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The Role of Subjective and Social Factors in the Desistance Process: A Within-Individual Examination

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ABSTRACT

THE ROLE OF SUBJECTIVE AND SOCIAL FACTORS IN THE DESISTANCE PROCESS: A WITHIN-INDIVIDUAL EXAMINATION

By

BEVERLY REECE CRANK

JULY 24, 2014

Committee Chair: Dr. Timothy Brezina

Major Department: Criminal Justice and Criminology

Many scholars examining desistance from crime have emphasized the importance of social factors in triggering the desistance process. Most notably, the work of Sampson and Laub (1993) focuses on the role of social bonds (e.g., marriage and employment), which serve as turning points in offenders' lives, while other scholars have emphasized other important social factors, such as antisocial peer influence (Stouthamer-Loeber, Wei, Loeber, Masten, 2004; Warr, 1998, 2002). However, missing from such works is the role of subjective factors (e.g., thinking patterns, expectations, self-identity) in the desistance process, despite evidence that changes in identity and other cognitive transformations promote desistance from criminal offending (Giordano, Cernkovich, & Rudolph, 2002; Maruna, 2001).

Examining the combined role of subjective and social factors is important, because it may lead to a more comprehensive understanding of the desistance process. Desistance researchers typically focus on one set of factors, while downplaying the other set of factors. Rarely have researchers examined the effects of social and subjective factors simultaneously (for exceptions, see Healy, 2010; Laub & Sampson, 2003; Morizot

& Le Blanc, 2007). And even fewer attempts have been made to examine the interplay between social and subjective factors (for exceptions, see LeBel, Burnett, Maruna, & Bushway, 2008; Simons & Barr, 2012). Further, there is a special need to examine the impact of change in subjective and social factors on the desistance process using within-individual analyses (Farrington, 2007; Horney, Osgood, & Marshall, 1995; Kazemian, 2007).

Thus, research on desistance is advanced in the current study in the following three ways. First, the influence of both subjective and social factors on desistance are considered, within the same statistical model. Second, this study is based on within-individual analyses. Third, the interplay between subjective and social factors is explored in this study, including mediation and moderation (interaction) effects. Data used in the current study are drawn from the Pathways to Desistance study (see Mulvey, 2004), following serious adolescent offenders for seven years – from mid-adolescence through early adulthood. The theoretical, policy, and research implications of the findings are discussed.

THE ROLE OF SUBJECTIVE AND SOCIAL FACTORS IN THE DESISTANCE
PROCESS: A WITHIN-INDIVIDUAL EXAMINATION

BY

BEVERLY REECE CRANK

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree
of
Doctor of Philosophy
in the
Andrew Young School of Policy Studies
of
Georgia State University

GEORGIA STATE UNIVERSITY
2014

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ACCEPTANCE

This dissertation was prepared under the direction of the candidate's Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Criminal Justice and Criminology in the Andrew Young School of Policy Studies of Georgia State University.

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August, 2014

DEDICATION

This dissertation is dedicated to my grandmother, Norma Trantham.

*“‘Hope’ is the thing with feathers -
That perches in the soul -
And sings the tune without the words -
And never stops - at all...”*

– Emily Dickinson, 1830-1886, 254

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To be fair, all of my success personally and professionally thus far is thanks to the glory of God (Proverbs 3:5-6). I feel I have been truly blessed. In addition, the biggest worldly influence in my life without question is my mother, Vicki Reece. Simply stated, without her, I could not have achieved any of this. She redefines the word support in a way that no one else can. She has been my biggest encourager and motivator. I strive to be like her daily. I also would like to acknowledge my father, Ray Reece, who always has supported my education, and taught me the importance of dedication, honesty, and hard-work.

Many mention how their spouse always provided the laughs they needed at just the right moment. My husband, Aaron, brings that cliché to a whole new level. But apart from his antics, Aaron has stood by me and never doubted that I would finish.

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CHAPTER I. INTRODUCTION

Research on desistance from crime (i.e., the abandonment of criminal activity) is progressively gaining more interest and attention from criminologists, although scholarly knowledge surrounding desistance is still relatively limited (Bushway, Thornberry, & Krohn, 2003; Farrington, 2007; Kazemian, 2007; Laub & Sampson, 2001; Maruna, 2001; Piquero, Farrington, & Blumstein, 2003). One reason for this gap in knowledge is that traditionally criminologists have placed greater emphasis on studying the causes of crime, rather than examining the causes of desistance. In fact, some scholars still question whether factors determining initiation in crime are unique from factors determining desistance from crime (see Laub & Sampson, 2001; 2003; Rutter, 1988; Uggen & Piliavin, 1998).

In addition to the theoretical importance of studying desistance from crime, there also are a number of potential policy implications for desistance research. As noted by Farrall and Bowling (1999):

A theory of desistance is not a criminological luxury. By helping to elucidate some of its facets, a theory of desistance would enable criminal justice policies aimed at reducing offending (e.g., the work of the probation service), to be ‘fine-tuned’ and for the elements of these interventions which ‘work’ best to be more thoroughly understood. (p. 254)

Farrall and Bowling argue that without a clear understanding of desistance from crime, it is very difficult for criminal justice agencies to correctly engage the policies and practices necessary for addressing criminal behavior.

This is especially salient given that as of 2011, approximately 2,239,800 offenders were incarcerated in either jails or prisons (Glaze & Parks, 2012), and almost all of them will be returning to society at some point (Travis, 2005). With these inmates reentering society, it follows that it would be important to support those offenders who want to “go straight” in their pursuit to desist from crime. However, without a comprehensive understanding of what propels some inmates in “going straight,” it is difficult to support desisting offenders appropriately. Given this deficiency, it should be of no surprise that approximately 67.5% of offenders recidivate after their release (Langan & Levin, 2002).

Although desistance is roughly defined as the abandonment or termination of criminal activity, there is little to no consensus among scholars regarding its operational definition (Laub & Sampson, 2001; Maruna, 2001; Piquero et al., 2003). For instance, a number of scholars employ a one year time window when determining desistance; thus, if there are no reported offenses or arrests during that year, then the individual is characterized as a desister (e.g., Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1991; Maruna, 2001; Warr, 1998). Other studies with lengthier longitudinal data have the ability to require longer periods of non-offending before one is characterized as a desister (e.g., Laub & Sampson, 2003; Shover & Thompson, 1992; Uggen & Kruttschnitt, 1998). However, the question still remains if an individual truly desisted within the given time period. In addition to the lack of clarity surrounding the operationalization of desistance, scholars debate whether desistance should be viewed as a process where individuals gradually halt their offending behavior, or if desistance is merely a single event where individuals have no relapses in offending. Overall, there is

still much debate surrounding the conceptualization and operationalization of desistance from crime.

Despite these areas of contention, many desistance researchers agree that a life course theoretical perspective provides a solid framework for accounting for the initiation, maintenance, and desistance of a criminal career. Life course perspectives are important because of the emphasis on the entire life course of offenders, helping to explain within-individual variations in antisocial behavior and crime. These theoretical perspectives account for not only psychological factors, but sociological changes, and emphasize the notion of social malleability across the life course (Laub & Sampson, 2001, p. 44). Thus, a life course perspective is useful for the current study, as it allows for the consideration of social contexts, as well as individual subjective factors over time.

Factors Influencing Desistance

Many influential scholars examining desistance from crime have emphasized the importance of social factors in triggering the desistance process. Most notably, Sampson and Laub (1993) focus on the role of social bonds (e.g., marriage and employment), which serve as turning points in offenders' lives. These turning points are believed to change the course of criminals' pathways and redirect them through forms of social support and control to more conventional behavior. Other researchers also have commented on the role of social bonds on desistance from crime and note that romantic relationships/marriage and employment are two primary predictors of desistance during early adulthood (Beaver, Wright, DeLisi, & Vaughn, 2008; Bersani, Laub, & Nieuwebeerta, 2009; Farrington, 1995; Horney, Osgood, & Marshall, 1995; Stouthamer-Loeber, et al., 2004; Uggen, 2000; Wright & Cullen, 2004). More specifically,

researchers in this area tend to emphasize the *quality* of these bonds, rather than just the presence or absence of these events (Laub, Nagin, & Sampson, 1998; Uggen 1999). In addition, other researchers point to the role of peer influence in explaining offending behavior and desistance (Stouthamer-Loeber et al., 2004; Warr, 1998; Warr, 2002). This emphasis on social factors in explaining criminal offending patterns has been the focus of many desistance researchers over the last several decades (Kazemian, 2007).

However, missing from these works is the role of subjective factors in the desistance process, despite evidence that cognitive transformations appear to promote desistance from criminal offending (see Giordano et al., 2002; Healy 2010; LeBel et al., 2008; Maruna, 2001). For instance, Maruna (2001) suggests that offenders have the ability to control future outcomes based on their own internal beliefs regarding their self-worth, identity, and destiny. In addition, Giordano and colleagues (2002) emphasize the role of cognition by arguing that “openness for change” and an opportunity to desist allows offenders to create a prosocial identity for themselves which, in turn, transforms the way they view their lifestyles, ultimately promoting desistance. In sum, the role of subjective factors in the desistance process has been gaining increasingly more traction among desistance researchers.

In fact, even Laub and Sampson (2003) recognize that human agency most likely plays a role in the desistance process when examined alongside social situations and structures. As one of the Glueck men in their study exclaimed, “The heck with you [guards and others in authority]. I made a conscious effort – do my time and get the hell out. And don’t come back” (Laub & Sampson, 2003, p. 55). Thus, in their revised theory of desistance, Laub and Sampson attempt to account for the importance and role of

human agency, as well. In addition, others note that “subjective changes do not simply accompany changes in the objective sphere of life, but trigger them as well, and determine how external events or physiological states will be interpreted and acted upon” (Gartner & Piliavin, 1988, p. 299).

Although many desistance scholars recognize that both subjective and social factors appear to play some role in the overall desistance process, studies that directly examine the interplay of these variables are rare. Of the few studies that exist, LeBel and colleagues (2008) found support for a subjective-social model of desistance. Specifically, they report that subjective changes (i.e., perceptions of hope/self-efficacy, regret and shame, internalizing stigma, and alternative identities) appear to precede changes in social factors (i.e., housing, employment, finances, relationships, and substance use). These findings are important because they indicate that both subjective and social factors play a role in the overall desistance process, and that subjective factors may serve as a catalyst for the formation of social factors, ultimately leading to desistance. However, LeBel and colleagues caution that more research is needed in this area.

Thus, future research examining the relative roles and importance of subjective and social factors is important based on our limited knowledge in this area (Kazemian, 2007; Laub & Sampson, 2001; Piquero et al., 2003). In addition, we know little about the interplay between subjective and social factors. For example, do subjective factors influence desistance net of the effects of social factors? Or are the effects of subjective factors mediated by social factors? Likewise, do social factors influence desistance net of the effects of subjective factors? And do subjective factors moderate the impact of social

factors on desistance? As several researchers have noted, disentangling the effects of subjective and social factors could be difficult (Laub & Sampson, 2001; Maruna, 2001; Shover, 1983), as it is believed that changes in subjective factors and social bonds may be reciprocal in nature and transpire simultaneously (Maruna 2001; Shover, 1983). Nevertheless, a better understanding of the relative influence of subjective and social factors, as well as the interplay between these factors, could have important policy implications. For instance, if desistance is mainly a function of social factors, then targeting cognitive factors/errors without regard for social factors may do little good for inmates attempting to “go straight.”

Overview of the Study

As noted above, there has been a lack of research on the complex relationship between subjective and social factors involved in the desistance process. In addition, a better understanding of this relationship has been identified as a key area for investigation in the current desistance literature (Kazemian, 2007; LeBel et al., 2008; Sullivan, 2013). As recognized by a number of scholars, examinations of subjective-social models are greatly needed in order to appropriately support offenders’ pathways to desistance (Ezell, 2007; Farrington, 2007; Kazemian, 2007; LeBel et al., 2008; Sullivan, 2013). Thus, one major goal of this dissertation is to estimate the relative importance of subjective and social factors in the desistance process. This will be accomplished by examining the effects of subjective and social factors *simultaneously*, within the same model.

A second major goal is to investigate these issues in the context of within-individual analyses. Within-individual analyses represent a significant methodological advancement and are important in extending desistance research, as there has been a lack

of such research using within-individual analyses for understanding changes in offending (Farrington, 2007; Horney et al., 1995; Kazemian, 2007; Laub & Sampson, 2001; LeBlanc & Loeber, 1998). As noted by Kazemian (2007):

What is lacking in desistance research is not a contrast of desisters versus persisters but rather an understanding of the internal and external factors that promote the desistance process within individuals. In other words, using individuals as their own controls, do changing cognitive and social characteristics have an impact on the progress made toward the termination of criminal careers?
(p. 11)

This statistical approach is particularly useful in that both measured and unmeasured time stable characteristics are controlled, allowing the model to truly reflect change within individuals across time.

The third major goal of this dissertation is to conduct exploratory analyses by considering the interplay between subjective and social factors (i.e., moderation and mediation). This interplay has rarely been studied in the desistance literature: Only a handful of researchers have tested these factors using a mediation framework (see LeBel et al., 2008; Simons & Barr, 2012), and the author of the current study is unaware of any desistance research specifically testing for interactions between subjective and social factors¹, especially using a within-individual approach. Thus, mediation and interaction effects are examined in this dissertation, in order to extend this underdeveloped area of research.

In order to fulfill the above goals, the Pathways to Desistance longitudinal dataset

¹ Although self-control is not considered as a subjective factor in the current study, Doherty (2006) examined self-control as a moderator between social bonds and desistance.

is used for the current study (see Mulvey, 2004 and Mulvey & Schubert, 2012). This is a large-scale, two-site, longitudinal study involving over 1,350 serious adolescent offenders who are interviewed throughout a period of seven years. Participants in this study were recruited after adjudication of a felony or serious misdemeanor offense and were between the ages of 14 to 18 years at the time of enrollment.

As noted by Mulvey and Schubert (2012), serious adolescent offenders and their transition from adolescence to early adulthood have rarely been focused on using longitudinal data. As a result, far more is known about the causes of juvenile offending than the causes of juvenile desistance. Consequently, it is unknown how exactly adolescents desist from offending (Mulvey & Schubert, 2012). The Pathways to Desistance dataset is appropriate for this dissertation, as it provides for a sample of known, serious offenders and allows for an examination of desistance during the time period in which desistance from crime is most likely to occur among adolescents. This particular dataset also is useful as it provides a variety of psychosocial measures of social and subjective factors. In sum, the current study adds to the existing desistance literature, as no study to date has yet to examine the impact and interplay of both subjective and social factors on desistance from crime among a sample of *serious* adolescent offenders using within-individual analyses.

Research Questions

Although scholars have emphasized the importance of both subjective and social factors underlying desistance, direct examinations involving both factors are rare. Thus, the main research questions in this dissertation are as follows: (1a) Do changes in subjective factors (i.e., future expectations, identity, criminal thinking patterns) contribute

to desistance, controlling for changes in social factors and other important variables?

(1b) Do changes in social factors (i.e., romantic relationship, employment/education, peer influence) contribute to desistance, controlling for changes in subjective factors and other key variables?

As discussed in later chapters, the failure to examine both subjective and social factors simultaneously using the same statistical model, while controlling for other important criminological predictors, may have produced misleading findings in the extant desistance literature. For instance, desistance researchers may have overestimated the importance of certain factors on the desistance process, while potentially overlooking and underestimating the role of other key factors. This important implication is discussed in greater detail in later chapters.

If the results of the main analyses suggest the importance of both subjective and social factors, this will prompt further exploratory questions regarding the relationship between subjective and social factors in the desistance process. For instance, LeBel and colleagues (2008) find in their study that subjective factors appear to precede social factors, ultimately resulting in desistance (although they were unable to include all of their subjective and social variables in the model simultaneously, did not conduct a within-individual analysis, and failed to control for certain important variables, such as self-control). Thus, mediation analyses are performed to investigate if social factors may mediate the relationship between subjective factors and desistance from crime.

Alternatively, others have suggested the possibility of interaction effects between subjective and social factors (Sullivan, 2013). For instance, subjective factors may moderate the relationship between social factors and desistance from crime, although no

studies to date have tested for these interactions using within-individual analyses. As an example of this interaction, an individual experiencing high levels of self-control may be better able to resist the temptations of antisocial peers, compared to when that same individual may be experiencing relatively low self-control. Thus, exploratory analyses surrounding interaction effects are warranted given the lack of research in this area.

Policy Implications

Because the large majority of offenders incarcerated in either jails or prisons will reenter society at some point in their lives, it is imperative to understand how to support offenders who want to “go straight”. Likewise, it would be valuable to know how to promote the desire to change among those offenders who report no intentions of going straight in the future. However, without a comprehensive understanding of what propels some inmates in “going straight,” it is difficult to support desisting offenders appropriately. Thus, it is hoped that the findings of this dissertation will help elucidate some of the predictors involved in the overall desistance process.

Some researchers have noted that additional exploration of cognitive processes and subjective factors that promote desistance may be beneficial to the construction of effective cognitive-behavioral therapies (Kazemian, 2007; see Ward, Hudson, Johnston, & Marshall, 1997), which are proven strategies that have been shown to reduce recidivism among incarcerated offenders. Improving upon the social and cognitive skills of offenders may aid in the formation of stronger social bonds and integration (Kazemian, 2007, p. 7), and consequently, reduce offending. Having a basic understanding of the factors that promote desistance may be beneficial for interventions that target those who are most likely to desist from crime. In addition, if we know more about the processes

that encourage desistance from crime, then we may be able to better predict those who are at the beginning stages of desistance. This is important as it certainly is not economical to spend correctional funds incapacitating those who are already in the process of desistance (Farrington, 2007). Thus, the overall goal of the current study is to help shed light on important predictors of the desistance process. Extending knowledge in this area also may help to guide public policy in the area of offender reentry. Given high rates of reoffending, the issue of offender reentry has been described as one of the most pressing challenges facing American society (see Travis, 2002).

Dissertation Roadmap

The purpose of this dissertation is to examine the relative importance of subjective and social factors in the desistance process using within-individual analyses. Few desistance studies have examined the effects of subjective and social factors simultaneously, and fewer still have examined the interplay of subjective and social factors. And despite the power of within-individual analyses, desistance researchers have yet to fully exploit this methodological approach for this purpose; therefore, it is anticipated that findings from this research will lead to a more comprehensive understanding of the underlying processes and factors involved in desistance from crime.

In Chapter II of this dissertation, an overview and discussion of key concepts (i.e., desistance, subjective factors, social factors, and social bonds) is provided. In addition, this chapter includes a discussion surrounding the conceptual and methodological challenges associated with understanding the desistance process. Further detail regarding the life course perspective and other influential perspectives of desistance is provided in Chapter III. In addition, findings from the existing research focusing on the role of

subjective and social factors in the desistance process are discussed. Finally, in Chapter III some of the methodological challenges involved in longitudinal desistance research are addressed.

An overview of the Pathways to Desistance longitudinal dataset used in this dissertation is explained in Chapter IV. In addition, the specific measures employed in the dissertation are discussed, along with a review of the within-individual analyses used in this study. In Chapter V, the results from the main analyses are presented where social and subjective factors are examined simultaneously, within the same statistical model. In Chapter VI, exploratory analyses are presented which test for mediation and interaction effects. Finally, in Chapter VII, the results presented in the previous chapters are discussed, along with the study's limitations, theoretical and policy implications, and implications for future research.

CHAPTER II. CONCEPTUALIZING KEY TERMS

Although research examining the desistance process continues to grow, conceptual and methodological issues remain. Some of these challenges are discussed in this chapter, as well as the groundwork for understanding what is meant by the term *desistance* and other important concepts examined in this dissertation.

Desistance as a Process

Assigning a definition to desistance presents a unique challenge, as there has been little to no agreement among scholars regarding its conceptualization. Traditionally, desistance has been viewed as an event – the abrupt end to a criminal career. As noted by Maruna (2001), however, this view is problematic: “desistance from crime is an unusual dependent variable for criminologists because it is not an event that happens, rather it is the sustained absence of a certain type of event (in this case, crime)” (p. 17). Although many researchers have proposed to study and measure desistance from crime, few have provided concrete definitions on what they are actually seeking to understand (Maruna, 2001).

At the same time, some attempts have been made in the literature to concretely define desistance, although many of these attempts have proven to be quite vague and uninformative. For example, Farrall and Bowling (1999) describe desistance as the “moment that a criminal career ends” (p. 253), while Shover (1996) defines desistance as the “voluntary termination of serious criminal participation” (p. 121). Although these definitions are not erroneous, they provide little guidance regarding what constitutes the end of a criminal career, as well as a lack of consideration regarding the dimensions that surround the desistance process.

Laub and Sampson (2001) have been particularly vocal in their concerns regarding these definitional issues by noting that there is a dearth of theoretical conceptualization surrounding desistance, as well as a lack of theoretical explanations as to why desistance occurs. Further, they argue that there is a lack of understanding regarding the various factors that inspire the desistance process (p. 5). In response to these issues, Laub and Sampson (2001) reformulated their conceptualization by distinguishing between *termination* and *desistance*: “Termination is the time at which criminal activity stops. Desistance, by contrast, is the causal process that supports the termination of offending” (p. 11). Thus, they separate “termination (the outcome) from the dynamics underlying the process of desistance (the cause)” (Laub & Sampson, 2001, p. 11). However, these definitions are not without critique either. Their conceptualization would imply that desistance (the cause) leads to termination (the outcome) which seems counterintuitive. As noted by Maruna and Toch (2005), in criminology desistance typically means “the state of non-offending” – not the factors that lead to it.

Instead, Maruna and Farrall (2004) suggest a framework for desistance using Lemert’s (1951) two-pronged understanding of deviance, by proposing the use of the terms primary and secondary desistance. Primary desistance would include any time period of non-offending during the course of one’s offending career. Maruna and Farrall note that primary desistance is really only applicable to secondary deviants who are offending over time, instead of sporadically. However, according to Maruna and Farrall, the real focus for desistance researchers is secondary desistance, which involves the transition from criminal behavior to a new identity of non-offender. Although they note

that it would be difficult to operationalize these definitions, Maruna and Farrall suggest that the two could be differentiated based on lengths of time. Primary desistance would then be for short, sporadic time periods, maybe a few weeks or a few months, while secondary desistance would involve a more maintained pattern of non-offending over a much lengthier period of time.

Although Laub and Sampson, along with Maruna and Farrall, promote separate and distinct conceptualizations of desistance, both are helpful in that they suggest that desistance should be viewed as a process, instead of a single event. In fact, many desistance researchers now accept this view of desistance as a process, which has important theoretical and methodological implications. Fagan (1989) is one of the first scholars to distinguish desistance (in the context of family violence) as a “*process* [emphasis added] of reduction in the frequency and severity of family violence, leading to its eventual end when 'true desistance' or 'quitting' occurs" (p. 380). Many other scholars since have noted that desistance can and should be viewed as a process of maintaining a state of non-offending (Bushway, Piquero, Broidy, Cauffman, & Mazerolle, 2001; Laub & Sampson, 2001; Loeber & Le Blanc, 1990; Maruna, 2001; Uggen & Kruttschnitt, 1998).

For example, Maruna (2001) particularly notes that desistance can be viewed as a maintenance process and may be best defined as the “long-term abstinence from crime among individuals who had previously engaged in persistent patterns of criminal offending” (p. 26). This definition implies that a transition or change should not be the primary emphasis, but that the key is the actual maintenance of non-offending over time. Further, Laub and Sampson (2003) note that “the process of desistance *maintains*

[emphasis added] the continued state of nonoffending” (p. 21). As discussed above, they further argue that when focusing on within-individual change, it is necessary to distinguish the concept of desistance from the termination of offending (Laub & Sampson, p. 21). By noting that desistance begins *after* the termination of offending, they emphasize the importance of maintaining the state of non-offending.

Similar to research on religious transformations, desistance is not something that occurs at a specific point in time, but is a process where one’s choices lead them to a transformed state. Similarly, desistance also happens over time. For the purpose of the current study, desistance is conceptualized as a process, and consistent with Bushway and colleagues (2001), can be thought of as a “process of reduction in the rate of offending (understood conceptually as an estimate of criminality) from a nonzero level to a stable rate empirically indistinguishable from zero” (p. 500). As noted by Ezell (2007), conceptualizing desistance as a gradual process emphasizes the importance of examining covariates and causal factors that influences the acceleration or “intensity of the desistance process” (p. 29). However, regardless if desistance is viewed as a static indicator of non-offending or as a dynamic process that occurs overtime, both conceptualizations of desistance present unique challenges. These challenges are discussed in further detail below.

Methodological Challenges in Studying Desistance

The conceptual struggles of defining desistance also impact the operational challenges associated with measuring desistance. We know that most offenders eventually stop offending at some point in their lives and, therefore, desistance is not always a voluntary decision, as it can occur involuntarily through death, injury, or

incarceration. However, because many times desistance occurs voluntarily, it is difficult to predict when “true desistance” has actually occurred; therefore, making it difficult to conclude with full confidence that an offender has successfully desisted. Periods of non-offending may occur for months, years, or even decades. Certainly, after 20 years of legal behavior, we might conclude that an individual has successfully desisted from crime; however, the possibility remains that an offender may commit crime after long periods of non-offending. As suggested by Farrington (1986), “even a five-year or ten-year crime-free period is no guarantee that offending has terminated” (p. 201). Therefore, “true desistance” may not be able to be determined until death has occurred (Bushway et al., 2003). Consequently, measuring desistance presents its own challenges.

Complicating this issue further, many researchers utilize different operational definitions of desistance. Some employ a one year time window to determine the occurrence of desistance (e.g., Loeber et al., 1991; Maruna, 2001; Warr, 1998), while others require longer periods of non-offending (Laub & Sampson, 2003; Shover & Thompson, 1992; Uggen & Kruttschnitt, 1998). This is problematic, as demonstrated by Bushway and colleagues (2003). They found that the use of two different definitions of desistance on the same data produced different groups of “desisters.” Thus, researchers utilizing diverse definitions of desistance may reach different conclusions regarding the causes of desistance based on these definitions (see Brame, Bushway, & Paternoster, 2003).

It should be noted that this inconsistency in measuring desistance is glaring in the criminological literature, especially compared to other fields and disciplines. As discussed by Laub and Sampson (2001), in terms of cessation of other types of chronic

symptoms or behavior, the average follow-up time period in drug use research appears to be a period of three years, while cancer research typically declares remission after five years (Vaillant, 1996). Unfortunately, scholars in criminology have yet to determine an appropriate follow-up period for studying desistance; thus, these major inconsistencies may result in flawed and inconclusive findings in the desistance literature (as demonstrated by Bushway et al., 2003).

With these conceptual and operational issues in mind, the purpose of the current study is to overcome some of the major limitations identified in previous research. Although the current study is limited in the length of life course examined, a process definition of desistance is used. Because the focus of this study is to understand change in the factors that promote desistance over time, desistance is operationalized as non-offending during the recall period (6 months to 1 year). Although this is not a measure of permanent desistance, this allows for an examination of changes in subjective and social factors that promote extended periods of desistance or non-offending.

Defining Subjective Factors, Social Factors, and Social Bonds

The purpose of the current study is to examine the relationship between subjective factors and social factors in the overall desistance process. This area of research is significant because both subjective and social changes have been identified as important variables in the overall desistance process, although relatively few researchers have examined both processes simultaneously.

