

## ABSTRACT

Title of dissertation:           ROLE TAKING AND RECIDIVISM: A TEST OF  
DIFFERENTIAL SOCIAL CONTROL THEORY

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In 1994, Karen Heimer and Ross Matsueda collaborated and developed Differential Social Control (DSC) theory. Heimer and Matsueda posit that the proximate cause of crime is role-taking which encompasses five major processes: 1) reflected appraisals of self as a rule violator, 2) anti-social attitudes, 3) anticipated disapproval of deviant acts from family and friends, 4) criminal associations, and 5) prior experience with crime and delinquency. Taking these processes together, DSC argues that the likelihood of crime and delinquency increases when an individual believes that others view him as a rule violator, holds anti-social attitudes, anticipates limited disapproval of deviance from family and friends, associates with deviant peers, and has repeatedly solved prior problematic situations using criminal or delinquent behaviors. DSC also posits that more distal factors such as role commitment and structural locations affect crime and delinquency indirectly via role-taking.

Unlike other theoretical perspectives also formulated in the 1990s, DSC has received scant theoretical discussion and empirical attention. To date, DSC has only been evaluated in a handful of empirical tests. The primary aim of this dissertation is to expand the body of empirical research assessing DSC. In particular, this dissertation examines DSC's ability to explain recidivism among a sample of adult offenders released from Maryland prisons.

Overall, the results generated from this dissertation do not lend support for DSC's ability to account for recidivism. Specifically, the results revealed that only two of the five measures of role-taking, anti-social attitudes and number of prior arrests, were consistent significant predictors of recidivism. The results also indicated that measures of role-commitment were not generally related to recidivism and as a consequence, the hypothesized mediating effects of role-taking on the relationship between role commitment and recidivism by DSC were not supported. The results also showed that with the exception of age, social location measures generally were not related to recidivism and thus, definite statements on the mediating effects of DSC's central concepts on this relationship could not be drawn.

ROLE TAKING AND RECIDIVISM: A TEST OF DIFFERENTIAL SOCIAL  
CONTROL THEORY

by

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Dissertation submitted to the Faculty of the Graduate School of the  
University of Maryland in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy

2009

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## DEDICATION

I dedicate this dissertation to the hundreds of refugee families from Southeast Asia who lost their lives at sea in search for freedom in the late 1970s and throughout the 1980s. I also dedicate this dissertation to my beloved father, Hen Lai Ngo, and my mother, Xuong Ngoc Thai, who taught me that unlike power and money that could come and go, education is something that will remain with you forever.

## ACKNOWLEDGMENTS

I could not have completed this work without the support, help and encouragement of many individuals; I cannot list them all.

I would like to acknowledge my mentors. I am indebted to my thesis chair, Ronald Vogel. During my time at the California State University at Long Beach, Dr. Vogel not only inspired and encouraged me to pursue a Ph.D., he also helped me realize my ability and strength.

I also owe many thanks to Denise Gottfredson. From the moment I walked through the door of the Criminology and Criminal Justice Department as an applicant of the Program, Dr. Gottfredson has supported me and made many opportunities available to me. Dr. Gottfredson not only believed in me from day one, she never stopped believing in me. I am forever indebted to her.

My greatest thanks go to Doris Layton Mackenzie, whom I greatly benefited from working closely with. Dr. Mackenzie has been a great mentor to me. I would not have made it through the program without her guidance and encouragement.

I would like to thank each committee member for their efforts and guidance. Their hard work and valuable comments have greatly improved this work. I would especially like to thank Ray Paternoster who reviewed many versions of this work and entertained all of my questions. I would not have completed this work without Dr. Paternoster's unwavering support. Thank you.

I am also deeply grateful to my family for their unconditional love. My husband, Ojmarrh, has always been my staunchest supporter and my daughter, Nora, is the sunshine in my life. I also thank my sister, Allison, and her husband, Ananda, for being

there for me through the good times and the bad. I would not have gotten to where I am today without my family!

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## CHAPTER 1: INTRODUCTION

The 1990s was a prolific era for the development of criminological theory. During this period, a host of new or revitalized theories was developed. For instance, in 1990, Michael Gottfredson and Travis Hirschi articulated a general theory of crime that posits that crime and analogous behaviors are caused by low self-control (Gottfredson & Hirschi, 1990). Similarly, in 1992, Robert Agnew revitalized anomie/strain theory (see Merton, 1938; Cohen, 1955; Cloward & Ohlin, 1960) with his general strain theory (GST) in which he not only expanded the sources of strain but also demonstrated that his theory is applicable to diverse kinds of crime and delinquent behavior (Agnew, 1992; see also Agnew, 1985; 2001; 2006). The following year, Robert Sampson and John Laub's age-graded theory of informal social control was published, which renewed interest in social bonding theories (see Hirschi, 1969). Sampson and Laub's (1993) theory blends the concept of social bonds with the emerging idea of "social capital" (i.e., the resources gained through social relationships) to account for continuity and change in offending over the entire life course. Sampson and Laub's theory highlights the salience of the social bonds at all ages across the life course in accounting for crime and delinquency (see also Laub & Sampson, 2003).

Another criminological theory that was formulated in 1993 was Terrie Moffitt's dual taxonomy theory. The theory argues that there are two groups of offenders with the first group consisting of offenders whose criminality is developed early in life and persists over the life course. By contrast, the second group consists of offenders whose criminality is restricted to adolescence. Moffitt posits that the first group of offenders,

life-course persisters, is small, approximately 5% to 10% of the male population. The second group of offenders, adolescence-limiteds, is larger and consists of most adolescents.

Theoretical development and revitalization at the macro level also occurred during the 1990s. For instance, in 1994, Steven Messner and Richard Rosenfeld revitalized macro anomie/strain theory with the publication of their book, *Crime and the American Dream*. In formulating their institutional anomie theory, Messner and Rosenfeld built upon Merton's (1938) paradigm on social structure and anomie to argue that the high crime rate in the U.S. is caused by the nation's distinctive culture and institutional structure. According to Messner and Rosenfeld, since the economy is the dominant institution in America and since American capitalism overemphasizes success and innovation compared to other societies, the high crime rate in the U.S. is the result of the domination of economic institutions and the devaluation of non-economic institutions (such as the family and education).

Theoretical development during the 1990s was also influenced by the theoretical integration movement as a way to move the field of criminology forward (see Barak, 1998; Bernard & Snipes, 1996; Elliott, Ageton & Cantor, 1979; Pearson & Weiner, 1985). As an example, Moffitt's (1993) dual taxonomy theory is an integration of biopsychological and sociological theories of crime. In particular, Moffitt relied on biological and psychological factors to account for the offending of life-course persistent offenders, and sociological factors to explain the offending of adolescence-limited offenders (Paternoster & Bachman, 2001). Similarly, Sampson and Laub's age-graded theory of informal social control (1993) is an integrated effort in which they merged the

life-course perspective (Elder, 1975; 1992) with concepts from social control theory (Hirschi, 1969), social learning processes in the family (Patterson, 1982) and the labeling perspective (Becker, 1963; Lemert, 1951).

The divergent theoretical propositions presented above naturally generated considerable interest from scholars studying crime and criminals. This interest prompted researchers to test many of the key hypotheses from these theories. As a result, a sizeable body of research has accumulated concerning these theories. For example, a recent query of Criminal Justice Abstracts for the term “low self-control” or “general theory of crime” (the date range was set from earliest to 2009) found almost 200 articles (search conducted on 10/12/08). A similar query for the term “general strain theory” revealed over 60 studies. There is also a hefty body of research concerning Moffitt’s dual taxonomy theory; Criminal Justice abstracts found over 30 studies using the terms “dual taxonomy,” “adolescent limited,” or “life course persistent.”

While the theories presented above have enjoyed widespread interest and attention, there is one potentially important contemporary theory that has received scant theoretical discussion and empirical attention. Namely, Karen Heimer and Ross Matsueda’s (1994) theory of differential social control (hereafter, DSC) has largely been neglected. A search of Criminal Justice Abstracts referencing the term “differential social control” (again, the date range was set from earliest to 2009) revealed only a handful of studies (search conducted on 10/12/08). This neglect of DSC is surprising given that DSC offers a cogent general explanation of criminal behavior that potentially resolves several problems/puzzles that plague other theories. Here I offer a brief synopsis of DSC and its

promise. In the next chapter, I will provide an extended discussion of DSC and its development.

DSC starts by elaborating the symbolic interactionist component that underlies several criminological theories, most notably, labeling and differential association theories. Heimer and Matsueda argue that the proximate cause of crime is “role-taking.” That is, during the course of everyday activities, whenever a problematic situation arises, individuals view themselves from the standpoint of others to find a response that fits their conception of themselves and that is appropriate for the situation. Relating to criminal activities, when individuals are confronted with criminal behavior as a possible line of action, they take each other’s roles through verbal and nonverbal communication (e.g., one person initiates an unlawful act, the second person takes the role of the other person and responds, then the first person reacts to the response, and so forth), until a jointly developed goal is reached, a new goal is established or the transaction is terminated (see Matsueda, 1992).

DSC posits that the likelihood of delinquency is affected by five major processes of role taking. The first element, reflected appraisals, concerns whether the individual believes that others view him as deviant. Reflected appraisals of self as deviant are the backbone of role-taking. When an individual perceives that others think of him as deviant, problematic situations are more likely to be resolved with crime. The second element concerns whether the individual holds anti-social attitudes. Similar to reflected appraisals, attitudes is central to role-taking as attitudes are “predispositions or plans to act” (Heimer & Matsueda, 1994: 367). Holding anti-social attitudes increases the likelihood of criminal resolutions to problematic situations.

The third element of role taking concerns whether the individual anticipates limited disapproval of deviant acts from friends and/or family. At the heart of role-taking is the issue of expected consequences of different possible lines of action. Individuals “consider the consequences of such reactions for self-image, extrinsic rewards, and group membership . . .,” and the more negative the anticipated reactions to a delinquent behavior, the lower the likelihood of delinquent lines of action” (Heimer & Matsueda, 1994: 367). The fourth element concerns whether the individual associates with other deviant peers. Associating with deviant peers increases the likelihood of crime both directly and indirectly. Indirectly associating with deviant peers increases the likelihood of crime and delinquency as the deviant peer group serves as a generalized other, even when they are not present. Directly, deviant peers present criminal opportunities that may have gone unrecognized in their absence. (Notice the situational component to this aspect of role-taking). Finally, the fifth element of role taking concerns whether the individual repeatedly solves problematic situations using delinquent behavior; Prior experience with delinquency, thus, is a salient predictor of future delinquency as “delinquent behavior can occur in the absence of reflective thought, via *habitual or scripted responses established through previous experiences*” (Heimer & Matsueda, 1994: 368).

DSC also posits that role commitment and social location are more distal causes of crime. According to the theory, the organized groups (role commitment) in which an individual is positioned affects the generalized other (role-taking) that one refers to when in a problematic situation. In other words, commitment to a specific role in an organized group will increase the likelihood of that group serving as the generalized other in problematic situation. Further, through role taking, “the organization of the group enters

the cognition and behavior of individuals as they locate their positions within the group and adjust their conduct according to group expectations (and) norms” (Heimer & Matsueda, 1994; p. 368). Hence, factors like attachment and commitment to pro-social institutions such as family, school, and employment affect the likelihood of criminal behavior indirectly via role taking.

Additionally, prior criminal conduct affects crime and delinquency both directly and indirectly through role commitment and role-taking. In other words, prior criminality reduces the likelihood of pro-social role commitments (e.g., attachment to family, commitment to school) and increases the likelihood of deviant role-taking (e.g., developing a deviant self-image, delinquent attitudes). Likewise, socio-demographic factors such as age, gender, race, socio-economic status and neighborhood factors (residential instability, concentrated disadvantage) largely influence the likelihood of criminal behavior indirectly through prior delinquency, role commitment, and role-taking. Thus, DSC is a multi-level theory of criminal behavior as it specifies how structural factors affect the likelihood of criminal behavior.

DSC not only provides a persuasive explanation of crime but also offers interesting accounts to several “criminological facts” that many more popular theories have trouble explaining. For example, as to the “fact” that the onset of delinquent and criminal behavior increases rapidly during late childhood and early adolescence, DSC attributes it to “the dramatic physical and physiological changes that occur during this period (that) create impulses or needs that are symbolized in identity crises, which in turn, prompt delinquency when role-taking suggests that (these) impulses and needs may be satisfied by delinquency” (Matsueda & Heimer, 1997: 190). Stated differently,

physical and hormonal changes during adolescence create impulses, needs or desires, which trigger reflective thought. Further, the intensity of such impulses is determined by the meaning they are given when youths view themselves from the perspectives of others. Given that the transition from childhood to adolescence is a time when most youths emancipate from parents, the peer group becomes an especially important generalized other for giving meaning to these physical and hormonal changes (Matsueda & Heimer, 1997).

As to the “fact” that males engage in crime and delinquency disproportionately relative to females, DSC posits that this “fact” is due to differential consequences associated with internalizing gender definitions. According to DSC, gender definitions (beliefs about femininity and masculinity) along with attitudes about rules and laws are internalized and individuals are motivated to behave in agreement with them. Through this process of internalization, the social control of gender-relevant behavior is translated into self-control. However, since not only is female delinquency regarded as gender-inappropriate behavior but more deviant than similar behavior displayed by males (i.e., female delinquency is viewed as doubly deviant; see Heimer, 1996) and since the perception that significant others would disapprove of crime and delinquency has a stronger effect on girls than boys (see for example, Gilligan, 1982), internalizing gender definitions reduces crime and delinquency among girls but not boys (Heimer, 1996). In fact, in light of the evidence that some boys use delinquency as a way to display gender (see Messerschmidt, 1993), DSC also contends that internalizing gender definitions may increase the likelihood of delinquent activities among boys (Heimer, 1996).



In spite of DSC's persuasive general explanation of crime and delinquency, it has received very limited attention. The primary aim of this dissertation is to expand the body of empirical research assessing DSC. This dissertation seeks to extend the existing body of research in two ways. First, it examines the explanatory power of DSC using a sample of adults. This dissertation differs from previous tests of DSC that utilized samples of either juveniles or juveniles and young adults in that it focuses exclusively on adults. Notably, this dissertation employs a sample of high-risk adult offenders to test key hypotheses of DSC. Given that DSC is regarded as a general theory of crime and delinquency, demonstrating its explanatory power among different age groups and different categories of offenders will speak to its value and import.

Second, this dissertation examines DSC's ability to explain recidivism ("secondary deviance"). Again, this dissertation differs from previous tests of DSC that emphasized primary deviance in that it focuses on secondary deviance. Additionally, whereas previous tests of DSC employed self-reported measures of crime, this dissertation involves official measures of crime. To my knowledge, no one to date has focused on using DSC to explain recidivism. Given that in their initial exposition of DSC Heimer and Matsueda specifically contend "the individual-level mechanism explaining the prophesy [of secondary deviance] will be identical to those mechanisms generating primary deviance" (1994: 372), this dissertation seeks to test the scope of the theory by examining its ability to account for the observed persistence in crime in a sample of ex-offenders.

Recidivism is a salient and timely area for inquiry. According to recent evidence, approximately two-thirds of released convicted offenders re-offend within three years

(Langan & Levin, 2002; Petersilia, 2003). Research also reveals that recidivists now comprise one of the largest segments of offenders admitted to U.S. prisons. For example, according to the Bureau of Justice Statistics, in 2005, more than a third (34%) of prison admissions were offenders returned on a parole violation (Bureau of Justice Statistics, 2007: 4 [NCJ #217675]). Hence, explaining the factors associated with recidivism is both crucial and sensible.

This dissertation is organized as follows: Chapter 2 describes the symbolic interactionist perspective, theories of delinquency based on this perspective (interactionist theories of delinquency), and DSC and its development. Chapter 2 also discusses how DSC addresses the shortcomings associated with earlier interactionist theories of delinquency as well as reviews the existing empirical tests of DSC. Chapter 3 presents the methodology of this dissertation. Specifically, chapter 3 describes the Maryland Boot Camp Experiment, the study from which data for this dissertation is derived. In particular, chapter 3 details the sampling process, data collection, and measurement of key constructs of the Maryland Boot Camp Experiment. Chapter 3 also describes the sample for this dissertation, presents research hypotheses and outlines the data analytic strategy to test the hypotheses offered.

Chapter 4 reports the findings for the research hypotheses. Specifically, Chapter 4 presents the logistic regression results for three analyses. The first analysis examines the effects of the five processes of role-taking on recidivism. The second analysis assesses whether the effects of role commitment indicators on recidivism are mediated by role-taking as DSC proposes. The third analysis tests whether the effects of structural location indicators are mediated by role commitment and role-taking as DSC specifies. Finally,

chapter 5 discusses the results generated from this dissertation. Chapter 5 also discusses the implications of the findings and concludes on the viability of DSC as a general theory of crime and delinquency.

