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Correlates of Specialization and Escalation in the Criminal Career: Final Report

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ABSTRACT

The primary goal of this research is to investigate whether adolescent correlates of criminal behavior also serve as correlates of specialization and escalation in the criminal career. Prior research on offense sequences has focused on (1) establishing the existence of specialization and escalation and on (2) testing whether observed patterns of offense sequences differ across age and race of offender. This research uses data from the Preston subsample of the Early Identification of the Chronic Offender Study (Haapanen and Jesness, 1994). A series of multinomial logit models are used to test for significant behavioral, social, and psychological correlates of the likelihood of offender specialization and escalation. The results show that without taking into account offender characteristics, there is evidence of specialization and escalation comparable to that found in prior research. Once offender background characteristics are controlled statistically, overall evidence of specialization and escalation is significantly reduced, indicating (1) background characteristics are important predictors of types of offending and (2) background characteristics help to explain patterns of offending across the criminal career.

INTRODUCTION

Do offenders specialize in a single crime type or cluster of similar crime types? Do offenders increase the seriousness of their criminal offenses over the course of their criminal careers? Blumstein et al. (1986, 1988) and LeBlanc and Frechette (1989) have suggested that at the onset of the criminal career (i.e., when the offender is presumably an adolescent), offenders will tend to commit a wide variety of offenses. However, as offenders age, and gain more experience in committing criminal acts, they should become more proficient at some crimes and should be increasingly likely to repeat those crimes where they have been more successful.

Alternatively, though not to the exclusion of the notion of specialization, some offenders are also expected to increase the severity of the crimes they commit across their criminal careers, ultimately specializing in a more serious type of crime. The reasoning here is similar: offenders who have gained a certain level of expertise in one type of crime (or cluster of similar types of crime) may be more willing to commit a more serious, and presumably more complicated type of crime, because they have acquired the requisite skills for less serious and less complicated forms of crime. Thus, it is possible for escalation to take a number of different forms. For example, offenders may move from committing relatively less serious property crimes to relatively more serious property crimes, move from committing less serious violent crimes to more serious violent crimes, or move from committing property crimes to violent crimes. In each case, the offender is seen moving from a relatively less serious crime type to a relatively more serious crime type, but is hypothesized to do so after first gaining experience in committing the less serious forms of crime.

Research evidence on offender specialization tends to show that the types of crimes committed by an offender at two consecutive points in time will often be quite similar. What has

varied in this research is the apparent strength of the relationship between successive crime types. Perhaps one of the most important factors to influence the strength of the evidence for specialization has been the age of the offender. The evidence for offense specialization is weakest among juvenile offenders, where research focusing on juvenile arrest sequences has often found a weak relationship between crime types (Bursik, 1980; Cohen, 1986; Davis, 1992; LeBlanc and Frechette, 1989; Nevares et al., 1990; Rojek and Erickson, 1982; Wolfgang et al., 1972, 1987). Other work focusing on juvenile offender samples has found stronger evidence of specialization, but it has often been limited to a small number of property theft and status (e.g., runaway) offenses (Farrington et al., 1988; Kempf, 1987; Lattimore et al., 1994; Paternoster et al., 1997; Stander et al., 1989; Tracy et al., 1990). The most convincing evidence for specialization appears in studies that use data on adult arrest histories, where Blumstein et al. (1988) found evidence of specialization in fraud and violent offenses, Brennan et al. (1989) found evidence of a small number of specialists in violence, while Britt (1996) found strong evidence of specialization in serious property, drug and violent offenses.

Relatively little research has investigated patterns of escalation in the seriousness of criminal offending. The published research, thus far, has failed to present a consistent picture of how strong the evidence is for any escalation among criminal offenders. Similar to the research on specialization, there is very little evidence of increasing severity of criminal offenses among juvenile offenders (Davis, 1992; LeBlanc and Frechette, 1989; Tracy et al., 1990; Wolfgang et al., 1972). Although limited, there appears to be weak to moderate evidence of escalation among adult repeat offenders (Blumstein et al., 1988; Britt, 1996).

Race and Patterns of Specialization and Escalation

Race and ethnicity have received limited attention in the study of specialization and escalation. The overall effect of race is unclear. For example, Bursik (1980) found weak overall evidence for specialization in his sample of juvenile offenders, but found significantly different crime sequences for white and black youths. Lattimore et al. (1994) similarly found different offense patterns for white, black and Hispanic youth, while Britt (1996) found different patterns of specialization for white and black adult offenders. Wolfgang et al. (1972), Tracy et al. (1990) and Blumstein et al. (1988), however, found similar patterns of specialization among white and black juvenile and adult offenders. Race does not appear to have a direct effect on patterns of escalation, regardless of whether the research has focused on juveniles (Tracy et al., 1990; Wolfgang et al., 1972, 1987) or adults (Blumstein et al., 1988; Britt, 1996).

Are the Correlates of Crime Also the Correlates of Specialization and Escalation?

Virtually all of the research on specialization and escalation has focused on establishing whether offenders tend to commit similar and/or more serious types of offenses over the course of their criminal careers. What has not been studied are the effects of other social and background characteristics on the likelihood that offenders specialize or escalate their offending over time. Comprehensive reviews of the research on the correlates of crime and delinquency show that a constellation of personal background characteristics (e.g., personality and behavioral indicators) and social characteristics (e.g., family and peer relationships) will affect the likelihood that an individual commits criminal acts (see, e.g., Blumstein et al., 1986; Gottfredson and Hirschi, 1990; Wilson and Herrnstein, 1985). What remains unclear, and is the focus of the following discussion, is to how these kinds of offender characteristics may influence patterns of offending throughout

the criminal career.

Age is the only factor that has received consideration as an indirect predictor of patterns of specialization and escalation, where age has been used as a proxy for criminal experience. Thus, younger offenders are assumed to have committed fewer crimes and should be less likely to show evidence of specialization or escalation patterns (Blumstein et al., 1988; LeBlanc and Frechette, 1989). As offenders age, and presumably commit additional crimes, they should also acquire additional skills in performing crimes and show evidence of specialization and escalation. It is possible that as the number of arrests increases among a group of offenders, there will be a greater tendency for offenders to specialize in a crime type or to increase the severity of the types of crimes committed. If the number of arrests is used as an indicator of criminal experience, then based on developmental arguments for offending patterns (Blumstein et al., 1988; LeBlanc and Frechette, 1989), specialization and escalation should be more prevalent among offenders with more extensive criminal histories.

For related reasons, the age at first arrest may have an effect on the chances of specialization and escalation that is independent of the effect for the number of arrests. Onset of the criminal career, often indicated by the age at first arrest, has been found to be an important predictor of adult criminal behavior (e.g., Blumstein et al., 1986; Haapanen, 1990; Sampson and Laub, 1993; Wolfgang et al., 1972). Since those offenders who begin their criminal careers at younger ages appear to have a greater attraction to crime, for what are likely many reasons, it is plausible that they may also be more likely to learn from prior criminal acts in the manner described by Blumstein et al. (1988) and LeBlanc and Frechette (1989). For example, if we have two offenders with more than 5 arrests, we might expect that the offender whose first arrest

occurred at an earlier age will be more likely to show a tendency to specialize or to escalate criminal offending. Alternatively, age at the time of arrest may serve similar predictive functions, indicating that as individuals age — independent of the number of crimes they have committed — there is a possibility that some kind of learning occurs and/or developmental trajectory that affects the types of crimes offenders are more or less likely to commit.

Personal and psychological characteristics of offenders often have moderately strong relationships with criminal behavior. Individual personality characteristics, for example, influence the chances of illegal behavior. Research on personality and crime has found that children and youth who are more impulsive, are more aggressive, have shallow emotional attachments to others, have a taste for risky activities, among many other personality traits, are more prone to commit illegal acts as adolescents and as adults (see, e.g., Arbuthnot et al., 1987; Caspi et al., 1994; Farrington, 1991a, 1991b; Loeber and LeBlanc, 1990; Robins, 1978, 1986; West and Farrington, 1973; Wilson and Herrnstein, 1985). This research suggests that youth with evidence of personality characteristics that make them more prone to commit criminal acts may also be more likely to specialize and/or to escalate their criminal offending. The reason being, if there is some quality to the criminal act that makes it attractive to the offender based on personality characteristics, then given the stability of many personality traits throughout life, offenders may return to the same types of crime to satisfy recurring personality needs.

Family environment and relationships represent a key set of correlates of illegal behavior throughout the life course (e.g., Sampson and Laub, 1993; Laub et al., 1998). Youth who come from homes where there is little affection between parent and child, where there is little supervision of the youth, or where a parent or other family member is involved in criminal

activities are at much greater risk of delinquent behavior (see, e.g., Gottfredson and Hirschi,

1990; Hirschi, 1969; Lauritsen, 1993; Rowe and Britt, 1991; Sampson and Laub, 1993; Wilson

and Hermstein, 1985). These same factors also appear to predict the likelihood of adult criminal

behavior (Sampson and Laub, 1993). The links between family environment and relationships with

specialization and escalation are less clear, however. It is possible that youth who came from a

family where others were engaged in crime may be at increased risk of specializing and escalating

the nature of their crimes. There appear to be at least two ways for a criminal parent and/or

sibling to influence the youth's tendency to specialize or to escalate criminal offending. If the

youth was marginally involved in a parent's or a sibling's crime or if the youth observed a number

of crimes being committed, it seems likely the youth would learn how to successfully commit

certain forms of crime at a much earlier age than a youth who was not exposed to that kind of

behavior within the home. In regard to the impact of supervision of specialization and escalation,

it is possible the youths who were generally unsupervised were experimenting with a wider range

of crimes at an earlier age than many of their peers, again leading to a tendency to specialize or to

escalate at an earlier age.

Similar to the effects of family, peer relationships are another key component in explaining

juvenile delinquency. A key finding in this research shows that youth who have at least one friend

involved in illegal acts will be at greater risk of committing delinquent acts (see, e.g., Akers et al.,

1979; Elliott et al., 1985; Hirschi, 1969; Jensen, 1976; Sampson and Laub, 1993; Thornberry et

al., 1994). Moreover, although peer relationships are fluid throughout youth and young

adulthood, they continue to have an effect on chances of adult crime (Sampson and Laub, 1993).

The link between peer relationships and patterns of specialization and escalation is more

speculative at this point, since it has received no prior attention in the literature. Several different hypotheses are implied by research on peer effects and the group nature of much crime. First, if crime is committed in a group context, there may be a greater likelihood of specialization and/or escalation, since the group may work to maximize the benefits received from criminal activities, and one way of doing this would be through concentrating criminal acts into a small number of different but related types. Alternatively, it may be possible for groups to provide a wider range of criminal opportunities, which would lead to greater versatility among offenders who commit crimes in a group. Thus, a second hypothesis suggests that for youth who commit most of their crimes alone, they may be more prone to specialize, since this would imply the juvenile offender clearly had an interest in committing criminal acts successfully, rather than being caught up in a group activity that may only occasionally result in crime commission.

Alcohol and drug use also influence of crime commission and other problem behaviors (see, e.g., Akers, 1992; Kaplan and Liu, 1994; Reiss and Roth, 1993). Individuals who have higher levels of alcohol consumption and greater frequency of illicit drug use tend to commit a greater number of criminal acts. Although there are strong correlations among alcohol use, drug use, and criminal behavior, it is not entirely clear how these factors will influence specialization and escalation. For example, it may be that alcohol and drug use as a minor are simply additional indicators of the variety of crimes committed by adolescents — during the early stages of their criminal careers — prior to some further specialization or escalation that occurs in adulthood. Alternatively, offenders may develop a repertoire of offending, where certain forms of crime occur only after preceded by alcohol and/or drug consumption, suggesting that alcohol and drug use may lead to increased levels of specialization and escalation.

DATA AND METHODS

Data

The data analyzed to test these hypotheses come from the Early Identification of the

Chronic Offender Study by Haapanen and Jesness (1994), which was obtained from the ICPSR's

National Archive of Criminal Justice Data. The youth who participated in this study were housed

under the supervision of the California Youth Authority (CYA) in the 1960s. The youth were

interviewed before and during (immediately prior to release) their supervision by the CYA. The

CYA was able to obtain extensive background, behavioral, social, and psychological information

on the youth. The sample used in the following analyses comes from the youths who were

detained at the Preston facility (N=1,715). Haapanen and Jesness later obtained detailed arrest

histories for these juvenile offenders by checking records from the California Bureau of Criminal

Identification and Investigation in 1978 and records from the FBI in 1980. Preliminary analyses of

this data revealed this information to be relatively complete and that most of the youth were

rearrested at least twice (about 95%).

These data provide a valuable resource for investigating whether the links between

adolescent correlates of adult crime affect the likelihood of specialization and escalation patterns

in similar ways. In order to test the hypotheses presented above, extensive background and arrest

history data are necessary, and the Early Identification of the Chronic Offender data set appears to

meet these needs. Haapanen (1990) has analyzed these data in regard to how adolescent

correlates of criminal behavior influence repeat offending in adulthood, but he did not investigate

how adolescent predictors of crime influenced crime type sequences. Thus, the following analyses

will extend Haapanen's work by testing a multivariate model of specialization and escalation,

rather than a predictive model of chronic or repeat offending.

