

UNDERSTANDING PRISON GANG MEMBERS' BEHAVIOR: A TEST OF GANG AND
NON-GANG RELATED MISCONDUCT AND VICTIMIZATION

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UNDERSTANDING PRISON GANG MEMBERS' BEHAVIOR: A TEST OF GANG AND
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ABSTRACT

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Prison gang members are believed to have higher level of in-prison misconduct and victimization than non-gang inmates. However, it is quite unknown whether prison gang membership has a different effect on gang and non-gang related misconduct and victimization. Adopting selection, facilitation, and enhancement models that were proposed to explain the relationship between street gang membership and offending/victimization into prison settings, the current dissertation explores the relationship between prison gang membership and gang and non-gang related misconduct and victimization separately, using cross-sectional self-reported data of an inmate sample. The findings indicate that prison gang membership is positively associated with the overall measure of violent misconduct, nonviolent misconduct, illicit sale, and violent victimization. After separating into gang and non-gang related misconduct/victimization, prison gang membership is positively related to each gang and non-gang related item, except for non-gang related nonviolent misconduct. Three main points are discussed, including the violent and profit-oriented nature of prison gang activities, gang and non-gang related misconduct and victimization, and use of self-reported membership and misconduct/victimization data. Theoretical and policy implications are also discussed.

KEYWORDS: Prison gang, Misconduct, Victimization

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CHAPTER I

Introduction

Prisons are the facilities that house criminals who are typically considered more dangerous than the general population. However, prisons are also dangerous places for criminals, and prison gangs are a major source of danger within correctional facilities (Beaird, 1986; Crist, 1986; Daniels, 1987). Nationwide, there are more than 230,000 prison gang members in correctional facilities (National Gang Intelligence Center, 2016). They are responsible for many types of in-prison violent misconduct, including intimidation, murder, and assault (Knox, 2005). They also dominate most of the inmate economic rackets, such as drugs, sex, food, clothing, loan sharking, gambling, extortion, and protection (Knox, 2005). The threat to prison security posed by prison gangs is increasing, as compared to previous years. Based on a prison gang survey sent to officials in jails, prisons, and detention centers in the United States, more than two-thirds of these officials believed that prison gang membership increased in their facilities in the past two years (National Gang Intelligence Center, 2015). In general, gangs in prisons are more dangerous than gangs in county jails, juvenile facilities, and detention centers (Skarbek, 2014). Gangs in juvenile facilities are engaged in delinquent and criminal behaviors, such as alcohol and drug use, weapon use, and fighting, but prison gangs are involved in more serious violent misconduct, like extortion, robbery, and homicide (Morris et al., 1995; Skarbek, 2014). Sometimes prison gangs even have strong control over the gangs in other correctional facilities and even street gangs (Skarbek, 2014). For example, prison gangs extort gang members in juvenile facilities and jails because those gang members expect eventually to end up in prisons, and if they do not follow prison gangs' orders, they, and

their fellow members who are already in prison, would face consequences (Skarbek, 2014). Therefore, this dissertation focuses on prison gangs, because prison gangs pose a greater threat to the safety of correctional facilities than gangs in jails, juvenile facilities, and detention centers.

In another recent national survey of 1.19 million inmates, gang membership in prison increased by 75 percent (12 to 19 percent of the inmate population) from 2004 to 2009, with an associated increase in prison misconduct of 67 percent (Winterdyk & Ruddell, 2010). Approximately 11 percent of the male inmates who were not previously a street gang member joined a prison gang after being incarcerated (Knox, 2005). Many more street gang members join prison gangs and import their street values, such as code of the street (Anderson, 1999), into prison, which may facilitate them engaging in more in-prison misconduct (Mears, Stewart, Siennick, & Simons, 2013).

While both qualitative and quantitative studies have started paying attention to the issue of prison gang misconduct, this topic remains understudied. Some early reports revealed that prison gangs were involved in many types misconducts, especially violent misconduct (e.g., Sheldon, 1991), but some more recent studies investigated more details of why and how prison gangs got to involve in those misconducts (e.g., Skarbek, 2014). Skarbek (2014), based on official record and interview data, found that many prison gangs in California made money through the sale of drugs and contraband, often using violence to secure their illicit sale. For example, La Nuestra Familia members were active in multiple profit-oriented behaviors, such as selling drugs, extortion, robbery, gambling, racketeering, and smuggling contraband. Violence was also used commonly among La Nuestra Familia members for both reputation and securing illicit business purposes. A

similar pattern was found in quantitative studies as well, that prison gang members were involved in more violent misconduct, minor misconduct, and drug and contraband sale than non-gang members (e.g., Cunningham & Sorensen, 2007; DeLisi & Munoz, 2003; Morris & Worrall, 2014). DeLisi and colleagues (2011; 2012) specifically looked at gang activity involvement among gang and non-gang members. Not surprisingly, gang members were engaged in more gang activities and gang-related misconducts than non-gang members. However, the more important question remains as to whether prison gang members are involved in more non-gang related misconduct.

Although the existence of prison gangs poses a security threat to prison safety, they were not regarded as a big problem when they first formed. Prison gangs actually started as self-protection groups instead of predator groups (Buentello, Fong, & Vogel, 1991). The research on the history of prison gangs proved that the original primary goal was to protect members from conflicts in prison (Buentello et al., 1991; Skarbek, 2014). As prison gangs developed, their primary goal shifted to profit gain from self-protection, but many inmates still join prison gangs for protection (Skarbek, 2014). As Winterdyk & Ruddell (2010) found, about 90 percent of inmates from a national sample reported fear of other inmates or seeking protection as a key reason for joining a prison gang. However, little is empirically known about whether prison gangs protect their members from victimization in prison. Ironically, on the street side, many teenagers join street gangs for protection (Decker & Van Winkle, 1996), but they actually experience more victimization than non-gang members (Melde, Taylor, & Esbensen, 2009; Taylor, Peterson, Esbensen, & Freng, 2007; Wu & Pyrooz, 2016). Wu and Pyrooz (2016) theorized the effect of street gang membership on violent victimization via self-control,

social learning, and routine activity/lifestyle, and found that street gang members experienced more violent victimization than non-gang members through engaging in more delinquent behaviors, which confirmed street gang members' offending-victimization overlap (Pyrooz, Moule, & Decker, 2014). Given the fact that prison gang members commit a significant amount of misconduct in prison, they may also experience a high level of victimization. Additionally, Lindegaard and Gear (2014), interviewing 35 inmates and ex-inmates in depth in South Africa, found that inmates joined prison gangs to avoid random violence. Meaning that after joining a prison gang, inmates would expect to be victimized by a rival or other prison gang members, instead of a random inmate. The findings, provided by Lindegaard and Gear (2014), suggest that it is possible that prison gang members would have high gang-related victimization, but not non-gang related victimization. Logically, since prison gang members are involved in more gang activities and gang violence than non-gang members (DeLisi et al., 2011, 2012), they would have more chances to be victimized through these gang-related activities than non-gang members. However, it is unknown to what extent prison gang members are victimized through non-gang related activities. Therefore, the current dissertation also explores the difference between gang and non-gang related victimization between gang and non-gang members. Combined with the question on gang and non-gang related misconduct, the current dissertation will produce a broader and more detailed picture of gang misconduct and victimization in prison, which may offer constructive suggestions for gang control policies. If prison gang members are not engaging in more non-gang related misconduct and experiencing no more non-gang related victimization than non-gang members, then correctional officers may just focus on conflicts between gangs to

reduce gang crimes in prison. If prison gang members are involved in more non-gang related misconduct and experience more non-gang related victimization than non-gang members, then correctional officers may want to limit prison gang members' contacts with both other gang and non-gang inmates.

