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## The Prediction of Violent Recidivism Amongst Individuals with Mental Disorders: Situational vs. Dispositional Factors

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## ABSTRACT

### THE PREDICTION OF VIOLENT RECIDIVISM AMONGST INDIVIDUALS WITH MENTAL DISORDERS: SITUATIONAL VS. DISPOSITIONAL FACTORS

By

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August 2016

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The objective of this study is to evaluate why some individuals with mental illness are more inclined to violently recidivate. There appears to be two perspectives that may explain recidivism: one that emphasizes situational factors and one that emphasizes dispositional factors. Situational factors are those that are constantly changing within one's life, whereas dispositional factors are those that remain relatively stable over time. Therefore, dispositional factors would theoretically put individuals with mental illness at stable risk for recidivism because these factors remain relatively stable over time. In fact, perhaps individuals with mental illness repeatedly engage in violence because they have a dispositional trait (like low self-control, for example) that puts them at stable risk for recidivism. Conversely, situational factors would theoretically explain why individuals do not engage in recidivism because they are transient and constantly changing. Therefore, perhaps one desists from violence because some situational factor changed in that individual's life. Using data from the MacArthur Violence Risk Assessment study (i.e. MacRisk), a longitudinal study of people with serious mental illness, violent recidivism will be evaluated across waves. Specifically, the objective is to determine if situational or dispositional factors influence violent recidivism.

THE PREDICTION OF VIOLENT RECIDIVISM AMONGST INDIVIDUALS WITH  
MENTAL DISORDERS: SITUATIONAL VS. DISPOSITIONAL FACTORS

By

Michelle Nicole Harris

A Thesis Submitted in Partial Fulfillment  
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## ACCEPTANCE

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

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## DEDICATION

There are a number of people who have constantly supported me throughout my life and my journey in my educational pursuits that I will forever be grateful for. I would like to thank my family for consistently pushing me to find my passion and to follow those dreams no matter what that entails. I will always be grateful for the lesson that there is more to life than money, and helping others is one way to find fulfillment within one's life. For this reason, I would like to dedicate this thesis to individuals who may not be able to voice the injustices occurring to them, and it is my goal to better the lives of others through research. Lastly, I would like to thank my grandmother, Mara Sue Wrinkle. Her guidance, support, and wisdom have consistently pushed me to be a better person and follow my dreams.

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## **CHAPTER 1.**

### **INTRODUCTION**

Over the past several decades, researchers and clinicians have tried to identify risk factors that may increase the likelihood of recidivism (Gendreau et al., 1996; Harris et al., 1993; Hemphill et al., 1998). In the mental health arena, studies have consistently showed that individuals with mental illness, who have a criminal history, present a greater risk for recidivism (Bonta et al., 1998; Gendreau et al., 1996; Harris et al., 1993; Monahan & Steadman, 1996; Skeem et al., 2011). For example, in Harris and colleagues' (1993) study, the authors found that out of 618 individuals with mental illness, 191 (31%) were violent recidivists (p. 323). Despite these findings, little is known about the processes and factors that influence an individual with mental illness to recidivate. For this reason, the purpose of the current study is to examine what may cause an individual with mental illness to recidivate.

In much of the literature, there has been increased interest in identifying valid predictors aimed to better assess the likelihood that a post-released offender will violently reoffend (Glover et al., 2002). This matters because recidivism research has important practical implications for policies. That is, the design of effective offender treatment programs is highly dependent on knowledge of the predictors of recidivism (Gendreau et al., 1994). Since treatment programs are designed based on predictors of recidivism, practitioners should be able to reduce the amount of recidivism; yet Lovell and colleagues (2014) emphasize that community agencies and practitioners often, "assess mentally ill offenders' risk of violence inaccurately" (p. 1291). This matters because practitioners and community agencies would benefit from research that helps to explain why the violent behavior of some of these individuals is limited to a single occasion, while others engage in repeated acts of violence. Therefore, recidivism research concerning

individuals with mental illness is needed to accurately assess the factors that contribute to the likelihood of recidivism.

There is a sizable proportion of individuals with mental illnesses in prisons and correction populations, today (Lurigio, 2011; Messina et al., 2004; Skeem et al., 2009; Skeem et al., 2011). Indeed, the United States has the highest documented incarceration rate in the world (Lurigio, 2011), and the corrections population is now over 7.2 million (Skeem et al., 2009). When compared to their relatively healthy counterparts, offenders with mental illness who are in the correctional system are significantly more likely to “fail” their community term (Messina et al., 2004; Skeem et al., 2009; Skeem et al., 2011). This is a matter of importance because if individuals with mental illnesses are less likely to successfully reintegrate into society, recidivism will remain stagnant for this population. Due to this, there have been several calls for recidivism research to analyze why some offenders with mental illness remain in the criminal justice system (see Morrissey et al., 2007; Silver, 2006; Skeem et al., 2009; Skeem et al., 2011).

The question scholars have not attempted to answer, to my knowledge, is why do some individuals with mental illness engage in violent recidivism? In the mental health literature, there is a gap regarding violent recidivism amongst offenders with mental illness (Silver, 2006; Skeem et al., 2009; Skeem et al., 2011). I argue that there are two perspectives that could account for variation in recidivism. The first perspective, which emphasizes the role of situational factors, may help to explain why violent offenders do not engage in recidivism. On the other hand, the second perspective, which emphasizes the role of dispositional factors, may help to explain why some offenders with mental illness have a propensity for repeated violence.

Situational factors may play a vital role in the likelihood of violence occurring for offenders with mental illness. Specifically, if violence is rooted in situational factors, one would

suspect that offenders with mental illness would only engage in violence once, if at all, because these factors are transient and constantly changing over time. In other words, perhaps some offenders with mental illness do not recidivate because some situational factor changed, which ultimately caused them to desist. Theoretical models that could explain these situational factors that occur over time for offenders would be Sampson and Laub's (1993) life course perspective on criminal offending, Horney and colleagues' (1995) local life circumstances perspective, Pearlin and colleagues' (1989) sociological study of stress, Agnew's (1992) general strain theory, and Link and Stueve's (1994) threat/control override symptoms.

The other perspective, dispositional factors, could explain why some offenders are stably at risk for repeated violence. Particularly, personality characteristics such as low self-control may put an offender with mental illness stably at risk for violence because these traits stay relatively stable over time. Under this assumption, one would suspect that dispositional factors would influence recidivism more than situational factors since these traits are constant. Specifically, since research shows that dispositional traits are relatively stable across an individual's life span, these dispositional traits may be the key to predicting a relatively stable behavioral pattern, such as violent recidivism. In other words, if violence is rooted in dispositional factors, one would suspect that individuals with mental illness would repeatedly engage in violence, because these factors are somewhat constant across one's life span. Theoretical models that could tap into dispositional factors include Gottfredson and Hirschi's (1990) general theory of crime, the five-factor model of personality, and psychopathy (Allport & Olbert, 1936; Cattell et al., 1970; Douglas et al., 1999; Fiske, 1949; Goldberg, 1981; Monahan et al., 2001; Skeem & Mulvey, 2001; Tupes & Christal, 1961).

Of course, there is the possibility that situational factors occur in response to dispositional factors. Indeed, situational and dispositional factors can influence one another, meaning that there is, “reciprocal interaction between personal traits and environmental reactions” (Moffitt, 1993, p. 684; also see Caspi et al., 1987). For example, in Moffitt’s (1993) theory of life-course persistent offenders, these individuals are said to experience antisocial behavior throughout the entire life course, with situational factors altering opportunities. That is to say that life-course persistent offenders’ stable dispositional traits (i.e., antisocial behavior) might influence the probability of engaging in deviant or violent behavior, depending on the situation. Thus, Moffitt (1993) argues that the life course persistent offenders select into situations that induce criminal offending due to their dispositional trait of antisocial behavior.

The same could be true for individuals with mental illness. That is to say, that perhaps individuals with mental illness select into or are selected into situations (such as, lacking employment, education, marriage, pro-social relationships) that influence violent behavior and ultimately recidivism due to a dispositional factor (like low self-control). In other words, in this example, individuals with mental illness lack the self-control to maintain stable employment, obtain education, and foster conventional relationships (i.e., situational factors), which would prevent such individuals from engaging in violent recidivism. In sum, there is not necessarily a rigid dichotomy of either situational or dispositional factors influencing recidivism. In fact, it is possible that dispositional factors may interrelate with situational factors for individuals with mental illness, and this process is what affects recidivism.

## CHAPTER 2.

### LITERATURE REVIEW

#### Situational Factors

Situational factors are those that are involved in day-to-day lives of individuals. Specifically, situational factors are constantly changing, just like an individual's life is full of change. These changes in ones life can lead to fluctuations in perspectives, situations, beliefs, attachments, and involvement (Hirschi, 1969). Individuals with mental illness often have somewhat chaotic, unpredictable lives and often suffer from diverse life stress (Link et al., 2015; Silver & Teasdale, 2005; Silver, 2006; Steadman & Ribner, 1982; Teplin et al., 2005). In fact, the structure of disordered individuals' lives contributes to increased chances of encountering chronic strains (Pearlin et al., 1989). These repeated stressors may lead individuals with mental illness to cope with these strains through violence (Steadman & Ribner, 1982). Thus, situational factors are important to examine to see if these factors have more (or less) influence on why some individuals with mental illness recidivate, compared with dispositional factors.

#### *A Life Course Perspective on Criminal Offending*

Sampson and Laub (1993) argue that the paths to both crime and conformity are altered by key institutions of social control (e.g., employment, marriage, etc.). Specifically, the authors emphasize that criminal offending should decrease as the social ties to key institutions increase. Thus, the entity of marriage itself may not increase social control, but close emotional ties increase the social bond between individuals and should lead to a reduction in criminal behavior. Metaphorically, the web of connections and bonds to social entities ensure that such entities operate as constraints and opportunities in shaping behavior (Sampson & Laub, 1993).

In order to understand Sampson and Laub's (1993) life course perspective on criminal offending, it is important to review Hirschi's (1969) social bond theory. Social bond theory emphasizes that most individuals refrain from deviant behavior due to their bond to society (Hirschi, 1969). Hirschi (1969) conceptualized social bond theory based on the premise of four main elements: attachment of the individual to others, commitment to conventional lines of action, involvement in conventional activities, and belief in legitimate order (Hirschi, 1969). Thus, deviance and crime are more likely when an individual's bond to society is weak or broken (Hirschi, 1969).

The first element of social bond theory, attachment, refers to the idea that the ties an individual has to other significant people (i.e. family, spouse, peers) influence behavior (Hirschi, 1969). Thus, attachment involves the degree to which individuals emotionally identify with others and therefore will care about these individuals' expectations or perceptions of their behavior. According to social bond theory, individuals who have strong attachments to others are less likely to commit deviant behavior. This is a key concept in Sampson and Laub's (1993) life course perspective because individuals who develop strong emotional ties to people (e.g., marriage), or those who can emotionally identify with others, are likely to care about the opinions and expectations of these individuals and will likely desist or refrain from engaging in violence and will therefore not recidivate.

