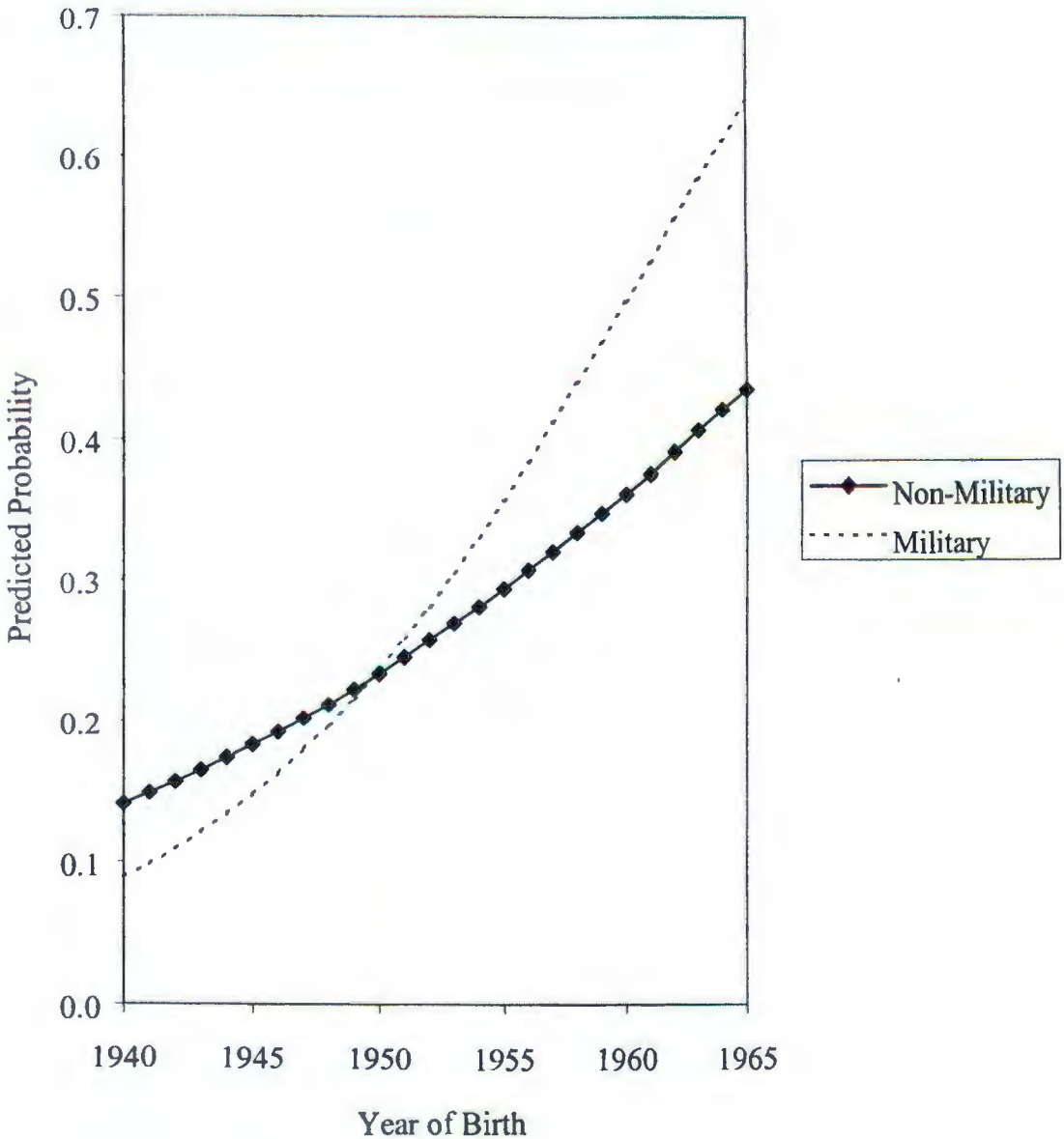


Figure 4. Predicted Number of Adult Violent Offenses by Military Service.