LeBel and colleagues (2008) are among the few who have examined both subjective and social factors in the desistance process. In their study, they provide broad definitions of what encompasses these factors. Using their definitions as a starting point,

the term *subjective factors* will refer to “changes in the way individuals experience, understand, interpret, and make sense of the world around them” (p. 133). In addition, the term *subjective* also can refer to “agentic” changes, such as choices, values, goals, and motivations (LeBel, et al., 2008, p. 133). As acknowledged by LeBel and colleagues, this is a broad use of the term *subjective*; however, the goal is to distinguish social factors, such as marriage and employment, from subjective states, such as motivations or intentions to change. For example, in their study, LeBel and colleagues examine the variables hope and self-efficacy, regret and shame, internalizing stigma, and alternative identities as subjective factors.

Maruna (1999; 2001) has been a strong proponent for understanding the role of subjective factors, and more specifically, personality traits and narratives in the process of desistance from crime. In addition, others have focused on specific aspects of personality, such as changes in self-concept and changes in strategies and goals in the desistance process (Giordano et al., 2002; Maruna, 1999; McAdams, 1994; Shover, 1983). Further, criminal thinking styles (Healy, 2010) and identity (Giordano et al., 2002; Maruna 2001) also have been found to be important subjective predictors in desistance from crime. Accordingly, in the current study the specific subjective factors that are examined include future expectations, identity, and criminal thinking patterns. The research surrounding the use of these subjective factors in the overall desistance process is discussed in detail in Chapter III.

In addition to examining subjective factors, LeBel and colleagues also examined *social factors*, which refer to “institutions, developmental events and processes” (p. 133). For example, the social factors examined in LeBel and colleagues’ work includes social

problems such as housing, employment, finances, relationships, and substance use. In addition, the role of social bonds on the overall desistance process has been an influential area of research for many desistance scholars- most notably Laub and Sampson. Specifically, a *social bond* is defined as an attachment or commitment to a social institution (Hirschi, 1969). According to Laub and Sampson, marriage and employment are both examples of social bonds and often serve as influential turning points in offenders' lives. The importance of these bonds have been emphasized and demonstrated in past research (Farrington & West, 1995; Horney, Osgood, & Marshall, 1995; Laub & Sampson 2003; Sampson & Laub, 1993; Simons & Barr, 2012; Uggen, 2000; Wright & Cullen, 2004). Further, researchers also have suggested the importance of antisocial peer influence in impacting the overall desistance process (Stouthamer-Loeber, et al., 2004; Warr, 1998; Warr, 2002), as the presence of antisocial peers may discourage the desistance process, whereas the absence of such peers may encourage desistance. Thus, for the current study, the broad term *social factors* is used to refer to peer antisocial influence and social bonds (i.e., romantic relationships and employment/education). In the next chapter, the existing research surrounding the role of subjective factors and social factors is described in detail. In addition, theoretical explanations surrounding the desistance process are addressed in depth, in order to provide a conceptual framework for the current study.

CHAPTER III. THEORIES OF DESISTANCE AND REVIEW OF EXISTING RESEARCH

Many conceptual and operational challenges remain when studying desistance from crime, and along with these challenges rest different theoretical perspectives regarding the desistance process. For example, some scholars argue that desistance “just happens” and is a natural element of aging (e.g., Gottfredson & Hirschi, 1990). Others point to social factors that explain offending and desistance over the life course (e.g., Laub & Sampson, 2003; Sampson & Laub, 1993). Some even note that subjective factors and psychological measures are important to consider when studying desistance from crime (e.g., Giordano et al., 2002; Maruna, 2001). These varying perspectives on desistance are examined in this chapter, along with the current research in this area. In addition, observations regarding the joint influence of social and subjective factors are discussed. Finally, methodological challenges associated with studying desistance from crime are addressed.

The Relationship between Age and Crime

One of the most consistent findings in criminology is the invariant relationship between age and crime. In the aggregate adult population, as age increases, offending decreases. Adolphe Quetelet (1833/1984) was one of the first social scientists to examine this relationship and found that crime peaked for many men in their late teens to mid-twenties. Goring (1919) also described this relationship between age and crime as a “law of nature”.

More recently, Sheldon and Eleanor Glueck (1974) described in their theory of maturational reform that “the physical and mental changes which enter into the natural process of maturation offer a chief explanation of improvement of conduct with the

passing of years” (p. 175). Thus, desistance is considered normative, and persistence in offending may be best explained by a lack of maturity. As noted by Piquero and colleagues (2003), scholars across time and culture have pursued research examining the relationship between age and crime, and this line of research remains one of the most widely examined areas within the field of criminology. However, despite this breadth of research, there is still much disagreement among scholars as to why declines in crime occur over the life course (Kazemian, 2007).

Similar to the Gluecks’ approach, Gottfredson and Hirschi (1990) argue that once offending levels peak in mid-adolescence, crime declines with age for all offenders. They suggest that this relationship is invariant across time, space, and historical context, and that no other variable can adequately explain this relationship. Thus, “spontaneous desistance is just that, change in behavior that cannot be explained and change that occurs regardless of what else happens” (Gottfredson & Hirschi, 1990, p. 136). Gottfredson and Hirschi further note that criminality refers to relatively stable propensities to commit crime that differ across individuals. Thus, crime is the criminal act committed, while criminality is the propensity to commit such acts. Therefore, while crime declines with age, criminal propensities remain relatively stable over time. In contrast to the Gluecks’ position, Gottfredson and Hirschi do not refer to the process of maturation, but instead find a direct effect of age on crime – “due to the inexorable aging of the organism” (Gottfredson & Hirschi, 1990, p. 141). As summarized by Laub and Sampson (2001):

From this theoretical perspective, it follows that criminal behavior is largely unaffected by life-course events- marriage, employment, education, and so forth- or any situational or institutional influences. The basic idea is that desistance ‘just

happens' and that the age effect cannot be explained with the available terms and concepts. (p. 40)

However, some seem to question this basic premise that desistance “just happens”. For instance, some scholars argue that offending does not always decline with age, and may even increase with age depending on the subgroup of offender and type of crime examined (Blumstein et al., 1986; Farrington, 1986). Glaser (1969) suggests a “zigzag path” where individuals experience cycles of criminal activity and noncriminal activity. Similarly, Matza (1964) proposes that offenders may “drift” between crime and conventional behavior.

Moffitt (1993) describes a developmental approach to understanding persistence and desistance in crime through her taxonomy of life-course persistent (LCP) and adolescence-limited (AL) offenders. In sum, Moffitt hypothesizes the existence of two distinct groups of offenders: LCP offenders begin their offending career somewhat earlier than AL offenders and persist in their antisocial behavior throughout adulthood, whereas the delinquency of AL offenders is situational, allowing these offenders to desist from crime when entering adulthood. AL offenders make up the largest portion of the offending (and general) population and do not display the neuropsychological deficits present in the relatively small group of LCP offenders. Her theory allows for “the constant process of reciprocal interaction between personal traits and environmental reactions to them” (Moffitt, 1994, p. 28); however, antisocial dispositions remain the guiding force behind offending behavior.

Since Moffitt’s earlier work, longitudinal studies now indicate a great deal of diversity in the age of desistance for many offenders, while also suggesting multiple

pathways to desistance (e.g., Bushway et al., 2003; Farrington & West, 1995; Laub & Sampson, 2003; Nagin & Tremblay, 2005). In particular, Laub and Sampson (2003) find in their longitudinal analysis that men displaying the individual level risk factors for LCP offending eventually desist from crime in adulthood, although at different rates; thus, they failed to find evidence of a single group of life-course persistent offenders matching the profile in Moffitt's taxonomy. Rather than falling into distinct groups of desisters and life-course-persistents, the offending patterns of the men in their landmark study fell on a continuum, with some offenders desisting in late adolescence and others in the late stages of life (and at all ages in between). Further, Laub and Sampson (2003) failed to find evidence of a single group of persistent offenders that could be identified prospectively (p. 194) and they warned against overreliance on offending typologies that may be defined without "prospective and external validation": "Despite the appeal of groups for simplifying a messy reality, we believe that criminologists may be better served by attending to individual trajectories of crime" (p. 289). Further, Maruna (1999) suggests, "any theory that uses age alone or a single, normative pattern of development to explain desistance *fails to account for the considerable heterogeneity of developmental pathways*" (p. 17).

As the current literature has focused on multiple pathways to desistance, a number of patterns have emerged. For example, some have found support for a life course perspective of desistance from crime where attachment to conventional others and stable employment positively encourage desistance (e.g., Sampson & Laub, 2001), while others find that desistance from crime occurs through cognitive transformations and "making good" (e.g., Maruna, 2001). A life course perspective emphasizing the importance of

social factors and turning points is discussed in further detail below, along with the current research in this area.

Life Course Perspectives of Turning Points

Developmental and life course theories of crime have become increasingly important and influential in the current desistance literature (Farrington, 2006, 2007). These theories account for offending across the life course, as well as the influence of different life events, and other risk and protective factors across time. As noted by Elder (1998), the life course perspective is based on a number of important principles: (1) historical time and place are embedded within the life course and individuals are shaped by this context over time, (2) timing in life is important in that the impact of a life transition or event is contingent on when it occurs within one's life course, (3) lives are linked through relationships, as well as social and historical influences, and (4) individuals construct their lives using their own agency, which is influenced and constrained by historical and social influences. The primary emphasis for those using life course perspectives is to "link social history and social structure to the unfolding of human lives" (Laub & Sampson, 2003, p. 33). Life course perspectives emphasize the importance of within-individual variations over time, focusing on changes in offending that is embedded within historical and contextual influences of life (Laub & Sampson, 2003).

One of the most influential life course perspectives is that of Sampson and Laub (1993) who "emphasize the role of age-graded, *informal* social control as reflected in the structure of interpersonal bonds linking members of society to one another and to wider social institutions (e.g., work, family, school)" (p. 303). In their explanation, they

emphasize the role of informal social bonds (especially strong bonds to family and school) in explaining juvenile delinquency. They argue that antisocial behavior is extended into adulthood and is apparent across a number of domains, such as crime, unemployment, and divorce (Sampson & Laub, 1993, p. 303).

At the same time, Sampson and Laub discuss important life events that can alter antisocial trajectories across time. In their perspective, they emphasize the role of social bonds in adulthood – especially attachment to employment and marriage. Sampson and Laub argue that regardless of differences in criminal propensities, trajectories can be altered by key life transitions, which they refer to as “turning points”. Obtaining stable employment, entry into a cohesive marriage, and military service are all examples of influential turning points that are theorized to reduce criminal behavior over time. These turning points have important implications in the desistance process, as they create new situations by (1) “knifing off” the past from the present, (2) providing supervision and monitoring, as well as opportunities for social support and growth, (3) allowing for change and structure to routine activities, and (4) providing opportunities for identity transformations (Laub & Sampson, 2003, p. 148-149).

Sampson and Laub contend that their life course perspective is different than other models, as it focuses on the quality or strength of social bonds rather than the timing or occurrence of turning points. Consequently, marriage itself is not a turning point that increases social control, rather it is the attachment and investment to marriage (Laub & Sampson, 2003). They further describe the influence of turning points as a process occurring over time, instead of a sudden change in behavior that happens instantaneously. Accordingly, they focus on “incremental change” that is rooted in

informal social controls (Sampson & Laub, 1993, p. 305).

Utilizing Sampson and Laub's life course perspective, a number of researchers specifically focus on the role of marriage/cohabitation and employment/education in the desistance process. Their findings typically emphasize the importance of social bonds and turning points in the overall desistance process. Turning to this research, we find overall support for Sampson and Laub's claims; however, important questions and implications remain. These ideas are discussed further below.

Existing Research on Social Factors and Turning Points

A number of scholars have examined the idea that social factors, in particular marriage and employment, can serve as significant turning points in individuals' lives, resulting in declines in criminal activity in adulthood (e.g., Blokland & Nieuwbeerta, 2005; Farrington & West, 1995; Laub & Sampson, 2003; Stouthamer-Loeber et al., 2004; Warr, 1998; Wright & Cullen, 2004). These turning points are thought to increase informal social control, which ultimately promotes long-term changes in behavior (Laub & Sampson, 2003). The turning points identified as most influential by Laub and Sampson (2003) include marriage and employment. Further, Warr (1998) points to the role of peer influence when examining the desistance process, as peer networks may explain why turning points, such as marriage and employment, appear to have such a large impact on the desistance process. Thus, romantic relationships, employment/education, and peer influence are examined in the current study as influential turning points. The role of turning points and the current findings in this area are discussed.

The role of marriage and romantic relationships in desistance.

The relationship between marriage and desistance has been widely examined over the past several decades through both quantitative and qualitative research, with the overall consensus being that marriage has a positive effect on the desistance process (e.g., Barnes & Beaver, 2012; Blokland & Nieuwebeerta, 2005; Farrington & West, 1995; Horney et al., 1995; King et al., 2007; Maume, Ousey, & Beaver, 2005; Sampson & Laub, 1993; Shover, 1996; Simons & Barr, 2012; Uggen, 2000; Warr, 1998).

Interestingly, marriage also has been found to have a significant inverse effect on crime based on research from other countries (Bersani et al., 2009; Savolainen, 2009). Further, existing research that has failed to detect a significant effect of marriage and desistance tend to use measures of marital status rather than marriage quality (see Kruttschnitt, Uggen, & Shelton, 2000). This suggests the importance of not only examining the status of the relationship, but also the *quality* of the relationship (see Laub & Sampson, 2003; West, 1982).

Laub and Sampson (2003) find a significant effect of marriage in their own research (see Laub, Nagin, & Sampson, 1998; Laub & Sampson, 2003; Sampson, Laub & Wimer, 2006); however, they note that several conditions must be present in order for marriage to have any real effect on criminal behavior. For example, Laub and Sampson argue that marriage alone is not enough to promote desistance in offending. Instead, a change in behavior must occur in reaction to an enduring attachment (Laub & Sampson 2003). This idea is consistent with Hirschi's (1969) social bonding theory, as marriage promotes "interdependent systems of obligation and restraint that impose significant costs for translating criminal propensities into action" (Laub & Sampson, 2003, p. 42). Thus,

the more investment one has in a marriage, the higher the incentive for avoiding crime (Laub & Sampson, 2003).

Support for this position was specifically identified by Laub and colleagues (1998), who found that early marriages considered socially cohesive had an increasing preventive effect over time. Further, Horney and colleagues (1995) found that marriage had a significant effect on decreased offending. Although Horney and colleagues did not use specific measures of marital attachment, they found that, for males, living with a wife lowered the odds of offending, while living with a girlfriend increased the odds of offending. Assuming that formalizing a relationship via marriage may increase attachment, their findings are consistent with the idea that marriage may be viewed as an investment. Consequently, one may have “more to lose” within a marriage when compared to a non-marital romantic relationship (Laub & Sampson, 2003).

Another reason why marriage may influence desistance is that marriage typically leads to significant changes in an individual’s routine activities. For example, one of the strongest predictors of crime is unstructured association with deviant peers, whereas the discontinuation of these friendships is a strong predictor of desistance (Warr, 2002). As noted by Osgood and Lee (1993), marriages consist of obligations that normally reduce the amount of free time spent outside of the marriage. In fact, Warr (1998) found support for this position, as marriage resulted in reduced time spent with friends and deviant peer groups. Further, Laub and Sampson discuss how marriage may result in the introduction of new friends and family, as well as relocation, which may change routines and exposure to deviant peer groups.

Related to this position, Laub and Sampson contend that marriage may result in desistance from crime because of the direct social control exercised by spouses. Consequently, one's free time outside of the relationship may be significantly curtailed by one's spouse upon marriage; therefore, less time is spent with deviant peers. As noted by the wife of a desister who insisted her husband change drinking locations: "It is not how many beers you have, it's who you drink with that matters" (Sampson, et al., 2006, p. 468).

Finally, Laub and Sampson note that marriage may change one's "sense of self." Getting married may suggest a new role in life – finally becoming an adult and a provider, which suggests new attitudes of responsibility and obligation. As illustrated by one offender, "I had to get the money to support the house. If I didn't have that, why would I have to quit drinking and go to work? I think that pushed me to a point anyways" (Laub & Sampson, 2003, p. 136). Thus, marriage can be considered a "hook for change" for some individuals (Giordano et al., 2002).

However, it is important to note that the proportion of those married has significantly decreased over the past several decades. Reflecting changes in norms and expectations surrounding the institution of marriage, individuals today may delay marriage or may not even marry at all (Seltzer, 2000). Thus, as marriage may have been historically relevant to Laub and Sampson's research, it may be less relevant for today's cohorts. Consequently, it is important for current research to consider forms of romantic attachments other than marriage (Simons & Barr, 2012).

Although there is limited research on non-marital romantic relationships and desistance from crime, the overall consensus is that the *quality* of the relationship matters

for both males and females (Giordano, Schroeder, & Cernkovich, 2007; McCarthy & Casey, 2008; Simons & Barr, 2012; Simons, Stewart, Gordon, Conger, & Elder, 2002). For example, McCarthy and Casey (2008) find that being in a romantic relationship does not impact delinquent behavior; however, “being in love” is associated with a reduction in delinquency. Others reach similar conclusions and find that being in a marital or non-marital relationship has no effect on crime; however, the degree of “happiness” with the relationship is inversely related to deviant outcomes (Giordano et al., 2007). One exception to this trend is Horney and colleagues’ (1995) research examining marriage versus cohabitation. They find that marriage reduces criminal involvement, whereas cohabitation may actually increase criminal behavior (Horney et al., 1995). However, the argument again can be made that the *quality* of the relationship was not examined sufficiently.

Simons and Barr (2012) recently advanced this area of research further by not only considering romantic relationship quality when examining desistance, but also the antisocial behavior of the romantic partner. Because most desistance studies do not control for the antisocial behavior of the partner, it is thought that the impact of the quality of romantic relationship on desistance is actually overestimated (Rhule-Louie & McMahan, 2007; Simons & Barr, 2012). To test this idea, Simons and Barr included romantic relationship quality and romantic antisocial behavior in the same model, and found that both remained significant when examining desistance from crime. However, in their analysis, Simons and Barr note that partner antisocial behavior increased offending for females, but not for males. This finding is consistent with Laub and Sampson’s position that men typically “marry up,” while women “marry down” (also see

King et al., 2007). Thus, women, who tend to display less antisocial behavior than men, may find their partners to be more antisocial, comparatively; thus, providing a strong antisocial influence on their lives.

Based on current findings in this area, future researchers should not only consider romantic relationship status, but the quality of such relationships, including the partner's antisocial behavior or influence. For the purpose of the current study, the quality of romantic relationships (marital and non-marital) is examined, along with the antisocial influence of the romantic partner. As suggested by previous research, the quality of romantic relationships may prove to be more telling in the desistance process, than just simply examining relationship status. Further, Simons and Barr suggest that antisocial romantic partners also may be an important influence on offending behavior. Relatedly, another social bond specified as important by Laub and Sampson is the role of employment and education. Current research findings regarding this relationship are discussed in further detail below.

The role of employment and education in desistance.

Similar to the role of marriage on desistance from crime, employment also may have a significant effect on offenders' desistance (e.g., Farrington, Gallagher, Morley, St Ledger, & West, 1986; Kruttschnitt et al., 2000; Laub & Sampson, 2003; Mischkowitz, 1994; Sampson & Laub, 1993; Southamer-Loeber, et al., 2004; see Giordano et al., 2002 as an exception). In fact, Laub and Sampson (2003) suggest that the underlying processes involved in employment as a substantial predictor of desistance are similar to that of marriage; therefore, indicators of stability and attachment to employment must be present in order for this bond to have a significant effect. For example, some researchers

examining employment and desistance from crime failed to find significant effects; however, their studies only used measures of employment status rather than measures of commitment to employment or quality of employment (Horney et al., 1995; Maume et al., 2005). Accordingly, the argument has been made that commitment to work, job stability, and ties to employment all are important indicators that serve to increase informal social control and ultimately lead to desistance from crime (Laub & Sampson, 2003).

Similar to marriage, employment also can be considered as an investment. As discussed by Laub and Sampson, employers make an investment in an employee in anticipation that the arrangement will be successful, thereby, prompting a return investment by the employee. As noted by one of the Gluecks' subjects, "My employer... was good to me. He trusted me with the money, put his confidence in me, and I learned to respect such confidence and was loyal to him" (Laub & Sampson, 2003, p. 47).

Investments in these types of relationships generate social capital (i.e., social investments or resources based on relational ties, see Coleman, 1988), which may ultimately lead to the desistance process (Savolainen, 2009). Further, social capital is thought to accumulate gradually over time, similar to the idea that desistance is a gradual process occurring over time (Laub, Nagin, Sampson, 1998).

Comparable to the role of marriage, work also provides a change in routine activities. Work, especially full-time work, may provide for less unstructured time, which further restricts offenders' availability to become involved in criminal activities (Laub & Sampson, 2003). This is illustrated in Tripodi and colleagues' (2010) study examining Texas parolees. They find that while employment does not reduce the odds of

being reincarcerated, employment does extend the length of time that parolees remain in the community prior to being reincarcerated. Thus, employment may increase the amount of time offenders remain in the community crime-free based on its disruption of one's routine activities.

Employment also may provide a new sense of identity and meaning for individuals (Laub & Sampson, 2003). Working may allow an individual to view him/herself as a responsible adult who has priorities and obligations. For example, one offender in Laub and Sampson's research explained, "Being able to work, being able to get a pay check... Being able to go to the store and buy something and not have to steal it. That's important in life... what changed my life is work" (p. 139). Further, as noted by Wallace (1986), for some young men, gainful employment shifts them away from the state of "permanent adolescence" and propels them toward adulthood.

At the same time, work does not randomly attach itself to individuals (Gottfredson & Hirschi, 1990). When estimating the effects of employment on desistance, it is therefore important to control for individual characteristics that may drive both employment and desistance. In fact, some researchers find there is little to no relationship between youth employment and delinquent behavior when individual traits are taken into account, such as self-control or impulsivity (Apel et al., 2007; Paternoster, Bushway, Brame, & Apel, 2003). However, work may still contribute to a reduction in delinquency for certain groups, including those who are at-risk of antisocial behavior at an early age (Apel et al., 2007). Further, Wright and Cullen (2004) suggest that youth employment may actually lead to an *increase* in offending when the work experience involves contact with deviant coworkers, leading to the development of "criminal

capital.” In contrast, youths whose co-workers are prosocial may encourage conventional behavior, thereby encouraging “prosocial capital.” Thus, Wright and Cullen’s work emphasizes the importance of controlling for deviant peers when examining social bonds such as employment.

Although Laub and Sampson (2003) emphasize the role of employment as a potential turning point, employment may be less of a turning point for young adults today than it was in previous decades. For example, many young adults may now forego employment temporarily, and instead, pursue a college degree full time. Therefore, it is possible that education may also serve as an influential turning point in offenders’ lives, possibly now more so than ever. Following the lead of previous researchers (i.e., Horney et al., 1995; Stouthamer-Loeber et al., 2004), education is examined as a potential turning point in the current study, in combination with employment. It is thought that education may serve as a turning point in a similar way as employment. Education requires commitment and an investment in order to be successful. Pursuing an education also alters one’s routine activities and may help prevent association with delinquent peers. Further, education may provide a change in the way one perceives him/herself, thereby promoting more responsible behavior. The specific approach for measuring employment/education is discussed in detail in Chapter IV.

The role of peer influence in desistance.

As discussed above, both marriage and employment/education can lead to a disruption in one’s peer network, which may ultimately reduce one’s involvement in antisocial activities. The idea is that attachment to conventional social bonds (e.g., a wife or employment), will lead to greater associations with conventional others, and less

association with delinquent peers. If one risks losing their employment or wife due to regular, heavy drinking with friends, then an individual may feel compelled to disengage in these activities. Further, a significant other or employer may directly forbid association with any antisocial influences. In fact, research in this area confirms that antisocial peers can have a direct influence on the desistance process (Warr, 2002). As illustrated by one offender, “that was a big problem when I was a kid. I was very influenced [by friends]. It’s taken you know (laugh) eleven years to make my own decisions, but that’s the way I do things now” (Giordano, Cernkovich, & Holland, 2003, p. 308).

Many criminologists have long acknowledged that association with delinquent peers is the strongest predictor of delinquent behavior (with the exception of one’s own prior delinquency) (Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979; Elliott, Huizinga, & Ageton, 1985; Jensen, 1972; Liu, 2003; Warr, 1998, 2002). Associating with conventional peers on a frequent, long-term basis is strongly correlated with conventional behavior, while greater association with antisocial peers is strongly correlated with delinquent behavior (Akers & Sellers, 2009). Warr (1998) in particular has been very influential in advancing the argument that turning points alter antisocial trajectories based on the disruption of antisocial peer networks. Peer groups greatly increase the availability and opportunity for delinquency; therefore, disrupting such peer groups while encouraging attachment to conventional peers, may greatly reduce one’s own delinquent involvement.

In particular, Warr found that marriage leads to desistance from crime because of a shift in focus from antisocial peers, to the spouse and family. This transition during

one's life course reduces their association with delinquent others, thereby reducing the opportunity and motivation to engage in crime (Warr, 1998). Thus, "marriage appears to discourage crime by severing or weakening former criminal associations" (Warr, 1998, p. 209). Further, Warr suggests that old friends from adolescence are likely to be replaced with new friends during one's transition to college or first "real" job. Warr argues that these new, older friends typically have aged out of crime or have no criminal history.

Thus, this research suggests that while marriage, employment, and education may indeed be important transitions during one's life course, the importance of these turning points on desistance is primarily based on the disruption of peer networks. It follows, then, that it would be important to include peer antisocial influence as a social factor in the current study, to see if relationship quality and employment/education status remain significant when peer influence is considered.

In fact, one recent test of Warr's ideas was conducted by Simons and Barr (2012), who examined a mediation framework to see if the impact of romantic relationships on desistance was primarily mediated by deviant peers. Although Warr found that less involvement with delinquent peer networks almost entirely explained the relationship between marriage and desistance, Simons and Barr note that changes in peer networks only marginally explain the impact of non-marital romantic relationships on desistance in their study. Thus, their findings seem to suggest that the quality of romantic relationships are important in the desistance process, even after controlling for deviant peers and deviant partners. Given the preliminary findings in this area, the current study further explores the relationship between romantic partners, deviant peers, and desistance from crime.

Overall, a number of desistance researchers have examined the importance of social factors in promoting one's cessation of criminal activity. Although Laub and Sampson (2003) note that "desistance is facilitated by self-described 'turning points' ... in combination with individual actions (that is, personal agency)" (p. 278), they also argue that long-term offending cannot be explained by individual differences and that offenders can desist from crime without cognitive transformations. Further, while Laub and Sampson acknowledge the importance of agency in the desistance process, they also strongly endorse the idea that social bonds precede cognitive transformations. Accordingly, it is the fear of losing one's investment in the social bond that actually promotes such transformations.

Although the importance of social factors has been well established in the desistance literature, influential perspectives taking an alternative approach in explaining desistance are also worthy of examination. Instead of focusing on the importance of social factors on desistance from crime, the importance of subjective factors in the desistance process is emphasized. These perspectives of desistance are discussed in detail below, along with the current research findings in this area.

Subjective Models of Desistance

One of the primary criticisms of social models of desistance is their tendency to downplay the role of subjective factors in the desistance process. For instance, Gottfredson and Hirschi (1990) deride the idea that "jobs somehow randomly attach themselves" to individuals (p. 188). Alternatively, scholars emphasizing the importance of subjective factors in the desistance process focus on the role of personal agency, identity, and cognitions. As discussed by LeBel and colleagues (2008), a strong

subjective model emphasizes that desistance is either uncorrelated with important life events, such as marriage and unemployment, or that life events are correlated only because they remain within the control of the individual. Consequently, without the appropriate mindset, transformative life events are unlikely to happen. In contrast to Laub and colleagues' (1998) position that "good things sometimes happen to bad actors" (p. 237), the subjective model supports the idea that "good things happen to positive people, and bad things happen to negative people" (LeBel et al., 2008, p. 138).

