ABSTRACT

Title of thesis: A LONGITUDINAL, MIXED-METHOD STUDY OF THE IDENTITY THEORY OF DESISTANCE

Thomas Lind Scott, Master of Arts, 2015

Thesis directed by: Professor, Raymond Paternoster, Department of Criminology and Criminal Justice

Recently, Paternoster and Bushway (2009) developed the Identity Theory of Desistance to explain how once criminal offenders transform their identities and reform. In an effort to test important components of this theory, the current study analyzed retrospective narratives from 144 substance-involved, male offenders from Delaware. After coding the narratives for mention of concepts from the identity theory and other theories of desistance, the author conducted time-based and age-based group-based trajectory models and multinomial logistic regression analyses to test whether the identity theory could explain criminal desistance. Results suggest that many offenders undergo these processes, and there may be experiences that distinguish those who desist from those who persist in crime and drug use. These include the formation of hoped-for selves, a change in preferences, social networks, and routine activities, motivation to change, and treatment.

A LONGITUDINAL, MIXED-METHOD STUDY OF THE IDENTITY THEORY OF DESISTANCE

by

Thomas Lind Scott

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Advisory Committee:
Professor Raymond Paternoster, Chair
Professor Kiminori Nakamura
Professor Thomas Loughran

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I. Introduction

“My thing, what I liked was the streets; I was always fascinated on what was going on down the street. Till I got old enough and went down and I went down the street, that’s when I guess, my life begin, you know what I mean anyway. But it was a life of crime, drugs, everything that was going on in the streets I was a part of.”

- White male, 55 years old

Studies of criminal desistance, defined here as the movement from a non-trivial amount of criminal offending to a zero or near zero frequency of offending, have increased substantially in recent years. Today, there is a strong body of theory and empirical research on the associations and causal factors linked to criminal desistance (see reviews in Laub & Sampson, 2001; Kazemian, 2007; Laub & Boonstoppel, 2012). In fact, mention of the lack of attention directed at desistance compared to onset or other criminal career components common to many studies of desistance might valuably be dispensed with. Like desistance from crime, research on the successful recovery from substance abuse is growing in sophistication (Hser, 2007; White & Bates, 1995).

Although scholars have formulated different theories to explain the cessation of crime and substance use, there is some similarity between the factors proposed important to criminal desistance and those posited for addiction recovery. Two concepts prevalent in many theories of desistance/recovery are identity and identity change. Here, identity is defined broadly as a sense of who one is, and identity change is discussed in terms of moving from viewing oneself at least partly as a criminal to viewing oneself as fully conventional.[1] Recent theories to include the role of identity processes in desistance involve cognitive shifts (Giordano, Cernkovich, & Rudolph, 2002), anger identities (Giordano, Schroeder, & Cernkovich, 2007), opportunities for identity transformation (Laub & Sampson, 2003), and changes in working identities (Paternoster & Bushway, 2009).

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[1] The terms self, self-concept, and identity are often (mistakenly) used interchangeably. In addition, definitions of each term vary by tradition and period. In social psychology the “self” refers to the ability for reflexive thought, the “self-concept” refers to one’s knowledge of who one is as a person, and “identities” refer to the traits and characteristics, social relations, roles, and social group memberships that define who one

The most recent of these theories, the identity theory of desistance (Paternoster & Bushway, 2009), has received limited empirical work (Bachman, Kerrison, O'Connell, Paternoster, & Smith, unpublished manuscript). The current study sought to build on the work of Bachman et al. (unpublished manuscript) by reading and coding for the elements specified important to desistance in the identity theory of desistance, as well as other reasons provided for desisting from crime and substance use, in qualitative narratives of a large sample of serious, male offenders. In addition, I conducted a series of group-based trajectory models and multinomial logistic regressions to examine whether these elements might valuably distinguish desisting from persisting ex-prisoners in a quantitative analysis. This resulted in both similar and divergent findings from the previous study. In sum, although it appears that many individuals in the sample experienced the processes specified by the identity theory of desistance, few of these processes are unique to individuals who follow desisting trajectories of offending.

In the next chapter of this thesis, I begin by describing the identity theory of desistance in detail, and provide empirical findings regarding each of its elements. This is followed by an explication of competing theories that use identity processes to explain desistance, including those proposed by Giordano et al. (2002), Giordano et al. (2007), Maruna (2001), and Laub and Sampson (2003). In Chapter V, I describe theories of

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is (Leary & Tangney, 2012). Due to disagreement over definitions, differentiating these terms will not be of great importance in this work.

desistance that do not involve identity, such as those based on changes in social bonds, age, maturity, the transition to adulthood, changes in cognitive decision-making, and deterrence, specifically the idea of “delayed deterrence” posited by Cusson and Pinsonneault (2013). Chapter VI includes descriptions of theories and related evidence that are more relevant to addiction recovery, such as residential change, spirituality, and substance abuse/mental health treatment. Again, I provide examples from the existing literature for the important component of each of these theories.

In Chapter VI, I describe the therapeutic community (TC) model in general, and the KEY and CREST programs specifically—two programs that a majority of the sample experienced. The KEY is an in-prison therapeutic community, whereas CREST is a work release TC. Offenders in this sample include those who experienced either program, both programs, and neither of the programs. In this chapter I also review findings from previous research with the Delaware sample, provide information on the males used in the current analysis, and explain the interviews and my coding procedure. The remaining chapters provide results and discussion.

Importantly, this study was unable to test these theories in their entirety. Rather, I tested the main concepts proposed by these theories to cause or facilitate desistance. For example, rather than testing the age-graded theory of informal social control (Sampson & Laub, 1993), this study aimed to assess the role that marriage, employment, and childbirth had on desistance from crime and substance use. Therefore, my literature review assesses the empirical support for the effects of the many theoretical components proposed to influence desistance. Though the current examination is largely exploratory, several hypotheses are put forward:

H_1: Offenders will report a working identity as a criminal while engaged in crime

H_2: Desisters will report a change in identity from criminal to conventional, whereas active offenders should not.

H_3: Ex-offenders will report that their movement from offending to nonoffending was the result of a willful decision, brought on through a reflection of the negative results incurred from maintaining a criminal identity and the benefits of acquiring a prosocial identity.

H_4: Ex-offenders will report linking negative events, culminating in their desire for change. Persisters will likely report the costs and benefits associated with their offending, but should not link these costs together and associate them to their identity as an offender.

H_5: The ex-offender will report envisioning feared possible selves if crime and drug use continue, and pro-social possible selves that are only achievable through desistance.

H_6: Desistance will be aided by a change in preferences and social networks.

H_7: Desisters will report a change in their decision-making coinciding with the change in their identity and preferences.

H_8: Desisters may report other important reasons for leaving crime and substance use previously reported in the criminological and substance use literature.

II. The Identity Theory of Desistance

Paternoster and Bushway (2009) formulated one of the most recent theories of criminal desistance, which directs attention to the role of the self and identity in the desistance process (see also Bushway & Paternoster, 2012; 2013). In summary, the theory suggests that offenders possess criminal identities, and in order to desist from crime, individuals must change their working identity as a criminal to one of a nonoffender. Offenders weaken their commitment to the criminal identity after undergoing the crystallization of discontent, and no longer perceiving that the identity nets them more benefits than costs. This self-change is at first motivated by the desire to avoid feared selves, and then by the desire to achieve prosocial possible selves. Even though the offender has made the decision to leave crime and attain a legitimate life, desistance from crime will be difficult to maintain in the absence of a change in preferences and social networks. These changes result in new, conventional penchants, a greater awareness of long-term costs, and a taste for a different, legitimate social network, which support the identity change. Importantly, in this theory, each stage of the desistance process is gradual, and based on the actor's exercise of conscious, intentional self-change. I provide theoretical and empirical background for each of these processes in the following subsections.

The working identity

According to the identity theory of desistance, criminal offenders hold a working identity as someone who has and will commit crime. To Paternoster and Bushway (2009), a working identity is the component of the self that can be accessed at the present moment and is based on one's here-and-now experience. The concept of a working self gained much appeal from the writings of Markus and Wurf, who describe a working self-concept as a continually active, shifting array of accessible self-knowledge (1987). At any time, humans hold and identify with multiple roles. For instance, one may be a father, a professor, a Christian, a brother, a conservative, a philanthropist, and an athlete, among others. As it is difficult to represent all of these identities at once, especially if some occasionally contradict one another, humans take on those identities that are most relevant to their current situation. For example, in church one's Christian identity is most active, whereas at work one's academic identity may hold the most salience. Shover (1996) points out that although most identities are conventional, "an individual's repertoire of identities may include criminal ones as well" (78). It is when one holds a working identity as a criminal that Paternoster and Bushway predict one will engage in criminal offending.

Research on the formation of identities is far outweighed by theory, in part because the term is difficult to operationalize (Gleason, 1983; Brubaker & Cooper, 2000), and even more difficult to measure (Burke & Tully, 1977).[2] For these reasons, empirical studies on identity processes have measured the concept in a variety of ways (Watzlawik & Born, 2007), using a multitude of definitions and theoretical foundations (Hogg, Terry, & White, 1995; Waterman, 1982; Baumeister & Muraven, 1996; Hitlin, 2003). Many identity researchers have begun to define the self-concept in a similar way—as being composed of multiple, situationally specific roles or identities (Oyserman, Elmore, & Smith, 2012; McConnell, 2011). The roles that are currently active have been called working identities (Markus & Wulf, 1987), dynamic identities (Ryan & Deci, 2012), and online identities (Oyserman et al., 2012). All of these conceptualizations share the idea that individuals hold many identities, which vary in their level of accessibility depending on the situation or context (Walton, Paunesku, & Dewck, 2012). Some of these roles are more accessible or chronic than others (Markus, 1977; Brown & McConnell, 2009), leading to a greater likelihood of behaviors congruent with that identity (Stryker, 1980).

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[2] Studies of identity change over time are even scarcer, as discussed shortly.

Empirical studies have generally supported a conceptualization of multiple, situationally activated identities. For example, Brown and McConnell (2009) measured chronic attributes (i.e., more characteristically-defining traits) and self-aspects (i.e., identities) in two studies of undergraduate students. They found that the influence of chronic traits depended on the activation of a self-aspect that included those traits. Chronic attributes only shaped self-judgments and aided in interpreting ambiguous behaviors when relevant self-aspects were activated.

Research in criminology has begun to investigate how one specific identity, a criminal identity, may influence offending when activated. If behaviors are linked to identities (Foote, 1951; Stryker, 1980; Rise, Sheeran, & Hukkelberg, 2010; Oyserman et al., 2012), then it is easy to see how a working identity as a criminal could influence offending. Quantitative tests of the relationship between criminal identities and offending are limited. Two recent attempts to test this relationship include studies by LeBel, Burnett, Maruna, and Bushway (2008), and Rocque, Posick, and Paternoster (2014).

In the first, LeBel and colleagues conducted a ten-year follow-up of the 130 male repeat offenders originally used in the Oxford “Dynamics of Recidivism” study. Examining two dichotomous dependent variables—reconviction and re-imprisonment over a 10-year period—and measuring “alternative identities” as respondents describing themselves as a good partner, a good father, and/or a good provider, the authors found offenders holding such an identity were half as likely as those not holding the identity to return to prison ($p = 0.1$). Further analysis revealed that holding an identity as a "familyman" may reduce the risk of re-imprisonment largely by improving social conditions post-release. Although serving as a sterling attempt in quantifying identity, this study has several limitations, including a small sample size and dichotomous outcomes. In addition, it only assessed whether an offender held a prosocial identity in one dimension, family, which does not tell us about the possible presence of a criminal identity. One study that improved on many of theses limitations was that of Rocque and colleagues (2014).

In their study, Rocque et al. (2014) utilized data from the youngest birth cohort of the Rutgers Health and Human Development Project (HHDP). This cohort included 230 males and 217 females followed from age 12 to age 30. Offending was measured via a variety summary score of nine items assessing deviancies such as B&E, using a weapon in a fight, armed robbery, and auto theft. The authors constructed a measure of identity by combining items asking whether the respondent felt like he/she was a "good person," "delinquent," "mean," and "dishonest and cannot be trusted" at each follow-up. The items were averaged to create an overall pro-social identity scale. After conducting a multi-level growth curve, the authors found a significant, negative effect of endorsing a prosocial identity on crime over time, net demographic and theoretical controls, including adult social bonds. In addition, both the between-individual effect and the within-individual effect of identity on crime were significant. This study provides further evidence that the identities an individual holds are related to criminal offending over time, and supports many of LeBel et al.'s (2008) conclusions. Further, this study suggests that the effect of identity on crime remains even after controlling for social bonds, contrary to Lebel and colleagues finding. Together, these studies serve as two important quantitative tests of the role identity plays in crime.

In contrast to quantitative research, there is a multitude of qualitative studies suggesting a relationship between possessing a criminal identity and engaging in deviant behavior (Giordano et al., 2002; Shover, 1996). Research on recovery from substance abuse has also shown that identity change is involved. One study interviewed 70 middle-aged recovering addicts recruited via snowball sampling in Scotland. These individuals often described a different, unique sense of self before, during, and after their period of drug abuse. They were able to construct a new, "non-addict identity" during the recovery process by reinterpreting their past lifestyle as negative, constructing a new sense of self or rebuilding a pre-addiction identity, and offering explanations supporting their recovery (McIntosh & McKeganey, 2000). McIntosh and McKeganey (2002) expanded this conceptualization by examining successful versus unsuccessful attempts to quit. According to the authors, successful attempts differed in that the primary concern for quitting involved an individual's desire to repair an identity that had been spoiled by drugs, and to regain a positive sense of self. These qualitative works suggest that an important stage in the desistance/recovery process involves relinquishing a deviant identity and adopting a positive, prosocial sense of self.

Although there is some research on identity change, much of this research is limited by its focus on college students over a short period of time (Ethier & Deaux, 1994; Serpe, 1987). Despite its limited sample and scope, this research often shows that in spite of strong stability, identities can change over time. For example, in a study of nearly 6,000 high school students in California, McFarland & Pals (2005) found that individuals changed their social identifications over a two-year period. This change was largely a result of inconsistencies in internal and external identifications over the time period, measured as incongruence between one's actual identity and ideal identity, and actual and public self, respectively. Absent research on students, there is limited research on identity change over the life course. Despite this, the extant research supports findings that identity change occurs over time (Anthis, 2002; Burke, 2006; Ebaugh, 1988; Rocque et al., 2014).

Maintaining a working identity

According to the identity theory of desistance, a criminal identity emerges slowly and in response to perceived criminal successes. Notably, although the payoffs of a criminal identity may seem low to most, the attraction becomes more obvious when one considers the alternative options available to many disadvantaged offenders, as well as the criminogenic risk factors present in many poverty-stricken neighborhoods. After experiencing continued successes in crime, and linking these successes to their criminal identity, individuals increase their commitment to that identity. Once emergent, Paternoster and Bushway explain, "This working identity remains a locus of commitment as long as it is thought to be successful, or, more specifically, as long as, on average, it nets more benefits than costs" (p. 1105, 2009). These benefits may be financial, such as money earned from theft, of could be socio-emotional, such as respect earned in the neighborhood.

An extensive body of research has examined the rationality of offender decision-making (Piliavin, Gartner, Thornton, & Matsueda, 1986; Nagin & Paternoster, 1993; Paternoster & Simpson, 1996; Bennett, 1986; Matsueda, Kreager, & Huizinga, 2006). Though rational choice may contribute to various levels of the criminal career paradigm (Cornish & Clarke, 1986), this study is primarily interested in testing whether calculated decisions influence desistance.

One study that tested whether the rational choice/deterrence perspectives could explain desistance found mixed support (Paternoster, 1989). The author found that desistance was unrelated to formal sanctions, but also that explanations provided by the subjects were offense-specific, supporting the rational choice perspective. In addition, changes in moral tolerance over time were significantly related to desistance for all four types of crime (Paternoster, 1989).

Although largely unsupportive of the rational choice perspective, Paternoster's (1989) sample was composed of adolescents followed over a short period, and largely consisted of minor, age-related offenses. Gardner (1993) persuasively argued that individual rationality and the risk calculus employed for any risky behavior may change over the life span. Indeed, using data from the Rand Corporation on 1,469 male inmates with a mean age of 27, Shover and Thompson (1992) found that age had a significant negative relationship with expectations of success in both legal and illegal enterprises. Age was not significantly related to estimates of legal risk from participation in crime, however, after controlling for these expectations. Despite suggesting a possible mediating effect of expectations of success on the age-risk relationship, the authors do not appear to have tested this relationship. In an additional regression of criminal convictions up to 36 months following release, the authors found that criminal expectations negatively predicted desistance controlling for age ($p < .05$).

In another study, Shover (1996) found that for a sample of adult thieves, desistance was described as a choice, induced largely by changed expectations of the potential outcomes of crime brought on by age. Likewise, the rewards of a noncriminal lifestyle became increasingly appealing with age. These findings led Shover to conclude, “The fact that the criminal calculus changes with age helps explain why crime countermeasures that work quite well with older men are much less likely be effective (*sic*) with adolescents or with young adults (p. 140; See also Shover (1985), p. 124).[3] The difference in age between samples might provide an explanation for why Paternoster (1989) did not find evidence of delayed deterrence, while others have.

Qualitative studies of substance users have reached similar conclusions regarding the rationality of drug use. For instance, in his study of 101 former opiate addicts, Biernacki (1986) found that around two-thirds of his sample developed the idea to quit rationally, and were able to describe their resolutions explicitly. The other third experienced a rock-bottom experience, which also involved perceptions of the costs and benefits of use. Only 4 to 5 percent of the sample stopped without making a conscious or rational decision to do so (i.e., desistance by default).

In another study, Waldorf (1973) found that abstinence from heroin use was achieved by some subjects through a rock bottom experience, which was characterized by a shift in the costs and benefits of drug use. He explains:

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[3] For example, see Uggen (2000), page 543.

> Heroin use becomes too much trouble and the addict reaches a saturation level where all the negative aspects of heroin use and the "life" outweigh whatever positive things he got from the drug. The life is no longer exciting, but intolerable. The hazards get him down so he makes some commitment to give up heroin. (pp. 149-150)

In an examination of cocaine abuse, Waldorf, Reinarman, and Murphy (1991) found a similar reason for quitting. The researchers found that behind the many reasons for quitting existed an overarching theme—cocaine users quit or drastically reduced their use when the pleasurable effects of the drug became outweighed by its negative impact on typical roles and responsibilities. Together, these studies suggest that reflections on the costs and benefits of crime or substance use influence the decision to desist.