In total, the current dissertation explores two research questions, including (1) What is the relationship between prison gang membership and in-prison misconduct? (2) What is the relationship between prison gang membership and in-prison victimization? Specifically, for each question, gang and non-gang related misconduct/victimization will be tested separately to see in which direction prison gang membership influences members' behavior.

In Chapter 2, a brief history of the development of prison gang in the United States will be presented, followed by the discussion of the theoretical framework and the prior studies on the relationship between gang membership and in-prison misconduct/victimization. In Chapter 3, the data, which comes from the Study of Offender Trajectories, Associations, and Reentry (LoneStar Project), will be introduced. Then, the measurement of the dependent, key independent, and control variables will be presented, followed by the discussion of analytical strategies based on the measurement and the distribution of the dependent variables. For each dependent variable, four models will be run, including two for the overall measure of misconduct/victimization, one for gang-related misconduct/victimization, and one for non-gang related misconduct/victimization. In Chapter 4, bivariate analysis on dependent variables between prison gang members and non-gang inmates will be shown first, followed by the multivariate results by the order of overall misconduct, gang-related misconduct, non-

gang related misconduct, overall victimization, gang-related victimization, and non-gang related victimization. Last, in Chapter 5, three main points are discussed, including violent and profit-oriented nature of prison gang activities, gang and non-gang related misconduct and victimization, and use of self-reported membership and misconduct/victimization data, followed by the limitations and implications of this dissertation.

CHAPTER II

Gang Membership, Misconduct, and Victimization

History of prison gangs

Back in the early 1950s, there were few prison gangs in American correctional facilities, and it was the convict code that regulated inmates' behaviors (Skarbek, 2014). Some typical and important principles of the convict code included that inmates cannot provide any information to correctional officials, they should be loyal to other inmates, and they should not interfere with others' illicit behaviors (Skarbek, 2014). The convict code established a stable relationship among inmates by providing governance to inmates. However, it started losing its control over inmates after 1950s, when the structure of inmate population started changing in the United States. After the 1950s, the inmate population increased dramatically due in large part to the "War on Crime" and the "War on Drugs" (Skarbek, 2014). When the population increased and diversified, it was harder to reach a consensus among inmates. It also created more opportunities for inmates to cheat during trades among inmates without being caught. Specifically, there were more young, minority, and first-time offenders being incarcerated after the 1950s. The convict code lost its power because these young, minority, and first-time offenders simply did not know the convict code well (Skarbek, 2014). Also, these newbies wanted to show their toughness and strength in prison, so they broke the rules and initiated conflicts, which destroyed the balance provided by the convict code.

As the convict code was broken down, inmates needed a new form of governance or regulation; and it was during this time when prison gangs came along, taking over the role of the convict code, helping inmates deal with conflicts. Aside from changes in the

inmate population, other factors also contributed to the early development of prison gangs. First, in 1964, the U. S. Supreme Court case, *Cooper v. Pate*, ruled that state prison inmates had the right to pursue cases in federal courts challenging their conditions of confinement. As a result of this case, prison gangs expanded in many states and some of them even evolved into organized crime groups (Roth, 2010), because inmates now lived in a more liberal environment that they could get together claiming they were engaging in legitimate business, such as for religious activities, without interference from correctional officers, but were actually discussing or planning illegal business. Second, after racial segregation housing policies were abolished from the 1960s to 1970s, people of different race and ethnicity could be housed in the same unit or cell (Roth, 2010; C. Trulson & Marquart, 2002). This created more opportunities for direct contacts among diverse inmates, which increased racial conflicts in prison in the short-term (Skarbek, 2014; C. Trulson & Marquart, 2002). Because of this increase in racial conflict, inmates from the same race or ethnicity joined prison gangs to deal with racial conflicts (Skarbek, 2014). For example, the Mexican Mafia was the first prison gang to appear in California correctional facilities, and its original purpose of establishment was to protect Latino inmates from racial conflicts against White and Black inmates (Skarbek, 2014). In response, White and Black inmates also formed prison gangs to protect themselves. Third, the sentencing for street gang members got tougher in the 1970s, which put more street gang members in prison. As a result, these members brought their street gang values into prison and made connections between street and prison gangs. These connections provided more opportunities for prison gangs to make money through illegal business, which supported their development and expansion.

Because of the high level of racial conflict, the early role of prison gangs was primarily to protect their members from prison conflicts (Buentello et al., 1991; Skarbek, 2014). However, as prison gangs developed, they became stronger and turned into predator groups. In general, there are four steps for a prison gang developing from a protection group to a predator criminal organization (Buentello et al., 1991; Skarbek, 2014). First, inmates with similar features, such as race, region, friends, and cellmates, got together as a group or clique because of the feelings of fear, isolation, loneliness, and danger that were generated after being incarcerated. They worked together to deal with new situations, like racial conflict, control of the black market, and violence in prison. Second, after group size increased, these cliques became self-protection groups. At this stage, these groups were not likely to attack others, because the initiation of violence would cause retaliation from others, which these self-protection groups could not handle. Therefore, the goal of these groups was only to survive, and they did not initiate violent misconduct but only fought back to protect their own safety. Third, as self-protection groups got stronger and gained more reputation among inmates, they learned the importance of power and transformed into predator groups. At this moment, they became more willing to execute violence and commit other types of misconduct, as the power they had made them less fearful of retaliation. Also, being powerful with a high reputation helps them in carrying out illegal business because it prevented fraud and deception from buyers (Skarbek, 2014). Fourth, while these predator groups became more powerful, they enjoyed their position because they did not need to fear others but became the ones to fear. Eventually, these predator groups turned into prison gangs as organized crime groups to maximize their benefit. At this stage, they would be involved

in multiple types of misconduct, including murder, trafficking, extortion, and other types of violent and contraband-related illicit activities. Violence is used not only to maintain reputation but also allocate resources for illicit sales.