Measures

Crime type is measured as arrests for violence (homicide, rape, assault), robbery, burglary, other property (e.g., larceny, forgery, motor vehicle theft), drug and alcohol, and other miscellaneous offenses. Although these offense classifications may initially appear to be somewhat general, they will allow for a more thorough examination of how adolescent characteristics influence general, but clearly meaningful, crime type patterns. Moreover, the offense categories are comparable to those used by Lattimore et al. (1994) in their analyses.

Seven indicators of the offender's personality characteristics are included in this research: maladjustment, aggression, alienation, withdrawl, anxiety, repression, and asocial index. All seven scales are components to the Jesness Inventory and have been shown to have good reliability and validity (Dillehay and Verns, 1973; Haapanen and Jesness, 1994).

Family environment and relationships are measured by several items. To assess the impact of having a parent who has committed crimes, an item measuring whether the juvenile offender's father had a criminal record will be used in the analysis. To measure the type of family environment and relationship the offender had with his family prior to commitment to the CYA, measures of family closeness, acceptance within the family, and level of supervision are used.

Peer environment and relationships prior to CYA commitment are measured with items that asked the offender about how much time they spent with friends, the quality of emotional attachment they had with peers, and whether they tended to commit illegal acts alone or in a group context.

Age at first delinquent contact with the criminal justice system will provide a means for

testing whether those offenders who begin their criminal careers at younger ages are more prone to specialize or to escalate their criminal offending at earlier ages. Alternatively, age at time of arrest for each arrest will be used to test for variable effects of age on type of offense.

In order to accurately assess the impact of these background and social characteristics on specialization and escalation patterns, a control variable will be included for the offender's race, measured as white and non-white.

Analytical Strategy

In order to test for patterns of specialization and escalation among repeat offenders, the sample will be restricted to those offenders with a record of at least ten arrests (n=935). Restricting the sample in this way permits a test for specialization and for escalation among a group of offenders who were clearly more active offenders. Those offenders with a small number of crimes would, under most circumstances, not be defined as offenders who specialized or escalated the seriousness of their crimes. For example, rarely would an offender with 2 or 3 crimes be defined as a career criminal. Without this limitation to the sample, it would be possible for the offense sequences of the offenders with short criminal careers to alter the substance of the results. Another benefit to restricting the sample to offenders with at least ten arrests is that it increases the chances that these criminal activities were pursued over an extended time period, which is important for testing hypotheses regarding long-term change in patterns of criminal offending.

Type of offense is modeled with a series of multinomial logit models. Recall that type of crime has six categories (violent, robbery, burglary, other property, drug and alcohol, and other miscellaneous). For all logit models, the reference category was other miscellaneous offenses. To

test for changes in offense types over time, the arrest information for each of the ten arrests is pooled, so that the dependent variable is type of crime, and predicted by characteristics of the offenders. Pooling the data in this way results in 9350 person observations (935 offenders with 10 arrests each). I estimate four conceptually distinct models. Model 0 is a naive model that assumes the probability of each type of crime is fixed across each of the ten arrests. Model 1 is conceptually equivalent to prior research on specialization and escalation and takes into account only information on the arrest number (i.e., first, second, etc.). Model 2 includes offender background characteristics in addition to the arrest number. The results reported below for Model 2 have been reduced to only those effects having significant relationships with type of offense at the bivariate level. Model 3 includes interaction effects of age at time of arrest and race with arrest number. Model 3 tests hypotheses related to whether age and race have time-varying effects on the likelihood of committing different types of crime. The predicted probabilities from Models 1 through 3 can then be interpreted in light of the support they indicate for patterns of specialization or of escalation among this group of offenders.

FINDINGS

Table 1 presents overall model fit statistics and difference of chi-square tests to assess the contribution of the independent variables at predicting the type of offense committed at each of the first ten arrests. Model 0 is the intercept-only model (constant probability model), and is used as a baseline model against which to compare the other, more substantively meaningful models that incorporate characteristics of the individual offenders. Predicted probabilities under Model 0 are presented in Table 2, and show that the most common offense type is the other category, followed by other property crime, drug and alcohol offenses, burglary, violence, and robbery,

respectively.

Specialization and Escalation: Baseline Results

We can see from the results presented in Table 1 that knowledge of the arrest number (Model 1) improves on our ability to predict offense type over the intercept-only model (difference of $\chi^2 = 625.6$, df=45, p<.001). Substantively, Model 1 is conceptually equivalent to prior research on specialization and escalation that has attempted to discern effects of arrest number on the types of offenses individuals are arrested for. Figure 1 displays the probabilities for each type of offense by arrest number for all six offense type categories. There are several noteworthy trends that appear in Figure 1. The overall probability that an offender commits a violent offense is generally stable from the first to the eighth arrest, but then begins to increase at the ninth and tenth arrest, suggesting a slight trend for offenders to move toward violent offenses in subsequent arrests. Other offenses that exhibited a pattern of increasing probability were robbery and drug and alcohol offenses. The increasing trend in drug and alcohol offenses is particularly pronounced, where the probability of being arrested for a drug or alcohol offense on the first arrest is about .05, while at the tenth arrest, the probability increased to about .29. The remaining three offense categories all showed a pattern of declining probability.

Although the results in Figure 1 provide a rough sense for the type of offenses offenders were arrested for over time, the results do not indicate the degree to which offenders are likely to repeat the same offense (specialization), or switch to an alternative crime type (escalation or deescalation). The predicted probabilities from Model 1 that are displayed in Figure 1 can be used to compute the probability of repeating the same offense or switching to another type of crime. Table 3 provides estimates of the probability of repeating the same offense on consecutive arrests;

the first arrest transition refers to the probability of repeating an offense type from the first to the second arrest, the second arrest transition refers to the probability of repeating an offense type from the second to third arrest, and so on.

The results presented in Table 3 inform the pattern of results in Figure 1, and show that the is a slight trend for offenders who have been arrested for violent or robbery offenses to have increased probabilities of repeating the same type of crime in later arrest transitions. For example, the probability of repeating a violent offense from the first to the second arrest is .026, but increases to .042 for the ninth arrest transition. The greatest increase in the probability of repeating the same offense is observed for drug and alcohol offenses, where the probability of repeating this crime type is on .006 for the first arrest transition, but increases to .086 for the ninth arrest transition. Alternatively, and consistent with the pattern observed in Figure 1, there is a slight decrease in the probability of repeating burglary and other property offenses. These results provide moderate evidence of specialization among this group of offenders, and are also suggestive of a trend toward increasing chances of specialization across later offenses.

The evidence of escalation or of deescalation appears in Tables 4 and 5, which display the probability of switching to a more serious crime type or to a less serious crime type, respectively. The largest probabilities in Table 4 are for offenders who switched from the other category to any other offense, except robbery. Offenders who were arrested for other property offenses also showed an increased likelihood of switching to burglary offenses for the first four arrest transitions, while offenders who were arrested for drug and alcohol offenses showed an increasing tendency to switch to violent offenses in later arrest transitions. For example, in the second arrest transition, the probability of switching from a drug or alcohol offense to a violent offense was

.016, but by the ninth arrest transition, this probability had increased to .068.

At the same time that there is evidence that offenders became increasingly likely to switch from one type of crime to another, there is also evidence that other switches became less likely. Offenders who were arrested for other property offenses initially had relatively high probabilities of then being arrested for a burglary offense, but this probability gradually decreased across the nine arrest transitions, so that by the ninth arrest transition, the probability of switching from other property to burglary had dropped to .037.

Although many of these offenders exhibited a trend toward committing more serious types of crime in later arrest transitions, there is also compelling evidence that a substantial proportion of offenders moved to less serious offenses over subsequent arrests. The results in Table 5 show the increasing probabilities of offenders moving from relatively serious offense types to the least serious offense types (the drug and alcohol and the other categories). By the ninth arrest transition, the highest probabilities are for offenders switching from violent, burglary, other property, and drug and alcohol offenses to the other category.

To address the relative impact of specialization compared to patterns of offense switching and escalation, a reasonable question at this point concerns whether the probability of committing the same offense on two subsequent arrests is greater or less than the probability of switching to another offense. Offenders arrested for violent offenses are more likely to repeat violence than they are to switch to robbery offenses over the nine arrest transitions, and are more likely to repeat a violent offense than switch to a drug and alcohol offense for the first two arrest transitions, but for all other offenses and arrest transitions, offenders are more likely to switch from violent crimes to other crimes. Offenders arrested for robbery are less likely to repeat a

robbery offense than to commit any other offense for all arrest transitions. Burglary offenders are about as likely to repeat a burglary offense as they are to switch to a violent offense, less likely to switch to a robbery offense, but much more likely to switch to less serious forms of property crime, drug and alcohol offenses, and other miscellaneous offenses. Offenders arrested for other property crimes are less likely to move to more serious offenses than to repeat property offenses, but these offenders are more likely to switch to drug and alcohol and other offenses than to repeat property crimes. As noted above, offenders arrested for drug and alcohol crimes become more likely to repeat this offense over the nine arrest transitions. A consequence of this trend is the probability of repeating a drug or alcohol offense is greater than the probability of switching to any of the more serious crime types, but is still less than the probability of switching to other miscellaneous offenses. Finally, for all arrest transitions, offenders who committed offenses classified in the other miscellaneous category were more likely to repeat these kinds of offenses than to switch to any of the more serious forms of crime. However, by the eighth and ninth arrest transitions, the probability of switching from other miscellaneous offenses to drug and alcohol offenses approached the probability of repeating other miscellaneous offenses.

Correlates of Specialization and Escalation

Recall from the results presented in Table 1 that characteristics of the offenders collectively had a significant effect on predicting the type of offense for each of the ten arrests (difference of $\chi^2 = 587.0$, df=55, p<.001). These characteristics included the age of the offender at the time of arrest, the race of the offender, the social psychological scales measuring social maladjustment, aggression, alienation, withdrawl, social anxiety, repression, and asocial index, whether the offender committed crimes alone or in a group, and the closeness of the offender's

family. In a series of related multivariate model estimations, Family criminal history, number of

codefendants, degree of family acceptance, and level of supervision of the youth prior to

incarceration did not have significant effects on offense type in preliminary analyses, and were

subsequently dropped. Age at first arrest was significantly related to type of offense, but its

relative impact was less than the effect of age at the time of arrest, and was subsequently dropped

from further analyses.

Figure 2 and Tables 6 through 8 report results for Model 2 that are analogous to those

reported in Figure 1 and Tables 3 through 5 for Model 1, which did not include any background

characteristics of offenders. In Figure 2, we see the overall probability of each type of offense by

arrest number, adjusting for the offender's background characteristics. The results in Figure 2 are

clearly different from those displayed in Figure 1, where the probabilities of committing other

property and other miscellaneous offenses are considerably larger in Model 2 than was found in

Model 1, while the probabilities of the other offense types are all much smaller. Moreover,

moving from the first arrest to the tenth arrest, the probability of offenders committing offenses

that fall into the other miscellaneous category increases substantially, while the other offense

probabilities gradually decline. Substantively, these results indicate that once offender background

characteristics have been taken into account, the most common type of offense falls into the

miscellaneous category. Alternatively, these results suggest that offender background

characteristics are important predictors of offense sequences in the sense that at any given time,

type of offense is related to offender background characteristics.

The probability of repeating the same offense is displayed in Table 6. As expected, given

the pattern in Figure 2, the chances of offenders repeating the same type of crime is uniformly

small, except for the miscellaneous other category, where the chances of offenders being arrested for other offenses are greater than .5 from the second arrest through the tenth arrest. These results imply little evidence of specialization, beyond the other miscellaneous category, among this group of offenders, once background characteristics have been controlled statistically.

There is little evidence of escalation or deescalation in Tables 7 and 8, once the offender's background characteristics have been taken into account. Given the overall tendency of offenders to repeat offenses falling into the other miscellaneous category, this result is not unexpected. The only substantive evidence of crime-type switching appears for offenders moving between other offenses and other property offenses. Otherwise, there is little evidence for movement of offenders among different types of crime. Thus, the consequence of including background characteristics of offenders is to reduce the overall pattern of specialization and escalation that appears when only information about the offense number is used.

The direct effects of the offender's characteristics on the probability of different offense types provides additional insight into offense patterns and sequences. The effect of age at arrest on type of crime arrested for is displayed in Figure 3. Clearly visible in Figure 3 is a pattern that shows that as the age at the time of arrest increases, there is an increasing probability of being arrested for a violent or a drug or alcohol offense, while the chances of the other offense types gradually decrease. This trend in the effect of age on patterns of offense types is suggestive of both escalation and deescalation, where offenders may be increasingly likely to commit one of the most serious types of crime, or to move to one of the least serious types of crime as they age. Thus, consistent with developmental hypotheses about specialization (e.g., LeBlanc and Frechette, 1989), age and repeat offending may indeed increase the likelihood of specializing in

some forms of crime. The effect of age and its interaction with arrest number on type of crime is explored below.