## CHAPTER 2: SYMBOLIC INTERACTIONISM, INTERACTIONIST THEORIES OF DELINQUENCY, AND A THEORY OF DIFFERENTIAL SOCIAL CONTROL

This chapter proceeds in four sections. The first section describes symbolic interactionism, highlighting the perspective's major concepts and principles. The second section presents interactionist theories of delinquency (theories that are based on symbolic interactionism) and outlines their shortcomings. The third section traces the development of Heimer and Matsueda's (1994) theory of differential social control (DSC) and discusses how DSC addresses the shortcomings inherent in earlier interactionist theories of delinquency. The last section reviews the existing empirical tests of DSC and demonstrates how this dissertation extends the existing body of research on DSC.

### *Symbolic Interactionism*

Symbolic interactionism emerged from the American philosophical tradition of pragmatism, a school of thought formed in the late nineteenth century based on the writings by Charles S. Pierce (see Shalin, 1986; 1991), William James (1907) and John Dewey (1962). The intellectual foundation of symbolic interactionism is attributed to the writings by George Herbert Mead (1934) and his student, Herbert Blumer (1969; see also, Becker, 1963; Goffman, 1959; Shibutani, 1961; Stryker, 1980; Turner, 1962a). While Mead is regarded as the founder of symbolic interactionism, it is the writings by Blumer (1969) and Stryker (1980) that serve as key sources for this perspective.

Three important tenets characterize the symbolic interactionist perspective. First, it takes a dynamic view of society, social organization and social order. Society is perceived as an ongoing process of interactions and social organization and social order are the products of such interactions. Second, it rejects the consensus model of society and the notion that subcultures are irrelevant to the motivation of behavior. Instead, symbolic interactionism adopts a pluralistic model of society in which social groups are organized around a common set of concerns or viewpoints. Symbolic interactionism also recognizes that subcultures have the potential of generating new ways for their members to solve problems but that these innovative solutions may be perceived as deviant behavior from the standpoint of other groups (Matsueda & Heimer, 1997).

Third, symbolic interactionism does not view humans as passive actors who simply respond to stimuli and reaction. Rather, it views humans as creative and active in the construction of their own biographies and malleable, pliable and plastic in their communication with others. Symbolic interactionism also posits that humans act in relation to the meanings others have of them or that human activity represents a social process whereby human beings take things, especially other humans, into account before they act (Blumer, 1969; Cooley, 1902; Mead, 1934).

The main focus of the symbolic interactionist perspective is on the meanings that people give to actions and events and how such meanings are constructed and negotiated. Meanings are presupposed to derive from social interactions, through a process of communication using language or symbols. More specifically, humans relate to each other through “significant symbols,” which are language or gestures that trigger the same response in the communicator as it does in the person receiving it. Accordingly, the use

of significant symbols evokes a set of meanings that not only enable one thing to represent something else (e.g., a hug stands for one person's affection toward another person), they also stipulate a course of action that is to be followed (Einstadler & Henry, 1995).

One of the most important meanings within symbolic interactionism is the meaning people give to themselves, their self-image. An individual's self-concept is shaped by his interaction with others and is created through "reflected appraisals," or the reflection of the attitudes by valued others attributed to the person (Mead, 1934). An individual's self-concept is one aspect of himself. The notion that humans have a self is of central importance to symbolic interactionists since it represents the distinguishing feature separating humans from the animal world (Einstadter & Henry, 1995). In particular, to have a self is to have the capacity to observe, respond to, and direct one's own behavior (see Mead, 1934). The self is also perceived as reflexive (i.e., an individual can be an object to himself and an individual's self arises when he becomes an object to himself) and encompasses an organization of distinguishable self-conceptions with each tied to specific situations, roles, and relationships (see McCall & Simmons, 1978; Schwartz & Stryker, 1970; Stryker, 1968; 1980; Wells, 1978).

The self also serves as a crucial locus of social control operating through the dialectical relationship between the "I" and the "me." The "I" represents the unpredictable and creative aspect of the self while the "me" constitutes the aspect of the self that conforms to community norms and attitudes. While an individual internalizes the attitudes and norms of the community (the "me"), the individual also reacts to these attitudes (the "I"). Hence, the self is a process involving the mediation between the "I"

and the “me” but because the response of the “I” is never completely determined by the “me,” behavior is thus patterned, but never completely predictable (Einstadter & Henry, 1995).

Finally, within social interactions, symbolic interactionism specifies that the mechanism by which individuals influence each other is role taking. Role taking occurs when an individual places himself into the position of others and appraises the situation from their standpoint. Role taking enables an individual to define the situation that he is in and to coordinate his lines of action with the actions of others (Lauer & Handel, 1983). Role taking is also the process whereby social control becomes self-control because it is through this process that social organization enters behavior (Matsueda & Heimer, 1997).

To summarize, symbolic interactionism presupposes that social organization and social order are the products of an ongoing process of social interaction and communication. Humans are perceived as dynamic beings who continuously engage in ongoing purposive activity in relation to each other. The main focus of symbolic interactionism is on the exchange of meanings communicated through interaction and the interplay of this interaction with an individual’s identity or self-concept. Accordingly, an individual’s identity or self-concept as well as his cognitive processes, values and attitudes are all salient predictors of behaviors (Sandstrom, Martin & Fine, 2003).

### *Interactionist Theories of Delinquency*

There appear to be two types of interactionist theories of delinquency: implicit and explicit (for discussions on interactionist theories of deviance, see Wells, 1978; Matsueda, 1992; Einstadter & Henry, 1995). Both types of interactionist theories

recognize the significance of social interaction as embodied in symbolic interactionism, but only explicit theories utilize the concept of the self as an integral explanatory construct. For example, differential association theory (Sutherland, 1939; 1947) is an implicit interactionist theory of delinquency in that it acknowledges the importance of social interaction in the motivation of behavior (the theory posits that delinquent behavior is learned through interaction and communication within intimate groups); however, differential association theory does not make any specific references with respect to the role an individual's self-conception may play in generating delinquent behavior. On the other hand, labeling theory (Becker, 1963; Lemert, 1951; Tannenbaum, 1938), an explicit interactionist theory of delinquency, not only incorporates the salience of social interaction in its theoretical propositions but also specifies how an individual self-conception is related to crime and delinquency. Particularly, labeling theory posits that the deviant labels or appraisals imposed on individuals by others affect their self-concepts and deviant self-conceptions in turn, increase the likelihood of delinquent behavior. Accordingly, while both implicit and explicit interactionist theories of delinquency acknowledge the salience of social interaction in the motivation of behavior, explicit interactionist theories rely on the conception of the self, rooted in social interaction, as an integral explanatory construct while implicit interactionist theories do not.

This section describes the major implicit and explicit interactionist theories of delinquency and outlines their shortcomings. Specifically, this section describes one implicit theory, differential association theory (Sutherland, 1939; 1947), and two explicit theories, masculinity-delinquency (Schwartz & Stryker, 1970) and labeling (Becker, 1963; Lemert, 1951; Tannenbaum, 1938).



### Differential Association Theory.

As stated above, differential association theory (hereafter, DA) is an implicit interactionist theory of delinquency. DA was developed and proposed by Edwin Sutherland (1939; 1947), one of the most influential criminologists of the twentieth century (Laub, 2006). The theory emphasizes the importance of social interaction in the motivation of behavior but does not reference the role that an individual's self-concept may play in the genesis of delinquent behavior. The main thesis of DA is that criminal behavior, like any other behavior, is learned through interaction and communication within intimate personal groups.

In formulating DA, Sutherland was influenced by three theoretical perspectives of the Chicago School: 1) ecological and cultural transmission theory, 2) culture conflict theory, and 3) symbolic interactionism (Einstadter & Henry, 1995). From ecological and cultural transmission theory, Sutherland incorporated the idea that in socially disorganized neighborhoods, community control declines and cultural values supportive of delinquency emerge and are transmitted from one generation to the next (Park & Burgess, 1925; Shaw & McKay, 1969). From culture conflict theory, Sutherland integrated the proposition that different groups in society have conflicting cultural norms which cause the groups to vary in their attitudes and beliefs toward law violations (Sellin, 1938). From symbolic interactionism, Sutherland focused on the importance of learning in interaction with others in a process of communication (Blumer, 1969; Mead, 1934).

DA originally offered seven propositions; these propositions were subsequently expanded to nine. The theory posits that criminal behavior is learned (proposition 1) over time through social interactions (proposition 2) within intimate groups (propositions 3).

Through interactions, individuals learn not only values and beliefs (definitions) that are either favorable or unfavorable to law violations (proposition 5) but also techniques to commit crime, and the motives and rationalizations for and against unlawful behavior (proposition 4). DA posits that crime occurs when an individual has an excess of definitions favorable to law violations (proposition 6), which can vary along the dimensions of frequency (refers to how often the person is exposed to definitions favorable to law violations), duration (refers to the amount of time the person is exposed to a definition), priority (refers to the suggestion that prior definitions take precedence over later ones), and intensity (refers to the suggestions that definitions that come from people we feel emotionally attached to are more intense than others; propositions 7). DA also claims that the process of learning criminal behavior is the same as other types of learning (proposition 8) and that while criminal behavior is an expression of general needs and values, it is not explained by those general needs and values because noncriminal behavior is also an expression of the same needs and values (proposition 9).

In DA, the crucial factor in the learning process is the learning of definitions concerning one's behavior. That is, although the people an individual associates with are important in the learning process, it is the individual's interpretations of their behavior and expressed attitudes that determine whether the individual will engage in crime or not (Kubrin, Stucky & Krohn, 2009). Hence, the likelihood of individuals' breaking the law is related to their perception of the legal codes with individuals who view the law negatively being more likely to break the law.

DA is arguably one of the best-known criminological theories. Despite its prominence, the theory has several shortcomings. First, some critics consider the theory

to be untestable because of its vague and ambiguous concepts (see Akers, 1998: 33). In particular, critics have noted the difficulty in determining and calculating an “excess” of definitions favorable to crime (BUT see Matsueda, 1982; Matsueda & Heimer, 1987; Orcutt, 1987). Likewise, critics have questioned whether definitions favorable to crime are general (i.e., when a person believes that all law violations are acceptable) or specific (e.g., when a person believes that stealing from big corporations is acceptable but shoplifting is not). From the standpoint of testing theories, this is an important issue because if definitions are crime specific then they must be measured specific to the crime to avoid misinterpreting findings and results (see Jackson, Tittle & Burke, 1986)

Second, some critics have raised the issue concerning the stability of definitions. Specifically, these critics pointed out that if definitions remain relatively permanent once developed, they would make strong predictors of behavior. Conversely, if they tend to change, then their inclusion as explanatory variables would be problematic (Kubrin, Stucky & Krohn, 2009). Third, DA does not have strong empirical support. For example, whereas Sutherland would assert that the attitudes of delinquent friends are the most salient predictor of delinquency, there is evidence that the behavior of delinquent friends is more important than their attitudes (Agnew, 1991; Warr & Stafford, 1991). In fact, in their study, Warr and Stafford (1991) found that when the attitudes of peers did not correspond with the behavior of peers, the effect of peer behavior on delinquency outweighs the effect of peer attitudes.

However, the greatest shortcoming of DA is Sutherland’s failure to specify precisely the mechanism by which the learning of criminal behavior occurred. This criticism has led to a number of proposed revisions to the theory, with the most

prominent of these revisions being the development of social learning theory (Akers, 1985; 1998; 2000). Social learning theory, developed by Ronald Akers and his colleague Robert Burgess, elaborated and extended DA. To define precisely the learning mechanisms behind DA, Burgess and Akers (1966) linked DA with the learning processes described by operant conditioning theory in behavioral psychology. Social learning theory posits that:

The groups with which one is in differential association provide the major social contexts in which all the mechanisms of social learning operate. They not only expose one to definitions, they also present them with models to imitate and with differential reinforcement (source, schedule, value and amount) for criminal or conforming behavior (Akers, 2000: 76).

Accordingly, in social learning theory, differential reinforcement and imitation are the concepts representing the mechanisms by which learning occurs. While social learning theory is regarded as an important extension of DA, it relies on the psychological principle of operant conditioning rather than symbolic interactionism, the framework that DA was built on, to specify the learning mechanisms behind DA. Hence, from an interactionist viewpoint, the question concerning whether other mechanisms of informal social control, besides definitions as proposed by DA, influence criminal behavior remains elusive (Heimer & Matsueda, 1994).

### Masculinity-Delinquency Theory

Masculinity-delinquency theory is an explicit interactionist theory of delinquency. The theory, formulated by Michael Schwartz and Sheldon Stryker (1970), emphasizes the structure and content of an individual's self as the key predictor of delinquent behavior. In developing their theory, Schwartz and Stryker were influenced by the proposition that the self is a complex and differentiated structure of identities put forth by symbolic

interactionism (see Loftland, 1969; Mead, 1934; Turner, 1962a). Schwartz and Stryker also borrowed from Albert Cohen's (1955) work the image of the delinquent boy as a role player in search of an identity. They also adopted the proposition that variations in self-concepts are related to variations in vulnerability to delinquency articulated by Walter Reckless and his colleagues (Reckless, Dinitz & Murray, 1956). Schwartz and Stryker also drew from their own research in which they examined the process of becoming committed to a deviant identity in a sample of emotionally disturbed children (Schwartz, Fearn & Stryker, 1966).

Masculinity-delinquency theory asserts that delinquency is related to problems in developing a masculine identity. Schwartz and Stryker based this thesis on the masculinity-delinquency literature that suggests that delinquency in American society is a reaction to the difficulties experienced when entering an adult male role (Miller, 1958; Parsons, 1947; Toby, 1966). For example, in his study, Toby (1966) uncovered that juvenile deviance stems from male juveniles' frustration when they do not perceive themselves as moving toward a fully adult role. The masculinity-delinquency literature also highlights the importance of mothers in the process of producing delinquents given the high percentage of female-headed households among lower-class families.

Specifically, this literature suggests that "Expected to become 'manly,' but closely tied to mother, the boy has no assurance that he is a representative and recognizable specimen of his sex. Consequently, he rebels against any impulse suggesting femininity and exaggerates any which would symbolize masculinity" (Schwartz & Stryker, 1970: 29).

Schwartz and Stryker theorized that the content of the self-concept of delinquent boys will reveal concerns and difficulties associated with developing a masculine

identity. They also proposed that delinquent boys' perceptions of their mothers' views of them will also reveal concerns with the problem of acquiring a masculine identity. To assess the above propositions, Schwartz and Stryker subjected their theory to empirical test using data from a sample of 12-15 years old male students in two high schools in a major Midwestern city. Schwartz and Stryker asked the students' teachers to assess the students' likelihood of becoming delinquent (i.e., as "good" or "bad" boys). Schwartz and Stryker hypothesized that boys labeled as "bad" by their teachers are more likely than boys labeled as "good" to 1) have poor and uncertain self-concepts, 2) exclude conventional others as their significant others, 3) express concerns and difficulties with masculine identities and 4) have their identities structured by their perception of their mothers' views of them. To measure the boys' self-concept, Schwartz and Stryker employed the semantic differential technique developed by Osgood and his colleagues (1957) that aims at measuring the meaning of various phenomena to an individual.

Schwartz and Stryker found limited support for their theory. They found that among white boys, "good" boys demonstrated less variability in their self-concepts relative to "bad" boys. However, among black boys, they found no differences in self-certainty between "good" and "bad" boys. As for the hypothesis that "bad" boys would exclude conventional individuals as their significant others, Schwartz and Stryker found that while teachers, parents and peers were significant others for white "good" boys, teachers also were significant others for black "bad" boys. The results also revealed weak support for the hypothesis that masculinity concerns underlie delinquency. Schwartz and Stryker only found evidence of the masculinity problem among lower-class, white

“good” boys. Schwartz and Stryker also found that the self-concepts of white “bad” boys did not reflect their mothers’ views of them.

While they only found limited support for their theory, Schwartz and Stryker’s work represents one of the major empirical studies of an interactionist approach to delinquency (Matsueda, 1992). The theory has also been noted for two main shortcomings. First, it failed to take into account the experiences of black youth and the social structure of the schools from which the boys were drawn from. Indeed, as the authors themselves acknowledged,

We are led to the conclusion either that ours is exclusively a white man’s theory, developed in the main by white men out of the experience of white men, and that it fails to contain the experience of Negroes ... In retrospect, it is clear that we assumed a social-structural constant; that all predominantly lower-class schools with relatively large proportions of Negro students would conform fairly well to stereotype (Schwartz & Stryker, 1970:122-3).

Second, the theory assumed that role-learning is a process of imitating a model when it could be the product of other processes such as role-taking exchanges. In fact, the results emerging from Schwartz and Stryker’s study appear to support the prospect that in the absence of a father or other male model, the mothers cast their sons in a male role and the sons learn the role by responding to such expectations from their mothers. This prospect corresponds with symbolic interactionism’s principles of role continuity and transitions that specify that role casting or the selection into roles is a joint transaction executed between two or more individuals. Hence, greater attention needs to be given to the interaction between interactants, which in the present case, involves mothers and sons (Matsueda & Heimer, 1997).