Dropping the criminal identity: The crystallization of discontent

Before considering the possible consequences of one's criminal involvement, one must first begin to question their current attachment to that identity. According to Paternoster and Bushway (2009), disillusionment with the criminal identity is a gradual process that results from a growing dissatisfaction with crime. Specifically, this dissatisfaction occurs through a cognitive process called "the crystallization of discontent." This phenomenon was developed by Roy Baumeister, who described it as a moment of insight in which a multitude of negative life events, which were previously seen as unconnected, are linked together to form a unified body of dissatisfactions (1994). Baumeister (1994) explains:

> This crystallization forms associative links between the subjective perception of costs, disadvantages, problems, unpleasant outcomes, and other undesirable

> features of some involvement. Instead of a motley and desultory series of unrelated problems, the person sees a broad pattern of repeated, persistent problems. Instead of a variety of bad days, the person recognizes a bad year. (287)

Baumeister also describes how this process can reduce one's attachment to a particular identity:

> The subjective impact can be enormous, because a large mass of negative features may be enough to undermine a person's commitment to a role, relationship, or involvement, whereas when there are many individual and seemingly unrelated complaints that arise one at a time, no one of them is sufficient to undermine that commitment. (282)

According to Paternoster and Bushway (2009), as criminal offenders accumulate dissatisfactions in their life, be they prison bids, drug overdoses, loss of relationships, or other negative events, they eventually undergo this moment of insight, and associate these linked dissatisfactions with their working identity as a criminal. In other words, an offender attributes these multiple, linked discontents to his lifestyle and identification as a criminal. At this moment, their working identity is no longer netting them more benefits than costs, and the individual begins to consider dropping their criminal identity and committing to a more conventional identity.

Evidence suggesting that humans experience the crystallization of discontent and that this process affects human behavior is limited. Although Baumeister (1994) provided extensive theoretical development surrounding the concept and its role in major life change, he did not provide any empirical evidence to support it. The few studies to test the crystallization of discontent phenomenon examined its impact on well-being and decision outcomes (Bauer, McAdams, & Sakaeda, 2005), and its relevance in accounts of successful versus unsuccessful life change experiences (Heatherton & Nichols, 1994).

In the former study, Bauer et al. (2005) tested for the presence of the crystallization of discontent as described by Baumeister (1994), and for a term they coined the "crystallization of desire," described broadly as an approach orientation where individuals realize what it is they want to do in the future. The authors coded narratives of life change as expressing a crystallization of desire when the reasons behind the change were approach oriented, and as expressing a crystallization of discontent when they were avoidant oriented. They found that those emphasizing a crystallization of desire as opposed to discontent were more likely to claim that their life change turned out well.

In the other study, Heatherton and Nichols (1994) randomly assigned 119 adult students to provide narrative accounts of either successful (n = 64) or failed (n = 55) attempts at life change. The authors found that successful life change accounts were more likely to culminate in a crystallization of discontent experience compared to accounts of failed life change experiences (57.8% of changers, 12.7% of non-changers; $\chi^2(1, 199) = 25.8$, $p < .0001$), in addition to being more likely to include intense emotional experiences, external threats, and focal events.

The studies by Bauer et al. (2005) and Heatherton and Nichols (1994) are limited in their ability to measure and test for the crystallization of discontent. Bauer et al. (2005) treated the crystallization of discontent as a simple avoidant perspective, rather than the complex mental process of connecting past failures and linking them to a current identity, and Heatherton and Nichols (1994) do not describe how they operationalized or measured the concept. This study aims to improve knowledge on the crystallization of discontent by clearly describing and measuring the concept in personal life history narratives, as well as providing real individual examples.

Envisioning a new future: The role of possible selves

Once an offender has linked his many dissatisfactions in life, and weakened his commitment to his current criminal identity, he begins to form negative projections of what his life might be like in the future if he were to continue to commit crimes. After picturing these undesired or feared outcomes, the individual begins to slowly form positive, or at least less negative projections of what his life could be like under the auspices of a new, prosocial identity. These two types of future-oriented self-projections have been termed 'possible selves.'

According to Markus and Nurius (1986), possible selves represent what individuals might become. The concept of possible selves includes three distinct types: what one could or is likely to become, what one would ideally like to become (the hoped-for self), and what one is afraid of becoming (the feared self). These future selves provide the direction and motivation for changes in self and behavior.[4] Importantly, possible selves differ from goals in that they reflect a vision of *oneself* in a future state, good or bad, rather than a representation of a *desired endpoint* (Fishback & Ferguson, 2007; my italicization).

Borrowing this concept and applying it to the identity theory of desistance, Paternoster and Bushway (2009) posit that once an individual has crystallized his discontents and become dissatisfied with his current criminal identity, his movement toward change is motivated by the salience of possible selves. They explain:

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[4] Interestingly, following the social identity conceptualization of Henri Tajfel, Cinnirella (1998) devised a theory on possible *social* selves. This social representation of possible selves does not seem to have generated as much research interest as the original personal model (though, see Marshall, Young, & Domene, 2006).

> Those desiring to break from crime, then, are likely motivated at first by a strong aversion to the negative possible self, the feared self that they do not want to become. Aversion to the feared self alone cannot sustain the break with crime, but it does supply the initial motivation, which, over time, is supplemented by more positive reasons. In fact, although notions of the feared self may dominate at first, success at self-change seems in the long-run to require a balance between positive and negative possible selves—a combination of both what one wants to become and moves toward and what one fears that one will become and moves away from. (1118)

To these researchers, the negative component of possible selves, or the *feared selves*, are the initial impetus to an intentional change in identity and behavior. This flows logically from their hypothesis that the initial dissatisfaction with a criminal identity came from the linking of diverse negative events and their attribution to the working self. In addition, although a recognition of the disadvantages associated with one's criminal identity may lead easily to a feared future self, a realistic look toward one's possible conventional alternatives likely requires more time and deliberation. Paternoster and Bushway's (2009) description of how the feared self initially motivates a change in identity is supported in the original work of Markus and Nurius (1986), who state:

> When a self-conception is challenged, there is likely to be a sudden and powerful flood of bad feeling. The negative affect that wells up at such times, whether shame, embarrassment, fear, or anger, may be a direct consequence of the

> activation of a variety of negative possible selves and their associated fears and anxieties. (964).

Although feared selves are expected to be the most immediate motivator toward self-change, without the eventual consideration of positive possible selves to provide a road map or blueprint away from the feared outcome, one is likely to suffer only from unresolved fear and anxiety. In fact, Paternoster and Bushway (2009) argue that balance between a hoped-for and feared possible self is likely to be most effective in bringing change, as this balance provides countering approach and avoidant motivations, which often work in tandem to bring about the hoped-for self, and avoid the feared self. For example, having a feared self of overdosing on heroin is likely going to be less effective in bringing change in someone’s life unless they have a balancing hoped for self as a recovering ex-user in treatment. The feared self likely motivates one not to use, while the positive self likely motivates the individual to find treatments in his area.

In testing their theory on possible selves, Markus and Nurius (1986) asked 210 college students to complete a questionnaire assessing whether 150 possible selves described the students in the past, currently, and in the future, and how probable and ideal those selves were for them. According to the authors, the majority of the students responded that most of the items were meaningful to them. On average, students considered 80 of the 150 items as possible for themselves. The correlation between the items considered possible and the items endorsed as currently descriptive was only 0.21. In addition, 65% of the sample reported that they thought about themselves in the future a great deal or all of the time. In light of their findings, Markus and Nurius concluded, “individuals can reflect on their possible selves and that these selves are not identical with descriptions of their current or now selves" (p. 959). In another study, Dunkel and Anthis (2001) linked possible selves to identity processes by showing that identity exploration was associated with listing more possible selves, and that changes in identity exploration over a four-month period was a significant predictor of changes in the number of possible selves generated.

One study assessed whether the number and types of possible selves generated differ over the life course. Cross and Markus (1991) recruited 50 first-year undergraduate students (male = 25), and 123 community volunteers (male = 34, age range = 19-86) to participate. The differences in possible selves that appeared showed that the youngest age group tended to mention extremely positive hoped-for selves, such as being rich and famous, and feared that life may be disappointing or that they may not be successful. Cross and Markus (1994) point out that this group showed uncertainty about the self, suggesting their identities were still developing. The possible selves of the two middle-aged groups mostly involved the family and finances. The elderly group mentioned hoped-for selves in the personal domain that were often yet to be realized, suggesting self-development and growth were still important at this age. The feared selves mentioned by this group often reflected the processes of aging, such as health decline and becoming a burden to family (Cross & Markus, 1994). Results from these two studies suggest that humans are capable of imagining themselves in the future when asked, and that these future selves differ from one's present self. These studies did not examine how possible selves influence behavior, though.

Daphna Oyserman and her colleagues have conducted much of the existing research on possible selves, largely with samples of urban, minority adolescents, and pertaining mostly to academic and delinquent possible selves (Oyserman & Fryberg, 2006; Oyserman & Saltz, 1993). Important to this work, Oyserman has argued that possible selves must have a self-regulatory component in order to effectively guide behavior (Oyserman, Bybee, Terry, & Hart-Johnson, 2004; Oyserman, Bybee, & Terry, 2006). Oyserman et al. (2006) describe, "[s]elf-regulatory effort improves when youth have both positive PSs (goals) and negative PSs (fears) in the same domain ("balanced" PSs)" … "and when youth have incorporated detailed strategies into the PSs ("plausible" PSs)" (p. 188).

In order to test these hypotheses, Oyserman et al. (2004) asked 160 eighth graders randomly selected from three inner-city middle schools to generate expected and feared possible selves for the next year, as well as any strategies they had for working toward or away from these possible selves. Using a series of hierarchical regressions, the authors found that students who scored higher in plausible academic possible selves in the fall participated more in class during the spring semester according to teacher-report, self-reported spending more time doing homework in the spring, attained higher GPAs by the end of the school year after controlling for fall grades, and were less likely to be referred by their school to attend summer school classes when compared to participants who scored lower on academic possible self regulation.

In another study, Oyserman et al. (2006) developed a school-based intervention aimed at eliciting possible selves and plausible strategies to attain them, and randomly assigned 264 students from three Detroit middle schools to either the intervention (n = 141) or a regular elective period (n = 123). The researchers measured possible selves in the 8th grade and spring of 9th grade by asking the students to generate both expected and feared possible selves, and to describe strategies to attain and avoid those selves. The authors analyzed the two most often reported possible selves: academic and off-track selves.

In their analysis, Oyserman et al. (2006) found that by the end of the 9th grade, the treatment group spent significantly more time doing homework, was more likely to take initiative in class, was less disruptive, and was less likely to skip class compared to students in the control group. By the end of the 9th grade, the estimated average GPA for the intervention group was 1.64 compared to 1.36 for the control group ($p < .05$). Important to their intervention, the treatment group generated more balanced academic possible selves, more plausible academic possible selves, and more feared off-track possible selves. In addition, balance and plausibility of academic possible selves completely mediated the intervention's effect on behavioral problems and time spent on homework in the 8th grade, and partially mediated the intervention's effect on GPA and depression in the 9th grade (Oyserman et al., 2006).

In related research on delinquency, Oyserman and Markus (1990b) argued that adolescents unable to form positive expected selves would be more likely to drift into delinquency compared to those youth with more positive expected selves. Oyserman and Markus (1990a) tested this assertion by interviewing a sample of 238 youth between the ages of 13-16 (141 male, 175 African American) drawn from four subsamples with varying degrees of known delinquency – public schools, community placements, group homes, and training schools. The authors found that the delinquent youths' fears focused on being involved in crime or drugs, and their hopes included relatively few mentions of school-related activities or other achievement selves. On the other hand, the officially nondelinquent youth typically generated expected and hoped-for selves that involved achievement in school, and feared not doing well in school. In addition, 33-37% of the most officially delinquent youth feared becoming criminals, but did not have expected or possible selves that involved avoiding crime to balance this fear. In contrast, the officially nondelinquent youth had significantly more balance between their expected and feared selves compared to the most officially delinquent youth.

The research on possible selves by Markus, Oyserman, and others scholars suggest that when asked, humans can provide visions of themselves in a future state, and that these selves are related to behavior, although possibly in a complex way (e.g., if balanced and plausible). Despite this support, there is little scientific evidence that future selves are generated to guide behavior in everyday life (though see Segal, DeMeis, Wood, and Smith (2001) for some support). One possible test of the *natural* influence of possible selves on future behavior might be to analyze life history narratives for the presence of possible selves, which could then be compared to life outcomes. This is the approach I take.

Maintaining a conventional self: Changing preferences

One of the means by which an individual is able to transform his initial desire for identity change to actually maintaining a non-criminal lifestyle is through changing his preferences. To Paternoster and Bushway (2009), a preference is thought of as a taste or penchant for something, such as running the streets or drug using. Preferences are connected to identities in that they provide a source and direction for motivation. Part of how humans express to others who we are as persons is through our tastes. Since identities are closely linked to preferences, once an individual decides that the streets are no longer worth it, he begins to reflect his new developing identity to others through a change in preferences. In the words of Paternoster and Bushway (2009), “offenders wishing to quit crime develop tastes for non-criminal actions and the newly perceived “comforts” of a non-criminal life” (1127). These new comforts may include having a family, getting clean, rediscovering one’s faith, or beginning a career.

An additional component of this change in preferences is a change in how one evaluates their circumstances. When holding a criminal working identity, an individual may have valued nice clothes, a fancy car, and a lot of pocket money. With a change in identity, however, ex-offenders begin to accept living without these luxuries, and begin to apply more value to maintaining prosocial conditions like having a stable relationship and providing for offspring. In addition, although most criminals do not desire to be imprisoned, with a change in preferences comes a more serious appreciation of the costs associated with prison time.

Much qualitative work in the criminology and substance use fields has evinced a relationship between ceasing deviant behaviors and a change in interests, preferences, or hobbies. As an example, more than half of the 106 individuals who either quit or drastically reduced their cocaine use studied by Waldorf et al. (1991) reported seeking new interests as a strategy for quitting, while almost 40% began participating in sports to help them avoid cocaine. Although these new preferences are often specific, they can be more general, such as a change in how the offender or addict views a conventional lifestyle (Waldorf, 1973; McIntosh & McKeganey, 2000; Shover, 1985; Biernacki, 1986; Giordano et al., 2002). These studies report a common theme where after prolonged drug use or criminal offending, the individual becomes dissatisfied with their aberrant lifestyle, and begins to view normal roles, activities, and identities as both personally satisfying and as a strategy to maintain their desistance.[5]

These many individual reevaluations represent a larger underlying change in time orientation; movement from a criminal to a conventional working identity is associated with a more future-oriented perspective. In other words, offenders begin to think more about long-term consequences. Paternoster and Bushway (2009) explain:

> We imply here that certain types of people (offenders, addicts, alcoholics, shopaholics) have self-control problems, are aware of these self-control problems as part of their self-identity, and, in becoming a different kind of person, can deliberately change the degree to which they exercise patience and the quality of their decision making. (1129)

As the authors describe, time orientation constitutes a component of the criminal working identity. Furthermore, offenders recognize this component as part of who they are as a person: hotheaded, ill tempered, or impulsive. With a change in identity and resulting preferences, individuals both change their cost-benefit evaluations, and how they view their selves: someone who is more patient, has better self-control, and thinks about alternative options.

Research on future orientation has shown that it changes over time (Steinberg, Graham, O'Brien, Woolard, Cauffman, et al., 2009), and is linked to a number of deviant behaviors (Robbins & Bryan, 2004). In a study of present-orientation and crime, Nagin and Pogarsky (2004) used data from 6,504 of the Add Health youth to examine how poor impulse control and higher time discounting at wave 1 affected self-reported criminal behavior between waves 1 and 2. For males they found poor impulse control but not high discounting significantly predicted involvement in three violent offenses, whereas high discounting but largely not poor impulse control predicted three property offenses. For females the pattern was more inconsistent, though the significant effects that did appear were in the predicted direction.

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[5] A possible tautology arises if a change in preferences for drugs or crime is used as an explanation for a change in drug use or crime. Changes in preferences are often numerous, though, including multiple components of the larger criminal or addict lifestyle.

Maintaining a conventional self: Changing social networks

The other important element in maintaining self-change involves a change in one's social networks. Paternoster and Bushway (2009) go so far as to claim, "it is unlikely that one can successfully desist from crime unless there is a successful network realignment with more prosocial others" (1129). It is likely that even if ex-offenders form a new identity and change their preferences, this change will remain feeble without the support and guidance of a prosocial network. On the flip side, as the road to conformity will likely be rocky, one is more likely to revert back to one's criminal ways after a failed job interview, for example, if faced with the encouragement and safety net of a criminal network. Paternoster and Bushway (2009) further develop this notion by explaining how a change in social networks occurs.

According to the authors, social realignment is not an exogenous process, as is often implied by control theories, but is instead a deliberate and intentional action. The desire to change one's social network results directly from the previous desire to change identities, and the resulting change in preferences. One piece of the new prosocial preferences includes a preference for a conventional social network. Paternoster and Bushway (2009) explain, "a change in identity to a more prosocial person brings with it a preference for the kind of people more likely to foster and support that new identity" (1129). Once offenders become discontented with the criminal lifestyle and motivated to avoid feared selves, they no longer have a taste for peers who abuse drugs or commit crimes. Instead, they begin to form a preference for those "doing the right thing," such as getting treatment, living a pious life, and giving back. Once established, a prosocial network can then strengthen one's prosocial identity and preferences by providing positive reinforcement, modeling prosocial behavior, and providing information on sources of capital such as jobs, school opportunities, and treatment programs. All of these features aid in the maintenance of prosocial identities, and eventually desistance from crime.

Although there is a lack of research allowing for causal inference, many studies have shown an association between social network change and desistance. For instance, Warr (1998) used data from waves 5 and 6 of the National Youth Survey (NYS) to examine the effect of peers on crime for individuals aged 15 to 24. Looking at marriage specifically, Warr found that the relationship between marriage and desistance was largely due to a change in social networks following marriage. He made this conclusion because married respondents spent fewer days of the week with friends and had less exposure to deviant peers and more exposure to conventional others compared to single respondents, and because a reduction in the number of peers who smoke marijuana, but not a change in marital status, was related to desistance from marijuana smoking between waves. Outside of the marriage effect, Warr's findings suggest that a reduction in the number of and time spent with deviant peers may increase the likelihood of desistance from crime and substance use.

In another study of social networks and crime, Giordano, Cernkovich, and Holland (2003) used data from the original interviews and a 13-year follow-up of the OLS sample to examine the influence of friends on crime across the life course. They found that the level of adult criminal involvement for both partners and friends significantly predicted the participant's own self-reported level of adult offending, net controls. Furthermore, results from their analysis of the life history narratives revealed that a subset of the sample desisted in part by either isolating themselves completely from negative social influences, or by purposefully forming prosocial friendships.

Adding to this study, Schroeder, Giordano, and Cernkovich (2007) incorporated data from another follow-up of 152 of the original OLS participants collected, on average, 21 years after baseline. Using two social network measures—romantic partner criminality and peer deviance—they found that both significantly reduced the odds of desistance compared to persistent offending. In addition, they found that these social network measures partially mediated the relationship between drug use and persistence in crime over the life course.