This subjective perspective, also referred to as cognitive behaviorism, developed from psychologists' attempts to understanding repeat offending (Farrall & Calverley, 2006). The key argument from this perspective is that offenders often display relatively poor thinking skills, and more specifically, inadequate decision-making and problem-solving skills (Farrall & Calverley, 2006; see McGuire & Priestley, 1985 for an overview). Using this perspective, interventions typically involve changing criminal thinking patterns, while promoting problem-solving and social skills training.

In addition, other scholars propose different versions of subjective models. For example, Maruna (2001) stresses the importance for offenders to make psychological breaks from crime by creating a prosocial identity. According to this perspective, desisting offenders often grow tired of the criminal life and recreate and repurpose their lives through "redemption scripts". On the other hand, persistent offenders express themselves through "condemnation scripts", where they indicate a "sense of being doomed or fated to their situation" (Maruna, 2001, p. 11). Persistent offenders make sense of their lives by pointing to external obstacles outside of their control that prevented them from achieving any form of conventional success, while desisting

offenders note personal control over their own destiny. Thus, to desist from crime successfully, offenders must see themselves as “good” people who may have acted in “bad” ways, but who have the power to rewrite their life story.

Giordano and colleagues (2002) also promote a subjective model of desistance using a gendered approach to account for both male and female offenders. In their theory of cognitive transformation, they note that offenders must first experience an “openness to change”, followed by an exposure to “hooks for change” or turning points. These opportunities are believed to redirect offenders’ lives if they perceive the opportunity as a “positive development” and are willing to accept this new challenge (Giordano et al., 2002, p. 1001). Once they are exposed to these hooks for change, desisting offenders may begin to alter their perceptions of self, similar to the “redemption scripts” described by Maruna. This is then followed by a transformation in the way they view crime and their future.

Following the lead of these influential perspectives, the role of subjective factors in the desistance process has been underscored in a number of recent studies. Overall, many of these works suggest considerable support for a subjective model of desistance that focuses on cognitive and subjective changes within individuals. The current research in this area is discussed in detail below.

Existing Research on Subjective Factors and Desistance

Although the examination of social bonds and the role of structural factors on desistance have been emphasized in the past, recent interest in subjective factors has grown among desistance researchers. Examinations of subjective and psychosocial factors is an important area of research, as factors such as identity, self-worth, future

expectations, and criminal thinking patterns have been found to be important predictors of the desistance process (Giordano et al., 2002; Healy 2010; LeBel et al., 2008; Maruna, 2001). In fact, some of this research examines the superiority of subjective predictors over structural predictors. For instance, Leibrich (1993) was unable to note “any obvious external differences in social environment of those who were going straight and those who were not” (p. 137), and instead found significant cognitive changes that were associated with the desistance process.

For the purpose of the current study, three influential subjective factors are examined in order to understand the impact of these factors on the desistance process. These factors include: 1) future expectations, or one’s perceived likelihood of future success in family, career, and conventional behavior, 2) identity, examining individuals’ clarity of the self and self-esteem, and 3) criminal thinking patterns, indicative of traits such as manipulation, unemotionality, and thrill seeking. Existing research on these three factors are discussed further below.

Future expectations.

Positive future expectations have been linked to a number of outcomes, including resiliency among youth (Sipsma, Ickovics, Lin, & Kershaw, 2012). And research has linked negative future expectations to increased levels of delinquency (Brezina, Tekin, & Topalli, 2009; Quinton, Pickles, Maughan, & Rutter, 1993; Raffaelli & Koller, 2005). In particular, the expectation of failure in key life domains (family, school, labor market, staying out of trouble with the law) is associated with elevated levels of antisocial behavior.

For instance, Maruna (2001) examined offenders’ beliefs about who they want to

become in the future, as well as who they *could* become. Maruna finds that those who persist in criminal activity see no real hope for change in their lives and come to believe that they are “doomed to deviance”. In contrast, Maruna notes that desisting offenders typically possess hope for the future and feel a sense of personal control over their lives. Relatedly, the idea of *possible selves* suggest that individuals may shape their behavior over time, in order to align their conduct with who they want to become in the future (Markus & Ruvolo, 1989). As stated by one offender, “I wanted a house, I wanted a life, stability and a future, and that [going straight] was the only way I could do it” (Maruna, 2001, p. 165). Consequently, expectations may be linked with future behavior. In fact, in their longitudinal study, Iselin and colleagues (2012) found that expectations to stay out of trouble with the law among adolescents are associated with lower levels of subsequent self-reported offending.

Shover (1983, 1985) further describes crime as becoming a less attractive option over time, as individuals become disenchanted with the criminal lifestyle, and their expectations for succeeding in the criminal world begin to diminish. In their study, Shover and Thompson (1992) examined if age and a lack of success at crime is associated with offenders’ reduced expectations for achieving success at criminal pursuits. They found overall support for this relationship, as desistance was more likely to occur when offenders’ expectations for succeeding in the areas of friendship, money, autonomy, and happiness through crime decrease. However, when examining expectations for achieving success via straight pursuits (i.e., conventional pathways), they found it was not significantly associated with desistance, although they note that their measure of straight pursuits was less than ideal.

Overall, this research points to the importance of examining future expectations in the desistance process, as the existing literature suggests that future expectations are significantly linked to future behavior. As suggested by Maruna's research, identity also may play a key role in one's cognitive transformation toward a non-offending state. Narrative theories in particular stress the importance of subjective changes in one's "sense of self," which is seen through changing motivations and greater concern for others (McNeill, 2006, p. 46).

Identity.

Identity is thought to be a way of organizing information about one's self (Clayton, 2003, p. 45). Mead (1964) notes that an important aspect of cognition is one's ability to reflect on the self. Further, Paternoster and Bushway (2009) acknowledge that identity is important to examine as it serves to motivate and provide direction for behavior. They recognize how fields such as social psychology and sociology have traditionally emphasized the importance of self-conceptions and identity, and more recently, criminologists have begun to examine identity and its link to the desistance process.

When examining identity and desistance, Maruna (2001) suggests that desisting offenders hold more conventional identities than other offenders, and may be less comfortable with their criminal behavior. He found that these individuals may highlight one of their sub-identities, such as being a good parent, to remind themselves that they really are not a "bad person," even if they have committed crime. Further, Maruna notes that many desisting offenders view themselves as good people "deep down" who were pushed into bad behaviors; therefore, they are more likely to neutralize or provide

justifications for their behavior. During this time, “generative activities” (actions that typically contribute to the well-being of others) serve as evidence that an alternative identity for the offender has been constructed. For example, one offender illustrated their desire for change: “Yea I always classed myself as a good thief now I want to be a good photographer” (Maruna, 2001, p. 91). These findings as a whole suggest that it is important to examine changes in identity over time, in order to investigate how these changes may relate to offending patterns.

Giordano and colleagues (2002) also emphasize the importance of cognitive transformations and shifts in identity where hooks for change may influence such shifts. They theorize that changes in identity gradually decrease one’s desire to participate in criminal activities; thus, a new, more conventional identity serves as a “cognitive filter” used for decision-making (Giordano et al., 2002, p. 1001). This new cognitive filter directs offenders to make conventional choices in life that align with their new identity.

From a quantitative perspective, LeBel and colleagues also found support for examining alternative identities using a subjective-social model of desistance. In their study, they found that among inmates released from prison, the odds of re-imprisonment decreased for those who identified with a conventional role (such as being a “family man”), compared to those who do not hold a conventional identity. This finding remained consistent even after controlling for a host of other social factors. Thus, it appears that maintaining a conventional identity is an influential force in determining later conduct.

In sum, it is important to investigate changes in identity over time, and how the creation of a more prosocial identity may result in non-offending behavior. The idea that

a “cognitive filter” may be used in the decision making process aligns well with research examining criminal thinking patterns and its role in the desistance process. Those who display criminal thinking patterns may be qualitatively different from those who display a cognitive filter that sifts out unconventional thoughts and ideas. Next, findings from the current research on criminal thinking patterns are discussed.

Criminal thinking.

The role of criminal thinking in offender rehabilitation is one of the oldest ideas in corrections (LeBel et al., 2008). Recent efforts examining criminal thinking patterns have focused on *how* desisting offenders think and how these patterns may differ from those of persisting offenders (LeBel et al., 2008). The overall idea is that if criminal thinking patterns can be altered, then this may disrupt one’s criminal lifestyle, resulting in more prosocial behavior.

In fact, pro-criminal attitudes have been found to be one of the strongest predictors of recidivism (Andrews & Bonta, 2006). It logically follows that this area of research may be important in understanding the desistance process. Indeed, a number of studies show support for the idea that criminal thinking patterns may be involved in persistence in offending, while more conventional thinking patterns are related to the process of desistance. For example, using three different psychometric instruments, Healy (2010) found that criminal thinking styles were an important predictor of primary desistance, and in contrast, perceived social circumstances did not have an effect. These results suggest that offenders are not passive participants in their social circumstances, but that offenders’ personal agency is critical in the desistance process (Healy, 2010).

Glenn Walters, a leading scholar in the study of criminal thinking patterns,

identified eight cognitive thinking patterns displayed by those who are committed to a lifestyle of crime. He notes that although some non-criminals may display these characteristics at times, lifestyle criminals display these thinking patterns consistently as part of their deviant lifestyle. These characteristics include mollification (blaming external sources for irresponsible actions), cutoff (eradication of deterrence through the use of an image or phrase, such as “fuck it”), entitlement (viewing oneself as privileged and exempt from societal rules), power orientation (categorizing those who are weak versus those who are strong), sentimentality (the expression of feelings and interests in a self-serving manner), superoptimism (extreme confidence and optimism), cognitive indolence (being exceedingly lazy), and discontinuity (breaking commitments) (see Walters, 1990 and Walters & White, 1990 for an overview). As noted by Walters, most of these patterns are derived from Yochelson and Samenow’s (1976) innovative work examining 52 cognitive errors in offenders’ thinking patterns.

To test his perspective on criminal thinking, Walters developed instruments, such as the 17-item Lifestyle Criminality Screening Form (LCSF) (Walters, White, & Denney, 1991). This instrument is designed to assess four overall patterns that characterize the criminal lifestyle (irresponsibility, self-indulgence, interpersonal intrusiveness, and social rule breaking) and has been used to measure criminal justice outcomes (Walters, 2003). More recently, Walters (1995) developed the Psychological Inventory of Criminal Thinking Styles (PICTS). In brief, this instrument consists of an 80-item, self-report inventory that measures criminal thinking patterns that are thought to sustain a criminal lifestyle. Walters’ PICTS scale has shown promise and has been found to significantly correlate with criminal background measures (Walters, 1995; Walters, Elliott, & Miscoll,

1998), as well as future disciplinary and release outcomes (Walters, 1996, 1997; Walters & Elliott, 1999). Further, Healy (2010) used the PICTS scale and noted that primary desisters were less likely to use criminal thinking styles compared to current offenders.

In sum, the above findings suggest the importance of examining criminal thinking patterns in the desistance process, as well as other subjective factors, such as changes in future expectations and identity. At the same time, it is difficult to discount the overwhelming evidence pointing to the importance of social factors in the desistance process. Consequently, the discussion below explores a compromise between a strong subjective model and a strong social model of desistance, resulting in an integrative framework that may be more suitable in exploring the desistance process.

Subjective-Social Models of Desistance

Acknowledging that desistance is a gradual process that occurs over time, many desistance scholars recognize that the most comprehensive models of desistance combine subjective and social factors in explaining the desistance process. Subjective-social models of desistance are important, as these models allow for a more comprehensive understanding of desistance, which is especially relevant when considering interventions that may be most appropriate for desisting offenders. Thus, instead of promoting one model over the other, desistance researchers should seek an integrative approach, in order to make the greatest contribution to the desistance literature.

As a start to developing such an integrative framework, Bottoms and colleagues (2004) proposed a subjective-social model where individual characteristics may interact with social context, noting a cyclical relationship in this interaction. Wikström (2004) also endorsed a psychosocial model of desistance suggesting a similar interaction.

Likewise, Farrall and Bowling (1999) emphasized the integration of both agency and situational circumstances when examining desistance, and warned researchers about the dangers of failing to consider both factors. Further, Catalano and Hawkins' (1996) social development model provides a mechanism for reciprocal effects among social structure, individual constitutional factors, and external constraints. In sum, many scholars acknowledge the importance of both subjective and social factors in the desistance process. Yet, very few actually test this integrative model. At the same time, it would be misleading to suggest that the perspectives discussed in the preceding section that emphasize social factors over subjective factors (or vice versa) do not acknowledge the other competing models. For example, Laub and Sampson (2003) promote a desistance model that is strongly based on social context while acknowledging that "personal agency looms large" in the desistance process (p. 280). They recognize that the men in their study were "active participants in the decision to give up crime" thereby noting that "both objective and subjective contingencies are important in the desistance process" (p. 146). Nevertheless, their position favors the idea that social bonds tend to precede subjective changes. Accordingly, individuals' commitments to social bonds are not always made "consciously or deliberately but rather ... 'by default' – the result of 'side bets' (Becker, 1960, p. 38)" (Laub & Sampson, 2001, p. 51). Laub and Sampson further suggest that many desisting offenders make a commitment to go straight without even realizing it. It was only after these offenders invested so much in their marriage or employment that they realized they did not want to risk losing their investment. Thus, agency plays a critical role in the desistance process *after* social bonds are forged.

Simons and Barr (2012) tested a mediation framework where it was hypothesized

that a criminogenic knowledge structure (characterized by a hostile view towards relationships, low commitment to conventional norms, and a tendency to discount the future) along with deviant peers, mediate the relationship between romantic relationship quality and desistance. Their framework further promotes the idea that cognitive changes *follow* changes in social bonds. In fact, although they found that deviant peers did not mediate the relationship between romantic relationship quality and desistance, a criminogenic knowledge structure did serve as a mediator between romantic relationship quality and desistance. The authors caution that although cognitive transformations may indeed be important in the overall desistance process, their findings do not indicate that cognitive structures are more *important* than social bonds, and further agree with Laub and Sampson (2003) that “offenders can and do desist without a cognitive transformation” (p. 279).

Using a different approach, Giordano and colleagues (2002) suggest the importance of both agency and structure in desistance from crime, as “the actor creatively and selectively draws upon elements of the environment in order to affect significant life changes” (p. 1003). This is clearly illustrated in their discussion of “hooks for change” or turning points that rely heavily on social context. Further, Maruna (2001) acknowledges the idea of a subjective-social model in that “narratives cannot be understood outside of their social, historical, and structural context” and are “developed through social interaction” (p. 8). In contrast to Laub and Sampson’s position, the theoretical frameworks advanced by Maruna and Giordano and colleagues tend to promote the idea that subjective changes *precede* social bonds. In other words, the process of forging meaningful social bonds is contingent, at least in part, on the development of certain

attitudes or cognitive orientations. For example, in Giordano and colleagues' framework, offenders must first experience an "openness to change", which is then followed by an exposure to "hooks for change" or turning points. Relatedly, McCord (1994) suggests in her review of Sampson and Laub's (1993) work that the qualitative case studies examined by the authors even "seem to show that attitude changes precede the attachments which Sampson and Laub emphasize in their theory" (p. 415).

One of the few studies to examine a subjective-social model was conducted by LeBel and colleagues (2008), who directly tested these competing frameworks. Using a sample of 130 male, ex-prisoners, LeBel and colleagues analyzed the Oxford University "Dynamics of Recidivism" study, which consisted of multiple interviews with repeat offenders in the United Kingdom. Wave one in their study involves interviews focused on expectations for life after release from prison and what these offenders perceive to be future obstacles to desistance. Wave two contains interviews surrounding these offenders' social circumstances (i.e., problems regarding housing, employment, finances, partner and family relationships, alcohol, and drugs), focusing on their experiences upon returning to the community. Wave three of the study contains interviews of these offenders 10 years later. The primary purpose of their study was to compare and test three competing models: (1) a strong subjective model of desistance, (2) a strong social model of desistance, and (3) a subjective-social model of desistance. Using a series of ordinary least squares (OLS) and logistic regressions, LeBel and colleagues tested if both social and subjective factors contribute to the desistance process, and then if social factors mediate the relationship between subjective factors and desistance from crime.

The results of their study indicate that both subjective and social factors are related to desistance from crime. Further, subjective factors appear to precede social events, which mediate the relationship between cognition and desistance. For example, an individual's change in mindset may lead them to form stronger social bonds, which may ultimately result in desistance. Although their initial test of a subjective-social model is promising, little research has been conducted to confirm and extend these findings.

At the same time, LeBel and colleagues' initial test of a subjective-social model is limited in a number of ways. One of the major limitations of their study is that the sample consists of a little over 100 male ex-prison inmates from the United Kingdom. Thus, their sample size is small and the generalizability of their findings is rather limited. This small sample size did not allow them to run a full model of all of their measures simultaneously; thus, LeBel and colleagues were required to run a series of separate regressions to investigate each measure of interest. One of the consequences of this limitation was that they were unable to make any conclusions about the relative impact of the specific subjective characteristics examined when compared to one another (LeBel et al., 2008, p. 145). Further, two of the three subjective factors examined were limited in that they were dichotomous in nature. LeBel and colleagues' sample size also limited the number of control variables they were able to include in the analyses. In particular, self-control was not included, nor was antisocial peer influence. Relatedly, because they only analyzed two time periods, they were unable to perform advanced statistical techniques that could potentially control for unobserved heterogeneity. Finally, their dependent variable of interest was limited in that only official records of offending history were

examined, despite the advantages of using self-report measures of offending in desistance studies (see Farrington, 2007).

The current study, discussed in depth below, differs from LeBel and colleagues not only based on the specific research questions of interest, but also as the current study is not as limited in terms of sample size or characteristics. The current study involves over 1,350 male and female serious adolescent offenders from two sites in the United States. This increases the generalizability of the findings, especially in comparison to LeBel and colleagues' study. This increased sample size, along with 10 waves of data, allow for more advanced statistical techniques to be used, most noteworthy, the use of within-individual analyses.² Further, the current study advances this area of research in that all variables of interest are included in the models simultaneously. Finally, the models include important time variant measures, such as self-control and peer antisocial influence.

In addition to these key differences, the current study not only investigates any potential mediating effects, but also examines direct effects using both subjective and social factors simultaneously, allowing for these factors to be rank ordered in terms of relative impact on the desistance process. In addition, the possibility of interaction effects among subjective and social factors is examined. These examinations are critical for this area of research in that the debate continues over the potential for mediation effects, the relative importance of both subjective and social factors, and the potential for interaction effects. As Sullivan (2013) confirms following his review of the desistance literature:

² The benefits of using within-individual analyses are discussed in depth in the following section.

Although there is now some convergence in the assertion that both agency and structure matter.... There is also a great deal of work to do in determining how to best integrate and test the interdependent aspects of the change process. (p. 212)

Thus, the purpose of the current study is to extend this important area of research by directly examining the relative impact of subjective and social factors on the desistance process, as well as the role of potential mediation and interaction effects. An overview of the current study is discussed in depth below.

The Current Study

As noted above, a better understanding of the relationship between subjective and social factors has been identified as a key area of research in the current desistance literature (Kazemian, 2007; LeBel et al., 2008; Sullivan, 2013), as relatively few studies have examined this complex relationship. As noted by Kazemian (2007), “it would be quite useful to explore whether changes in social bonds and cognitive predispositions also contribute to the desistance process” (p. 21). Further, Farrington (2007) contends that “special efforts should be made to carry out within individual analyses” (p. 132) when examining models of desistance. Others also confirm the utility of this approach for desistance research (Ezell, 2007; Kazemian, 2007; Sullivan, 2013). Consequently, the current study attempts to fill this gap in the literature by examining the relative influence of subjective and social factors, as well as the interplay between these factors, using within-individual analyses.

The use of within-individual analyses is significant in extending this area of research, as there has been a lack of attention given to within-individual change in offending (Farrington, 2007; Horney et al., 1995; Kazemian, 2007; Laub & Sampson,

2001; LeBlanc & Loeber, 1998). This specific statistical approach allows for an examination of within-individual change using individuals as their own controls, making a comparison group unnecessary (Horney et al., 1995). Consequently, this approach is powerful as it rules out the possibility of spuriousness for all measured and unmeasured time stable characteristics. It should be noted, however, that the relationship between subjective factors, social factors, and desistance could be potentially influenced by other time variant factors, such as the proportion of time supervised in an institutional setting (approximately 87% of the entire sample spend some time in an institutional setting over the seven years of the study), as well as drug use. Thus, it is important to control for such factors in the analyses.

Within-individual analyses are particularly important in this area of research based on the debates within the field surrounding stability and change. Gottfredson and Hirschi (1990) in particular have argued that individuals have time-invariant differences in criminal propensities (after the age of 8-10); therefore, life events in adulthood are not important predictors of antisocial behavior once these individual differences are statistically controlled (see Ezell, 2007). As discussed by Horney and colleagues (1995), Gottfredson and Hirschi argue that longitudinal studies intending to study changes in offending over time “offer no real advantage and waste resources” (p. 657), as “crime-relevant characteristics of people cause all of these events” (Gottfredson & Hirschi, 1990, p. 237). Thus, the use of within-individual analyses allow for a test of these arguments (Horney et al., 1995). Further, in the current study, self-control characterized by impulsiveness and display of aggression is statistically controlled. This will allow for a conservative test surrounding Gottfredson and Hirschi’s claims, by including potential

changes in one's level of self-control in the models.

In the current study, the social factors examined include: the status, quality, and antisocial influence of romantic relationships (marital and non-marital); employment and education status; and peer antisocial influence. The subjective factors examined include: future expectations, identity, and criminal thinking patterns. A self-report measure of offending is used to investigate if desistance is occurring. The use of a self-report measure is noteworthy, as much of the current quantitative desistance research has relied on official reports of offending (Farrington, 2007); therefore, the use of self-reported offending is valuable in uncovering a more complete range of offending behaviors (not being limited to those behaviors that result in official contact with the criminal justice system). The specific data and methods employed are discussed in the following chapter.

In addition, serious adolescent offenders' transitions from adolescence to adulthood are examined in the current study. As noted by Mulvey and Schubert (2012), few longitudinal desistance studies have specifically focused on youthful offenders, and as a result, far more is known about the causes of juvenile offending than the causes of juvenile desistance. Thus, in order to fill this gap in the literature, desistance among serious adolescent offenders is analyzed by considering important subjective and social influences.

The first and primary task of the current study is to determine if both subjective and social factors are important in the desistance process. Although, most desistance researchers assume that both factors contribute to the desistance process, relatively few have examined subjective and social factors simultaneously, within the same statistical model. And even fewer have relied on within-individual analyses when examining such

effects, which allow the researcher to control for time-stable individual differences. The research questions that guide the primary analyses of the current study are as follows:

Research Question (1a): Do changes in subjective factors (i.e., future expectations, identity, criminal thinking) contribute to desistance, controlling for social factors and other important variables?

Research Question (1b): Do changes in social factors (i.e., romantic relationship, employment/education, peer influence) contribute to desistance, controlling for subjective factors and other key variables?

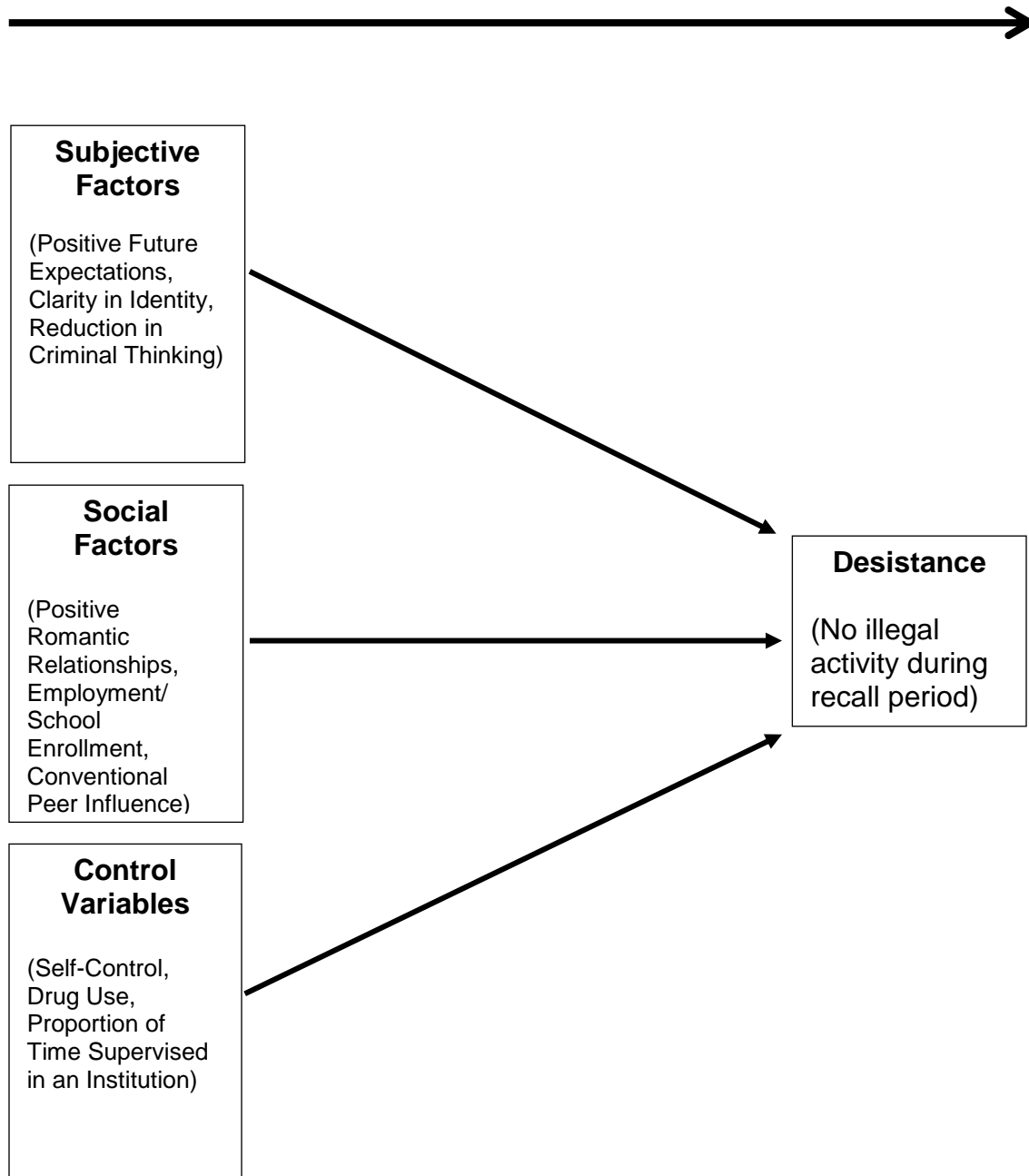
See Figure 3.1 for the conceptual model illustrating the possible influences on desistance. If the findings of the primary analyses indicate that both factors are important in the desistance process, then supplemental analyses will be performed.