The second element of social bond theory, commitment, refers to the idea that investments of time, resources, and energy in conventional activities, like school, employment, or hobbies within the community, will persuade individuals not to jeopardize these investments by becoming involved in deviant activities (Hirschi, 1969). Therefore, social bond theory suggests that individuals with strong commitments will not want to risk engaging in violence

because of their ties to conventional activities. Extending Sampson and Laub's (1993) hypothesis regarding involvement in key institutions, i.e. conventional activities, perhaps individuals with mental illnesses are less likely to have the willingness to recidivate because their stake in conformity is higher. That is, individuals with mental illness vary in the extent to which they have commitments to conventional lines of actions or stakes in conformity that restrain them from deviance.

The third component of social bond theory, involvement, refers to the amount of time an individual devotes to engaging in conventional activities (Hirschi, 1969). According to social bond theory, individuals who devote their time to conventional pursuits will not have time to participate in deviant activities. Therefore, Sampson and Laub (1993) emphasize that if individuals are involved in some conventional activity, such as employment, education, or a community hobby, these individuals will theoretically not have the time or opportunity to engage in recidivism.

The last element of social bond theory, belief, denotes the degree to which an individual values and accepts the conventional value system (Hirschi, 1969). Stated another way, the belief component includes a general acceptance of the rules of society as binding. Therefore, according to social bond theory, the more an individual believes in the system, the less likely they are to recidivate. For individuals with mental illness, this could be particularly salient because this population is treated differently within the system (Engel & Silver, 2001; Fisher et al., 2006; Lurigio, 2011) than others, and could lead to feelings of distrust in the system. If this is the case, one would expect individuals to recidivate due to the lack of belief that social bond theory posits as an important preventative mechanism.

Social bond theory may explain why some offenders do not engage in recidivism. In particular, if an individual with mental illness gains or maintains meaningful bonds to other individuals, has strong bonds to the community, or has belief in society, that individual is likely to desist from, or not engage at all, in crime. Conversely, if an individual with mental illness has weak bonds to individuals and the community, crime is likely to occur. Sampson and Laub (1993) adopt Hirschi's (1969) understanding of the importance of social bonds by extending this perspective to incorporate turning points and how those can influence an individual's behavior.

Sampson and Laub (1993) emphasized turning points, or changes in the life course, as a major concept in their framework. Turning points are those that significantly impact the individual's life and alter the trajectory of an individual's life course (Sampson & Laub, 1993). Thus, getting married or divorced, gaining or losing employment, entering or leaving the military, all serve as turning points in an individual's life (Sampson & Laub, 1993). Therefore, adaptation to life events and major changes in the life course, like getting married, can modify the trajectory and radically redirect the paths these individuals were once on (Sampson & Laub, 1993). These turning points can predict criminal offending because if a tie to a key institution is severed, the individual no longer has a reason to resist criminal temptations (Sampson & Laub, 1993).

If individuals with mental illness are on a trajectory that stably connects these individuals to key institutions, violent recidivism is unlikely to occur. Assuming that situational factors are transient, one would expect offenders with mental illness to experience a key turning point that would redirect their trajectory, thus resulting in single-time violent occurrences. Conversely, if individuals with mental illness are on a trajectory that stably disconnects these individuals from key institutions, then violent crime is likely to reoccur. Individuals with mental disorders are

likely to be unemployed, have fewer years of formal education, and are less likely to be married (Draine et al., 2002). Thus, these individuals' trajectories often involve being stably disconnected from the key institutions that Sampson and Laub (1993) identify as significantly related to changes in adult crime. In this case, one would expect violent recidivism to occur because these individuals are stably disconnected from key institutions.

This theoretical framework has important implications for offenders with mental illness because it emphasizes the key role turning points play in an individual's life. Individuals with mental illness are often disconnected from key institutions that provide meaningful connections to others and the social control to refrain from engaging in criminal acts (see Draine et al., 2002). Thus, if an individual's trajectory changes due to a turning point (i.e. situational factor changes), then this is likely to influence the outcome of violent crime. Specifically, if individuals with mental illness experience meaningful turning points, such as engaging in some conventional activity (i.e. employment, education, marriage), violent recidivism is unlikely to occur.

#### *Local Life Circumstances and Recidivism*

Horney and colleagues (1995) examined why individuals engage in criminal offending at a particular time by exploring local life circumstances as factors of change in criminal behavior. This perspective provides a short-term evaluation of changes in an individual's life that lead to criminal activity. Thus, Horney and colleagues (1995) build upon Sampson and Laub's (1993) long-term perspective of life events that could alter an individual's trajectory by honing in on how temporally "local" life circumstances can alter the likelihood of offending at particular times.

Local life circumstances are events in an individual's life that induce short-term changes. Specifically, Horney and colleagues (1995) emphasize that employment, marriage, and education

are found to alter the individual's life, which ultimately influences criminal offending. The authors emphasize that when an individual is married, their perceptions of the consequences of crime may change (Horney et al., 1995). Specifically, these individuals may weigh the cost of losing an important bond to their spouse or other individuals more heavily than before the change in their local life circumstance (Horney et al., 1995).

Horney and colleagues (1995) stress that criminal activity is likely to result if an individual is not involved in key institutions that structure daily activity. Indeed, during times that an individual is unemployed, unmarried, or homeless, criminal activity is likely to result, due to the lack of social controls these entities provide (Horney et al., 1995). Thus, shifting social environments and change are significantly related to criminal activity (Horney et al., 1995).

In regards to offenders with mental illness, if an individual is involved in a key institution, such as marriage or employment, that person is likely to refrain from engaging in criminal activity due to the risk of breaking an important bond to that entity. Furthermore, these local life circumstances provide a connection to others and may contribute to a change in perception about the consequences of crime. Therefore, in these instances of change and shifting social environments, one would expect violent recidivism not to occur. On the other hand, if an offender with mental illness is not engaged in a key institution, such as employment or marriage, violent crime is likely to reoccur.

It is important to note that the lives of individuals with mental illness are somewhat chaotic, unpredictable, and many may suffer from frequent life stress (Link et al., 2015; Silver & Teasdale, 2005; Silver, 2006; Steadman & Ribner, 1982; Teplin et al., 2005). Furthermore, individuals with mental illness have many chronic strains that result from these individuals' life experiences (Pearlin et al., 1989). Indeed, repeated stressors may occur due to the chaotic

lifestyle individuals with mental illness have. One possible way individuals with mental illness cope with these chronic strains is through violence (Steadman & Ribner, 1982). Thus, it becomes particularly salient if some local life circumstance changes and shifts the daily stressors an individual with mental illness encounters; in other words, perhaps the chaos that surrounds their daily life may subside. If this is the case, one could assume that violence would diminish, ultimately leading to a reduced chance of recidivism.

In sum, local life circumstances that ultimately change the individual's life, can explain why some offenders refrain from recidivating. Specifically, if an individual with mental illness is involved in key entities such as employment or marriage, these individuals are likely to abstain from crime. On the contrary, if individuals with mental illness are not connected to key institutions, they have less to lose and do not share an intense connection with other individuals (Horney et al., 1995) and may therefore reoffend.

### *Life Stress and Recidivism*

Pearlin and colleagues (1989) state that interrelated levels of social structure (i.e. social stratification, social institutions, interpersonal relationships) mold the experience an individual undergoes. Such experiences, in turn, may produce stress (Pearlin et al., 1989). Stressors are defined as, "the experiential circumstances that give rise to stress" (Pearlin et al., 1989, p. 243). Pearlin and colleagues (1989) state that there are primary and secondary stressors. Primary stressors are those that are likely to occur first in an individual's experience (Pearlin et al., 1989). Examples of primary stressors could be any undesired event such as, loss of employment, loss of loved ones, or repeated stressors of marital problems or occupational issues (Pearlin et al., 1989). Secondary stressors are a result of primary stressors. For example, if an individual loses their job, the loss of income would constitute as a secondary stressor.

Stressors that are embedded in social and economic circumstances surrounding an individual's life can result in chronic strains (Pearlin et al., 1989). For example, those who reside in neighborhoods that are economically distressed are more likely to experience daily chronic strains that result from poverty (Hiday, 1997; Pearlin et al., 1989). Furthermore, having a serious chronic illness, among other strains, directly and indirectly influences an individual's ability to integrate into roles and associations with other individuals (Pearlin et al., 1989). This has important implications for individuals with mental illness because these individuals often reside in economically distressed neighborhoods, resulting in an array of social problems (Draine et al., 2002; Fisher et al., 2006; Hiday, 1997; Silver et al., 2002). Since Pearlin et al. (1989) established that social and economic circumstances can result in chronic strains, one may assume that individuals with mental illness that reside in these neighborhoods are experiencing repeated stressful life events or strains. Therefore, one of the possible ways that individuals with mental illness cope with these repeated stressful life events is through violence. If this is the case, one could assume that once these strains are alleviated, recidivism is unlikely to occur.

Furthermore, individuals with mental illness may suffer from assaults on their identity more often than their non-disordered counterparts. As Pearlin and colleagues (2005) explain, socially ascribed statuses are acquired at birth and persist through much of the life course. These statuses can lead to discriminatory experiences (Pearlin et al., 2005). A stigma has been attached to mental illness and thus might have impacted the individual's own perception about their identity (see Arboleda-Florez et al., 1998; Clark et al., 1999, Fisher et al., 2006; Link et al., 1999). In today's culture, emphasis is placed on achievement, and this can prompt undesirable social evaluations that are internalized to form a negative self-evaluation (Pearlin et al., 2005). This diminished self-concept that individuals with mental illness may experience puts them at

risk to experience severe stressors, which may have a substantial impact on the individual. If this is the case, the individual will seek out a way to cope with such feelings of animosity by perhaps turning to violence. These stressors, in turn, may affect recidivism outcomes. Specifically, if an individual with mental illness overcomes such feelings of animosity and identifies with meaningful pro-social self-concepts, they are likely not to recidivate.

In addition, individuals with mental illness may face more discriminatory experiences than their non-disordered counterparts. Pearlin et al. (2005) explain that discriminatory experiences may be encountered in multiple contexts such as education, jobs, the criminal justice system, housing, and in medical care. Indeed, research has shown that individuals with mental illness are disproportionately homeless, lack formal education, and lack employment (Draine et al., 2002). In addition, individuals with mental illnesses are policed differently (Teplin, 1984; Teplin, 2000) and are subjected to more discrimination, which ultimately can lead to social isolation and damaging effects on the individual's well-being (Pearlin et al., 2005). This discrimination against individuals with mental illness may lead to violent responses; however, if an individual escapes from these discriminatory experiences (that are situational), recidivism is unlikely to occur.

#### *General Strain Theory*

In his theory, general strain theory, Agnew (1992) argues that individuals who are stressed are more likely to experience negative affective states such as anger, frustration, and fear. Specifically, Agnew (1992) focuses on failure to achieve goals, removal of positive stimuli, and presentation of negative stimuli, which leads to negative affective states. These affective states, in turn, create internal pressures that will consequently lead to "corrective actions" (Agnew, 1992, p. 49). Violent behavior is likely to occur when violence is seen an alternative

means to goal achievement, or a form of alleviating internal pressures caused by negative affective states (Agnew, 1992).