An additional study assessed the relative power of social networks in predicting persistence in heroin and cocaine use. Schroeder, Latkin, Hoover, Curry, Knowlton, et al. (2001) used data on 342 adult participants from a longitudinal assessment of injecting drug users to compare those who reported recent heroin and/or cocaine use (N = 236) to those who did not report use (N = 106) at all three assessments. The authors measured social network structure and support via a social network inventory, and collected neighborhood-level arrest rates, including crime type, from the Baltimore City Police Department. Out of many predictors, having drug users in the social network was most associated with continuing drug use (OR = 5.70, $p < .001$). Interestingly, only one of the social support indicators was significantly correlated with persisting, and the average frequency of contact with drug users in the network did not significantly differentiate the groups.

Additional to the benefits of discarding negative social influences, an increase in social support following a social network change may be an important factor behind one's movement toward nonoffending (Cullen, 1994). For example, in her research on role exit in general, Ebaugh (1988) found that social support was important to the successful transition of roles. After conducting 185 interviews with individuals who had exited a past role and created a new identity, she found that in about 20% of the role exits someone significant to the individual responded negatively to the change in role, and that in the majority of these transitions this negative response cast doubt in the individual's desire to exit the role. In five of the interviews such a negative response delayed the exit for five or more years (pp. 97-98). Positive social support, on the other hand, often accelerated the process of seeking alternative roles and exiting the undesired role (p. 100). These studies suggest that the level and type of social support spawning from one's social network may be important factors in determining one's continued participation in crime and substance use.

Underemphasized until now is the point that this process is gradual. It is unlikely that serious offenders will form exclusively prosocial networks, especially if isolated in disadvantaged neighborhoods where the presence of crime and drugs is difficult to escape. Many times those wishing to do the right thing are hampered by circumstances spawning from their environment, and relapse is normative on the road to recovery.

Paternoster and Bushway (2009) acknowledge these obstacles by pointing to the gradual nature of identity change, but maintain that desistance is more likely when prosocial relationships are strengthened, and relations with antisocial peers weakened.

III. Competing theories of identity and desistance

The theory of cognitive transformation developed by Giordano et al. (2002) also relates changes in identity to criminal desistance. These authors describe a process of desistance that involves four types of cognitive transformations. First, offenders become generally open to the idea of change. Next, the offender has to be exposed to a set of opportunities for change in his environment. The authors call these opportunities "hooks for change" in order to emphasize that, although the opportunities may be available to the offender, he or she must still take a metaphorical bite. The third type of cognitive transformation occurs when the offender begins to envision and fashion a new, conventional identity to replace the criminal one he or she is leaving behind. The final transformation occurs when the individual begins to view the deviant behavior or lifestyle that once represented who that individual was as a person as no longer positive, relevant, or descriptive of whom that person is now. Taking an overall cognitive perspective of desistance, the theory of cognitive transformation directs attention to the "up-front work" of offenders by emphasizing that shifts in cognition are fundamental to the desistance process and that offenders exercise human agency throughout the change process. In their follow-up interviews with the young adults, the authors found support for their theory in that desisters were most easily distinguished from persisters by their use of the past tense in describing their criminal selves. Those who desisted from crime and substance use expressed distance between their past selves and the conventional replacement selves they now maintained (p. 1031, Giordano et al., 2002).

The theory of cognitive transformation (Giordano et al., 2002) and the identity theory of desistance (Paternoster & Bushway, 2009) are similar in many regards. Both theories suggest that a change in identity from criminal to conventional is fundamental to the process of criminal desistance. Both theories suggest that without legitimate opportunities available in one's environment, a desire to change is unlikely to be sufficient to maintain desistance from crime. Both theories emphasize the role of human cognition and will in the change process. Finally, each theory hypothesizes that identity change causes individuals to alter their perception of the behaviors and preferences they see as congruent with who they are as a person. Although there are many similarities, there are also important differences between the identity theory of desistance and the theory of cognitive transformation, which are important both for desistance theory and policy.

The first difference involves philosophical perspective. The identity theory uses a rational choice approach to explain why individuals form and maintain delinquent identities, while the theory of cognitive transformation takes a symbolic interactionist perspective. Second, the identity theory describes the specific mechanism–the crystallization of discontent–behind an offender's motivation to question their current identity and become open to the idea of change. Third, although Giordano et al. (2002) mention that individuals envision a conventional replacement self (p. 1001), Paternoster and Bushway (2009) describe how this future-oriented self materializes, what it involves, and how it encourages desistance. Fourth, although both theories posit that prosocial opportunities (i.e., hooks for change) are endogenous, the identity theory of desistance hypothesizes these opportunities occur *after* and *because of* a change in identity, whereas the theory of cognitive transformation states prosocial opportunities *precede* and *foster* the replacement self. In the identity theory of desistance, offenders *decide* to change identities, *form* preferences that support their new identity, and *actively realign* social networks. In this sense, Paternoster and Bushway (2009) are placing even greater weight on the "up-front work" of individuals. Although this may seem like a negligible detail, it nonetheless holds important policy implications. If identity change is required before opportunities like work or school can influence offending, more funding should be allocated to interventions aimed at changing antisocial identities. If prosocial opportunities change identities, more cost efficient treatments like life skill training may suffice.

Finally, the identity theory is a general theory meant to explain how desistance occurs across the population, whereas Giordano and colleagues (2002) limit the theory of cognitive transformation to describing only those offenders in the middle range of a continuum of socioeconomic advantage and disadvantage. They state, "Given a relatively 'advantaged' set of circumstances, the cognitive transformations and agentic moves we describe are hardly necessary; under conditions of sufficiently extreme disadvantage, they are unlikely to be nearly enough" (p. 1026). In other words, according to Giordano et al. (2002), cognitive change and human agency only generate desistance if offenders are not overly burdened by disadvantage or abundantly supplied with conventional opportunities. This caveat necessitates a close look at how the authors define human agency, interpret identity change, as well as how the mechanisms underlying their theory function to enact change. Although limiting their theory to a subsample of the population may seem inconsequential on the surface, the theoretical divergence between it and other general identity theories of desistance becomes large.

More recently, the thinking of Giordano and her colleagues changed, as their beliefs about desistance transitioned from an individualist, cognitive explanation to a socio-emotional conceptualization of crime and desistance. This “neo-Meadian perspective” of desistance directs attention to the relationship between emotions and crime, as the authors suggest individuals break the law due to the formation and expression of an “emotional self,” and desist after engaging in a process of “emotional mellowing” (Giordano et al., 2007). Although the theory describes a broad spectrum of emotions, the authors focus on anger and the development of an “angry self” throughout the majority of their article.

In support of their theory, Giordano et al. (2007) measured anger identity at the first follow-up of their longitudinal study using a five-item scale. They found significant cross-sectional associations between their measure of anger identity and criminality, relationship violence, and problem drug and alcohol use, net sociodemographic characteristics, adult social bonds, and adolescent delinquency/substance use. In addition, a multinomial logistic regression suggested that anger identity decreased the odds of being a desister at both follow-ups compared to the persisters (OR = .468, $p < .05$), and episodic offenders (OR = .392, $p < .01$). Furthermore, both a diminution of and better management of one’s anger identity were linked with desistance in their qualitative analysis. Another study using the same sample found that anger identity partially mediated the effect of child-parent bonds in adulthood on stable, long-term criminal desistance (Schroeder, Giordano, & Cernkovich, 2010).

Although the majority of research on anger identity and crime comes from these three authors and the OLS dataset, a study by Simons, Simons, Chen, Brody, and Lin (2007) tested a similar construct using a large, longitudinal sample of African-American families in Georgia and Iowa. Measuring anger/frustration with a similar four-item scale, they found that parental hostility and rejection increased the odds of both affiliating with deviant peers and conduct problems largely through fostering anger and frustration. Finally, Gadd and Farrall's (2004) qualitative case study of "Dan" provides a clear account of the relationship between anger identity and deviance.

Another prominent criminological theory that links identity to desistance applies a different conceptualization of identity and self-change. According to Maruna (2001), individuals are able to maintain desistance from crime by undergoing an identity transformation described as "making good". He explains, "To make good is to find reason and purpose in the bleakest of life histories" (pp. 9-10, 2001). An individual makes good by reinterpreting his past criminal identity to make it congruent with his current prosocial self-view. This identity change is qualitatively distinct from the type of self-change described by Paternoster and Bushway (2009) and Giordano et al. (2002). Rather than discard one's past criminal identity for a new, conventional one, Maruna (2001) believes that desisters reinterpret (but maintain) their past identities to form new self-visions. Specifically, the actor sustains a continuous self-concept by viewing his negative past as necessary or required for him to have transformed into the positive person he is today. This view of identity draws from the work of Conway (2005) who locates the self in memory, and McAdams's (2001; 2008) idea of the "narrative identity," which describes identity as an ongoing story of an individual's past experiences, present circumstances, and future expectations.

After conducting a qualitative study of both persisters and desisters in Liverpool, Maruna (2001) found that the persisting offenders largely followed a "condemnation script." Although few expressed a desire to offend, the majority described their offending as the product of an ill-fated past, with little hope of self-change outside the forces of luck. On the other hand, the desisters followed a "redemption script," described as a positive, conventional change in self brought on both by one's own volition and through the help of others. Within this redemption script is a change in how an ex-offender views his identity—desisters distort criminal pasts to represent conventional, productive presents. Despite a lack of research supporting Maruna's (2001) original conception (Healy & O'Donnell, 2008), it is possible that one path to desistance is by means of making good.

Currently, each theory has argued that a change in identity is necessary for an ex-offender to desist from offending and maintain a conventional life. In addition, each of the theories, albeit to varying degrees, have attributed much of this change to the actor's own desire or will for self-change. Another notable theory of desistance, the age-graded theory of informal social control (Sampson & Laub, 1993; Laub & Sampson, 2003), also incorporates identity and agency into its explanation of crime, and is used for purposes of comparison by many of the former authors. One of the key propositions of this theory is that despite stability in antisocial behavior across age, important social bonds formed in adulthood can cause criminals to desist from crime. Laub and Sampson (2003) call these social bonds "turning points" based on the idea that they can cause an individual to change radically in his or her course of offending. The authors describe obtaining employment, getting married, going into the military, being sent to reform school, and neighborhood change as examples of possible turning points (pp. 145-146; 2003). According to the authors, turning points like these induce desistance by creating new situations that 1) knife off the past from the present, 2) provide both supervision and monitoring and opportunities for social support and growth; 3) bring change and structure to routine activities; and 4) provide an opportunity for identity transformation (pp.148-149; 2003). The last mechanism, identity transformation, relates this theory to the previous theories of identity and desistance. Clearly, though, identity transformation plays a more subsidiary role in this explanation of desistance.

Finally, the authors incorporate human agency into their explanation of the desistance process. Laub and Sampson (2003) state:

> … what is most striking in the narratives we collected is the role of human agency in processes of desistance from crime and deviance. The Glueck men are seen to be active players in their destiny, especially when their actions project a new sense of a redeemed self. (p. 55)

Despite granting agency a pivotal role in the desistance process, the age-graded theory of informal social control remains more deterministic than the previous identity theories. In contrast to the notion of cognitive and independent choice, the age-graded theory of informal social control contends most offenders desist due to more structural turning points, often through a process of unconscious and unintentional change described as "desistance by default" (pp. 278-279; 2003).

In their best account of desistance by default, Sampson and Laub (2009) explain that desistance is not necessarily a conscious or purposeful process, but rather occurs largely outside the awareness of the offender. Instead of deciding to change one's identity and desist, as the previous authors have argued, Sampson and Laub posit offenders desist largely as a result of "side bets." According to the authors, individuals generate investments in conventional society—what Jackson Toby (1957) termed "stake in conformity"—over time like getting a job, buying a house, and marrying a good partner, without the actual intention of desisting. Once these bonds are realized, however, the offender feels that it is no longer worth risking them to break the law. Sampson and Laub (2009) explain:

> The majority of men we interviewed desisted from crime largely because they were able to capitalize on key institutional and situational circumstances. Although "deciding" to enter these circumstances is often thought to require considerable cognitive work, we found evidence of much habitual action and non-reflection. (p. 231)

As mentioned earlier, Laub and Sampson (2003) agree with other theorists that identity change and agency are possible mechanisms of desistance. They set themselves apart, however, by contending that neither is *required* for an individual to stop offending. Instead, they find it more likely that "*behavior changes identity rather than the other way around*" (p. 230, 2009; italicized in original).

In contrast to Laub and Sampson's (2003) position, Paternoster and Bushway (2009) treat criminal desistance as a conscious, rational decision. In their view, former offenders make the *choice* to cease offending. The capacity of humans to take intentional or purposeful action has often been referred to as agency (Little, Snyder, & Wehmeyer, 2006). This is a broad definition, though, and is often equated with the capacity of humans to make choices (Nagin, 2007). In criminology, this idea is often contrasted with desistance by default—desistance that occurs unconsciously or is otherwise unwilled by the offender (Sampson & Laub, 1993; 2009). Though studies have found that some individuals do desist by default (Laub & Sampson, 2003; Biernacki, 1986), the majority of research supports the contention that for an individual to desist, he/she must become open or willing to change, and make a conscious decision to do so (Biernacki, 1986; Girodano et al., 2002; Bachman et al., unpublished manuscript).

The criminological theories reviewed thus far suggest that identity change constitutes an important part of an offender's ability to achieve and maintain a crime-free life.[6] Consequently, a finding that offenders who desist change their identity from criminal to prosocial would provide support for important aspects of each of these theories. On the other hand, if results suggest that identity is not involved in crime or desistance, the value of many of these theories becomes in question. In that case, alternative theories that do not refer to identity will likely offer a more persuasive framework for studying criminal desistance. These theories are the topic of the next section.

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[6] This review is by no means exhaustive. Other theories linking crime to identity exist (Glaser, 1956; Matsueda, 1992; Matsueda & Heimer, 1997; Farrall, 2005; Uggen, Manza, & Behrens, 2004; Vaughan, 2007). The theories described here, however, serve as the most recent, fully explicated, and popular in the field, and were specifically examined in this study.

IV. Alternative theories of desistance

Social bonds and informal sources of social control

As previously described, prosocial bonds may provide important sources of social control that serve as turning points in the life course, influencing criminals to go straight (Sampson & Laub, 1993). As part of their analysis of the Glueck data, the authors incorporated measures of attachment to spouse, job stability, and job commitment, measured with composite scales derived from the Glueck's detailed interviews with the men. Using a number of quantitative techniques and a qualitative analysis, the authors found a particularly strong effect of marital attachment on criminal desistance, and a present, though weaker effect of job stability (Chapter 7, Sampson & Laub, 1993). These results were corroborated in a later qualitative analysis with a portion of the delinquent men (Laub & Sampson, 2003). The work of Laub and Sampson played a major part in the proliferation of research on the relationship between marriage, work, and criminal involvement.

In a study on marriage, Laub, Nagin, and Sampson (1998) applied a group-based trajectory model to examine how changes in marital attachment relate to changes in crime after controlling for life course patterns of offending. Their model generated four unique offending patterns, two of which indicated a pattern of persistence in crime to age 32, while two demonstrated a desisting pattern over time. Next, in order to assess whether marriage length and quality were related to desistance, the authors created a series of dummy variables indicating whether an individual was married in any two-year period. Surprisingly, despite an initial negative effect on crime, after three years of marriage the married men were actually arrested more often than the unmarried men ($p < .001$).

Importantly, compared to men who had a marital quality score below the median at age 32 and unmarried men, men who entered into “good marriages” were less likely to offend up to three years after the marriage. These results suggest that although marriage alone may not induce desistance, entering a quality marriage significantly improves one’s likelihood of desistance over time.

Even though Laub et al. (1998) controlled for trajectories of arrest over time, there could still exist heterogeneity within the groups in the propensity to offend, thus confounding the finding that good marriages reduce offending over time. In other words, those most likely to enter into good marriages may also be the most likely to cease offending over time. This claim has motivated the use of causal inference techniques to better examine the marriage effect while controlling for differences in propensity. One study used inverse probability-of-treatment weighting that accounted for past marriages (i.e., history of treatment), time-varying covariate history (e.g., changes in alcohol use over time), and baseline covariates (e.g., childhood risk factors) to examine offending rates during the state of marriage, while effectively weighing individuals on their likelihood of marriage at any given age. The authors found that on average, for 226 men who were married at age 25, being in a state of marriage between the ages of 17 and 32 was associated with an average reduction of 35% in the odds of offending compared to being in a state of nonmarriage (Sampson, Laub, & Wimer, 2006). Another study employing the similar technique of propensity score matching, and using a population-based, adolescent sample, found that self-reported marriage was negatively and significantly associated with a weighted measure of self-reported offending for males but not females between the ages of 21 and 27 (King, Massoglia, & Macmillan, 2007). These studies, as well as others (Horney, Osgood, & Marshall, 1995; McGloin, Sullivan, Piquero, Blokland, & Nieuwbeerta, 2011; Bersani & Doherty, 2013), suggest that being in a state of marriage, especially if the marriage is characterized by attachment to a conventional spouse, reduces one's likelihood of criminal offending.

Empirical studies on another social bond thought to reduce offending—employment—have generated more complex results, largely suggesting that work reduces criminal involvement for some, but not all offenders (Uggen & Wakefield, 2008). In a seminal piece, Christopher Uggen (2000) overcame the selection problem that has plagued much research on the marriage effect by taking advantage of data from the National Supported Work Demonstration Project, a program that randomly assigned ex-prisoners, drug addicts, and youth dropouts to either minimum-wage jobs or a control condition. Analyzing 85% of the sample that had an official arrest history, Uggen (2000) used event history analysis to examine the predicted timing of first self-reported arrest up to 3 years following program entry. He found that for those aged 26 and under, being randomly assigned to employment compared to the control condition did not significantly differentiate arrest rates during the follow-up period. For those aged 27 and older, however, random assignment to work compared to the control condition significantly decreased chance of arrest from 6 to 36 months after program entry. This study suggests that work can cause a reduction in criminal involvement, depending on one's age. Later analyses with this data suggest that employment did not reduce drug use, however (Uggen & Shannon, 2014).

Another study examined how employment and individual employability affected convictions over time for a sample of 263 high-risk Dutch men followed between the ages of 18 and 32. Van der Geest, Bijleveld, and Blokland (2011) conducted a group-based trajectory analysis including information on regular and temporary employment, a measure of “employability” derived from principle components analysis, and employment stability, calculated as the number of years of uninterrupted employment, controlling for exposure time. The authors found that for the full sample, being employed significantly reduced one’s likelihood of being convicted (β = -1.02). Meaning that in their high-risk sample, a typical job lasting an average duration of 0.6 years was associated with a 46% reduction in conviction rates. Importantly, regular employment exerted a stronger negative effect on the likelihood of conviction compared to temporary employment, though both were significant. Surprisingly, employment stability only reduced conviction rates for the late escalating group, though this lack of finding may be due to the sample’s overall inability to keep a job.