For instance, a number of desistance researchers have acknowledged the complexity in examining subjective-social models of desistance (Bottoms, Shapland, Costello, Holmes, Muir, 2004; Laub & Sampson, 2001; Maruna, 2001; Shover, 1983). As noted in the preceding section, convincing arguments have been made on both sides in regard to the causal order of the subjective-social model. Of the few direct examinations to exist, LeBel and colleagues' study suggest that subjective changes may trigger the occurrence of influential social bonds. With the "right subjective mindset" offenders may be able to take advantage of positive opportunities instead of being thrown off by "social disappointments" (LeBel et al., 2008, p. 139). Thus, a positive mindset (i.e., positive changes in subjective factors) ultimately helps promote positive social bonds and interactions, while a negative mindset may prevent such life-changing attachments. This argument is consistent with Giordano and colleagues' (2002) theoretical framework

suggesting that one must first experience a subjective “openness for change” before being influenced by “hooks for change” or turning points. If these arguments are correct, then social factors should mediate the effects of subjective factors on desistance (subjective factors → social factors → desistance).

Figure 3.1. *Research Questions (1a & 1b)* – Direct effects of subjective and social factors on desistance.

CHANGE OVER TIME

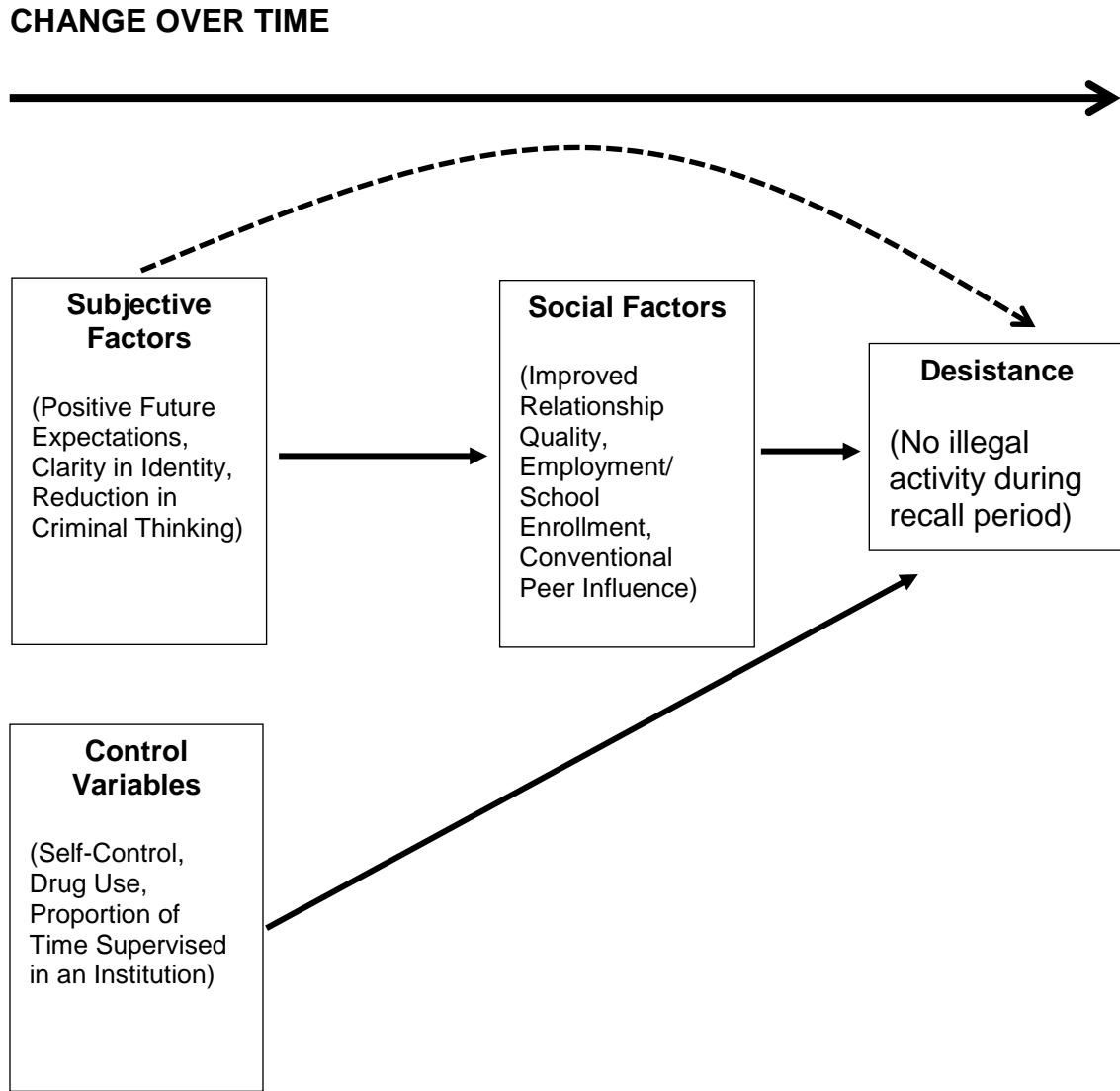


Given the compelling nature of these arguments, and based on the limited (but encouraging) evidence promoting an integrated model, supplemental analyses are conducted to test if, in fact, social factors mediate the relationship between subjective changes and desistance. See Figure 3.2 for the conceptual mediation model. The same statistical approach of within-individual analyses is used to test for mediation. The second research question examined in this study is as follows:

Research Question (2): Within individuals, do changes in social factors (i.e., romantic relationship, employment/education, peer influence) mediate the relationship between changes in subjective factors (i.e., future expectations, identity, criminal thinking) and desistance from crime?

Before proceeding, it is important to stress that the determination of causal order in the desistance process is complex, as changes in cognition and structure are oftentimes interdependent and can even occur simultaneously (Kazemian, 2007; Maruna, 2001). Le Blanc (1993) acknowledges this complexity by noting that “some potential variables may occur in such close proximity to desistance that, for all practical purposes, it is impossible to measure which comes first; moreover, they may have reciprocal influences” (p. 56). Recognizing this complexity, it is important to note that the supplemental analyses will not rule out simultaneous or reciprocal effects. The purpose of the supplemental analyses is simply to *explore* the extent to which social factors may mediate the effects of subjective factors.

Figure 3.2. *Research Question (2)* – Path analysis of social factors mediating the relationship between subjective factors and desistance.



In addition, certain researchers have pointed to the potential for interaction effects among subjective and social factors (Bottoms et al., 2004; Farrall & Bowling, 1999; Sullivan, 2013). As discussed by Sullivan, a subjective-social model “could take a few different forms based on existing propositions about the desistance process”; thus, it is important to estimate “potential main effects...and interactions among social influences and subjective factors... that flow through the change process” (p. 220). A convincing argument could be made that subjective factors, in particular, may moderate the relationship between social factors and desistance from crime. For instance, it is widely acknowledged that associating with delinquent peers is one of the strongest predictors of antisocial behavior (see Akers et al., 1979; Elliott et al., 1985; Jensen, 1972; Liu, 2003; Warr, 1998, 2002). However, having a delinquent peer network does not always lead to further delinquency within individuals; in fact, there are youth who may have a number of delinquent friends, yet do not conform to their friends’ delinquent behavior. It is possible that one reason for this is that when an individual experiences more positive changes in cognition, they may be better able to resist the influences of their antisocial peers (or antisocial romantic partners), compared to times when an individual does not experience such positive changes in cognition (also see Gardner, Dishion, & Connell, 2007). For example, if an individual experiences more positive expectations for the future (e.g., they see themselves going to college, obtaining a good job, and having a family), they may be better equipped to resist antisocial influences; thus, less likely to participate in delinquency. Conversely, if an individual does not have high expectations for the future, they may be less able to resist the temptations of their antisocial peers and may be more likely to participate in delinquent behavior. Given this argument that

subjective factors may serve to moderate the relationship between social factors and desistance, additional supplemental analyses are performed in order to test for potential interaction effects (see Figure 3.3 for the conceptual model). Thus, the final research question to be addressed in the current study is as follows:

Research Question (3): Do subjective changes (i.e., future expectations, identity, criminal thinking) interact with social changes (i.e., romantic relationship, employment/education, peer influence) to predict the desistance process within individuals?

To summarize, the current study advances desistance research in the following ways:

1. *The influence of both subjective and social factors on the desistance process are examined simultaneously, within the same statistical model.* Only a handful of studies include both factors in the same statistical model (for exceptions, see Giordano et al., 2007; Healy, 2010; Loeber et al., 1991; Stouthamer-Loeber et al., 2004). By including both sets of factors into the model simultaneously, it will be possible to estimate the relative impact of subjective factors versus social factors.
2. *The analyses include controls for leading criminological predictors, such as self-control.* Desistance from crime may be influenced by factors that have received little attention from desistance researchers, such as improvements in self-control. When estimating the effects of subjective and social factors on desistance, I control for self-control, drug use, and other variables. As discussed in later chapters, evidence indicates that the findings of prior

desistance studies may be suspect due to the failure to include adequate controls.

3. *Within-individual analyses are employed, in order to examine how changes in subjective and social factors promote the desistance process.* Very few desistance researchers use a within-individual approach in their work. In fact, a number of scholars have acknowledged that this powerful statistical approach is greatly underused, especially when considering changes in offending patterns across time (see Farrington, 2007; Horney et al., 1995; Kazemian, 2007; Laub & Sampson, 2001; Le Blanc & Loeber, 1998; Sullivan, 2013). The current study utilizes this method, as it provides an examination of within-individual change using individuals as their own controls. Further, this approach is valuable in that it rules out the possibility of spuriousness for all measured and unmeasured time stable characteristics. In sum, simply using this advanced statistical approach that analyzes change over time can be viewed as a positive contribution to the current desistance literature.
4. *Exploratory analyses are preformed to examine the interplay of subjective and social factors.* Very few studies have examined this interplay using a mediation framework (for exceptions, see LeBel et al., 2008; Simons & Barr, 2012), and the author is unaware of any desistance study examining subjective factors (not including self-control) moderating the relationship between social factors and desistance from crime.³
5. *A sample of serious adolescent offenders are examined.* Few longitudinal

³ It should be noted that a number of scholars have acknowledged that interaction effects among subjective and social factors should be explored (see Bottoms et al., 2004; Farrall & Bowling, 1999; Sullivan, 2013).

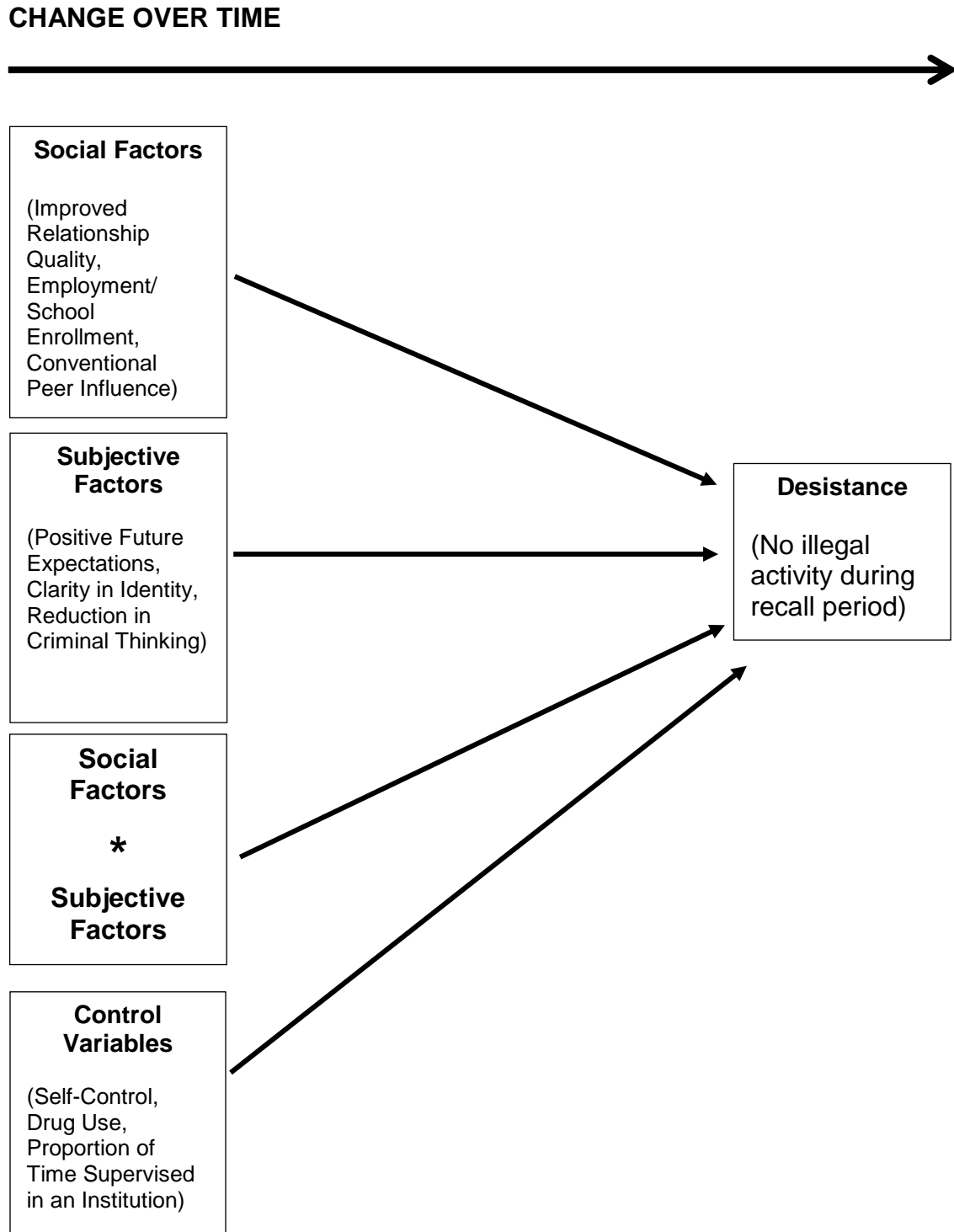
studies have been utilized to examine desistance among adolescent offenders, and even fewer have specifically examined a sample of *serious* adolescent offenders. Thus, it is unknown exactly how these serious adolescent offenders desist from crime (Mulvey & Schubert, 2012). The current study attempts to fill this gap, as a sample of serious adolescent offenders are examined during the time period in which desistance is most likely to occur among adolescents. The current study is unique in that it allows for a specific focus on those offenders who may be the most likely to persist in their antisocial activity when entering adulthood. In fact, no study has yet to examine the impact and interplay of subjective and social factors on desistance from crime among *serious* adolescent offenders using within-individual analyses.

6. *Self-reported offending is used to measure desistance.* The existing desistance research has been limited in the past, as a number of studies have relied only on official records when determining desistance (Farrington, 2007). To overcome this limitation, self-reports of offending behavior among serious adolescent offenders are analyzed. This provides for an examination of criminal behavior that may otherwise be undetected by official sources.

Finally, this study seeks not only to advance the existing research on desistance, but the findings may have concrete policy implications. Specifically, this study may contribute to the overall knowledge regarding the factors that promote desistance from crime. In the future, a better understanding of these factors will allow practitioners to support desisting offenders more appropriately in their pursuit of a crime-free lifestyle. In addition, if we know more about the involved processes that encourage desistance

from crime, then we may be able to better predict those who are at the beginning stages of desistance. The specific methodological techniques and variables of interest examined in the current study are discussed in the following chapter.

Figure 3.3. *Research Question (3)* – Interaction effects of subjective factors moderating the relationship between social factors and desistance.



CHAPTER IV. METHODOLOGY

The purpose of the current study is to explore the relative impact and interplay of subjective and social factors on the desistance process. This is accomplished using longitudinal data and a within-individual statistical approach. The use of within-individual analyses are important in extending research on desistance, as little attention has been devoted to understanding within-individual change in offending patterns (Farrington, 2007; Horney et al., 1995; Kazemian, 2007; Laub & Sampson, 2001; Le Blanc & Loeber, 1998). This approach also is noteworthy based on the important debates in the field surrounding stability and change in criminal propensity (see Ezell, 2007 for an overview). The data and sample used in the current study are discussed in this chapter, followed by a description of the measures used, as well as the data analysis performed.

The Pathways to Desistance Data

As acknowledged by Mulvey and Schubert (2012), few longitudinal studies have specifically focused on serious adolescent offenders and their transition from adolescence to early adulthood. As a result, far more is known about the causes of juvenile offending than the causes of juvenile desistance. Consequently, it is unknown exactly how serious adolescent offenders desist from crime (Mulvey & Schubert, 2012). The Pathways to Desistance dataset is appropriate for the current study, as it provides a sample of known, serious adolescent offenders, while allowing for an examination of desistance during the time period in which desistance from crime is most likely to occur among adolescents. This particular dataset also is useful as it includes a variety of measures that allow for an examination of both subjective and social factors.

The Pathways to Desistance longitudinal study is publicly available through the Inter-university Consortium of Political and Social Research (see Mulvey, 2012). A total of 1,354 serious adolescent offenders are followed in this study over a period of seven years – from mid-adolescence through early adulthood (see Mulvey, 2004 and Mulvey & Schubert, 2012). Participants in the Pathways study range in age from 14 to 19 years at the time of enrollment, and were recruited from two metropolitan site locations, one in Maricopa County, Arizona and the other in Philadelphia County, Pennsylvania. These two areas were chosen for strategic reasons, such as each location contains high rates of serious juvenile offenders and both locations' participants are racially and ethnically diverse. In addition, the two locations provide a notable contrast in its criminal justice systems' operations.

Enrollment in the Pathways study began in November 2000 and ended in January 2003.

Data collection concluded in April 2010. Youth were eligible for inclusion in the Pathways study if they met the age requirements (14-18 years of age at the time of the offense), and if they had been adjudicated delinquent in juvenile court or found guilty in adult court of a serious offense. Almost all offenses were felony level with the exception of some misdemeanor property offenses, sexual assaults, and weapons offenses. Because drug offenses constituted a large number of cases in the population, the study capped the proportion of male drug offenders to 15% of the sample at each site location. All female drug offenders remained eligible for inclusion due to the limited number of female offenders, and all youth transferred or waived to adult court also remained eligible. Cases were excluded if there was potential for overload of the local interviewer.

Of the 3,807 eligible cases in the study, approximately 47% were excluded based on the above reasons. The remaining 2,018 youth were approached for study participation, and approximately 67% agreed to participate, resulting in the final sample size of 1,354 total youth (Maricopa County = 654 and Philadelphia County = 700). Table 4.1 displays the demographic characteristics for the final sample.

Table 4.1. Sample demographic characteristics (n = 1354).

	n	%		
Sex				
Male	1170	86.4%		
Female	184	13.6%		
Race				
White	274	20.2%		
Black	561	41.4%		
Hispanic	454	33.5%		
Other	65	4.8%		
	\bar{x}	s	Minimum	Maximum
Age	16.5	1.15	14	19
Number of Prior Court Petitions	2.16	2.216	0	14

Once enrolled, participants involved with the juvenile court system completed a baseline interview within 75 days of their adjudication, while those involved in the adult system completed their interview within 90 days of certification or arraignment. Follow-up interviews were then conducted every six months for the first three years and then every year for the remaining four years. Thus, 11 waves of data were collected across 7 years in the Pathways study. The study had a very good response rate for each follow-up interview, averaging 90%.

For the purpose of this study, all waves of data are analyzed except for baseline. The baseline data are not used, because one of the subjective measures (criminal thinking) is unavailable at the baseline wave. The second wave of data was collected 6 months after baseline. Although ideally all waves of data would be used in the current study, the baseline survey is not critical in investigating the research questions at hand.

It is important to emphasize that this sample consists of *serious* adolescent offenders. This sample does not derive from a general population of youth, which would include some serious offenders, but mostly less serious offenders. As illustrated in Table 4.1, the average number of court petitions prior to their current involvement in the justice system is 2.16. Thus, these are adolescent offenders who have, for the most part, been involved in the criminal justice system before, and who have committed relatively serious crimes (mostly felonies). This longitudinal study is unique in that it allows for a specific focus on those offenders who may be the most likely to persist in their antisocial activity when entering adulthood.

Finally, it should be noted that the Pathways to Desistance longitudinal study has been used in a number of past research studies (e.g., Iselin et al., 2012; Loughran, Paternoster, Piquero, & Pogarsky, 2011; Mulvey & Schubert, 2012; Sweeten, Piquero, & Steinberg, 2013), and specifically those focusing on desistance from crime (e.g., Monahan, Steinberg, Cauffman, 2009; Mulvey et al., 2010; Sweeten, Pyrooz, & Piquero, 2013). However, no study has examined the impact and interplay of subjective and social factors on desistance from crime among *serious* adolescent offenders using within-individual analyses. The current study adds to the existing desistance literature by

employing a powerful statistical model that accounts for potential spuriousness of both measured and unmeasured time stable characteristics.

Measures

Dependent Variable: Desistance

The dependent variable of interest in this study is desistance from crime. Desistance is measured using an adaptation of the Self-Reported Offending (SRO) instrument (Huizinga, Esbensen, & Weiher, 1991). The SRO consists of 24 items asking respondents about their engagement in a number of different criminal activities during the recall period. These offenses include violent, property, and drug offenses, such as robbery, arson, and selling illegal drugs. For this study, the dependent variable is dichotomous where no illegal activity during the recall period is coded as 1 (indicating desistance), and committing one or more illegal activities during the recall period is coded as 0.

As noted in preceding discussions, it is almost impossible to ascertain that an individual has permanently desisted from crime unless they are followed until their death. Further, desistance should be viewed as process where it occurs gradually over time instead of a specific event that occurs once during the life course. Thus, although those categorized as “desisters” in this study may not have permanently desisted from crime, the question of interest in this study is, “What factors *promote* the desistance process?” Thus, measuring desistance as described above is appropriate for this study (a detailed discussion of this issue was provided in Chapter II, pp. 12-17).

Independent Variables: Subjective Factors

The three subjective factors upon which the current study is focused include future expectations, identity, and criminal thinking. The specific measures used to explore these constructs are explained in depth below.

Future expectations.

The future expectations scale used in the current study is derived from the Perceptions of Chances for Success measure in the Pathways to Desistance study. This measure was adapted from Menard and Elliott (1996) and assesses adolescents' perceived likelihood of future adult success in three key areas: work, family, and avoiding trouble with the law. Sample questions include: "What do you think your chances are to earn a good living?" and "What do you think your chances are to stay out of trouble with the law?" A total of seven questions comprise this scale, with responses ranging from "Poor" = 1, "Fair" = 2, "Good" = 3, "Very Good" = 4, and "Excellent" = 5. The scores to these seven items are averaged, and higher scores indicate more positive future expectations for adult success. The Cronbach's alpha for this measure ranges from .84 (minimum) to .88 (maximum) across the 10 waves of data.

Identity.

The identity scale is comprised of 10 items and is a subscale of the Psychosocial Maturity Inventory (PSMI Form D; Greenberger, Josselson, Knerr, & Knerr, 1974). For this measure, identity is conceptualized as one's "stable sense of self" and items in this scale capture self-esteem, internalized values, clarity of self-concept, and consideration of life goals (Greenberger & Sorensen, 1974, p. 333; also see Erikson, 1959/1980). Using the PSMI, researchers have demonstrated that clarity of one's identity, along with other

indicators of psychosocial maturity, increase over the course of adolescence (Steinberg & Cauffman, 1996; Steinberg, Chung, & Little, 2004); thus, these changes in identity are thought to affect adolescents' decision-making regarding their involvement in crime, as well as their future goals and aspirations (Mulvey et al., 2004). In fact, Cauffman and Steinberg (2000) used the PSMI in their study examining immaturity in judgment and found that antisocial decision-making is more strongly influenced by indicators of psychosocial maturity than by age (p. 756).

Sample items in the identity scale include: "I change the way I feel and act so often that I sometimes wonder who the 'real' me is" and "Nobody knows what I am really like". Participants indicate their response using a 4-point Likert scale ranging from "Strongly Agree" = 1, "Slightly Agree" = 2, "Slightly Disagree" = 3, and "Strongly Disagree" = 4. The 10 items in this subscale are averaged to produce an overall score ranging from 1 to 4. Thus, higher scores on this scale indicate more stable views of identity. Although the individual items in the scale are not made available in the public dataset, the Cronbach's alpha was calculated by the original researchers for the following time-points: 6 months (.80), 12 months (.81), 18 months (.83), and 24 months (.85).

Criminal thinking.

For the current study, criminal thinking is measured using subscales from the Youth Psychopathic Traits Inventory (YPI; Andershed, Kerr, Stattin, & Levander, 2002). The specific subscales used in this study are the manipulation, unemotionality, and thrill seeking. The manipulation subscale corresponds well to the criminal lifestyle as described by Walters (1990), who contends that criminals often seek to control and manipulate those who they view as weak. The manipulation subscale used in the current

study includes items such as: “To get people to do what I want, I often find it efficient to con them” and “It has happened that I’ve taken advantage of (used) someone in order to get what I want.” The five items that make up this subscale are summed and the responses for each item are coded as 1 = “does not apply at all”, 2 = “does not apply well”, 3 = “applies fairly well”, and 4 = “applies very well”. Scores on this measure range from 4 to 20, with higher scores indicative of more manipulative behavior.

Although the individual items in the scale are not made available in the public dataset, the Cronbach’s alpha was calculated by the original researchers. This subscale has shown good internal consistency, and the Cronbach’s alpha ranges from .84 (minimum) to .87 (maximum) across the 10 waves of data.

The second subscale used in the current study is unemotionality. As described by Walters and White (1990), lifestyle criminals may use a “cutoff” in order to eliminate any emotion, especially fear or anxiety, which may interfere with their performance during a criminal act. In addition, lifestyle criminals often emphasize the importance of power and control over others, and the display of emotions is typically viewed as a sign of weakness. The unemotionality subscale used in the current study includes items such as: “To be nervous and worried is a sign of weakness” and “What scares others usually doesn’t scare me”. This subscale is comprised of the sum of five items and the responses for each item are coded as 1 = “does not apply at all”, 2 = “does not apply well”, 3 = “applies fairly well”, and 4 = “applies very well”. Scores on this measure range from 4 to 20 with higher scores indicative of more unemotional behavior. Although the individual items in the scale are not made available in the public dataset, the Cronbach’s alpha was calculated by the original researchers. This subscale has shown adequate internal

consistency across waves in the Pathways study with the Cronbach's alpha ranging from .59 (minimum) to .66 (maximum) across the 10 waves of data.

Finally, the last subscale used to measure criminal thinking is thrill-seeking. Those committed to a lifestyle of crime often are sensation-seeking individuals who become easily bored with everyday routine activities. For example, some of the items in the thrill-seeking subscale include: "I like to do things just for the thrill of it" and "I like to do exciting and dangerous things, even if it is forbidden or illegal". This subscale is comprised of the sum of five items and the response of each item are coded as 1 = "does not apply at all", 2 = "does not apply well", 3 = "applies fairly well", and 4 = "applies very well". Scores on this measure range from 4 to 20 with higher scores indicative of more thrill-seeking behavior. Although the individual items in the scale are not made available in the public dataset, the Cronbach's alpha was calculated by the original researchers. This subscale shows adequate internal consistency across waves, with the Cronbach's alpha ranging from .64 (minimum) to .76 (maximum) across the 10 waves of data.

Independent Variables: Social Factors

For this study, the social factors that are examined include romantic relationships, employment/education, and peer antisocial influence. These measures are discussed in more detail below.

Romantic relationships.