After prison gangs turned into predator groups and expanded their illegal business behind bars, they became involved in many types of misconduct in prison, including drug trafficking (Camp & Camp, 1985; Fong & Buentello, 1991), violence (Fong & Buentello, 1991), extortion, bullying, and harassment (Stevens, 1997). These members accounted for more than half of prison management problem (G. M. Camp & Camp, 1985) and even higher percentage of serious violent misconduct. Based on Gaes and colleagues' (2002) work, prison gang members were responsible for approximately 80 percent of the homicides in prison.

On the street, gang members engage in a significant amount of gang-related activity, and much of it involves violence (Curry, 1994). They also engage in profit-generation activities through illegal enterprise, and violence is also deeply involved in these profit-making activities (Curry, 1994). Similarly, prison gang members participate in many gang-related activities and misconduct in prison, since they are already in the gang (DeLisi et al., 2012, 2011). In prison, bullying or attacking other inmates is a primary way to show their toughness and enhance one's status and reputation, just as street gang members do outside the prison (Scott, 2018; Vigil, 1988; Wood, Moir, & James, 2009). Non-gang inmates witness how those prison gang members raise their reputation by attacking others, so they join prison gangs to gain a reputation for themselves and also prevent future victimization (Wood et al., 2009). After joining, they accept the gang culture and start attacking more inmates to build their reputation. Prison

gang members also are more likely to use violence to retaliate against others, especially their rivals (Scott, 2018). When some members are attacked by their enemy, it is not just a threat to their own reputation in prison, but also a threat to the whole prison gang, so the whole prison gang would probably fight back (Skarbek, 2014). At the same time, prison gang members experience high levels of gang-related victimization because they are vulnerable targets of other prison gangs. These gang-related fights, especially against rivals, increase the internal bond and solidarity of the prison gang (Decker, 1996; Scott, 2018). Additionally, violence is a mechanism to allocate resources for their illegal business (Skarbek, 2014). Yards, basketball courts, and other recreational areas are often places that prison gangs fight for, because they are good locations to conduct illicit sales (Skarbek, 2014). Sometimes, prison gangs limit their members use of unauthorized violence to avoid unnecessary attention from correctional officers, which hinders their illegal business, but overall, violence is a common tool for prison gangs to maintain and expand their businesses in prison (Skarbek, 2014). Of course, prison gang members not only engage in gang-related misconduct and victimization, but they also experience these behaviors through non-gang related sources, such as trivial issues, non-gang disputes, race motives, manners or personality conflicts, and disrespect (Scott, 2018).

Just like non-gang inmates, prison gang members also live in the prison setting. They can be involved in non-gang related misconduct and victimization because of non-gang related situational factors, for instance, engaging in non-gang related aggressive behaviors and unstructured socializing with fellow inmates (Anderson & Hughes, 2009; Fagan & Wilkinson, 1998; Scott, 2018). Also, non-gang inmates can be involved in gang-

related misconduct. Because prison gangs are powerful in prison, non-gang members may turn to prison gangs for help when they cannot handle the conflict by themselves.

As Scott (2018) revealed, youth in prison used violence to solve both gang and non-gang related issues. Joining a prison gang and accepting gang culture may increase both gang and non-gang related violent misconduct because violence becomes a culturally expected way to deal with issues. This misconduct may also, in return, put them in more risky situations, resulting in more victimization. Among street gang literature, three models were used to explain the relationship between gang membership between offending/victimization, including selection, facilitation, and enhancement models (Thornberry, Krohn, Lizotte, & Chard-Wierschem, 1993). The current dissertation borrows from these three models to explain the relationship between prison gang membership and misconduct/victimization. Additionally, many prior studies adopt deprivation and importation perspectives to explain prison misconduct. Therefore, the following section reviews the three models from the street gang research to illuminate the connection between prison gang membership and misconduct and discusses the two perspectives from the prison misconduct research for other predictors of misconduct.

Theoretical framework

Selection, facilitation, and enhancement models. Among street gang literature, three theoretical models are historically used to explain the relationship between gang membership and offending/delinquency: namely selection, facilitation, and enhancement models (Thornberry et al., 1993). These three theoretical models were later applied to the gang membership and victimization link as well by DeLisi and colleagues (2009). The first model is selection model or “kind of person” model. It argues that people who share

the same high level of delinquency and propensity of victimization tend to get together and join a gang, the delinquency and victimization rates of gang members should be consistent before joining a gang, during onset, and after desistance from the gang. Under this model, the reason why street gang members commit more offenses and experience more violent victimization than non-gang peers is due to their pre-existing risk characteristics. Therefore, the relationship between gang membership and offending/victimization is spurious. The same logic can be applied to prison gang members, where inmates with an extremely high orientation toward misconduct and victimization join prison gangs. Their level of misconduct and victimization would be higher than non-gang members before, during, and after prison gang membership.

The second model is facilitation model or “kind of group” model, holding that street gang members are just like non-gang members before joining a gang, but behave more delinquently and violently after becoming a gang member due to “normative structure and group processes of the gang” (Thornberry et al., 1993, p. 58). At the same time, these group processes also put gang members in riskier environments that facilitate their chances of victimization. Therefore, there should be a positive relationship between street gang membership and offending/victimization. In prison settings, prison gang members and non-gang inmates are all criminals already; they should have a certain level of orientation toward misconduct and victimization before some of them become prison gang members. It is possible that something unique about prison gang group processes exaggerates and reinforces this orientation and makes these members engage in more misconduct and victimization than non-gang inmates.

The last model, enhancement, is the combination of the selection and facilitation models. It agrees with the selection model that people with a higher propensity of offending and victimization are more likely to join a street gang, but it disagrees with the selection model that gang members would remain the same level of offending and victimization after joining. The enhancement model also concurs with the social facilitation model that street gang membership increases adolescents' offending and victimization level, but it does not integrate the notion that street gang membership fully explains the increase of offending and victimization during the gang onset. The selection effects weaken the impact of gang membership on offending and victimization, which means the prior risk factors partially explain their high involvement of criminal behavior and exposure to victimization (Barnes, Boutwell, & Fox, 2012). Under this model, gang members would have higher levels of offending and victimization than non-gang members before joining a gang, and gang membership enhances their offending and victimization level after joining. Similarly, prison gang membership could have both selection and facilitation effects on misconduct and victimization in prison. Meaning that inmates who are more likely to commit misconduct and experience victimization are self-selected into prison gangs and prison gang membership enhances their engagement in misconduct and exposure to victimization after joining.

Facilitation and enhancement models received more support than the selection model among prior street gang research (Battin, Hill, Abbott, Catalano, & Hawkins, 1998; DeLisi et al., 2009; Esbensen, Huizinga, & Weiher, 1993; Gatti, Tremblay, Vitaro, & McDuff, 2005; Melde & Esbensen, 2011; Thornberry et al., 1993; Wu & Pyrooz, 2016), suggesting a theoretically positive relationship between prison gang membership

and misconduct/victimization as well. According to the selection model, other factors would also predict misconduct and victimization, so it is also important to mention other risk and protective factors of misconduct and victimization in prison, which are addressed in deprivation and importation perspectives used in broader inmate misconduct literature.