A final study of the relationship between employment and crime analyzed population data on a sample of 783 Nordic men born between 1960 and 1974 who obtained at least five felonies between the period of 1992 and 2000, with at least one occurring after 1998 (Skardhamar & Savolainen, 2014). Using genetic matching, a special type of propensity score matching, the authors formed a comparison group of offenders who were similar to the employment group in many ways, but who did not experience a job entry. Next, the authors specified a GBTM and a non-parametric smoothing spline to estimate changes in the offending rate during the months immediately before and after the job entry experience, defined as becoming employed for at least six consecutive months. The researchers also examined the effect of job loss by creating a variable indicating if the person was no longer employed six months after job entry. Their results indicated that while the comparison group's offending rate remained relatively flat over time, the employed group showed a substantial decrease in offending that preceded an employment entry, with no further reductions in offending following the employment entry (Skardhamar & Savolainen, 2014). These results suggest that the relationship between criminal desistance and employment may result from offenders choosing simultaneously to both gain employment and stop offending, possibly explaining the interaction with age, rather than a direct effect of employment.

Having a child is another social bond that may impact the likelihood of desistance from crime and substances. In an analysis of 378 London males followed to the age of 32, Farrington and West (1995) found that having a child by age 26 was significantly related to an increased conviction rate between ages 27 and 32. Marital conception mediated this relationship, as only conceptions outside of marriage significantly predicted offending. In contrast, the analyses by Warr (1998), Blokland and Nieuwbeerta (2005), and Sampson and Laub (1993) found that parenthood was not a significant predictor of offending once marriage or marital attachment was entered into the model. Despite this, many of the men Laub and Sampson (2003) interviewed reported that becoming a parent was an important turning point. Other qualitative studies, on the other hand, report that having children stopped very few individuals from offending or using drugs, regardless of the sex of the respondent (Bachman et al., unpublished manuscript; Giordano et al., 2002). Thus, the majority of evidence suggests that having children is not associated with desistance from crime or drug use for most individuals, though it may serve as an important turning point for some (Moloney, MacKenzie, Hunt, & Joe-Laidler, 2009; Edin, Nelson, & Paranal, 2004; Kerr, Capaldi, Owen, Wiesner, & Pears, 2011; Giordano, Seffrin, Manning, & Longmore, 2011).

Deterrence

Despite Shover's (1996) belief that "No one seriously disputes the contribution that the risk of arrest and imprisonment makes to offenders' estimates of the likely consequences of and payoff from further criminal participation" (p. 141), research supporting a deterrent effect of criminal justice interventions on crime remains largely inconclusive (Paternoster, 2010). The majority of research on the link between perceived punishments and crime has documented a modest negative association between greater perceived certainty of legal punishment and crime, and no effect for the perceived severity or celerity of formal punishment on criminal behavior (Paternoster, 2010). Quantitative findings on deterrence may be compared to qualitative studies of crime and drug use, which show that the fear of punishment, especially when experienced over time, serves as a weighty deterrent for many offenders, eventually influencing their decision to desist.

Many qualitative studies of ex-offenders and recovering drug users point to the fear of punishment as a major reason for desistance or recovery. In one study, researchers conducted a 12-year follow-up of a sample of 405 male opioid addicts originally collected as part of the Drug Abuse Reporting Program (DARP; Simpson, Joe, Lehman, & Sells, 1986). The authors found that by 12 years, three-fourths of the sample had been abstinent for a year or longer. When asked for their reasons for quitting daily opioid use, 56% said a fear of being sent to jail served as a reason, while 32% stated that a fear of the law or incarceration was their primary motivator. In another qualitative study of 70 adults who self-reported recovery from drug addiction, McIntosh and McKegany (2002) found that the threat of prison resulting from crimes committed in support of one's habit was one of many reasons given for the ex-addicts' decision to stop using drugs.

For some, it is the increased length of the next prison term that most acutely affects their decision to desist. For instance, in an ethnographic account of 30 burglars, those who had desisted stated that their decision to quit burglarizing homes resulted from an increasing fear of punishment (Cromwell, Olson, & Avary, 1991). Along with an increased perception of the certainty of apprehension after past imprisonment, these desisters recognized that their next sentence was likely to be substantially longer. Although admitting that one to two years of imprisonment was not very difficult to endure, longer bids were particularly troubling to these persons, especially with increased age (Cromwell et al., 1991). These results are similar to those reported by Bachman et al. (unpublished manuscript) who found that although few individuals in their sample of 304 drug-involved former Delawarean inmates reported being deterred by their first time in jail, many of those who faced habitual offender status reported the fear of a lengthy sentence as a motivator for change.

The studies described above suggest that the fear of imprisonment seems to increase with time. Cusson and Pinsonneault (2013) have offered the intriguing theory of "delayed desistance" to explain this complex relationship. According to Cusson and Pinsonneault (2013), giving up crime is a conscious decision, triggered by either a "shock," a process of delayed deterrence, or a combination of both. Shocks include acute negative events such as a severe sentence or being shot by the police. Delayed deterrence is described as "the gradual wearing down of the criminal drive caused by the accumulation of punishments" (p. 76). Accordingly, deterrence is effective largely in the long run, as the succession of criminal justice sanctions provokes 1) a higher estimate of the cumulative probability of punishment, 2) the increasing difficulty of doing time, 3) an awareness of the weight of previous convictions on the severity of the sentences, and 4) a spreading of fear (p. 76).

According to the authors, shocks and the process of delayed deterrence lead to a reassessment of crime and the criminal lifestyle, which causes offenders to reappraise their goals. This reappraisal results in the conscious, agentic decision to leave crime, which ultimately results in criminal desistance. Importantly, all of this occurs and becomes more likely as one physically ages (Cusson & Pinsonneault, 2013). The authors supported their concept through interviews with 17 ex-robbers in Canada, who described (a) a higher estimate of the likelihood of punishment, (b) an increased challenge of serving time, (c) an acknowledgment of the effect of their prior record on sentence length, and (d) an increased fear of the consequences of crime with age. Despite this evidence, some would argue that the increased salience of prison with age is not due to deterrence, but rather the mechanisms of aging itself.

Age and crime

One of the most consistent findings in criminology is the relationship between age and crime. Hirschi & Gottfredson (1983) have gone so far as to call this relationship a fact, usually considered unsayable in science. The relation between age and crime is manifested in the age-crime curve, which shows that at the aggregate level crime increases in the teenage years, and then steadily declines there after. Hirschi & Gottfredson (1983) made the bold claim that this relationship has been invariant over time and social condition; despite period, location, and social structure, the shape of the age crime curve remains roughly the same. Although criminological theories exist that incorporate age, Hirschi & Gottfredson (1983) focus on the direct relationship between age and crime as an "empirical generalization," without the support of theory (p. 561). In fact, the authors argue any theory that attempts to use age in its explanation of crime will fail because, "A ubiquitous relation falsifies explanations the moment they are advanced, and the ubiquity of the age relation to crime is phenomenal" (p. 573, 1983).

Although scholars like Farrington (1986), Greenberg (1985), and Steffensmeier, Allan, Harer, and Streifel (1989) disagree with some of Hirschi & Gottfredson's (1983) assertions, such as the temporal invariance and direct causality of the age-crime relationship, they agree with some of their other points. Thus, criminologists tend to agree that there is a strong relationship between age and crime, and that individual offending tends to decline with advancement in age. In fact, the relationship between age and crime is so consistent that it has been called "one of the brute facts of criminology" (Hirschi & Gottfredson, 1983; p. 552). Farrington (2003) describes a recurring finding regarding age and crime: desistance from crime peaks between 20 and 29 (p. 223). Sampson and Laub, who have directed attention to the unique trajectories individuals experience over time, could not help but appreciate "the overwhelming power of age in predicting desistance from crime" in the offending trajectories of the Glueck men (2005; p. 31). Even the most criminally persistent of the men, who continued to offend past their teenage years, eventually began to desist by middle adulthood (Sampson & Laub, 2003; 2005). Answers to why individuals decide to reduce and eventually cease their offending as they age may be found in qualitative work conducted in the criminological and substance use fields.

Research on desistance from crime and substance use suggests that the correlates of physically aging, notably health concerns and physical fatigue, may be one explanation for why individuals cease these aberrant behaviors. Persistence in many forms of substance use and types of crime can be detrimental to one's health over time. When used in excess, drugs like alcohol, crack, and cocaine have varying deleterious effects on the body, and using a needle can result in the contraction of HIV. In addition, obtaining, selling, and using illicit drugs can place individuals in situations where they can be victimized. In the same manner, persistence in crime can result in victimizations like being assaulted, shot, or stabbed. Although these dangers are always present, with physical age comes and inability or unwillingness to subject oneself to these physical taxes. Even the burdens of prison, which were once bearable in youth, become more detestable with age (Cromwell, Olson, & Avary, 1991; Cusson & Pinsonneault, 1986; Shover, 1985; Sommers, Baskin, & Fagan, 1994). Qualitative studies on recovery from substance use (Bennett, 1986; Biernacki, 1986; McIntosh & McKegany, 2000; 2002; Smart, 1994; Stall & Biernacki, 1986; Waldorf, Reinarman, & Murphy, 1991; Walters, 2000) and desistance from crime (Baskin & Sommers, 1998; Shover, 1983; 1985; 1996) show that in many instances, individuals provide age-related concerns like these as reasons for ceasing their drug use and/or offending.

Despite the strong relationship between physical age and crime, some have suggested that this relationship is indirect (Gove, 1985), with the real factor responsible for the reduction in crime over age being a co-occurring growth in psychological maturity. Therefore, it could be that the link between age and crime is inextricably tied to another process, which better explains this relationship.

Psychosocial maturity

The idea that maturity rather than physical age could explain desistance gained attention in criminology largely through the work of Sheldon and Eleanor Glueck. After analyzing their earlier research, Glueck and Glueck (1943) concluded, “it is not arrival at any particular age span but the achievement of a degree of maturity adequate to social adaptation, that seems reasonably to account for the abandonment of criminalistics ways” (pp. 38-39). Although maturity is difficult to operationalize, the Gluecks describe it as, “the development of a certain stage of physical, mental, and emotional capacity and stability, and a certain degree of integration of personality” (p. 39, 1943). According to the authors, maturity leads to desistance because it is associated with the development of better self-control, executive functioning, regard for law-abiding others, and similar attributes, which enable the ex-offender to adapt to conventional society and avoid crime. Although most individuals mature around the time of adulthood, corresponding to the age-crime curve, the Gluecks contend that individuals can differ in their age of maturity due to factors such as early conditioning, thus explaining those offenders who persist after adolescence (p. 39, 1943). If maturation rather than age explains desistance, ex-offenders should describe “growing up” or maturing as their reason for abandoning crime, regardless of the age at which they cease offending.

To test their contention, Glueck and Glueck (1940) compared whether the approach of a certain age-span, for example sixteen to twenty years, is related to changes in criminality regardless of the follow-up period in which it occurred. They found that offenders who reached the same age-span but in different periods did not resemble each other in criminality. The authors used this to support their argument that a reduction in offending is not due to the arrival at a particular chronological age, per se, but rather due to the achievement of adequate maturation. They suggest, "… there is some underlying process in the lives of criminals related to their growth or development from the time of onset of their delinquent behavior which seems to play a basic role in the evolution and devolution of their criminal careers" (p. 97, 1940).

Though the Gluecks are well known for early theorizing on maturation and behavioral change, their studies are dated, and primarily relied on descriptive statistics. More recent research that utilizes advanced statistical techniques has continued to identify a relationship between desistance from crime and psychosocial maturity. For example, Monahan, Steinberg, Cauffman, and Mulvey (2009) provided a clearer description of maturity, modeling it as a cluster of traits including impulse control, suppression of aggression, future orientation, consideration of others, personal responsibility, and resistance to peer pressure. Testing this conceptualization in a longitudinal, group-based trajectory analysis, Monahan, Steinberg, Cauffman, and Mulvey (2013) found that the more criminally involved youth had lower levels of maturity and increased in maturity at a slower pace compared to the less criminal youth. Despite strong support for the relationship between maturity and offending, the societal transition of youth from adolescence to adulthood during this period further obfuscates the relationships between age, maturity, and crime.

Becoming an adult

Maturational growth coincides with a number of important life changes during the period of adolescence and emerging adulthood, including a transition in social standing from youth to adult. There are multiple social markers of this change, including being able to join the military, purchase tobacco and alcohol, buy a gun, and vote. In addition, there are psychological indicators such as being expected to decide on a life plan such as obtaining postsecondary education, beginning a career, and moving out of one's home. Movement toward these various adult roles and statuses has the potential to transform one's identity from that of a teenager to that of an adult (Benson & Furstenberg, 2007), and may be associated with changes in the appraisal of delinquency (Siennick & Osgood, 2008), as emerging adults begin to view delinquency as incongruent with their new role as an adult (Massoglia & Uggen, 2010).

In their interactionist theory of desistance, Massoglia and Uggen (2010) hypothesize that desistance is one marker in a constellation of statuses indicating adulthood, along with the traditional markers of a family, job, and home. Delinquency is considered appropriate during youth, but becomes age-inappropriate after adolescence. Once an individual is ready to become an adult, he leaves this childish tendency behind him, and adopts a status and identity as an adult. The authors state, "Growing out of delinquency appears to be a key element of the subjective and behavioral transition to adulthood …" (p. 574). Those who persist into the age span associated with adulthood, it is argued, "are less likely to see themselves as adults or to be perceived by others as adults, marking desistance as a facet of the adult transition in the contemporary United States" (p. 574). This theory is similar to theories of maturation, but rather than proposing individuals desist after becoming socially or emotionally more developed, it insists individuals desist because they are ready to identify with and take on an adult status.

Massoglia and Uggen (2010) provide an example of how this concept may be portrayed by ex-offenders, “Now I’ve got to go to trial with that. … For real. I’m about 25 now, and I need a decent family, decent job, car, going to work every day” (p. 569). This individual did not mention the physical process of aging, or a sense of growing up or maturing. Rather, he pointed to his desire to become an adult, comparing the need to desist with other markers of adulthood like having a decent family and car.

In order to test whether young adults ascribe delinquency to adolescence, Massoglia and Uggen (2010) examined the relationship between desistance over four measures of delinquency and various markers of adulthood using data from the Youth Development Study (YDS). The authors then supplemented this analysis with data from the National Longitudinal Study of Adolescent Health (Add Health), and semi-structured interviews with convicted felons.

Their results showed that those who were the most likely to persist in delinquency were also the least likely to make successful transitions to many traditional adult domains. Further results revealed that those who were arrested were about 78% less likely to report feeling like an adult, net controls for other adult status markers, race and gender, and identification as an adult in 1999 (Massoglia & Uggen, 2010). Further, the authors report that their results were fully supported by supplementary analyses with the Add Health data, and presented evidence from their prisoner interviews showing, “interview participants clearly recognize the appraisals of others and the stigma associated with age-inappropriate delinquent behavior” (Massoglia & Uggen, 2010, p.

569). These results suggest that desistance during adolescence and emerging adulthood may be linked to changes in adult status instead of, or in addition to, maturation and aging alone.

Changes in decision-making

Another explanation of crime cessation focuses on changes in individual psychological features. The most recognized of these features in criminology is self-control, but related features include impulsivity, risk-taking, and sensation seeking. According to Hirschi and Gottfredson (2001), self-control is "the tendency to avoid acts whose long-term costs exceed their immediate or short-term benefits" (p. 83). This trait, according to Gottfredson and Hirschi (1990), is relatively stable over time—individuals with high self-control will always remain higher in self-control compared to individuals with low self-control. Absolute stability likely changes over time, however, as the majority of people increase in self-control due to continued socialization (p. 107). In fact, several studies have shown that self-control does vary over time (Winfree, Taylor, He, & Esbensen, 2006; Hay & Forrest, 2006, Na & Paternoster, 2012). Thus, desisters might point to an increase in the ability to delay gratification or exercise patience as the reason for their desistance.

Research on the ability to exercise self-control has related it to both crime and substance use. One study using a nationally-representative probability sample of 900 14 to 22-year-olds found a negative relationship between tobacco, marijuana, and alcohol use and the ability to delay gratification. Temporal orientation, though positively related to delay, was not related with drug use independently (Romer, Duckworth, Sznitman, & Park 2010). Another study utilized the Add Health dataset and measures of self-control at wave 1 and 3 to show that a gain in self-control was related to desistance from marijuana use (Ragan & Beaver, 2009). On the other hand, Morizot & Le Blanc (2007) used data on 470 formerly adjudicated adolescents followed to the age of 40 to show that changes in self-control variables did not predict desistance, though this study appeared to have measured personality traits rather than self-control factors.

Logically, in order to exercise self-control one must have the ability to reflect on long-term outcomes. It may be productive to consider both self-control and future orientation as being subsumed under the larger concept of good decision-making, since the concepts are similar both to each other and to the decision-making process more generally.

Smart decision-making characterizes people who are patient, have high self-control, resist impulsivity, deliberate between alternative actions, and think about future consequences. It is likely that there is between-person heterogeneity in the quality of decision-making—on average some people make better decisions than others—as well as within-individual variability in decision making over time—reinforcement likely influences future decisions. Paternoster and Pogarsky (2009) actually postulated a process of good decision-making called thoughtfully reflective decision making (TRDM), and linked it to decreased antisocial activity. According to these authors, individuals who practice TRDM first collect information on multiple alternatives to a given choice, then think critically about each alternative, next choose the solution that will bring about the desired outcome, and finally reflect back on that choice and the decision-making process. In accordance with this idea, individuals who desist may acknowledge a general change in the way they make decisions, such as more thoroughly contemplating important decisions, feeling more patient and better able to exercise self-control, or thinking more about the future consequences of an action. The authors provided evidence that students who were less reflective in their decision-making at baseline, as measured by lower endorsement of these four decision-making processes, experienced more negative criminal and life outcomes one to six years later (2009).

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V. Theories of addiction recovery

Many of the aforementioned theories of criminal desistance are similar to theories of recovery from addiction. Consequently, I utilized studies of desistance from both drugs and crime as evidence for these various theories in my empirical review. Despite many similarities, there are unique theories of desistance tailored to the recovery from drugs and alcohol, which incorporate certain explanatory factors to a greater extent than theories of criminal desistance. These theories focus on the importance of neighborhood change, spirituality/religiosity, and formal treatment.

Residential relocation

Although criminologists have explained changes in crime in terms of individual routine activities, or the activities of everyday life (Cohen & Felson, 1979; Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996; Laub & Sampson, 2003), theory on addiction recovery has emphasized these changes, especially leaving one's neighborhood or city, as especially important for recovery. This is commonly expressed in the "places" component of the common treatment mantra: "avoid people, places, and things" (Leverentz, 2010). There are many reasons why a change in residence would make desistance from crime and drugs more likely. Kirk (2009) provides multiple examples of how residential change may reduce involvement in crime and drugs, including: serving as a turning point; removing an offender from his criminogenic social network; eliminating opportunities for engaging in crime; and disrupting routine activities and daily temptations conductive to crime. Another explanation specific to relapse and addiction is the cue-reactivity paradigm.