Figure 4 displays the effect of race on the odds of being arrested for each type of offense relative to being arrested for a miscellaneous other offense. These results show that black offenders are more likely than white offenders to be arrested for violent, robbery, burglary, and other property offenses, but are less likely to be arrested for drug and alcohol offenses relative to being arrested for a miscellaneous other offense. The effect of race observed in Figure 4 is consistent with prior research that has indicated patterns of specialization and escalation may vary by the race of the offender (e.g., Blumstein et al., 1988; Britt, 1996; Lattimore et al., 1994). However, these results do not address directly the question of whether the effect of race on offense type varies by the arrest number. In other words, does the effect of race on crime type at the first or second arrest differ in any meaningful way from the effect of race on the ninth or tenth arrest? This issue is explored in more detail below.

Figure 5 presents the effects of the offender committing crimes alone and the closeness of the offender's family. Those offenders who worked alone are less likely to commit violent or robbery offenses than to commit other miscellaneous offenses, while these offenders are somewhat more likely to commit burglaries, other property offenses, and drug or alcohol offenses. The effect of family closeness indicates that offenders who came from families classified as having stronger ties were more likely to commit all other offenses, relative to other miscellaneous offenses, but these odds are so close to 1.0 that it is difficult to assess the substantive effect of family closeness on offense patterns.

Finally, Figures 6a and 6b display the effects of the various social psychological

assessment scales collected during the intake interview in the CYA. Each value reflects the multiplicative change in the odds of committing an offense given that the value on the scale has been increased by one unit. The odds are uniformly close to one, indicating that for offenders who differed little in their levels of maladjustment, aggression, alienation, withdrawl, anxiety, repression, and asocial index, there were relatively slight differences in the odds of different offense types. However, given that each scale has a wide range of values, the effects are more informative for offenders with particularly high or particularly low values on each scale. For example, the alienation scale has values ranging from 24 to 83. At a value of 30, the odds of committing a burglary offense rather than a miscellaneous other offense are 1.44 (exp(30*.0121)), while at a value of 80, the odds increase to 2.63 (exp(80*.0121)), indicating rather large differences in the effects of social psychological indicators on type of offense.

Age, Race and Patterns of Specialization and Escalation

In order to explore in more detail the effects of age and of race on offense types committed for each of the ten arrests included in this study, Model 3 includes interaction effects of age and of race with each arrest number indicator. Substantively, this model is identical to Model 2, except that it allows the effects of age and of race to vary by the arrest number, rather than constraining these effects to be fixed across the ten arrests. The addition of the interaction terms makes a statistically significant contribution to the overall fit of the model (difference of χ^2 = 185.9, df=90, p<.001). The effects of age and of race are indirectly related to each other in this model, due to the common interaction with arrest number, meaning that each effect needs to be interpreted in light of the other effect.

Figures 7 through 12 display the race-specific probabilities of a violent offense, a robbery

offense, a burglary offense, a other property offense, a drug or alcohol offense, or a miscellaneous other offense, respectively. Since the age of the offender at the time of arrest was also estimated as an interaction effect with arrest number, it is necessary to account for age at each of the ten arrests. To simplify the information presented in Figures 7 through 12, the mean age at each arrest for the sample was used to calculate the probabilities of each offense type.

Taken together, Figures 7 through 12 show that there are important differences in the race-specific probabilities of each type of offense. Perhaps the greatest similarity between black and white offenders is found in Figure 7, which shows that the race-specific probabilities of being arrested for a violent offense. The differences in the probability of a violent offense across the ten arrests are quite small, and do not reveal any significant differences in the likelihood of being arrested for violent offenses across a sequence of ten arrests. The race-specific probabilities of a drug or alcohol offense initially vary by about .30 (see Figure 11), but by the third arrest, black and white probabilities of drug and alcohol offenses are much more similar to each other than they are different.

Much greater differences in race-specific probabilities appear for robbery, burglary, other property, and miscellaneous other offenses. Due to the disproportionate number of black and white offenders arrested for violent offenses at their seventh arrest, this represents the only point in the probability curves for robbery, burglary, other property, and miscellaneous other offenses, where the black and white probabilities approach each other. Otherwise, there is much more variation both in value and direction of the probability of a given offense across the ten arrests.

Similar to the analyses reported for Models 1 and 2, it is possible to use the predicted probabilities of each offense type to estimate the mean level of specialization and escalation in this

group of offenders, once background characteristics have been taken into account. Figures 13a and 13b display the probability of committing each of the six offenses for white and non-white offenders, respectively. The effect of race on the probability of committing each type of offense shows much more variability in the chances of each offense type across the ten arrests, which contrasts with the results in Figure 2 that showed a stable pattern once the offender's background characteristics had been taken into account.

Table 9 presents the probability repeating the same offense across the nine arrest transitions, after accounting for background characteristics of the offenders. Except for the miscellaneous other offense category, the chances that non-white or white offenders repeat the same offense are slight, with most probabilities being less than .05.

There is greater evidence of offense switching across the nine arrest transitions that varies by race. For example, Table 10 presents results bearing on the issue of escalation. Results in Table 10 show that there is a slightly greater probability that black offenders will move to more serious offenses over the nine arrest transitions, especially in switching to robbery from a less serious property crime (burglary or other property). Among white offenders, the chances of switching to drug and alcohol or other property offenses from the miscellaneous other category are greater than those observed for other offense switches. Otherwise, the probabilities of switching to more serious offenses are uniformly low.

The evidence addressing the issue of deescalation appears in Table 11. Overall, both black and white offenders are more likely to move to miscellaneous other offenses. The arrest transition also has no bearing on the apparent likelihood of switching to an offense in the other category. Where there are apparent differences in race patterns concern switching to alcohol and drug

offenses, where black offenders are more likely to switch to offenses in this category — from all other offenses — than are white offenders.

To summarize, these results provide only weak evidence of specialization and of escalation across a sequence of ten offenses, once offender background characteristics have been controlled statistically. However, and substantively important, these results also indicate that background characteristics of the offender, such as age, race, family background, whether crimes are committed in a group context or alone, and social psychological assessment, are useful predictors of the types of offenses that may be committed over time.

SUMMARY AND CONCLUSION

This research has examined the effects of adolescent correlates of crime on patterns of specialization and escalation in the criminal career. Although a small, but growing, body of research has shown adult offenders tend to specialize in (repeat) the same crime type and/or to escalate the severity of crime types over their criminal careers, there has been little work aimed at trying to account for the factors that predict offense sequences. The results reported above show that adolescent correlates of criminal behavior predict future types of offending, which has consequences for the observed patterns of specialization and of escalation. In sum, the evidence presented above indicates that a combination of behavioral, social, and psychological characteristics of juvenile offenders is useful for predicting types of criminal behavior, but the evidence does not indicate significant levels of specialization and escalation once these characteristics have been taken into account.

These results begin to shed light on the mixed nature of findings in prior research on specialization and escalation. Specifically, prior specialization and escalation research has typically

focused on bivariate arrest transition matrices — the relationship between type of crime at time t and the type of crime at time $t+1$ — and found a significant relationship between consecutive types of crime. Similarly, the results presented above also find evidence of a moderate relationship between type of crime for two successive arrests, when no other information is used. Where these results part from prior research is what happens to this relationship once the offender's background characteristics are taken into account, and which has not been a focus of prior research on specialization and escalation. A consequence of this finding may be that prior research finding evidence of specialization and of escalation may be limited by its exclusion of other relevant characteristics of offenders that affect patterns of criminal behavior.

There are four important implications of these results for future specialization and escalation research that should be highlighted. First, there are interactive effects of age at time of arrest and race with the type of crime committed, and thus the apparent pattern of specialization and of escalation. Although the level of specialization and of escalation was low compared to the model without background characteristics, the non-white offenders in the sample had different patterns of offending — offense sequences — than the white offenders included in the sample, whose level of specialization and of escalation was particularly low.

Second, given that there are race-specific patterns of offending — white and non-white offenders are differentially likely to specialize or to escalate the seriousness of their offending — these results suggest that future research on offense sequences across the criminal career will need to be sensitive to these variable patterns (see, also, Lattimore et al., 1994). For example, should all cases be pooled into a common sample of offenders, it is possible to reach inaccurate conclusions about the true likelihood of repeating the same offense or switching to a different type

of offense.

Third, this research shows that adolescent correlates of criminal behavior continue to have predictive power with subsequent offense patterns. This issue has not been examined in prior research, and the nature of the sample used in this analysis suggests caution in generalizing the results, but these results indicate that knowledge of a serious juvenile offender's background may be quite useful at estimating the kind of risk the offender poses for society. Thus, for example, the results show which factors appeared to increase the likelihood of later violent behavior or drug-related offending. What becomes necessary at this point to cross-validate these results with other, more contemporary samples of juvenile offenders who can be assessed and then followed to test for similar effects of behavioral, social, and psychological characteristics on the types of crime committed.

Fourth, and consistent with related research on criminal career trajectories that focuses on the timing and the quantity of offending over the criminal career, this research shows that similar issues arise out of the study of the type of offending. Thus, where characteristics of offenders can be used to predict trajectories of general criminal offending, this work suggests that it may also be possible to develop analogous models of offense types over the criminal career.

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Table 1: Model Fit Statistics.

Model	-2 log-likelihood	Number of Parameters	df
0. Intercept Only	31503.5	5	9345
1. Arrest Number	30877.9	50	9300
2. Offender Background Characteristics	30290.9	105	9245
3. Age and Race Interaction Effects	30105.0	195	9155

Table 2: Predicted Probabilities for Each Offense Type (Model 0).

Type of Offense	Mean Predicted Probability
Violent	.176
Robbery	.077
Burglary	.195
Other Property	.322
Drug and Alcohol	.231
Other Miscellaneous	.408

Table 3: Predicted Probabilities of Repeating the Same Offense: Arrest Transitions 1 Through 9.

Type of Offense	Arrest Transition									
	1	2	3	4	5	6	7	8	9	Mean
Violent	.026	.025	.026	.030	.031	.029	.030	.032	.042	.030
Robbery	.004	.006	.005	.005	.005	.005	.006	.008	.010	.006
Burglary	.069	.050	.044	.042	.032	.030	.030	.027	.022	.038
Other Property	.186	.157	.127	.096	.087	.086	.076	.069	.061	.105
Drug and Alcohol	.006	.018	.040	.058	.078	.085	.090	.093	.086	.062
Other Miscellaneous	.123	.345	.270	.205	.169	.177	.150	.125	.125	.188

Table 4: Predicted Probabilities of Escalation for Each Offense Type: Arrest Transitions 1 Through 9.

Types of Offenses	Arrest Transition								
	1	2	3	4	5	6	7	8	9
Robbery to Violent	.009	.012	.013	.012	.012	.012	.013	.014	.023
Burglary to Violent	.045	.039	.033	.041	.032	.029	.031	.030	.037
Burglary to Robbery	.021	.020	.013	.016	.013	.013	.014	.017	.017
Other Property to Violent	.075	.062	.065	.060	.050	.051	.051	.047	.061
Other Property to Robbery	.035	.031	.025	.024	.020	.022	.022	.026	.027
Other Property to Burglary	.012	.080	.087	.062	.050	.053	.049	.042	.037
Drug and Alcohol to Violent	.009	.016	.030	.041	.044	.051	.050	.057	.068
Drug and Alcohol to Robbery	.004	.008	.011	.016	.018	.022	.022	.031	.030
Drug and Alcohol to Burglary	.014	.021	.040	.042	.044	.053	.048	.051	.041
Drug and Alcohol to Other Property	.022	.041	.058	.066	.077	.086	.075	.084	.068
Other Miscellaneous to Violent	.032	.097	.091	.090	.070	.070	.077	.062	.084
Other Miscellaneous to Robbery	.015	.049	.035	.036	.028	.031	.034	.034	.038
Other Miscellaneous to Burglary	.049	.124	.122	.093	.071	.072	.073	.055	.051
Other Miscellaneous to Other Property	.078	.245	.179	.144	.123	.117	.114	.091	.084
Other Miscellaneous to Drug and Alcohol	.020	.112	.123	.128	.124	.116	.138	.101	.106

Table 5: Predicted Probabilities of Deescalation for Each Offense Type: Arrest Transitions 1 Through 9.