## Labeling Theories

Similar to masculinity-delinquency theory, labeling theories are explicit interactionist theories of delinquency (see Becker, 1963; Lemert, 1951; Tannenbaum, 1938). The intellectual roots of labeling theories can be traced to symbolic interactionism (Cooley, 1902; Mead, 1934; Blumer, 1969) and the conflict perspective (Chambliss, 1969; Quinney, 1974; Vold, 1958). From symbolic interactionism, labeling theories adopt the insight that an individual's self-concept is the reflection of others' opinions of him. From the conflict perspective, labeling theories embrace the argument that rules and laws are never uniformly enforced; rather, rules and laws are selectively enforced against members of the lower class because they lack collective and individual political and economic power.

As a diverse group of perspectives, characterizing labeling theories is not an easy task. However, one distinguishing feature that sets labeling theories apart from other theories of crime and delinquency is that instead of focusing on the etiology of crime and delinquency, they emphasize the consequences associated with social control processes. Particularly, labeling theories are interested in the consequences following societal reactions to deviant and delinquent behaviors. Because of this distinctive focus, labeling theories are also known as "societal reaction" theories (Paternoster & Bachman, 2001).

The main thesis emerged among labeling theories is that the labels or appraisals of individuals by others will affect their identity, and individuals' identities will in turn affect the likelihood of subsequent deviant or delinquent behavior. Labeling theories also assert that deviant labels are more likely to be applied to members of the lower class or racial minorities due to stereotypical conceptions of deviants by others (Heimer &



Matsueda, 1994) and to those who are economically or politically powerless to resist the label (Schur, 1971).

Two important ideas underlie labeling theories. The first is the notion of the dramatization of evil set forth by Frank Tannenbaum (1938). The second is the concept of secondary deviance proposed by Edwin Lemert (1951). Both ideas aim at explicating how negative labels can have adverse consequences. Specifically, labeling theories suggest that there are two types of deviant acts, primary and secondary deviance. Primary deviance, which has multiple causes, refers to deviant acts that are temporary, isolated and often trivial. Secondary deviance includes deviant acts that are serious and enduring and are acts in reaction to the consequences of a deviant label. Labeling theories argue that when individuals engaging in primary deviance are ignored or not reacted to by society, their identities do not change. Conversely, when individuals engaging in primary deviance are reacted to by society in a negative manner, such as being labeled as criminals or delinquents, their identities are changed. Notably, these individuals' conceptions of themselves will change in such a way that they come to view themselves as the labels dictate (e.g., as a criminal or delinquent). The change in identity brought on by the labeling process further amplifies deviant behavior (i.e., deviance amplification or secondary deviance), further stigmatizes and segregates the individual from conventional society, and ultimately pushes the individual toward a life embedded in crime (Paternoster & Bachman, 2001).

Labeling theories were very popular in the 1960s and 1970s. However, by the early 1980s, it fell into disfavor (Paternoster & Bachman, 2001). The downfall of labeling theories has been attributed to weak/inconsistent empirical support and the criticisms

charged against the theories. For instance, contrary to the theory's hypothesis that who gets labeled is dependent on the characteristics of the individual (i.e., the status characteristics hypothesis), there is evidence that the main determinants of labeling outcomes (i.e., arrest, prosecution, and punishment) include the seriousness of the offense, the wishes of complainant and the criminal history of the offender (Akers, 1968; Wellford, 1975). It is noteworthy that while the status characteristics hypothesis received weak support among adult populations, the evidence among juvenile populations is mixed with some studies found support for the hypothesis (Bishop & Frazier, 1988; Sampson, 1986; Walker, Spohn & DeLone, 2000) while others did not (Tittle & Curran, 1988; Leiber, 1994). Inconsistent results were also reported for the "labeling amplifies deviance" hypothesis (i.e., being labeled leads to more crime and delinquency) with some studies providing support for the hypothesis (Palamara, Cullen & Gersten, 1986) while others do not (Gove, 1980; Smith & Paternoster, 1990).

In addition to having weak/inconsistent empirical support, labeling theories also suffered from several criticisms. In particular, labeling theories were criticized for failing to address the root causes of crime (i.e., primary deviance) and for ignoring the role that human agency may play in the genesis of crime and delinquency (Akers, 1968; Davis, 1972; Gibbs, 1966; Mankoff, 1971). Labeling theories have also been chastised for inadequately conceptualizing key concepts, failing to specify clearly the intervening processes between being labeled and secondary deviance, and ignoring the effects of informal labels (Wellford & Triplett, 1993; see also Paternoster & Iovanni, 1989). Labeling theories were also accused for being overly deterministic and for relying on one

unidimensional theoretical model to explain all deviance (i.e., labeling is the sole cause of secondary deviance).

Perhaps the most important criticism directed against labeling theories was their failure to attend to their intellectual roots, the symbolic interactionism tradition (Heimer & Matsueda, 1994; Matsueda, 1992; see also, Akers, 1968; Paternoster & Iovanni, 1989; Wellford & Triplett, 1993). For instance, whereas the labeling perspective perceives deviance as a status conferred by a social audience, the symbolic interactionist perspective, following Mead's (1934) idea of objective relativism, views deviance as consisting of an objective set of behaviors. As such, unlike the labeling perspective, the symbolic interactionist framework is capable of accounting for all forms of deviance, including primary and secondary forms of delinquency. Further, because symbolic interactionism focuses on the interactional mechanisms within informal groups and how such interaction leads to identity formation, it helps shed light on the consequences of informal labeling by significant others (Heimer & Matsueda, 1994).

In sum, a review of differential association, masculinity-delinquency, and labeling theories reveals the need for a well-developed interactionist model of delinquency. Specifically, what is lacking is an integrated causal model that would account for both primary and secondary forms of delinquency, clearly specify the most proximate determinant of delinquency, and articulate the linkage between the broader social organization and delinquent behavior. Karen Heimer and Ross Matsueda (1994) formulated such a theoretical model in their theory of differential social control. A description of their theory is presented next.

### *Differential Social Control: A Symbolic Interactionist Theory of Delinquency*

As stated previously, the theory of differential social control (DSC) was developed by Karen Heimer and Ross Matsueda (1994) in the 1990s. DSC is an extension of an earlier work undertaken by Matsueda. In 1992, Matsueda attempted to renew interest in interactionist theories of deviance with the publication of his symbolic interactionist theory of the self and delinquency (hereafter, Matsueda's interactionist theory). Matsueda's interactionist theory integrates concepts and ideas set forth by symbolic interactionism and the labeling tradition. Since DSC was built upon Matsueda's interactionist theory, a description of his theory is presented first followed by the description of DSC.

#### Matsueda's Interactionist Theory

In developing his interactionist theory of delinquency, Matsueda drew from both the labeling tradition and symbolic interactionism. From symbolic interactionism, Matsueda incorporated the concepts of reflected appraisals and role taking or the ideas that an individual's self is in part a reflection of others' opinions about the person (reflected appraisals) as well as through social interaction, an individual's self emerges when the individual views himself in terms of the attitudes of others (role taking; Mead, 1934).

Symbolic interactionism also stipulates that within a transaction (i.e., an interaction involving two or more individuals), the mechanism by which individuals influence each other is role-taking. Since role-taking occurs when an individual projects himself into the role of others and appraises the situation from their standpoint, hence, role-taking enables an individual to define the situation that he is in and to coordinate his

lines of action with the actions of others until a jointly desired goal is reached, a new goal is substituted or the transaction is aborted (Matsueda, 1992).

Further, during the course of everyday interaction, similar situations will elicit similar “me’s” (i.e., the aspect of an individual’s self that constitutes conformity to community norms and values) as well as previous “I’s” (i.e., the aspect of an individual’s self that allows for the expression of individuality and innovation in life) from similar past situations. In other words, people will act or behave similarly to how they acted or behaved in previous similar problematic situations. Likewise, when a problematic situation arises repeatedly, such phenomenon will result in unconscious or habitual behavior as people learn to resolve them effectively. However, because the response of the “I” is never completely determined by the “me,” behavior is patterned but never predictable.

Notwithstanding the dialectical relationship between the “I” and the “me,” the consistent emergence of previous “me’s” and “I’s” across situations will eventually produce a stable self. This stable self contains an organized set of stable meanings about oneself from the standpoint of others. Further, the specific meanings or content of the self with respect to certain behavior will be a salient predictor of such behavior. For instance, if the meaning of the self as a delinquent endures across situations, such meaning would predict the individual’s delinquent behavior. Conversely, if the meaning of the self as a law abiding person persists across situations, such meaning would predict the individual’s conforming behavior. Since behavior is influenced in part by the perceptions of oneself from the standpoint of others, behavior is thus controlled by one’s significant others or reference groups (Matsueda, 1992).

From the labeling tradition, Matsueda incorporated the notions of “dramatization of evil” (Tannenbaum, 1938) and secondary deviance (Lemert, 1951). Both notions articulate a process whereby the criminal and juvenile justice systems’ responses to primary deviance (i.e., deviant acts that are temporary, isolated and often trivial) exacerbate further deviance (i.e., secondary deviance). Particularly, these two ideas posit that by labeling an individual a criminal or delinquent, the criminal or juvenile justice system contributes to the crime problem as the label not only alters the individual’s self-image in such a way that he comes to view himself as a criminal or delinquent, it also stigmatizes and disconnects the individual from conventional society. Being excluded from conventional activities and taking on the master status of a criminal or delinquent, in turn, pushes the individual toward criminal and delinquent subcultures and a life further embedded in crime.

The labeling perspective also argues that deviant labels are not randomly applied across the social structure. Instead, the deviant labels tend to concentrate among the poor and the powerless. According to the labeling perspective, “deviance is not [entirely] a quality of the act the person commits, but rather a consequence of the application by others of rules and sanctions to an ‘offender.’ The deviant, hence, is one to whom that label has successfully been applied (and) deviant is behavior that people so label” (Becker, 1963: 9). Since it is society’s reaction to behavior that creates deviance and since individuals who are powerless or who possess values that are different from the dominant group are more likely to get reacted to, deviant labels are applied disproportionately to these classes of individuals.

Merging the above concepts and ideas together, Matsueda's interactionist theory posits that delinquency is largely a function of the meanings of self that are relevant to deviant behavior (i.e., either as a delinquent or conformist). The theory also asserts that an individual's reflected appraisals of self as a delinquent are affected by the actual labels made by significant others such as parents, teachers and peers. Because delinquency is in part determined by the individual's appraisals of self from the standpoint of other, social control of delinquency, therefore, lies in an interactionist conception of the self (Matsueda, 1992).

Matsueda also subjected his theory to empirical test using data from the first three waves of the National Youth Survey (NYS; see Elliott, Huizinga & Ageton, 1985 for a detailed description of the survey). NYS is a longitudinal study of delinquency and drug use and the participating youths reasonably representative of all 11-17-year-olds in the United States. The attrition rates for the three waves of NYS were also low (4% in 1978 and 6% in 1979) and an examination of the patterns of nonparticipation revealed that nonparticipation did not compromise the representativeness of the sample (Elliott, Knowles & Cantor, 1981).

Matsueda derived and tested the following hypotheses: 1) net of prior delinquency, youths from disadvantaged background (i.e., black youth who come from urban, low-income areas and broken homes) will be more likely to be labeled as delinquents; 2) reflected appraisals of self will result partly from the reflection of the objective appraisals made by others; 3) the effect of prior delinquency on reflected appraisals as a rule violator will be mediated by parental appraisals as a rule violator; and

4) prior delinquency will significantly influence reflected appraisals as a rule violator net of parental appraisals.

Overall, Matsueda found support for his hypotheses. Specifically, Matsueda found that delinquency was significantly affected by reflected appraisals of the self as a “rule violator.” Reflected appraisals of the self as a “rule violator,” in turn, were determined by parental labels of youths as rule violators. Matsueda also found that youths from disadvantaged background were more likely to be labeled negatively relative to more advantaged youths. However, most of these effects were found to operate through prior delinquency. Matsueda attributed this finding to the fact that the labels being investigated were those of parents who share the disadvantages of the youth (Matsueda, 1992). There was one notable anomaly that emerged from Matsueda’s results and that proved difficult to explain. Matsueda found that the effect of parental appraisals on delinquent behavior was not mediated by reflected appraisals. This finding has important implications in that it contradicts symbolic interactionism and raises questions about the perspective (Heimer & Matsueda, 1994).

While the initial test of Matsueda’s interactionist theory was encouraging (see also Bartusch & Matsueda, 1996), the theory suffers from a number of shortcomings. For instance, it is probable that besides reflected appraisals, other specific meanings of the self such as specific attitudes held toward delinquent and conforming behavior or anticipated reactions to delinquent behavior by significant others could also be related to delinquency. Likewise, it is possible that parents may form their appraisals based in part on the role occupied by the child (e.g., the role of trouble maker) but never communicate their appraisal to the child. In fact, this point could potentially explain Matsueda’s



anomalous finding regarding the mediating effect by reflected appraisal on the relationship between parental appraisals and delinquent behavior (see Matsueda, 1992). However, perhaps the most important shortcoming associated with Matsueda's study was his failure to attend to the importance and usefulness of structural symbolic interactionism; namely, the evidence from research in structural symbolic interactionism that links interactions to social organization (Heimer & Matsueda, 1994).

In 1994, Ross Matsueda collaborated with Karen Heimer and developed differential social control (DSC) theory. DSC is an elaboration of Matsueda's interactionist theory in that it addresses all of the shortcomings associated with Matsueda's interactionist theory. A description of DSC is presented next.

#### A Theory of Differential Social Control (DSC)

DSC extended Matsueda's interactionist theory by capitalizing on the research and evidence in structural symbolic interactionism and re-conceptualizing role-taking as being conditioned by the broader social organization in which it is embedded. In DSC, social organization constitutes a configuration of roles and interactants occupying similar situations in the social structure would display similarities in role-taking and behavior. Accordingly, through role taking, the organization of the group enters the cognition and behavior of individuals as they locate their positions within the group and act according to group expectations and norms. Hence, through commitment to roles and role identities, social structure is linked to the individual process of role taking (Heimer & Matsueda, 1994).

DSC also stipulates that behavior is never a perfect reflection of role expectation since behavior is influenced by the novelty of the "I." DSC is also cognizant of the fact

that individuals do belong to multiple reference groups and that organized groups vary both in the efficacy and content of group regulation. Therefore, DSC posits that the efficacy of group regulation will depend on the individual's level of commitment to group roles and the degree to which the group serves as his generalized other. Because reference groups could either foster or discourage crime and delinquency depending on their orientation toward the law, reference groups are seen as exerting "differential social control." DSC also suggests that social structural location such as race, age, and social class, influence group commitments and role-taking by affecting individuals' opportunities to interact with conventional and delinquent others (Heimer & Matsueda, 1994).

The concept of role-taking is also expanded in DSC. Particularly, role-taking is conceptualized as encompassing five main elements. The first element, reflected appraisals as a rule violator, refers to the meanings of the self relative to deviant behavior. These meanings are presupposed to arise partly through the mechanisms of role-taking and partly through labeling (see Matsueda, 1992). The second element, holding delinquent attitudes, refers to the likelihood that delinquent solutions to problematic situation will occur. According to DSC, "the attitudes of one's communities and social groups constitute the generalized other and become incorporated into the 'me'" (Heimer & Matsueda, 1994: 367). Further, when attitudes favoring delinquency are incorporated into the "me" over time, they become stable and are elicited in the future to solve problematic situations. DSC also theorizes that if the attitudes of communities and social groups fail to resolve a problematic situation, the individual will sometimes form an attitude that is incongruent with those of his social group (see Miller, 1973). In such

cases, the individual justifies, disclaims or neutralizes the new attitude to make it acceptable to law-abiding social groups (see Sykes & Matza, 1957), or adopts the role of a different generalized other (e.g., a delinquent group) that supports such an attitude (Heimer & Matsueda, 1994).

The third element, anticipated reactions of significant others to delinquent behavior, refers to an individual's ability to anticipate the responses of others (see Mead, 1934). DSC hypothesizes that the more negative the anticipated reactions to delinquent behavior, the less likely such behavior is to occur. The fourth element, associating with delinquent peers, is theorized to affect delinquency directly and indirectly. Directly, delinquent peer association could affect delinquency through the presentation of opportunities and motives for delinquency; indirectly delinquent peer association could affect delinquency through the provision of a pro-delinquent generalized other (see Glaser, 1956). The last element, delinquent histories, suggests that delinquent behavior could also occur via habits or non-reflective thought stemming from previous experiences (Heimer & Matsueda, 1994).

Accordingly, DSC posits that through the process of role-taking or evaluating situations from the standpoint of others, individuals assign meanings to things and events. Relating to delinquent situations, DSC claims that when the impulse to act is interrupted, youths take the role of significant others and reference groups and evaluate the situation from their standpoint. In particular, youths anticipate the likely reactions of parents and peers to delinquency and if the anticipated reactions are negative, they are less likely to engage in delinquent behavior. Youths also consider their own attitudes about rules and laws that are shaped by their commitment to law-abiding and delinquent reference

groups. Youths who are strongly committed to roles in groups that are organized against law violations are less likely to engage in delinquent behavior (Heimer, 1996).