Romantic relationships (both marital and non-marital) are examined in three parts. First, romantic relationship status is examined using the entire Pathways sample. The romantic relationship status measure is coded 0 = no romantic relationship during the

recall period, and 1 = in a romantic relationship during the recall period. Second, for those who are involved in a romantic relationship during the recall period, the quality of the relationship is examined at each wave using the Quality of Romantic Relationship inventory (Pierce, 1994; Pierce, Sarason, Sarason, Solky-Butzel, & Nagle, 1997), adapted for the Pathways study. Specifically, the subscale Quality of Relationship consists of seven items (e.g., “In general, how happy are you with your relationship?”) where participants respond using a 5-point Likert scale ranging from 1 = “not at all”, 2 = “a little”, 3 = “moderately”, 4 = “quite a bit”, and 5 = “very much”. For this measure, the average of the seven items are computed and the scores range from 1 to 5. Thus, higher scores are indicative of a higher quality romantic relationship. Although the individual items in the scale are not made available in the public dataset, the Cronbach’s alpha was calculated by the original researchers for the following time periods: 6 months (.78), 12 months (.80), 18 months (.81), and 24 months (.83).

Third, romantic antisocial influence is examined in the current study. Romantic antisocial influence is measured using the Peer Delinquent Behavior items, a subset of those used by the Rochester Youth Study (Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994). A total of seven items comprise this scale, and specifically measure the degree to which the romantic partner encourages the respondent to participate in delinquent activities (e.g., “Has [PARTNER NAME] suggested that you sell drugs?” and “Has [PARTNER NAME] suggested that you should steal something?”). Scores indicate the number of antisocial items suggested by the romantic partner (ranging from 0 to 7). The individual items of this particular scale are not available for factor analysis and were not calculated by the original researchers. However, some researchers using the

Pathways data have utilized this measure (e.g., Monahan, Dmitrieva, & Cauffman, 2014), and Cauffman, Farruggia, and Goldweber (2008) report an average alpha of .68 for this measure in their study.

Employment/education.

Although data on the quality of employment/education is not available in the Pathways Study, the status of employment and education are treated as a social factor. Participants are considered “employed” if they have worked at least half of the recall period at a job within the community. In addition, participants are considered as students if they have attended school within the community during the recall period. Consistent with Stouthamer-Loeber and colleagues (2004) and Horney and colleagues (1995), a dichotomous measure is computed where participants are coded as 1 if they are employed or enrolled in school during the recall period, and coded as 0 if they are not employed nor enrolled in school.

Peer antisocial influence.

For this study, peer antisocial influence is measured using the Peer Delinquent Behavior items, a subset of those used by the Rochester Youth Study (Thornberry et al., 1994). A total of seven items comprise this scale, and this scale specifically measures the prevalence of peers that encourage youth to participate in delinquent activities (e.g., “How many of your friends have suggested that you should sell drugs?” and “How many of your friends have suggested that you steal something?”). Respondents use a 5-point Likert scale to indicate their answers where 1 = “none of them”, 2 = “very few of them”, 3 = “some of them”, 4 = “most of them”, and 5 = “all of them”. The mean of the seven items is computed and higher scores indicate higher prevalence of peer antisocial

influence. This subscale shows excellent internal consistency across waves, with the Cronbach's alpha ranging from .93 (minimum) to .94 (maximum).

Control Variables

Because within-individual analyses are conducted, it is only necessary to control for time variant measures that may impact both the independent and dependent variables. Time stable characteristics do not have to be controlled when using a within-individual analysis, as individuals serve as their own controls. This is one of the benefits of performing such an analysis; variables such as race, sex, nationality, childhood head injury, and early onset of behavior problems do not have to be included as control variables in the analysis, as they are held constant via statistical design. However, a few time variant characteristics are controlled for in this study. These variables include self-control, drug use, and proportion of time supervised in an institutional setting.

Self-control serves as a control variable in the current study and is measured using the temperance scale of the Weinberger Adjustment Inventory (WAI). The temperance subscale is calculated using 15 items from the impulse control and suppression of aggression subscales. Participants are asked to rank how much their behavior during the recall period matches a number of statements (e.g., "I say the first thing that comes into my mind without thinking enough about it"; "People who get me angry better watch out"). Respondents indicate their answers where 1 = "false", 2 = "somewhat false", 3 = "not sure", 4 = "somewhat true", and 5 = "true". The mean of the 15 items are computed and higher scores indicate more positive behaviors. Although the individual items in the scale are not made available in the public dataset, the Cronbach's alpha was calculated by

the original researchers for the following time periods: 6 months (.85), 12 months (.85), 18 months (.86), and 24 months (.86).

Drug use also serves as a control variable and is measured as a dichotomous variable. For this study, no drug use during the recall period is coded as 0 and any drug use during the recall period is coded as 1. Finally, proportion of time supervised (PTS) in an institutional setting is used as a control variable, as approximately 87% of all respondents are detained in some form of an institution (e.g., jail, detention center, prison, secure residential treatment center) at some point during the study (Mulvey & Schubert, 2012). At each wave, the proportion of time supervised in an institutional setting is equal to the number of days an individual is supervised institutionally (i.e., removed from the community) divided by the number of days in the recall period. Other researchers using the Pathways Desistance data also utilize the PTS measure to control for time supervised in an institutional setting (see Chassin et al., 2010; Chung, Mulvey, Steinberg, 2011; Monahan, Steinberg, Cauffman, & Mulvey, 2009; Mulvey et al., 2010).⁴

Time

Time is captured based on the 10 waves of data and represents the growth or average change in the dependent variable. Time is coded as the amount of time in years since baseline. Thus, wave 1 is coded as 0.5 (6 months after baseline), wave 2 is coded as 1 (1 year after baseline), wave 3 is coded as 1.5 (1.5 years after baseline), wave 4 is coded as 2 (2 years after baseline), wave 5 is coded as 2.5 (2.5 years after baseline), wave 6 is coded as 3 (3 years after baseline), wave 7 is coded as 4 (4 years after baseline),

⁴ Approximately 35% of the sample is detained in some form of an institutional setting by wave 2 (1 year after baseline). The proportion of those institutionalized decreases to 25% by wave 10.

wave 8 is coded as 5 (5 years after baseline), wave 9 is coded as 6 (6 years after baseline), and wave 10 is coded as 7 (7 years after baseline). It is important to include time in the analysis, so that the final results regarding the desistance process are not affected by the time stable trend. Time is coded as quadratic when analyzing desistance as the outcome variable, as it is hypothesized that desistance over time within individuals does not produce a linear trajectory, but occurs in a curvature pattern (similar to the age-crime curve).

Data Analysis

For the current study, multilevel models for change are used. A multilevel model for change allows for consideration of observations nested within individuals in level-1 of the model, as well as the inclusion of an error term in level-2 (μ_{0i}) that assures individual-level residuals (r_{it}) remain uncorrelated. Level-1, or the individual growth model, signifies the change within individuals across time. The error term in level-2 is important in that multiple observations from the same individual may be highly correlated; thus, to overcome this issue, the error term accounts for the error variance across time that is specific to each individual (Teasdale, 2009). These two levels combine to form a multilevel statistical model (Bryk & Raudenbush, 1987; Rogosa & Willett, 1985). This model can be used to address the following question: how does each individual change across time?

This statistical approach is powerful, as the use of individual growth curve models allow for each individual to serve as their own control. For example, using a serious adolescent offender as his own control, how does his offending patterns (indicative of the desistance process) change across time? Because individuals are used as their own

controls, both measured and unmeasured time stable characteristics of individuals are controlled for using this technique (Horney et al., 1995). Thus, it is unnecessary to control for characteristics such as race, sex, or childhood problem behaviors, for example.

In order for the model to be truly about change within individuals, the predictors in the model are group-mean centered and are estimated as fixed effects. In essence, group-mean centering takes into account the average of a variable for individual i (e.g., identity_{it}), as well as the individual's deviation from this average, ($\text{identity}_{it} - \overline{\text{identity}_{i1}}$). This ensures that the level-1 model represents change (Horney et al., 1995). Further, group-mean centering is an appropriate technique compared to grand-mean centering or no centering option, as level-1 effects are the focus of the current study, and group-mean centering provides an unbiased estimator of within-individual effects (see Raudenbush & Bryk, 2002).

Because the dependent variable (desistance) is dichotomous in the main analyses, a logistic regression multilevel model is used, as it takes into consideration the dichotomous nature of the dependent variable. The general equation of the multilevel model is included below:

$$\text{Log odds } (Y_{it} = 1) = \mathbf{B}_{0i} + \mathbf{B}_{1i} (\mathbf{X}_{it} - \bar{\mathbf{x}}_{i1}) + \mathbf{B}_{2i} \text{ TIME} + \mathbf{B}_{3i} \text{ TIME}^2 + \mathbf{r}_{it},$$

where $\mathbf{B}_{0i} = \gamma_{00} + \mu_{0i}$, and $\mathbf{B}_{1i} = \gamma_{10}$, and $\mathbf{B}_{2i} = \gamma_{20} + \mu_{2i}$, and $\mathbf{B}_{3i} = \gamma_{30} + \mu_{3i}$.

Specifically, \mathbf{B}_{0i} is the intercept parameter for individual i (i.e., the overall constant average desistance for an individual across time). In the level-2 equation, γ_{00} refers to the population average of the level-1 intercept (i.e., the overall constant average desistance across persons and across time). In addition, μ_{0i} is the random error component for the intercept, which is the individual-specific deviation from the average population desistance across persons and time periods. \mathbf{B}_{1i} is the slope parameter for

individual i (i.e., the acceleration or deceleration of desistance for an individual across time). In the level-2 equation, γ_{10} is the population average of the level-1 slopes, which represents that the effect of x on y are consistent across persons. X_{it} represents the level-1 predictors that are group-mean centered (subtracting x_{i1}).

In the level-1 equation, B_{2i} TIME is the person specific growth pattern of desistance representing linear time. In the level-2 equation, γ_{20} is the average linear time across persons and μ_{2i} is the random error component, which is the individual-specific deviation from the average linear time. In addition, B_{3i} TIME² is the person specific growth pattern of desistance representing quadratic time, whereas in the level-2 equation γ_{30} is the average quadratic time across persons and μ_{3i} is the random error component, which is the individual-specific deviation from the average quadratic time. Finally, r_{it} is the person-wave level residual (i.e., the difference between the observed and estimated values) for a specific person at a specific time.

CHAPTER V. RESULTS OF THE MAIN ANALYSES

Descriptive findings and results from the main analyses are presented in this chapter. First, descriptive statistics are provided for the dependent and predictor variables, in order to illustrate the average change in these variables that occur across time. Second, the findings from the multilevel logistic regression models are presented, focusing on the direct effects of subjective and social factors on the desistance process.

Descriptive Results

Dependent Variable

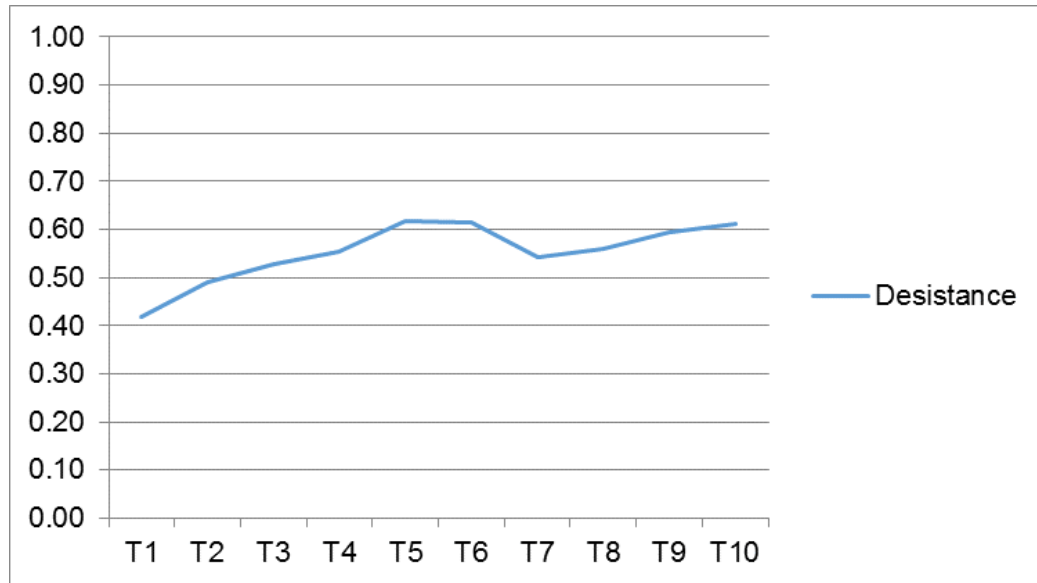
Figure 5.1 illustrates the average trend of the dependent variable across time. As shown in Figure 5.1, on average across individuals, desistance increases modestly over time (with slight fluctuations between T₁ and T₁₀). During T₁ (6 months after baseline), 41% of the sample indicate no offending (desistance) in the recall period. By T₁₀ (7 years after baseline), 61% of the sample indicate desistance since the recall period.⁵

As shown in Figure 5.1, there are slight fluctuations in desistance over time across individuals; thus, time is examined as quadratic when analyzing desistance as the outcome variable, as it is hypothesized that desistance over time within individuals does not produce a linear trajectory, but occurs in a curvature pattern (consistent with the age-crime curve).⁶

⁵ Figure 5.1 illustrates the average desistance trajectory across persons and across time. NOTE: Individual trajectories, which are the focus of the current study, are highly likely to deviate from this average.

⁶ Time also was examined as cubic in the models; however, time as cubic was non-significant in a number of the models examined.

Figure 5.1. Proportion desisting across time.



Time-Variant Variables

Figures 5.2 through 5.7 display the predictor and control variables in the analyses across time. These graphs show the average of these variables across individuals; therefore, individual trajectories are likely to significantly deviate from these graphs. Figure 5.2 presents the average trend of the following subjective factors examined: (a) future expectations and (b) identity, and Figure 5.3 presents the average trend of the remaining subjective factors: (c) criminal thinking patterns (including manipulation, unemotionality, and thrill-seeking). Figure 5.4 presents the average trend of the social factors: (a) romantic partner status and (b) employment/education status. Figure 5.5 presents the average trend of the remaining social factors: (c) romantic relationship quality, (d) romantic antisocial influence, and (e) peer antisocial influence. Finally, Figure 5.6 presents the average trend of the control variable (a) self-control, and Figure

5.7 presents the control variables (b) drug use, and (c) proportion of time supervised in an institutional setting.

Figure 5.2. Subjective factors (future expectations and identity) across time.

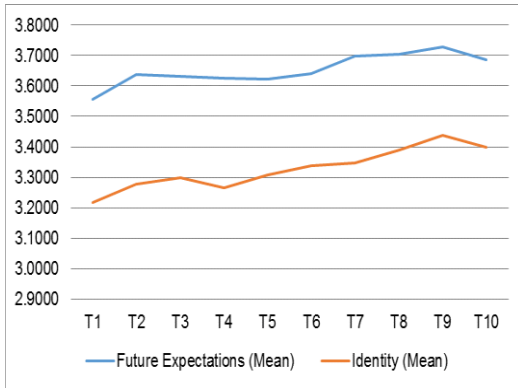


Figure 5.3. Subjective factors (criminal thinking patterns) across time.

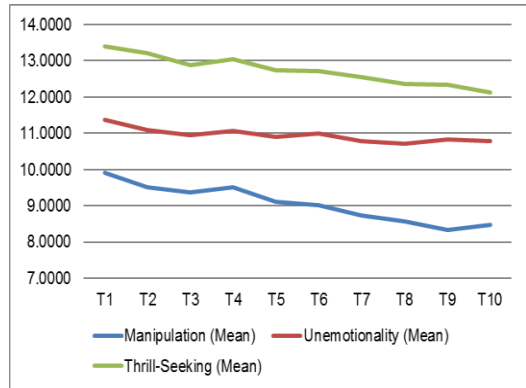


Figure 5.4. Social factors (romantic partner and employment/education status) across time.

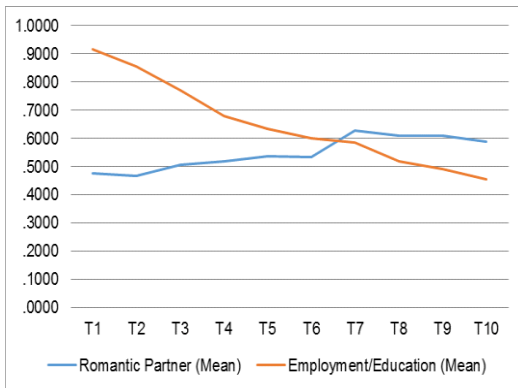


Figure 5.5. Social factors (romantic relationship quality, romantic antisocial influence, and peer antisocial influence) across time.

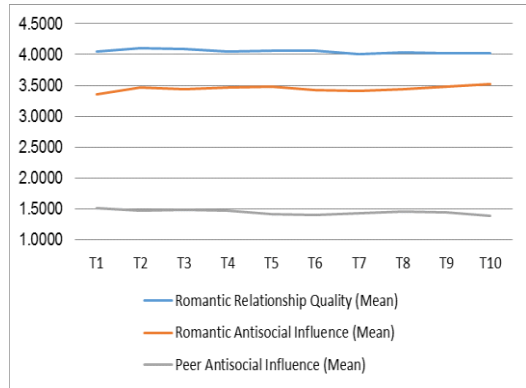


Figure 5.6. Self-control (control variable) across time.

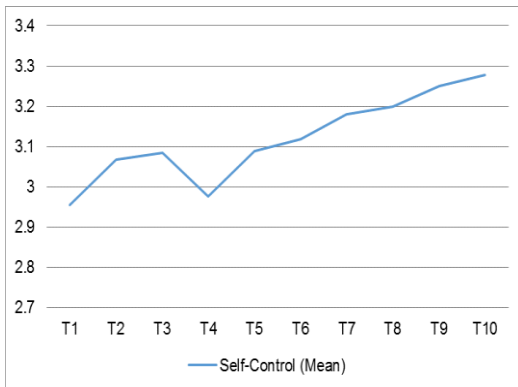
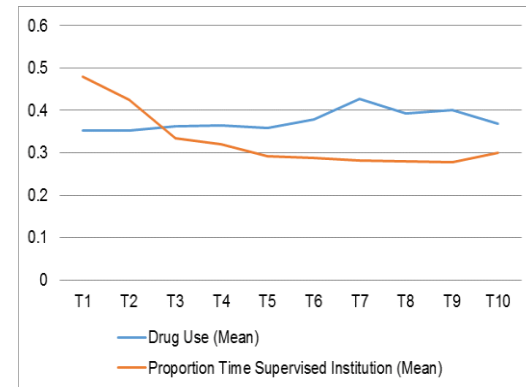


Figure 5.7. Drug use and PTS (control variables) across time.



As illustrated in Figure 5.2, on average across individuals, positive changes in future expectations and identity occur across time. For example, at baseline (T_1), the average level of future expectations is 3.56, and by the end of the study (T_{10}), the average level increases to 3.69 (scores on the future expectations scale range 1 – 5). Further, the average level of the identity subscale across individuals is 3.22 at baseline (T_1), and 3.40 by the end of the study (T_{10}) (scores on the identity subscale range 1 – 4). In addition, Figure 5.3 displays how criminal thinking styles tend to decline among individuals across time. At $Time_1$, the average score on the manipulation subscale is 9.91, and by $Time_{10}$ the average score declines to 8.48 (scores on the criminal thinking subscales range 4 – 20). For unemotionality, the average score at $Time_1$ is 11.37 and by $Time_{10}$ the score declines to 10.78. Finally for thrill-seeking, the average score at $Time_1$ is 13.39 and by $Time_{10}$ the score declines to 12.11. Overall, Figures 5.2 and 5.3 indicate that the subjective factors tend to become more positive in nature across time. Thus, on average, these serious adolescent offenders have higher future expectations, more stable self-concepts, and are less prone to criminal thinking patterns across time.

Figure 5.4 displays romantic relationship status and employment/education status across time (dichotomous measures). As illustrated in this figure, romantic relationship status tends to increase across time, while employment/education status decreases. At $Time_1$, approximately 48% of the sample have a romantic partner, while at $Time_{10}$, approximately 59% of the sample have a romantic partner. Further, approximately 92% of the sample at $Time_1$ are either employed or enrolled in school, while only 45% of the sample are employed or enrolled in school by $Time_{10}$.

Interestingly, as illustrated in Figure 5.5, among those who have a romantic partner, romantic relationship quality (scores range 1 – 5) tends to remain relatively stable across time: 4.05 at Time₁ and 4.02 by Time₁₀. Romantic and peer antisocial influence appears to slightly decline across time, where the average romantic antisocial influence among those with a romantic partner is .30 at Time₁ and .23 by Time₁₀ (scores range from 0 to 7). Further, peer antisocial influence is 1.51 at Time₁ and 1.39 by Time₁₀ (scores range from 1 to 5).

Finally, when examining Figure 5.6, it appears that average levels of self-control tend to increase over time. At Time₁, the average level of self-control is 2.95, where at Time₁₀ the average level is 3.28 (self-control scale ranges 1 – 5). In Figure 5.7, the proportion of time supervised in an institutional setting shows a decrease across time, where at Time₁ the proportion of time is .48 and by Time₁₀ the proportion of time is .30. Finally, drug use appears to fluctuate slightly across time, where 35% of the sample use drugs at Time₁ and 37% of the sample use drugs at Time₁₀. Although the descriptive statistics are informative regarding the average trend of these variables across person and across time, next, the multilevel models are presented, in order to show the direct effects of subjective and social factors on desistance within individuals.

Multilevel Models of Desistance: Examining Direct Effects

Subjective Factors and Desistance

The first task of the current study is to determine if subjective factors are important in the desistance process. Changes in future expectations, identity, and criminal thinking patterns are thought to be important contributors to this process based on prior research (e.g., Giordano et al., 2002; Healy 2010; LeBel, et al., 2008; Maruna,

2001). Thus, these subjective factors are examined in the current study using within-individual analyses. In addition, it is important to consider debates in the field surrounding stability in criminal propensity. As discussed in Chapter III, Gottfredson and Hirschi (1990) suggest that self-control among individuals is time stable (after age 8-10); thereby, essentially discrediting the importance of events in later adulthood in terms of antisocial behavior. However, some studies have suggested that one's level of self-control may *not* be necessarily time stable (see Burt, Simons, & Simons, 2006; Hay & Forrest, 2006; Turner & Piquero, 2002). Given that the current study seeks to explore integrative frameworks for the desistance process, considering not only social factors, but subjective influences as well, changes in self-control characterized by impulsiveness and displays of aggression are controlled, while allowing this measure to be time variant in the model. This decision provides a conservative test surrounding Gottfredson and Hirschi's claims, by including potential changes in one's level of self-control in the models. Thus, not only are "fixed" individual characteristics controlled for by using within-individual analyses, but self-control as a time variant predictor is included in the models as well.

Table 5.1 presents two models illustrating the influence of subjective factors on the desistance process. Model I in Table 5.1 presents the results of subjective factors on the desistance process without controlling for self-control, whereas Model II includes self-control in the model. The results are displayed in this fashion, in order to see if changes in self-control influence desistance, even when controlling for important subjective factors.

Table 5.1. Multilevel logistic regression results of subjective factors on desistance.

Within Level	<u>Model I</u> (<u>Excluding Self-Control</u>)		<u>Model II</u> (<u>Including Self-Control</u>)	
	b (SE)	Odds Ratio	b (SE)	Odds Ratio
<i>Subjective Factors</i>				
Future Expectations	.283 (.042)	1.327***	.264 (.042)	1.303***
Identity (PSMI)	.179 (.071)	1.196*	.101 (.072)	1.107
Manipulation (CT)	-.033	.967**	-.017	.984
Unemotionality (CT)	-.013	.987	-.011	.989
Thrill-Seeking (CT)	-.070	.932***	-.041	.960***
<i>Controls</i>				
Wave	.418 (.053)	1.519***	.422 (.054)	1.524***
Wave ²	-.044	.957***	-.046	.955***
Drug Use	-1.527	.217***	-1.493	.225***
Proportion Time Supervised	-.262	.770**	-.245	.782**
Self-Control	-	-	.517 (.052)	1.676***
Pseudo R-Square	0.143		0.159	

Note: PSMI = Psychosocial Maturity Inventory, CT = Criminal Thinking Measures.

Model I: N = 11,881 observations nested in 1,334 subjects. *Model II:* N = 11,880 observations nested in 1,334 subjects.

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

In Model I, all of the subjective factors are found to be influential on the desistance process, with the exception of one criminal thinking measure – unemotionality. As far as the significant subjective factors, future expectations, identity, manipulation, and thrill-seeking are all predictors of desistance within individuals. For example, when an individual experiences an increase in positive future expectations, the odds of desistance are multiplied by 1.327, compared to waves when an individual does not experience these increases in future expectations. Similarly, when an individual experiences positive changes in identity, the odds of desistance are multiplied by 1.196, compared to when an individual does not experience these positive changes. Further, when an individual exhibits an increase in criminal thinking patterns associated with

manipulation and thrill-seeking, the odds of desistance decrease by 3.3% and 6.8% respectively, compared to waves when an individual does not exhibit these increases in criminal thinking. These results are consistent with past research findings suggesting the importance of these variables on the desistance process, and these variables remain significant even after controlling for drug use and proportion of time supervised in an institutional setting.⁷ In addition, the effects of drug use and proportion of time supervised in an institutional setting are significantly different from zero and are in the expected direction, where using drugs decreases one's odds of desistance and spending proportionally more time in an institutional setting also decreases one's odds of desistance.

In Model II, the results of subjective factors on the desistance process, when controlling for changes in self-control, are presented. The first significant finding in Model II is that changes in self-control (characterized by impulsivity and aggression) are positively related to changes in desistance. Specifically, when one experiences an increase in self-control, the odds of desistance are multiplied by 1.676, compared to when an individual does not experience this increase in self-control. This finding deserves further comment. In contrast to the position of Gottfredson and Hirschi (1990), the results indicate that self-control is not entirely time stable after early childhood—a finding consistent with certain other studies that have focused on the development of self-control (e.g., Burt et al., 2006; Hay & Forrest, 2006; Turner & Piquero, 2002).

Moreover, in this sample of serious adolescent offenders, increases in self-control encourage the desistance process, even after controlling for important time variant

⁷ As evidence in the results, proportion of time supervised in an institutional setting has a large effect on the desistance process. This control measure was removed from all analyses examining direct effects to ensure it was not affecting other outcomes. The significance of all other variables remained the same.

subjective factors and unmeasured time stable characteristics (by statistical design).

While certain studies on desistance have controlled for baseline measures of self-control (e.g., Beaver et al., 2008; Doherty, 2006; Laub and Sampson, 2003), to my knowledge this is the first study on desistance that specifically examines a number of subjective and social factors simultaneously using a within-individual analysis, while controlling for changes in self-control over time, and the first study to show the relevance of these changes to the desistance process.

At the same time, when including self-control into the model, the only subjective factors that remain significant are future expectations and thrill-seeking (criminal thinking). Here, when one experiences positive changes in future expectations, the odds of desistance are multiplied by 1.303, compared to when one does not experience these positive changes. Likewise, when one exhibits greater thrill-seeking criminal thinking, the odds of desistance decrease by 4%, compared to when one does not exhibit these thinking patterns. Also noteworthy is the significance of time on the desistance process. In both models, both linear wave and wave squared are significant. The significant time trends indicate that over time, individuals tend to increase their chance of desistance; however, the wave squared term indicates that this increase in odds of desistance decelerates over time. In sum, the curve increases initially, but then flattens out later across time.

Overall, these findings suggest that improvements in self-control exert a significant effect on desistance, and failure to control for changes in self-control may lead researchers to overestimate the effects of subjective factors, including the role of identity (self-concept) and certain criminal thinking patterns. Nonetheless, some subjective

factors remain significant contributors to the desistance process, even after controlling for changes in self-control (and vice versa). Thus, the next step in examining the relative contribution of subjective factors on the desistance process is to include important social factors in the model.