Types of Offenses	Arrest Transition								
	1	2	3	4	5	6	7	8	9
Violent to Robbery	.012	.013	.010	.012	.012	.013	.013	.018	.019
Violent to Burglary	.040	.032	.034	.031	.031	.030	.029	.028	.025
Violent to Other Property	.064	.064	.050	.049	.054	.049	.045	.047	.042
Violent to Drug and Alcohol	.017	.029	.034	.043	.055	.048	.054	.052	.053
Violent to Other Miscellaneous	.010	.090	.076	.069	.074	.073	.059	.064	.062
Robbery to Burglary	.013	.015	.017	.012	.012	.012	.013	.012	.014
Robbery to Other Property	.021	.030	.025	.019	.022	.020	.020	.021	.023
Robbery to Drug and Alcohol	.005	.014	.017	.017	.022	.019	.024	.023	.029
Robbery to Other Miscellaneous	.033	.042	.038	.027	.030	.030	.026	.028	.034
Burglary to Other Property	.110	.099	.064	.065	.056	.049	.047	.045	.037
Burglary to Drug and Alcohol	.029	.045	.044	.058	.056	.049	.056	.049	.047
Burglary to Other Miscellaneous	.171	.139	.097	.092	.077	.074	.061	.061	.055
Other Property to Drug and Alcohol	.048	.072	.087	.085	.088	.085	.091	.077	.078
Other Property to Other Miscellaneous	.289	.222	.192	.136	.119	.129	.099	.095	.092
Drug and Alcohol to Other Miscellaneous	.034	.057	.088	.093	.101	.130	.098	.115	.102

Table 6: Predicted Probabilities of Repeating the Same Offense for Model 2: Arrest Transitions 1 Through 9.

Type of Offense	Arrest Transition									
	1	2	3	4	5	6	7	8	9	Mean
Violent	$.2 \times 10^{-3}$	$.8 \times 10^{-4}$	$.8 \times 10^{-4}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.8 \times 10^{-4}$	$.9 \times 10^{-4}$	$.9 \times 10^{-4}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$
Robbery	$.1 \times 10^{-3}$	$.7 \times 10^{-4}$	$.7 \times 10^{-4}$	$.7 \times 10^{-4}$	$.8 \times 10^{-4}$	$.7 \times 10^{-4}$	$.1 \times 10^{-3}$	$.2 \times 10^{-3}$	$.2 \times 10^{-3}$	$.1 \times 10^{-3}$
Burglary	.004	.001	.001	.002	.002	.001	.001	.002	.001	.002
Other Property	.049	.022	.022	.021	.023	.022	.022	.024	.022	.025
Drug and Alcohol	$.1 \times 10^{-4}$	$.2 \times 10^{-4}$	$.5 \times 10^{-4}$	$.8 \times 10^{-4}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.8 \times 10^{-4}$
Other Miscellaneous	.412	.630	.623	.616	.608	.620	.611	.598	.614	.593

Table 7: Predicted Probabilities of Escalation for Each Offense Type for Model 2: Arrest Transitions 1 Through 9.

Types of Offenses	Arrest Transition								
	1	2	3	4	5	6	7	8	9
Robbery to Violent	$.1 \times 10^{-3}$	$.7 \times 10^{-4}$	$.8 \times 10^{-4}$	$.8 \times 10^{-4}$	$.1 \times 10^{-3}$	$.8 \times 10^{-4}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$
Burglary to Violent	.001	$.3 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$
Burglary to Robbery	.001	$.4 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.5 \times 10^{-3}$	$.5 \times 10^{-3}$
Other Property to Violent	.003	.001	.001	.002	.001	.001	.001	.001	.002
Other Property to Robbery	.003	.001	.001	.001	.001	.001	.002	.002	.002
Other Property to Burglary	.014	.005	.006	.006	.006	.006	.006	.006	.005
Drug and Alcohol to Violent	$.4 \times 10^{-4}$	$.3 \times 10^{-4}$	$.6 \times 10^{-4}$	$.9 \times 10^{-4}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$
Drug and Alcohol to Robbery	$.4 \times 10^{-4}$	$.3 \times 10^{-4}$	$.4 \times 10^{-4}$	$.8 \times 10^{-4}$	$.9 \times 10^{-4}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$
Drug and Alcohol to Burglary	$.2 \times 10^{-3}$	$.1 \times 10^{-3}$	$.3 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.3 \times 10^{-3}$
Drug and Alcohol to Other Property	.001	.001	.001	.001	.002	.002	.001	.002	.001
Other Miscellaneous to Violent	.005	.007	.007	.009	.007	.007	.008	.007	.009
Other Miscellaneous to Robbery	.004	.007	.006	.008	.007	.007	.009	.010	.011
Other Miscellaneous to Burglary	.021	.028	.033	.033	.029	.028	.033	.028	.026
Other Miscellaneous to Other Property	.073	.122	.112	.118	.119	.110	.125	.118	.111
Other Miscellaneous to Drug and Alcohol	.002	.005	.006	.008	.009	.007	.009	.007	.007

Table 8: Predicted Probabilities of Deescalation for Each Offense Type for Model 2: Arrest Transitions 1 Through 9.

Types of Offenses	Arrest Transition								
	1	2	3	4	5	6	7	8	9
Violent to Robbery	$.1 \times 10^{-3}$	$.8 \times 10^{-4}$	$.7 \times 10^{-4}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$
Violent to Burglary	$.1 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.3 \times 10^{-3}$
Violent to Other Property	.003	.001	.001	.001	.002	.001	.001	.002	.001
Violent to Drug and Alcohol	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$
Violent to Other Miscellaneous	.018	.007	.007	.007	.009	.008	.007	.008	.007
Robbery to Burglary	$.5 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$
Robbery to Other Property	.002	.001	.001	.001	.001	.001	.001	.002	.002
Robbery to Drug and Alcohol	$.4 \times 10^{-4}$	$.5 \times 10^{-4}$	$.7 \times 10^{-4}$	$.8 \times 10^{-4}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$	$.1 \times 10^{-3}$
Robbery to Other Miscellaneous	.010	.006	.007	.006	.008	.007	.007	.009	.011
Burglary to Other Property	.014	.006	.005	.006	.006	.005	.006	.006	.005
Burglary to Drug and Alcohol	$.4 \times 10^{-3}$	$.3 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.5 \times 10^{-3}$	$.3 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$	$.4 \times 10^{-3}$
Burglary to Other Miscellaneous	.078	.032	.027	.033	.032	.030	.028	.032	.029
Other Property to Drug and Alcohol	.001	.001	.001	.001	.002	.001	.002	.002	.001
Other Property to Other Miscellaneous	.275	.111	.121	.111	.116	.122	.109	.122	.121
Drug and Alcohol to Other Miscellaneous	.004	.003	.005	.006	.008	.009	.007	.009	.008

Table 9: Predicted Probabilities of Repeating the Same Offense for Whites and Non-Whites: Arrest Transitions 1 Through 9.

Panel A: Whites

Type of Offense	Arrest Transition									
	1	2	3	4	5	6	7	8	9	Mean
Violent	.006	.004	.006	.010	.011	.071	.073	.011	.014	.023
Robbery	$.3x10^{-3}$	$.3x10^{-3}$	$.2x10^{-3}$	$.1x10^{-3}$	$.3x10^{-3}$	$.2x10^{-3}$	$.2x10^{-3}$	.001	.002	.001
Burglary	.008	.003	.003	.003	.003	.001	.001	.003	.002	.003
Other Property	.042	.020	.016	.014	.016	.004	.004	.015	.014	.016
Drug and Alcohol	$.4x10^{-3}$	.001	.003	.005	.007	.003	.003	.010	.010	.005
Other Miscellaneous	.306	.473	.455	.412	.372	.121	.117	.343	.329	.325

Panel B: Non-whites

Type of Offense	Arrest Transition									
	1	2	3	4	5	6	7	8	9	Mean
Violent	.005	.002	.009	.010	.012	.094	.133	.026	.030	.036
Robbery	.027	.020	.006	.009	.007	.001	.001	.007	.008	.010
Burglary	.011	.007	.007	.007	.005	.001	.001	.005	.005	.005
Other Property	.039	.021	.039	.036	.034	.009	.009	.034	.027	.027
Drug and Alcohol	.007	.010	.001	.002	.004	.001	.001	.006	.005	.004
Other Miscellaneous	.026	.063	.259	.232	.244	.057	.044	.169	.183	.142

Table 10: Predicted Probabilities of Escalation for Each Offense Type for Whites and Non-whites: Arrest Transitions 1 Through 9.

Panel A: Whites
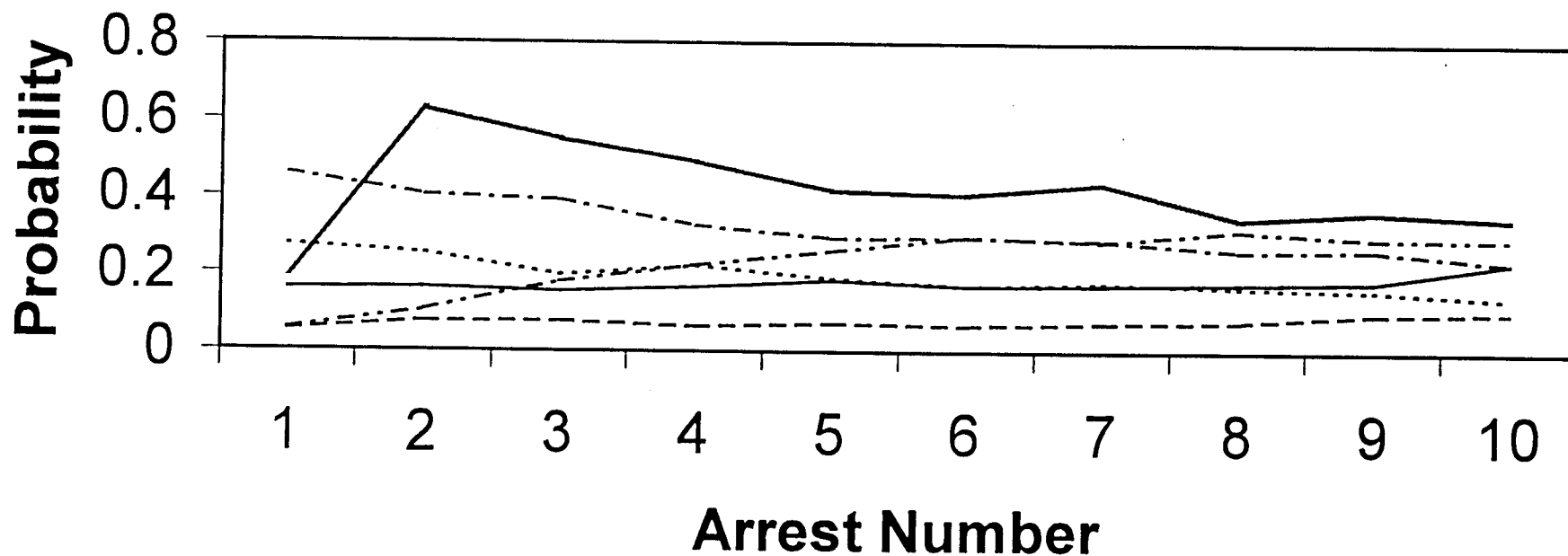
Types of Offenses	Arrest Transition								
	1	2	3	4	5	6	7	8	9
Robbery to Violent	.001	.001	.002	.001	.001	.015	.001	.003	.006
Burglary to Violent	.008	.004	.004	.006	.006	.038	.002	.006	.007
Burglary to Robbery	.002	.001	.001	.001	.001	.001	.001	.003	.002
Other Property to Violent	.019	.010	.013	.013	.013	.085	.004	.012	.017
Other Property to Robbery	.005	.003	.001	.001	.003	.001	.001	.005	.005
Other Property to Burglary	.018	.007	.008	.006	.007	.002	.002	.006	.005
Drug and Alcohol to Violent	.001	.001	.004	.007	.008	.067	.003	.011	.013
Drug and Alcohol to Robbery	.001	.001	.001	.001	.002	.001	.001	.005	.004
Drug and Alcohol to Burglary	.001	.001	.002	.004	.002	.002	.001	.005	.004
Drug and Alcohol to Other Property	.003	.003	.005	.008	.009	.003	.003	.013	.011
Other Miscellaneous to Violent	.027	.050	.059	.078	.060	.436	.020	.061	.079
Other Miscellaneous to Robbery	.007	.013	.006	.008	.013	.006	.005	.026	.024
Other Miscellaneous to Burglary	.026	.034	.036	.039	.032	.011	.011	.029	.025
Other Miscellaneous to Other Property	.060	.103	.074	.088	.073	.022	.024	.074	.064
Other Miscellaneous to Drug and Alcohol	.008	.031	.042	.052	.057	.016	.020	.059	.058

Panel B: Non-whites

Types of Offenses	Arrest Transition								
	1	2	3	4	5	6	7	8	9
Robbery to Violent	.002	.027	.007	.009	.012	.055	.002	.014	.015
Burglary to Violent	.002	.010	.007	.001	.008	.052	.002	.011	.014
Burglary to Robbery	.029	.007	.006	.010	.005	.001	.001	.006	.008
Other Property to Violent	.007	.011	.018	.022	.020	.161	.007	.031	.033
Other Property to Robbery	.098	.008	.016	.021	.011	.003	.004	.016	.018
Other Property to Burglary	.036	.008	.018	.015	.011	.003	.003	.015	.012
Drug and Alcohol to Violent	.001	.033	.003	.004	.007	.048	.003	.015	.013
Drug and Alcohol to Robbery	.005	.024	.003	.004	.004	.001	.001	.008	.007
Drug and Alcohol to Burglary	.002	.023	.003	.003	.004	.001	.001	.007	.005
Drug and Alcohol to Other Property	.002	.064	.006	.006	.012	.003	.003	.016	.011
Other Miscellaneous to Violent	.005	.010	.056	.047	.059	.388	.019	.060	.085
Other Miscellaneous to Robbery	.068	.008	.050	.045	.034	.007	.011	.031	.045
Other Miscellaneous to Burglary	.025	.007	.055	.032	.033	.006	.008	.028	.030
Other Miscellaneous to Other Property	.027	.020	.120	.076	.102	.021	.023	.066	.069
Other Miscellaneous to Drug and Alcohol	.081	.003	.021	.028	.030	.007	.011	.026	.031

Table 11: Predicted Probabilities of Deescalation for Each Offense Type for Whites and Non-whites: Arrest Transitions 1 Through 9.