DSC also stipulates that association with delinquent peers affects delinquency both directly and indirectly. Indirectly, delinquent peers provide a pro-delinquent generalized other and directly, delinquent peers provide opportunities and motives for delinquency. Delinquent histories also affect the likelihood of delinquency. According to DSC, when youths have repeatedly solved past problematic situations with law violation, future situations become nonproblematic (i.e., they do not trigger role-taking) as behavior becomes habitual or requires no reflective thought. However, it is noteworthy that even within situations that trigger reflective thought or role-taking, delinquent histories still affect the likelihood of delinquency in that such histories increase the chances of youths becoming committed to delinquent groups, and in turn, take the role of the delinquent groups as their reference groups (Heimer, 1996).

To summarize, in DSC, role-taking constitutes the most proximate determinant of delinquency. Further, through role-taking, social control is transformed into self-control as the organization of reference groups enters the cognition and behavior of individuals (Heimer & Matsueda, 1994; Heimer, 1996). DSC also posits that commitment to reference groups and role-taking will depend in part on social structural location since it influences individuals' communication networks.

To my knowledge, to date, only three empirical tests of DSC have been undertaken. The first study, authored by Karen Heimer and Ross Matsueda, examined the key propositions of DSC as well as juxtaposed DSC's hypotheses with specific hypotheses drawn from competing theories. The second study, authored by Karen

Heimer, assessed the efficacy of DSC in explaining gender differences in delinquent behavior. The third study, authored by Stacy De Coster and Karen Heimer, examined hypotheses concerning common antecedents, continuity and mutual influence between law violation and depression using propositions from DSC and sociological research on mental health. A review of these studies is presented in the next section.

### *Empirical Tests of DSC*

To date, DSC has been evaluated in three empirical studies. The first test of DSC was conducted by its authors and involved data from the three waves of the National Youth Survey (NYS; see Elliott, Huizinga & Ageton, 1985 for a detailed description of the survey; see also, Matsueda, 1992)

To measure the concept of role-taking, Heimer and Matsueda (1994) employed four latent constructs: 1) reflected appraisals as a rule violator, 2) anticipated reactions of significant others to delinquent behavior, 3) delinquent attitudes and 4) association with delinquent peers. The construct of reflected appraisals included youths' responses to the question of whether their parents or friends viewed them as trouble-makers or rule violators. A similar set of questions was used to represent the construct of parental appraisals. Heimer and Matsueda also theorized that the construct of parental appraisals is an antecedent of reflected appraisals.

The construct of anticipated reactions of significant others to delinquent behavior contained youths' perception of their parents' disapproval of vandalism, theft and burglary as well as their friends' disapproval of similar acts. The construct of delinquent attitudes included youths' reports of the extent to which they believe vandalism, theft and

burglary are wrong. The construct of association with delinquent peers contained youths' reports of the number of their friends who have engaged in vandalism, theft and burglary in the previous year.

To measure the concept of commitment to conventional roles, Heimer and Matsueda employed five variables: 1) attachment to family which was measured by youths' reports of the importance of family intimacy and the importance of comfort from and activities with parents; 2) attachment to peers which was measured by youths' assessments of the importance of time spent with their friends and being included in their activities; 3) commitment to school roles which was measured by youths' reports of the importance of getting good grades and the importance of school in general; 4) expectations of future employment which was measured by youths' assessments of them getting the kind of job that they would like to get; and 5) expectations of a college education which was measured by youths' assessments of whether they will obtain a college degree.

Heimer and Matsueda also included background variables such as race, age, number of siblings, family situation, residence, family income, residential stability and neighborhood crime (measured by parental reports of vandalisms and burglary) as structural location and residential indicators. Finally, Heimer and Matsueda's outcome variable consisted of a 28-item index of self-reported illegal acts, including property, violent, public disorder, and drug offenses (see Elliott & Ageton, 1980).

In addition to examining the key propositions of DSC, Heimer and Matsueda also derived specific hypotheses from the classical theories of differential association, control and labeling theories and compared them against DSC's hypotheses. In particular,

Heimer and Matsueda compared the hypothesis that association with delinquent peers affects delinquency principally through the differential association process of learning and reinforcing attitudes about delinquency as posited by differential association theory, with DSC's hypothesis that other aspects of the role-taking process such as forming reflected appraisals and anticipating reactions to delinquency are also important determinants of delinquency. Heimer and Matsueda also juxtaposed the hypothesis that pro-delinquent organizational controls have no effect on future delinquency derived from social disorganization theory (note that a pure disorganization model would stipulate that delinquency is the direct result of structural conditions that reflect disorganization and weak institutional ties) and the hypothesis that systematic sources of delinquent motivation such as having delinquent peers and reflected appraisals as a rule-violator will have no effect on future delinquency as asserted by control theory, with DSC's hypothesis that both pro-delinquent organizational controls and systematic sources of delinquent motivation affect future delinquency.

Heimer and Matsueda also assessed hypotheses derived from labeling theory against those from DSC. Heimer and Matsueda conceptualized the proposition of deviance amplification specified in labeling theory as a special case of a differential social control process. That is, because labeling theory does not specify the intervening mechanisms leading to secondary deviance or deviance amplification, Heimer and Matsueda hypothesized that disadvantaged youth are more likely to be falsely labeled by their parents in part because they frequently engage in delinquent activities and also because their parents may act on stereotypical images of delinquency.

Heimer and Matsueda derived and tested the following hypotheses: 1) role-taking, measured by reflected appraisals of the self as rule violator, delinquent attitudes, anticipated disapproval of delinquency from parents and peers, and association with delinquent peers, are related to delinquency; 2) commitment to conventional roles, structural locations, and residential characteristics affect delinquency indirectly through role-taking; 3) association with delinquent peers, anticipated disapproval of delinquency by parents and peers, and prior delinquency affect delinquency net of delinquent attitudes (note that this hypothesis tests differential association theory against DSC); 4) youths from disadvantaged background (i.e., black youth who come from urban, low-income areas and broken homes) are more likely to be labeled as delinquent (this hypothesis is related to labeling theory); and 5) the effects of commitments to conventional roles on delinquency are mediated by role taking (this hypothesis tests social disorganization and control theories against DSC).

The results from Heimer and Matsueda's study culminated in five main findings. First, among the elements of role-taking, Heimer and Matsueda found that reflected appraisals, delinquent peers and delinquent attitudes were all significantly related to delinquency. Heimer and Matsueda also found that anticipated reactions by parents to delinquent behavior, but not anticipated reactions by peers, were significantly related to delinquency. Second, Heimer and Matsueda found that commitments to conventional roles, structural locations and residential characteristics all affected delinquency indirectly through role-taking. Third, while Heimer and Matsueda did find support for differential association theory (i.e., delinquent attitudes were significantly related to



delinquency), they also found that delinquent peer association and prior delinquency affected delinquency net of delinquent attitudes.

Fourth, Heimer and Matsueda found limited support for the labeling hypothesis of deviance amplification. Specifically, Heimer and Matsueda found that after controlling for prior delinquency, only race exerted a significant effect on parental labeling (i.e., only black youths were more likely to be falsely labeled by their parents). Fifth, Heimer and Matsueda found support for social disorganization and control theories; namely, that strong ties to conventional institutions were significantly and positively related to delinquency. However, the effects of these ties on delinquency were mediated by role-taking.

It is noteworthy that the results generated from Heimer and Matsueda's study also helped explain the anomalous finding found in Matsueda's earlier test. That is, Matsueda found that parental appraisals affected delinquency even net of reflected appraisals (see Matsueda, 1992). In the present study, Heimer and Matsueda discovered that the effects of parental appraisals on delinquency were mediated entirely by reflected appraisals and association with delinquent peers. This finding indicates that youth who were appraised negatively by their parents were more likely to engage in subsequent delinquent activities in part because of their perception of the appraisals and in part because they came into contact with peers who are delinquent.

The second empirical test of DSC, published in 1996, was authored by Karen Heimer. In this study, Heimer sought to extend DSC by demonstrating its efficacy in explaining the observed gender differences in delinquency. Heimer theorizes that typical gender definitions - beliefs about femininity and masculinity - are acquired and

incorporated into an individual's self-concept (the "me" aspect of the self) through role-taking (Mead, 1934). Further, just as internalized attitudes about rules and laws become fairly stable dimensions of role-taking over time (as long as youths' reference groups remain the same), Heimer argues that gender definitions also become somewhat stable over time. However, given that female delinquency is regarded as gender-inappropriate behavior and more deviant than similar behavior displayed by males, Heimer hypothesizes that the effect of gender definitions on delinquency will only impact girls but not boys. Heimer also proposes that the reactions of others will have greater consequences for girls than boys based on the evidence that females appear to be more concerned with interpersonal relationships than males. Finally, Heimer also notes the possibility that girls who internalized both gender definitions and attitudes about rule and law violations may display divergent behavioral outcomes (Heimer, 1996).

Drawing from the principles of DSC and her propositions relating to gender definitions discussed above, Heimer derived the following hypotheses: 1) among both males and females, holding attitudes favoring rule and law violations will increase the chances of subsequent delinquency while anticipating disapproval of delinquency by parents and peers will decrease the chances of subsequent delinquency; 2) the effect on delinquency of internalizing gender definitions will differ across gender; 3) the effects on subsequent delinquency of anticipating disapproval from parents and peers will differ across gender; and 4) for both males and females, prior delinquency will affect subsequent delinquency directly as well as indirectly by reducing commitments to families, increasing commitments to delinquent peers, increasing the chances that youths

will form attitudes favoring rule and law violations, and decreasing anticipated disapproval of delinquency by significant others.

The second test of DSC yielded the following findings. First, attitudes favoring deviance increased the likelihood of delinquency among both boys and girls. Second, internalizing gender definitions in tandem with attitudes favoring deviance and anticipated disapprovals of delinquency by friends affected girls' delinquency. On the other hand, internalizing gender definitions and anticipated disapprovals of delinquency by parents and friends did not influence boys' delinquency. Third, attitudes favoring deviance and delinquency were the most proximal factors affecting boys' delinquency but attitudes favoring delinquency did not affect girls' delinquency. Fourth, commitment to family, commitment to friends, and association with delinquent peers affected both boys and girls' delinquency indirectly by influencing role-taking. Finally, prior delinquency affected delinquency directly as well as indirectly among both boys and girls.

The results from the second test of DSC provided further support for the theory in demonstrating that delinquency by both girls and boys occurs through the process of role-taking. Role-taking, in turn, is shaped by group commitments and social structural locations. The results also reveal that among both girls and boys, commitments to groups exert differential social control in that some groups, such as families, encourage role-taking leading to law-abiding behavior whereas other groups, such as peer groups, foster role-taking leading to law-violating behavior.

The third test of DSC, published in 2001, was authored by Karen Heimer and her colleague, Stacy De Coster (De Coster & Heimer, 2001). In this study, De Coster and

Heimer examine hypotheses concerning common antecedents, continuity and mutual influence between law violation and depression using the propositions of DSC and sociological research on mental health. In particular, De Coster and Heimer were interested in examining two explanations that have been put forward to account for the positive association between law violation and depression. The first explanation claims that the observed relationship is spurious because law violation and depression are determined by common antecedents and resulted through a similar process (see Hagan, 1988; Hagan & Wheaton, 1993; Rutter, 1989). The second explanation argues that law violation and depression are related because they influence each other over time (see Kaplan & Xiaoru, 1994; Kaplan, Martin, & Johnson, 1986). Given that the precise nature of the relationship has not been determined, De Coster and Heimer sought to develop an interactionist account for the relationship.

Applying the principles in DSC and drawing from sociological research on mental health, De Coster and Heimer tested whether crime and depression are linked through common antecedents or mutual influences. De Coster and Heimer also sought to offer an explanation for the consistency or continuity in crime and depression over time. They proposed the following causal mechanisms: 1) social structural positions such as race, urbanicity and family income will affect the chances that individuals will be exposed to stressful events; 2) exposure to stressful events, in turn, will trigger law violation and depressive problems during adolescence; 3) adolescent law violation and depressive problems will subsequently shape social support and identities; and 4) social support and identities will influence both crime and depression in early adulthood.

Similar to the first and second tests of DSC, De Coster and Heimer employed data from the National Youth Study (see Elliott et al., 1985) to test their hypotheses. Further, De Coster and Heimer capitalized on data collected over a six-year-span (i.e., data that were gathered in 1977, 1978, 1981, 1982, and 1983). It is noteworthy that the attrition rate over this six-year-span was low (13%) and a comparison of respondents across the waves revealed that loss by demographic variables and delinquency did not compromise the representativeness of the sample. After conducting pairwise deletion of missing data, the final sample for their study included 1,550 subjects and their parents (De Coster & Heimer, 2001).

De Coster and Heimer constructed six blocks of variables to test their hypotheses. The first block contained background variables (family income, race, urbanicity) and control variables (age and sex). The second block included the number of stressful events (parental divorce, serious illness or death in the family) that occurred in the year prior to 1977. The third block consisted of youths' self-reported delinquency during the year between 1977 and 1978 and self-reported depressive problems that occurred in 1978. The fourth block contained the scales of family attachment and friend attachment. Family attachment was measured using three questions asking youths how close they feel to their families, how interested they perceive the family to be in their problems, and how willing the families are to listen to them. Friend attachment was measured using three questions asking youths the importance of having friends, the importance of being included in activities with friends, and the importance of spending time with friends.

The fifth block included the scales of reflected appraisals as a rule violator and reflected appraisals as a distressed person. Reflected appraisals as a rule violator were

measured using four questions asking youths whether their parents and friends view them as troublemakers and whether their parents and friends view them as rule breakers.

Reflected appraisals as a distressed person were measured using four questions asking youths whether their parents and friends view them as often upset and whether their parents and friends view them as having many personal problems. Finally, the sixth block consisted of youths' self-reported crime during the year between 1982 and 1983 and self-reported depression. Self-reported crime encompassed both delinquency and early adult crime. Delinquency was measured using a 21-item scale tapping property, violent, drug and public disorder offenses while early adulthood crime was measured using a 25-item index of illegal acts. Self-reported depression was measured using questions asking youths about loss of appetite, unusual sleeping patterns, loss of energy, inability to concentrate, feelings of worthlessness and thoughts of suicide.

To assess the claim that law violation and depression share common antecedents, De Coster and Heimer derived the following hypotheses: 1) social structural factors will increase the chances of exposing youths to stressful events and stressful events, in turn, will increase the chances of delinquency and depressive problems during adolescence; 2) early experiences with delinquency and depressive problems will weaken attachments to families and friends; 3) strong attachments to family and friends will reduce reflected appraisals as a rule violator as well as reflected appraisals as a psychologically distressed individual; and 4) reflected appraisals of self will directly influence crime and depression in that reflected appraisals as a rule violator increasing the likelihood of crime and reflected appraisals as psychologically distressed increasing the likelihood of depression.

To account for the continuity in law violation and depression, De Coster and Heimer derived the following hypotheses: 1) adolescent delinquency will increase the chances of early adulthood crime and 2) adolescent depressive problems will increase the chances of early adulthood depression. To evaluate the claim that law violation and depression influences each other over time, De Coster and Heimer derived the following hypotheses: 1) adolescent delinquency will increase the chances of early adulthood depression and 2) adolescent depressive problems will increase the chances of early adulthood crime.

In regard to the argument that law violation and depression share common antecedents, De Coster and Heimer found support for this claim. Particularly, in congruence with their hypotheses, they found that social structural positions, such as living in urban neighborhoods and lower socioeconomic status, predisposed individuals to stressful experiences, including parental divorce and criminal victimization. Stressful experiences, in turn, increased the likelihood of delinquency and depressive problems during the adolescent years, which in turn, reduced attachment to family and friends. Stressful experiences were also found to increase deviant reflected appraisals and eventually increase the likelihood of crime and depression in early adulthood. De Coster and Heimer also found that strong family attachment reduced the chances that youths form reflected appraisals as rule violators and as distressed persons. However, they did not find the same effects on reflected appraisals of friend attachment. De Coster and Heimer also found that deviant reflected appraisals significantly influenced both crime and depression during early adulthood.

As for their hypotheses concerning the continuity of law violation and depression over time, De Coster and Heimer found significant effects on early adulthood crime and depression of adolescent delinquency and depressive problems. Lastly, as to the claim that law violation and depression influence each other over time, De Coster and Heimer found partial support for this contention. Specifically, De Coster and Heimer found that while adolescent delinquency increased the chances of early adulthood depression, adolescent depressive problems did not increase the chances of early adulthood crime. The results also revealed that the effects on early adulthood crime and depression of continuity in law violation and mental health problems were more pronounced than the effects on early adulthood crime and depression of mutual influence between these problems over the six-year period.

Accordingly, this study extended DSC by demonstrating that in addition to crime and delinquency, DSC is applicable and effective as explanations for other individual-level problems such as depression. Indeed, the value and import of DSC are evident from the review of the theory's empirical tests presented above. In this dissertation, I seek to extend DSC further by subjecting the theory to an empirical test using a sample of adult offenders, employing a different data set, and examining the outcome of recidivism. Given that previous tests of DSC all utilized samples of youths or youths and young adults and thus, the question concerning the efficacy of DSC in explaining law-violating behavior among adults, particularly high-risk adults, remains elusive. In this dissertation, I am going to subject DSC to an empirical test using a sample of high-risk inmates released from Maryland prisons.