The cue-reactivity paradigm assumes that certain environmental cues become associated with drug use through the process of classical conditioning. Carter and Tiffany (1999) explain:

> During a history of drug use, certain stimuli such as environmental contexts (e.g. the use of drug paraphernalia), are reliably associated with the administration of drug. It is assumed that these stimuli, by virtue of being paired with the drug unconditioned stimulus, can become conditioned stimuli (CSs) which, in turn, elicit conditioned responses (CRs). Viewed from this perspective, addicts' responses to drug related stimuli are considered CRs. (p. 328)

Although these authors mention drug paraphernalia, a previous crack house in one's neighborhood or the corner where one purchased drugs could equally serve as cues. Once these cues become conditional stimuli, they can evoke drug-related (i.e., conditional) responses in the individual, increasing the likelihood of relapse. Drummond (2000) relates this process to alcohol dependence:

> Within the cue-reactivity paradigm, cues previously associated with drinking behavior can, under certain conditions, elicit cue-reactivity, which can be symbolic expressive (e.g. craving, anxiety, pleasure), physiological (e.g. drug-like, withdrawal-like, appetitive), and behavioral (e.g. drink-seeking behaviour, consummatory behaviour). (p. S131)

According to Drummond, drug-related cues elicit drug-related responses, which can range from increased cravings for a drug to actually attempting to find and purchase drugs. Relating to the neighborhood, this suggests that a neighborhood cue such as seeing an old drug dealer could increase one's desire for drugs, and thus their likelihood of relapsing. The paradigm of cue-reactivity compliments theories of residential change and criminal desistance to suggest that some offenders might describe a change in neighborhood or city as their reason for quitting crime and drug use.

There is a long history of research showing that neighborhood characteristics, especially neighborhood disadvantage, increase the likelihood of crime (Pratt & Cullen, 2005). In addition, studies have shown that these same neighborhood characteristics predict substance use as well. For example, a study by Boardman, Finch, Ellison, Williams, and Jackson (2001) found that after controlling for sociodemographics, employment and marital status, levels of social stressors and social strain, and social and psychological resources, a summary measure of neighborhood disadvantage was positively associated with drug use, though the effect was only marginally significant (standardized beta = .140, $p < .10$). In addition, an interaction term of neighborhood disadvantage and individual-level income was significant, suggesting that the relationship between neighborhood and drug use is most pronounced among individuals with low incomes ($p < .01$).

Another study by the Urban Institute examined prisoner reentry among 400 former prisoners released in the city of Chicago (Visher & Farrell, 2005). In the first few months following release, 54% of those interviewed were living in the same neighborhood they were in before being incarcerated. Of the 46% who moved to a new neighborhood, over half reported that the reason for their move was to stay away from trouble or drugs in the old neighborhood. This is understandable as those who stayed in their old neighborhoods were more likely than those who moved to agree that drug dealing was major problem in their community, and that living in that neighborhood makes it hard to stay out of prison. In support of this finding, Kubrin & Stewart (2006) examined one-year rearrest rates among 4,630 former prisoners in Oregon returning to census tracts of varying disadvantage. They found that neighborhood disadvantage and relative inequality were important predictors of recidivism even after controlling for multiple individual and criminal justice-based (e.g., prior arrests; level of supervision) variables. It is possible that escaping these types of neighborhoods may reduce an individual's likelihood of engaging in crime and substance use.

In a series of studies on the effect of residential relocation on reincarceration following Hurricane Katrina, David Kirk examined the effect of moving to one's original parish or a different parish both one year (2009) and three years (2012) after release from prison. In his first study, Kirk (2009) analyzed the recidivism rates of ex-prisoners released from Louisiana correctional facilities who resided in areas severely affected by the Hurricane before incarceration. Comparing prisoners released before and after Hurricane Katrina, Kirk showed that the hurricane led to a significant change in residence following release from prison. After conducting an instrumental variable (IV) analysis, Kirk found that individuals who migrated to a different parish following release from prison were significantly less likely to be reincarcerated within the next year. In his second study, Kirk (2012) again compared those prisoners released before and after Hurricane Katrina on residential change and reincarceration. In addition to conducting another IV analysis, Kirk (2012) used survival analysis to determine if the effect of relocation changed over time. His results showed that ex-prisoners who moved to a different parish were significantly less likely to be reincarcerated within three years compared to those who stayed. In addition, this effect remained at each quarter during the 3-year observational period.

Finally, one study examined residential relocation and substance use in a sample of 248 dependent opioid drug users who resided in San Antonio, Texas, and who had undergone treatment for their dependence (Maddux & Desmond, 1981). The researchers were able to obtain data files on every participant that included urine specimens, information from treatment, law enforcement, and correctional agencies, detailed chronological records of every residence since birth and every instance of opioid drug use since initial use, and life history narratives from multiple sources. The 171 subjects who relocated at least once since initial opioid use were abstinent 54% of the time in their relocated residences, but only 12% of the time in San Antonio. Of the 124 subjects who returned to San Antonio, only 19% remained abstinent for one month or more after returning (Maddux & Desmond, 1981). These findings suggest that moving away from one's previous drug use environment may facilitate abstinence for individuals dependent to opioids, and cocaine (Waldorf et al., 1991).

Spirituality

Spirituality or religiosity is another factor that may be related to desistance from deviant behavior. Interestingly, although spirituality is commonly included as a variable in statistical models, theoretical developments surrounding this concept are lacking. Chu (2007) points out, "Although religiosity is generally included as part of the explanation for the deterrence from crime and delinquency, no desistance theories to date include religiosity in their model (p. 666). For example, although Mears, Roman, Wolff, and Buck (2006) provide eight possible causal effects for how faith might impact offending (e.g., direct, indirect, interactive), the mechanisms discussed are hypothetical and differ for each effect. Common sense dictates that there should be a negative relationship between religiosity and antisocial behavior; more devout churchgoers should be less likely to abuse drugs and commit crime. This belief originates from the knowledge that most religions advocate more conservative lifestyles, and are opposed to harming others. This belief is so ubiquitous that it has escaped formal theoretical development. Chu (2007), however, offers a preliminary theory of religion and desistance from drug use to support this belief and past empirical work. She argues that this inverse relationship likely results from religion serving both as a source of social capital that increases one's stake in conformity, and as a source and strengthener of moral values and prosocial beliefs. According to this theory, desisters should include becoming more religious or spiritual as a reason for ceasing their involvement with drugs and other antisocial behavior.

Despite mixed empirical support, a meta-analysis of 60 studies suggests that religiosity is negatively related to delinquent engagement, with a significant mean effect size of -0.12, and no studies showing a positive effect of religious beliefs and attitudes on criminal behavior (Baier & Wright, 2001). Even if spirituality does not have a strong overall effect on the engagement in delinquency or crime, it could still be a factor associated with the exit from crime and substance use. In fact, a few studies have examined whether involvement in religion increases the likelihood of desistance. For example, Chu (2007) used data from wave 5 through wave 7 of the NYS to analyze how current religious behaviors and attitudes measured at wave 7 related to changes in substance use between wave 5 and wave 7. Religiosity was measured by asking respondents to identify the frequency of their church attendance in the year preceding the interview, and how important religion has been in their life. Participants were classified as desisters if they used drugs at wave 5 and/or wave 6, but not at wave 7, and drug use was divided into soft-drug use (marijuana) and hard-drug use. Multinomial logistic regression was employed to estimate the relationship between religiosity and desistance, persistence, and nonuse. Controlling for a measure of concurrent conventional values, Chu found that church attendance, but not the personal importance of religion, predicted desistance from both soft- and hard-drug use.

Another study extends these findings by 1) comparing religiosity and desistance from crime and substance use, 2) examining this relationship with both quantitative and qualitative data, and 3) maintaining time order. In this study, Giordano, Longmore, Schroeder, and Seffrin (2008) used quantitative data collected from three waves of their Ohio Lifecourse Study to determine whether two measures of religiosity—self-reported closeness to God and church attendance—collected during the first follow-up were related to lower scores on self-reported criminality and problem alcohol and drug use measures collected during the first and second follow-ups. Controlling for socio-demographic characteristics, prior delinquency, adult social bonds, and the criminality of partners and friends, the authors found that both measures of religiosity were inversely related to concurrent self-reported criminal involvement, while only perceived closeness to God significantly predicted levels of drug or alcohol use. Using the same measures of religiosity to predict desistance eight years later, the authors found that neither measure was a significant predictor of desistance from crime or substance abuse. Despite a lack of findings from their quantitative analysis on the longitudinal effect of spirituality on desistance, information from their qualitative narratives, including 41 focused specifically on faith and religion, revealed that spiritual transformations and involvement in religious communities were important factors in behavioral change and life satisfaction for a portion of respondents, especially minorities and women.

Formal treatment

Finally, formal drug and alcohol treatment has long been the ideal method for promoting recovery from addiction. Moos (2007a; b) proposed a comprehensive theory of why various treatments are effective for substance use disorders, explaining that behind many of these treatments is a focus on strengthening prosocial bonds, identifying rewards provided by alternative activities to drug use, modeling and reinforcing conventional behavior, and improving individuals' ability to cope with stress. It is likely that individuals with a long history of drug use and arrest have participated in multiple treatment settings. If formal treatments are successful at reducing addiction and relapse, individuals should attribute much of their desistance from drugs and crime to these varying therapeutic programs.

In a review of drug-abuse treatment evaluations, Anglin and Hser (1990) found that multiple drug-treatment programs, including MM, TC, CJS-based treatments, and outpatient programs have shown to reduce both drug use and crime in empirical studies conducted in the 1970s and 80s. MacKenzie (2006) found support for similar programs in reducing the recidivism of drug-involved offenders in her review (see Chapter 12). A meta-analysis found that drug abuse treatments had both a statistically and clinically significant effect in reducing drug use and crime after controlling for methodological effects (Prendergast, Podus, Chang, & Urada, 2002). More specific findings on successful treatments include 12-step programs (Fiorentine, 1999; Timko, DeBenedetti, & Billow, 2006), TCs (Lipton, 1998; Pearson & Lipton, 1999; Martin, O'Connell, Paternoster, & Bachman, 2011), and MM programs (Marsch, 1998). Outside of substance use, mental health treatments such as cognitive behavioral therapies (Wilson, Bouffard, & MacKenzie, 2005; MacKenzie, 2006) and multisystemic therapy (Sawyer & Borduin, 2011; Wagner, Borduin, Sawyer, & Dopp, 2014) have shown to reduce criminal behavior in samples of offenders. Thus, involvement in treatment may offer one potential explanation for desisting from crime. One particular treatment for substance abusers including those in the criminal justice system is the therapeutic community (TC). The TC model and the current sample are the topic of the next section.

VI. Methods

The data for this study originates from a series of grants obtained by principle investigators James Inciardi and Steven Martin, and their colleagues, to implement and evaluate the long-term benefits of a prison-based therapeutic community (called The KEY), initially, and then a transitional, work release-based TC (called CREST; Marin, Butzin, & Inciardi, 1995). Before introducing the current analysis, I situate the study by providing a brief overview of the TC model generally, and The KEY and CREST program specifically. This is followed by a discussion of my sample, procedure, and measures.

The Therapeutic Community Model

One of the most recent advances in addiction treatment has been the development of therapeutic communities. The foundation for the evolution of modern TCs was Synanon, a 24-hour residential addiction treatment facility founded in 1958 in Santa Monica, California. This program integrated some of the principles and practices of alcoholics anonymous (AA), while shifting philosophical orientation and treatment ideology. Synanon adopted a psychological perspective of addiction, placing greater emphasis on individual responsibility, treating self-change as achievable through self-determination, and placing recovery within the confines of a residential facility and peer community (De Leon, 2000). Although therapeutic communities continue to evolve, and vary by location, the model developed in Synanon remains largely intact.

TCs conceptualize drug abuse as a disorder of the whole person, with addiction being just one symptom of that disorder. Dependency is only secondary compared to the more primary psychological and social deficits of drug abusers, which include low self-esteem, low self-control, problems with authority, problems with responsibility, and cognitive deficits. In other words, the problem is the person, not the drug (De Leon, 1995). Resulting from this perspective, the goal of treatment in the TC model is to change the addict's overall lifestyle and identity. This is accomplished through mutual self-help, social learning, motivation, and a general teaching of the right way to live, which includes being truthful, taking responsibility for one's future, being socially responsible, having self reliance and a good work ethic, among others (De Leon, 1995). Since drug abuse is conceptualized as a disorder of the whole person, treatment is focused on multiple cognitive, social, emotional, and behavioral dimensions, with recovery ultimately being achieved through a stage-based process of development, spanning from induction into the community to reentry into society (De Leon, 1995). In addition to offering a novel combination of treatments, TCs are distinct largely because of their unique organizational format.

The quality that most distinguishes the TC model from other group-based treatments is its focus on forming perceptions of a community, and using that community to engender individual change. The TC model creates this community by having the patient serve as an active participant in their change process, as well as the change process of others (e.g., by serving as a friend, mentor, and coordinator for others), using successful and more senior patients as role models, reinforcing shared norms and values through a unique vernacular, and through other practices (De Leon, 1995). The TC model is also unique in the importance it places on being physically secluded from others, creating a community environment through the use of communal space and visual displays, programming the majority of activities as communal, and treating staff as community members who facilitate treatment rather than provide it (De Leon, 1995).

Though the TC was first established as a voluntary treatment method, the model was eventually adopted within correctional facilities to aid the large number of inmates with substance use problems (James & Glaze, 2006). Though the treatments are based on a similar model, Lipton (1998) points out nine important differences between the prison-based therapeutic community (PBTC) and the TC, including the separation of men and women, limits on opportunities for work, and a narrower range of programmatic autonomy (pp. 218-219). TCs first appeared inside prisons in the 1960s, with the earliest established in Nevada State Prison in 1962. Closely following the formation of Synanon in 1958, the Nevada State Prison extended this early model to prison inmates (Lockwood, Inciardi, Butzin, & Hooper, 1997). PBTCs began to appear and then disappear in a number of states and the federal system in the 1970s and 80s due to factors such as prison crowding and loss of funding, but were revitalized in the late 1980s and 1990s through program funding such as that from the Anti-Drug Abuse Acts and Project REFORM (Lockwood et al., 1997). During this time, the TC model has even entered jail settings (Glider, Mullen, Herbst, Davis, & Fleishman, 1997; Peters & May, 1992). Inciardi, Lockwood, & Martin (1994) have argued that to be most effective, the correctional-based TC model should operate at three stages corresponding to the inmate's movement from 1) incarceration (primary treatment), to 2) work release (secondary treatment), and finally to 3) parole (tertiary treatment).

The Delaware Model

The KEY was established in 1988 through collaboration between the Delaware Department of Corrections, researchers at the University of Delaware, and clinicians at Correctional Medical Systems (CMS), the state correctional system's health care provider (Lockwood et al., 1997). Despite an original desire to include both genders in The KEY, the strict rule of gender separation set forth by the Delaware Department of Corrections and space limitations forced the exclusion of women (Inciardi, Martin, Lockwood, Hooper, & Wald, 1992).[7]

Selection for The KEY was nonrandom, with admission criteria requiring that clients: participate voluntarily, do not have pending or open charges, come from the general prison population, be eligible for parole within 12 to 18 months, have a history of substance abuse, and do not have a history of aggressive, nonconsensual sexual offenses or arson charges (Inciardi et al., 1992). Nonrandom selection by the CMS staff led KEY residents to differ from the general inmate population in having an increased likelihood of being black, older, having prior treatment experiences, and having used multiple drugs in the past. Cocaine was the predominant pre-incarceration drug of abuse—82% of the KEY clients reported it as their primary or secondary drug of abuse (Inciardi et al., 1992).

The KEY operated as a 12-month program similar to the traditional TC model described above, as the program hosted morning meetings, operated in a hierarchical format, and provided resident job functions. One exception, though, is that due to its population, The KEY focused more on behavioral change among its clients through prosocial modeling and cognitive restructuring and less on the emotions and cognitions that precede behavior (Lockwood et al., 1997). Eventually, through funding from the National Institute of Drug Abuse, the KEY was supplemented with a community-based work release and aftercare program, CREST.

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[7] The KEY Village (or BWCI Village) was established during the later months of 1993 as a prison-based TC for women located at a women's correctional institution in Delaware (Inciardi, Martin, & Surratt, 2001).

In 1990, the CREST Outreach Center in Wilmington, DE became the first work release TC in the country (Lockwood et al., 1997). Like The KEY, CREST was also based on the traditional TC model, but was modified to integrate the work release component, thus attempting to achieve the dual outcomes of changing the person and gradually reintegrating them into society (Nielsen, Scarpitti, & Inciardi, 1996). CREST is a 6-month aftercare program that operates through five phases ranging from orientation, assessment, and evaluation during phase 1 to physical reentry in phase 5 when the clients obtain and maintain employment outside CREST (Lockwood et al., 1997). Throughout these phases, CREST helps clients increase their self-esteem, develop responsibility, honesty, and self-control, gain employment skills, and obtain employment in the outside community (Nielsen et al., 1996). Unlike The KEY, CREST includes both males and females, and did not have selection criteria other than that the individual be incarcerated and have a history of substance abuse. After its establishment in 1990, virtually all KEY graduates were assigned to CREST, while other individuals were randomly selected by the researcher staff to enter into CREST without going through The KEY, or to a comparison group who participated in regular (non-TC-based) work release (Lockwood et al., 1997).

In a long-term follow up of the Delaware sample, Martin et al. (2011) compared arrest histories among the 915 individuals who received treatment in the therapeutic communities to the 335 cases randomly assigned to the comparison group. The authors collected criminal justice records from the state of Delaware and adjacent states and the National Crime Information Center (NCIC), which included the number and date of each arrest from 1969 to 2010, as well as the entrance and exit date from prison for each sentence from 1979 to 2010. The authors used this information to create a yearly count of arrests for each subject, and a variable indicating the number of days free per year as a measure of exposure time. Their sample included 1,006 males (80%), 899 African Americans (73%), and 351 non-African Americans (mostly white; 27%). Additionally, although 10% of the original cohort had died before the most recent follow-up, these individuals were still included in the analyses, though censored at the date of their death.