Panel A: Whites

Types of Offenses	Arrest Transition								
	1	2	3	4	5	6	7	8	9
Violent to Robbery	.002	.001	.001	.001	.002	.001	.019	.005	.004
Violent to Burglary	.006	.003	.004	.005	.006	.002	.041	.005	.004
Violent to Other Property	.013	.009	.008	.011	.014	.003	.085	.013	.011
Violent to Drug and Alcohol	.002	.003	.004	.007	.011	.003	.073	.010	.010
Violent to Other Miscellaneous	.066	.041	.048	.054	.070	.020	.421	.060	.058
Robbery to Burglary	.001	.001	.001	.001	.001	.001	.001	.001	.002
Robbery to Other Property	.002	.002	.002	.001	.001	.001	.001	.003	.005
Robbery to Drug and Alcohol	.001	.001	.001	.001	.001	.001	.001	.003	.005
Robbery to Other Miscellaneous	.011	.011	.013	.005	.007	.004	.005	.016	.025
Burglary to Other Property	.019	.009	.005	.007	.007	.002	.002	.007	.006
Burglary to Drug and Alcohol	.003	.003	.003	.004	.005	.001	.002	.006	.005
Burglary to Other Miscellaneous	.095	.040	.032	.032	.035	.011	.011	.033	.028
Other Property to Drug and Alcohol	.006	.006	.009	.008	.012	.003	.004	.012	.013
Other Property to Other Miscellaneous	.213	.093	.099	.067	.079	.023	.021	.069	.071
Drug and Alcohol to Other Miscellaneous	.015	.013	.029	.038	.047	.019	.016	.059	.056

Panel B: Non-whites

Types of Offenses	Arrest Transition								
	1	2	3	4	5	6	7	8	9
Violent to Robbery	.066	.001	.008	.010	.007	.002	.073	.013	.016
Violent to Burglary	.024	.001	.009	.007	.007	.002	.056	.012	.011
Violent to Other Property	.026	.004	.020	.016	.021	.005	.157	.029	.025
Violent to Drug and Alcohol	.079	.001	.004	.006	.006	.002	.075	.012	.011
Violent to Other Miscellaneous	.025	.012	.043	.050	.049	.014	.304	.074	.065
Robbery to Burglary	.010	.019	.007	.006	.006	.001	.001	.007	.005
Robbery to Other Property	.011	.053	.015	.015	.020	.003	.003	.016	.013
Robbery to Drug and Alcohol	.033	.008	.003	.005	.009	.001	.001	.006	.006
Robbery to Other Miscellaneous	.010	.165	.032	.045	.048	.008	.005	.041	.033
Burglary to Other Property	.011	.020	.014	.016	.014	.003	.003	.012	.012
Burglary to Drug and Alcohol	.034	.003	.002	.006	.004	.001	.001	.005	.005
Burglary to Other Miscellaneous	.011	.060	.030	.049	.033	.008	.005	.031	.031
Other Property to Drug and Alcohol	.116	.003	.007	.013	.010	.003	.004	.014	.012
Other Property to Other Miscellaneous	.037	.065	.084	.108	.081	.024	.017	.087	.071
Drug and Alcohol to Other Miscellaneous	.002	.197	.013	.019	.030	.007	.006	.042	.029

Figure 1: Predicted Probability for Type of Offense -- Model 1

Figure 2: Predicted Probability for Type of Offense -- Model 2
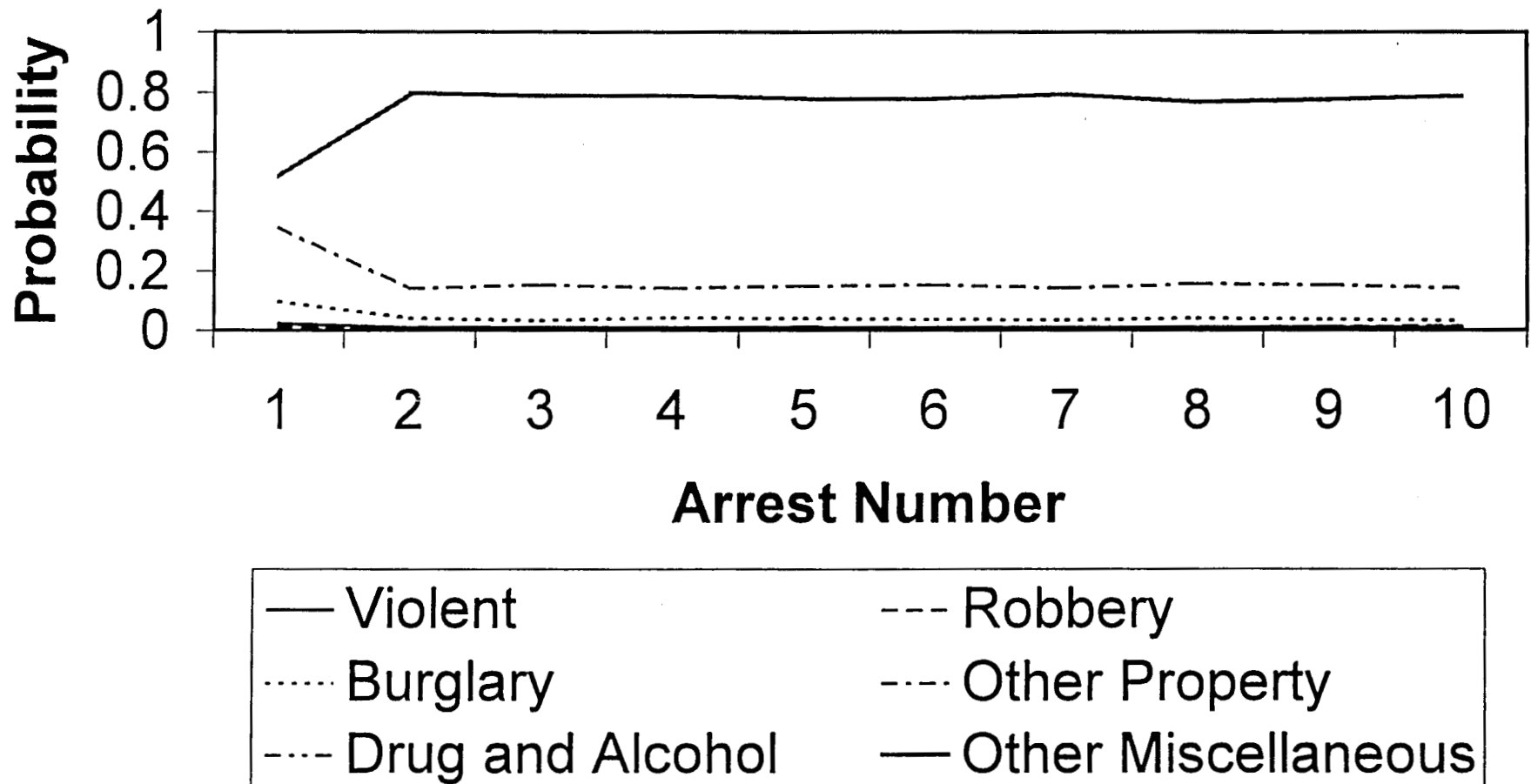
Legend:
— Violent
----- Burglary
---- Drug and Alcohol
--- Robbery
---- Other Property
— Other Miscellaneous