Agnew (1992) states that, “the larger social environment may affect the individual’s sensitivity to particular strains by influencing the individual’s beliefs regarding what is and is not adverse” (p. 72). Thus, the social and economic environment within which one resides may influence negative affective states that create internal pressure, consequently leading to violent behavior. Although this statement has been challenged by other researchers (Farnworth & Leiber, 1989), the goal blockage experienced by lower class individuals trying to achieve monetary success or middle class status has been theorized to be a source of strain (Agnew, 1992).

It can be argued that individuals who suffer from mental illness are often members of lower socioeconomic status (Draine et al., 2002; Fisher et al., 2006; Hiday, 1997; Silver et al., 2002). Fisher and colleagues (2006) emphasize that unemployment or under-employment for individuals with severe mental illness is as high as 80%. Furthermore, Silver and colleagues (2002) stress that individuals with mental disorders experience a downward drift that leads them to poorer socio-economic circumstances, a problem that has persisted for over 70 years. Lastly, Hiday (1997) emphasizes that tense situations that lead to violence can be produced by stressful events such as losing a job, divorce, or death of a family member. Hiday (1997) further suggests that these situations are more likely to occur in conditions of poverty, an indirect cause of violence through stressful life events. Therefore, it may be reasonable to assume that the more perceived stress an individual experiences due to these situational factors, the increased likelihood of violence occurring.

To date, there are only three studies, to my knowledge, that utilize strain/stress theoretical framework regarding individuals with mental illness. First, Steadman and Ribner (1982) examine life stress and violence amongst individuals with mental illness who were ex-patients. Silver and Teasdale (2005) approach the association between mental illness and stress/strain by examining impaired social support and stressful life events. Lastly, Link and colleagues (2015) extend the approach employed by Silver and Teasdale (2005) by incorporating longitudinal data to measure the impacts of life strains on violence.

Steadman and Ribner (1982) examined the nature and strength of the relationship between violence and stress. In fact, the researchers predicted that life stress might be a major factor to consider when making assessments about the dangerousness amongst individuals with mental disorders (Steadman & Ribner, 1982). Importantly, Steadman and Ribner (1982) found that individuals with mental illness, who have high levels of stress, are more likely to be involved in verbal and physical disputes. This is an important finding because it showed the important impact stress has on disputes, which ultimately may lead to violence.

Silver and Teasdale (2005) assert that social factors, such as stressful life events and impaired social supports, are associated with violence. Specifically, Silver and Teasdale (2005) examine if the relationship between mental disorder and violence is due to, in part, exposure to stress and impaired social support. Utilizing the Epidemiological Catchment Area (ECA) survey, Silver and Teasdale (2005) found higher levels of stress and impaired social support amongst individuals with mental illness who engage in violence. Furthermore, the researchers found that the relationship between mental disorder and violence was significantly reduced when controlling for life stress and social support (Silver & Teasdale, 2005). Thus, in line with the focus of the current study, if levels of stress are reduced, violence is likely to subside. Therefore,

one would expect that if life stressors/strains are reduced for individuals with mental illness, recidivism is unlikely to occur.

Link and colleagues (2015) argue that violence amongst individuals with mental illness is due to the high degree of life stressors or strains they encounter. Indeed, individuals with mental illness experience frequent and diverse life stresses that may be a factor in engaging in violence (Steadman & Ribner, 1982). By incorporating longitudinal data from the Community Outcomes of Assisted Outpatient Treatment (AOT) study, Link and colleagues (2015) were able to test the impact stress and strain variables had on violence. Interestingly, stressful life events were predictive of violence, while there was only some evidence that psychiatric features affect violence; specifically, schizophrenia was significantly correlated with an increase in the incidence of violence (Link et al., 2015). This is an interesting finding for the current study because it suggests that stressful life events (that are situational factors) are more predictive of violence than dispositional factors, such as psychiatric features. Thus, applying these findings to the current study, one would expect that individuals with mental illness that experience repeated stressful life events are likely to recidivate. Conversely, if stressful life events change or are alleviated, individuals with mental illness are unlikely to recidivate, because the negative internal pressure that strain theory predicts has been changed.

In summary, if an individual with a mental disorder is experiencing negative affective states resulting from strain, they may correct this internal pressure with violence. If this is the case, one would expect violence to only occur for these individuals if they are situationally strained; however, it is important to note that situational factors are ever changing; thus, if an individual is not experiencing stress or strain, violence is unlikely to reoccur. This implication could explain why some offenders do not recidivate, because their situational environment and

internal affective states may have changed resulting in reduced strains and increased positive affective states.

### *Threat/control-override Symptoms*

Link and colleagues (1999) identify a subset of psychotic symptoms that the authors term “threat/control-override symptoms (TCO)”. Threat/control-override symptoms are likely to lead to violence in two situations: if they cause the person to feel threatened by others (i.e. threat), or if they override internal controls that might otherwise block violent tendencies (i.e. control-override) (Link et al., 1999). For example, in the first instance, if an individual defines the situation as threatening and real, violence is likely to occur in a rational fashion (Link et al., 1999). In the second instance, if a symptom leads to a definition of a situation that overwhelms the individual, behavioral constraints are likely to fail (Link et al., 1999). In sum, violence is likely to occur when an individual suspends concerns about the irrationality of psychotic symptoms and defines the situation as real, thus responding in a rational way to the perceived threat (Link et al., 1999).

Link and Stueve (1994) incorporated a symbolic interactionist perspective in their work, and acknowledge that if an individual’s perception of a situation is defined as real, then it is real in its consequences. In short, definitions of a situation are consequential because they dictate the motivation to act (Link et al., 1999). It is important to understand an individual’s definition of a situation in order to understand their behavior (Link et al., 1999). In fact, definitions have been a central idea in criminological theories (Akers et al., 1979; Sutherland, 1947), and have been linked to violent behavior (Heimer, 1997). Furthermore Link and Stueve’s (1994) theory of threat control override symptoms has received much empirical support (Hodkins et al., 2003;

Link, Stueve, & Monahan, 1994; Link et al., 1999; Swanson et al., 1996; Swanson et al., 1997; Teasdale et al., 2006).

One could define these psychotic symptoms as situational because they only occur in a subset of instances. Therefore, if a delusion is occurring, one could think of this as a transient, situational factor because they are not dispositionally situated (i.e. TCO symptoms are not stably present). Therefore, if an individual with mental illness is experiencing threat/control-override delusions, violence is likely to occur due to the current situation these offenders perceive to be true. On the other hand, if an offender with mental illness receives treatment or medicine to lessen these psychotic symptoms, violence is likely to subside since the individual's perception of the situation is likely to change.

In sum, situational factors, such as threat/control override symptoms, may explain why some offenders do not recidivate. If an individual with mental illness receives treatment to alleviate TCO symptoms, or the individual changes their definition of the situation, they are less likely to define situations as threatening, which will lead to individuals refraining from recidivating. The same is true for the reverse; if TCO symptoms are active and reoccurring, recidivism is likely to occur.

### Dispositional Factors

An individual's life is full of continuity and change (Sampson and Laub, 1993). Situational factors explain how changes influence individuals' lives; conversely, dispositional factors represent continuity. Dispositional factors may explain why some individuals with mental illness recidivate, holding constant situational factors. Specifically, since dispositional factors are relatively stable over time, one can assess if an individual has a dispositional factor or trait that influences this individual to engage in violence and ultimately recidivate. In fact, there is

evidence to believe that self-control, the five-factor model of personality, and psychopathy are correlated with deviant behavior (Douglas et al., 1999; Gottfredson & Hirschi, 1990; Miller & Lynam, 2001; Monahan et al., 2001). The question then becomes, do these dispositional traits correlate with violent recidivism? Thus, self-control, the five factor model of personality (including personality traits of extraversion, openness, conscientiousness, agreeableness, and neuroticism), and psychopathy will be evaluated in terms of assessing how likely individuals with mental illness are to violently recidivate when demonstrating these traits.

### *Comorbidity*

It is important to note that among individuals with mental disorders, comorbidity, otherwise known as the co-occurrence of psychological disorders, is common and important to consider when conducting research involving individuals with mental disorders (Bubier & Drabick, 2009). Indeed, the prevalence of comorbid alcohol or substance abuse disorders with other psychiatric disorders is high (Kessler et al., 1994; Kessler et al., 2005; Regier et al., 1990). In fact, researchers have determined that having a severe mental disorder is associated with over four times the risk of having a drug dependence or substance abuse issue and over twice the risk of having an alcohol disorder (Regier et al., 1990). Among individuals who suffer from schizophrenia or schizophreniform, the odds of having a substance abuse problem is 4.6 times higher than the rest of the population and for individuals who suffer from affective disorders, the odds of having a co-occurring substance abuse problem was 2.6 times higher (Regier et al., 1990).

This is particularly salient for the current study because those who are diagnosed with a severe mental disorder are likely to have a comorbid disorder of alcohol or substance abuse, which in turn, may lead to medication noncompliance (Swartz et al., 1998). Medication

noncompliance, coupled with substance abuse and diagnosis of a severe mental disorder, is associated with serious violence (Swartz et al., 1998); thus, one could assume that violent recidivism would occur in such a situation, holding constant situational factors. Lastly, Monahan and colleagues (2001) found that substance abuse or dependence combined with a co-occurring mental disorder was a key component of the likelihood violence would occur (see also Elbogen et al., 2006). Thus, it is important to control for comorbid diagnoses when trying to tease out factors that influence violent recidivism.

### *A General Theory of Crime*

Gottfredson and Hirschi (1990) assert that crime is a result of individuals with a high propensity for criminogenic needs, low self-control, and access to illegal opportunities. Given that opportunities for crime are ubiquitous, individuals with low self-control will inevitably become embedded in the criminal enterprise (Gottfredson & Hirschi, 1990). Therefore, the core premise of Gottfredson and Hirschi's (1990) general theory of crime is that the lower a person's self-control is, the higher their involvement in criminal behavior will be.

Gottfredson and Hirschi (1990) explain that a major characteristic of individuals with low self-control is the tendency to, "respond to tangible stimuli in the immediate environment, to have a concrete 'here and now' orientation" (p. 89). Furthermore, the authors continue to explain that the dimensions of self-control are "factors affecting the calculation of the consequences of one's acts" (p. 95). Thus, according to Gottfredson and Hirschi's (1990) theory, individuals who score particularly low on self-control are more likely to engage in criminal acts that provide immediate gratification, and are more likely to respond to provoking stimuli in the environment.

If individuals with mental illness score low on self-control measures, then these individuals may engage in violent crimes, because of the lack of self-control to refrain from such

acts. This dispositional attribute of low self-control would stably put individuals with mental illness at risk for repeated violence. As Gottfredson and Hirschi (1990) state, “such stability of criminality is a staple of pragmatic criminology” (p. 108). Thus, self-control measures should serve as a strong predictor of recidivism. On the contrary, it is important to note that if individuals with mental illness score high on self-control measures, then these individuals are more likely to refrain from engaging in violent acts; however, research involving impulsivity often indicates that individuals with mental illness are usually more impulsive, suggesting that their self-control is low (Bonta et al., 1998; Douglas & Skeem, 2005).

In summary, this dispositional factor may explain why some offenders with mental illness are stably at risk to repeatedly engage in violence. This suggests that these individuals lack self-control to avoid the temptation of violence and are likely to recidivate.