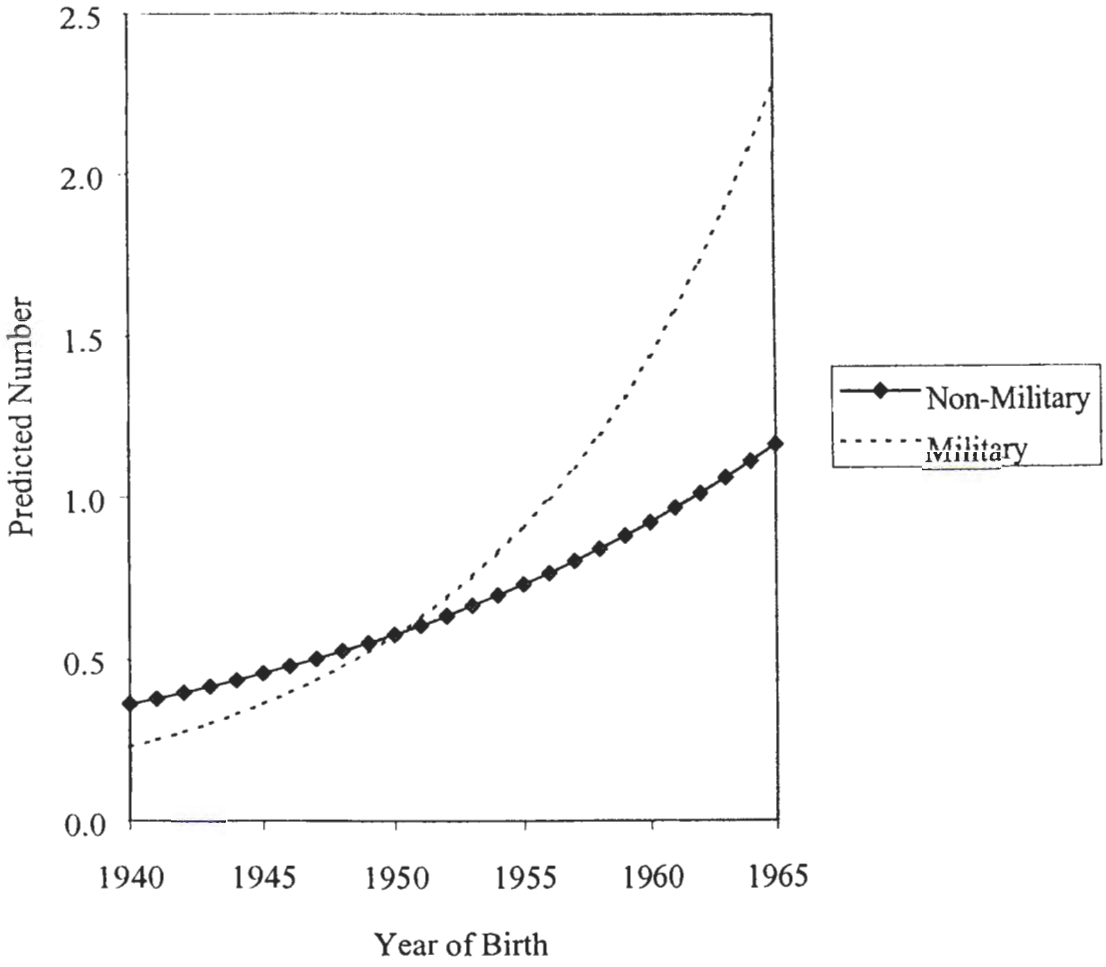


Figure 5. Predicted Probability of Adult Property Offense by Military Service.