Figure 3: Probabilty of Offense by Age
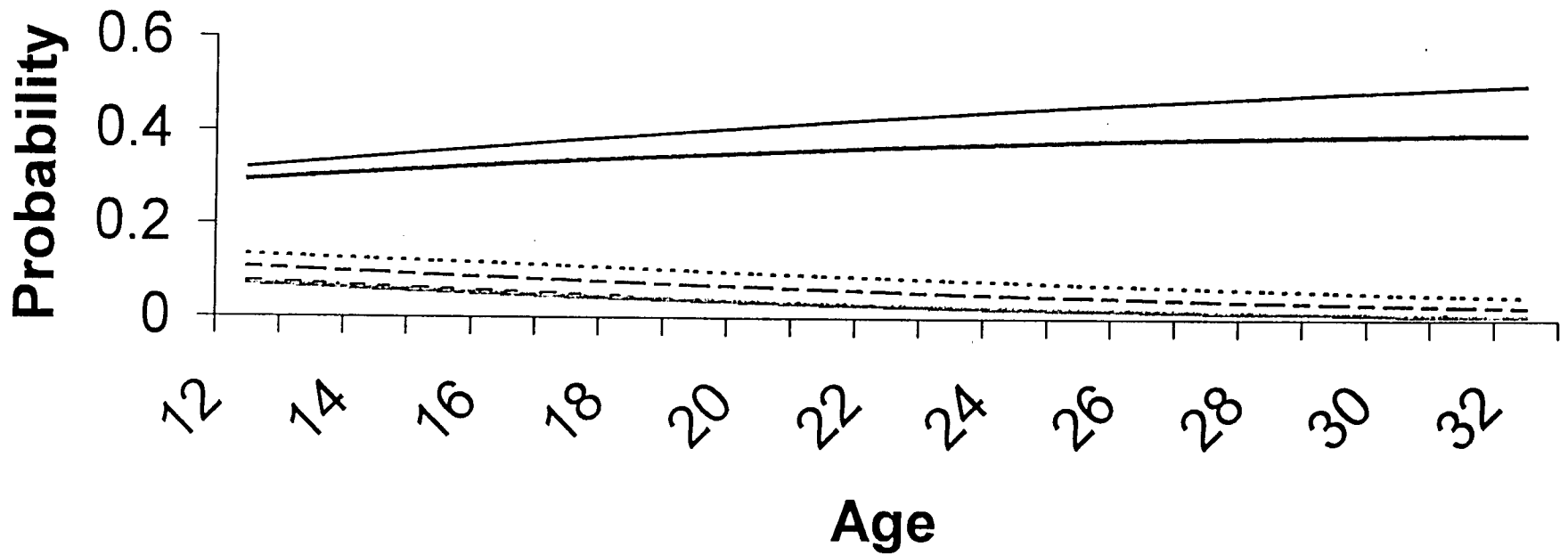
Figure 4: Effect of Race (Non-white) on Odds of Type of Offense
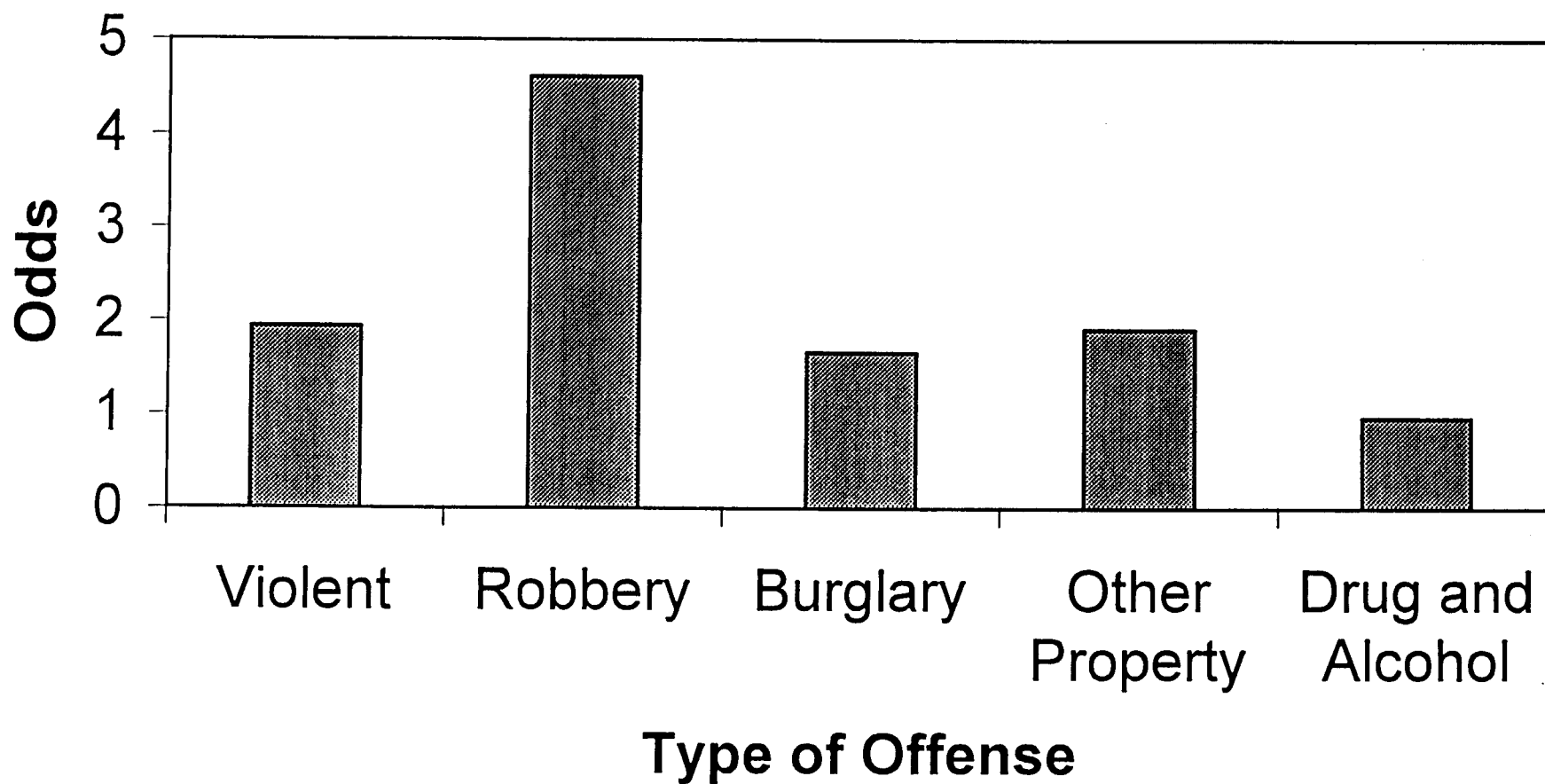
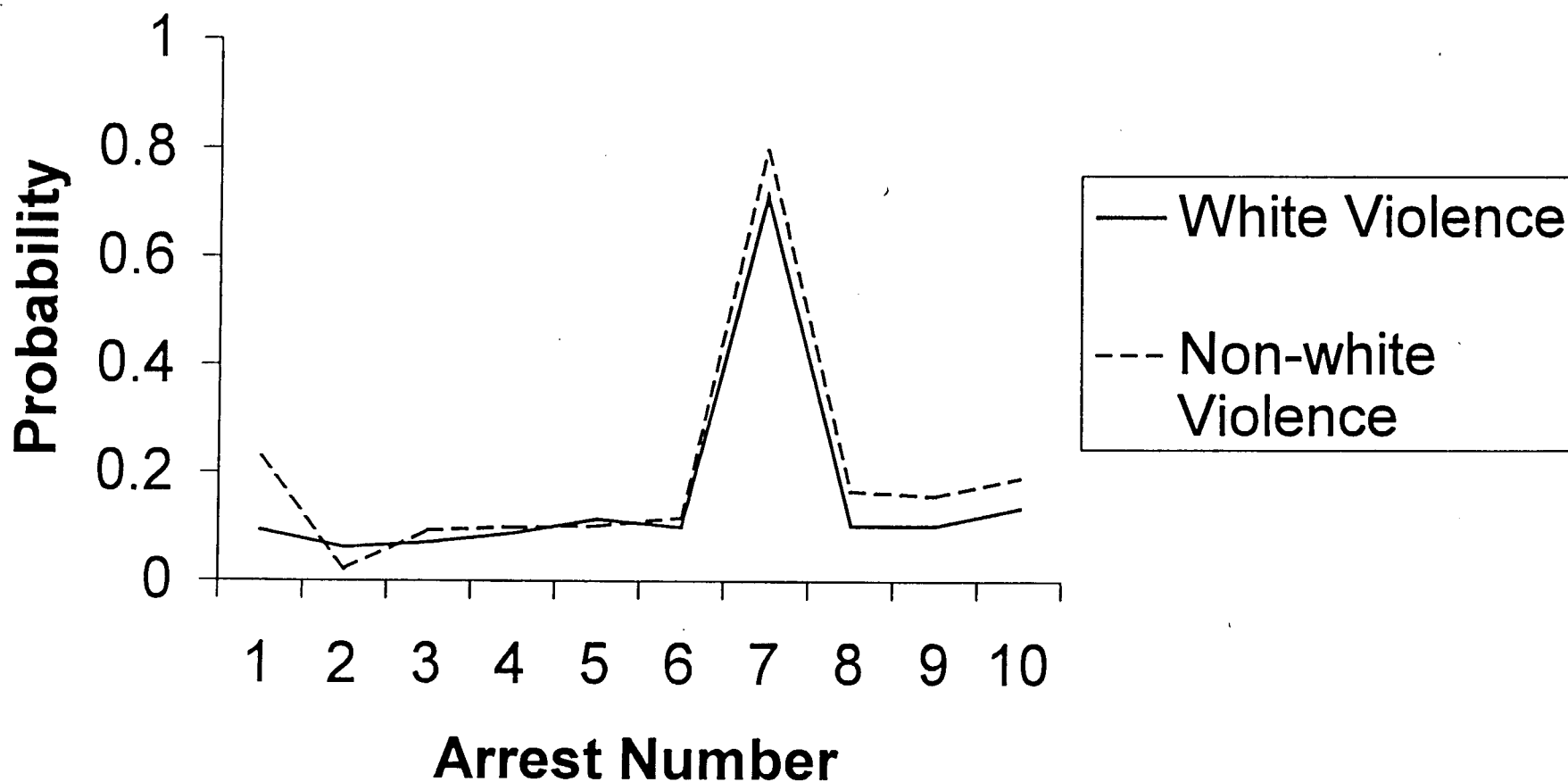Figure 5: Effects of Committing Crimes Alone and Family Closeness on Odds of Type of Offense