Using this extended sample, Martin et al. (2011) conducted a semi-parametric group-based trajectory model (GBTM) to estimate differences in long-term offending trajectories over the 41-year time period between 1969-2010. Treating membership in the KEY/CREST drug treatment group as a time-varying covariate, and controlling for gender and race as time-stable covariates, the authors found that, within each of the five trajectory groups, involvement in the both the in-prison TC and work release TC led to a significant decline in arrests compared to those with the same developmental history (i.e., trajectory) of arrests who did not experience both the KEY and CREST programs. Interestingly, the authors found different effects conditional on trajectory group membership: involvement in the two TC programs was particularly beneficial for the two groups that showed the most evident pattern of decline in criminal arrests (i.e., desisters). This long-term follow up shows that the KEY/CREST intervention was effective in reducing recidivism among substance-involved offenders.

More relevant to the current study, Bachman et al. (unpublished manuscript) supplemented a group-based trajectory model of the Delaware data by sampling 304 individuals from their GBTM for in-depth qualitative interviews.[8] Sample selection was conditional on trajectory group membership, thus the qualitative sample is proportional to the number of individuals in each of the five trajectories, ensuring a diversity of developmental arrest histories. In the sampling phase, the authors found that approximately 11% of the original sample were deceased, 13% were incarcerated, 3% were living out of state, and 7% were unreachable. For those selected and successfully contacted for qualitative analysis, 96% agreed to participate (Bachman et al., unpublished manuscript). Their final sample of 304 included 187 males (61.3%), 185 African Americans (60.7%), and had a median and mean age of 45 years (range 30-65 years).

The face-to-face interviews were primarily open-ended, and incorporated Event History Calendars with criminal justice and important life events included cuing memory recall. The goal of the interviews was to capture offender "storylines" by asking respondents to recreate, both structurally and perceptually, each criminal- and drug-related event, with special emphasis on the respondents' decision-making process (Bachman et al., unpublished manuscript). During the interviews, the men were asked to report, retrospectively, on events spanning from their childhood to the present. Accuracy is a concern, as these men were mostly in their 40s, often did not graduate from high school, and had a history of heavy involvement with drugs and alcohol. In order to aid in memory recall, Event History Calendars (EHC) were used, which included the dates of important life events and arrests and incarcerations. This method has shown to improve the accuracy and reliability of retrospective reporting about the life course (Belli, Stafford, & Alwin, 2009; Caspi, Moffitt, Thornton, Freedman, Amell, et al., 1996).

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[8] These interviews took place on average 15 years after the individual's original release from prison in the years 2009 and 2010.

Topics included whether the individual had been in a relationship, if they had children, if they had employment, their involvement in drugs or alcohol, their involvement in crime, if they sought any drug treatment, changes in religion or spirituality, and general reflections about their self and decision-making. For those who mentioned quitting drugs and/or crime, respondents were asked what made them want to quit, how they were able to stop their drug use or offending, and how they were able to maintain their conventional life. For those who persisted in drug use and/or crime, participants were asked why they had not quit, and what they thought it would take for them to give up the behaviors. The authors tape-recorded and transcribed each interview before entering them into NVivo for coding and analysis.

Their findings provide important information on the mechanisms behind both desistance and persistence in substance use and offending, especially those pertinent to the identity theory of desistance (Paternoster & Bushway, 2009), for a sample of serious, substance-involved former prisoners.[9] Overall, the authors reported that the participant narratives largely supported the cognitive processes advanced in Paternoster and Bushway's (2009) identity theory of desistance over the structural processes inherent in a turning point view of desistance (Sampson & Laub, 1993; Laub & Sampson, 2003). The majority of participants who reported desisting in their qualitative narratives mentioned transforming their offender identity to a conventional one, with many describing a feared self as a motivating factor, and a change in social networks and preferences as aiding their transformation. The traditional turning points of work, marriage, and children, on the other hand, often facilitated the desistance process but were seldom mentioned as the instigating factors behind an offender's transformation (Bachman et al., unpublished manuscript).

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[9] See Wish (1990) for why such a sample may be especially important to study.

Qualitative studies, especially life history studies like this one are valuable because they are able to achieve a greater depth of information, explore more contexts, and cover a greater period of time. However, qualitative studies are disadvantaged in that they provide less certainty than quantitative studies (e.g., "the majority of people" is more ambiguous than a formal proportion and significance test).[10] With this statistical uncertainty, it is difficult to decide whether a qualitative study is convincing in its suggestion that individual, cognitive processes play a greater role in explaining desistance than do more social, external factors. To do so necessitates numbers and proportions (Sandelowski, 2001). More importantly, it is impossible to know if any differences in qualitative results are due to chance.

By using binary codes to indicate the presence of a concept, it is possible to test important components of a theory formally, using coefficients, standard errors, and significance tests. This type of coding has been described as mixed methods coding (Saldaña 2013, pp. 62-63). Although the results might miss differences in context (for example, certain jobs may be more likely to lead to desistance than others), they provide a simple, straightforward description of the factors attributed to desistance by members of the sample, and allow for more rigorous statistical comparisons. For a systematic review of studies that have employed similar methods, see Fakis, Hilliam, Stoneley, and Townend (2014). I describe this procedure and my measurements in more depth below.

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[10] These are simply a few of the benefits and disadvantages of qualitative data, and not a formal discussion of the overall merits of the approach as a whole, or in comparison to quantitative research. For an interesting commentary on the role both methods can play in criminological research, see Laub and Sampson (2004).

Sample

The sample used for this study included the males from the 304 individuals interviewed as part of the qualitative portion of the Bachman et al. (unpublished manuscript) study (n = 187).[11] Out of these 187 males, 144 transcripts were complete and able to be analyzed. Some reasons for the absence of the 43 male transcripts include the interview being conducted in prison (n = 4) and corrupted audio tapes (n=2). The other reasons why some of the transcriptions were not included in the data are currently unknown. Despite a possible further reduction in the generalizability of the sample resulting from these missing files, this study is primarily interested in whether the mechanisms in the identity theory of desistance distinguish desisters from persisters, and is less concerned with generalizing this process to various populations. The current sample of 144 provides a large number of serious drug-involved offenders in which to examine these elements and reasons for desistance. The current sample is 75 white (46.3%), 87 black (53.7%), and had a median and mean age on January 1, 2010 of 45 (range 31-65, quartile 1 = 40, quartile 3 = 50). The majority were born and raised in the state of Delaware.[12]

Procedure

The current study's objective was to follow the lead of Bachman et al. (unpublished manuscript) by testing the identity theory of criminal desistance

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[11] The 117 females in the sample were used as part of another study (Copley, 2013).

[12] Of the 86 men who responded to where they were born, 78% reported being born in Delaware. The qualitative interviews support this statistic.

(Paternoster & Bushway, 2009). As the identity theory is a relatively new theory of desistance, it has received little empirical attention. A second objective was to test concepts from other notable theories of criminal desistance and addiction recovery. To do so, I used a binary code to identify the presence of a concept in the narratives. These codes align with Saldaña's (2013) definition of a code as "a word or short phrase that symbolically assigns a summative, salient, essence capturing, and/or evocative attribution for a portion of language-based or visual data" (p. 3). For each narrative, if the individual mentioned a certain concept related to their desistance it was coded as a 1, and if they did not mention a concept it was coded as a 0.[13] Although individuals who admitted to persisting in crime and/or drug use (except alcohol and marijuana use)[14] could not have a reason for desistance, these individuals could report experiencing concepts from the identity theory of desistance. Therefore, I was able to code for the presence of these types of concepts for the persistent offenders, but was unable to code their reasons for desistance.[15]

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[13] In this sense, my coding scheme could be described as deductive rather than inductive (Strauss, 1987, pp. 11-14), and as "closed coding" rather than open coding. As I tracked the perceived causes of desistance that were not included in my original list of theoretical concepts (i.e., open coding), perhaps a better label for this coding scheme is "mixed coding."

[14] Individuals who quit all crime and heavy drug use but still occasionally used marijuana and/or alcohol were considered desisters, unless this use was clearly abuse (consumed large quantities of either substance, use led to a loss of job or family, experienced serious financial or health burdens due to use, or use led to criminal justice sanctions). See DSM-IV definition of substance abuse. Although the prevalence of marijuana use was not measured in this study, of the 103 men who reported using drugs in the 12 months prior to their interview, 34 identified marijuana as their drug of choice (Kerrison, personal correspondence, March 30, 2015). Consistently driving under the influence of either substance was considered persisting.

[15] In a few cases, self-reported persistent offenders mentioned giving up more serious crimes because of, for example, a fear of going to jail. This movement to "softer crimes" has been described in other studies, such as Shover (1985) and Cromwell et al. (1991). In

Due to the difficulty in measuring many of the elements in the identity theory of desistance, such as the presence of and change in working identities and the formation of possible selves, analyzing qualitative narratives for these experiences provides a promising avenue for examining the interaction of these phenomena in the lives of individuals. In addition, past research on possible selves has largely had to ask individuals whether and how they envision themselves in the future (Cross & Markus, 1991), and previous researchers had difficulty operationalizing and measuring the crystallization of discontent (Bauer et al., 2005). This study improves on these methods by allowing the sample to describe possible selves naturally, and clearly operationalizing and measuring the crystallization of discontent within offender narratives.

Measures

Beginning with the identity theory, I coded for the presence of a working identity as a criminal, a change in identity, the presence and type of both feared and prosocial possible selves, whether the individual mentioned costs and benefits in their decision to leave or remain in crime (a test of the rational component of the identity theory), whether the individual experienced the crystallization of discontent, and whether the individual mentioned a change in social networks, or a change in preferences.[16]

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even fewer cases, individuals mentioned reasons for desistance or recovery at the same time as admitting to persistence in crime or drug use. As these offenders were still persisting in criminal behaviors they could not be coded as having a reason for desistance. Although coding only for complete or absolute desistance (except marijuana use) may overlook valuable information, it removes much of the subjectivity.

[16] This study defined identity as “a sense of who one is,” as used in Paternoster and Bushway (2009; p. 1111) An individual was coded as having a criminal identity if at one point in his life he thought of himself as a criminal. This was often expressed as attempting to be, or considering oneself a thug, thief, or drug user, wanting to be like the drug dealers on the corner, admitting to looking up to notorious gangsters in the community, among other ways. A change in identity was coded if a narrative mentioned

For alternative theories of desistance, I coded for social bonds including whether the individual mentioned a spouse or partner, a job, or children as the reason for leaving crime.[17] Physical age and health decline were combined as a measure of whether physically aging was a reason for quitting drugs and/or crime. Maturing or becoming more responsible was another concept coded. I tested for Massoglia and Uggen's (2010) idea that becoming an adult and viewing delinquency as incompatible with adulthood was a reason for leaving crime. I coded for Maruna's (2001) concept of redemption scripts and making good. I coded if an individual mentioned being angry, but either overcoming or learning to manage their anger and desisting. A change in one's home, neighborhood, or routines was recorded as one reason for desistance. Additionally, spirituality, mental health and/or addiction treatment (including methadone maintenance or other pharmacological treatments), and the desire to avoid prison were all coded as separate reasons for desisting. If an individual mentioned an improvement in decision-making, a shift in orientation from present to future, or being able to better exercise self-control and patience, this was coded under one decision-making concept. Finally, I coded for the exercise of agency, or motivation for change, which was coded as zero if the individual mentioned actively not wanting to change, 1 if agency was not mentioned (i.e., desistance by default), and 2 if the individual mentioned actively wanting to give up crime or

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once forming a criminal identity, but then giving up that identity, whether a new, conventional identity replaced it or not. See the results section for examples from the text.

[17] Although I call these social bonds, I did not measure the context behind mentioning a partner, job, or child as a reason for desistance, so it is difficult to know whether these relationships had an actual "bonding" component to them.

substances.[18] In the results section, I provide examples from the narratives for each concept.

As described in the introduction, this study was largely exploratory, and coded for concepts from multiple theories of crime. Two questions I sought to answer included, 1) are processes described by the identity theory of desistance at work, and 2) what are some of the reasons provided by the individuals themselves for leaving crime and/or substance use. I predicted that desisters would be more likely to describe the mechanisms in the identity theory of desistance compared to those still persisting in crime.

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[18] An interesting decision came up when coding for agency: what if the individual is persisting in crime or substance use, but does not mention actively wanting to engage in the behaviors (i.e., "persistence by default"?), or mentions wanting to give the behaviors up but is not able to (suggesting a motivation for change despite continuation in crime). I decided to treat agency as the exercise of will in giving up crime, thus individuals were only coded as exercising agency when they reported choosing to stop offending. As drug use and crime are aberrant behaviors, individuals likely face many reminders of the negativity of these behaviors everyday (e.g., having to hide drug use, fear of being apprehended by the police). Thus, it is unlikely someone could truly persist without any motivation, even if minimal, to continue drug use or crime (even if this motivation is due to addiction or necessity). Therefore, agency was coded zero for self-reported persisters.

VII. Results

As previously mentioned, the current study used a sample of men selected proportional to their group membership from a GBTM conducted as part of a prior study (Bachman et al., unpublished manuscript). These authors decided on a 5-group model, which reflected three trajectories of a desisting pattern and two showing continued offending. I began my analysis by combining the desisting trajectories and persisting trajectories from which the sample came into two groups—desisters and persisters—and examining whether the two groups provided different reasons for desisting in the qualitative narratives.[19] The reasons for desistance and the percent of the sample endorsing each reason are provided in Table 1.

Table 1. Reasons provided for desistance by membership in desisting or persisting groups.

Reason for desistance	Full Sample (N= 144)	Desisters (N = 101)	Persisters (N = 43)
Significant other	22.2%	21.8%	23.3%
Employment	11.1%	12.9%	7.0%
Parenthood	22.2%	20.8%	25.6%
Age	20.1%	17.8%	25.6%
Maturity	11.8%	12.9%	9.3%
Subjective adulthood	2.1%	2.0%	2.3%
Change in decision-making	25.7%	24.8%	27.9%
Making good	6.3%	5.0%	9.3%
Change in routine activities	8.3%	11.9%*	0.0%*

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[19] As a reminder, reasons for desistance were coded in the narratives regardless of the individuals' trajectory of arrest. The only reason for not coding a reason for desistance was if it was provided while simultaneously admitting to persisting in crime or substance use.

Spirituality/Religion	29.2%	32.7%†	20.9%†
Change in emotions/anger	8.3%	7.9%	9.3%
Formal drug treatment	38.9%	45.5%*	23.3%*
Deterrence	42.4%	43.6%	39.5%
Agency			
Will to change	69.4%	74.3%*	58.1%*
Desistance by default	9.7%	6.9%*	16.2%*
Want to persist	20.8%	18.8%	25.6%

1-tailed Z-test of proportions: † = $p < 0.1$; * = $p < 0.05$

These results suggest that there are many roads to desistance. Which path one takes may largely depend on the context of one's life. The reasons provided for leaving crime and substance use most often included a desire to stay out of prison (42%), formal treatment (39%), and spirituality (29%). Seldom was the transition to adulthood (2%), making good (6%), or a change in anger (8%) mentioned. Interestingly, only the desisters (as measured by trajectories of arrest) mentioned a change in routine activities as a reason for desisting. The desisting groups also mentioned spirituality and formal treatment as reasons for quitting more often than the persistent group, even though the desisters were less likely to experience the CREST program (41% compared to 63%, respectively), and only slightly more likely to experience the KEY and CREST programs together (25% compared to 14%, respectively). Finally, the desisters were much more likely to describe a will to change and agentic action in their movement to noncrime (74%) than the persisters (58%), who more often described desisting without any choice or purposeful action.

Next, I move to an examination of the elements specific to the identity theory of desistance. Beginning with a descriptive table (Table 2), it is clear that many of the men described forming a working identity as a criminal. In addition, of the 57 men who described such an identity, 48, or 84% of them also described changing their identity to a more prosocial one. Possible selves were also mentioned by about a third of the sample. Prosocial selves included being a good father, husband, or family man, staying out of prison, successfully desisting, getting or keeping a job, becoming religious, or more generally being a conventional individual. Feared selves were in the opposite domains, such as envisioning oneself as an addict, being incarcerated, dying, losing one's family, and more generally wasting one's life. Offenders appear to reflect on the costs and benefits associated with their lifestyle, and the crystallization of discontent, a complex process, was described by about a fifth of the sample. Finally, the processes of preference change and social network realignment were often at work. Table 3 provides prototypical examples from the texts of each of these components.

Table 2. Percent of sample that mentioned experiencing components of the identity theory of desistance

Concepts	Percent of sample mentioning (N = 144)
Working identity as a criminal	40%
Change in identity	33%
Prosocial possible self	35%
Feared self	37%
Costs of crime/substance use	67%
Benefits of crime/substance use	33%

Crystallization of discontent	22%
Change in preferences	65%
Change in social networks	47%

Table 3. Examples of the identity theory of desistance from the mens’ narratives.