#### *The Five Factor Model of Personality*

Several researchers were involved in the discovery and creation of the Big Five dimensions of personality (Allport & Olbert, 1936; Cattell et al., 1970; Fiske, 1949; Goldberg, 1981; Tupes & Christal, 1961). Specifically, Allport and Olbert (1936) sought to include terms that could be used to describe personality attributes using a lexical study of terms in an English dictionary. The researchers’ complete list amounted to almost 18,000 terms (Allport & Olbert, 1936). Several follow up studies were conducted by other researchers to reduce this list to five broad dimensions that were believed to encompass wide-ranging dimensions of personality. These five dimensions represent personality at the broadest level of abstraction, and the researchers involved in the creation of the dimensions emphasize that the Big Five structure does not imply that personality differences can only be reduced to five traits (John & Srivastava,

1999). Rather, each dimension summarizes a larger number of distinct personality characteristics (John & Srivastava, 1999).

The five-factor model contains five broad domains of personality including: Extraversion (surgency or positive affectivity), Agreeableness, Conscientiousness (or Constraint), Neuroticism (negative affectivity), and Openness (intellect or unconventionality) (John & Srivastava, 1999). Specifically, the first factor, Extraversion, indexes an individual's propensity to display positive emotions and sociability (Miller & Lynam, 2001). In regards to individuals with mental illness, those who score high on extraversion are likely to resist engaging in crime due to pro-social attitudes. Conversely, those who score low on extraversion are at risk for recidivism because they presumably lack the pro-social attitudes and positive emotions that ordinarily inhibit deviant acts.

The second factor, Agreeableness, is concerned with an individual's interpersonal relationships and strategies (Miller & Lynam, 2001). That is, individuals who are high in Agreeableness tend to be trusting, straightforward, and empathetic (Miller & Lynam, 2001). In contrast, individuals who are low in Agreeableness tend to be arrogant, manipulative, and unconcerned about others (Miller & Lynam, 2001). Thus, if an individual with mental illness scores low in Agreeableness, they may be stably at risk for repeated violence due to their lack of concern for others.

The third factor, Conscientiousness, relates to the "control of impulses," (i.e. constraint) as well as to differences in the ability to plan, organize, and complete behavioral tasks (Miller & Lynam, 2001). This has important implications for individuals with mental illness because if they score relatively low in conscientiousness, they are likely to engage in violence because these individuals lack the constraint to resist acts that provide immediate gratification. Therefore,

one could assume that individuals with mental illness who score low in conscientiousness are more at risk for violent recidivism because they lack the constraint to control their impulses.

The fourth factor, Neuroticism, assesses emotional adjustment and stability (Miller & Lynam, 2001). Thus, individuals who score high in emotional stability are likely to exhibit calm affective states and are not easily upset. In contrast, those who score high in neuroticism are more likely to experience anxiety, anger and hostility, depression, and impulsiveness (John & Srivastava, 1999). Therefore, one could assume that individuals with mental illness who score high in neuroticism are more likely to recidivate due to their dispositional tendency to be anxious and hostile.

The fifth and final factor, Openness, refers to openness to experience, meaning an individual's interest in culture and to the preference for new activities and emotions (Miller & Lynam, 2001). Specifically, individuals who score high in openness are likely to be curious, imaginative, artistic, excitable, and unconventional (John & Srivastava, 1999). If an individual with mental illness scores high in openness, they are less likely to recidivate because they are interested in and open to new experiences and activities that will likely encourage these individuals to make meaningful bonds to individuals and cultural beliefs that will, in turn, cause these individuals to refrain from repeated violence. Conversely, if an individual with mental illness scores low on openness, they are more likely to recidivate because of the lack of interest in pro-social experiences and activities.

In order to test if personality factors were related to anti-social behavior, Miller and Lynam (2001) conducted a meta-analysis of 59 studies that provided relevant information. The meta-analysis revealed that neuroticism, agreeableness, and conscientiousness were significantly related to anti-social behavior (Miller & Lynam, 2001). Interestingly, Miller and Lynam (2001)

found that both high and low levels of neuroticism were related to antisocial behavior. This suggests that individuals who are less emotionally stable may be more prone to impulsive acts and individuals who have high levels of negative emotions may perceive interpersonal events differently (Miller & Lynam, 2001). Furthermore, Miller and Lynam (2001) assert that agreeableness and conscientiousness are personality dimensions that, “characterize the criminal better” (p. 780) meaning that these personality traits are often present in individuals who commit crimes. That is, agreeableness, which refers to interpersonal relationships with others, and conscientiousness, which refers to the ability to control impulses, may explain why some individuals are more prone to anti-social behavior.

These results are particularly relevant for the current study because if an individual scores high in neuroticism or low in agreeableness or conscientiousness, one would expect recidivism to occur, because these stable personality characteristics are unlikely to change. Specifically, if an individual with mental illness scores high in neuroticism, that individual is prone to anxiety, anger and hostility, depression, and impulsiveness (John & Srivastava, 1999). These emotions may lead an individual with mental illness to alleviate these feelings of animosity through violence (Agnew, 1992). Thus, if an individual with mental illness scores high on neuroticism, one would expect that individual to be at a stable risk to engage in recidivism in order to alleviate such negative feelings. Likewise, if an individual with mental illness scores low on agreeableness they are likely to be unconcerned about others (Miller & Lynam, 2001). Thus, these individuals are likely to recidivate due to the lack of interest in caring about others and lack of interpersonal relationships. Lastly, individuals with mental illness who score low on conscientiousness are likely to recidivate due to that individual’s lack of constraint to engage in violence, which provides immediate gratification.

In sum, personality traits were seen as stable, long lasting, and internally caused (John & Srivastava, 1999). In addition, adult personality traits remain relatively stable by the age of thirty (Costa & McCrae, 1994), and Robins and colleagues (2001) elaborate that personality exhibits moderate degrees of continuity over time. Therefore, personality traits may provide an explanation for repeated violence, because these traits are relatively stable over time.

### *Psychopathy*

Psychopathy appears to be an important predictor of recidivism, because of interpersonal, affective and behavioral characteristics that define the disorder (Litwack & Schlesinger, 1987; Widiger & Trull, 1994) Furthermore, research suggests that those suffering from psychopathy lack empathy, emotional depth, fear of punishment, and remorse (Hemphill et al., 1998). These characteristics are positively associated with aggressive and antisocial behaviors (Miller & Eisenberg, 1988; Hemphill et al., 1998).

Psychopathy and recidivism have been empirically assessed by other researchers. For instance, in Hemphill and colleagues' (1998) study, the authors found that, at one year, the general recidivism rate among psychopaths was approximately three times higher than the general recidivism rate among non-psychopaths (Hemphill et al., 1998). Moreover, relative risk statistics indicate that, at one year, the violent recidivism rate among psychopaths was approximately three to five times higher than the violent recidivism rate among non-psychopaths (Hemphill et al., 1998). Hemphill and colleagues (1998) conclude that their findings indicate that psychopathy is among one of the strongest predictors of recidivism, and contributes unique information to the prediction of recidivism beyond that offered by key criminal history and demographic variables.

Douglas and colleagues (1999) examined the association between scoring above the Hare

PCL:SV median and violence, among 193 involuntarily civilly committed patients. The authors found that those individuals who scored above the median on the Hare PCL:SV were 14 times more likely to be arrested for a violent crime and 5 times more likely to commit a violent act (Douglas et al., 1999). Lastly, Monahan and colleagues (2001) examined the association between the Hare PCL:SV and violence at both the first 20 weeks after discharge and the entire 1-year follow up period and found that the prevalence of violence was significantly higher for “potentially psychopathic” patients than for the “nonpsychopathic” at both times (p. 67). Moreover, the authors found that individuals who scored higher on the Hare PCL:SV had a 73% chance that the individual would be violent (Monahan et al., 2001). Thus, since there is empirical evidence that psychopathy is associated with violent behavior and recidivism, psychopathy may also be an important predictor of violent recidivism for individuals with mental disorders.

### *The Current Study*

To summarize, there is a lack of research regarding why individuals with mental illnesses recidivate. This is a matter of importance because research has consistently shown that individuals with mental illness represent a sizable proportion of those in prisons and correctional settings (Lurigio, 2011; Skeem et al., 2009; Skeem et al., 2011), and those who have a criminal history present a greater risk for recidivism (Bonta et al., 1998; Gendreau et al., 1996; Harris et al., 1996; Monahan, 1996; Skeem et al., 2011). Thus, the current project addresses this gap in the literature by testing theoretically anchored explanations for why some individuals with mental illness recidivate.

Specifically, situational perspectives (representing change), including Sampson and Laub’s (1993) life course perspective on criminal offending, Horney and colleagues (1995) local life circumstances perspective, Pearlin and colleagues (1989) sociological study of stress,

Agnew's (1992) general strain theory, and Link and Stueve's (1994) threat/control override perspective, suggests that individuals with mental illnesses lead unpredictable lives and perhaps these fluctuations are what influence individuals not to recidivate. Conversely, dispositional perspectives (representing continuity) including, Gottfredson and Hirschi's (1990) general theory of crime, psychopathy, comorbidity, and the five-factor model of personality (Allport & Olbert, 1936; Cattell et al., 1970; Fiske, 1949; Goldberg, 1981; Tupes & Christal, 1961), suggest that traits are relatively stable over time and disordered individuals with certain stable characteristics are at risk to engage in violence and ultimately recidivate. Furthermore, there is the possibility that dispositional traits influence situational factors, meaning that perhaps individuals with mental illness select into negative situations, due to a dispositional trait. Thus, based on the theoretical framework and available literature on violence and recidivism, I propose the following hypothesis:

*Hypothesis 1: For individuals with mental illnesses, dispositional factors will predict violent recidivism, holding constant situational factors.*

## **CHAPTER 3.**

### **METHODS**

#### *Sampling*

The current study utilizes data from the MacArthur Violence Risk Assessment study (i.e. MacRisk study), a longitudinal study of post-release psychiatric patients. Participants were selected using a stratified random sample from inpatient facilities, in three cities- Kansas City, MO, Pittsburg, PA, and Worcester, MA (Monahan et al., 2001). The selection criteria included patients between the ages of 18 and 40, who were civil admissions (Monahan et al., 2001). The patients were English-speaking, White or African American (except for the Worcester site, which included Hispanics) (Monahan et al., 2001). Furthermore, participants were diagnosed with schizophrenia, schizophreniform, schizoaffective, depression, dysthymia, mania, brief reactive psychosis, delusional disorder, alcohol or other drug abuse or dependence, or a personality disorder (Monahan et al., 2001, pp.150-151). Lastly, eligible patients were stratified by age, gender, and race (Monahan et al., 2001) and a random sample of eligible patients within each stratum was conducted. Eligible participants had to be hospitalized for fewer than 21 days, and had spent a median number of 10 days in the hospital (Monahan et al., 2001).

Once the participants had been randomly selected, data collection began in 1992 and enrollment of new patients continued until 1994 (Monahan et al., 2001). Follow up interviews were conducted every 10 weeks for 1 year, and the study ended in 1995 (Monahan et al., 2001). A collateral informant was also interviewed using the same interview schedule (Monahan et al., 2001). Collateral informants consisted of family members (47.1% of the time), friends (23.9% of the time), professionals (13.9% of the time), significant others (12.4% of the time), or others like co-workers, etc. (2.7% of the time) (Monahan et al., 2001).