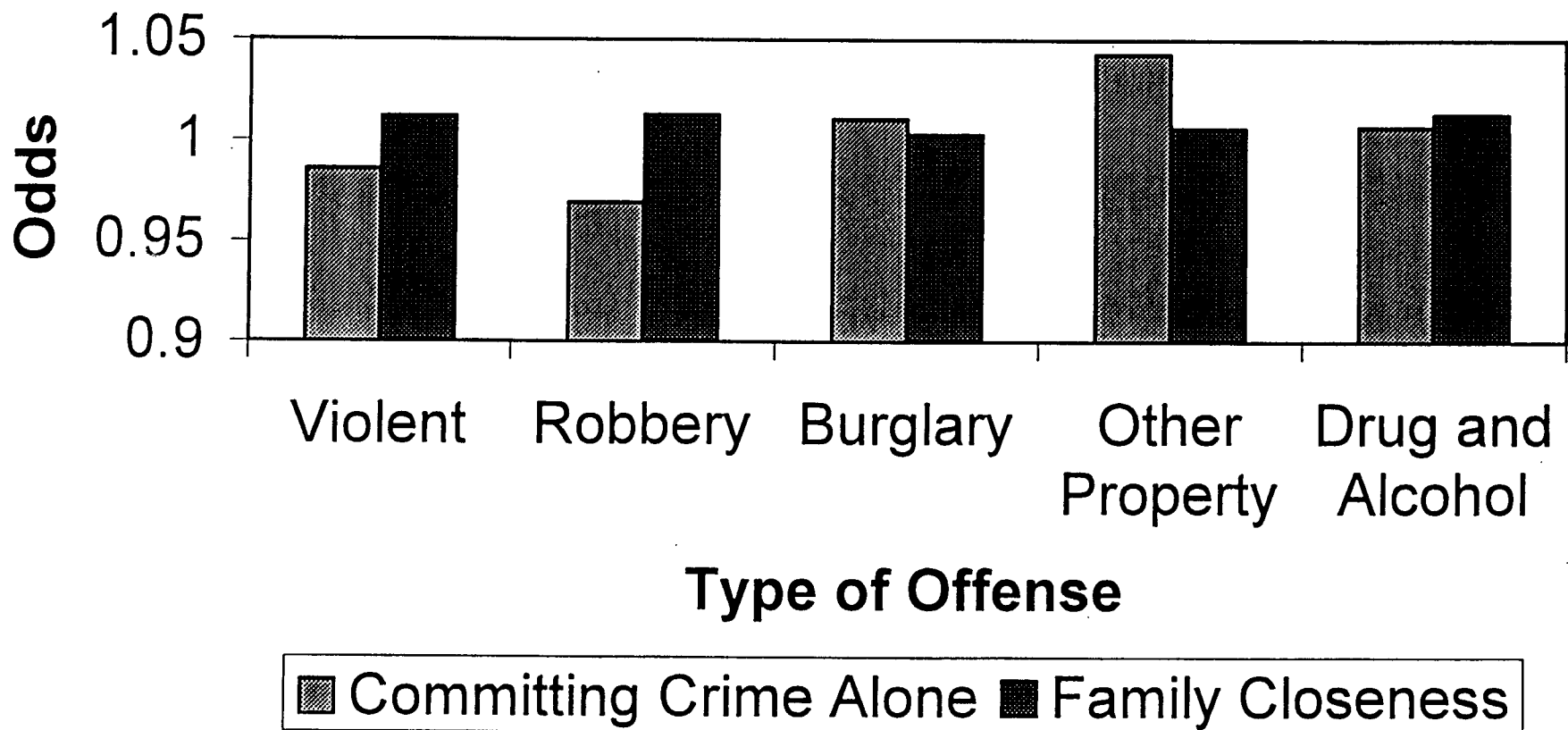
Figure 6a: Effects of Social Psychological Measures on Odds of Type of Offense
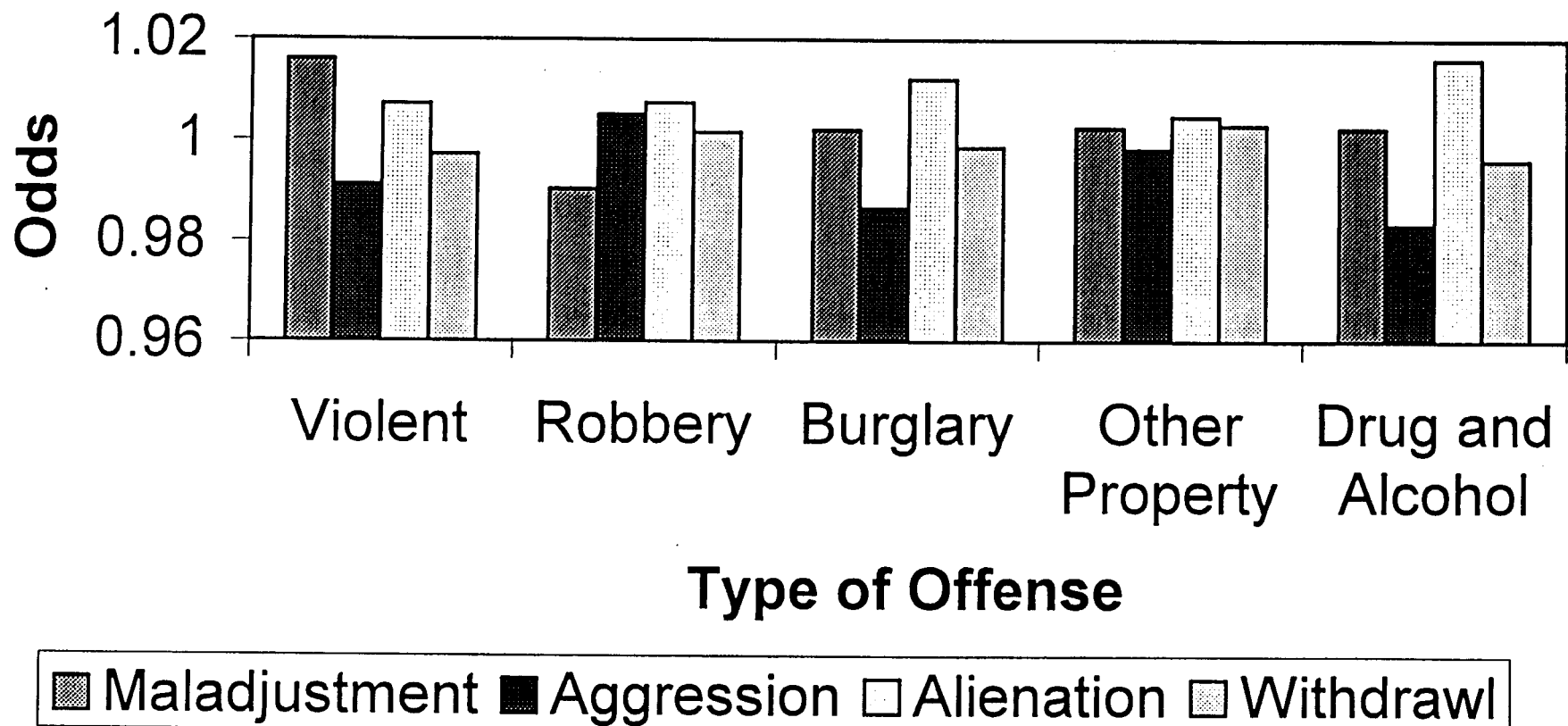
Figure 6b: Effects of Social Psychological Measures on Odds of Type of Offense
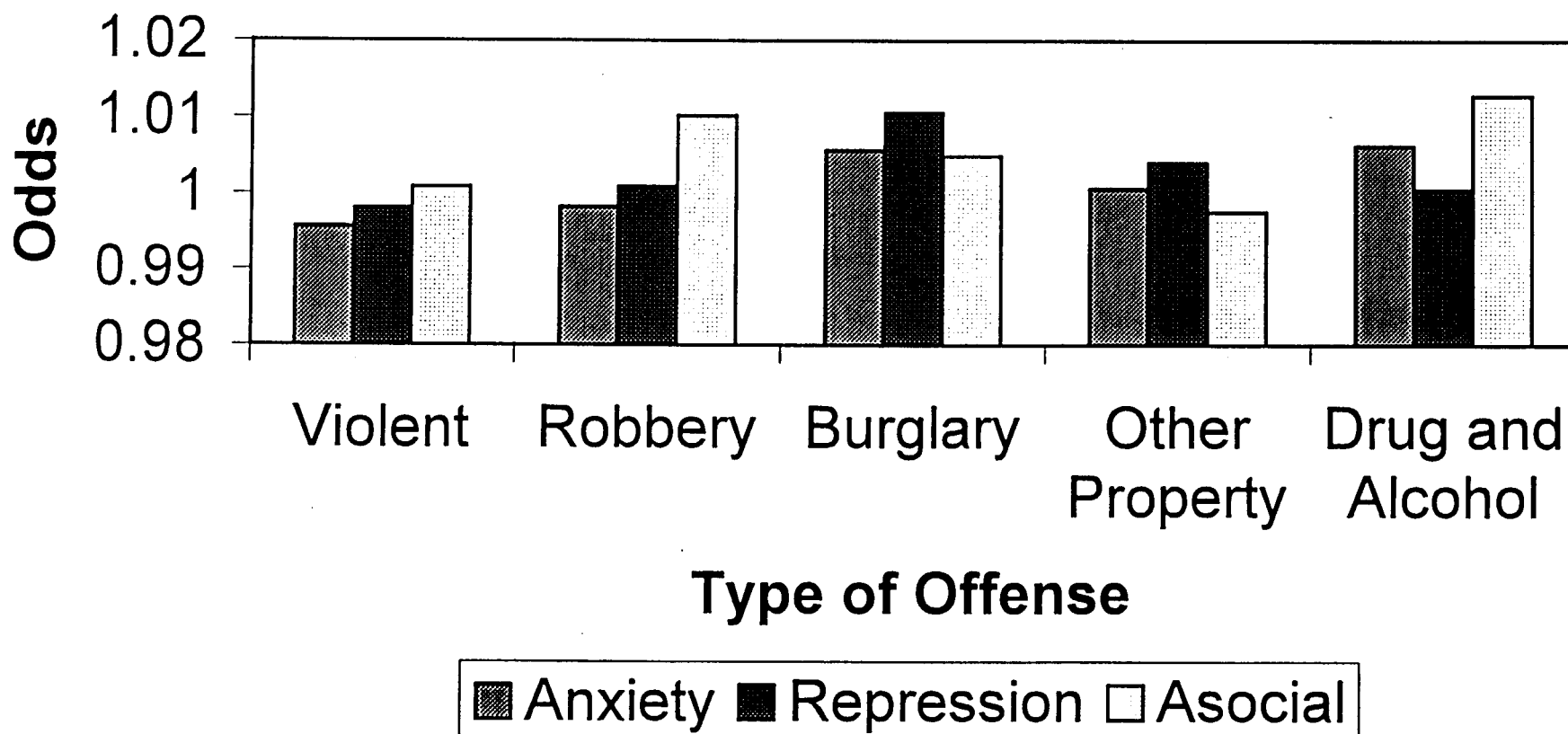
Figure 7: Probabilty of Violent Offense at Mean Age by Race