Deprivation perspective. One commonly used theory that helps understand why inmates commit misconduct in prison is the deprivation perspective. It argues that inmates behave aggressively in prison because of their high levels of stress and the pains of imprisonment, which are derived from the harsh conditions and environment in prison (Sykes, 1958). Under this perspective, aggressive behaviors are a maladaptive reaction to the harsh conditions in prison and is a way to release frustration (Sykes, 1958). Some frequently used individual level deprivation factors are custody level (e.g., Camp, Gaes, Langan, & Saylor, 2003; Cao, Zhao, & Van Dine, 1997; Morris & Worrall, 2014), sentence length (e.g., Cunningham & Sorensen, 2007; DeLisi, Berg, & Hochstetler, 2004; Griffin & Hepburn, 2006; Worrall & Morris, 2011), time served (e.g., Cunningham & Sorensen, 2006; DeLisi et al., 2004; DeLisi & Munoz, 2003; Tasca, Griffin, & Rodriguez, 2010), and victimization (Edgar & O'Donnell, 1998; Lahm, 2009; Tasca et al., 2010).

Based on the deprivation model, higher security levels of custody should have a positive effect on prison violence, because inmates would feel more stress and frustration under more restrictive conditions (Camp, Gaes, Langan, & Saylor, 2003). However, inmates who are housed in higher security level custody should be managed by more restrictive rules and supervised by more correctional officers. Therefore, inmates who live in such circumstance may not have many opportunities to engage in misconduct.

Previous studies found mixed results on the relationship between custody level and prison violence. As the deprivation model predicts, Camp et al. (2003), Cao et al. (1997), Griffin and Hepburn (2006), and Morris and Worrall (2014) found that higher custody level was positively related to prison misconduct. However, custody level was not a statistically significant predictor at all in two experimental designs (Bench & Allen, 2003; Camp & Gaes, 2005). Bench and Allen (2003) compared disciplinary violations among three groups of inmates, including an experimental group containing 100 newly classified maximum security custody inmates who were resigned to medium security custody, a comparison group containing 100 newly classified maximum security custody inmates who remained in maximum security custody, and the other comparison group containing 100 medium security custody inmates who remained in medium security custody. After observing disciplinary violations among these three groups for a year, Bench and Allen (2003) found that there was no difference on disciplinary violations between experimental and control groups, indicating that custody level did not have an effect on inmates' disciplinary violations. Similarly, Camp and Gaes (2005), employing an experimental design, tested the effect of custody level on misconduct using four groups of inmates, including two groups of low risk inmates who were randomly assigned to high security and low security custody and the other two groups of high risk inmates who were randomly assigned to high security and low security custody. However, the results showed that only the security level of inmates predicted misconduct, instead of the security level of custody, meaning that individual characteristics mattered more than the custody level (Camp & Gaes, 2005).

The deprivation perspective predicts that inmates with longer sentence length and longer time served in prison would have a higher level of misconduct because inmates would experience more stress with more experience in prison. However, there were mixed findings regarding sentence length. As the prediction of the deprivation perspective, both Morris and Worrall (2014) and Kuanliang and colleagues (2008) found a positive relationship between sentence length and the prevalence of prison misconduct. However, some studies found a non-significant relationship between sentence length and prison misconduct (DeLisi, Berg, & Hochstetler, 2004; Diamond, Morris, & Barnes, 2012), while others found a negative relationship (Cunningham & Sorensen, 2007; DeLisi & Munoz, 2003; Griffin & Hepburn, 2006; Worrall & Morris, 2012). Compared to sentence length, there have been more consistent findings on time served. Berg and DeLisi (2006), DeLisi and colleagues (2004), DeLisi and Munoz (2003), and Drury and DeLisi (2010) revealed a positive relationship between the direct measure of time served in prison and prison misconduct. Also, percent time served, which accounts for sentence length, was also found positively related to different types of misconduct, including violence against inmates, violence against staff, property misconduct, security misconduct, drug-related misconduct, contraband related misconduct, and sexual misconduct (R. G. Morris & Worrall, 2014; Worrall & Morris, 2011).

Unlike custody level, sentence length, and time served in prison, victimization was consistently found to be positively correlated with misconduct (Edgar & O'donnell, 1998; Lahm, 2009; Tasca, Griffin, & Rodriguez, 2010). Lahm (2009) and Tasca and colleagues (2010) suggested a reciprocal nature of violence in prison, meaning that inmates who attacked others were usually the targets of other attackers.

In terms of gang members' living conditions in prison, they usually have longer sentence length, are housed in higher security level units, and experience more victimization than non-gang members in prison (Ruddell & Gottschall, 2011; Winterdyk & Ruddell, 2010). Meaning that gang members would suffer from a harsher and more dangerous environment than non-gang members, which makes them more frustrated and triggers more maladaptive behaviors in prison. Although some prior studies found certain deprivation variables predicted prison misconduct, others argued that instead of the harsh conditions in prison, inmates violate institutional disciplines just because they bring their criminal values and habits from the streets to the prison environment. This pattern of behavior is in line with the importation perspective (Irwin & Cressey, 1962).

Importation perspective. In contrast to the deprivation perspective, the importation model disagrees with the notion that the influence the harsh environment exerts is the primary cause of behavior, but asserts that inmates import their criminal-oriented characteristics from outside into the prison (Irwin & Cressey, 1962). In other words, it argues that the factors that predict criminal behavior on the streets should also predict misconduct inside the prison. Unlike deprivation perspective's argument on the harsh environment in prison, importation perspective blames inmates' personal characteristics. Several importation factors have been tested in prior studies, including age (e.g., Cunningham & Sorensen, 2007; DeLisi et al., 2004; Griffin & Hepburn, 2006; Kuanliang, Sorensen, & Cunningham, 2008), race (e.g., Drury & DeLisi, 2010; Huebner, 2003; Morris et al., 2010; Worrall & Morris, 2012), education (R. G. Morris & Worrall, 2014), marital status (Huebner, 2003; R. G. Morris & Worrall, 2014; Worrall & Morris, 2011, 2012), criminal history (e.g., Diamond et al., 2012; Griffin & Hepburn, 2006;

Tasca et al., 2010; Worrall & Morris, 2012), and gang membership (e.g., DeLisi et al., 2004; Griffin & Hepburn, 2006; Ruddell & Gottschall, 2011; Ruddell & Scott, 2011). Therefore, under this perspective, gang membership is a predictor of crime both inside and outside the prison, just like other predictors mentioned in the importation perspective. However, the question remains whether prison gang membership is a significant predictor of in-prison misconduct after controlling for other importation covariates.