Identity	“They were always that criminal element that I became, that I always wanted to be kind of like, you know what I mean? So I looked up to them you know other people around me were working hard, paying the bills, the people that were raising me were doing the right thing, but I looked at them guys as like the hero or the cool aspect and so I guess to take that step I had always, in a sick way aspired to be them.”
Identity change	“But I stay away from that violent lifestyle now, I don’t affiliate myself with the streets and what's going on into the streets and stuff now”
Possible self as a nonoffender	“I can be somebody, you know what I mean. Like I didn’t have to feel left out of what is good, that I could be a part of that. So once you start feeling that you can be somebody, those things impact you, man, you know.”
Feared self	“So it was like either I wind up dying in jail or do what I had to do, stay out here and I ain't been back since.”
Costs	“But it’s not worth it to me. It’s so much I could make but it’s not worth it to me it’s so much I could make but it’s not worth it to me in the long run.”
Benefits	“It's like I really don’t wanna get hooked back onto heroin, but I do it for recreation. Like a vent, you know.”
Crystallization of discontent	“It was more than that I mean my daughter, I have my daughter and my grand-kids and I don’t even really have relationships with all of my grandkids and my daughters relationship is strained so it’s an accumulation of all of that knowing that if I

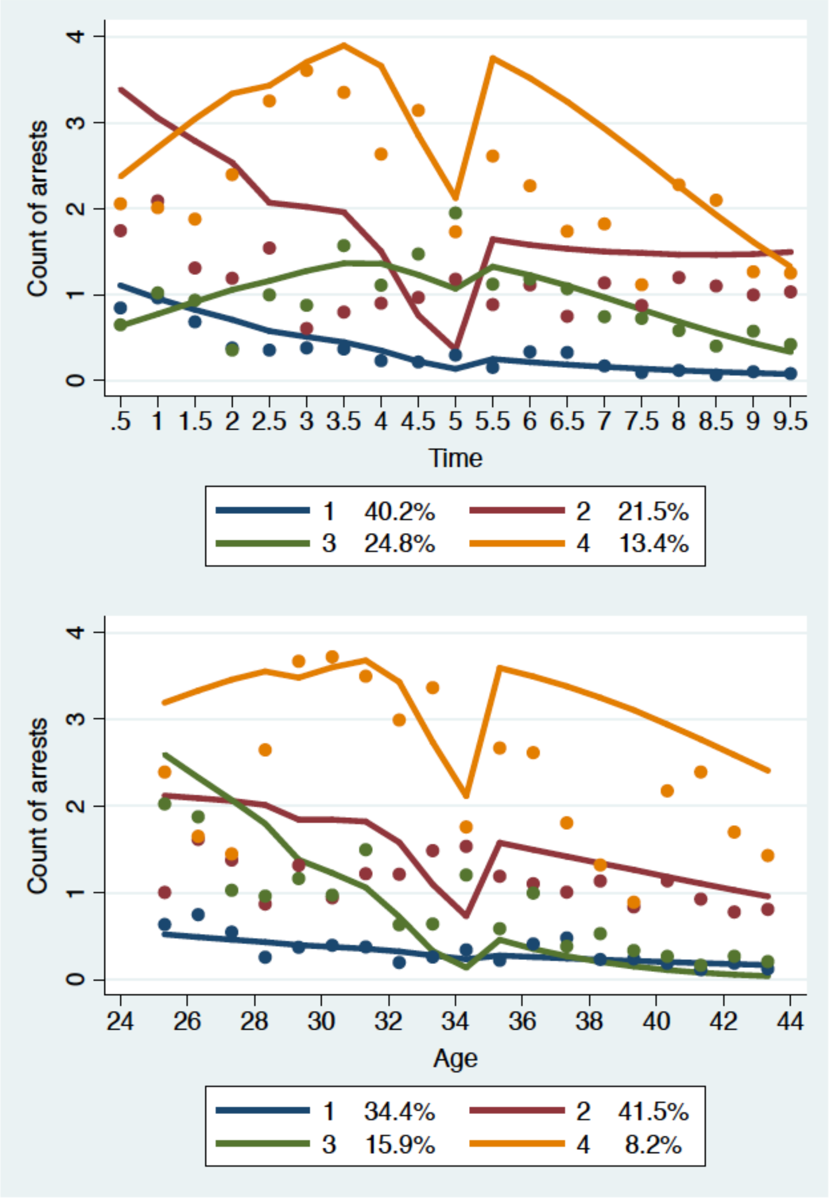
	wasn't using my relationship would be better because when you use the only person really important to you is you, using, everything is second if it's that close"
Change in preferences	"Change the way you like to have fun and you'll change your life. I don't go out to drink to have fun, I build on my house to have fun. My life changes"
Change in social networks	"I disassociated myself with people from the past, every once in a while I'll get a call and they'll be like you gotta call me some time, and I'll say yea I'll do that, but I don't because I know what it's gonna lead me back into"

I provide a correlation matrix of the identity processes and the reasons for desistance in Table 4 of the Appendix. The high correlation between identity and changed identity results from the fact that one could only change their identity if they had first formed a working identity as a criminal. There is a moderate, positive correlation between forming a possible hoped-for and feared self ($r = 0.44$), suggesting that when individuals mentioned forming one of the possible selves they were also likely to mention forming the other. Feared selves are also linked to the costs of offending ($r = 0.44$), which makes intuitive sense. A change in preferences was positively related to a change in working identity ($r = 0.39$), the envisioning of future selves (0.41 for hoped-for selves and 0.31 for feared selves), and the crystallization of discontent ($r = 0.35$). The two mechanisms hypothesized to maintain desistance, changes in social networks and preferences, had a moderate, positive correlation ($r = 0.50$). Paternoster & Bushway (2009) argue that individuals who decide to reform will actively change their preferences. Some support for this is provided by the moderate-strong positive correlation between agency and a change in preferences (*r* = 0.69), and the strong negative relationship between a desire to persist and changed preferences (*r* = -0.70).

In order to test whether certain elements of the identity theory of desistance are related to criminal desistance, controlling for race and aspects of criminal propensity, I conducted my own GBTMs (Nagin, 2005). Typically, GBTMs are modeled over age, allowing the researcher to track how individuals change in their offending as they grow older. However, GBTMs may also be modeled over time, allowing the researcher to examine heterogeneity in individual change from a certain date or event. For example, Piquero, Monahan, Glasheen, Shubert, and Mulvey (2013) used the Pathways dataset to compare results from group-based trajectories of self-reported offending over age and time, respectively. The authors found that the two methods generated trajectories of distinct function and form, such as providing different shapes and points of peak offending. Despite these differences, the two trajectory models showed a similar pattern of covariate association to trajectory group membership, suggesting that the different analyses provided substantively similar results. Since the current study utilizes a mixed-age sample and predicts offending trajectories starting in 1990 after their release from prison, logically it makes more sense to plot trajectories over time while controlling for age. Due to the possible differences described by Piquero et al. (2013), though, I conducted a GBTM based on age and compared it to the results from the time-based trajectory when appropriate.

First, I modeled trajectories of arrest from 1990 to 2008 over yearly time variables, while including time-varying covariates—days free from prison each year, age, and whether the individual was employed each year—and time stable covariates—race, arrests before 1990, age of first arrest, age of first imprisonment, and age of first drug use. I began with a five-group quadratic model, and then moved to a four-group model. Although the BIC suggested that the five-group model fit better, the criterion has a tendency to over fit models, and the AIC preferred the four-group model. By changing the first group to linear I concluded on a significant model (see Table 5 in Appendix). The posterior probabilities (PPs) of group membership were 0.97 for group 1, 0.95 for group 2, 0.92 for group 3, and 0.98 for group 4. This process replicated itself exactly (i.e., not by design) in the age-based model, where I concluded on a four-group model, with the first trajectory set as linear (see Table 6 in Appendix). The PPs were 0.93, 0.95, 0.85, and 0.99, respectively. Looking at Figure 1, the two GBTMs produced similar trajectory groups, with two groups showing a pattern of continued offending, and two groups displaying movement toward desistance.

Figure 1: Comparison of time- and age-based trajectory models.



Despite the similarity in groups, the moderate persistent group (group 2) comprises a much greater proportion of the sample in the age-based than the time-based model (41.5% to 21.5%, respectively). To better examine these differences, I conducted a cross-tabulation of the groups in each model (see Table 7). These results show that in the age-based model, group 2 (the moderate persisters) is composed of about an equal number of the group 2 and group 3 (higher-level desisters) members in the time-based model. Thus, around 43% of those considered persisters in the age-based model are considered desisters in the time-based model. Taking a deeper look by examining the number of moderate persisters arrested from 2006-2008, 75% were arrested once or less in 2006, 78% in 2007, and 82% in 2008 in the age-based model. In the time-based method, the numbers are 65%, 71%, and 71%, respectively. Thus, the moderate persistent group in the age-based model appears to include a larger proportion of individuals with one or zero arrests in the last three measurement years compared to the time-based model. In addition, 57% of the moderate persisters in the age-based model were sampled from the three desisting trajectory groups in Bachman et al. (unpublished manuscript), whereas the number is only 35% in the time-based model. These results suggest that the two methods classify individuals quite differently when not at the extremes, and that the time-based model might have provided a more accurate distinction between desisters and persisters in the middle range of the trajectory distribution.

Table 7. Relation between time-based and age-based trajectory solutions.

	Age-based trajectory (Group #)				
	Low desisting (1)	Moderate desisting (3)	Moderate persisting (2)	High persisting (4)	Total
Time-based trajectory (Group #)					
Low desisting (1)	43	13	2	0	58
Moderate desisting (3)	6	4	26	0	36

Moderate persisting (2)	1	4	25	1	31
High persisting (4)	0	2	7	10	19
Total	50	23	60	11	144

Moving to an examination of results from the time-based GBTM, several features stand out. Starting with the time-varying covariates, the effect of days free in the community was significant and positive for each group, suggesting that being out of prison at any given time is related to increased offending. Age was negative and significant in groups 1 through 3, suggesting a decrease in offending with age, but was actually positive in the high persistent group, implying greater offending with age ($p < 0.05$). Employment only appeared to exert an effect in the moderate declining group; this group committed less crime in the years its members were employed ($p = 0.06$). In the age-based model, days free was no longer significant in the low-level offending group, and employment was related to decreased offending only in the high persistent group.

Next, I examined the time-stable covariate effects in the time-based model. Compared to the low-level desisters, the moderate persisters were more likely to be black ($p < 0.05$), and trended toward having more arrests before 1990 ($p < 0.1$). The remaining two groups did not significantly differ from the low level desisters on any of the time-stable covariates included in the trajectory estimation. Similar to the time-based model, the moderate persistent group in the age-based model had more arrests before 1990 than the low desisting group did ($p = 0.05$), though race was no longer a significant predictor. The high persistent group also had significantly more arrests before 1990 compared to the low-level desisters. A Wald test showed that the difference between these groups was significant ($\chi^2(1) = 4.17$, $p < 0.05$), implying that the high persistent group incurred more arrests before 1990 than the moderate persistent group. None of the time-stable covariates distinguished the two desisting groups in the age-based model. After examining group differences in the time-stable and time-varying covariates, many of the early propensity measures were unable to predict group membership, and work was only predictive of two very different groups across the models. I now turn to a series of multinomial logistic regression analyses to test the identity theory of desistance (see Tables 8-11 in Appendix). In these analyses, I begin by comparing the two desisting groups to the moderate persisters, and then change the reference category to the high persistent group.

First, compared to the moderate persisters, the low-level desisters were more likely to describe hoped-for selves (log-odds = 1.54, OR = 4.66) and changing social networks (log-odds = 1.42, OR = 4.14). The moderate desisters also mentioned forming hoped-for selves more often than the moderate persisters (log odds = 1.93, OR = 6.89). The high persistent group trended toward realizing the costs of offending less often (log-odds = -1.40, OR = 0.25, $p = 0.08$), undergoing the crystallization of discontent more often (log-odds = 1.57, OR = 4.81, $p = 0.10$), and were less likely to describe a change in preferences (log-odds = -1.96, OR = 0.14, $p = 0.06$), compared to the moderate persisters. Next, I changed the reference group to the high persistent group. Surprisingly, the low-level desisters were much less likely to undergo the crystallization of discontent (log-odds = -2.44, OR= 0.09), but were more likely to describe changing their preferences (log-odds = 1.97, OR= 7.17). The moderate desisters were also less likely to describe undergoing the crystallization of discontent (log-odds = -2.25, OR = 0.11). Treatment group membership (KEY, CREST, or KEYCREST) did not significantly predict trajectory membership compared to the comparison treatment group.

Conducting the same analyses but with the age-based groups as the dependent variable I found somewhat similar results. Beginning with the moderate persistent group as the reference category, I found the low-level desisters were more likely to describe a change in social networks (log-odds = 1.43, OR = 4.18). This coefficient is almost identical to the comparison using the time-based model, though the effect of possible selves is no longer significant. Compared to the moderate persisters, the moderate desisters were less likely to experience both the KEY and CREST programs, and trended toward forming positive selves more often (log-odds = 1.17, OR = 3.22, $p < 0.08$). The two persistent groups did not differ on any of the predictors. Changing the reference group to the high persisters produced only two significant findings. First, the low-level desisters trended toward changing social networks more often (log-odds = 1.50, OR = 4.48, $p < 0.1$). Also, the moderate desisters formed prosocial possible selves much more often than the high persisters (log-odds = 2.23, OR = 9.30, $p < 0.05$).

The results from my multinomial logistic regression analyses revealed that regardless of whether trajectories are modeled over age or time, the two desisting trajectories are more likely to form prosocial possible selves and change their social networks compared to the moderate persisting group. The results differed when the high-persistent group was used as the reference category, though. Surprisingly, the two desisting groups were actually *less* likely to report experiencing a crystallization of discontent in the time-based model. This effect was not found in the age-based model. More revealing is what failed to distinguish group membership. All offenders were hypothesized to form a criminal identity, but against my predictions, neither a change in identity nor feared possible selves were significant predictors in any of the models, and the rational choice component did not stand out.[20] The other hypothesized predictors were inconsistently associated with desistance across the models, though the desisting groups appear to envision positive possible selves and change their social networks and preferences more often than the persisters. Possible reasons for these findings are discussed in the following section.

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[20] Importantly, due to my small sample size and a large number of predictors in my multinomial logistic regression models, it is possible that the lack of findings may have resulted from a lack of sufficient power to identify the effects (i.e., Type II error).

VIII. Discussion

The results of this study build on previous studies of desistance by applying quantitative methods to qualitative narratives using a large sample of ex-offenders with extensive involvement in drugs and alcohol. In reading and coding the narratives for the self-described reasons for desistance, I was able to take advantage of the depth of the qualitative data while also comparing the reasons provided across groups analytically. I was also able to examine the effect of employment on desistance both quantitatively, by using it as a time-varying covariate in a GBTM, and qualitatively, by counting how often it was described as a reason for leaving crime. Both analyses suggest that work was not very important to the desistance process, which may be due to the fact that the majority of individuals in the sample expressed little difficulty in obtaining employment over their lives. More important to these men were receiving formal treatment, finding religion, and the fear of prison. Interestingly, though a large proportion of the sample did not mention a change in routine activities, those who did were sampled solely from the desisting trajectory groups from the Bachman et al. (unpublished manuscript) analysis.

My findings regarding the identity theory of desistance were both similar to and distinct from those found by Bachman et al. (unpublished manuscript). Like Bachman and colleagues, I found that the processes described by Paternoster and Bushway (2009) were at work in this sample of serious offenders. In this sense, the current study replicated the finding that offenders undergo these experiences, using a different methodology and coder. Unlike the previous study, though, that reported that a majority of the desisters mentioned changing their identity, I found that only a third of the two desisting groups reported such an identity change, and that the likelihood of identity change did not distinguish the desisters from the persisters based on their trajectories of arrest over time. I also found that feared selves were mentioned much less than hoped-for selves, and unlike the latter, did not distinguish the two groups. My findings, therefore, suggest that even persisters experience many of the changes described in the identity theory of desistance. It appears that more may be required to leave crime and addiction than simply undergoing these identity processes.

Despite many similarities, the two desisting groups were more likely to describe envisioning hoped-for possible selves and changing their preferences and social networks compared to the two persistent groups. On the other hand, desisters and persisters do not seem to differ in how often they form criminal identities, change those identities, envision feared selves, and weigh the costs and benefits of their lifestyle. Somewhat surprising was the finding that chronic persisters actually explicitly linked the negative circumstances in their life together and attributed them to their offending and drug use more often than the desisting groups. It is possible that the individuals in this group had more serious problems in their lives, and were simply able to acknowledge them and attribute them to their source. It must take more than experiencing this moment of insight to motivate individuals to give up their damaging ways. It does not seem like a change in preferences or social networks is enough, though, as persisters were still more likely to experience the crystallization of discontent even after conditioning on a change in preferences and social networks.

Importantly, Paternoster and Bushway (2009) argue that it is not the experience of any one or two of these phenomenon that produce desistance, but the gradual interaction of this entire process. However, only 5 individuals in the sample experienced a change in identity, envisioned both possible selves, underwent the crystallization of discontent, and changed their preferences. In addition, only 1 of these individuals also experienced a change in social networks, and he was a moderate persister. In addition, interactions between a change in identity and a change in social preferences, and a change in identity and a change in preferences occurred slightly more often in the low-level desisters compared to the persisters, but not the moderate desisters. The results from all these analyses suggest that distinguishing persisters from desisters is difficult using elements from the identity theory of desistance, though it does appear that many individuals in this sample do undergo these experiences.

The differences in findings may have arisen for multiple reasons. First, Bachman et al. used a static definition of desistance when analyzing their narratives. Bushway, Thornberry, and Krohn (2003) define a static definition of desistance as people who enter a period of nonoffending (p. 140). The current study coded for the perceived reasons for desistance for the entire sample, keeping the dynamic or developmental measure of desistance—the individual arrest trajectories—as the outcome. Bushway et al. (2003) found that this trajectory method did a better job of describing offending patterns in their sample, and was more articulate about the nature of the desistance process in an analysis of the RYDS data. Second, by assigning numbers to the qualitative data, I was able to test whether different trajectory groups varied in their experience with elements of the identity theory of desistance, outside of chance.

Many unexpected surprises arose in the narratives that were not part of the coding scheme. First, the relationship between the offender and his mother retained importance well into adulthood. The role of mothers in the desistance process was unexpected, yet many men reported on the importance of taking care of their mothers in old age and promises to their aging mothers as reasons for their reformation. Others suffered deaths of their grandparents while behind bars, and did not want the same fate when it became their mothers' time. I could find very little work studying this relationship into adulthood, though Schroeder et al. (2010) found that strong bonds between adult children and their parents significantly increased the odds of stable criminal desistance, net adolescent parental bonds, using three waves of their OLS data. Though the relationship with the mother was pointed to most often, the continued support of fathers through periods of incarceration was also mentioned.

Though seldom provided as a reason for their movement to a state of desistance, many offenders reflected on the role of generativity in their ability to maintain a conventional life. Individuals in the sample often attempted to obtain employment as a counselor, or to find other ways to discuss their life stories with and edify at-risk youth. This often served as a source of therapy for them. The sample's description of their generativity closely resembles the exit process described by Brown (1991). Using his own experience as well as qualitative research on 35 counselors with a history of substance problems, Brown found that movement toward recovery involved a process of 1) emulating one's therapist, 2) becoming emotionally and morally committed to the counseling profession, 3) role/identity realignment, and 4) credentialization in the career. This process suggested that "professionalizing rather than abandoning a deviant identity facilitates exiting deviance" (1991; p. 219). These stages were described by many of the Delaware men.

The largest surprise from the narratives was how closely they resembled the findings of Shover (1985). This similarity may result from the use of similar samples; Shover's (1985) work examined black and white men aged 40 and older who offended for length in adulthood (though he focused on property offenders rather than substance-involved offenders). Like the Delaware sample, Shover's men reported that their criminal records largely did not affect their ability to gain employment. In addition, the men experienced orientational changes as they aged, believing that their earlier criminality had been unproductive, and forming new perspectives of their selves, a growing awareness of time, changes in aspirations and goals (i.e., preferences), and a growing sense of tiredness (1985). A large number of offenders in both samples reflected on their past identities, realizing that their behavior was of limited value in constructing their future selves. His offenders too increasingly recognized the exhaustibility of time and the growing fear of dying in prison. In addition to the fear of lengthier sentences, the offenders in both samples reported on the increased difficulty of serving time with age, often due to the "young boys" who were more dangerous and unpredictable than their generation was when in prison. Finally, many men in Shover's (1985) sample expressed a newly kindled interest in family members, which served as an important change in social networks for many of the Delawarean men.

Importantly, although competing theories were compared in this sample of male, substance-involved ex-prisoners from Delaware, it is possible that findings from this study might not be directly comparable to the findings of Laub and Sampson (2003) or Giordano et al. (2002), for example. Sampson and Laub examined the life of delinquent white males born in Boston during the Great Depression. Giordano and colleagues studied incarcerated males and female adolescents beginning in the 1980s. The Delaware sample were studied in the 1990s and were an average age of 30 six months after their release from prison (Martin et al., 1995), and 45 at the time of the retrospective interviews. Although the current study involves a similar retrospective window as Laub and Sampson (2003), and also only examines males, it is possible that period and cohort effects among other confounders may have produced differences in findings between the two studies. In addition, Giordano et al. (2002) report mostly on the females in their study, so differences between the two studies many also reflect sex differences in the desistance process (though see Uggen and Kruttschnitt (1998) and Veysey, Martinez, & Christian (2013)).