## *Measures*

### *Dependent Variable*

**Violent Recidivism.** Information about patients' violence was obtained through multiple sources including the follow-up interviews with subjects, interviews with collateral informants, and official records (Monahan et al., 2001). There were eight categories of violent behavior including 1. pushing, grabbing, or shoving, 2. kicking, biting, or choking, 3. slapping, 4. throwing an object, 5. hitting with a fist or object, 6. sexual assault, 7. threatening with a weapon in hand, and 8. using a weapon (Silver et al., 1999). Other aggressive acts excluded verbal threats, but included incidents of battery that did not result in an injury (Monahan et al., 2001). Consistent with other researchers, a violence measure was created containing violence and other aggressive acts (see Skeem & Mulvey, 2001).

Following suit from previous researchers (see Teasdale, Silver, & Monahan, 2006), if the subject had engaged in one of these behaviors during the past 10 weeks, the participant was coded as violent. In order to distinguish between one-time violent individuals and individuals who engage in violent recidivism across the five waves, a dichotomous measure was created. Specifically, one-time violent offenders were those who only committed one violent act in all of the waves and were coded as 0. Violent recidivists were individuals engaged in violence during more than one follow-up wave, ultimately resulting in a dichotomous measure of one-time violent (0) and violent recidivist (1). Non-violent individuals were excluded from the analyses.

In order to examine variations in recidivism, a second dependent variable was utilized. Specifically, the dependent variable was transformed to reflect the count of number of waves in which an individual was a recidivist. For example, non-recidivists are those who commit violence in one wave; one-time violent recidivists are those who have committed violent acts in

two waves of MacRisk, two-time violent recidivists are those who have committed violence in three waves, three-time violent recidivists are those who have committed violence in four waves, and so on. Here too, nonviolent individuals were excluded from the analysis. The resulting count of recidivism ranged from 1-5.

### *Situational Independent Variables*

**Delusions.** Delusions were assessed using the Diagnostic Interview Schedule (DIS) (Monahan et al., 2001). Interviewers, who were clinically trained, were instructed to determine, based on the DSM-III-R, whether the subjects were possibly or definitely delusional or whether the response reflected reality (e.g., someone really was watching [“spying”] on them) (Monahan et al., 2001). Participants who were rated as possibly or definitely delusional were assessed using a more detailed instrument, the MacArthur-Maudsley Delusions Assessment Scale (MMDAS), which generates scores on six dimensions including: conviction, negative affect, acting on belief, refraining from acting because of belief, preoccupation, and pervasiveness (Monahan et al., 2001).

Delusions were also coded based on content. Thus, delusions that involved persecution were coded as threat delusions (Monahan et al., 2001; also see Teasdale, Silver, & Monahan, 2006). These included the belief that the participant was “being secretly tested or experimented on”, the belief that someone “was plotting against [the participant] or trying to hurt or poison [the participant]”, or the belief that “people were spying on [the participant]” (for other examples see Monahan et al., 2001; Teasdale, Silver, & Monahan, 2006). Delusions involving mind or body control were coded as control-override delusions (Monahan et al., 2001). Examples of these delusions include the belief that “someone was reading [the participants] mind”, the belief that “others [were] hearing [the participants] thoughts”, or the belief that the participant was “under

the control of some person, power, or force” (for other examples see Monahan et al., 2001; Teasdale, Silver, & Monahan, 2006). A dichotomous measure of TCO delusions was created; specifically, the absence of TCO delusions was coded as 0 and the presence of TCO delusions was coded as 1.

Since situational factors demonstrate changes within one’s life, it is important to measure change. Therefore a level-change approach was utilized. The level-change method can establish temporal order, help rule out spuriousness, and is considered, “a powerful tool for making causal inferences with non-experimental data” (Allison, 1990, pp. 93-94). Although there are limitations to measuring change, including: possibility of unreliability (Kessler, 1977) and regression effects (i.e. regression toward the mean) (Cronbach & Furby, 1970), it can be useful to measure fluctuations over time (Guyatt et al., 1987). Notably, Allison (1990) refuted these claims by stating that, “the low reliability of change scores is irrelevant for the purpose of causal inference” (p.104) and, depending on the application, “regression to the mean within groups implies regression to the mean between groups, a conclusion that seems quite implausible” (p. 110). Thus, Allison (1990) argues that it is appropriate to use the level-change approach, bearing in mind these limitations and applications in which the approach is appropriate. In order to measure change across all five waves, a level-change approach was utilized in which wave one represents the level and wave five minus wave one represents the change. Thus, a change score was created by subtracting wave five TCO delusions minus wave one TCO delusions.

**Employment.** Since employment is a central concept in Sampson and Laub’s (1993) life course perspective and Horney and colleagues (1995) local life circumstances perspective, an employment measure was included. Specifically, the question asks, “are you working (for pay) outside your home now?”. Thus, a dichotomous measure was created to signify if the participant

was employed (1) or not (0). Furthermore, a level-change approach was used by subtracting wave five minus wave one to evaluate if there was change within one's employment status.

**Marriage.** Like employment, marriage is a central concept in Sampson and Laub's (1993) perspective and Horney and colleagues (1995) perspective. I measured marriage based on an item that asks, "are you currently married, widowed, legally separated, divorced, or never married?". A dichotomous measure of married (1) or not (0) was created both at wave one and at wave five. The change score was created by subtracting wave five minus wave one in order to assess if there was change within one's marital status.

**Education.** Horney and colleagues (1995) emphasize that those who are currently in school are less likely to be violent. Thus, the question, "do you go to school now?" was utilized. Responses included yes (1) or no (0). The change score was created by subtracting wave five minus wave one in order to assess if there was change in one's educational status.

**Perceived Stress.** Consistent with Pearlin and colleagues (1989) sociological study of stress and Agnew's (1992) general strain theory, perceived stress is an important measure to consider. As the authors highlight, negative feelings may arise due to daily life stressors (Agnew, 1992; Pearlin et al., 1989). Perceived stress was captured through asking the participant, on a likert scale, how much they agreed with 15 questions, all aimed at identifying the participant's perception of stressful experiences (Monahan et al., 2001). Response options included: never, almost never, sometimes, fairly often, and very often. Examples of this include: "how often have you felt nervous or stressed?", "how often have you been able to control irritations in your life?", or "how often have you felt difficulties were piling up so high you could not overcome them?". Consistent with other researchers (see Teasdale, 2009), and because the items showed acceptable reliability (cronbach's alpha= .781), a stress measure was created by taking the mean of the 15

items for each wave. Furthermore, in order to demonstrate change in the perceived levels of stress, the mean of the items at wave five minus the mean of the items at wave one was computed to assess the change in perceived stress.

**Alcohol Use.** There is an abundance of research that emphasizes that substance abuse (including alcohol use) is significantly correlated with violence for individuals with mental disorders (see Swartz et al., 1998 for more information). Thus, in order to see if this association relates to recidivism, the question, “since [reference date] have you had any alcoholic drinks?” was utilized. Responses included yes (1) or no (0). In order to assess if there was change within one’s alcohol use, a change score was created by subtracting wave five minus wave one.

**Drug Use.** Like alcohol, drug use has been found to be significantly associated with violence (see Swartz et al., 1998). The question, “since [reference date] have you used any street drugs, even if it was just one time?” was utilized. Responses included yes (1) or no (0). In order to assess if there was change within ones drug use, a change score was created by subtracting wave five minus wave one.

#### *Dispositional Independent Variables*

**Impulsiveness (BIS-11).** In order to tap into Gottfredson and Hirschi’s (1990) general theory of crime, the Barratt Impulsiveness Scale (BIS; Barratt, 1959) was used to measure the participant’s amount of self-control. After numerous revisions, Barratt (1985) stated that impulsiveness was comprised of three sub-traits including: cognitive impulses, motor impulses, and non-planning impulses. According to Barratt (1985), cognitive impulses involves making hasty decisions, motor impulses involves acting without thinking, and non-planning impulses includes little regard to future planning (for review see Stanford et al., 2009).

MacRisk utilizes the 11<sup>th</sup> revision of the BIS (BIS-11). Impulsiveness was measured through 30 questions by asking the participant how often they engaged in impulsive acts, measured on a likert scale (1=rarely/never; 2=occasionally; 3=often; 4=almost always/always) (Monahan et al., 2001). Specifically, the 30 questions are divided into three subscales: BIS-Motor Scale, BIS-Non-Planning Scale, and BIS-Cognitive Scale. Examples of questions within the BIS-Motor Scale include: “I act on the spur of the moment” or “I act ‘on impulse’”. Within the BIS-Non-Planning subscale, examples include: “I am more interested in the present than the future” or “I plan for job security”. Lastly, examples of BIS-Cognitive Scale include: “I do things without thinking” or “I say things without thinking”. Since dispositional factors are relatively stable over time, impulsiveness was measured only at wave one.

**NEO Five-Factor Inventory.** The NEO Five-Factor Inventory (hereafter, NEO FFI) was created by Costa and McCrae (1985) to provide a measure of the five basic personality traits. Specifically, the NEO FFI contains 60 questions that were selected from a pool of 180 NEO Personality inventories items (Costa & McCrae, 1985). Examples of questions include: “I am not a worrier”, “I often feel inferior to others”, or “I rarely feel lonely or blue” (Costa & McCrae, 1985). Participants used a likert scale (strongly agree, agree, neutral, disagree, or strongly disagree) to respond to each question (Costa & McCrae, 1985). For each of the big five traits (i.e. extraversion, agreeableness, conscientiousness, neuroticism, and openness), 12 questions were selected to measure the degree to which that specific trait was present in a participant (Costa & McCrae, 1985). Lastly, the NEO Five- Factor Inventory has proven to be, “reliable, valid, and useful” (McCray & Costa, 2004, p. 592) in variety of situations and contexts.

*NEO-Neuroticism Scale.* Neuroticism personality trait assesses emotional adjustment and stability (Miller & Lynam, 2001). Examples within the NEO-Neuroticism scale include: “I rarely

feel lonely or blue”, “I often get angry at the way people treat me”, or “I am not a cheerful optimist”.

*NEO-Extraversion Scale.* Extraversion measures an individual’s proneness toward positive emotions and sociability (Miller & Lynam, 2001). Examples include: “most people I know like me”, “I laugh easily”, or “I really enjoy talking to people”.

*NEO-Openness Scale.* Openness measures one’s openness to experience (Miller & Lynam, 2001). Examples include: “I often try new and foreign food”, “I am intrigued by the patterns I find in art and nature”, or “I have a lot of intellectual curiosity”.

*NEO-Agreeableness Scale.* Agreeableness concerns individuals’ interpersonal relationships and strategies (Miller & Lynam, 2001). Examples within the NEO-Agreeableness scale include: “if necessary, I am willing to manipulate people to get what I want”, “if I don’t like people, I let them know”, or “some people think of me as cold or calculating”.