Many studies found a negative effect of age on prison misconduct, indicating that younger inmates engaged in more misconduct in prison (Cunningham & Sorensen, 2006, 2007; DeLisi & Munoz, 2003; Drury & DeLisi, 2010; Griffin & Hepburn, 2006; Huebner, 2003; Kuanliang et al., 2008; Morris & Worrall, 2014; Worrall & Morris, 2011, 2012). For instance, Morris and Worrall (2014) looked at 2,500 inmates housed by the Texas Department of Criminal Justice and examined six types of prison misconduct, including inmate-on-on violence, security-related misconduct, property misconduct, drug-related misconduct, contraband related misconduct, and inmate-on-staff violence. Age was found to be negatively related to all six types of misconduct using multilevel models (Morris & Worrall, 2014). Different from the linear relationship between age and misconduct proposed by other studies, DeLisi et al. (2004) looked at a juvenile and adult inmate sample (age ranged from 16 to 78) in a large southern state and hypothesized that age should have quadric relationship with violent misconduct, just like the reversed bell-shaped relationship between age and crime in a general population. Consistent with their hypothesis, age was positively related to violent misconduct and age squared was negatively related to violent misconduct (DeLisi et al., 2004). This evidence reinforces the importation perspective that the reverse bell-shaped relationship between age and

crime from the free world also applies to the prison setting (Hirschi & Gottfredson, 1983).

Unlike age, previous studies found mixed, and in some instances, opposite results on the effect of race and ethnicity on prison misconduct. When comparing Whites with non-Whites, non-Whites were found to engage in more misconduct and violence than White inmates (DeLisi et al., 2004; DeLisi & Munoz, 2003; Drury & DeLisi, 2010; Morris & Worrall, 2014; Varano, Huebner, & Bynum, 2011), while other studies found Whites to report more violent misconduct than non-Whites (Huebner, 2003). When looking at minority groups, Blackburn and Trulson (2010), Diamond et al. (2012), Morris et al. (2010), Trulson et al. (2010) all found that African-American inmates were involved in more violence in prison than other racial groups. However, Worrall and Morris (2012) found the opposite result, suggesting that Blacks were less likely to commit violent misconduct. Additionally, Hispanics were found to have a higher level of prison violence in some samples (Berg & DeLisi, 2006; Diamond et al., 2012; Griffin & Hepburn, 2006), but not in others (Blackburn & Trulson, 2010; Huebner, 2003; Worrall & Morris, 2011).

There were no consistent findings on the effect of educational attainment on prison misconduct. As the importation perspective predicts, inmates with lower educational attainment should have higher levels of misconduct. Using a continuous measure of educational attainment, several studies supported this prediction (Berg & DeLisi, 2006; Cunningham & Sorensen, 2007; DeLisi et al., 2004; DeLisi & Munoz, 2003; Huebner, 2003; Kuanliang et al., 2008; Varano et al., 2011; Worrall & Morris, 2012). However, some other studies failed to find a significant relationship between

education attainment and prison misconduct (Diamond et al., 2012; Drury & DeLisi, 2010; Graeve, Delis, & Hochstetler, 2007; R. G. Morris et al., 2010; R. G. Morris & Worrall, 2014; Wulf-Ludden, 2013). Drury and DeLisi (2010) examined the effect of education level on major and minor misconduct among male and female inmates separately. The results indicated that education level only predicted female inmates' major misconduct (Drury & DeLisi, 2010). Also, Morris and colleagues (2010) tested the prevalence and incidence of eight types of misconduct, and the results showed that low education attainment only predicted the high prevalence of security infractions and the count of drug-related misconduct, while it was related to low count of contraband related misconduct. Different from other studies' continuous measure, Wulf-Ludden (2013) tested two dichotomized variables, including high school and at least some college, and found no significant relationships with violent misconduct.

Marriage is considered as a conventional bond, and as such, the importation perspective predicts that marriage is a protective factor for prison misconduct. However, many studies found no relationship between marriage and misconduct (Huebner, 2003; Morris & Worrall, 2014; Worrall & Morris, 2011, 2012). Although Morris and Worrall (2014) found inmates who were married had a lower level of violence against inmates, they found no relationship between marriage and violence against staff, property misconduct, security misconduct, drug-related misconduct, and contraband related misconduct. Similarly, Worrall and Morris (2012) found that marriage only predicted lower levels of violence against officers, security-related misconduct, and accountability misconduct, but not violence against inmates, contraband related misconduct, property misconduct, sexual misconduct, drug-related misconduct, and other types of misconduct.

Therefore, marriage seems not to be a consistent protective factor for all types of misconduct.

According to the importation perspective, inmates with prior criminal history would have more prison misconduct. Few studies did not support this prediction (Blackburn & Trulson, 2010; Diamond et al., 2012; Graeve et al., 2007; Worrall & Morris, 2012), among which Worrall and Morris (2012) found that prior incarceration experience only had an effect on violent misconduct among gang members. However, many more prior studies supported a positive relationship between criminal history and prison misconduct using different measurements of criminal history (Berg & DeLisi, 2006; Cunningham & Sorensen, 2007; DeLisi et al., 2004, 2011; DeLisi & Munoz, 2003; Drury & DeLisi, 2010; Griffin & Hepburn, 2006; Huebner, 2003; MacDonald, 1999; Morris et al., 2010; Morris & Worrall, 2014; Trulson et al., 2010; Worrall & Morris, 2011). For instance, DeLisi and colleagues (2011) found that inmates with prior felony adjudications had a higher level of any prison misconduct. Drury and DeLisi (2010) found that a history of violence had a positive effect on major and minor prison misconducts. Worrall and Morris (2011) revealed a positive relationship between prior incarceration and multiple types of prison misconduct.

In line with the importation perspective, since street gang membership predicts delinquency and offending on the streets (Melde & Esbensen, 2011), prison gang membership should also predict in-prison misconduct. With some exceptions, many studies did support this notion, finding that either street gang, prison gang, or security threat group (STG) affiliation is a robust risk factor of prison misconduct. For example, looking at a sample of male inmates in a large state in southwestern America, DeLisi and

colleagues (2004) examined the effect of street gang history, prison gang affiliation, and the interaction between the two on violent misconduct. The results showed both street gang history and prison gang affiliation were positively related to violent misconduct (DeLisi et al., 2004). However, few studies have looked at the within gang difference on misconduct. For instance, Ruddell and Gottschall (2011) compared the in-prison violence level among gang members from different types of gangs, including Aboriginal, Asian, Outlaw Motorcycle Groups (OMG), street, and traditional organized crime (TOC) gangs. The results showed that TOC gangs actually had a lower level of in-prison violence than other types of gangs and even non-gang members (Ruddell & Gottschall, 2011). On the other hand, Varano and colleagues (2011) found that only organized gang involvement was positively related prison misconduct, but not unorganized gang involvement, which suggests that the organizational structure may play a role on explaining gang members' prison misconduct. Therefore, evidence suggests that there is a between gang and maybe a within gang difference, due to the organizational structure of gangs, on in-prison misconduct. A more detailed discussion of prior literature on prison gang misconduct will be addressed later in this chapter.