Further, since previous tests of DSC all drew from the same data set (NYS) the question concerning the applicability of DSC in other data sets remains unanswered. In this dissertation, I am going to employ data from the Maryland Boot Camp Experiment to test key hypotheses from DSC. Lastly, this dissertation also expands DSC's explanatory power by focusing on the outcome of recidivism (i.e., secondary deviance). As stated previously, while Heimer and Matsueda argue that the individual-level mechanism explaining secondary deviance should be identical to the mechanism accounting for primary deviance, to date, no one (to my knowledge) has focused on using DSC to explain recidivism. In the next chapter, I present my research hypotheses, describe my data and outline my analytic strategy to test my hypotheses.

## CHAPTER 3: DATA AND METHODS

The aim of this dissertation is to test key hypotheses from Heimer and Matsueda's Differential Social Control (DSC) theory. These aims are pursued by using DSC to explain recidivism among a sample of offenders released from Maryland prisons. In this chapter, I present my research hypotheses and describe the data including a discussion of the sample and key measures. I also delineate the analytic strategy used to test my hypotheses.

### *Hypotheses*

DSC posits that the proximate cause of crime is "role-taking." Role-taking encompasses five processes. First, individuals who adopt deviant meanings of the self are likely to engage in criminal behavior. Second, individuals who incorporate deviant attitudes (i.e., attitudes favorable toward deviance) into the self are more likely to engage in crime and this likelihood increases as the strength of deviant attitudes increases. Third, individuals who anticipate that significant others (e.g., family and close friends) disapprove of crime are less likely to engage in criminal behavior and the stronger the anticipated disapproval, the lower the likelihood of criminal behavior. Fourth, individuals who associate with anti-social peers are more likely to engage in crime because these deviant peers are likely to serve as a generalized other and because associating with deviants leads to increased opportunities for crime. That is, delinquent friends have direct and indirect influences on the likelihood of offending. Indirectly, delinquent peers serve as a generalized other and as such, affect the other aspects of role-taking. Directly,

delinquent peers affect the likelihood of criminal behavior as merely being in the presence of delinquent peers induces criminal behavior. This implies that part of the relationship between delinquent peers and criminal behavior is mediated by role-taking. Fifth, individuals with more extensive prior experience with delinquency are more likely to engage in crime as criminal behavior becomes a scripted or habitual response to problematic situations for these individuals. Again, this implies that part of the relationship between criminal behavior and this concept is partially mediated by role-taking as the habitual, scripted nature of offending affects reflected appraisals, delinquent attitudes, and anticipated disapproval of significant others.

I use these five propositions to explain recidivism among a sample of offenders released from Maryland prisons. While DSC focuses on explaining “primary deviance,” its authors specifically note that “the individual-level mechanisms explaining the [self-fulfilling] prophesy [of secondary deviance] will be identical to those mechanisms generating primary deviance” (Heimer & Matsueda, 1994: 372). Combining these five propositions with my focus of explaining recidivism yields the following five hypotheses:

- H<sub>1</sub>: Parolees who believe that their family and friends perceive them as troublemakers are more likely to recidivate.
- H<sub>2</sub>: Parolees expressing attitudes favorable to crime are more likely to recidivate.
- H<sub>3</sub>: Parolees who perceive that their friends are anti-social are more likely to recidivate.
- H<sub>4</sub>: Parolees who believe that their family and friends disapprove of criminal behavior are less likely to recidivate.

H<sub>5</sub>: Parolees with more extensive criminal histories are more likely to recidivate.

While role-taking is the proximate cause of offending according to Heimer and Matsueda, the likelihood of offending is also affected by more distal factors, namely, role commitment and social location. Heimer and Matsueda argue that taking the role of the generalized other shapes individuals' cognition. That is, individuals "adjust their conduct according to group expectations and norms, and appraisals linked to those positions" (Heimer & Matsueda, 1994: 368). Hence, the generalized other that one refers to in problematic situations is affected by the organized groups in which one is involved as "commitment to a specific role in an organized group increases the likelihood of that group serving as a generalized other in problematic situations" (p. 369). This statement indicates that Heimer and Matsueda believe that role commitment primarily affects criminal behavior via role-taking. The two most important commitments in young adulthood (this is the age range of the current sample) are commitments to family (spouse/girlfriend and children) and employment (see Sampson & Laub, 1993). Therefore, I hypothesize:

H<sub>6</sub>: The effect of parolees' attachment to family and job on recidivism is mediated by role taking.

Similarly, Heimer and Matsueda posit that indicators of one's social location (e.g., race, gender, age) primarily affect involvement in crime indirectly by influencing "group [role commitment] and individual processes [role-taking]" (Heimer & Matsueda, 1994: 370). Hence, I hypothesize:

H<sub>7</sub>: Role commitment and role-taking mediate the effects of demographic factors on recidivism.

The seven hypotheses listed above test core propositions of DSC. Next, I describe the sample and data and present the key measures.

### *The Maryland Boot Camp Experiment*

The data utilized in this dissertation comes from the Maryland Boot Camp Experiment, a randomized experimental evaluation of the state of Maryland's only correctional boot camp for adult offenders. This evaluation was conducted from January 2002 to January 2004. The main objective of the evaluation was to determine whether a correctional boot camp with a treatment orientation (i.e., includes addictions treatment, life skills component and basic education courses), namely the Herman L. Toulson Boot Camp, reduces recidivism in comparison to a standard correctional facility (the Metropolitan Transition Center) that also had a treatment orientation but had no military component (see MacKenzie, Bierie & Mitchell, 2007, for a full description of this study). Below, I summarize the key aspects of this evaluation.

The Herman L. Toulson Boot Camp (hereafter, "TBC") was established in 1990 in an effort to reduce prison overcrowding and as a means to motivate inmates to become responsible and productive citizens. The facility is staffed with social workers, substance abuse counselors, educators, and correctional officers many of whom have previous military background either in the Marine Corps or other branches of the armed forces.

TBC mixes the military model with three key treatment components. TBC, like all correctional boot camps, is designed to be similar to military basic training. Inmates wear

uniforms similar to the ones wore in military. Inmates march to and from place to place and participate in strenuous physical exercises. Each day at TBC is highly structured and inmates are constantly engaged in some activity. Further, there is a strictly enforced set of rules that all inmates must abide by. These rules regulate not only inmates' comportment, but also the way inmates present themselves.

Unlike many other correctional boot camps, TBC has a significant treatment component. Inmates are required to participate in adult basic education programming, drug treatment/education programming, and a cognitive-behavioral life skills training program. Thus, TBC integrates a treatment component into a military model.

Finally, while the TBC serves both male and female offenders, only male offenders are housed at the facility. Female offenders participating in the program are transported to the facility from a nearby women's facility each morning and return in the evening.

The Metropolitan Transition Center (hereafter "MTC") is one of the oldest continually operating correctional facilities in the U.S. Originally, MTC operated as a maximum-security prison. At present, MTC serves as a pre-release facility and as such, all inmates are within 18 months of their expected parole release dates. Like TBC, MTC also has adult basic education programming, drug treatment and education programs, and a life skills component. The main difference between TBC and MTC is that MTC does not have a military component. Hence, inmates at the MTC have much less structure than inmates at TBC. Many inmates at MTC spend their time watching television, reading, playing dominoes and other games, and sleeping.

## Sampling

To be eligible for TBC, inmates had to be relatively young, non-violent offenders, with limited criminal histories. Specifically, the eligibility criteria for TBC specify that inmates had to be:

- less than 36 years of age;
- incarcerated for a non-violent offense;
- serving their first extended period of incarceration as an adult (i.e., a period of incarceration of 60 days or more);
- serving a sentence of 2 to 5 years; and
- physically and psychologically fit to participate in the boot camp program.

The final eligibility criterion was that all inmates had to sign a Mutual Agreement Program (“MAP”) contract with the Parole Commission and the Maryland Division of Corrections. MAP contracts stipulated that in return for completion of the TBC program (or MTC programming, if randomly assigned to that facility) inmates would receive a guaranteed early release date. Typically, the early release date was set at six months after program entry. Accordingly, in return for their participation in these programs/facilities, inmates’ prison terms, once anticipated good time is factored in, were reduced by 6 to 18 months. It should be noted that inmates who failed to meet the provisions of the MAP contract had their MAP contracts terminated, their original sentence was re-imposed, and they were re-assigned to a different correctional facility. Further, non-compliant inmates assigned to either facility could have their MAP contract revoked.

### Randomization

Eligible inmates volunteering for TBC were originally held in a staging area at the TBC, but were not allowed to participate in any TBC activities. There they awaited the Parole Commission's approval of their MAP contract. Each month, after the Parole Commission's approval had been granted but before entry in the TBC program, inmates were randomly assigned to complete their terms of the MAP contracts at either TBC or MTC. Of the 238 inmates with approved MAP contracts, 113 were randomly assigned to TBC and the other 125 were randomly assigned to MTC. Inmates entered the two facilities each month in platoons of 8 to 20 inmates.

### Data Collection

Two sources of data were collected for the Maryland Boot Camp Experiment. First, surveys were administered prior to program entry and exit. Second, official criminal history record checks were conducted to measure recidivism and prior criminal history (i.e., criminal history prior to program entry).

With regard to the surveys, inmates were surveyed in groups approximately one week before program entry and again about one week before release. Before inmates learned the results of the random assignment procedure, the research team administered a 45-minute voluntary survey ("baseline survey"). The baseline survey measured demographic features, employment history, history with drugs and alcohol, self-reported criminal history (both juvenile and adult), attachment to employment and family, anti-social attitudes and association with anti-social peers. A similar 45-minute survey was administered prior to release ("exit survey"). The exit survey measured perceptions of the assigned correctional facility, prison victimizations (i.e., victimization within the



assigned facility), changes in relationships with friends and family, plans for the future, and crime problems in the neighborhood of release. The exit survey also used the same anti-social attitudes questions as the baseline survey to assess changes in such attitudes.

Inmates were informed that participation in the survey was voluntary and their responses would remain confidential. Participating inmates were asked to sign an informed consent form. Both surveys were administered in a group format and the survey was read aloud to help inmates with limited reading skills.

In all, 203 of the 238 inmates completed both surveys. This yielded an overall survey completion rate of 85%. Most of the inmates who did not complete both surveys were either released before they could be asked to participate in the exit survey (16), had their MAP contract revoked for violation of the agreement (14), or declined to participate in the study (5). Also, while program dropouts were included in the data, there were very few dropouts who completed both surveys as well as had recidivism data. Hence, the inclusion of dropouts had very minimal impact on study findings.

Official criminal history and recidivism data were obtained from records checks conducted by the Maryland Department of Public Safety. The records checks were conducted in November of 2005. Because inmates came into the study in monthly platoons, the time at risk for recidivism varied from 32 days to 1208 days (mean time at risk = 791 days, median = 798 days). Accordingly, one complication with these data is the fact that time at risk varies greatly.

### *Sample*

The sample for this dissertation consists of 162 inmates who completed both baseline and exit surveys. Table 1 shows the demographic and other characteristics of the sample. As shown in Table 1, this sample of inmates was comprised of young (mean age 23 years), mostly African American (82%) males. Most of the inmates were unmarried and did not complete high school. Many lacked full-time employment prior to incarceration. Also, while these inmates were serving their first extended term of incarceration, they had considerable prior contact with the criminal justice system. In particular, on average, sample members had approximately 5 prior arrests and 2.5 prior convictions. Finally, the number of months these former inmates have been in the community range from 32 days to 1208 days (mean time at risk = 791 days, median = 798 days) and almost two-thirds (62%) of the inmates were rearrested at least once during the tracking period.

### *Measures of Key Constructs*

In this section, I discuss measurement of key DSC concepts. I begin by discussing the calculation of scale scores. Then I describe each scale and any modifications made to the original scale.

The adequacy of each scale was assessed in two ways. First, to assess the strength of the association between each item and its scale, corrected correlations (i.e., item-to-total correlations excluding the item of interest) were computed. While there is no universal criterion for suitable item-to-total correlations, consistent with Steiner and Norman (1995), I used a criterion of .20 as an acceptable correlation between item and

scale score. Items with correlations below .20 were dropped from the scale one at a time (lowest first) and then item-to-total correlations were re-computed. Second, to assess the internal consistency of each scale, Cronbach's alpha was computed for each scale after conducting item-to-total correlations. Again, while there is no one agreed upon standard for acceptable levels of internal consistency, following scholars, such as Nunnally and Bernstein (1994), I used a common criterion of .70 as a cut-off for acceptable internal consistency.

Each scale was standardized to facilitate interpretations, and to ease comparisons between scales measured on different response formats. For example, most of the scales were measured on five-point scales, but one scale was measured on a one-point (true/false) scale.

Finally, to minimize the loss of observations due to missing data on scale items, respondents who completed at least 80% of each scale's items were retained in the analysis. Specifically, for respondents with missing data on a scale but who completed at least 80% of the scale, scale scores were based on the items they did complete. Respondents who completed less than 80% of any scale were coded as missing on that scale.

### Role-Taking

The baseline and exit surveys included measures of role taking, role commitment, and social location. The measure of role-taking was constructed to parallel the measure employed in Heimer and Matsueda's (1994) research. According to Heimer and Matsueda, role-taking encompasses five components: reflected appraisals, anticipated parents and friends' disapproval, delinquent attitudes, delinquent peers and prior criminal

history. The exit survey contained items designed to measure all of these constructs, except delinquent peers and prior criminal history, which were measured on the baseline survey.

Reflected appraisals was measured by six items; three of which assess the respondent's perceptions of how his family views him (e.g., "Your family thinks you are a trouble-maker) and three parallel items assess the respondent's perceptions of how his friends view him (i.e., these questions are the same as those posed about family perceptions but the word "friends" replaces family). All of these items were measured on a five-point scale - strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree - with higher scores indicating that the respondent perceived his family and friends view him as a troublemaker. All of the reflected appraisal items displayed adequate item-to-total correlations. Cronbach's alpha for this scale was .76. Table 2 displays the wording of each item for the reflected appraisals scale, as well as descriptive statistics for each item.

The measures of anticipated disapproval from family and friends were also constructed to parallel the measures used in Heimer and Matsueda's (1994) study. The construct of anticipated disapproval from family was measured by five items (e.g., "Would your family approve if you sold drugs"). Similar to the construct of reflected appraisals, all of these items were measured on a five-point scale: strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree. Higher scores on this construct indicate that the respondent anticipated his family would disapprove of criminal behavior. A similar set of items was used to measure the concept of anticipated disapproval from friends (i.e., these questions are the same as those posed about

anticipated disapproval from family but the word “close friends” replaces “family”). Higher scores on this measure indicate that the respondent anticipated his friends would disapprove of criminal behavior. Both the anticipated family disapproval and anticipated friends’ approval scales exhibited adequate reliability. In particular, all of the item-to-total correlations were greater than .20 and Cronbach’s alpha for each scale is greater than .87. Table 2 lists the wording of each item for the anticipated disapproval by family and friends scales, as well as descriptive statistics for each item.

The Anti-Social Attitudes subscale of the Jesness Inventory (Jesness, 1983; 1986) was used to measure antisocial attitudes. It should be noted that the anti-social attitudes scale utilized in this dissertation is different from the delinquent attitudes scale employed by Heimer and Matsueda (1994) which contained youths’ own reports of the extent to which vandalism, theft and burglary are wrong. That is, the Jesness Inventory, employed in this dissertation, was designed to tap “... the generalized disposition to resolve problems of social and personal adjustment in ways ordinarily regarded as showing a disregard for social customs or rules” (Jesness, 1969: 45). Further, the Jesness Inventory has been found to be successful in predicting offending among juveniles as well as adults (Caldwell, Silvermand & Lefforge, 2004; Jesness, 1986; Jesness & Roberts, 1983; Pineseault, 1999; Posey, 1988) and to be associated with recidivism (Jesness 1983; Jesness & Wedge, 1984). The Anti-Social Attitudes subscale of the Jesness Inventory contains 30 true/false items (e.g., “When you’re in trouble, it’s best to keep quiet about it”) and six of the 30 items displayed substandard item-to-total correlations (these six items are italicized in Table 2). After dropping these items Cronbach’s alpha was .81.

Table 2 displays the wording of each item for the anti-social attitudes scale, as well as descriptive statistics for each item.

The construct of criminal associations used in this dissertation was measured by 11 items that assess the respondent's perceptions of their friends' anti-social behaviors/attitudes (e.g., "In the 12 months before you came to this facility, did your friends trade, sell, or deal drugs?"). These items were measured on a five-point scale - never, rarely, sometimes, often, and always – with higher scores indicate that the respondent perceived his friends to have anti-social behaviors or attitudes. This construct is also different from the delinquent friends construct employed by Heimer and Matsueda (1994) which asks the respondents to report the number of their friends who have engaged in vandalism, theft or burglary in the past year. One item on the criminal associations scale was dropped due to a low item-to-total correlation. The resting 10-item scale exhibited very high internal consistency (Cronbach's alpha = 0.88). Table 2 lists the wording of each item for the construct of criminal associations and descriptive statistics for each item.