Figure 8: Probability of Robbery Offense at Mean Age by Race
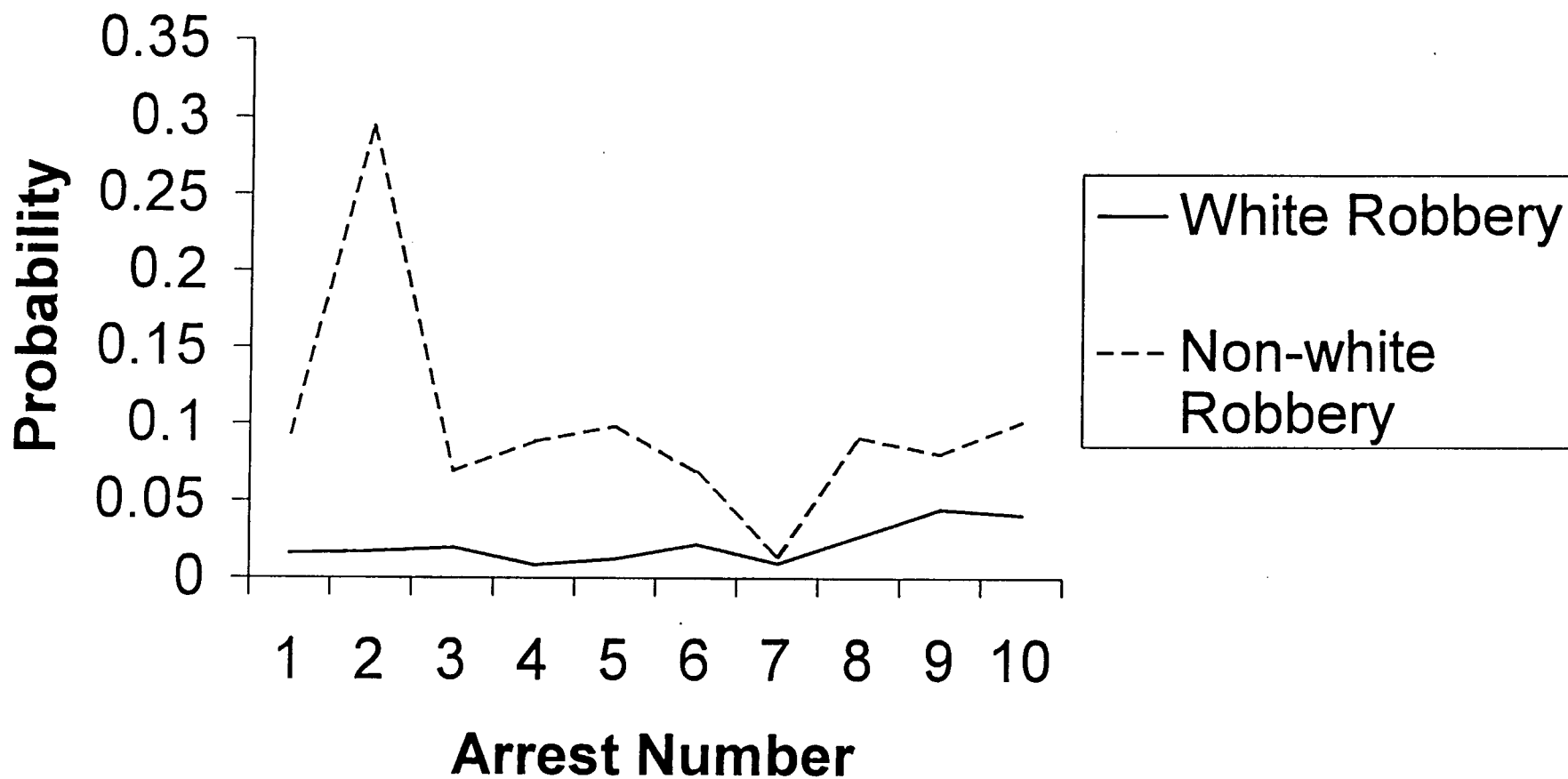
Figure 9: Probability of Burglary Offense at Mean Age by Race
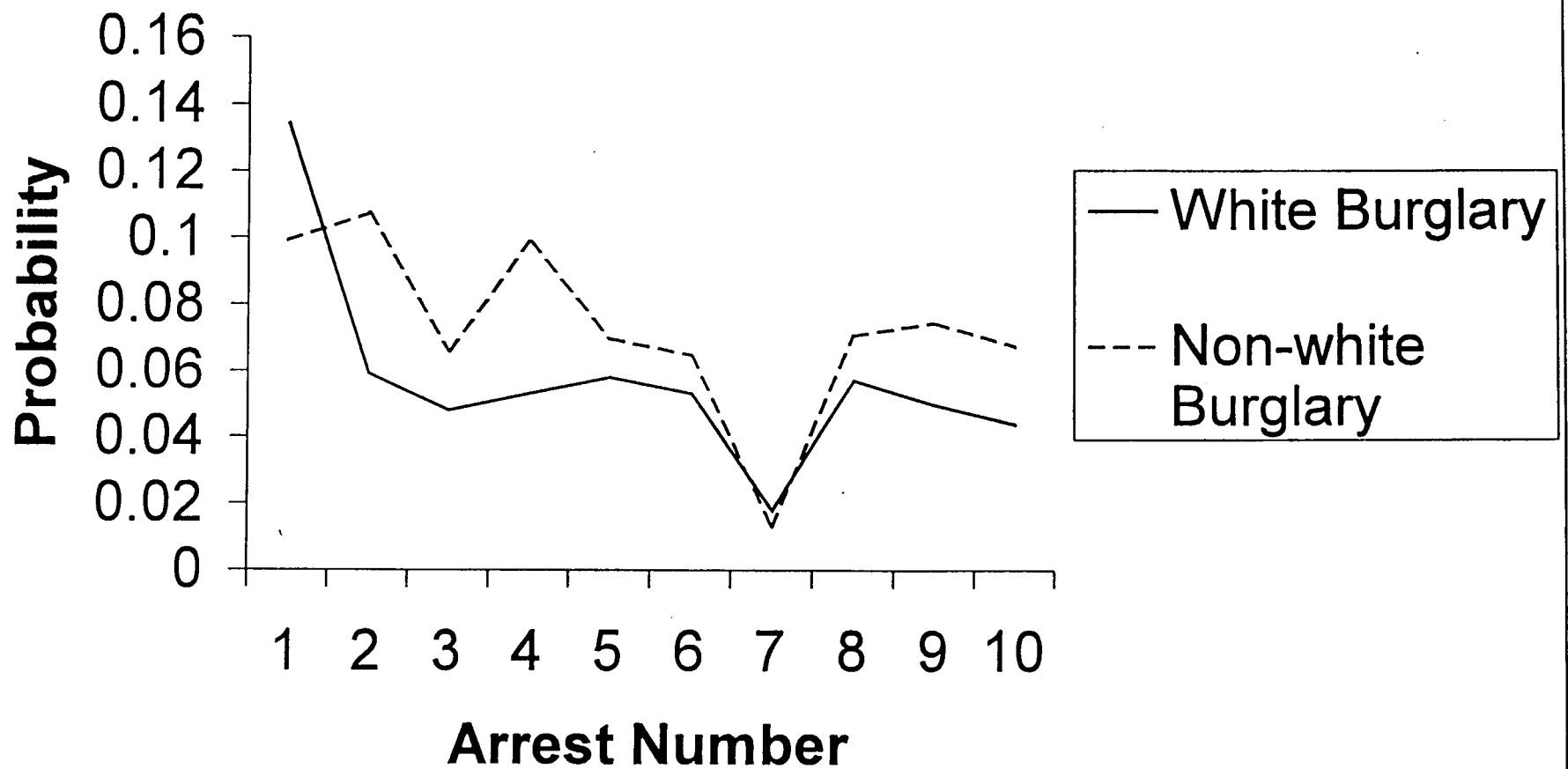
Figure 10: Probability of Other Property Offense at Mean Age by Race
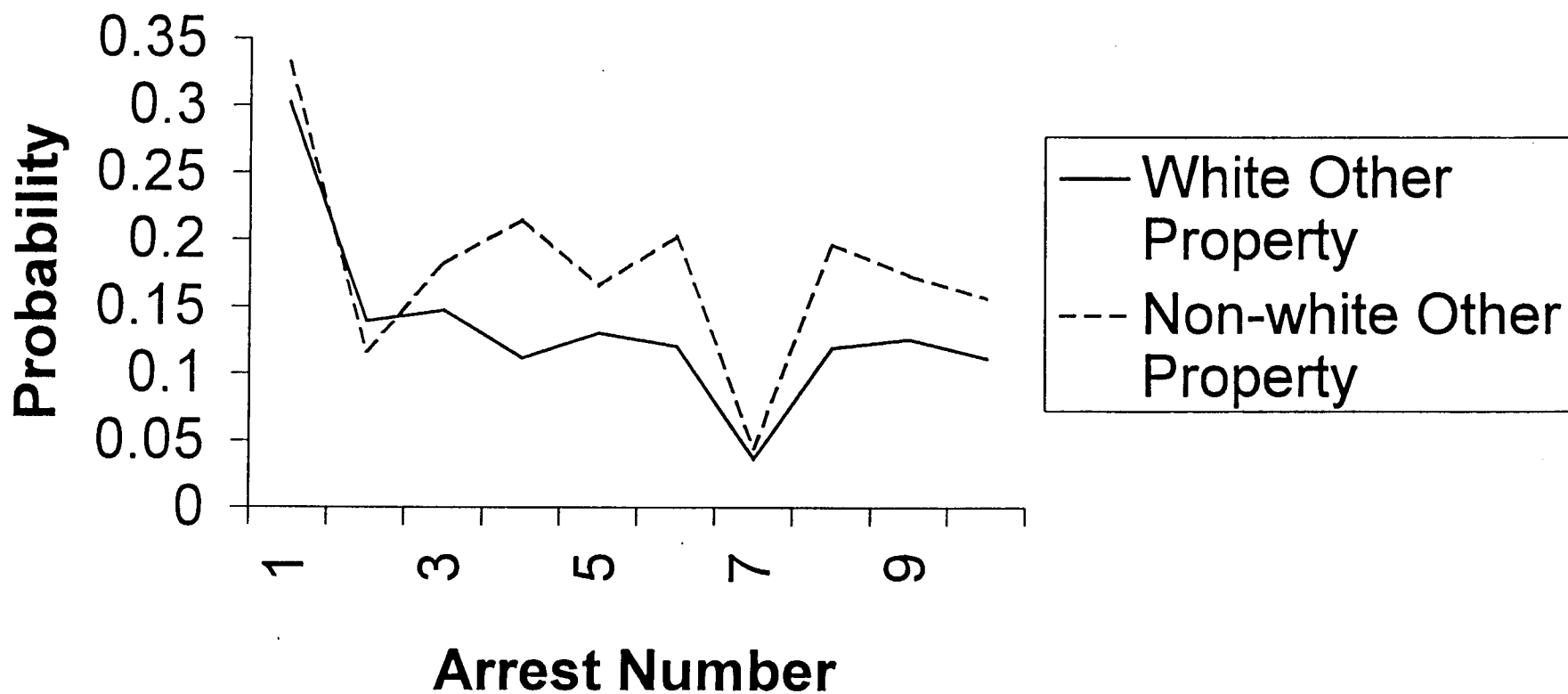
Figure 11: Probability of Drug or Alcohol Offense at Mean Age by Race
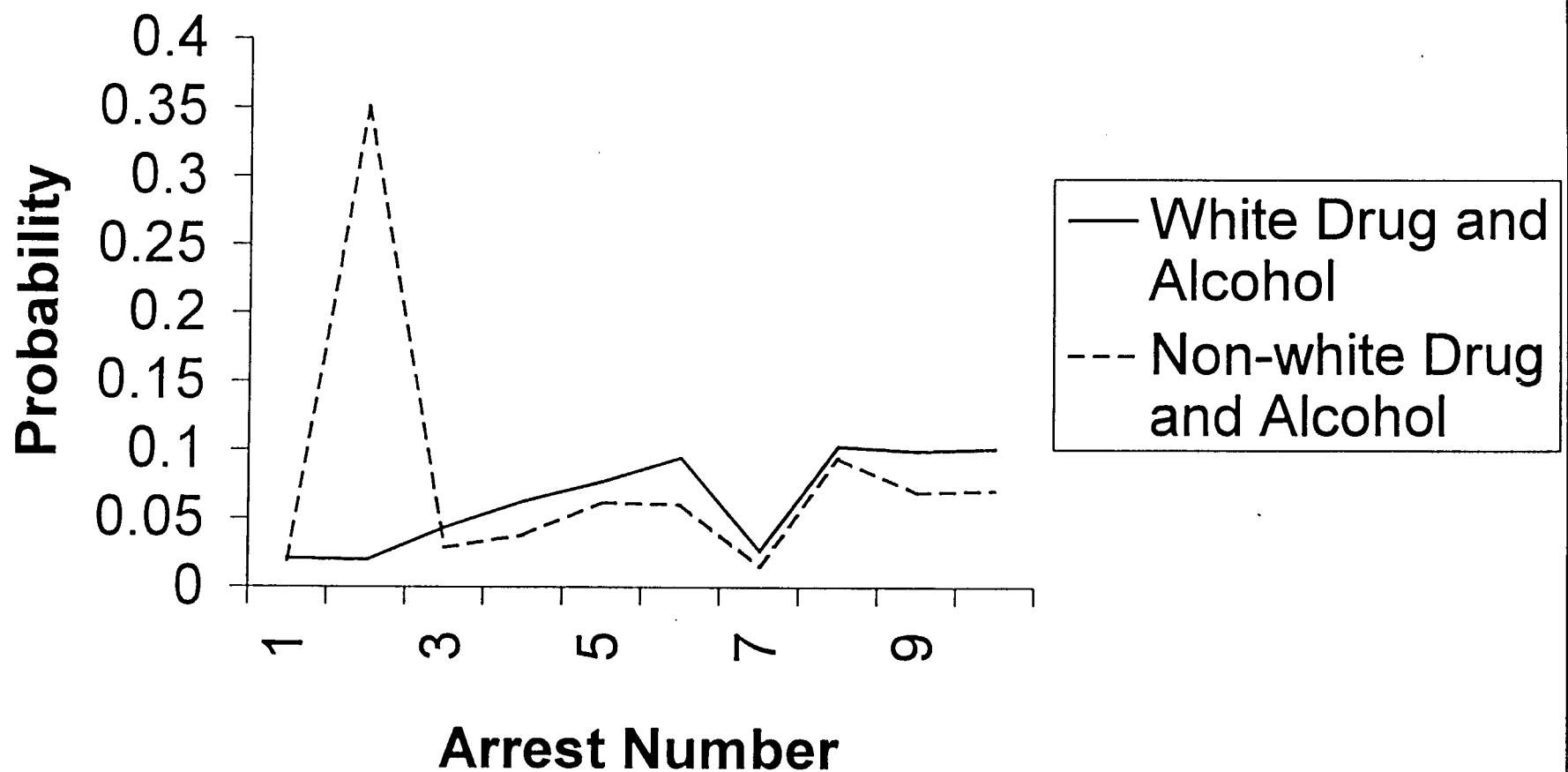
Figure 12: Probability of Other Miscellaneous Offense at Mean Age by Race
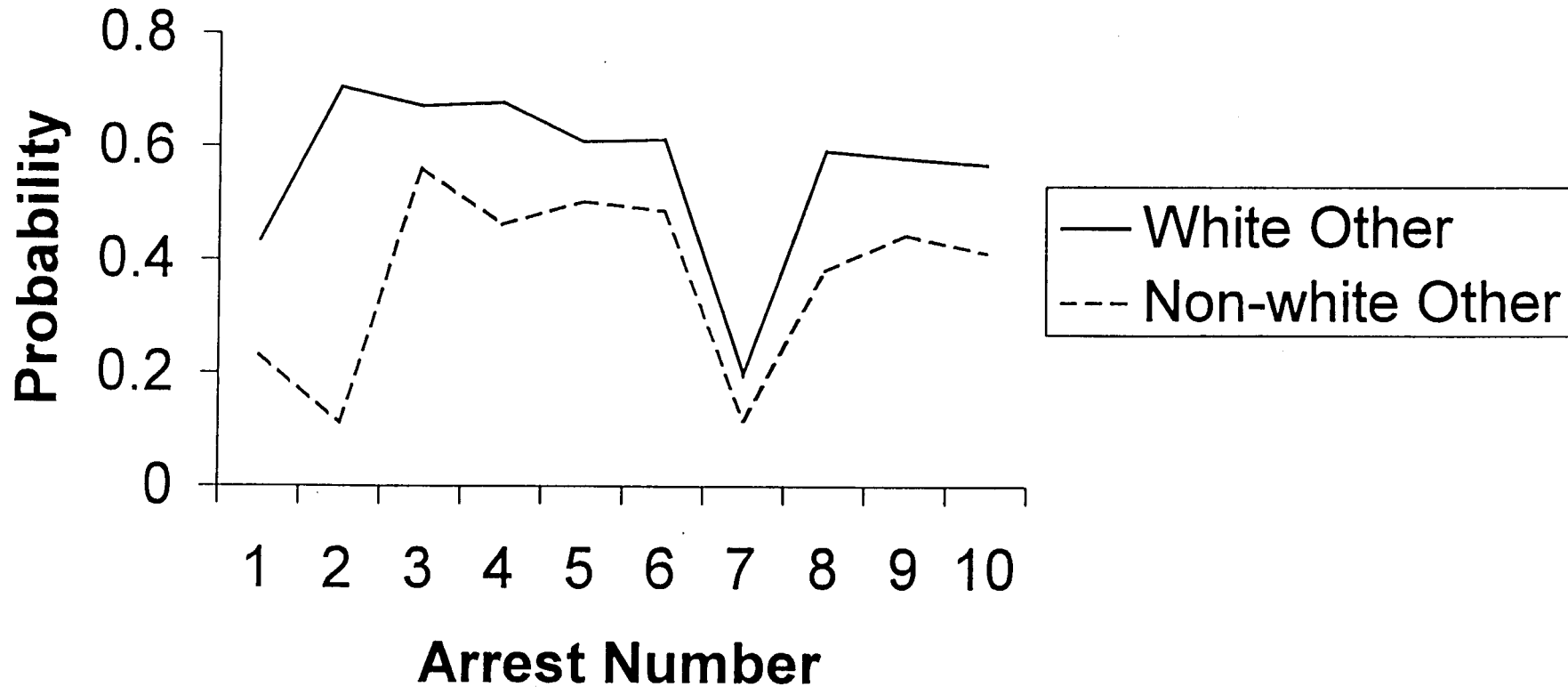
Figure 13a: Predicted Probability for Type of Offense -- White Offenders
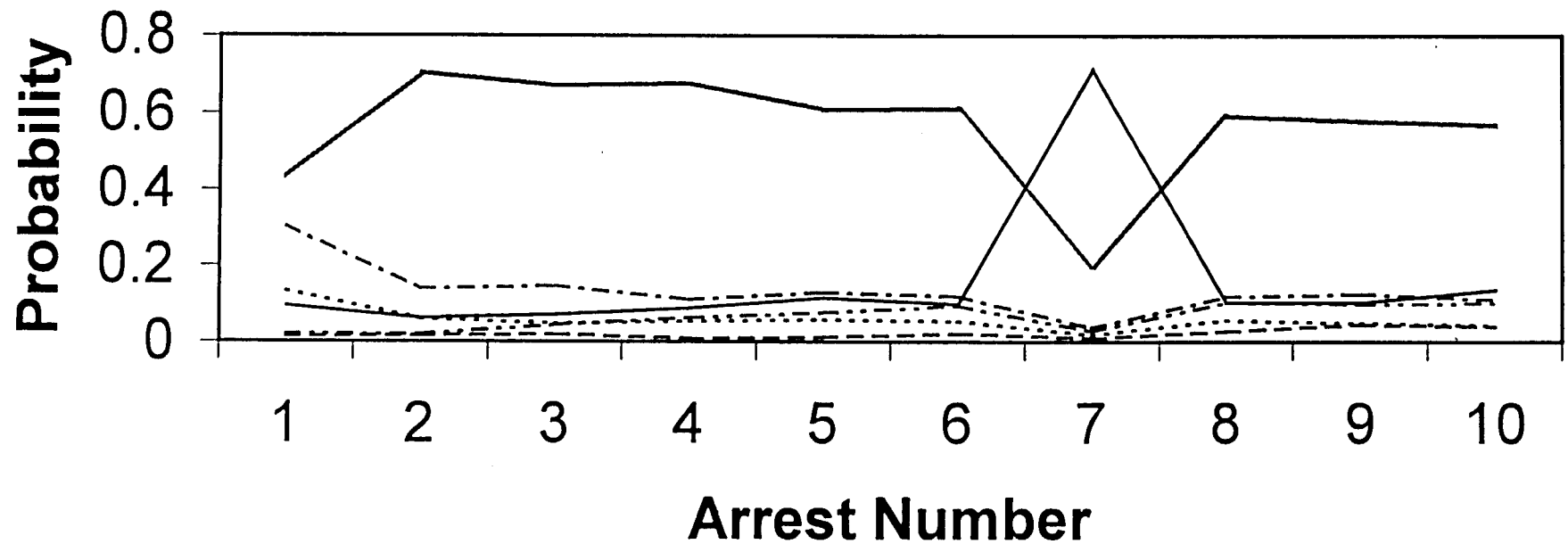
Figure 13b:Predicted Probabilty for Type of Offense -- Non-white Offenders