*NEO-Conscientiousness Scale.* Conscientiousness refers to the ability to plan, organize, and complete behavioral tasks (Miller & Lynam, 2001). Examples include: “I never seem to be able to get organized”, “once I find the right way to do something, I stick to it”, or “I try to perform all tasks assigned to me conscientiously”.

**PCL.** MacRisk utilizes the Hare PCL:SV, which structures clinical interviews as well as collateral information to assess the level of psychopathy (Monahan et al., 2001). There are two factors within the Hare PCL:SV. The first factor includes items that reflect the interpersonal and affective core of psychopathy including items of superficial, grandiose, deceitful, lacks remorse, lacks empathy, and doesn’t accept responsibility (Monahan et al., 2001). Factor 2 measures socially deviant behaviors including impulsiveness, poor behavioral controls, lack of goals, irresponsible, adolescent antisocial behavior, and adult antisocial behavior (Monahan et al.,

2001). MacRisk combined both factor 1 and factor 2 to create a PCL-total variable, which was utilized in the current study.

### *Control Variables*

**Diagnostic category.** In order to obtain a diagnosis' for participants, a baseline interview was conducted by a trained clinical interviewer utilizing the DSM-III-R criteria (Monahan et al., 2001). The DSM-III-R was the current edition utilized in MacRisk, thus revised editions could not be used for the current study. There are five primary diagnostic categories including: 1. major depression, 2. schizophrenia spectrum disorders, 3. manic spectrum disorders (including bipolar disorder), 4. personality disorders, and 5. substance abuse/dependence (Monahan et al., 2001; also see Teasdale et al., 2013). Therefore, a series of dummy variables was created to account for the diagnostic criteria of the participants. Specifically, there was dichotomous measures of having major depression or not, having schizophrenia spectrum disorders or not, having manic spectrum disorders or not, and having a personality disorder or not. The omitted reference category was having a substance abuse/dependence diagnosis.

**Age.** Age is included as a control variable. The MacRisk study created an age measure by including the age in years at time of admission into the study (Monahan et al., 2001).

**Race.** Race is included as a control variable. A dummy variable was created to represent race with White (0) and Black (1). Hispanics were excluded from the analyses due to the small number (n=21).

**Sex.** Sex is included as a control variable. Specifically, the MacRisk study created a dichotomous measure (i.e. female is coded as 0 and male is coded as 1) (Monahan et al., 2001; also see Silver et al., 1999).

**Socioeconomic Status.** Socioeconomic Status (SES) is included as a control variable. MacRick created the SES measure based on Hollingshead and Redlich (1958) operationalization of SES. Thus, the MacRisk SES measure was created by combining educational attainment and occupational status of the participants, which previous researchers have utilized (Monahan et al., 2001; Silver, 2000).

### *Analytic Plan*

The analysis was conducted in three stages. The first stage included univariate analysis to provide descriptive statistical information. Second, bivariate analysis was conducted, including t-tests and crosstabs. The last stage will include multivariate analysis utilizing logistic regression and a Poisson-based regression model.

Logistic regression takes into account the dichotomous nature of the first dependent variable (i.e., recidivist or not) (Hosmer & Lemeshow, 2000). An Ordinary Least Squares regression technique is not appropriate for dichotomous dependent variables because the assumption of normality is violated (i.e., the dependent variable is not normally distributed) (see Hosmer & Lemeshow, 2000). Specifically, the dependent variable is not linear and the proportions of the expected value of y given x range from 0 to 1 instead of negative infinity to positive infinity (Hosmer & Lemeshow, 2000). Thus, in order to correct for these violations, logistic regression will be utilized to account for the dichotomous nature of the dependent variable.

A Poisson-based regression model will be utilized in order to account for the second dependent variable's distribution of low count of events (i.e., recidivism). Poisson-based regression may be more appropriate than Ordinary Least Squares regression technique because, "Poisson-based regression analyses successfully address the most serious problems that arise in

the OLS analyses” (Osgood, 2000, p. 36). Problems that could arise in the OLS analyses include: assumptions that are inconsistent with the data (such as, violations of homoscedasticity, normality, and linearity), and the skewed nature of recidivism rates for small populations (Osgood, 2000). Thus, a Poisson-based regression model will additionally be utilized since the model corrects for problems that arise utilizing OLS analyses techniques and accounts for small number of count of events.

Furthermore, one issue that arose in the analysis of this data is the issue of missing data. Since MacRisk participants were interviewed every 10 weeks for 1 year, there are participants that did not report data at each wave and participants that dropped out of the study. In order to account for this, the missing data technique, multiple imputations, was utilized. There are several benefits to utilizing imputation methods for missing data. One such benefit is that the approach is, “potentially more efficient than case deletion, because no units are sacrificed” (Schafer & Graham, 2002, p. 158) and the full sample can be retained, which increases statistical power. An important feature of multiple imputations is that the missing values are predicted from each participant’s previous observed values (Schafer & Graham, 2002). Therefore, multiple imputations may, “effectively solve the missing-data problems in many analyses” (Schafer & Graham, 2002 p. 165). Previous researchers have utilized 50 imputed data sets (Sloboda et al., 2009), and others have suggested that 20 imputed data sets (Schafer & Graham, 2002). Graham and colleagues (2007) suggest that one should use 20, 40, or 100 imputed data sets and suggest that 40 imputed data sets is best. Since it appears that the ideal imputation number is between 20 and 50, the current study used 40 imputed data sets that were used to pool together one cohesive data set. Thus, 40 imputations can remove noise from statistical summaries such as probability values or significance levels (see Graham et al., 2007).

## CHAPTER 4.

### RESULTS

**Univariate Results.** The sample for this study comprises only individuals who reported being violent in at least one of the waves (n=746). Table 1 includes the mean, standard error of the mean, minimum and maximum for all of the variables used in the study. The variables included were the two dependent variables (dichotomous recidivist measure and count recidivist measure), situational independent variables, dispositional independent variables, and control variables. Since SPSS does not include standard deviation for pooled results, standard error of the mean was utilized instead, which has been done by previous researchers (Staff et al., 2015).

As shown in Table 1, the sample consists of primarily males (59%) and the mean age was 29. Most of the sample was White (68%). Furthermore, most of the participants were diagnosed with a depressive disorder (40%), while approximately 19% were diagnosed with a schizophrenia spectrum disorder, 11% were diagnosed with a manic spectrum disorder (including bipolar), 28% were diagnosed with a substance abuse disorder, and 2% were diagnosed with a personality disorder. These diagnoses were primary diagnoses and it is important to note that these individuals may also have secondary diagnoses.

For the situational independent variables, approximately 50% of the sample reported symptoms of TCO. Furthermore, 32% were employed, 20% were married, and 20% were currently in school. Approximately 71% reported drinking alcohol, and 47% reported drug use. Lastly, the mean level of perceived stress was 1.90 on a scale of 0 to 4 where 0 indicates never and 4 indicates very often. Thus, 1.90 translates into the respondents on average reporting “sometimes” to the perceived stress items.

For the dispositional independent variables, the mean level of total psychopathy was 10.23. Other researchers who have utilized MacRisk data (Skeem & Mulvey, 2001) have used cut points to assess levels of psychopathy. These cutpoints included total scores of 12 or less indicating non-psychopathy, 13-17 indicating potential psychopathy, and scores of 18 or more strongly suggesting psychopathy (Skeem & Mulvey, 2001). Thus, the mean level of total psychopathy for the current study indicates, on average, that participants scored within the “non-psychopathy” range, based on the above cut points. This is not surprising, since most of the individuals sampled by MacRisk did not have personality disorders.

Furthermore, the mean level of cognitive impulsivity was 16.26, the mean level of motor impulsivity was 19.51, and the mean level of non-planning impulsivity was 25.17. In Mitchell’s (1991) study of the impulsivity in cigarette and non-cigarette smokers, the mean scores for the non-smokers were 14.20 for cognitive impulsivity, 21.85 for motor impulsivity, and 22.20 for non-planning impulsivity. Utilizing Mitchell’s (1991) sample of non-smokers as a frame of reference for impulsiveness scores within the population, individuals with mental disorders mean scores are higher for all three sub-traits within the BIS.

Lastly, the mean levels for the NEO five-factor inventory are 27.03 (neuroticism), 26.11 (extraversion), 26.04 (openness), 26.17 (agreeableness), and 28.34 (conscientiousness). Utilizing Schmidt and colleagues (1995) sample of college students as a frame of reference for the NEO five-factor inventory scores within the population, the mean levels include 24.20 (neuroticism), 31.84 (extraversion), 32.44 (agreeableness), and 33.04 (conscientiousness). Thus, individuals with mental disorders sampled in the current study, on average, scored higher on neuroticism, and lower on extraversion, agreeableness, and conscientiousness than their non-disordered

counterparts. The personality trait of openness was not assessed in Schmidt and colleagues (1995) study.

**Table 1: Descriptive Statistics**

**N=746**

<b>Variable Name</b>	<b>Mean</b>	<b>SE</b>	<b>Min</b>	<b>Max</b>
<i>DV</i>				
Dichotomous Recidivism	.540		0	1
Count Recidivism	2.174	.162	1	5
<i>Situational IV</i>				
TCO	.497		0	1
Employment	.320		0	1
Marriage	.204		0	1
Education	.200		0	1
Stress	1.904	.052	.13	3.13
Alcohol use	.710		0	1
Drug use	.470		0	1
Change TCO	-.118	.148	-1	1
Change employment	-.008	.1665	-1	1
Change marriage	.005	.134	-1	1
Change stress	-.070	.080	-1.60	1.47
Change education	-.027	.146	-1	1
Change alcohol	-.046	.172	-1	1
Change drugs	-.078	.141	-1	1
<i>Dispositional IV</i>				
Motor Impulses	19.510	.439	1	38
Non-planning Impulses	25.170	.417	2	46
Cognitive Impulses	16.260	.331	1	31
Neuroticism	27.030	.493	2	48
Extraversion	26.110	.533	0	45
Openness	26.040	.447	8	42
Agreeableness	26.170	.399	4	44
Conscientiousness	28.340	.574	7	48
Psychopathy	10.230	.343	0	24
<i>Control Variables</i>				
Race	.322		0	1
Male	.590		0	1
Age	29.160	.227	18	40
SES	64.56	.806	11	84
PD schizophrenia	.193		0	1
PD depression	.398		0	1

PD bipolar	.111	0	1
PD substance dependence	.282	0	1
PD personality	.016	0	1

**Bivariate Results.** Table 2 presents the bivariate crosstabs between recidivism, the dichotomous independent variables, and the change-scores variables. As shown in Table 2, none of the situational variables are significantly associated with recidivism at the bivariate level. Table 3 presents independent t-tests between recidivism, the one continuous situational variable (i.e., stress and change in stress), and all of the dispositional variables. As shown in Table 3, motor impulsivity, agreeableness, and psychopathy are significantly associated with recidivism at the bivariate level. Specifically, the mean level of motor impulsivity for violent recidivists was 20.27, while for non-recidivists the mean was 18.61. The mean level of agreeableness for violent recidivists was 25.57, while the mean level of non-recidivists was 26.88. Lastly, the mean level of psychopathy for violent recidivists was 10.80, while the mean level was 9.54 for non-recidivists.