Prior studies on prison misconduct have proved that no single perspective alone fully explains the variation in misconduct. Instead, some deprivation and importation variables are found having a statistically significant effect on prison misconduct in the same model, indicating that these two models may work together to predict prison misconduct (e.g., Cao et al., 1997; Jiang & Fisher-Giorlando, 2002; MacDonald, 1999; Tasca et al., 2010). Gang membership, as an importation variable, remained statistically significant in many studies that controlled for various deprivation and importation

covariates (e.g., Morris & Worrall, 2014; Tasca et al., 2010). Therefore, the current dissertation also controls for multiple deprivation and importation covariates, in order to examine whether prison gang membership has a positive relationship to misconduct/victimization after accounting for these factors. The following section reviews prior studies on the relationship between gang membership and misconduct in depth.

Prison gang membership and misconduct in context

As mentioned above, many prior studies found a positive relationship between gang membership and in-prison misconduct (e.g., Gaes, Wallace, Gilman, Klein-Saffran, & Suppa, 2002; Morris & Worrall, 2014). However, most prior studies did not distinguish among street gang membership, prison gang membership, and STG membership, which might be slightly different (Pyrooz, Decker, & Fleisher, 2011). Although there is no universal agreement of on the definitions of street gang and prison gang, a street gang refers to “any durable, street-oriented youth group whose involvement in illegal activity is part of its group identity (Klein & Maxson, 2006, p. 4), whereas a prison gang is “a cohesive group of prisoners, with a leader, whose criminal activities negatively impact on the institutions that hold them” (Wood et al., 2009, p. 569). Street and prison gangs differ on their physical environment, which street gangs operate on the street while prison gangs are active in prison, and they also differ on their organizational structure and crime involvement (Pyrooz et al., 2011). First, prison gangs are more organized than street gangs. In general, street gangs have ephemeral leadership, high turnover of membership, and moderate internal solidarity (Klein & Maxson, 2006). However, prison gangs tend to have more hierarchical structure and more stable

membership (Pyrooz et al., 2011). Also, although street gangs may have a code of conduct, prison gangs have more rigorous rules and even written constitutions (Roth, 2010). Second, street gang violence is symbolic and cafeteria style while prison gang violence is more instrumental and entrepreneurial (Pyrooz et al., 2011). In addition, although both street and prison gangs deal drugs and other illicit goods, prison gangs' illicit trade behaviors are more organized and collective than street gangs (Pyrooz et al., 2011). In other words, making money through drug trafficking may be a collective goal of a prison gang, but street gangs' drug trafficking is more individualized. Some powerful prison gangs even control several street gangs to help them sell drugs and make money on the street (Skarbek, 2014). For example, the Mexican Mafia is a highly organized prison gang in California and gives orders to street gangs to sell drugs. To make more money, Mexican Mafia even limits street gangs use of drive-by shootings, which might attract more attention from the police (Skarbek, 2014). Therefore, the violence used by prison gangs may be more purposive than street gangs. Because of these differences between street and prison gangs, it is not proper to use a general measure of gang membership when studying misconducts in prison.

While there are several considerable differences between street and prison gangs, prison gang and STG are often used interchangeably (DeLisi et al., 2004; Roth, 2010). STG is defined as "identifiable collections of inmates whose misconduct poses various hazards to prison order" (DeLisi et al., 2004, p. 372). Prison gang and STG are similar in two ways. First, they both operate in prison and may have connections on the street for their criminal enterprises (Allender & Marcell, 2003). Second, STG and prison gangs are disproportionately perpetrators of misconduct in prison (Allender & Marcell, 2003;

Fleisher & Decker, 2001). Therefore, the current review of prior studies is sorted by the measurement of gang membership and categorizes prior studies into four levels, including (1) unspecified measurement of gang membership, (2) street gang membership only, (3) prison gang or STG membership only, and (4) multiple measurements of gang membership.

Table 1 shows the four levels of studies on the relationship between gang membership and in-prison misconduct. Level 1 studies do not have a clear indication whether it is street or prison gang membership, so they only examined the effect of gang membership in general on in-prison misconduct. Using a sample of male inmates from a large south state, DeLisi and colleagues (2011, 2012) examined the effect of gang membership on multiple types of in-prison misconduct. In both studies, gang membership was measured as known gang member based on the documented history and observation by correctional officials. DeLisi and colleagues (2011) looked at the relationship between gang membership and the count of any misconduct, assault, escape, drug possession, weapon possession, and gang activity, beyond the effect of family background characteristics, delinquent career characteristics, and other demographic characteristics. The results showed that gang membership was positively associated with drug possession and gang activity, but had no relationship with any misconduct, assault, escape, and weapon possession (DeLisi et al., 2011). Time served was found as the most consistent predictor of misconduct, but this significant relationship was likely due to the ever measure of the misconduct. Unlike DeLisi et al. (2011), DeLisi and colleagues (2012) used a path model to test the direct and indirect effect of pre-incarceration characteristics on in-prison gang activity. Gang membership was found positively related to in-prison

gang activity, while also mediating the effect of pre-incarceration characteristics on gang activities (DeLisi et al., 2012). Using similar measurement of gang membership in the Texas Department of Criminal Justice, Morris and colleagues (2010) examined the relationship between confirmed gang membership by officials and eight types of in-prison misconduct during the first three years of incarceration, including violence, potential violence, accountability, security, sexual, property, contraband, and drug misconduct. The findings indicated that gang membership was positively associated with the prevalence of violence, security, sexual, property, contraband, and drug misconducts, and the count of accountability and property misconducts (Morris et al., 2010).