Subjective Factors, Social Factors, and Desistance

As discussed in Chapter III, although most desistance researchers assume that both subjective and social factors contribute to the desistance process, relatively few studies have examined both factors simultaneously, within the same statistical model. Further, even fewer studies have examined these factors using within-individual analyses. The results to the following research questions are presented in this section:

Research Question (1a): Do changes in subjective factors (i.e., future expectations, identity, criminal thinking) contribute to desistance, controlling for social factors and other important variables?

Research Question (1b) Do changes in social factors (i.e., romantic partner, employment/education, peer influence) contribute to desistance, controlling for subjective factors and other variables?

These questions are addressed in three separate analyses, in order to investigate the romantic partner relationship in more depth. The first set of analyses examines the relationship of subjective factors, romantic partner status, employment/educations status, and peer antisocial influence on desistance. The second set of analyses examines this same relationship, except by substituting romantic relationship quality for romantic partner status, amongst the subsample of individuals who are involved in a romantic relationship. Finally, the third set of analyses examines this relationship, except by

substituting romantic antisocial influence for romantic relationship quality (amongst those who are involved in a romantic relationship).

Romantic partner status.

Model I of Table 5.2 presents the results of subjective factors on the desistance process, while including romantic partner status and employment/education status as the social factors examined. In addition, Model II of Table 5.2 illustrates the direct effects while also including peer antisocial influence in the model. The results are presented in this way to illustrate potential changes to the model that are made once peer antisocial influence is introduced.

Table 5.2. Multilevel logistic regression results of subjective factors and social factors (including romantic partner status) on desistance.

Within Level	Model I (Excluding Peer Antisocial Influence)		Model II (Including Peer Antisocial Influence)	
	b (SE)	Odds Ratio	b (SE)	Odds Ratio
<i>Subjective Factors</i>				
Future Expectations	.283 (.044)	1.328***	.272 (.045)	1.312***
Identity (PSMI)	.151 (.074)	1.163*	.134 (.076)	1.143
Manipulation (CT)	-.016 (.012)	.985	-.009 (.012)	.991
Unemotionality (CT)	-.009 (.013)	.991	-.008 (.013)	.992
Thrill-Seeking (CT)	-.039 (.012)	.962**	-.029 (.012)	.971*
<i>Controls</i>				
Wave	.447 (.056)	1.564***	.413 (.057)	1.512***
Wave ²	-.049 (.007)	.952***	-.045 (.007)	.956***
Drug Use	-1.478 (.074)	.228***	-1.355 (.074)	.258***
Proportion Time Supervised	-.328 (.091)	.720***	-.391 (.092)	.676***
Self-Control	.496 (.054)	1.642***	.462 (.055)	1.587***
<i>Social Factors</i>				
Employment/Education	-.043 (.066)	.958	-.042 (.068)	.959
Romantic Partner (1 = yes)	-.374 (.064)	.688***	-.358 (.065)	.699***
Peer Antisocial	-	-	-.593 (.057)	.553***
Pseudo R-Square	0.163		0.189	

Note: PSMI = Psychosocial Maturity Inventory, CT = Criminal Thinking Measures. *Model I*: $N = 10,854$ observations nested in 1,334 subjects. *Model II*: $N = 10,743$ observations nested in 1,334 subjects.
* $p < .05$; ** $p < .01$; *** $p < .001$.

As illustrated in Model I of Table 5.2, some of the subjective factors in the model remain significant, even after the introduction of romantic partner status and employment/education status. In particular, after holding these social factors and other control variables constant, when one experiences an increase in positive future expectations, the odds of desistance are multiplied by 1.328, compared to when an individual does not experience these positive changes in future expectations. In addition,

in Model I where peer antisocial influence is excluded, positive changes in one's identity are again associated with greater odds of desistance, while negative changes in one's criminal thinking (thrill-seeking) are associated with lower odds of desistance. Furthermore, self-control remained significant even after including romantic partner status and employment/education status in the model.

Additionally, romantic partner status is significant in Model I, whereas employment/education status is not.⁸ Specifically, when one has a romantic partner, the odds of desistance decrease by 31.2%, compared to when an individual does not have a romantic partner, holding all else in the model constant. This suggests that having a romantic partner does not contribute to the desistance process and may, in fact, discourage desistance (as stated earlier, it may be important to consider romantic partner type, and whether the romantic partner exerts an antisocial influence—see below).

In Model II of Table 5.2, peer antisocial influence is introduced into the model. The overall findings remain consistent, with the exception that the subjective factor, identity, is no longer significant. Future expectations and thrill-seeking criminal thinking patterns remain significant in the expected direction. In addition, the new social factor added to the model, peer antisocial influence, is significant at the $p < .001$ level. In particular, when one experiences increased peer antisocial influence, the odds of desistance decrease by 44.7%, holding all else in the model constant. In addition, romantic partner status remains significant, suggesting that having a romantic partner discourages the desistance process from occurring across time within individuals.

When evaluating the magnitude of importance these predictors have on the

⁸ Employment/educations status also was examined as separate measures to see if either would present as significant once separated. Employment status and educations status remained non-significant.

dependent variable, logistic regression standardized coefficients are examined. In the current study, only the predictor variables are standardized, in order to show the relative importance of these variables.⁹ When examining the overall impact of subjective factors, it appears that future expectations has a larger effect size than thrill-seeking criminal thinking. When examining the impact of both subjective and social factors, the following rank order is determined: peer antisocial influence (.593), self-control (.462), romantic partner status (.358), future expectations (.272), and thrill-seeking criminal thinking (.029).¹⁰

Despite these promising findings, past research suggests that simply examining whether one has a romantic partner or not, may not be sufficient in exploring the role of romantic relationships on desistance from crime. This may be especially true if an individual is involved with an antisocial partner, as suggested in these findings. Thus, the second set of analyses illustrates the role of romantic relationship quality (among those who are in a romantic relationship) on desistance, holding constant other social and subjective factors.

Romantic relationship quality.

Table 5.3 displays the multilevel logistic regression results of both subjective and social factors on desistance from crime, substituting romantic relationship quality for romantic relationship status. These results also are presented in two models, where Model I shows the results excluding peer antisocial influence, and Model II presents the results by including peer antisocial influence into the model.

⁹ Menard (2004) suggests that any of the six methods presented in his article for calculating the logistic regression standardized coefficients are acceptable in determining rank order.

¹⁰ Absolute value of the logistic regression standardized coefficients are reported.

Table 5.3. Multilevel logistic regression results of subjective factors and social factors (including romantic relationship quality) on desistance.

	Model I (Excluding Peer Antisocial Influence)		Model II (Including Peer Antisocial Influence)	
	b (SE)	Odds Ratio	b (SE)	Odds Ratio
<i>Subjective Factors</i>				
Future Expectations	.293 (.066)	1.341***	.280 (.067)	1.323***
Identity (PSMI)	.061 (.111)	1.063	.056 (.115)	1.057
Manipulation (CT)	-.013 (.017)	.987	-.007 (.017)	.993
Unemotionality (CT)	-.006 (.018)	.994	-.003 (.019)	.997
Thrill-Seeking (CT)	-.029 (.018)	.971	-.022 (.018)	.978
<i>Controls</i>				
Wave	.401 (.080)	1.493***	.372 (.081)	1.450***
Wave ²	-.046 (.010)	.955***	-.042 (.010)	.959***
Drug Use	-1.540 (.105)	.214***	-1.433 (.107)	.239***
Proportion Time Supervised	-.443 (.145)	.642**	-.508 (.146)	.602**
Self-Control	.469 (.079)	1.598***	.425 (.080)	1.530***
<i>Social Factors</i>				
Employment/Education	.009 (.091)	1.009	-.003 (.093)	.997
Romantic Relationship Quality	.136 (.066)	1.145*	.125 (.068)	1.134
Peer Antisocial Influence	-	-	-.636 (.090)	.529***
Pseudo R-Square	0.151		0.176	

Note: PSMI = Psychosocial Maturity Inventory, CT = Criminal Thinking Measures.

Model I: $N = 5,738$ observations nested in 1,229 subjects. *Model II*: $N = 5,704$ observations nested in 1,229 subjects.

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

As shown in Model I of Table 5.3, romantic relationship quality significantly contributes to the desistance process. Thus, when an individual in a romantic relationship is in a high quality relationship, the odds of desistance are multiplied by 1.145, compared to when they do not experience a high quality relationship. Self-control also remains significant in the expected direction, where improvement in self-control within an individual increases the odds of desistance. Employment/education status remains non-

significant in this model as well. The only subjective factor that remains significant once controlling for romantic relationship quality is future expectations. Neither the identity measure nor the criminal thinking measures are significant when controlling for romantic partner quality.

In Model II, peer antisocial influence is introduced. Future expectations remain significant with the inclusion of peer antisocial influence; however, romantic relationship quality is no longer significant. Peer antisocial influence is significant in this model as well: When an individual experiences increased peer antisocial influence, the odds of desistance decrease by 47.1%, compared to when an individual does not experience these changes in peer antisocial influence. This finding is in the expected direction and is consistent with past research suggesting antisocial peers to be one of the strongest predictors of offending behavior (e.g., Akers et al., 1979; Elliott et al., 1985; Jensen, 1972; Liu, 2003; Warr, 1998, 2002).

Because romantic relationship quality did not remain significant when controlling for peer antisocial influence, a third measure is examined – romantic antisocial influence. Based on the findings from the analyses presented in Tables 5.2 and 5.3, it is thought that romantic antisocial influence may play a larger role in the desistance process, compared to romantic partner status and the quality of the romantic relationship. It is possible that these serious adolescent offenders are romantically involved with partners who are similar in their antisocial behavior (Haynie et al., 2005; Lonardo et al., 2009). The findings illustrating the effect of romantic antisocial influence on desistance are presented in the next section.

Romantic antisocial influence.

Table 5.4 presents the multilevel logistic regression results, which adds romantic antisocial influence into the models. As with the previous tables, Model I presents the effects of subjective factors, romantic antisocial influence, and employment/education status on desistance from crime, while excluding the role of peer antisocial influence. Model II presents the entire direct effects, including peer antisocial influence in the model.

Table 5.4. Multilevel logistic regression results of subjective factors and social factors (including romantic antisocial influence) on desistance.

	Model I (Excluding Peer Antisocial Influence)		Model II (Including Peer Antisocial Influence)	
	b (SE)	Odds Ratio	b (SE)	Odds Ratio
<i>Subjective Factors</i>				
Future Expectations	.300 (.066)	1.350***	.290 (.067)	1.336***
Identity (PSMI)	.061 (.112)	1.062	.056 (.115)	1.057
Manipulation (CT)	-.013 (.017)	.987	-.007 (.017)	.993
Unemotionality (CT)	-.006 (.018)	.994	-.004 (.019)	.996
Thrill-Seeking (CT)	-.027 (.018)	.974	-.021 (.018)	.979
<i>Controls</i>				
Wave	.390 (.080)	1.447***	.363 (.082)	1.438***
Wave ²	-.045 (.010)	.956***	-.042 (.011)	.959***
Drug Use	-1.530 (.105)	.217***	-1.430 (.107)	.239***
Proportion Time Supervised	-.468 (.145)	.626**	-.515 (.146)	.597***
Self-Control	.459 (.079)	1.583***	.420 (.079)	1.522***
<i>Social Factors</i>				
Employment/Education	.016 (.091)	1.016	.001 (.093)	1.001
Romantic Antisocial Influence	-.232 (.061)	.793**	-.169 (.060)	.845**
Peer Antisocial Influence	-	-	-.614 (.089)	.541***
Pseudo R-Square	0.155		0.178	

Note: PSMI = Psychosocial Maturity Inventory, CT = Criminal Thinking Measures.

Model I: $N = 5,738$ observations nested in 1,230 subjects. *Model II*: $N = 5,707$

observations nested in 1,230 subjects.

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

Consistent with findings from Table 5.3, Model I of Table 5.4 shows that the only subjective factor that remains significant is future expectations. Thus, when one experiences an increase in positive future expectations, their odds of desistance is multiplied by 1.3, compared to other waves when they do not experience these positive changes, holding all else in the model constant. Self-control also remains significant, suggesting that when one experiences positive changes in self-control, they have greater

odds of desistance, compared to waves when an individual does not experience these positive changes. As far as the social factors, employment/education status remains non-significant; however, romantic antisocial influence is significant in Model I. These results suggest that when an individual experiences antisocial influence from a romantic partner, the odds of desistance decrease by 20.7%, compared to waves when an individual does not experience this increase in romantic antisocial influence.

Similar results are found in Model II where peer antisocial influence is included into the model. Romantic antisocial influence remains significant and in the expected direction, even when including peer antisocial influence into the model. Accordingly, the antisocial influence a partner exhibits also is a significant contributor to the desistance process, holding constant important subjective factors, self-control, and even peer antisocial influence. Based on all of the models examined in this chapter, it appears that the role of romantic antisocial influence is more telling than the quality of the romantic relationship (which is non-significant when including peer antisocial influence), as well as romantic partner status. It is believed that romantic partner status may discourage desistance because of the antisocial nature of the partner; thus, the romantic partner's antisocial influence is examined in greater detail in the following chapter where exploratory analyses are performed.

Further in Model II of Table 5.4, antisocial influence by the romantic partner *and* peers are both significant in the model. When one experiences antisocial influence from peers, the odds of desistance decrease by 45.9%, compared to when an individual does not experience these changes. Also noteworthy is that future expectations remain significant in this model in the expected direction, as well as self-control. In addition,

linear wave and wave squared remain significant, indicating that over time, individuals tend to increase their chance of desistance, and the wave squared term implies that this increase in odds of desistance decelerates over time.

When examining the relative impact of both subjective and social factors on desistance from the full model (Model II) in Table 5.4, the following rank order is determined: peer antisocial influence (.614), self-control (.420), future expectations (.290), and romantic antisocial influence (.169). In review of the research questions addressed in this chapter:

Research Question (1a): Do changes in subjective factors (i.e., future expectations, identity, criminal thinking) contribute to desistance, controlling for social factors and other important variables?

Research Question (1b) Do changes in social factors (i.e., romantic partner, employment/education, peer influence) contribute to desistance, controlling for subjective factors and other variables?

The formal response to both questions is affirmative, that both subjective and social factors contribute to the desistance process, even when including both factors in the model simultaneously, and when controlling for other important time varying influences such as self-control and drug use. Further, when examining the rank order, there is no clear answer as to which is more important – subjective or social factors. Although the social factor peer antisocial influence leads the ranking, it is closely followed by self-control. Further, future expectations is ranked higher than romantic antisocial influence. Thus, when determining the relative importance of these factors, the answer is exceedingly dependent on the specific variables examined.

Given these encouraging findings regarding the role of both subjective and social factors, as well as the role of self-control in these models, additional supplemental analyses are performed in the following chapter. Given the level of significance of self-control in these models, this variable is examined in greater depth in the following chapter, along with the role of future expectations, romantic antisocial influence, and peer antisocial influence. Using these variables, indirect and interactive effects are examined in the following chapter.

CHAPTER VI. RESULTS OF THE SUPPLEMENTAL ANALYSES

In this chapter, exploratory research is conducted to further investigate the initial patterns detected in the previous chapter. Given the variables that emerged as significant predictors, of main interest here is the roles that future expectations, self-control, peer antisocial influence, and romantic antisocial influence play in the desistance process. As discussed in Chapter III, few studies have examined the interplay of subjective and social factors on the desistance process, although researchers have suggested the possibility of both indirect and interactive effects (e.g., Kazemian, 2007; LeBel et al., 2008; Sullivan, 2013). Thus, this chapter presents findings from exploratory mediation and moderation analyses.

Mediation Effects

As discussed in detail in Chapter III, some researchers have suggested that subjective changes may trigger the occurrence of influential social bonds (e.g., Giordano et al., 2002; LeBel et al., 2008). Consequently, a positive mindset (or an “openness for change” as discussed by Giordano et al., 2002) may encourage positive social bonds, thereby resulting in desistance from crime. This section presents the supplemental analyses conducted to test if social factors mediate the relationship between subjective changes and desistance. The same statistical approach of within-individual analyses are used to test for mediation. Again, it is important to stress that the determination of causal order in the desistance process is complex, as changes in cognition and structure are oftentimes interdependent and may even occur simultaneously (Kazemian, 2007; Maruna, 2001). Thus, the supplemental analyses cannot rule out the possibility of simultaneous or reciprocal effects and are exploratory in nature.

The following research question is examined in this section:

Research Question (2): Within individuals, do changes in social factors mediate the relationship between changes in subjective factors and desistance from crime?

Based on the findings from the previous chapter, the specific social factors that are examined include peer antisocial influence and romantic antisocial influence. The subjective factor that is examined is future expectations, along with self-control. In particular, the self-control measure is studied in further detail in this chapter for a number of reasons. First, self-control was significant in the examinations of direct effects. Self-control is a leading predictor in the larger study of criminal offending (see Pratt and Cullen, 2000) but, surprisingly, it has not been the focus of desistance theorists, except as a control variable (for exceptions see Doherty, 2006 and Morizot & Le Blanc, 2007). Thus, it deserves further attention in these exploratory analyses. Second, the previous findings indicate that changes in self-control within-individuals do occur; thus, it will be interesting to see how this variable is associated with social changes in the desistance process.

The first set of analyses in this section examine peer antisocial influence as a mediator. The second set of analyses examine romantic antisocial influence as a mediator. Mediation is examined using Baron and Kenny's (1986) steps for testing mediation hypotheses. Similar to Chapter V, a multilevel model is used to test for within-individual change.

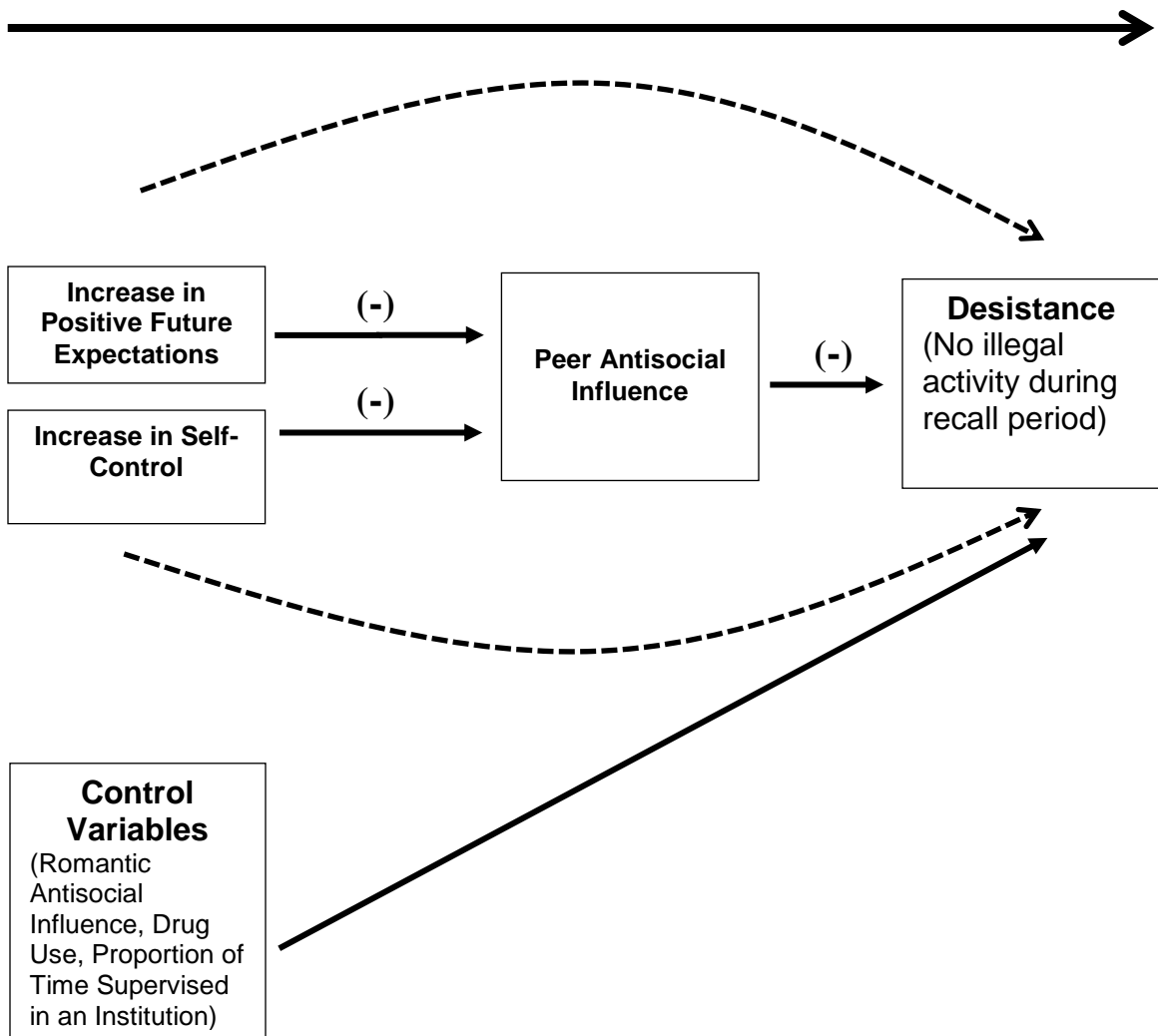
Peer Antisocial Influence as a Mediator in the Desistance Process

See Figure 6.1 for the first mediation model examined. Here, peer antisocial influence is thought to mediate the relationship between future expectations and

desistance, as well as self-control and desistance, while controlling for important variables such as romantic antisocial influence, drug use, and proportion of time supervised in an institutional setting.

Figure 6.1. Path analysis testing peer antisocial influence as a mediator in the desistance process.

CHANGE OVER TIME



Three-step regression analyses were performed to test for mediation, in accordance with Baron and Kenny's (1986) guidelines. See Table 6.1 for the first step where the predictor variables (future expectations and self-control) are regressed on the dependent variable. As illustrated in this table, when an individual experiences an increase in positive future expectations, the odds of desistance are multiplied by 1.393, compared to when an individual does not experience these positive changes ($p < .001$). Further, when an individual experiences increases in self-control, the odds of desistance are multiplied by 1.697, compared to when an individual does not experience these changes in self-control ($p < .001$).

Table 6.1. Path analysis (peer antisocial influence): Multilevel logistic regression results of predictors on desistance.

	<u>Dependent Variable: Desistance</u>	
Within Level	b (SE)	Odds Ratio
<i>Predictors</i>		
Future Expectations	.089 (.016)	1.393***
Self-Control	.132 (.017)	1.697***
<i>Controls</i>		
Romantic Antisocial Influence	-.086 (.018)	.756***
Drug Use	-.297 (.017)	.209***
Proportion Time Supervised	-.066 (.018)	.594**
Wave	.392 (.076)	1.458***
Wave ²	-.320 (.074)	.961***
Pseudo R-Square	0.164	

Note: $N = 6,607$ observations nested in 1,251 subjects.

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

The results of the second step of the path analysis are displayed in Table 6.2. Here the predictors (future expectations and self-control) are regressed on peer antisocial influence (mediator). Because peer antisocial influence is a continuous variable, the model is calculated using a multilevel regression model for continuous variables. As illustrated in Table 6.2, future expectations (-.051) and self-control (-.128) are negatively associated with the mediator, peer antisocial influence ($p < .001$).

Table 6.2. Path analysis (peer antisocial influence): Multilevel regression results of predictors on the mediator.

	<u>Mediator: Peer Antisocial Influence</u>	
Within Level	Estimate	SE
<i>Predictors</i>		
Future Expectations	-.051	.015***
Self-Control	-.128	.014***
<i>Controls</i>		
Romantic Antisocial Influence	.150	.021***
Drug Use	.165	.014***
Proportion Time Supervised	-.009	.015
Wave	-.139	.058*
Wave ²	.121	.056*
Pseudo R-Square	0.087	

Note: $N = 6,607$ observations nested in 1,251 subjects.

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

Finally, the results of the third step in the path analysis are displayed in Table 6.3. Here, the mediator (peer antisocial influence) and the independent variables (future expectations and self-control) are regressed on the dependent variable (desistance). As illustrated in Table 6.3, when an individual experiences increases in peer antisocial influence, the odds of desistance decrease by 45.7%, compared to when an individual

does not experience these changes ($p < .001$). When controlling for the mediator, future expectations and self-control remain significantly associated with desistance. In sum, all of the paths investigated in the mediation model are significant and in the expected direction. Figure 6.2 displays these associations conceptually.

Table 6.3. Path analysis (peer antisocial influence): Multilevel logistic regression results of predictors on desistance.

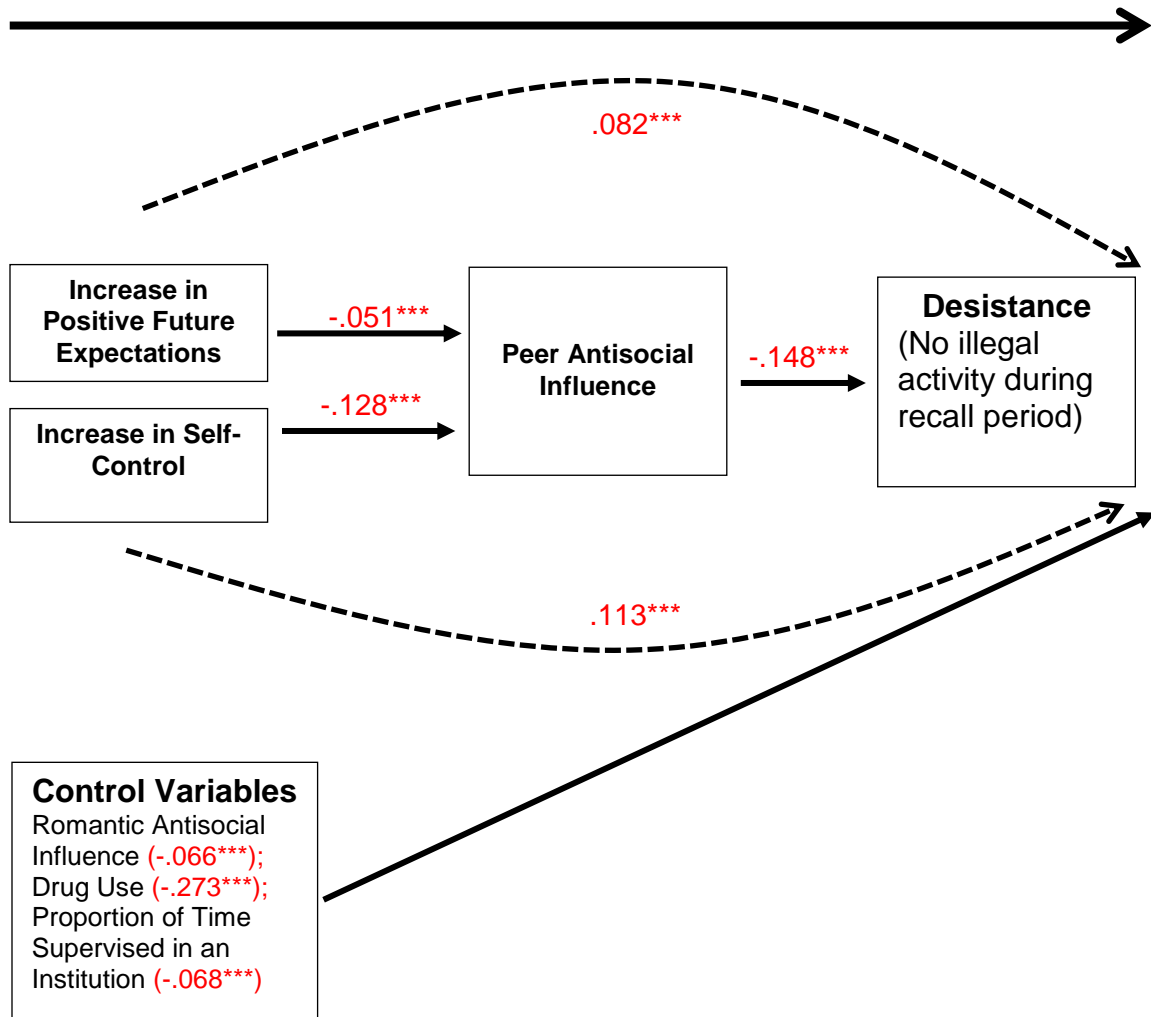
Within Level	<u>Dependent Variable: Desistance</u>	
	b (SE)	Odds Ratio
<i>Predictors</i>		
Future Expectations	.082 (.016)	1.361***
Self-Control	.113 (.017)	1.582***
Peer Antisocial Influence	-.148 (.020)	.543***
<i>Controls</i>		
Romantic Antisocial Influence	-.066 (.017)	.805***
Drug Use	-.273 (.017)	.233***
Proportion Time Supervised	-.068 (.017)	.578***
Wave	.367 (.075)	1.429***
Wave ²	-.298 (.073)	.963***
Pseudo R-Square	0.185	

Note: $N = 6,607$ observations nested in 1,251 subjects.