**Table 2: Bivariate Crosstabs between Recidivism and Independent Variables**

Independent Variables	Not Recidivist %	Recidivist %	P Value
Female	42.82%	57.18%	.300
Male	48.29%	51.71%	
Black	43.50%	56.50%	.449
White	47.23%	52.77%	
TCO present	44.31%	55.69%	.569
TCO not	47.72%	52.28%	
Increase TCO	50.84%	49.16%	.550
Decrease TCO	43.94%	56.06%	
No change TCO	45.27%	54.73%	
Employed	48.94%	51.01%	.482
Not employed	44.67%	55.33%	
Becoming employed	48.41%	51.59%	.935
Becoming unemployed	49.52%	50.48%	
No change employed	43.49%	56.54%	

Married	47.11%	52.89%	.911
Not married	45.75%	54.26%	
Becoming married	46.03%	53.97%	.823
Becoming not married	56.09%	43.91%	
No change married	41.46%	58.54%	
In school	52.65%	47.35%	.381
Not in school	44.35%	55.67%	
Going to school	52.00%	48.00%	.724
Dropping school	55.45%	44.55%	
No change school	40.61%	59.39%	
Alcohol use	44.55%	55.45%	.336
No alcohol use	49.72%	50.28%	
Began drinking	51.01%	48.99%	.700
Stop drinking	46.82%	53.18%	
No change drinking	43.36%	56.64%	
Drug use	45.15%	54.85%	.716
No drug use	46.83%	53.17%	
Start drugs	51.34%	48.66%	.865
Stop drugs	48.90%	51.10%	
No change drugs	41.98%	58.02%	

**Table 3: Independent samples t-tests between Recidivism and Independent Variables**

<b>Independent Variable</b>	<b>Not Recidivist Mean</b>	<b>Recidivist Mean</b>	<b>t value</b>
Stress	1.90	1.91	-.199
Change stress	-.08	-.06	-.283
Motor impulses	18.61	20.27	-2.247*
Non-planning impulses	25.00	25.31	-.450
Cognitive impulses	16.02	16.46	-.821
Neuroticism	26.50	27.50	-1.157
Extraversion	26.03	26.15	-.133
Openness	26.23	25.86	.578
Agreeableness	26.88	25.57	1.985*
Conscientiousness	28.72	28.01	1.010
Age	29.10	29.21	-.170
SES	63.77	65.24	-1.287
Psychopathy	9.54	10.80	-2.429*

p<.05\*

**Multivariate Results.** Two models were utilized for the multivariate results including logistic and Poisson-based regression analyses. Table 4 displays the logistic regression analysis between

the key independent variables, control variables, and violent recidivism. As shown in Table 4, the results of the logistic regression suggest that psychopathy is the only key independent variable that predicts violent recidivism (versus single-time violence), holding constant all other variables. That is, for every one more point individuals with mental disorders score on psychopathy, the odds of engaging in violent recidivism increase by 4.4%. This aligns with previous researchers findings of the significant association between psychopathy and violent recidivism (Hemphill et al., 1998). The current study extends this association between violent recidivism and psychopathy to be applicable to individuals with mental disorders additionally. Finally, this finding provides support for the relationship between psychopathy and violence amongst individuals with mental disorders, which previous researchers have established (Douglas et al., 1999; Monahan et al., 2001; Skeem & Mulvey, 2001).

Interestingly, the results displayed in Table 5 portray a different story. As shown in Table 5, the results of the Poisson-based regression analysis suggest that personality is the key independent variable that predicts the amount of violent recidivism. Particularly, the personality traits of extraversion and agreeableness are significantly associated with the count of violent recidivism. That is, those who score low on agreeableness and high on extraversion have higher recidivism counts. Specifically, for every one-point increase in extraversion for individuals with mental disorders, there is a 1.4% increase in the count of recidivism. For every one-point increase in agreeableness for individuals with mental disorders, there is a 1.6% decrease in the count of recidivism.

**Table 4: Logistic Regression Predicting Violent Recidivism**

	b	SE	Exp(b)
Education	.017	.344	1.017
Employment	-.392	.470	.676
Alcohol use	.224	.325	1.251
Drug use	.009	.282	1.009

Neuroticism	.014	.019	1.015
Extraversion	.022	.020	1.022
Openness	-.005	.020	.995
Agreeableness	-.033	.022	.968
Conscientiousness	-.014	.020	.986
Psychopathy	.043	.022	1.044*
Motor impulses	.027	.017	.984
Non-planning impulses	-.016	.018	.989
Cognitive impulses	.011	.023	1.006
TCO	-.048	.293	.953
Marriage	.141	.407	1.152
Stress	-.199	.298	.819
Change education	.053	.375	1.055
Change employment	-.023	.256	.978
Change married	.188	.352	1.207
Change alcohol	-.017	.276	.983
Change drugs	-.104	.226	.901
Change TCO	-.156	.254	.855
Change stress	.139	.251	1.149
PD schizophrenia	-.058	.395	.944
PD depression	.186	.295	1.204
PD bipolar	-.216	.411	.806
PD personality	.717	.773	2.048
Male	-.288	.249	.750
SES	.006	.010	1.006
Age	.006	.010	1.006
Race	.116	.236	1.123

\*p<.05

**Table 5: Poisson Regression Predicting Variation in Violent Recidivism**

	b	SE	Exp(b)
Education	.005	.107	1.005
Employment	.078	.140	1.081
Alcohol use	.056	.095	1.058
Drug use	.038	.084	1.039
Neuroticism	.005	.006	1.005
Extraversion	.014	.006	1.014*
Openness	.007	.007	1.007
Agreeableness	-.016	.007	.984*
Conscientiousness	-.003	.008	1.003
Psychopathy	.009	.008	1.009
Motor impulses	.005	.006	1.005
Non-planning impulses	-.003	.008	1.003

Cognitive impulses	-.005	.008	.995
TCO	.011	.107	1.011
Marriage	.130	.116	1.139
Stress	-.031	.091	1.031
Change education	.023	.122	1.023
Change employment	-.040	.079	1.041
Change married	.008	.010	1.008
Change alcohol	-.006	.079	.994
Change drugs	-.012	.072	.988
Change TCO	.016	.076	1.016
Change stress	-.029	.078	.971
PD schizophrenia	.016	.112	1.016
PD depression	.004	.091	1.004
PD bipolar	-.045	.120	.956
PD personality	.083	.224	1.087
Male	-.072	.076	.931
SES	.003	.004	1.003
Age	.002	.005	1.002
Race	-.003	.071	.997

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\*p<.05

## CHAPTER 5.

### DISCUSSION AND CONCLUSIONS

Little is known about the processes and factors that influence an individual with mental illness to violently recidivate. For this reason, the purpose of the current study was to examine potential factors that may cause an individual with mental illness to recidivate. Results indicated that dispositional factors were more likely to predict violent recidivism than situational factors, which provides support for hypothesis 1. Specifically, the logistic regression analysis suggested that psychopathy is the only key independent variable that predicts violent recidivism (any versus none), among a sample of violent individuals. Conversely, the Poisson-based regression analysis indicated that personality factors were the key independent variables that predict the amount of violent recidivism. Specifically, the personality traits of agreeableness and extraversion were significantly associated with the count of violent recidivism.

The results of the current study are consistent with prior literature, which suggests that psychopathy is an important predictor of recidivism (see Hemphill et al., 1998; Litwack & Schlesinger, 1987; Widiger & Trull, 1994). Indeed, research suggests that those who score high on psychopathy lack empathy, emotional depth, fear of punishment, and remorse (Hemphill et al., 1998). These characteristics of psychopathy have been linked to aggressive and antisocial behavior (Miller & Eisenberg, 1988; Hemphill et al., 1998). Furthermore, the current study's findings provide support for the relationship between psychopathy and violence amongst individuals with mental disorders, which previous researchers have established (Douglas et al., 1999; Monahan et al., 2001; Skeem & Mulvey, 2001).

On the other hand, the Poisson-based regression analysis indicated that personality variables are the key independent variables that predict the count of violent recidivism.

Specifically, the personality traits of extraversion and agreeableness were significantly associated with violent recidivism. That is, those who score low on agreeableness and high on extraversion recidivate more often.

The personality trait agreeableness refers to one's concern with interpersonal relationships and strategies (Miller & Lynam, 2001). That is, individuals who are high in agreeableness tend to be trusting, straightforward, and empathetic, while individuals who score low tend to be arrogant, manipulative, and unconcerned about others (Miller & Lynam, 2001). Thus, if an individual with mental illness scores low in agreeableness, they may be stably at risk for repeated violence due to their lack of concern for others. The results above provide support for this assumption. Additionally, Miller and Lynam (2001) found that agreeableness was significantly associated with anti-social behavior. This project extends those findings to violent recidivism.

While it was expected that agreeableness would be significantly associated with violent recidivism (based on Miller & Lynam's (2001) results), it was surprising that the personality trait extraversion was significantly associated with violent recidivism additionally. Extraversion refers to an individual's propensity to display positive emotions and sociability (Miller & Lynam, 2001). Thus, those who score high on extraversion are likely to resist engaging in violence due to pro-social attitudes. Conversely, those who score low on extraversion are presumably at risk for violent recidivism because they lack the pro-social attitudes and positive emotions that ordinarily inhibit deviant acts. Based on the current study, the results did not provide support for this assumption. Indeed, the results suggested the opposite to be true, meaning those who score higher on extraversion are more likely to engage in violent recidivism than those who scored low.

One interpretation of why the personality trait extraversion is significantly associated with violent recidivism may be that perhaps individuals with mental disorders that score higher on extraversion are more likely to engage with others outside of clinical settings. That is to say, perhaps individuals with mental illnesses, who display higher scores of extraversion, are more likely to encounter and potentially provoke individuals outside of clinical settings, because of the stigma attached to having a mental illness (Link et al., 1999). Indeed, research indicates that public perception of individuals with mental disorders has been negative and skewed. This stereotype of this subgroup creates a stigma against mental illness, which has direct and indirect effects on these individuals (see Fisher et al., 2006; Skeem et al., 2009; Skeem et al., 2011).

One of these effects could be an increased chance for engaging in violence with others. Thus, one could assume that the more extraverted an individual with mental illness is, the more likely the individual is to engage with others outside of clinical settings, and ultimately, the more likely a chance to engage in violence (and violent recidivism) will occur. Lastly, this interpretation may align with Teasdale's (2009) finding that higher levels of functioning indicated a higher chance of victimization. That is to say, that individuals with mental disorders who have higher levels of functioning (i.e., may be more extraverted) are more likely to engage with others, which, in turn, led to an increased chance of being victimized. The current study's findings align with that perspective.

### **Policy Implications**

This study has important policy implications regarding criminal justice intervention and clinical practice. Currently, there is a sizable proportion of individuals with mental disorders in prisons and correctional populations (Lurigio, 2011; Messina et al., 2004; Skeem et al., 2009; Skeem et al., 2011). What is concerning is that when compared to their relatively healthy

counterparts, offenders with mental illness, who are in the correctional system, are significantly more likely to “fail” their community term (Messina et al., 2004; Skeem et al., 2009; Skeem et al., 2011). This is a matter of importance because if individuals with mental illnesses are less likely to successfully reintegrate into society, recidivism will remain a consistent problem for this population.