Table 1

Studies examining the relationship between gang membership and in-prison misconduct

Study	Key findings
Level 1 – unspecified measurement of gang membership	
DeLisi et al. (2011)	Any misconduct (ns); Assault (ns); Escape (ns); Drug possession (+); Weapon possession (ns); Gang activity (+)
DeLisi et al. (2012)	Gang misconduct (+)

(continued)

Study	Key findings
Gaes et al. (2002)	Violence (+); Serious violence (+); Drug (+); All (+)
Griffin & Hepburn (2006)	Assault (+); Fight (ns); Threat (+); Weapon (ns); Any major violent misconduct (+)
Kuanliang et al. (2008)	Total violation (+); Potential violence (+); All assault (+); Assault with injuries (+); Assault with serious injuries (+)

(continued)

Study	Key findings
Morris et al. (2010)	Violence (prevalence +, count ns); Potential violence (prevalence ns, count ns); Accountability (prevalence ns, count +); Security (prevalence +, count ns); Sexual (prevalence +, count ns); Property (prevalence +, count +); Contraband (prevalence +, count ns); Drugs (prevalence +, count ns)
Ruddell & Gottschall (2011)	Major incident (+); Minor incident (+); Rate of perpetrator (+)
Level 2 – street gang membership only	
Blackburn & Trulson (2010)	Major rule violation (ns); Minor rule violation (ns); Staff assault (ns); Ward assault (+)
Huebner (2003)	Inmate-on-staff assault (+); Inmate-on-inmate assault (+)

(continued)

Study	Key findings
McDonald (1999)	Violent misconduct (+); Drug misconduct (ns)
Sheldon (1991)	Number of disciplinary offense (+); Percent of drug offense (+); Percent of fighting offense (+); Percent of rules violation (ns); Percent of contraband offense (ns); Percent of alcohol offense (ns)
Tasca et al. (2010)	Inmate assault (+)
Trulson et al. (2010)	Major misconduct violation (+); Minor misconduct violation (+); Staff assault (ns); Ward assault (+)
Level 3 – prison gang or STG membership only	
Cunningham & Sorensen (2006)	Violent infraction (+)
Cunningham & Sorensen (2007)	Violent rule misconduct (+)
DeLisi & Munoz (2003)	Violent prison violations (+)
Diamond et al. (2012)	Violent prison misconduct (ns)

(continued)

Study	Key findings
Ireland & Power (2013)	Aggressive behavior (+); Negative behavior (+); Drug-related behavior (+)
Mears et al. (2013)	Violence (+)
Morris & Worrall (2014)	Violence against inmates (ns); Violence against staff (+); Property misconduct (ns); Security misconduct (ns); Drug misconduct (+); Contraband misconduct (ns)
Ruddell & Scott (2011)	Total institutional charges (+)
Worrall & Morris (2011)	Contraband misconduct (ns); Violence against inmates (ns); Property misconduct (ns); Accountability misconduct (ns); Sexual misconduct (ns); Violence against officer (+); Security misconduct (ns); Drug misconduct (ns); Other misconduct (ns)

(continued)

Study	Key findings
Worrall & Morris (2012)	Inmate-on-inmate violence (ns)
Level 4 – multiple measurements of gang membership	
Berg & DeLisi (2006)	Male inmate violence (street gang ns; STG ns); Female inmate violence (street gang ns; STG +)
DeLisi et al. (2004)	Violent misconduct (street gang marginal +; prison gang marginal +; interaction of street and prison gang ns)
Drury & DeLisi (2010)	Major misconduct (street gang ns; prison gang ns); Minor misconduct (street gang -; prison gang ns); Male major misconduct (street gang ns; prison gang ns); Male minor misconduct (street gang -; prison gang ns); Female major misconduct (street gang ns; prison gang +); Female minor misconduct (street gang -; prison gang ns)
Fischer (2001)	Bivariate but no significant tests
Graeve et al. (2007)	Prison riot (street gang ns; STG -)
Wulf-Ludden (2013)	Prison violence (street gang ns; prison gang +)

Note. A positive effect of gang membership on in-prison misconduct is symbolized by (+), negative effect by (-), and no effect by (ns).

Ruddell and Gottschall (2011), using the official data in Canada, compared 1,636 gang members with 1,636 non-gang members. The bivariate analyses displayed that gang members, in general, were more likely to engage in major and minor misconduct than

non-gang members. Griffin and Hepburn (2006) looked at the relationship between gang affiliation and four types of violent misconduct, including assault, fight, threat, and weapon, among 2,158 male inmates in the Arizona Department of Corrections. Gang affiliation was identified based on the official records of either street or prison gang membership. The dependent variables were obtained from official data in the three years' observation period. After accounting for several importation control variables, gang membership was found positively associated with assault, threat, and any major violent misconduct, but not with fight or weapon (Griffin & Hepburn, 2006). Different from DeLisi and colleagues (2011, 2012), Griffin and Hepburn (2006), and Morris and colleagues (2010), Kuanliang and colleagues (2008) not only included confirmed gang members but also suspected gang members in the Florida Department of Corrections by correctional officials. Controlling for several importation variables, gang membership was found positively associated with the all five dependent variables, namely total violation, potential violence, all assault, assault with injuries, and assault with serious injuries (Kuanliang et al., 2008). Gaes and colleagues (2002) used the data from Bureau of Prisons, which contains the record of each gang an inmate participated in. The results indicated that gang membership, length of gang membership, and multiple gang membership were all positively related to prison violence, serious violence, drug-related misconduct, and the overall misconduct (Gaes et al., 2002). In sum, the Level 1 studies all used official data for both gang membership and in-prison misconduct and with some exceptions, gang membership was found positively related to different types of in-prison misconduct, especially for violence and drug misconducts. However, the measurement of gang membership was not clear about the affiliation with street or prison, so the

conclusion can only be made that there is a positive relationship between the affiliation with criminal groups, like street or prison gangs, and in-prison misconduct.

Level 2 studies only look at the relationship between street gang membership and in-prison misconduct. In this type of study, street gang membership was typically regarded as an indicator of importation perspective. Sheldon (1991) compared the difference between street gang members and non-gang members on prison disciplinary offenses. Six criteria were used to help identify the gang membership, including “(1) in a court case it was proven or admitted by the offender that he was a gang member; (2) gang membership was admitted by the offender and noted in the pre-sentence report; (3) gang membership was confirmed through police reports; (4) the inmate has confirmed gang tattoos; (5) in the prison classification report gang membership was admitted by the offender; (6) an informal confidential file (based in part upon an informal snitch network) of gang members, suspected gang members, associates and ”wannabe’s” is kept” (Sheldon, 1991, p. 51). Anyone who met three or more criteria would be identified as a gang member. Based on the bivariate analysis, gang members had a greater number of prison disciplinary offenses, and higher percentage of drug and fighting offenses than non-gang members, while there was no difference on the percentage of rule violations, theft, contraband, and alcohol offenses between the two groups (Sheldon, 1991). Also using criteria to identify gang membership, Huebner’s (2003) criteria were closer to Klein and Maxson’s (2006) definition of street gang. Four questions were asked to inmates in 272 state correctional facilities, including whether the group “(1) had members from the same area; (2) had a turf or territory; (3) had a formal membership; and (4) had a known leader” (Huebner, 2003, p. 110). Gang members were found to have a greater

amount of inmate-on-staff and inmate-on-inmate assault than non-gang members, after controlling for both individual and prison level variables (Huebner, 2003).