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

Figure 6.2. Results of the path analysis using peer antisocial influence as a mediator.

CHANGE OVER TIME



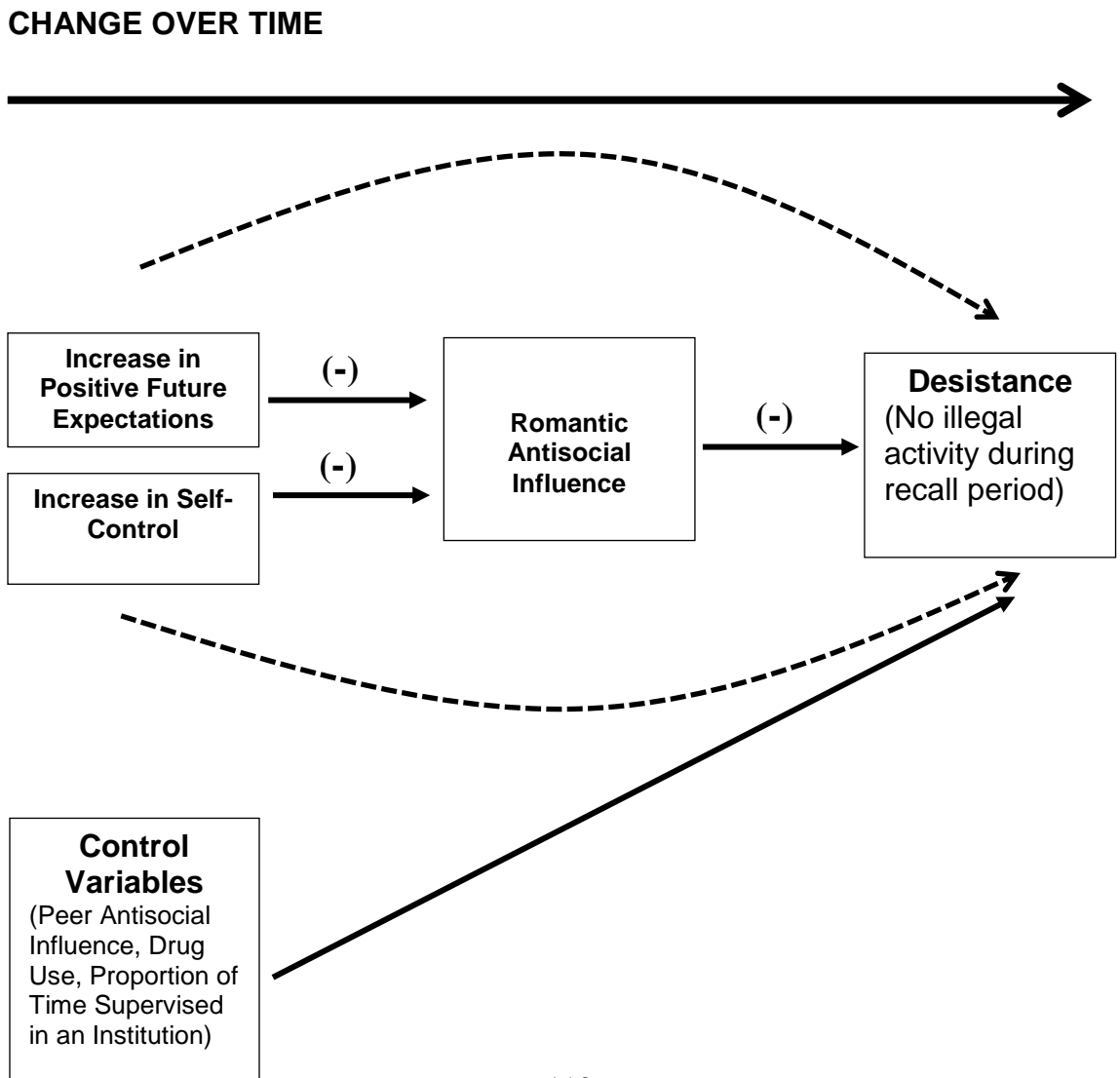
The Monte Carlo integration algorithm was used in Mplus to run the path analysis, as there were missing data on the mediating variable. As expected, complete mediation did not occur; however, the possibility remains for partial mediation. As Monte Carlo integration does not provide indirect effects, the Monte Carlo Method for Assessing Mediation (MCMAM) is used (MacKinnon, Lockwood, & Williams, 2004), in order to test if the mediation effect is significant. This method specifically calculates the confidence interval for indirect effects. In particular, the computer software by Selig and Preacher (2008) is used, which requires the user to input raw regression coefficients for paths *a* and *b* in the mediation, along with their standard errors. An R Code is then generated, which can be run using Rweb. This procedure produces a confidence interval for the indirect effects and the mediated effect is considered significant if the confidence interval does not include zero.

When assessing if peer antisocial influence mediates the effect of future expectations and desistance within individuals, the results from Rweb indicate that mediation is occurring, 95% CI [.012, .047]. Further, when assessing if peer antisocial influence mediates the effect of self-control and desistance within individuals, the results indicate that mediation is occurring for this relationship as well, 95% CI [.051, .106]. Thus, when individuals experience positive changes in future expectations and self-control, they are less likely to experience peer antisocial influence; thereby, encouraging the desistance process. As these mediation results are promising, next romantic antisocial influence is examined as the potential mediator in the relationship between subjective factors and desistance.

Romantic Antisocial Influence as a Mediator in the Desistance Process

Figure 6.3 displays the second mediation model examined where romantic antisocial influence is believed to mediate the relationship between future expectations and desistance, as well as self-control and desistance, while controlling for important variables such as peer antisocial influence, drug use, and proportion of time supervised in an institutional setting.

Figure 6.3. Path analysis testing romantic antisocial influence as a mediator in the desistance process.



As with the first mediation model, Baron and Kenny’s three-step regression analyses were performed to test for mediation. Table 6.4 displays the first step where the predictors (future expectations and self-control) are regressed on the dependent variable. As illustrated in this table, when an individual experiences positive changes in future expectations, the odds of desistance are multiplied by 1.306, compared to when an individual does not experience these positive changes ($p < .001$). Further, when an individual experiences increases in self-control, the odds of desistance are multiplied by 1.733, compared to when an individual does not experience these changes in self-control ($p < .001$). The remaining control variables in the model are significant and in the expected direction, where greater peer antisocial influence, drug use, and time supervised in an institutional setting all decrease the odds of desistance.

Table 6.4. Path analysis (romantic antisocial influence): Multilevel logistic regression results of predictors on desistance.

	<u>Dependent Variable: Desistance</u>	
Within Level	b (SE)	Odds Ratio
<i>Predictors</i>		
Future Expectations	.078 (.012)	1.306***
Self-Control	.145 (.014)	1.733***
<i>Controls</i>		
Peer Antisocial Influence	-.165 (.014)	.539***
Drug Use	-.260 (.012)	.248***
Proportion Time Supervised	-.051 (.013)	.707***
Wave	.415 (.053)	1.501***
Wave ²	-.333 (.051)	.958***
Pseudo R-Square	0.186	

Note: $N = 11,960$ observations nested in 1,335 subjects.

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

The results of the second step of the path analysis are displayed in Table 6.5. Here the predictors (future expectations and self-control) are regressed on romantic antisocial influence (mediator). As illustrated in Table 6.5, future expectations is not significantly associated with the mediator; therefore, mediation is not occurring for future expectations and desistance using romantic antisocial influence as a mediator. However, self-control (-.079) is negatively associated with the mediator ($p < .01$). Therefore, it is still possible that mediation is occurring among self-control and desistance.

Table 6.5. Path analysis (romantic antisocial influence): Multilevel regression results of predictors on the mediator.

	<u>Mediator: Romantic Antisocial Influence</u>	
Within Level	Estimate	SE
<i>Predictors</i>		
Future Expectations	-.008	.020
Self-Control	-.079	.026**
<i>Controls</i>		
Peer Antisocial Influence	.193	.027***
Drug Use	.031	.013*
Proportion Time Supervised	-.007	.058
Wave	-.096	.057
Wave ²	.089	.002
Pseudo R-Square	0.068	

Note: $N = 11,960$ observations nested in 1,335 subjects.

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

The results of the third step in the path analysis are displayed in Table 6.3. In this table, the mediator (romantic antisocial influence) and the predictor (self-control) are regressed on the dependent variable (desistance). As illustrated in Table 6.3, when an individual experiences increased romantic antisocial influence, the odds of desistance

decrease by 18.1%, compared to when an individual does not experience these changes ($p < .001$). When controlling for the mediator, future expectations and self-control remain significantly associated with desistance.

Table 6.6. Path analysis (romantic antisocial influence): Multilevel logistic regression results of predictors on desistance.

	<u>Dependent Variable: Desistance</u>	
Within Level	b (SE)	Odds Ratio
<i>Predictors</i>		
Future Expectations	.074 (.015)	1.213***
Self-Control	.159 (.017)	1.495***
Romantic Antisocial Influence	-.060 (.016)	.819***
<i>Controls</i>		
Peer Antisocial Influence	-.174 (.017)	.598***
Drug Use	-.262 (.012)	.235***
Proportion Time Supervised	-.072 (.013)	.635***
Wave	.407 (.051)	1.506***
Wave ²	-.318 (.050)	.959***
Pseudo R-Square	0.232	

Note: $N = 11,960$ observations nested in 1,335 subjects.

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

All of the paths investigated in the mediation analysis for self-control \rightarrow romantic antisocial influence \rightarrow desistance are significant and in the expected direction. However, when comparing Tables 6.4 and 6.6, there is evidence for a suppression effect on self-control. As described by MacKinnon, Krull, and Lockwood (2000), suppression is indicated when the “magnitude of the relationship between an independent variable and a dependent variable becomes larger when a third variable is included” (p. 175). In Table 6.4, the regression coefficient for self-control is .145, where in Table 6.6 when the

mediator is included, the regression coefficient for self-control is .159. This indicates that suppression, or inconsistent mediation, is occurring. Thus, when romantic antisocial influence is introduced into the model, the regression coefficient for self-control increases.

The purpose of the exploratory mediation analyses was to further investigate the interplay between subjective and social factors. This section addressed the following research question:

Research Question (2): Within individuals, do changes in social factors mediate the relationship between changes in subjective factors and desistance from crime?

The mediators peer antisocial influence and romantic antisocial influence were both examined. Future expectations and self-control were investigated as the exogenous variables in the mediation models, with desistance being the outcome variable. The results of the path analyses suggest that while peer antisocial influence is a significant mediator, romantic antisocial influence is not. Just as with *Research Question (1)*, the answer to *Research Question (2)* heavily depends on the specific variables examined. When examining peer antisocial influence as a mediator, the answer to *Research Question (2)* is affirmative. This social factor can perform as a mediator between future expectations and desistance, as well as self-control and desistance. Thus, the possibility remains that positive changes in cognition and self-control may promote an individual to associate with more prosocial peers, thereby encouraging the desistance process. At the same time, not all social factors appear to mediate this relationship, as evidenced by the findings surrounding romantic antisocial influence.

Although the possibility for mediation is not ruled out when examining the

interplay between subjective and social factors, other possibilities remain. Thus, further exploratory analyses are performed to investigate any potential interaction effects using these same variables in the next section.

Interaction Effects

As evidenced in the mediation analyses, it appears that there is some interplay occurring between subjective and social factors. Along with mediation effects, some desistance researchers also have pointed to the potential for interaction effects (e.g., Bottoms et al., 2004; Farrall & Bowling, 1999; Sullivan, 2013). In particular, subjective factors (including self-control) may moderate the relationship between social factors and desistance from crime. For example, the relationship between peer antisocial influence and desistance could be influenced by one's level of self-control. If an individual experiences increases in self-control, then they may be better able to resist the influences of their antisocial peers, compared to times when an individual does not experience increases in self-control (see Gardner et al., 2007). Further, if an individual is experiencing relatively low self-control, then they may be less able to resist the temptations of their antisocial peers and may be more likely to participate in delinquent behavior. Thus, additional supplemental analyses are performed in this section, in order to test for potential interaction effects. In this section, the final research question is examined:

Research Question (3): Do subjective changes interact with social changes to predict the desistance process within individuals?

Here, the moderators of interest include self-control and future expectations, and the exogenous variables are peer antisocial influence and romantic antisocial influence.

To explore these interaction effects, multilevel models are used to examine multiplicative interaction terms involving subjective factors (including self-control) and social factors. The first section of results show the interactions with future expectations and peer and romantic antisocial influence. The second section of results include interactions involving self-control and peer and romantic antisocial influence.

Future Expectations as a Moderator in the Desistance Process

Future expectations is examined as a moderator in this section using two separate models. The first model displays the interaction between future expectations and peer antisocial influence. The second model displays the interaction between future expectations and romantic antisocial influence. Table 6.7 present the multilevel logistic regression models including the independent variables (peer antisocial influence and romantic antisocial influence), along with the moderator (future expectations) and control variables.

Table 6.7. Multilevel logistic regression results of multiplicative interactions involving future expectations as moderator.

Within Level	<u>Model I</u>		<u>Model II</u>	
	b (SE)	Odds Ratio	b (SE)	Odds Ratio
<i>Independent Variables</i>				
Peer Antisocial Influence	-.663 (.085)	.515***	-.663 (.085)	.515**
Romantic Antisocial Influence	-.213 (.057)	.808***	-.207 (.056)	.813**
<i>Moderator</i>				
Future Expectations	.332 (.061)	1.394***	.330 (.060)	1.391*
<i>Controls</i>				
Wave	.341 (.075)	1.406***	.340 (.075)	1.405*
Wave ²	-.036 (.009)	.964***	-.036 (.010)	.964**
Drug Use	-1.43 (.099)	.239***	-1.433 (.099)	.239**
Proportion Time Supervised	-.561 (.141)	.570***	-.564 (.141)	.569**
Self-Control	.487 (.071)	1.628***	.487 (.071)	1.627*
<i>Interactions</i>				
Peer Antisocial Influence x Future Expectations	.034 (.134)	1.034	-	-
Romantic Antisocial Influence x Future Expectations	-	-	-.104 (.102)	.901
Pseudo R-Square	0.201		0.201	

NOTE: Results presented to test interactions are the unstandardized regression coefficients (Aiken & West, 1991). *Model I*: $N = 6,573$ observations nested in 1,251 subjects. *Model II*: $N = 6,573$ observations nested in 1,251 subjects.

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

As illustrated in Model I, the moderator (future expectations) is positively associated with the odds of desistance occurring within individuals, while the independent variable (peer antisocial influence) is negatively associated with the odds of desistance occurring within individuals. These associations are in the expected direction; however, the interaction effect is not significant. Thus, no interaction is occurring among future expectations and peer antisocial influence. Thus, in response to *Research Question*

(3), changes in future expectations (subjective factor) and changes in peer antisocial influence (social factor) do not interact to promote desistance.

Model II of Table 6.7 present the interaction results among future expectations and romantic antisocial influence. The results in this analysis are very similar to Model I, as future expectations is positively associated with odds of desistance occurring within individuals and romantic antisocial influence is negatively associated with odds of desistance occurring within individuals. Further, the interaction between future expectations and romantic antisocial influence presented in Model II is also insignificant. Thus, in response to *Research Question (3)*, future expectations and romantic antisocial influence do not interact in the desistance process.

It is noteworthy, however, that although the interactions involving future expectations as the moderator are insignificant, Model I shows that future expectations and peer antisocial influence have independent effects on the desistance process, and Model II indicates that future expectations and romantic antisocial influence also have independent effects on the desistance process. These independent effects occur even when controlling for other important key variables, such as self-control and drug use. Next, a moderation framework is explored where self-control is thought to moderate the relationship between peer and romantic antisocial influence and the desistance process.

Self-Control as a Moderator in the Desistance Process

Self-control is examined as a moderator in this section using two separate models. The first model examines the interaction between self-control and peer antisocial influence. The second model examines the interaction between self-control and romantic antisocial influence. Table 6.8 present the multilevel logistic regression models including

the independent variables (peer antisocial influence and romantic antisocial influence), along with the moderator (self-control) and control variables.

Table 6.8. Multilevel logistic regression results of multiplicative interactions involving self-control as moderator.

Within Level	Model I		Model II	
	b (SE)	Odds Ratio	b (SE)	Odds Ratio
<i>Independent Variables</i>				
Peer Antisocial Influence	-.651 (.085)	.522***	-.662 (.085)	.516***
Romantic Antisocial Influence	-.213 (.057)	.808***	-.211 (.056)	.809***
<i>Moderator</i>				
Self-Control	.491 (.071)	1.633**	.487 (.071)	1.627**
<i>Controls</i>				
Wave	.337 (.075)	1.401**	.340 (.075)	1.405**
Wave ²	-.036 (.010)	.965***	-.036 (.009)	.964***
Drug Use	-1.431 (.099)	.239***	-1.431 (.099)	.239***
Proportion Time Supervised	-.559 (.141)	.572***	-.562 (.141)	.570***
Future Expectations	.333 (.060)	1.395**	.332 (.060)	1.394**
<i>Interactions</i>				
Peer Antisocial Influence x Self-control	.173 (.123)	1.189	-	-
Romantic Antisocial Influence x Self-control	-	-	.021 (.104)	1.021
Pseudo R-Square	0.203		0.201	

NOTE: Results presented to test interactions are the unstandardized regression coefficients (Aiken & West, 1991).

Model I: $N = 6,573$ observations nested in 1,251 subjects. *Model II:* $N = 6,573$ observations nested in 1,251 subjects.

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

As illustrated in Model I in Table 6.8, the moderator (self-control) is positively associated with the odds of desistance occurring within individuals, while the independent variable (peer antisocial influence) is negatively associated with the odds of desistance occurring within individuals. These associations are in the expected direction;

although, the interaction effect is not significant. Consequently, in response to *Research Question (3)*, no interaction is occurring among self-control and peer antisocial influence.

Model II of Table 6.8 presents the interaction results among self-control and romantic antisocial influence. These results also indicate that no interaction is occurring, although self-control is positively associated with odds of desistance occurring within individuals and romantic antisocial influence is negatively associated with odds of desistance occurring within individuals. However, self-control and romantic antisocial influence do not interact in this model. Again, the response to *Research Question (3)* is negative in this context.

Similar to the results in the preceding section, although the interactions using self-control as the moderator are insignificant, Model I of Table 6.8 shows that self-control and peer antisocial influence have independent effects on the desistance process, and Model II shows that self-control and romantic antisocial influence also have independent effects on the desistance process. These results, along with the results from the path analyses and main analyses are discussed in depth in the next chapter, along with a discussion of the current study's limitations, policy implications, and directions for future research.

CHAPTER VII. SUMMARY AND CONCLUSION

Although research on desistance from crime has been gaining more traction and attention among criminologists in recent years, the theoretical underpinnings of what motivates the desistance process is still underdeveloped (Bushway et al., 2003; Farrington, 2007; Kazemian, 2007; Piquero et al., 2003). In addition to the theoretical importance of studying the causes of desistance, there are important policy implications for desistance research. As discussed in Chapter I, over two million offenders are currently incarcerated in prisons or jails, and a large majority will be reentering society at some point. To ensure these offenders do not repeat the cycle of offending and incarceration, quality desistance research is needed to guide practitioners on how to better promote the desistance process.

In Chapter II, conceptual and methodological issues surrounding defining and measuring desistance were discussed. The desistance process can be a challenging phenomenon to study, as many have argued that “true desistance” cannot be guaranteed until death. Although the discussions surrounding the definition and measurement of desistance are important and needed, researchers should not lose focus on the importance of examining what factors promote the desistance *process* (i.e., maintaining a state of non-offending), regardless of when true or complete desistance may occur.

Past desistance scholars have pointed to a number of factors that promote this process, and these factors typically fall into two categories – subjective factors and social factors. In general, the term subjective relates to attitudinal factors, such as motivations or intentions to change (LeBel et al., 2008). In this study, subjective factors include future expectations, views of self-concept (i.e., identity), and criminal thinking patterns.

In contrast, social factors are considered to be institutions or developmental processes and events (LeBel et al., 2008, p. 133). For example, the social factors examined in the current study include romantic relationships, employment and education, and peer antisocial influence.

Traditionally, desistance scholars have often endorsed one set of factors (e.g., social) over the other (e.g., subjective) in their research. For instance, Laub and Sampson's (2003) research focuses on the role of social bonds (i.e., marriage, employment, military service) on the desistance process. Although they acknowledge that subjective factors can influence desistance to a degree, their main argument focuses on the idea that subjective factors may become important *after* social bonds are forged, and that subjective factors typically play a much smaller role in the overall desistance process. Further, Maruna's (1999) research has focused on the role of cognition in the desistance process, especially through the use of narrative scripts. Although he consents that personal narratives are highly dependent on their social context and cannot be developed without social interaction (p. 8), Maruna also acknowledges that social factors may play a more important role *after* subjective changes occur.

What is remarkable is that desistance scholars are so consumed with focusing on one set of factors (subjective or social), that many fail to consider other important criminological predictors, such as the role of self-control on the desistance process. Further, although the two competing views (subjective model versus social model) tend to acknowledge the need for an integrative perspective, relatively few have pursued this line of research by combining both subjective and social processes.

This gap in desistance research is what prompted the current study. Few

desistance scholars have considered the major components of both subjective and social factors. Thus, looking to past research, major subjective and social processes were identified, and used as key predictors in the current study. After examining other important gaps and limitations in past desistance research, three major aims of the current study were developed.

First, there is a great need to examine the role of subjective and social factors on the desistance process simultaneously, within the same statistical model. A number of past researchers either failed to consider both factors in their studies of desistance (e.g., Bersani et al., 2009; Blokland & Nieuwbeerta, 2005; Horney et al., 1995; Savolainen 2009), or were limited in their ability to include both factors in the same statistical model (e.g., LeBel et al., 2008). To extend this area of research, both subjective and social factors were examined simultaneously in the current study.

Related to the first major aim, the second aim of the current study was to extend this area of research further by not only examining subjective and social factors simultaneously, but also by using a within-individual analysis. Only a handful of studies have used multilevel models for examining desistance (e.g., Bersani et al., 2009; Blokland & Nieuwbeerta, 2005; Doherty, 2006; Horney et al., 1995; Morizot & Le Blanc, 2007; Tripodi, Kim, & Bender, 2010), and even fewer have considered both subjective factors (not including self-control) and social factors simultaneously (e.g., Sampson et al., 2006). To my knowledge, the current study is the first study to examine a number of subjective and social factors simultaneously using a within-individual analysis, while also controlling for changes in self-control.

The third aim of the current study was to examine the interplay between

subjective and social factors through exploratory analyses. In this study, indirect and interactive effects were examined using within-individual analyses. This interplay has rarely been studied in the desistance literature. In fact, only a handful of studies have tested these factors using a mediation framework (see LeBel et al., 2008; Simons & Barr, 2012), and to my knowledge this is the first desistance study to specifically test for interactions between subjective and social factors, especially using a within-individual approach.

In order to address the above goals of the current study, the Pathways to Desistance Study was analyzed, which provides a sample of over 1,350 serious adolescent offenders from two site locations in the United States (Phoenix and Philadelphia). As discussed in Chapter IV, few longitudinal studies have specifically focused on serious adolescent offenders and their transition from adolescence to adulthood; consequently, it is unknown exactly how serious adolescent offenders desist from crime (Mulvey & Schubert, 2012). Thus, the Pathways to Desistance dataset was used in the current study, as it provided a sample of known, serious offenders during the time period in which desistance is most likely to occur among adolescents.

The Pathways to Desistance study also was useful in that it provided a variety of subjective and social measures. The specific subjective factors examined in the current study were future expectations, identity, and criminal thinking patterns (i.e., manipulation, unemotionality, and thrill-seeking). The social factors examined in the current study were romantic partner status, romantic relationship quality, romantic antisocial influence, employment/education status, and peer antisocial influence. Finally, this study also included controls for drug use, self-control, and proportion of time spent in

an institutional setting. Desistance was measured by asking respondents to indicate their engagement in criminal activities during the recall period. Finally, multilevel models for change were used to investigate the direct, indirect, and interactive effects. A summary and discussion of the results of the current study are presented next.

Summary of Findings

A brief summary of the main findings is presented in this section. Major implications and themes surrounding these findings are introduced in this section; however, the specific theoretical and policy implications of these findings are discussed in the following sections. First, a summary of the findings when examining direct effects are presented, followed by a summary of the indirect effects, and lastly, the interactive effects.

Examining Direct Effects

The first set of analyses in the current study showed the effects of subjective factors on the desistance process. The results from these analyses prompt a number of considerations. First, without controlling for self-control, most, but not all, of the subjective factors were significantly related to the desistance process. Future expectations, identity, and all of the criminal thinking patterns, except for unemotionality, were significant predictors of desistance. Although non-significant in the current study, unemotionality was examined based on a number of past research findings (mostly qualitative) that suggest the importance of this construct in regards to one's criminal lifestyle. For instance, Walters and White (1990) suggest that lifestyle criminals use a "cutoff" in order to eliminate emotion. Further, the display of emotions (other than those emphasizing power and control) are typically viewed as a sign of weakness among

lifestyle criminals. Although this criminal thinking pattern was found to be important in past qualitative works, it does not seem to be an important predictor of desistance as measured in this study. It was thought that when one experiences decreases in an unemotional criminal thinking pattern, that desistance would have a greater odds of occurring; however, this was not the case in the current study. The implications of this finding are discussed in later sections.

The second key finding from the analysis of subjective factors on desistance was that self-control was a significant predictor in the desistance process. Despite the subjective factors included in the analysis, increases in self-control were associated with an increased odds of desistance. This is a significant finding as it indicates that not only is self-control an important predictor in terms of desistance from crime, but that *changes* in self-control promote *changes* in desistance. More comment on this topic is provided in the theoretical implications section.

At the same time, some of the subjective factors did not remain significant with the inclusion of self-control. In particular, the criminal thinking pattern of manipulation and one's view of self-concept (i.e., identity) were no longer significant. Manipulation was included as a predictor, again, based on qualitative research suggesting that lifestyle criminals tend to control and manipulate others, especially those viewed as weak (see Walters, 1990). Identity also was included based on research indicating that clarity in one's identity typically increases in adolescence, and is thought to affect adolescent's decision-making involving crime (Mulvey et al., 2004). Further, Maruna (1999) and others (Giordano et al., 2002; LeBel et al., 2008) emphasize the role of identity in the desistance process, specifically the importance of holding a conventional identity versus a

criminal identity. The implications of these non-significant findings are discussed in greater depth in later sections as well.