Finally, the measure of prior criminal history was obtained from a criminal records check conducted by the Maryland Department of Public Safety in November of 2005. From this records check, Dr. MacKenzie's research team counted the number of arrests reported for each former inmate before entry into the study (see Table 1).

### Role Commitment

In Heimer and Matsueda's initial test of DSC (1994) they broke role commitment into seven components: attachment to family, attachment to friends, parents' appraisal, parents' disapproval, commitment to school, expectations of a good job and expectations

of a college education. Because the participants in the Maryland Boot Camp experiment were older than the sample used by Heimer and Matsueda, participants were not asked items relating to school. Further, parental appraisal and disapproval were not measured, because respondents' parents were not surveyed. Instead, role commitment was measured by attachment to spouse/partner, attachment to employment, and employment/school status upon release as these roles were more appropriate for young adults.

Attachment to spouse/partner was measured by 7 items that assess the respondent's perception of his relationship and activities with his spouse or partner (e.g., "In the 12 months before you came to this facility, I was happy with the relationship"). These items were measured on a five-point scale - never, rarely, sometimes, often, and always – with higher scores indicate that the respondent perceived his relationship with his spouse or partner as favorable. Cronbach alpha for this construct was 0.80. Also, the item-total correlations for this construct revealed that all of the items had adequate correlations with the total scale score. Hence, no items were dropped from this scale. Table 3 contains these items and their descriptive statistics.

It is important to note that my measure of attachment to significant other is based on attachment to spouse or partner (girlfriend). Yet, extant research indicates that spouses, but not girlfriends, are a key factor in desistance (see e.g., Farrington & West, 1995; Horney, Osgood & Marshall, 1995). These findings suggest attachment may only matter if the parolee is married. To test this predictor I created an interaction term between marital status (married vs. unmarried) and attachment to spouse/partner. If this interaction term is significant, this indicates that wives have a more powerful influence on desistance than other amorous arrangements.

Attachment to employment was measured by 6 items that assess the respondent's perception of his employment, employer and co-workers (e.g., "In my last job, I really enjoyed working there"). Similar to the construct of attachment to family, these items were measured on a five-point scale - never, rarely, sometimes, often, and always – with higher scores indicating the respondent's perception of his employment, employer and co-workers were favorable. An examination of the item-total correlations for this construct revealed that one item had a correlation that was below .20. Therefore, this item was dropped from the scale. The revised attachment to employment scale exhibited high internal consistency (Cronbach's alpha = .91). Table 3 contains all of the scale's items and their descriptive statistics. (The item that was dropped from the scale is italicized in Table 3.)

Employment/school status upon release was measured using the question, "Have you ALREADY found a job or a place to go to school when you leave here." This item was coded where 1= the respondent has found a job or a place to go to school and 0=the respondent has not found a job or a place to go to school. Table 3 contains the descriptive statistics for this item.

### Structural Location

Structural location indicators included the following items: age, race, education level, marital status, and employment status prior to imprisonment (see Table 1). Education level, marital status, and employment status prior to imprisonment were recoded as dummy variables. Specifically, education level was coded where 1=high school dropout and 0= having a high school diploma or higher degree, marital status was



coded where 1=unmarried and 0=married, and employment status was coded where 1=employed part-time and 0=employed full-time.

### Other Measures

In addition to the constructs of role-taking, role commitment, and structural location, the measures of the facility where the inmates served their time (i.e., TBC or MTC), and time at risk for recidivism were included as control variables (See Table 1). Time at risk for recidivism was recoded in months (instead of days) with values ranged from 4 months to 40 months, with a mean of 27 months and a standard deviation of 7.59. Finally, the dependent variable, recidivism, was coded as a dichotomous variable where 1 = recidivated and 0 = did not recidivate (See Table 1).

### *Validity Assessment*

Above I have described key measures of DSC concepts and demonstrated the reliability (internal consistency) of these measures. Here I conduct a validity assessment to examine whether these measures accurately gauge the intended concepts. More specifically, because prior research consistently finds a sizeable positive correlation between prior and future criminal conduct (see e.g., Gendreau, Little & Goggin, 1996; Nagin & Paternoster, 1991, 2000), I assessed the concurrent validity of key DSC measures by examining the correlations between these measures and two measures of prior offending, official prior arrests and self-reported prior arrests. Logically, if my measures of DSC are valid, then they should be related to prior offending in the same manner as Heimer and Matsueda propose these measures are related to future criminal behavior.

I chose to use two measures of prior offending because neither is completely satisfactory. The official prior arrests variable is less than ideal because it covers only adult arrests and given the youth of this sample, this is a significant shortcoming. On the other hand, the self-reported prior arrests variable covers both juvenile and adult arrests but it is a retrospective, self-report measure and therefore susceptible to problems of recall and respondent deception. Given these issues, I chose to utilize both measures as criterion variables. Measures with high validity will have substantial, statistically significant correlations with both of these criterion variables (in the theorized direction); whereas, measures with questionable validity will have near zero correlations with the criterion variables.

Table 4 displays the bivariate correlations between each DSC scale and the criterion variables. The most striking feature of this table is that none of the DSC scales have a statistically significant relationship to official prior arrests. Further, these correlations are all small in magnitude. This finding suggests two interpretations: 1) all of the DSC scales have low validity; or, 2) the prior arrest variable was a poor criterion in this sample. If all of the DSC scales have low validity, then they should all have negligible correlations with self-reported prior arrests as well. The correlations in Table 4, however, contradict this prediction: All of the DSC scales, except family disapproval and attachment to significant other (spouse/girlfriend), have statistically significant correlations to self-reported prior arrests in the theorized direction. For example, reflected appraisals had a correlation of approximately +0.18 with self-reported prior arrests. Likewise, criminal associations had a correlation of roughly +0.34 with self-reported prior arrests. Taken together, I believe these findings indicate that: the official prior arrest

variable was a poor criterion variable. Accordingly, all of the DSC scales with two exceptions (family disapproval and attachment to spouse) exhibit evidence of concurrent validity. I decided to retain the two scales with low validity in the analyses because there were no suitable alternative measures in the data set. It is important to note, however, that if these two variables do not behave as anticipated by DSC such inconsistencies may be due to inadequate validity.

### *Analytic Strategy*

The dependent variable in this research is re-arrest in the follow-up period. Parolees who were re-arrested in this period were coded “1” and those who were not re-arrested were coded “0.” Given this dichotomous dependent variable, logistic regression technique was employed to analyze the data.

Logistic regression is a statistical method used to predict the probability that a specific event occurs (e.g., the probability that an individual recidivates within a specified time period). Standard ordinary least squares (OLS) regression would be less than ideal in this situation as it is best suited for continuous dependent variables. Application of OLS regression to a binary dependent variable would violate the assumptions of homoskedasticity and normality of the error term, as well as potentially yield predicted probabilities that fall outside of the range 0 to 1. Logistic regression remedies all of these problems by transforming the binary dependent variable into the natural log of the odds (“the log odds”) of the event of interest’s occurrence; that is, the dependent variable in logistic regression is:

$$\ln\left(\frac{p}{1-p}\right)$$

This transformation yields a variable that is continuous and the effect of each predictor on this transformed dependent variable is a linear function of the estimated parameters.

$$\ln\left(\frac{p}{1-p}\right) = \alpha + \beta x_i + \varepsilon$$

Also, the parameters in the model specified above are estimated via maximum likelihood estimation using *STATA 7*.

In particular, three separate analyses were conducted. The first analysis assessed whether role-taking explains recidivism (i.e., hypotheses 1 through 5). In this analysis, recidivism was regressed on the five indicators of role-taking (reflected appraisals, family and friend's anticipated approval, antisocial attitudes, criminal associations and prior arrest) while controlling for demographic variables (age, race, education level and marital status), time at risk, and facility (i.e., TBC or MTC).

The second analysis consists of two models that examined whether role-taking mediated that relationship between role commitment and recidivism (i.e., hypothesis 6). In the first model, recidivism was regressed on the indicators of role commitment alone (i.e., attachment to spouse/partner, interaction term of attachment to spouse and marital status, attachment to employment, and employment/school status upon release). The aim of model 1 was to determine if the indicators of role commitment were associated with recidivism. In the second model, recidivism was regressed on the indicators of role commitment while controlling for the indicators of role-taking. The aim of model 2 was to determine if the effects of role commitment indicators on recidivism were mediated by role-taking. Since DSC claims that role commitment primarily affects criminal behavior via role-taking, the effects of role commitment on recidivism should be mediated by role-taking.

The third analysis also consists of two models. These models assessed whether role-taking and role commitment mediate the relationship between demographic factors and recidivism (i.e. hypothesis 7). In the first model, recidivism was regressed on structural location indicators alone (i.e., age, race, education level, marital status and employment status). The aim of model 1 was to determine if structural location indicators were associated with recidivism. In the second model, recidivism was regressed on structural location indicators while controlling for the constructs of role-taking and role commitment. The aim of model 2 was to determine if the effects of structural location indicators on recidivism were mediated by role-taking and role-commitment. Again, given DSC's proposition that indicators of one's social location (e.g., race, gender, age) primarily affect criminal involvement indirectly by influencing "group [role commitment] and individual processes [role-taking]" (Heimer & Matsueda, 1994: 370), the effects of structural location indicators on recidivism should be mediated by role-taking and role commitment.

### *Summary*

In this chapter, I presented seven research hypotheses to test the core propositions of DSC. I also described the Maryland Boot Camp Experiment, the study from which my data are derived from. In particular, I detailed the study's sites (TBC and MTC), sampling procedure, randomization process, and data collection. I also described the sample for my dissertation and measures of key constructs. I also described the analytic strategy employed to test my seven hypotheses. In the next chapter, Chapter 4, I present my findings and results.

## CHAPTER 4: FINDINGS AND RESULTS

The aim of this dissertation is to examine the core propositions of Heimer and Matsueda's Differential Social Control (DSC) theory. Specifically, this dissertation seeks to determine whether DSC explains recidivism among a sample of offenders released from two prisons in the state of Maryland. In the previous chapter, Chapter 3, I outlined my research hypotheses, described the data and sample, presented key measures, and delineated my analytic strategy. In this chapter, I report findings relating to tests of the following seven hypotheses:

1. Parolees who believe that their family and friends perceive them as troublemakers are more likely to recidivate.
2. Parolees expressing attitudes favorable to crime are more likely to recidivate.
3. Parolees with criminal friends are more likely to recidivate.
4. Parolees who believe that their family and friends disapprove of criminal behavior are less likely to recidivate.
5. Parolees with more extensive criminal histories are more likely to recidivate.
6. The effect of parolees' attachment to family and job on recidivism is mediated by role taking.
7. Role commitment and role-taking mediate the effects of demographic factors on recidivism.

The analyses begin by testing the explanatory power of DSC's central concept, role-taking, in explaining recidivism. In particular, to test hypotheses one through five, I regressed re-arrest on measures of five components of role-taking (reflected appraisals,

anticipated disapproval from family and friends, antisocial attitudes, criminal associations and numbers of prior arrest), while controlling for time at risk and the facility where the inmates served their sentences. This model's results are reported in Table 5. These results indicate that the overall model has a statistically significant relationship to recidivism ( $X^2 = 23.89$ ; d.f. = 8;  $p < 0.01$ ) meaning that the model predicts recidivism better than a model without any predictors (the "null" model).

The model presented in Table 5 provides weak support for the central propositions of DSC in that only two of the five role-taking variables were statistically related to recidivism. In particular, anti-social attitudes and number of prior arrests were both statistically related to recidivism, after controlling for time at risk and assignment facility. According to these results, each additional prior arrest increased the odds of re-arrest by 17% and a one standard deviation increase in anti-social attitudes increased the odds of re-arrest by over 240%, while controlling for time at risk and assignment facility. It should also be noted that time at risk was an important predictor of re-arrest, with each additional month of time at risk associated with an approximately 5% greater odds of re-arrest. Type of facility, boot camp or standard, was not related to re-arrest. Thus, these results support hypotheses two and five.

Measures of reflected self-appraisals, anticipated disapproval, and criminal associations, however, all were not statistically significant predictors of re-arrest. Perhaps most damaging to DSC is the finding that reflected self-appraisals were not related to re-arrest. This finding is damaging because reflected appraisals appears to be an important concept in DSC.

DSC also posits that the components of role commitment are intermediate causes of crime in that they affect crime indirectly via role-taking and mediate the relationship between social location and offending. To assess whether the effects of role commitment on re-arrest is mediated by role-taking as specified by DSC (i.e., hypothesis 6), I first estimated a model involving only the role commitment measures (attachment to employment, attachment to spouse/partner, full-time employment/school at release) and the control variables (time at risk and assigned facility). As shown in Table 6, this model (model 1) is not statistically related to re-arrest ( $X^2 = 9.67$ ; d.f. = 5;  $p > 0.05$ ). The results indicate that none of the role commitment indicators exhibited a statistically significant influence on the likelihood of being re-arrested. I also estimated an alternative model (not shown) that regressed re-arrest on the same measures, marriage and an interaction between attachment to spouse/partner and marriage (attachment times marriage). This interaction term tests whether attachment to spouse had a different relationship to re-arrest than attachment to partner (i.e., girlfriend). This interaction term was not statistically significant ( $p = 0.405$ ) suggesting that in these data, attachment had the same relationship for wives and girlfriends. Further, the overall model continued to be non-statistically significant indicating that this model fit the data no better than a null model without any predictors ( $X^2 = 10.95$ ; d.f. = 7;  $p > 0.05$ ). These findings do not support DSC's propositions regarding the relationship between role-commitment and measures of offending.

Model 2 in Table 6 assesses whether role-taking measures mediate the relationship between role-commitment and recidivism. This model was estimated in concordance to the *a priori* analytic strategy, but I recognize that role-commitment does



not have a statistically significant relationship to re-arrest and therefore it is logically impossible for role-taking to mediate this (non-existent) relationship. Model 2 presents the results of the logistic regression analysis when re-arrest is regressed on role commitment indicators, role-taking indicators, and control variables. Model 2 is statistically significant ( $X^2 = 28.3$ ; d.f. = 11;  $p < 0.01$ ). Similar to the findings reported in Table 5, these results indicate that both anti-social attitudes and number of prior arrest are significant predictors of the likelihood of getting re-arrested (see Table 6). In this expanded model, measures of role-commitment continue to be unrelated to re-arrest. Given the results from model 1, it is not surprising that measures of role-commitment are not mediated by role-taking (there are no statistically significant relationships to mediate).

Clearly, these results do not support hypothesis 6. In particular, none of the role commitment indicators, individually or collectively, demonstrated a statistically significant effect on re-arrest. Further, since the role commitment indicators were not significantly associated with re-arrest, DSC's hypothesized mediating relationship between role commitment and role-taking measures could not be supported.

DSC also suggests that structural location indicators are distal causes of crime as they affect crime indirectly via role commitment and role-taking. To assess whether the effects of structural location indicators on recidivism are mediated by role commitment and role-taking as specified by DSC (i.e., hypothesis 7), I first estimated a model that regressed re-arrest on measures of location indicators and control variables (see Model 1 of Table 7). This model was statistically significant ( $X^2 = 21.45$ ; d.f. = 8,  $p < 0.01$ ).

As model 1 in Table 7 indicates, race, age and age-squared were significant predictors of the likelihood of being re-arrested. In particular, being black increased the odds of being re-arrested by approximately 170%. Age was also a statistically significant predictor of re-arrests, but this variable exhibited a non-linear relationship to re-arrest. In particular, age decreased the odds of re-arrest but the effect of age had a decreasing effect as age increased. The remaining measures of social location (i.e., marital status, educational level and employment status), however, were not significantly related to re-arrest.

Model 2 in Table 7 presents the results of the logistic regression analysis when re-arrest is regressed on social location indicators, role commitment indicators, role-taking measures, and control variables. The model was statistically significant ( $X^2 = 45.68$ ; d.f. = 17,  $p < 0.01$ ). As Table 7 indicates, after role commitment and role-taking indicators are taken into account, the significant effect of race on re-arrest disappeared but the effect of age remained statistically significant. Thus, only two of the five theoretically important measures of social location were related to re-arrest and the effect of only one of the two social location measures was mediated by role-commitment and role-taking. These findings again provide only weak support for hypothesis seven.

It is worth noting that model 2 in Table 7 employs all of the available DSC measures and two control variables. Of these measures, only two (age and number of prior arrests) were statistically significant predictors of recidivism. In fact, the findings from this series of logistic regressions indicate that the only theoretically relevant variable that was consistently related to re-arrest in the hypothesized manner was number of prior arrests.