Another issue of generalizability arises due to the non-random selection process of the current sample. The original project design was quasi-experimental. Out of a sample of male volunteers, prisoners were selected for inclusion in The KEY if they did not have any open charges, were part of the general prison population, were eligible for parole within 12 to 18 months or release in 18 to 24 months, had a history of substance abuse or some indication of involvement in the drug subculture, and did not have a history of aggressive, nonconsensual sexual offenses or arson charges (Inciardi et al., 1992). This selection criteria led The KEY sample to differ from the general inmate population by being more likely to be older, black, have prior treatment experiences, and to have used multiple drugs in the past. Other groups in the sample include inmates approved for work release with a past history of chronic, heavy drug use who were randomly assigned to either CREST or regular work release with a recommendation for drug treatment (COMPARISON). These groups differ from The KEY sample by being more likely to be white, first incarcerated at an older age, less drug-involved before entering prison, and less likely to have had prior drug abuse treatment (Martin et al., 1999). The final group includes those who experienced both The KEY and CREST programs.

Behind all these groups is a selection process that incorporates past experience with illegal substances, making it possible that results from this analysis might not generalize to offenders without extensive experience with illegal substances and/or those who have not spent time in prison. In addition, the majority of the sample had some experience with therapeutic communities, and almost all with some form of formal treatment. Therapeutic communities resemble cognitive behavioral therapies in their focus on changing a person's attributes and identity. For example, in a semi-ethnographic study of three English PBTCs, Stevens (2012) found that the TC "socially enables, produces and reinforces the emergence of someone 'different'" (p. 540). It is likely, therefore, that identity process are more likely, or at least more identifiable as a reason for desistance in this sample compared to those not involving such intense therapeutic experiences.[21] Providing some support for this idea, 48% of the KEYCREST group and 50% of the KEY-only group described changing their identities, compared to 28% of the CREST-only group and 24% of the comparison group.

A final limitation is the absence of inter-rater reliability in coding the manuscripts. Ideally, two or more individuals would read the narratives, code for the reasons provided for desistance and presence of identity concepts, and compare their ratings. Despite that only one individual read these interviews, and no official measure of reliability was provided, advice was sought from colleagues and one of the identity theory's authors when coding decisions were questionable. Despite these limitations, this study used a larger sample than traditional qualitative analysis, and a measure of desistance that spanned almost 20 years. This follow-up period produced offending information stretching into middle adulthood, thus increasing the chances that those who desisted from crime were actually "out of the game," instead of temporary or intermittent desisters. In addition, as the identity theory of desistance is a general theory of crime, the processes should hold the same regardless of the extent to which individuals are involved with illicit substance use.

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[21] Though, as mentioned earlier, due to being an PBTC, The KEY focused more on behavioral change among its clients through prosocial modeling and cognitive restructuring and less on the emotions and cognitions that precede behavior compared to traditional TCs (Lockwood et al., 1997)

Appendices

Table 4. Correlation matrix

	Identity	Identity change	Hoped self	Feared self	Costs	Benefits
Identity	1.00					
Identity change	0.87	1.00				
Hoped self	0.19	0.26	1.00			
Feared self	0.15	0.16	0.44	1.00		
Costs	0.08	0.12	0.20	0.44	1.00	
Benefits	0.03	-0.03	-0.02	0.04	0.18	1.00
Cryst discont	-0.08	-0.01	0.33	0.23	0.18	-0.05
Preferences	0.23	0.39	0.41	0.31	0.27	-0.26
Social net	0.21	0.32	0.23	0.21	0.23	-0.01
Relationship	0.18	0.26	0.03	0.18	0.27	0.05
Parenthood	0.11	0.12	0.14	0.11	0.27	-0.06
Job	0.17	0.17	0.21	0.23	0.25	0.03
Age	0.05	0.09	0.22	0.30	0.28	0.05
Subjective age	0.08	0.10	0.20	0.19	0.10	0.00
Decisions	0.21	0.26	0.37	0.34	0.21	-0.01
Maturity	-0.08	-0.03	0.09	0.12	-0.02	-0.12
Routine acts	-0.09	-0.05	0.15	0.13	0.00	-0.05
Making good	-0.03	0.00	0.17	-0.02	0.00	0.00
Emotions	0.06	0.11	0.20	0.13	0.21	0.00
Spirituality	0.14	0.23	0.14	0.14	0.09	-0.13
Treatment	0.17	0.28	0.23	0.22	0.28	-0.05
Deterrence	0.11	0.23	0.32	0.37	0.45	-0.07
Willful persist	-0.07	-0.22	-0.34	-0.29	-0.34	0.33
Default desist	-0.03	-0.03	-0.19	-0.15	-0.12	-0.08
Willful desist	0.07	0.21	0.42	0.35	0.37	-0.23
	Cryst discont	Preferences	Social net	Relationship	Parenthood	Job
Cryst discont	1.00					
Preferences	0.35	1.00				
Social net	0.16	0.50	1.00			
Relationship	0.00	0.32	0.37	1.00		
Parenthood	0.00	0.21	-0.03	0.36	1.00	
Job	0.08	0.21	0.11	0.02	0.02	1.00
Age	0.20	0.29	0.16	0.27	0.23	0.21
Subjective age	0.16	0.11	-0.04	0.04	0.04	0.10
Decisions	0.08	0.36	0.15	0.07	0.11	0.15
Maturity	0.02	0.18	0.18	0.17	0.17	-0.13
Routine acts	0.15	0.17	0.12	-0.04	-0.10	0.05

Making good	0.07	0.19	0.10	0.14	0.07	-0.09	
Emotions	0.03	0.17	0.12	0.26	0.26	-0.03	
Spirituality	0.15	0.34	0.26	0.17	0.17	0.06	
Treatment	0.28	0.43	0.31	0.29	0.09	0.17	
Deterrence	0.20	0.45	0.21	0.18	0.29	0.37	
Willful persist	-0.27	-0.70	-0.38	-0.27	-0.27	-0.18	
Default desist	-0.17	-0.11	-0.07	-0.01	0.12	-0.04	
Willful desist	0.35	0.69	0.38	0.25	0.32	0.19	
	Age	Subjective age	Decisions	Maturity	Routine acts	Making good	
Age	1.00						
Subjective age	0.17	1.00					
Decisions	0.18	0.25	1.00				
Maturity	0.08	0.10	0.08	1.00			
Routine acts	0.10	0.31	0.11	0.05	1.00		
Making good	0.16	-0.04	-0.02	0.26	-0.08	1.00	
Emotions	0.22	0.13	0.11	-0.03	0.00	0.13	
Spirituality	0.06	0.01	0.04	0.00	-0.03	0.28	
Treatment	0.24	0.08	0.25	-0.03	0.02	0.21	
Deterrence	0.34	0.17	0.30	0.12	0.15	0.13	
Willful persist	-0.26	-0.07	-0.30	-0.19	-0.15	-0.13	
Default desist	-0.05	-0.05	-0.09	-0.12	-0.10	-0.08	
Willful desist	0.26	0.10	0.32	0.24	0.20	0.17	
	Emotions	Spirituality	Treatment	Deterrence	Willful persist	Default desist	Willful desist
Emotions	1.00						
Spirituality	0.14	1.00					
Treatment	0.17	0.37	1.00				
Deterrence	0.15	0.22	0.35	1.00			
Willful persist	-0.15	-0.33	-0.41	-0.44	1.00		
Default desist	-0.10	-0.11	-0.07	-0.14	-0.17	1.00	
Willful desist	0.20	0.36	0.41	0.48	-0.77	-0.49	1.00

Table 5. Time-based zero inflated Poisson trajectory model

Variable	Coefficient Estimate	T-score	*p*
Time-varying covariates			
Group 1			
Intercept	1.343	3.383	0.001
Exposure	0.002	4.890	0.000

Age	-0.043	-5.118	0.000
Work	0.275	1.165	0.244
Group 2			
Intercept	1.472	3.533	0.000
Exposure	0.005	13.053	0.000
Age	-0.042	-4.694	0.000
Work	0.166	0.724	0.469
Group 3			
Intercept	-0.102	-0.271	0.786
Exposure	0.001	2.112	0.035
Age	-0.019	-2.523	0.012
Work	-0.519	-1.877	0.061
Group 4			
Intercept	-0.721	-2.317	0.021
Exposure	0.002	5.497	0.000
Age	0.017	2.804	0.005
Work	-0.091	-0.410	0.682
Time stable covariates			
Group 1	-	-	-
Group 2			
White	-1.262	-2.150	0.032
Arrests before 1990	0.061	1.726	0.085
Age first arrested	-0.064	-1.554	0.120
Age first imprisoned	-0.019	-0.322	0.747
Age of first drug use	-0.144	-0.423	0.672
Group 3			
White	0.087	0.170	0.865
Arrests before 1990	0.001	0.038	0.969
Age first arrested	0.047	1.624	0.104
Age first imprisoned	-0.043	-1.030	0.303
Age of first drug use	-0.420	-1.440	0.150
Group 4			
White	0.812	1.392	0.164
Arrests before 1990	0.023	0.583	0.560
Age first arrested	0.053	1.626	0.104
Age first imprisoned	-0.059	-1.203	0.229
Age of first drug use	0.087	0.240	0.811

Table 6. Age-based zero inflated Poisson trajectory model

Variable	Coefficient Estimate	T-score	*p*
Time-varying Covariates			
Group 1			
Intercept	0.692	2.928	0.003
Exposure	0.001	1.483	0.138

Work	0.307	0.894	0.371
Group 2			
Intercept	-1.011	-2.313	0.021
Exposure	0.003	9.901	0.000
Work	-0.016	-0.089	0.929
Group 3			
Intercept	`-2.863	-1.760	0.079
Exposure	0.004	7.011	0.000
Work	-0.047	-0.109	0.914
Group 4			
Intercept	-2.813	-2.491	0.013
Exposure	0.002	4.559	0.000
Work	-0.768	-2.184	0.029
Time stable covariates			
Group 1	-	-	-
Group 2			
White	-0.020	-0.047	0.963
Arrests before 1990	0.072	1.949	0.051
Age first arrested	0.011	0.381	0.703
Age first imprisoned	-0.029	-0.700	0.484
Age of first drug use	0.010	0.035	0.972
Group 3			
White	0.434	0.621	0.535
Arrests before 1990	0.066	1.195	0.232
Age first arrested	-0.046	-0.721	0.471
Age first imprisoned	0.050	0.718	0.473
Age of first drug use	-0.419	-1.079	0.281
Group 4			
White	0.569	0.712	0.477
Arrests before 1990	0.177	3.064	0.002
Age first arrested	0.046	1.092	0.275
Age first imprisoned	0.045	0.648	0.517
Age of first drug use	0.706	1.241	0.215

Table 8. Time based multinomial logistic regression with moderate persisters as reference.

Variable	Coefficient estimate	z-Score	*p*
Group 1			
Key	-0.092	-0.09	0.929
Crest	-0.916	-1.43	0.152
Key-Crest	-0.483	-0.62	0.539
Working identity	-1.712	-1.40	0.160
Changed identity	1.232	0.94	0.349
Hoped-for self	1.542	2.28	0.022
Feared self	-0.192	-0.32	0.750

Rational costs	-0.555	-0.87	0.383
Rational benefits	0.041	0.07	0.943
Crystal of discont	-0.876	-1.29	0.198
Preference change	0.014	0.02	0.984
Social change	1.419	2.47	0.014
Constant	0.922	1.24	0.213
Group 2	-	-	-
Group 3			
Key	0.271	0.23	0.815
Crest	-0.397	-0.56	0.577
Key-Crest	0.537	0.64	0.522
Working identity	-1.983	-1.56	0.120
Changed identity	0.714	0.51	0.610
Hoped-for self	1.930	2.60	0.009
Feared self	-0.414	-0.62	0.534
Rational costs	-0.362	-0.53	0.596
Rational benefits	0.082	0.13	0.893
Crystal of discont	-0.680	-0.90	0.367
Preference change	-0.374	-0.50	0.618
Social change	0.444	0.71	0.478
Constant	0.696	0.89	0.372
Group 4			
Key	-11.924	-0.02	0.983
Crest	0.545	0.63	0.528
Key-Crest	-0.137	-0.12	0.907
Working identity	0.110	0.11	0.912
Changed identity	0.031	0.03	0.979
Hoped-for self	0.700	0.79	0.427
Feared self	-0.169	-0.20	0.840
Rational costs	-1.403	-1.73	0.083
Rational benefits	-0.812	-1.05	0.295
Crystal of discont	1.566	1.62	0.104
Preference change	-1.957	-1.90	0.058
Social change	0.805	1.04	0.298
Constant	0.418	0.47	0.642

Table 9. Time based multinomial logistic regression with high persisters as reference.

Variable	Coefficient Estimate	z-Score	*p*
Group 1			
Key	11.832	0.02	0.983
Crest	-1.461	-1.82	0.069
Key-Crest	-0.346	-0.32	0.752
Working identity	-1.821	-1.38	0.169
Changed identity	1.200	0.82	0.410
Hoped-for self	0.842	1.05	0.294

Feared self	-0.024	-0.03	0.976
Rational costs	0.848	1.11	0.266
Rational benefits	0.853	1.12	0.262
Crystal of discont	-2.442	-2.64	0.008
Preference change	1.971	1.99	0.047
Social change	0.614	0.83	0.405
Constant	0.504	0.64	0.524
Group 2			
Key	11.924	0.02	0.983
Crest	-0.545	-0.63	0.528
Key-Crest	0.137	0.12	0.907
Working identity	-0.110	-0.11	0.912
Changed identity	-0.031	-0.03	0.979
Hoped-for self	-0.700	-0.79	0.427
Feared self	0.169	0.20	0.840
Rational costs	1.403	1.73	0.083
Rational benefits	0.812	1.05	0.295
Crystal of discont	-1.566	-1.62	0.104
Preference change	1.957	1.90	0.058
Social change	-0.805	-1.04	0.298
Constant	-0.418	-0.47	0.642
Group 3			
Key	12.195	0.02	0.983
Crest	-0.942	-1.11	0.268
Key-Crest	0.674	0.60	0.548
Working identity	-2.093	-1.54	0.123
Changed identity	0.683	0.45	0.653
Hoped-for self	1.230	1.44	0.150
Feared self	-0.244	-0.29	0.773
Rational costs	1.041	1.30	0.194
Rational benefits	0.894	1.15	0.251
Crystal of discont	-2.245	-2.28	0.023
Preference change	1.583	1.56	0.119
Social change	-0.360	-0.46	0.643
Constant	0.278	0.34	0.734
Group 4	-	-	-

Table 10. Age based multinomial logistic regression with moderate persisters as reference.

Variable	Coefficient Estimate	z-Score	*p*
Group 1			
Key	-0.591	-0.70	0.485
Crest	-0.065	-0.12	0.907
Key-Crest	-0.373	-0.59	0.557
Working identity	-0.440	-0.45	0.651
Changed identity	0.453	0.42	0.674

Hoped-for self	0.446	0.83	0.407
Feared self	-0.665	-1.24	0.216
Rational costs	0.198	0.37	0.713
Rational benefits	0.746	1.55	0.121
Crystal of discont	-0.797	-1.31	0.189
Preference change	0.336	0.53	0.599
Social change	1.425	2.81	0.001
Constant	-1.062	-1.68	0.094
Group 2	-	-	-
Group 3			
Key	-0.513	-0.46	0.644
Crest	-0.315	-0.50	0.619
Key-Crest	-2.566	-2.13	0.033
Working identity	1.592	1.44	0.149
Changed identity	-1.233	-1.02	0.310
Hoped-for self	1.175	1.76	0.079
Feared self	-0.963	-1.37	0.172
Rational costs	-0.593	-0.91	0.365
Rational benefits	-0.654	-0.91	0.365
Crystal of discont	0.349	0.51	0.607
Preference change	1.260	1.40	0.162
Social change	0.562	0.90	0.368
Constant	-1.510	-1.85	0.064
Group 4			
Key	-14.556	-0.01	0.991
Crest	0.350	0.44	0.661
Key-Crest	-14.692	-0.02	0.984
Working identity	-14.875	-0.01	0.991
Changed identity	15.426	0.01	0.991
Hoped-for self	-1.052	-0.99	0.320
Feared self	-0.223	-0.22	0.824
Rational costs	-0.851	-0.90	0.370
Rational benefits	0.377	0.42	0.677
Crystal of discont	0.772	0.77	0.440
Preference change	0.162	0.17	0.868
Social change	-0.074	-0.08	0.933
Constant	-1.093	-1.35	0.178

Table 11. Age based multinomial logistic regression with high persisters as reference.

Variable	Coefficient Estimate	z-Score	*p*
Group 1			
Key	13.964	0.01	0.991
Crest	-0.415	-0.49	0.621
Key-Crest	14.319	0.02	0.985
Working identity	14.434	0.01	0.991

Changed identity	-14.972	-0.01	0.991
Hoped-for self	1.499	1.39	0.165
Feared self	-0.442	-0.43	0.666
Rational costs	1.049	1.08	0.278
Rational benefits	0.369	0.40	0.688
Crystal of discont	-1.568	-1.51	0.131
Preference change	0.174	0.17	0.865
Social change	1.499	1.68	0.093
Constant	0.031	0.03	0.973
Group 2			
Key	14.556	0.01	0.991
Crest	-0.351	-0.44	0.661
Key-Crest	14.692	0.02	0.984
Working identity	14.875	0.01	0.991
Changed identity	-15.426	-0.01	0.991
Hoped-for self	1.052	0.99	0.320
Feared self	0.223	0.22	0.824
Rational costs	0.851	0.90	0.370
Rational benefits	-0.377	-0.42	0.677
Crystal of discont	-0.772	-0.77	0.440
Preference change	-0.162	-0.17	0.868
Social change	0.074	0.08	0.933
Constant	1.093	1.35	0.178
Group 3			
Key	14.042	0.01	0.991
Crest	-0.666	-0.75	0.453
Key-Crest	12.126	0.02	0.987
Working identity	16.467	0.01	0.990
Changed identity	-16.659	-0.01	0.990
Hoped-for self	2.227	1.99	0.047
Feared self	-0.740	-0.67	0.500
Rational costs	0.258	0.25	0.800
Rational benefits	-1.031	-0.97	0.332
Crystal of discont	-0.423	-0.40	0.689
Preference change	1.098	0.94	0.350
Social change	0.636	0.68	0.499
Constant	-0.417	-0.41	0.683
Group 4	-	-	-

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