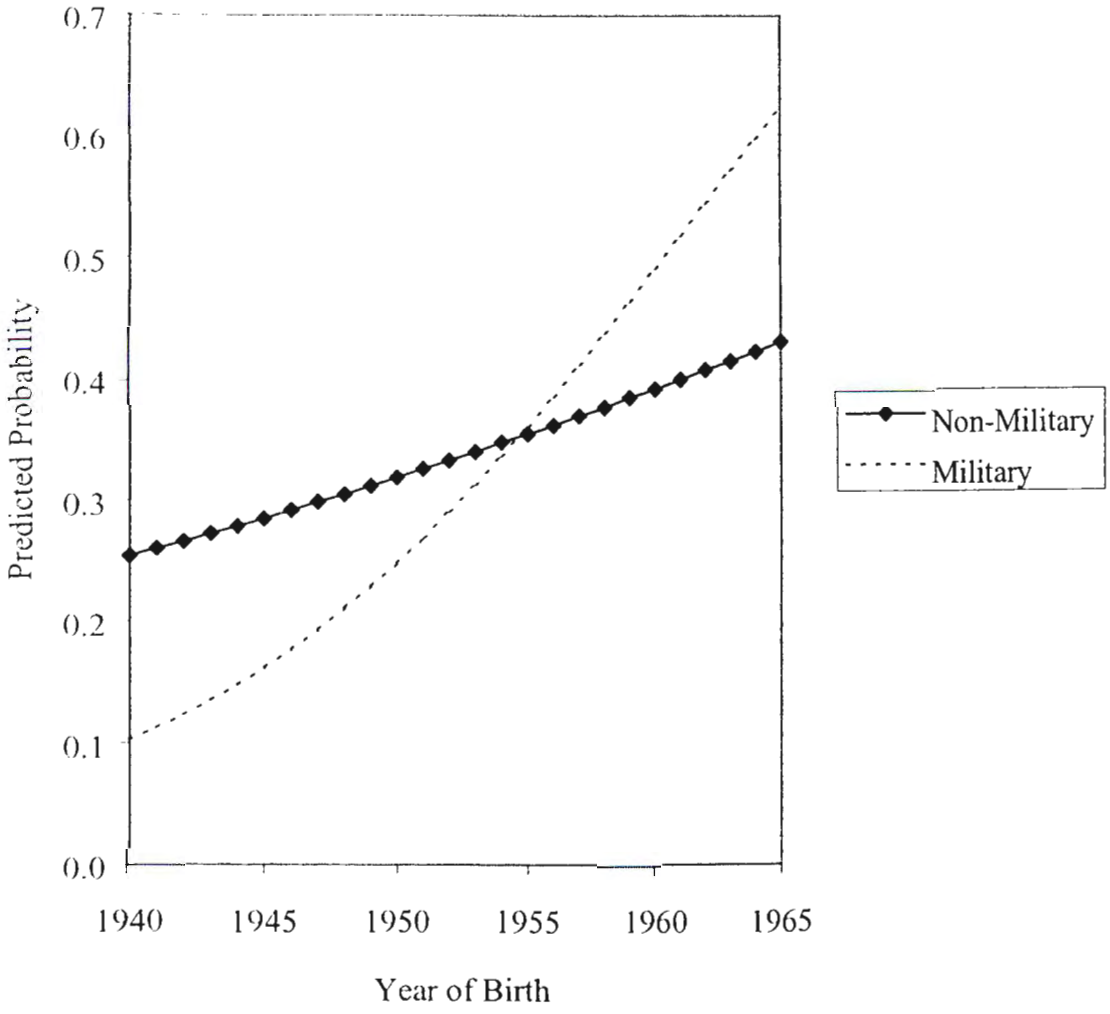
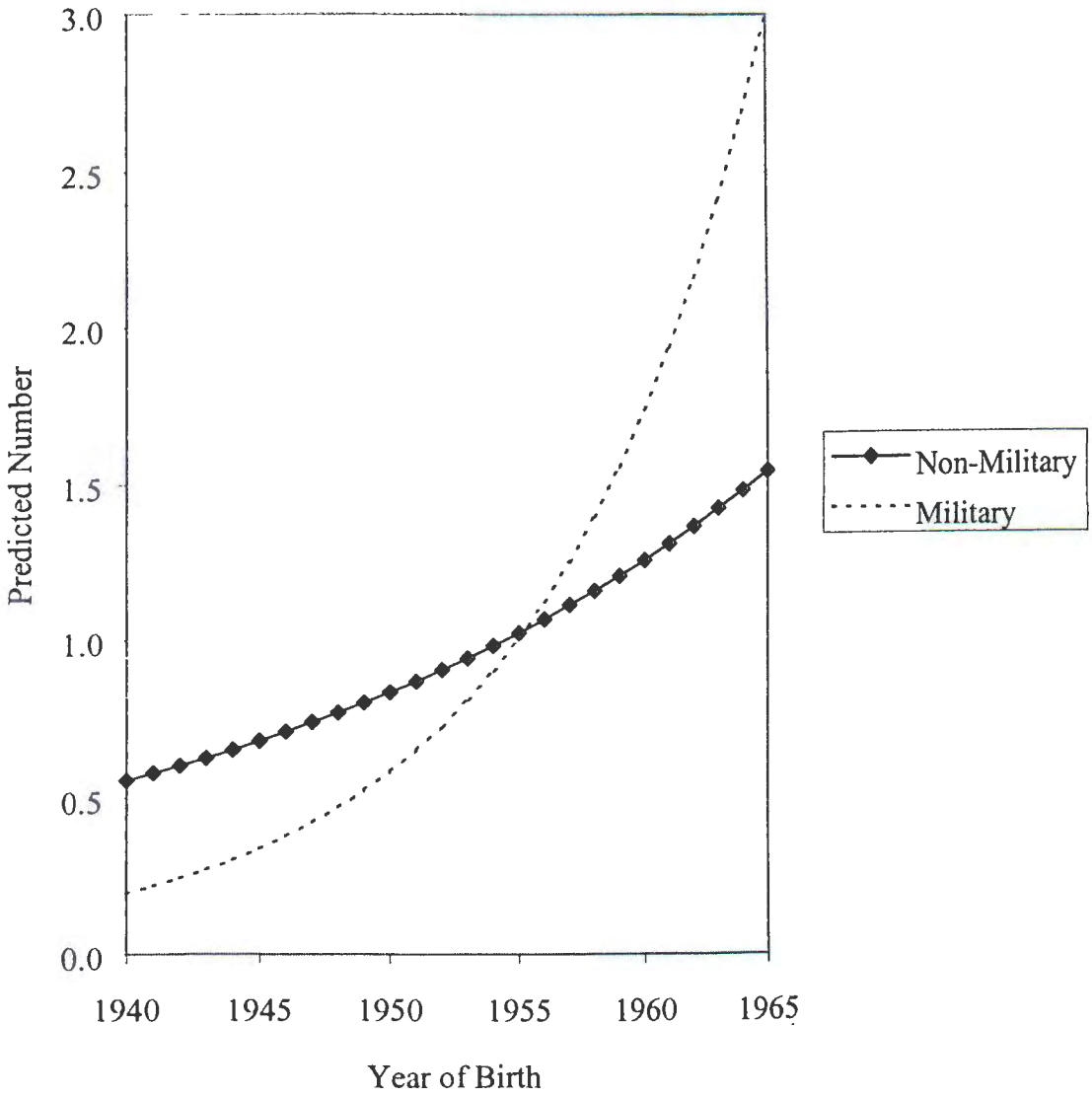


Figure 6. Predicted Number of Adult Property Offenses by Military Service.



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