### Alternative Specifications

Model 2 in Table 7 is the most complete representation of DSC available in these data. One concern with this model is that it fits 17 variables to a data set containing 162 observations. Many analysts suggest that I may have “over-fit” the data, as the ratio of observations to predictors is less than 10 to 1 (see e.g., Long, 1997: 54). To alleviate this concern, I estimated a reduced model that excluded those variables that had  $p$ -values of .50 or more (in the original model). In this reduced model (not shown), age and number of prior arrests remained the only statistically significant explanatory variables. Thus, the finding that only age and number of prior arrests were related to the probability of re-arrest is robust.

Another potential explanation for the relative dearth of statistically significant findings is multicollinearity. It is well known that a high degree of inter-correlation between independent variables inflates the standard errors of those variables that have little unique variation (see e.g., McClendon, 1994; Allison, 1999a). Therefore, one possible explanation for the lack of statistically significant relationships is that the presence of multicollinearity robs the logistic regressions of statistical power. To test this possibility, I followed Allison’s (1999b: 30) advice and obtained variance-inflation factor (VIF) diagnostic statistics after estimating model 2 reported in Table 7 using ordinary least squares. Allison suggests that VIF scores greater than 2.40 are potentially problematic. In these data, all of the VIF scores were below 1.60 with the exception of age and age squared, which had much higher VIF scores, because of the quadratic term employed to estimate age’s non-linear relationship to re-arrest. Thus, multicollinearity

was not present in these analyses and as a result the lack of statistically significant findings cannot be attributed to multicollinearity.

I also estimated an alternative specification of these models focusing on number of re-arrests, instead of the dichotomous re-arrest measure. That is, I regressed this count dependent variable on the same set of independent variables as reported in Tables 5, 6, and 7, using negative binomial regression. Table 8 reports the findings from the negative binomial regression of number of re-arrests on the role-taking measures. Similar to the findings from the logistic regression model two role-taking variables, anti-social attitudes and number of prior arrests, were statistically related to the dependent variable. Likewise, time at risk was also an important predictor of the number of re-arrests. In contrast to the findings from the logistic regression, assignment facility was related to number of re-arrests; in particular, assignment to the boot camp program reduced the number of re-arrests by roughly 30%. Thus, overall, the results from the negative binomial test of hypotheses one through five remain the same as in the earlier logistic regression models.

In regards to the role commitment variables, the negative binomial results find that the model containing these measures was related to the number of re-arrests. Specifically, one indicator of role commitment, having a full-time job or full-time enrollment in school at release, reduced the number of re-arrests by 36% (see model 1, Table 9). Further, time at risk and assigned facility continue to be strong predictors of recidivism in this model.

Hypothesis six predicts that the effect of role commitment on recidivism is mediated by role-taking. This hypothesis was tested in model 2 (Table 9), which added the role taking variables to model 1. The results from this model reveal that the

magnitude of the effects of having a full-time job or full-time enrollment in school at release and assigned facility decreased in this model (see model 2, Table 9). In fact, the effect of having a full-time job or full-time enrollment in school at release was not significant in this expanded model. These findings suggest that role commitment's (modest) effects on recidivism are mediated by role-taking.

In regards to the social location variables, the negative binomial regression results reveal that only age had a statistically significant effect on number of re-arrests, with each additional year reducing the number of re-arrests by approximately 5%. The earlier analysis using any re-arrest as the dependent variable also found age to be an important predictor but the earlier results also found that race was related to re-arrest. This latter finding was not replicated in the analysis of number of re-arrests (see model 1, Table 10).

Hypothesis seven predicts that the effects of social location measures are mediated by role-commitment and role-taking. This hypothesis was not strongly supported in these data. While the magnitude of the effects of social location measures did drop for four of the five social location measures (except for age), the magnitude of age's effect on number of re-arrests actually grew stronger. This finding is important as age was the only social location measure that was significantly related to number of re-arrests.

It is worth noting that model 2 (Table 10) is the most complete representation of DSC using number of re-arrests as the dependent variable. This full model indicates that age, anti-social attitudes, number of prior arrests, time at risk, and assignment facility all predicted number of re-arrests.

### Summary of findings

Taken as a whole, several findings are robust to model specification. First, the most consistent predictors of recidivism (any re-arrest or number of re-arrests) are age and number of prior arrests. This finding is consistent with known correlates of crime and therefore this finding comes as no surprise. Second, the effects of reflected appraisals, anticipated disapproval, and criminal associations on recidivism were statistically non-significant and the magnitude of these measures' effects on recidivism measures was small or near zero. The effect of anti-social attitudes on recidivism was consistently large and generally statistically significant. Thus, the importance of two of the five measures of role-taking (anti-social attitudes and number of prior arrests) was supported in these data. Third, measures of role commitment were not generally related to recidivism, and as a consequence definitive statements about role-taking's ability to mediate the effects of role commitment on recidivism are difficult to draw. Finally, with the exception of age and race, social location measures generally were not related to recidivism, which once again makes definitive statements about the mediating effect of DSC's central concepts on this relationship difficult to draw.

## CHAPTER 5: DISCUSSION AND CONCLUSION

In 1994, Karen Heimer and Ross Matsueda collaborated and developed Differential Social Control (DSC) theory. DSC is an extension of Matsueda's (1992) Symbolic Interactionist Theory of the Self and Delinquency, which is rooted in the tradition of symbolic interactionism (Blumer, 1969; Mead, 1934; Stryker, 1980). In developing DSC, Heimer and Matsueda (1994) sought to build a general theory of crime and delinquency by "conceptualizing classical criminological theories as special cases of a general interactionist framework" (p. 366). In DSC, the proximate cause of crime is role-taking which encompasses five major processes: 1) reflected appraisals of self as a rule violator, 2) anti-social attitudes, 3) anticipated disapproval of deviant acts from family and friends, 4) criminal associations, and 5) prior experience with crime and delinquency. Taking these processes together, DSC argues that the likelihood of crime and delinquency increases when an individual believes that others view him as a rule violator, holds anti-social attitudes, anticipates limited disapproval of deviance from family and friends, associates with deviant peers, and has repeatedly solved prior problematic situations using criminal or delinquent behaviors. DSC also posits that more distal factors such as role commitment and structural locations affect crime and delinquency indirectly via role-taking.

### *Role Taking, Role Commitment and Recidivism*

In this dissertation, I examined the explanatory power of DSC's central concept, role-taking, in explaining recidivism (re-arrest) in a sample of high-risk adult offenders. It

is important to note that my sample (high-risk adult offenders) and outcome variable (recidivism) differ from the samples (conventional juvenile/young adults) and outcome variables (delinquency and depression) used in previous tests of DSC. Overall, my results do not lend support for the theory. In particular, my results indicate that recidivism is not related to DSC's role-taking process. I only found two of the five measures of role-taking (anti-social attitudes and number of prior arrests) and none of the role commitment measures to be consistently related to the likelihood of re-arrest.

Compared with previous tests of DSC, my results exhibit both consistent and inconsistent findings. In regard to consistent findings, my results parallel several findings reported by Heimer and Matsueda (1994) in their initial test of DSC. First, both studies found that anti-social attitudes and prior experience with crime are significant predictors of crime. Second, both studies concluded that anticipated disapproval of crime by family and friends are not related to crime. Third, both studies reported that the effect of race, an important indicator of social location, on crime is mediated by role commitment and role-taking (see Heimer & Matsueda, 1994, for further elaboration).

With regard to inconsistent findings, my results differed from previous tests of DSC along several lines. First and foremost, I did not find reflected appraisals to be a significant predictor of crime. This finding is crucial as reflected appraisals is DSC's central concept and measures of this concept has been found to have large positive relationships with crime in previous tests of DSC (see Heimer, 1996; Heimer & Matsueda, 1994). However, it is noteworthy that this finding may be due to my sample's high risk of recidivism as Heimer and Matsueda theorize that "delinquent behavior can occur in the absence of reflective thought, via habitual or scripted responses established



through previous experiences” (p. 368). In other words, at some point in a “criminal career” offending becomes a habit and after this point offenders commit crime without engaging in the process of role-taking.

At first glance, DSC’s explanation of habitual or chronic offending appears plausible. It also appears to be a viable account of my null findings in this high-risk sample of offenders. However, upon closer inspection this explanation is problematic. In particular, if reflected appraisals denote an individual’s perception of himself from the standpoint of others, it follows that high-risk offenders should exhibit stronger deviant reflected appraisals relative to low-risk offenders. Stated differently, given chronic offenders’ established history of offending it is hard to imagine that such offenders are not perceived by others as rule-breakers. Further, it is equally hard to imagine that such offenders do not pick up on these perceptions. Thus, it stands to reason that habitual offenders should have more deviant reflected appraisals than other offenders.

Accordingly, given my findings of a strong positive relationship between prior and future offending, I should have found a meaningful positive relationship between reflected appraisals and recidivism. But this was not the case. In bivariate and multivariate analyses that I conducted (not shown) offenders with more extensive criminal history exhibited similar scores on the reflected self-appraisal scale as offenders with less criminal history as well as scores on the reflected self-appraisal scale were not meaningfully related to recidivism.

The second inconsistent finding between my research and previous tests of DSC concerns the relationship between criminal associations and crime. Contrary to the findings reported in earlier research (Heimer, 1996; Heimer & Matsueda, 1994), I did not

find criminal associations to be a significant predictor of crime. In addition to having a non-significant relationship, criminal associations in my research was related to recidivism in the wrong direction (see Tables 5-7). This finding is perplexing given that criminal association is a known robust correlate of crime and delinquency.

It is noteworthy that my measure of criminal associations is different from the measures used in previous tests of DSC. For instance, Heimer and Matsueda (1994) measured delinquent peer associations using respondents' reports of the number of friends who have engaged in vandalism, theft and burglary in the last year. On the other hand, I measured criminal associations using respondents' perception of their friends' anti-social attitudes and behaviors in the last year. Notwithstanding this difference, my measure of criminal associations was demonstrated to have adequate reliability (see Table 2) and validity (see Table 4). Thus, I do not believe the observed non-significant finding between this independent variable and recidivism is due to measurement issues.

It is possible that the non-significant relationship between criminal associations - and the DSC measures more generally - and recidivism found in my dissertation could be due to a lack of variability in the independent variables. To assess this possibility I calculated the coefficient of variation for each of the role-taking measures by dividing each scale's standard deviation by its mean. The coefficient of variation ranged from 0.83 for number of prior arrest to a low of 0.28 for anticipated family disapproval; the coefficient of variation for the other measures hovered around 0.45. A rule of thumb with the coefficient of variation is that measures with coefficients greater than 1 have considerable variation; by this rule, the role-taking variables exhibit low variability and

as a result, it is likely that my null findings are due at least in part to low variability among the DSC variables.

Another inconsistent finding between my research and previous tests of DSC is that my findings do not provide support for the hypothesis that role-taking fully mediates the relationship between role commitment and recidivism. None of the role commitment indicators in my research exhibited a statistically significance influence on the likelihood of being arrested. As a result, there were no statistically significant relationships to mediate (see Model 2, Table 6). Further, it is notable that my analyses found no relationship between attachment to spouse or attachment to employment and recidivism. Similar to the finding on the association between criminal associations and crime, these findings are perplexing as there is evidence that attachment to spouse and attachment to employment generally decrease the probability of crime and deviance (see Sampson & Laub, 1993; Laub & Sampson, 2003; but also see Giordano, Cernkovich & Rudolph, 2002).

One possible explanation for the findings discussed above is that I have invalid measures of attachment to spouse/partner and attachment to employment. While this was the case for the former measure, as attachment to spouse/partner did not exhibit suitable validity (see Table 4), the latter measure demonstrated evidence of both reliability and validity (see Tables 3 and 4). As such, I believe the observed finding between attachment to employment and recidivism is due to other possibilities. For example, perhaps attachment to employment did not promote desistance because the types of jobs available to the offenders in my sample were unstable, low paying, or had limited opportunities for advancement. All of these factors could undermine the desistance fostering effect of

employment as such jobs are unlikely to create the stakes in conformity that increase the costs associated with law violation.

I also did not find support for the hypothesized mediating effects of role-taking and role commitment on the relationship between structural locations and recidivism. In particular, while my results revealed that both age and race were significant predictors of recidivism, only race was mediated by role-taking and role commitment in the logistic regression analysis. It is not surprising that age was not mediated by role-taking and role commitment, as age is a known, robust correlate of crime. On the other hand, it is somewhat surprising, that role-taking and role commitment were able to mediate the relationship between race and recidivism, as prior research has had difficulty in explaining the relationship between these measures.

To isolate which DSC measures accounts for the relationship between race and recidivism, I examined a correlation matrix to identify the variables that were strongly correlated with race. I discovered that the number of prior arrest, anti-social attitudes, and full-time employment/school upon release were the variables with the highest correlations to race. To determine if the above three variables were indeed responsible for the observed mediating effect of role commitment and role-taking on the relationship between race and recidivism, I estimated a logistic regression model first using all of the measures (i.e., model 2 from Table 7), then I estimated another model eliminating the number of prior arrest, anti-social attitudes, and full-time employment/school (not shown). The result revealed that race was significantly related to recidivism after the above variables were eliminated from the full model. This implies that the observed mediating effect of role commitment and role-taking on the relationship between race and

recidivism was due to the fact that relative to white offenders, African American offenders in my sample had more prior arrests, expressed more anti-social attitudes and were less likely to have full-time employment or attend school full-time upon release.

To summarize, the results of this dissertation indicate that DSC does not account for the recidivism in my sample. Further, these findings could not have been attributed to invalid measures as only two were found to lack concurrent validity. In fact, many of the measures employed in this research were constructed to parallel the measures employed in Heimer and Matsueda's (1994) test of DSC. However, it is important to note that these findings may be due to the low variability exhibited by several of the key independent variables. The observed low variability is one limitation of this research. In the next section, I describe other limitations of this research, before discussing the implications of this research.

#### *Limitations of Current Research*

There are a number of limitations in my dissertation. First, as stated above, two of my measures lack concurrent validity. Specifically, my measures of anticipated disapproval of crime by family and attachment to spouse/partner did not demonstrate significant correlations to the criterion variable, the number of self-reported prior arrests (see Table 4). As a result, it is not surprising that these two measures were also found to be unrelated to this study's primary outcome variable, odds of re-arrest. Second, as mentioned above, my measures of role-taking exhibited low variability. This lack of variability in the independent variables makes it difficult for the statistical analyses to find meaningful relationships with the dependent variable.

Third, my measures of role commitment and structural locations were not as extensive as the measures employed in previous tests of DSC. For example, in their research, Heimer and Matsueda (1994) employed a host of variables such as race, age, urban, family income, family structure, age and number of siblings in the home, residential stability and neighborhood crime to measure structural location. In contrast, my measure only included the variables of race, age, marital status, educational level and employment status.

Fourth, my research has limited statistical power due to its relatively small sample size. The original sample size for this study was 205 cases. However, after excluding cases with missing data, the sample size drops to 162 cases. As a consequence, my study's null findings are due at least in part to low statistical power. However, it needs to be emphasized that several of the null relationships in my research are unlikely to be explained by statistical power as the absolute magnitude of these relationships were small or in the wrong direction. For example, the relationship between reflected self-appraisals and recidivism was consistently small in the multivariate analyses and in some cases in the wrong direction. Hence, such findings are not a function of limited statistical power.

Finally, given that my sample represents a very specific and narrow sample (i.e., primarily young African American adult males convicted of drug crimes), the findings generated from this dissertation have limited generalizability. And as a result, my results may only speak to the validity of Heimer and Matsueda's theory in this specific or similar samples.

### *Implications of Findings*

The results reported in this dissertation indicate that DSC is not a general theory of crime and delinquency as its authors claim. Particularly, the results show that the theory does not have wide scope in that these findings reveal that the theory does not explain the recidivism of young drug offenders. This implies that DSC may not be the appropriate theory to account for recidivism and desistance, at least not in samples similar to this one.

Another potentially important finding and implication of this research is that DSC contains several poorly conceptualized constructs, which undermines efforts to measure key DSC constructs. In particular, the measures of anticipated disapproval of deviant behavior by family and friends appear to have been conceptualized inadequately. As evident from my research, these constructs are difficult to measure. Further, the measures suggested by Heimer and Matsueda also exhibited insufficient validity as well as they were found to be unrelated to recidivism (see Heimer & Matsueda, 1992). The fact that the above two measures have consistently been found to be unrelated to delinquency and recidivism warrants alternative conceptualizations for them.

One possible solution of the issue of conceptualization and measurement is to collect qualitative data to test DSC. DSC is a symbolic interactionist theory of crime and the symbolic interactionist perspective stresses the importance of qualitative data in uncovering the meanings that humans assign to actions and events (see Blumer, 1969). Given that DSC assumes that individuals are active participants in the construction of their own biographies, as well as they have the ability to interpret life experiences, it would be fruitful to try to “get into the head” of study subjects and gauge the factors that

are causing their behavior. In fact, efforts to collect qualitative data to measure DSC concepts such as reflected appraisals and anticipated disapproval of family and friends could yield more valid measures of these constructs and in turn bolster the relationship between role-taking and criminal conduct.