Thus, in terms of criminal justice intervention and clinical practice, there has been increased interest in identifying valid predictors aimed to better assess the likelihood that a post-released offender will violently reoffend (Glover et al., 2002). That is, the design of effective offender treatment programs is highly dependent on knowledge of the predictors of recidivism (Gendreau et al., 1994). Based on the current study’s results, practitioners and community agencies should examine psychopathy levels when predicting whether an individual with mental illness will engage in violence, and ultimately violent recidivism.

This means that the PCL:SV (i.e., the assessment tool utilized to examine psychopathy levels) is a useful risk assessment tool that clinicians and community agencies should administer to post-released individuals with mental disorders. Clinicians should be particularly sensitive to individuals who score high on psychopathy, for this indicates emotional detachment and a greater risk for committing violent acts. Despite this finding, scores on the PCL:SV are not entirely predictive of an individual with mental illness engaging in violence. Indeed, Skeem and Mulvey (2001) caution clinicians that a patient who scores low on psychopathy is not necessarily risk free from engaging in violence; rather, the PCL:SV provides clinicians with a better chance of predicting violent behavior.

Furthermore, personality traits such as extraversion and agreeableness should be examined when assessing how often an individual with mental illness is likely to recidivate.

Based on the current study's results, individuals with mental disorders, who score high on extraversion or low on agreeableness, are likely to recidivate more often. Thus, administering the NEO five-factor inventory may be useful for clinicians and community agencies. Perhaps identifying individuals who score high on extraversion or low on agreeableness will help community agencies and practitioners intervene, which will ultimately help reduce the proportion of individuals with mental disorders in prisons and correctional populations.

### **Limitations**

There are several important limitations of this study that should be highlighted. First, the lack of findings regarding situational factors was surprising, since each factor was theoretically driven and presumably relevant to the risk of engaging in violent recidivism. The reason for the lack of findings could be that the current study may not have utilized the best statistical test for the ideas presented above regarding situational factors. Indeed, perhaps there was a lack of findings regarding situational factors due to the inability to measure situational fluctuations within each individual. Thus, future research should use within person modeling (i.e., multilevel models) because this technique would have the ability to examine the impact of situational factors based on the changes within an individual's life instead of looking at changes between individuals.

Moreover, there is the potential that there was a lack of findings regarding situational variables on violent recidivism due to the possibility that certain dispositional traits are conducive to individuals selecting into (or being selected into) certain situational contexts that influence violent behavior (meaning that situational factors may be contingent on dispositional factors) (see Moffitt, 1993). Indeed, there is research that supports situational and dispositional factors influencing one another (Caspi et al., 1987; Moffitt, 1993). Bearing this in mind, perhaps

there was a cross-level interaction effect (i.e., one effect from between individuals, and one effect from within persons) regarding situational and dispositional factors that contributed to the lack of situational findings. This means that there is a possibility that situational and dispositional factors may interact to produce recidivism, and perhaps future researchers should examine cross-level interaction effects.

An additional limitation within the current study has to do with measurement. For instance, the perceived stress scale may not be the best measurement when testing Agnew's (1992) general strain theory. Indeed, Agnew (1992) argues that the disjunction between expectations and actual achievements, leads to anger, which, in turn, leads to the individual being strongly motivated to reduce that gap, perhaps by engaging in deviance or violence. Thus, the perceived stress scale, although used by other researchers (see Teasdale, 2009), may not adequately measure this disjunction. Future research should attempt to measure strain in a way that reflects one's aspirations (or expectations) and the individual's likelihood of achieving such expectations.

Furthermore, the measure of violent recidivism consisted of eight categories of violent behavior (ranging from pushing, shoving, or kicking to using a weapon) and other aggressive acts (including incidents of battery that did not result in an injury). Consequently, this measurement lumped in several categories that had an extensive range regarding the severity of violence. Thus, perhaps by dichotomizing violent recidivism (i.e., the participant either committed these acts or not), the current study could overlook which violent behaviors are more likely to result in recidivism. That is to say that perhaps some types of violent crimes are more conducive to violent recidivism. Additionally, future research should examine other forms of

dependent variables (i.e., deviant behaviors) in regards to recidivism. This line of research could examine property crime measures in the context of recidivism.

Finally, in regards to measurement, perhaps the measures of alcohol and substance use were overly simplified. There is research that supports the relationship between substance/alcohol abuse and violence for individuals with mental disorders (see Swartz et al., 1998). Due to this association, it may be important for future researchers to parse out the extent to which individuals with mental disorders use illicit substances and alcohol and how substance abuse effects violent recidivism, as opposed to the simple dichotomies of use/not presented here.

Lastly, MacRisk is one of the most extensive studies conducted examining community violence committed by individuals with mental disorders (see Monahan et al., 2001); however, since the sample consists of individuals who are diagnosed with a major mental disorder, the current study's findings are only applicable to individuals with similar diagnoses. Furthermore, MacRisk only utilized three psychiatric hospitals in three different cities. Thus, perhaps the current results are only applicable to individuals who reside within Kansas City, MO, Pittsburg, PA, and Worchester, MA. Future research should be conducted with the aim of obtaining a nationally representative sample of individuals with mental disorders.

### **Recommendations for Future Research**

In regards to future research, there are several potential avenues researchers should explore. For instance, since there is an established relationship between substance abuse and violence (Swartz et al., 1998), future research could examine how and if this relationship extends to violent recidivism. Indeed, does substance abuse predict violent recidivism? Is there a particular drug that increases the risk of violent recidivism?

Moreover, gender has been one of the strongest correlates of violent offending (Sampson & Lauritsen, 1994), with men engaging in more violent acts than women (Reiss & Ross, 1993). In the mental health literature, there has been mixed results regarding gender and violent offending, with some studies reporting no significant differences (Hiday et al., 1998; Lidz et al., 1993; Newhill 1993). Despite these findings Robbins, Monahan, and Silver (2003) found that there were significant gender differences in the situational factors surrounding violence, specifically showing gendered differences in substance abuse, severity of offense, adhering to medication, target selection, and likelihood of arrest. The authors highlight that clinicians need to consider the different situational contexts in relation to gender, and how these differences may influence violence (Robbins et al., 2003). Stemming from Robbins and colleagues' (2003) argument, future research should examine how gender may alter the impacts of risk factors (i.e., situational contexts) on violent recidivism.

Additionally, resilience research should be conducted in regards to violent recidivism and individuals with mental illness. Indeed, research should be conducted examining why individuals with mental illness, who have risk factors identified in the empirical research, do not engage in deviant behaviors such as violent recidivism. Thus, it would be interesting to examine individuals who have risk factors for violent recidivism identified in this study (i.e., scores high on psychopathy, low on agreeableness, and high on extraversion), but do not engage in violent recidivism. What causes individuals with mental disorders who do not engage in violence, but have the risk factors, to be different than individuals who do engage in violent recidivism? Do individuals with mental disorders, who display high levels of self-efficacy (i.e., the idea that the individual can produce change within their life), promote resilience, which would ultimately affect recidivism outcomes?

Furthermore, future researchers should conduct an empirical examination of the victim-offender overlap. Indeed, the victim-offender overlap has been examined by previous researchers, both in the context of individuals with mental disorders (Silver et al., 2011) and individuals who do not have mental disorders (Lauritsen et al., 1991; Singer, 1981). Perhaps this association also applies to individuals with mental disorders who engage in violent recidivism. In fact, there was evidence of the victim-offender overlap relationship in Teasdale's (2009) study, which should be further explored. Moreover, Silver and colleagues (2011) examined the victim-offender relationship, in the context of individuals with mental disorders, and found that even after controlling for demographic, clinical, and social factors, there was a significant correlation between violent offending and violent victimization. Thus, future research could examine the victim-offender overlap and if this relationship relates to violent recidivism.

Additionally, perhaps future researchers should attempt to bridge together micro-level and macro-level perspectives in regards to individuals with mental disorders who engage in violent recidivism. This potentially could include applying individual level variables identified as important predictors of violent recidivism to neighborhood level variables that have been identified as important indicators of violence. Indeed, there is reason to believe that neighborhood factors contribute to violent tendencies for individuals with mental illnesses that are not accounted for by individual level factors only (see Silver, 2000). To date, only Eric Silver (2000) and colleagues (1999; 2002) have tried to fill this gap within the literature, although this was done in the context of violence, not violent recidivism.

Moreover, future research should collect longitudinal data that examines micro and macro-level variables, potentially including how long an individual with mental illness has been exposed to disorganized neighborhoods. This could include examining key neighborhood factors

that have been empirically demonstrated to be associated with violence. This line of research could help researchers further understand the relationship between neighborhood characteristics and mental disorders, which might shed light on why some individuals with mental disorders engage in violent recidivism.

Lastly, desistance research should be conducted in regards to individuals with mental disorders. To my knowledge, this is a neglected topic of research in the mental health field, perhaps due to the lack of data required to analyze such processes. For this reason, longitudinal data should be collected to analyze pathways that may illustrate processes of desistance and persistent offending (see Laub & Sampson, 2003). In doing so, perhaps longitudinal data may be able to illustrate recidivism outcomes for different pathways. Toward this end, this study sheds light on factors that are significantly associated with violent recidivism in hopes that these findings will facilitate future research on the correlates of violent recidivism amongst individuals with mental disorders. Through additional research, researchers and clinicians may be able to develop monitoring and treatment techniques that will facilitate reduced chances of violently recidivating, which would ultimately decrease the proportion of individuals with mental disorders in correctional facilities and prisons.

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## VITA

Michelle Nicole Harris was born on January 8<sup>th</sup>, 1992 in Ft. Worth Texas. In 2010, Michelle attended University of Arkansas and graduated in 2014 with two Bachelors of Arts degrees in Psychology and Criminal Justice. While pursuing her undergraduate degrees, Michelle learned that she enjoyed research within her field of choice, in which she decided to attend graduate school.

In 2014, Michelle started her Masters in Science degree at Georgia State University. While attending Georgia State University, Michelle has presented Harris & Teasdale's (2015) poster entitled, "The Effect of Social Network Characteristics on Adolescent Deviance for Individuals with Depression," at the Annual meetings of the *American Society of Criminology*, in Washington, DC, November 2015. Furthermore, Michelle and Dr. Teasdale currently have a working paper under review entitled, "The Indirect Effects of Social Network Characteristics and Normative Beliefs in the Association between Adolescent Depressive Symptomatology and Binge Drinking."

Michelle has worked as a graduate research assistant for Dr. Brent Teasdale during her entire graduate school career thus far. Michelle will be a student instructor at Georgia State University in August 2016. Additionally, Michelle has received the Andrew Young Fellowship Award, Andrew Young School of Policy Studies, Georgia State University, in 2014, 2015, 2016. Michelle is currently a member of the American Society of Criminology, Alpha Phi Sigma, and the Criminal Justice Graduate Student Association. Michelle was the Vice President of the Criminal Justice Graduate Student Association in 2015-2016, and in August 2016 Michelle will be the President of the association. If in need for more information, please contact Michelle via email: [mharris78@student.gsu.edu](mailto:mharris78@student.gsu.edu), or mail at 1213 Urban Life Building, Atlanta, GA, 30302.