The third key finding from the first set of analyses (and all subsequent) indicate that time as quadratic is significant, which suggests that among this sample of serious adolescent offenders, the odds of desistance initially increase across time, but then the odds of desistance decelerate. This is not an unexpected finding, as this is a sample of *serious* offenders. We know that most serious offenders desist from crime at some point, but they are also the most likely to persist in crime for longer periods of time, especially in comparison to less serious offenders (Laub & Sampson, 2003).

Next, when social factors were included in the desistance models, a number of significant results emerged. First, employment/education status was not significant in any of the models. This finding held despite recoding attempts (e.g., including employment and education status separately in the models). This finding is inconsistent with some past research indicating employment/education status as an important predictor of desistance (e.g., Horney et al., 1995; Southamer-Loeber et al., 2004). However, this finding is consistent with more recent research findings that indicate when important third variables are controlled (i.e., self-control), employment has little to no effect on delinquent behavior (Apel et al., 2007; Paternoster et al., 2003). For now, the findings in the current study should be interpreted with caution. It is possible that if more precise measures of employment/education were employed (i.e., examining the quality of these social bonds), then the results may have differed.

The second important finding when including social factors in the model is that peer antisocial influence remained significant, despite which dimension of romantic

relationship was explored. In fact, out of all the subjective and social factors examined, antisocial peer influence was the strongest predictor in terms of magnitude. This is consistent with past research suggesting that it is the strongest predictor of delinquent behavior (with the exception of one's own prior delinquency) (Akers et al., 1979; Elliott et al., 1985; Jensen, 1972; Liu, 2003; Warr, 1998, 2002). This underscores the importance of including this variable in future desistance research.

The third key finding when examining the impact of social factors on desistance is that romantic partner status is significant in the models, even after controlling for self-control and peer antisocial influence. However, the relationship is in an unexpected direction. The findings suggest that having a romantic partner decreases the odds of desistance occurring, compared to times when an individual does not have a romantic partner. Past research indicates that being married typically *increases* the odds of desistance (Beaver et al., 2008; Bersani et al., 2009; Horney et al., 1995; Sampson et al., 2006); although research surrounding non-marital romantic relationship status is somewhat mixed with some studies suggesting that living with a girlfriend may increase offending (Horney et al., 1995), encourage desistance (Savolainen, 2009), or have no effect (Simons & Barr, 2012). Given the measure in the Pathways study does not distinguish whether the romantic partnership is marital or non-marital, it is unclear if the findings in the current study would differ if marital relationships were examined apart from non-marital relationships. However, given the young age of the sample (especially at baseline), it is assumed that the majority of youth were not married at least during the bulk of the study; consequently, the findings in the current study may be consistent with the findings from Horney and colleagues' work. At the same time, past research suggests

that simply examining romantic relationship status may not be sufficient. Consequently, the current study also explored romantic relationship quality among those who were married or in a romantic relationship.

Similar to romantic partner status, romantic relationship quality was examined in models that included peer antisocial influence and self-control. When peer antisocial influence was excluded from the model, romantic relationship quality was significant in the expected direction, where at times when an individual experiences an increase in the quality of the romantic relationship, the odds of desistance increase. However, when peer antisocial influence was included in the model, the quality of the romantic relationship was no longer significant. This suggests the importance of including peer antisocial influence in models examining desistance, as previous studies that failed to do so (e.g., Beaver et al., 2008; Bersani et al., 2008; Giordano et al., 2002; Giordano et al., 2007; Sampson et al., 2006) may have overestimated the impact of romantic relationship quality on desistance from crime.

The perplexing relationship between romantic partner status and desistance suggested the possibility that these serious adolescent offenders may be engaging in romantic relationships with partners who are similar in their antisocial behavior (Haynie et al., 2005; Lonardo et al., 2009; Simons & Barr, 2012). Thus, the antisocial influence of the romantic partner was included in the model. The findings from these analyses indicate that among those with a romantic partner, greater antisocial influence from that partner decreases the odds of desistance, even after controlling for peer antisocial influence, self-control, and subjective factors. This finding is consistent with Simons and Barr's (2012) research, and further emphasizes the importance of controlling for not only

peer antisocial influence, but romantic antisocial influence as well.

In the final models where social factors and subjective factors were examined simultaneously, along with peer antisocial influence and self-control, the only subjective factor that remained significant was future expectations. This finding that an increase in future expectations leads to an increase in the odds of desistance within individuals is consistent with past research (e.g., Brezina et al., 2009; Quinton et al., 1993; Raffaelli & Koller, 2005). This is also consistent with Maruna's (2001) work, who suggests that individuals align their conduct with who they want to become in the future. If youth experience more positive future expectations, then this appears to encourage them to refrain from offending. This has important policy implications, which is discussed in greater detail in the policy implications section.

As a whole, these findings indicate that subjective factors, social factors, and self-control as operationalized in the current study all contribute to the desistance process. In the final model of the direct effects, peer antisocial influence had the largest impact on desistance, followed by self-control, future expectations, and romantic antisocial influence. These findings were encouraging; however, they raised some questions regarding the interplay among these variables. Thus, supplemental analyses were performed to investigate potential indirect and interactive effects.

Examining Indirect Effects (Mediation)

Mediation was examined where it was hypothesized that positive changes in subjective factors may promote positive changes in social factors, ultimately resulting in desistance from crime. The mediators examined were peer antisocial influence and romantic antisocial influence, and the exogenous variables were future expectations and

self-control. In sum, the mediation analyses indicate that peer antisocial influence partially mediates the relationship between self-control and desistance, as well as future expectations and desistance. Thus, these findings are consistent with previous research that positive subjective changes may encourage positive social changes, thereby encouraging desistance from crime (LeBel et al., 2008). For instance, when an individual experiences more positive future expectations, then this may prompt them to associate less with antisocial peers who do not share the same expectations for the future, thereby promoting the desistance process.

The next mediation analyses in the current study involved romantic antisocial influence as the mediator between self-control and desistance, and between future expectations and desistance. The results from these analyses indicate that romantic antisocial influence does not serve as a mediator for either model. Thus, social factors may mediate the relationship between subjective factors and desistance in some contexts, but not all. To my knowledge, only one other study (i.e., LeBel et al., 2008) considers social factors as a potential mediator between subjective factors and desistance, and this study also indicates that mediation can occur. Thus, this area deserves further attention from desistance researchers and future studies should be designed to confirm these mediation effects.

Examining Interactive Effects (Moderation)

The last analyses conducted in the current study further explores the interplay of subjective and social factors by examining interactive effects. It was hypothesized that subjective factors (future expectations, along with self-control) may moderate the relationship between social factors (peer and romantic antisocial influence) and

desistance. For example, when an individual experiences an increase in self-control, they may be better able to resist antisocial influences, compared to when an individual is low in self-control and less able to resist such influences. To my knowledge, the current desistance study was the first to explore these interactive effects.

The results of these final analyses indicate that moderation is not occurring for self-control and antisocial influences, nor future expectation and antisocial influences. Although no interactive effects were discovered, the findings indicate that self-control and antisocial influence, as well as future expectations and antisocial influences, have independent effects on the desistance process. Thus, increasing one's self-control may encourage the desistance process, independent of the presence of antisocial influences (and vice versa). These findings and others discussed in this section have important theoretical implications. These implications are discussed in the next section.

Theoretical Implications

Overall, the current study examined the relative impact of subjective and social factors on desistance from crime, as well as the interplay among subjective and social factors. A life course theoretical perspective was used to explain within-individual variations in the desistance process. The life course perspective is flexible in that it allows for the consideration of both subjective and social influences across the life course of an individual. As discussed in great depth in Chapter III, many desistance researchers tend to endorse one set of factors (e.g., social) over another (e.g., subjective), despite acknowledgements from scholars that both factors influence the desistance process.

The findings from the current study illustrate the potential flaw in this approach. If the current study had examined subjective factors in isolation, without considering the

role of social factors, the conclusion would have been made that almost all of the subjective factors are influential in the desistance process. However, once social factors were included into the models, most of the subjective factors lost statistical significance. Further, the failure to include other important criminological predictors, such as self-control and peer antisocial influence, also would have produced misleading results. It is hoped that this study underscores the importance of including important empirical predictors in desistance models, rather than focusing on the effect of one variable (e.g., marriage) on desistance from crime, while only considering a few other control variables.

What is interesting is that peer antisocial influence and self-control had the largest relative impact on the desistance process (out of the subjective and social factors examined), *yet these variables are some of the least studied in desistance research*. The reason why self-control in particular is so seldom included in desistance research may be because certain influential theorists have depicted self-control as a time-stable trait that becomes fixed at an early age (Gottfredson and Hirschi, 1990). As result, an emphasis on self-control has been viewed as incompatible with life course perspectives (Forrest & Hay, 2011). For instance, Gottfredson and Hirschi (1990) argue that life events should have no major impact on offending when considering the impact of self-control; thus, longitudinal studies examining change over time are an unfruitful avenue for criminological research. These arguments certainly present self-control as incompatible with life course perspectives on desistance. However, more current research has challenged some of Gottfredson and Hirschi's arguments, including the idea that self-control is stable across the life course. Given that self-control is such an important predictor of antisocial behavior (regardless if it is conceived as stable or not), excluding

this predictor from the study of the desistance process will not help advance future desistance research, and may lead to some faulty conclusions.

Further regarding the compatibility of self-control and life course perspectives, Gottfredson and Hirschi's suggestion that life events are not important predictors of antisocial behavior appears to be false. For instance, peer antisocial influence has an independent effect on the desistance process, even when controlling for relevant predictors such as self-control. Thus, in the current study antisocial influences do not necessarily depend on self-control in influencing the desistance process. The measures of these social factors predict desistance independent of the effect of the measure of self-control.

Further, the findings of the current study indicate that changes in self-control as operationalized in the current study can occur among individuals. Thus, self-control is not entirely stable within individuals, but individuals may experience short-term fluctuations in self-control. It should be stressed that Gottfredson and Hirschi do not suggest that self-control is entirely stable. Instead, the idea is that one's level of self-control should be *relatively* stable, in comparison to another individual of the same age. Although the analyses employed in the current study cannot address relative stability, the idea that self-control can fluctuate within individuals suggests that self-control can be increased and decreased, at least to some degree. In addition, although this was not a test of the stability of self-control, other tests of the stability of self-control have concluded that self-control may not be as stable as Gottfredson and Hirschi suggest (Burt et al., 2006). These ideas surrounding changes in self-control hold important policy implications that are discussed in the next section.

As noted above, peer antisocial influence had the strongest relative impact on the desistance process, yet this variable is not one of the “traditional” social bonds included in desistance research (e.g., marriage and employment). This is unfortunate as the current study shows that antisocial peer influence has an independent effect on desistance, apart from self-control and future expectations. Further, the findings from the current study illustrate how antisocial peer influence may mediate some desistance processes. Again, past research that has failed to include this important variable, may have produced some misleading findings. For example, if peer antisocial influence had not been included in the current study, then I would have concluded that romantic relationship quality is an important predictor in the desistance process. In fact, the effect of relationship quality becomes insignificant when the models control for the influence of antisocial peers.

When analyzing romantic relationships in desistance research, another theoretical implication from the current study is that quality in terms of relationship happiness may not matter as much as previously thought. In the past, researchers first examined the status of romantic relationships before recognizing the importance of analyzing quality. Now, it appears that we must explore different dimensions of relationship quality other than just being “happy” in a relationship. In the current study, romantic antisocial influence was more telling on the desistance process than romantic relationship quality. Thus, being happy in a relationship may not be as important as being in a relationship with a conventional partner.

Findings from the current study also indicate that future expectations is an important predictor of future outcomes, consistent with past research (Brezina et al.,

2009; Quinton et al., 1993; Raffaelli & Koller, 2005). As suggested by Maruna, individuals in the current study may be aligning their conduct with who they want to become in the future. Thus, those with low future expectations may see little reason to modify their antisocial behavior if they do not believe they will experience positive future outcomes. This finding has important policy implications that are discussed next.

Finally, there are a number of other non-significant findings from the current study that are worthy of comment. First, criminal thinking patterns lost statistical significance when including social factors and self-control in the statistical models. This contradicts past research, as Healy (2010) found that criminal thinking patterns were important predictors in the desistance process. At the same time, *Healy did not specifically control for key variables such as self-control, peer antisocial influence, and romantic relationships.*¹¹ Consequently, her findings regarding these criminal thinking patterns might have produced very different results had these other predictors been included. Nevertheless, although the measures of criminal thinking lost statistical significance in the current study when including social factors, this should not be interpreted as criminal thinking patterns having no theoretical importance or predictive value. Instead, these findings imply that more research is needed surrounding the role of criminal thinking patterns on desistance, and it is strongly encouraged that future research include social factors and self-control in the models. For example, it may be that self-control is a more important determinant of behavior than criminal thinking patterns, and that criminal thinking patterns are, to some extent, a reflection of low self-control. Further, only three specific measures of criminal thinking were explored in the current

¹¹ Healy's (2010) study does include the Level of Service Inventory (LSI-R: Andrews & Bonta, 1995); however, this instrument simply categorizes offenders based on risk.

study, although many more have been identified in past research (Walters, 1990, 2002; Yochelson & Samenow, 1977). Thus, these additional criminal thinking patterns should be explored as well.

Relatedly, employment/education status and identity as non-significant predictors in the current study are somewhat surprising. It is possible that these predictors may not be as important for *serious* adolescent offenders. It is also possible that these findings may not stand in future research, as there were some limitations to these measures as discussed in the limitations section. As far as the insignificance of employment/education status on the desistance process, this finding is consistent with past research that examined youth employment and delinquent behavior, while also controlling for self-control (Apel et al., 2007; Paternoster et al., 2003). Thus, it is possible that early findings showing an association between employment and desistance may be misleading if self-control is not included. Further, exploring identity in desistance research is not entirely new, although most studies that find this variable important in the desistance process have been qualitative in nature (e.g., Giordano et al., 2002; Maruna, 2001). It is possible that these findings simply do not hold up as well in quantitative analyses that control for a variety of other influences. At the same time, there were some notable limitations using this measure of identity, which also may have produced non-significant findings. This is discussed further in the limitations section.

The findings from the current study hold important theoretical considerations that have been discussed in this section. However, as noted in Chapter I, “a theory of desistance is not a criminological luxury” (Farrall & Bowling, 1999, p. 254). Desistance researchers should strive toward having their research hold important implications for

policy, especially related to serious, persistent offending. Thus, policy implications from the current study are discussed in the next section.

Policy Implications

The purpose of the current study was not only to investigate the desistance process for theoretical purposes, but it was hoped that findings from the current study would lead to tangible policy implications. Given the overall findings in the current study, a number of implications emerge regarding prevention and rehabilitation efforts for persistent offenders. The findings from the current study have implications relating to programs focusing on cognition, social bonds, and self-control.

Of course, prevention is a key step in addressing serious adolescent offending. For instance, mentoring as a prevention strategy has been found to positively affect youths' future expectations and aspirations (Hellenga, Aber, & Rhodes, 2003), as the presence of a positive role model who displays a conventional, productive lifestyle may influence a youth to envision a more positive future. If youths have more positive future expectations to begin with, then they may align their conduct accordingly. Other prevention programs also have been shown to reduce problem behavior. For example, Promoting Alternative Thinking Structures (PATHS) programs typically use skills training and cognitive-behavioral techniques in the elementary school setting to reduce negative outcomes. Both types of programs mentioned are empirically supported and focus on subjective and social factors, which may help prevent youth from becoming serious delinquents in the first place.

One major policy implication as far as rehabilitating offenders surrounds the idea that subjective factors, such as thinking patterns and future expectations, can encourage

the desistance process. As observed in this study, increases in positive future expectations and improvements in self-control exert direct effects on desistance. They also exert indirect effects on desistance by contributing to a reduction in antisocial peer influence. Cognitive-behavioral therapy (CBT), is one approach that focuses on skill building to change thinking patterns. Cognitive-behavioral programs typically fall into two broad categories: 1) cognitive restructuring programs that change *what* offenders' think (e.g., future expectations), and 2) cognitive skills programs that attempt to change *how* offenders' think (e.g., how to control impulsive urges) (Cullen & Jonson, 2011). Programs that involve cognitive-behavioral techniques, in particular, have been found to be effective, especially when the programs are in a community based setting (compared to an institutional setting) (Lipsey, 2009). Cognitive-behavioral programs in the community not only can help target errors in thinking, but programs in this setting help promote conventional social bonds. Thus, both subjective and social factors can be targeted using the CBT approach in a community setting.

Another related approach that may be appropriate to encourage desistance based on the current research findings is Multisystemic Therapy (MST), which are family-based programs that target specific behavioral issues. For instance, these programs may help youth disengage from delinquent peers, or improve school performance. These programs focus on youths' environment, such as the family home, school, or even neighborhood. Overall, MST has been found to be effective in reducing delinquent outcomes (Greenwood & Turner, 2011). Further, as the results of the current study suggest that life events are important in the desistance process, even after controlling for important within-individual traits, programs should encourage the development of prosocial bonds

among offenders. In particular, programs that allow offenders to remain in the community, such as residential community correction programs, day reporting centers, and electronic monitoring should be explored for those offenders who can safely be placed in a community setting, in order to encourage bonds within the community (Laub & Allen, 2000).

In addition to the above, there also are implications surrounding the finding in the current study regarding self-control. Although the current study cannot rule out the relative stability of self-control (i.e., one's self-control relative to others of a similar age), the within-individual analyses did rule out absolute stability (i.e., self-control as entirely stable). Thus, individuals do experience fluctuations within their levels of self-control, even over relatively short periods of time. This is an important finding as it suggests that self-control may be malleable. Consequently, those who are low in self-control may not be "doomed" to a lifetime of deviance (Burt et al., 2006). In fact, in a recent meta-analysis conducted by Piquero, Jennings, and Farrington (2010), the authors conclude that self-control is indeed malleable, can be improved, and that programs focusing on improvements in self-control can result in reductions in delinquency (p. 829). Thus, the findings in the current study suggest that this may be an important avenue to foster desistance among offenders.

Finally, these findings suggest that even serious adolescent offenders can and do desist from crime. Thus, the criminal justice system should avoid employing strategies of selective incapacitation that are based solely on criminal history, in order to avoid Type I errors – where we are incarcerating those who were unlikely to continue offending. As discussed by Farrington (2007), incarcerating those who are at the beginning stages of

desistance may be a waste of resources in terms of crime control policy.

Limitations

There were a number of identified strengths associated with the current study, such as testing subjective and social factors simultaneously, using within-individual analyses, and exploring the interplay between subjective and social factors, as well as including changes in self-control. In addition, to the best of my knowledge, the current study is the first study on desistance to examine multiple subjective and social factors simultaneously using a within-individual analysis, while also controlling for changes in self-control over time. In addition, it is believed to be the first desistance study to investigate interactions between subjective and social factors. Despite these strengths, the current study is not without limitation.

First, some of the factors hypothesized to be significant in the desistance process were not, and the possibility that this insignificance could be caused by the actual measures of the constructs employed cannot be ruled out. For instance, it is possible that identity was not an important predictor in the desistance process while controlling for self-control based on the specific measure of identity used. Determining the type of identity (i.e., conventional or criminal) that the respondent holds is not possible using this dataset and is therefore a limitation, as past research has indicated that the actual identity the offender holds is important (Maruna, 2001; Shover, 1996; Walters, 2003), rather than just studying improvements in self-concept overall. For instance, LeBel and colleagues' (2008) research suggest that holding a "family man" identity positively contributes to the desistance process. Thus, this finding regarding the measure of identity used in the current study does not necessarily indicate that identity as a construct is unimportant in

the desistance process, and future research using more precise measures of identity is needed.

In addition, employment/education status was not significant in the models either. Although this finding may be due to the fact that employment/education is not significant when controlling for self-control (as indicated by past research: Apel et al., 2007; Paternoster et al., 2003), it is possible that this measure was non-significant as the quality of these bonds were not examined. Laub and Sampson (2003) suggest that employment characteristics, such as commitment to work, job stability, and ties to the employer, are all important considerations in the desistance process (and the same argument could be made in regards to education). The current study was limited in that there is no indicator of employment quality. Thus, future research could explore this area in greater depth.

In addition to these limitations, another important limitation is that causal order cannot be conclusively determined in the current study. Thus, although mediation effects were examined where social factors mediate the relationship between subjective factors and desistance, the possibility remains that subjective factors may not occur first in the desistance process. As noted by past researchers, changes in cognition and structure are oftentimes interdependent and can even occur simultaneously (Kazemian, 2007; Maruna, 2001). Le Blanc (1993) acknowledges this idea by noting that “some potential variables may occur in such close proximity to desistance that, for all practical purposes, it is impossible to measure which comes first; moreover, they may have reciprocal influences” (p. 56). Thus, simultaneous or reciprocal effects cannot be ruled out, especially when considering the role of antisocial peer influence and desistance (see Akers, 1998; Matsueda & Anderson, 1998; Thornberry, Lizotte, Krohn, Farnworth, &

Jang, 1994). Although the findings in the current study were consistent with past research findings examining a similar mediation model (i.e., LeBel et al., 2008), future research should continue to explore this interplay. For instance, cross-lagged modeling strategies could be used to test for reciprocal effects between subjective and social factors.

Limitations surrounding generalizability should also be noted. The desistance of serious adolescent offenders were examined in the current study. These findings may not be generalizable to other populations. For instance, because the study consists of serious adolescent offenders, these findings may not apply to adolescence-limited offenders. Further, the offenders in this sample were serious adolescent offenders who were detected by the criminal justice system; thus, it is possible that these offenders are different than those who remain undetected by law enforcement or whose cases are not pursued in juvenile or adult court.

A final limitation of the current study relates to the idea of “true desistance”. As noted in earlier sections, it is almost impossible to determine when an individual permanently desists unless they are followed until their death. Thus, I cannot say with full certainty which offenders in the current study permanently desisted from crime. However, the point of the current study was to explore the factors that *promote* the desistance process, regardless if current patterns of desistance are permanent or not, and regardless of whether desistance from crime continued beyond the six-month-to-one-year recall periods examined here. Nonetheless, future researchers should be aware of potential measurement issues surrounding the study of desistance.

Future Research

There are a number of different avenues of research that could extend the current study and the desistance literature as a whole. Because desistance research is relatively “new” compared to traditional criminological research focusing on the causes of crime, this is an exciting area for researchers to explore, as there are many different aspects of the desistance process that have yet to be examined. At the same time, this also can be seen as a limitation to desistance research, as this area is quite underdeveloped in a number of ways.

As discussed in greater detail in the theoretical implications section, the most important implication from the current study is the need for desistance researchers to consider all potential predictors of the desistance process when possible. This would involve including subjective and social factors simultaneously within the same models, as well as incorporating self-control and peer antisocial influence in desistance studies. As indicated previously, the failure to do so may produce misleading results, which will not add to the current knowledge surrounding desistance. Thus, future research should incorporate those variables discussed in the current study, as well as other variables found to be predicative of the desistance process from other works. As stated best by Mulvey and colleagues (2004):

It appears that the desistance process involves interactions among dynamic changes in offenders’ psychological states, developmental capacities, and social contexts. Expanding the rich leads from qualitative work and the initial quantitative analyses of existing longitudinal data sets, therefore, will require a sustained and coordinated research agenda. It will require a series of systematic

investigations, each illuminating another aspect of the larger desistance process.
(p. 218)

Thus, desistance researchers should work towards uncovering the complex process of desistance by considering important factors that may have been overlooked in prior research.

It is important to note that desistance research has pointed to other important life events not examined in the current study (e.g., military, children, religion) (Craig & Foster, 2013, Edin, Nelson, & Paranal, 2004; Giordano, Longmore, Schroeder, & Seffrin, 2008). These social factors also may be important to include in future desistance research. Relatedly, although the use of a within-individual analysis is a strong statistical approach, the possibility that other time-varying measures could potentially influence desistance remains. For example, ecological variables (e.g., community violence) potentially could be important predictors of the desistance process. In addition, other life altering experiences, such as death of a family member or serious injury or illness, also may be influential predictors of desistance. Further, future research could examine if these life altering experiences contribute to changes in cognition and attitudes, ultimately promoting the desistance process.

It also would be interesting to examine the role of sanction threat perceptions as a subjective factor in the desistance process, and how this perception may interact with social factors, such as peer antisocial influence for example. Some researchers have already begun to explore this area by examining differential deterrence and the role of sanction threat perceptions (see Loughran, Piquero, Fagan, & Mulvey, 2012; Matsueda, Kreager, & Huizinga, 2006; Pogarsky & Piquero, 2003), however, examining the

interplay of sanction threat perceptions and other subjective and social factors using a multilevel model would add to the existing literature. Further, examining the role of formal punishment on desistance is another important avenue for future research (see Mulvey et al., 2004).

In addition, Giordano and colleagues (2002, 2003, 2007, 2008) emphasize the importance of gender in the study of desistance. Although the current study utilized within-individual analyses that did not require the control of such time stable factors, future research could conduct a multilevel model incorporating a between-individual component to test for gender effects. For instance, it is possible that the antisocial influence of the romantic partner may be interacting with gender (as suggested by Simons & Barr, 2012). Females may be more heavily influenced by antisocial partners than males. Conversely, males may be more susceptible to antisocial peers than females. Thus, future research should continue to explore this area and take into consideration potential gender differences.

Additionally, examining age as a between-individual variable in a multilevel model of desistance is another avenue for future research. Certain life events may play a more influential role depending on the age of the individual. For example, the role of antisocial peers may have a more significant impact on the desistance process when individuals are younger (e.g., sixteen years of age), compared to when they become older (e.g., twenty-three years of age).

Other antisocial outcomes besides criminal offending also should be pursued while incorporating subjective and social factors. For example, is there a similar interplay among subjective and social factors when examining desistance from drug and

alcohol use or abuse? This is an interesting question that future researchers could pursue.

Finally, researchers should continue to investigate innovative statistical techniques for studying the causes of crime and the causes of desistance. As this was one of the few desistance studies to use a multilevel model, more research is needed utilizing these advanced statistical approaches. The ability to control for within-individual change is especially relevant in desistance research, as it allows for both measured and unmeasured time stable characteristics to be controlled, which allows the model to truly reflect change.

Conclusion

Overall, the findings from this study suggest that it is crucial to incorporate subjective and social factors in the desistance process, as well as important criminological predictors such as self-control. Both subjective (future expectations) and social factors (peer and romantic antisocial influences) were found to influence the desistance process, along with changes in self-control. Further, the use of within-individual analyses in the current study was important, as most studies only consider between-person effects, and within-individual models have the special advantage of ruling out potential spuriousness for all time stable characteristics. Finally, this study tested several new ideas, such as the interplay among subjective and social factors, and the role of changes in self-control across time on the desistance process. The overall findings indicate that interplay can occur among these factors, and future research should continue to explore this underdeveloped area.

Theoretical implications of the current study were presented, including the

importance of integrative perspectives on desistance, as well as some of the potential pitfalls of failing to include important criminological predictors. In addition, concrete policy implications were discussed, and programs that have been found to be particularly effective among persistent offenders seem to resonate well with the current study's findings. Future research should certainly continue to explore this exciting area of research, as a number of different research avenues was suggested. It is hoped that future researchers continue to explore different predictive models of desistance, in order to increase our knowledge on the complexities surrounding the desistance process.

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VITA

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