A final implication of this research is that DSC appears to include ambiguous causal mechanisms, particularly in regard to habitual or chronic offending. The theory's explanation of the relationship between prior and future criminal conduct among chronic offenders is problematic. According to the theory, criminal conduct can occur in the absence of reflective thought (without engaging in role-taking) once offenders have repeatedly solved problematic situations with deviance. As noted previously, this explanation is problematic because even if an individual acts according to habitual responses established through previous experiences, one still expects a significant relationship between his reflected appraisals and subsequent behavior. After all, if an individual is a chronic offender, one would think that such individual is perceived as such and therefore he would have deviant appraisals of self, which in turn would be positively associated with involvement in crime. The results generated in this research, however, do not find this positive relationship, and Heimer and Matsueda's explanation of this null finding is unsatisfactory.

### *Conclusion*

In 1994, Karen Heimer and Ross Matsueda sought to develop a general theory of crime and delinquency based on the framework of symbolic interactionism. In their theory, the most proximate cause of crime and delinquency is role-taking while the more



distal causes of crime and delinquency are role commitment and structural location. The goal of this dissertation was to determine if DSC could account for the recidivism among a sample of adult offenders released from two prisons in the state of Maryland. The results did not lend support for DSC, which suggests that DSC is not an appropriate explanation for recidivism and desistance. On the other hand, based on the findings from previous empirical tests, the theory appears to provide a persuasive account for the initiation of delinquent activities. Notwithstanding this fact, the claim that DSC is a general theory of crime and delinquency remains to be determined.

One recommendation in assessing the scope of DSC is to subject the theory to empirical tests involving a broader spectrum of samples (college students), other racial and ethnic groups (Asian Americans), and other age groups and/or other types of offenders (white-collar, career criminals).

**Table 1. Sample Characteristics of Inmates Who Completed Both Baseline & Exit Surveys (N=162)**

<b>Characteristics</b>	<b>Mean (%)</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<b>Age</b>	23.73	4.09	17	35
<b>Black</b>	82%			
<b>Marital Status</b>				
Single	53%			
Cohabitate	34%			
Married	8%			
Divorced or separated	5%			
<b>High School Dropout</b>	59%			
<b>Unemployed</b>	18%			
<b>Number of official arrests, adult only</b>	5.19	4.28	0	21
<b>Number of prior convictions</b>	2.56	1.78	0	11
<b>Offense</b>				
Drug	92%			
Property	6%			
Violent	2%			
Other	1%			
<b>Assigned to TBC</b>	48%			
<b>Time out in the community (mos.)</b>	26.69	7.59	4	40
<b>Re-arrest</b>	62%			

**Table 2. Role-Taking Indicators (N=162)**

<b>Reflected Appraisals* (alpha = 0.76)</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
Your family thinks you are a trouble-maker	1.22	1.15	0	4
Your family thinks you are one of the “good guys” (reversed)	1.67	1.09	0	4
Your family thinks of you as a crook	1.00	0.97	0	4
Your friends think that you are a trouble-maker	1.17	0.98	0	4
Your friends think that you are one of the “good guys” (reversed)	1.73	1.10	0	4
Your friends think of you as a crook	1.17	1.02	0	4
<b>Anticipated Family Disapproval* (alpha = 0.88)</b>				
Would your family approve if you continued to do the same things that got you in trouble in the past.	3.20	1.08	0	4
Would your family approve if you purposely damaged something that did not belong to you.	3.08	1.02	0	4
Would your family approve if you broke into a building or vehicle to steal something.	3.28	0.96	0	4
Would your family approve if you hurt someone in a fight.	2.80	1.11	0	4
Would your family approve if you sold drugs.	2.99	1.22	0	4
<b>Anticipated Friends Disapproval* (alpha =0.92)</b>				
Would your close friends approve if you continued to do the same things that got you in trouble in the past.	2.56	1.21	0	4
Would your close friends approve if you purposely damaged something that did not belong to you.	2.67	1.08	0	4
Would your close friends approve if you broke into a building or vehicle to steal something.	2.71	1.15	0	4
Would your close friends approve if you hurt someone in a fight.	2.16	1.19	0	4
Would your close friends approve if you sold drugs.	2.21	1.29	0	4
<b>Anti-social Attitudes<sup>+</sup> (alpha = 0.81)</b>				
When you're in trouble, it's best to keep quiet about it.	0.42	0.50	0	4
I get into a lot of fights.	0.12	0.32	0	4
<i>I always like to hang around with the same bunch of friends.</i>	0.56	0.50	0	4
<i>It makes me mad that some crooks get off free.</i>	0.63	0.48	0	4
Most police will try to help you. (reversed)	0.61	0.49	0	4
If the police don't like you, they will try to get you for anything.	0.89	0.32	0	4

<i>Women seem more friendly and happy than men.</i>	0.61	0.49	0	4
Police stick their noses into a lot of things that are none of their business.	0.70	0.46	0	4
I hardly ever get a fair break.	0.34	0.47	0	4
A lot of strange things happen to me.	0.50	0.50	0	4
If someone in your family gets into trouble it's better for you to stick together than to tell the police.	0.73	0.44	0	4
It often seems like something bad happens when I'm trying my best to do what is right.	0.77	0.43	0	4
Most people in authority are bossy and overbearing.	0.75	0.43	0	4
It seems like wherever I am I'd rather be somewhere else.	0.48	0.50	0	4
I think that boys 14 years old are old enough to smoke cigarettes.	0.11	0.32	0	4
Police usually treat you dirty.	0.71	0.46	0	4
I often feel lonesome and sad.	0.34	0.48	0	4
A lot of times I do things that my family tells me I shouldn't do.	0.70	0.46	0	4
A lot of people say bad things about me behind my back.	0.57	0.50	0	4
It seems like people keep expecting me to get into some kind of trouble.	0.52	0.50	0	4
Other people are happier than I am.	0.35	0.48	0	4
Policemen and judges will tell you one thing and do another.	0.70	0.46	0	4
<i>It DOESN'T seem wrong to steal from crooked store owners.</i>	0.19	0.39	0	4
<i>My life at home is always happy. (reversed)</i>	0.36	0.48	0	4
Nobody seems to understand me or how I feel.	0.45	0.50	0	4
I DON'T mind lying if I'm in trouble.	0.53	0.50	0	4
<i>I think my mother should have been stricter than she was about a lot of things.</i>	0.40	0.49	0	4
I feel alone even when there are other people around me.	0.38	0.49	0	4
Things DON'T seem real to me.	0.19	0.39	0	4
I think there is something wrong with my mind.	0.17	0.38	0	4
<b>Criminal Associations‡ (alpha = 0.88)</b> In the 12 months before you came to this facility, did your friends:				
Work regularly on a job? (reversed)	1.65	1.12	0	4
Spend time with their families? (reversed)	1.30	1.00	0	4
Like being with their families? (reversed)	1.09	1.04	0	4
Get into arguments or fights?	1.76	1.00	0	4

Get drunk?	2.31	1.24	0	4
Use illegal drugs?	2.07	1.35	0	4
Trade, sell, or deal drugs?	2.28	1.40	0	4
Do other things that were against the law?	1.96	1.24	0	4
Get arrested?	1.81	1.10	0	4
Do things that could get them into trouble?	2.16	1.16	0	4
Spend time in a gang?	0.45	1.09	0	4

Note: Items with item-to-total correlations less than .20 were considered problematic and were not used in their respective scales. These problematic items are italicized above.

\* 0 = strongly disagree, 1 = disagree, 2 = neither agree nor disagree, 3 = agree, 4 = strongly agree

+ 1 = true, 0 = false

‡ 0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = always

**Table 3. Role Commitment Indicators (N=162)**

<b>Attachment to Employment* (alpha = 0.91)</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
In my last job:				
I was happy with the job.	2.69	1.21	0	4
I really enjoyed working there.	2.73	1.26	0	4
The people at my job cared about me.	2.53	1.43	0	4
I really cared about the people at my job.	2.46	1.32	0	4
<i>I had big arguments or fights with my supervisor(s). (reversed)</i>	3.62	0.74	0	4
If I had the chance, I would work there again.	2.96	1.50	0	4
<b>Attachment to Spouse* (alpha = 0.80)</b>				
In the 12 months before you came to this facility:				
I was happy with the relationship.	3.27	0.90	0	4
We got along together.	3.21	0.88	0	4
We really enjoyed being together.	3.46	0.89	0	4
We had serious talks about each other's interest and needs.	3.03	1.05	0	4
We helped each other with problems.	3.19	1.06	0	4
We had disagreements. (reversed)	1.88	1.00	0	4
We had big arguments or fights. (reversed)	1.36	1.06	0	4
<b>Employed Full-Time (at release)<sup>+</sup></b>				
Have you ALREADY found a job or a place to go to school when you leave here?	46%			

Note: Items with item-to-total correlations less than .20 were considered problematic and were not used in their respective scales. These problematic items are italicized above.

\* 0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = always

+ 0 = no, 1 = yes

**Table 4. Correlation Matrix between DSC Scales and Prior Arrests**

<b>Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
1) Reflected Appraisals	1.0000								
2) Family Disapproval	-0.3421*	1.0000							
3) Friends Disapproval	-0.1884*	0.4047*	1.0000						
4) Anti-Social Attitudes	0.3990*	-0.2869*	-0.3253*	1.0000					
5) Criminal Associations	0.2689*	-0.0801	-0.2016*	0.2340*	1.0000				
6) Attachment to Employment	-0.0972	0.1268	0.1983*	-0.2184*	-0.2768*	1.0000			
7) Attachment to Spouse	-0.0336	-0.0755	-0.0909	-0.0662	-0.2763*	0.1208	1.0000		
8) Prior Arrests	0.0101	-0.0040	-0.1071	0.0944	0.0908	-0.0699	-0.0024	1.0000	
9) Self-Reported Prior Arrests	0.1805*	0.0205	-0.1868*	0.1210*	0.3445*	-0.1515*	-0.0955	0.4169*	1.0000

**Table 5. Logistic Regression Results for Hypotheses 1 through 5 (N=162)**

Variable	Odds ratio	S.E.	<i>p</i>
Reflected Appraisals	1.040	0.312	0.897
Anticipated Disapproval From Family	1.196	0.312	0.491
Anticipated Disapproval From Friends	0.890	0.231	0.655
Anti-Social Attitudes	3.441	1.656	0.010
Criminal Associations	0.750	0.222	0.331
Number of Prior Arrest	1.175	0.064	0.003
Time At Risk for Recidivism (mos.)	1.048	0.025	0.047
Assigned to TBC	0.850	0.307	0.653
Model $X^2$	23.890		
<i>df</i>	8.000		
<i>p</i>	0.002		
Pseudo- $R^2$	0.111		



**Table 6. Logistic Regression of Re-Arrest on Role Commitment and Role-Taking (N=162)**

Variable	Model 1			Model 2		
	Odds ratio	S.E.	<i>p</i>	Odds ratio	S.E.	<i>p</i>
Attachment to Spouse/Partner	0.685	0.145	0.073	0.701	0.170	0.144
Attachment to Employment	1.133	0.270	0.600	1.145	0.305	0.612
Full-time Employment/School Upon Release	0.589	0.204	0.126	0.647	0.239	0.239
Time At Risk for Recidivism (mos.)	1.027	0.023	0.231	1.046	0.025	0.063
Assigned to TBC	0.687	0.233	0.268	0.789	0.293	0.523
Reflected Appraisals				1.081	0.331	0.799
Anticipated Family Disapproval				1.256	0.336	0.394
Anticipated Friends' Disapproval				0.940	0.251	0.818
Anti-Social Attitudes				3.075	1.503	0.022
Criminal Associations				0.708	0.225	0.276
Number of Prior Arrest				1.177	0.065	0.003
Model $X^2$	9.670			28.300		
<i>df</i>	5.000			11.000		
<i>p</i>	0.085			0.003		
Pseudo- $R^2$	0.045			0.132		

**Table 7. Logistic Regression of Re-Arrest on Social Location and Role-Taking Variables (N=162)**

Variable	Model 1			Model 2		
	Odds ratio	S.E.	<i>p</i>	Odds ratio	S.E.	<i>p</i>
Black	2.696	1.217	0.028	1.321	0.709	0.604
Age	0.340	0.166	0.027	0.211	0.118	0.005
Age Squared	1.019	0.009	0.041	1.027	0.011	0.010
Married	0.546	0.338	0.328	0.514	0.371	0.356
High School Dropout	1.362	0.503	0.403	1.104	0.466	0.814
Unemployed at Baseline	1.011	0.492	0.983	0.471	0.286	0.215
Time At Risk for Recidivism (mos.)	1.022	0.024	0.365	1.047	0.029	0.092
Assigned to TBC	0.553	0.201	0.104	0.559	0.232	0.161
Reflected Appraisals				0.976	0.330	0.943
Anticipated Disapproval From Family				1.307	0.407	0.390
Anticipated Disapproval From Friends				0.819	0.235	0.487
Anti-Social Attitudes				2.269	1.206	0.123
Criminal Associations				0.624	0.224	0.188
Number of Prior Arrest				1.271	0.089	0.001
Attachment to Spouse/Partner				0.720	0.202	0.241
Attachment to Employment				1.038	0.311	0.900
Full-time Employment/School Upon Release				0.764	0.308	0.505
Model $X^2$	21.45			45.68		
<i>df</i>	8.000			17.00		
<i>p</i>	0.006			0.000		
Pseudo- $R^2$	0.100			0.213		

**Table 8. Negative Binomial Results for Hypotheses 1 through 5 (N=162)**

Variable	Coeff	S.E.	<i>p</i>
Reflected Appraisals	0.086	0.134	0.521
Anticipated Disapproval From Family	-0.077	0.107	0.474
Anticipated Disapproval From Friends	0.016	0.106	0.881
Anti-Social Attitudes	0.721	0.224	0.001
Criminal Associations	-0.146	0.129	0.256
Numbers of Prior Arrest	0.058	0.017	0.001
Time At Risk for Recidivism (mos.)	0.056	0.012	0.000
Assigned to TBC	-0.350	0.169	0.038
Constant	-1.681	0.422	0.000
Model $X^2$	45.41		
<i>df</i>	8		
<i>p</i>	0.0000		
Pseudo- $R^2$	0.0919		

**Table 9. Negative Binomial Regression of Re-Arrest on Role Commitment and Role-Taking (N=162)**

Variable	Model 1			Model 2		
	Coeff.	S.E.	<i>p</i>	Coeff	S.E.	<i>p</i>
Attachment to Spouse/Partner	0.131	0.118	0.270	0.065	0.118	0.580
Attachment to Employment	-0.061	0.095	0.526	-0.010	0.091	0.917
Full-time Employment/School Upon Release	-0.448	0.181	0.013	-0.305	0.174	0.080
Time At Risk for Recidivism (mos.)	0.042	0.012	0.000	0.053	0.011	0.000
Assigned to TBC	-0.456	0.172	0.008	-0.366	0.168	0.030
Reflected Appraisals				0.069	0.133	0.603
Anticipated Family Disapproval				-0.078	0.105	0.457
Anticipated Friends' Disapproval				0.023	0.106	0.826
Anti-Social Attitudes				0.656	0.225	0.004
Criminal Associations				-0.129	0.135	0.339
Numbers of Prior Arrest				0.054	0.017	0.001
Constant	-0.601	0.360	0.095	-1.409	0.435	0.001
Model $X^2$	27.1			48.76		
<i>df</i>	5			11		
<i>p</i>	0.0001			0.0000		
Pseudo- $R^2$	0.0548			0.0987		

**Table 10. Negative Binomial Regression of Re-Arrest on Social Location and Role-Taking (N=162)**

Variable	Model 1			Model 2		
	Coeff	S.E.	<i>p</i>	Coeff	S.E.	<i>p</i>
Black	0.385	0.256	0.133	0.035	0.267	0.895
Age	-0.048	0.023	0.039	-0.062	0.025	0.011
Married	-0.432	0.358	0.227	-0.387	0.363	0.287
High School Dropout	0.072	0.184	0.694	-0.033	0.177	0.853
Unemployed at Baseline	0.187	0.206	0.366	0.085	0.203	0.674
Time At Risk for Recidivism (mos.)	0.039	0.012	0.001	0.051	0.011	0.000
Assigned to TBC	-0.510	0.172	0.003	-0.413	0.164	0.012
Reflected Appraisals				0.073	0.137	0.593
Anticipated Disapproval From Family				-0.078	0.106	0.460
Anticipated Disapproval From Friends				0.053	0.103	0.610
Anti-Social Attitudes				0.602	0.222	0.007
Criminal Associations				-0.178	0.138	0.197
Numbers of Prior Arrest				0.065	0.018	0.000
Attachment to Spouse/Partner				0.042	0.093	0.654
Attachment to Employment				0.042	0.120	0.726
Full-time Employment/School Upon Release				-0.241	0.172	0.160
Constant	0.069	0.680	0.919	0.031	0.735	0.966
Model $X^2$	31.06			58		
<i>df</i>	7			16		
<i>p</i>	0.0001			0.0000		
Pseudo- $R^2$	0.0629			0.1174		

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