Unlike the measurement of street gang membership using several criteria, MacDonald (1999), Blackburn and Trulson (2010), Trulson and colleagues (2010), and Tasca and colleagues (2010) used one simple item to identify street gang membership. After controlling for deprivation and importation variables, MacDonald (1999) found that inmates with gang affiliation were more likely to commit violent misconduct, but not drug misconduct. Trulson and colleagues (2010) looked at the frequency of both violent and non-violent misconducts among 2,520 serious and violent male youth offenders. Gang members were found having more major rule violations, minor rule violations, and ward assaults than non-gang members, controlling for demographics, delinquent history, commitment history, and social history. Using the same data and measurement, but examining female serious and violent youth offenders, Blackburn and Trulson (2010) found that gang membership was only positively related to the amount of inmate-on-inmate assault, but had no relationship with a major rule violation, minor rule violation, and staff assault. These two studies using the same data and measurements revealed that there is a gender difference in the relationship between gang membership and in-prison misconduct. Tasca and colleagues (2010) examined whether importation and deprivation factors have an effect on inmate assault among juvenile transfers. The importation factors included prior violent offense, history of street gang membership, and age at first arrest, and the deprivation factors included threatened with weapon, property victimization, and time served. The results showed that history of street gang membership was a significant predictor of inmate assault before and after controlling for deprivation factors (Tasca et

al., 2010). In sum, the level 2 studies generally found a positive relationship between street gang membership and in-prison misconduct, especially among male inmates.

Level 3 studies only look at the relationship between prison gang/STG membership and in-prison misconduct. Ruddell and Scott (2011) compared institutional charges between a group of female STG members and a group of female non-STG members on a bivariate level. When looking at the total institutional charges, STG members had significantly more charges than non-STG members. After breaking down each type of institutional charge, STG members had significantly more charges than non-STG members on most types of charges, including disobeying rules, refusing or leaving work, possessing unauthorized items, failing or refusing urine sample, being disrespectful or abusive toward staff, fights, assaults, threatens, possessing or dealing in contraband, making damage or destroy, disobeying order, being disrespectful to provoke violence, creating or participating to jeopardize security, entering prohibited area, and creating or participating in disturbance (2011). Only three types of institutional charges, including taking intoxicant into the body, escaping or assisting escaping, and possessing stolen property, did not display statistical significance between STG and non-STG groups (2011). Also looking at the bivariate difference on misconduct or violation between prison gang members and non-gang members based on the official record, Ireland and Power (2013) found that prison gang members had more aggressive behaviors, negative behaviors, and drug-related behaviors than non-gang members.

Cunningham and Sorensen (2006, 2007) used an official and dichotomized measure of suspected or confirmed prison gang membership from the Florida Department of Corrections. Using a proportional hazards model, Cunningham and Sorensen (2006)

found that prison gang members increased the hazard rate of violent infraction after controlling for age of entry of correctional facility, prior prison commitments, offense type, and sentence length. Cunningham and Sorensen (2007) revealed that prison gang members are more likely to have violent rule misconduct than non-gang members, holding age, prior prison term, sentence length, offense type, and prior rule violation in past 5 years as constant.

Also using an official measure of prison gang membership, DeLisi and Munoz (2003) found prison gang membership was positively related to a count measure of violent prison violation. However, Diamond and colleagues (2012) found that officially measured prison gang members did not increase the likelihood of having a violent prison misconduct, after controlling for individual and prison level covariates, where individual-level covariates included IQ, admission age, prior incarceration, marriage status, sentence length, offense type, race, ethnicity, security level, and education level, and prison level covariates included average IQ in the unit, age of prison, percent with priors, and exposure to danger.

Using official data from Texas Department of Corrections, Morris and Worrall (2014) and Worrall and Morris (2011, 2012) found that prison gang membership is only a significant predictor of certain types of in-prison misconduct, after controlling for inmate level and unit level factors. Worrall and Morris (2011) found that confirmed prison gang membership was only positively related to violence against an officer, but had no effect on contraband misconduct, violence against inmates, property misconduct, accountability misconduct, sexual misconduct, security misconduct, drug misconduct, and other misconduct. Also, the percentage of gang members in the unit was not related to any type

of misconduct (Worrall & Morris, 2011). Using different unit level factors, Morris and Worrall (2014) found prison gang membership was positively related with violence against staff and drug misconduct, but not violence against inmates, property misconduct, security misconduct, and contraband misconduct. Worrall and Morris (2012) only looked at inmate-on-inmate violence and found that prison gang membership was not significantly related to the count of inmate-on-inmate violence. These studies may indicate that prison gang membership is no longer a predictor of in-prison misconduct after controlling for unit level covariates, but most of the unit level covariates did not show a consistent effect on misconduct (Morris & Worrall, 2014; Worrall & Morris, 2011, 2012).

Instead of commonly used official measures of prison gang membership, Mears and colleagues (2013) used a self-identified measure. This self-identified measure of prison gang membership was found positively related to in-prison violence after controlling for code of the streets, inmate demographic characteristics, criminal justice related covariates, and incarceration experience variables (Mears et al., 2013). In sum, prior studies on the relationship between prison gang membership and in-prison misconduct generally found a positive association, except for those studies that controlled for unit level covariates. However, no unit level covariates were found consistently explaining the variation in misconduct.

Level 4 studies have multiple measurements of gang membership, including both street and prison gang membership. Fischer (2001) evaluated the STG program in the Arizona Department of Corrections and found that certified prison gang members, uncertified prison gang members, and street gang members had more disciplinary

violations than non-gang members. However, only raw descriptive statistics were provided without any significant tests. Also using official data from the Arizona Department of Corrections, Drury and DeLisi (2010) took a random sample of 1,005 inmates and examined the factors predicting major and minor in-prison misconduct. Official measures of street gang risk and STG risk were included simultaneously in the model. In the whole sample model, there was no relationship between both street gang risk and STG risk and the count of major misconduct after controlling for demographic characteristics and other criminal history variables. STG risk did not influence the count of minor misconduct, but street gang risk was negatively related to minor misconduct. After splitting the sample by gender, researchers found that there were different effects of both street gang and STG risks on major misconducts between male and female inmates (Drury & DeLisi, 2010). Specifically, street gang and STG risks had no effect on major misconduct among male inmates, but STG risk was positively related to major misconduct among female inmates. The authors explained the non-significant relationship between gang membership and misconduct by acknowledging the effort of separating gang members from the general population (Drury & DeLisi, 2010).

Also looking at male and female inmate violence with dichotomized official measurements of street and prison gang membership, Berg and DeLisi (2006) found similar results from Drury and DeLisi (2010) that street gang and STG membership did not influence the count of violent misconduct among male inmates, but STG membership was positively related to violent misconduct among female inmates. Graeve and colleagues (2007) only looked at prison riots, which is an extreme type of violent misconduct, and they found street gang membership had no relationship with riots and

prison gang members were less likely to participate in prison riots. DeLisi and colleagues (2004) not only included official measures of street gang membership and prison gang membership in the model, but also the interaction term of the both. It showed that street gang and prison gang membership was only marginally and positively related to the count of in-prison violence, net of demographic characteristics and other criminal risk factors (DeLisi et al., 2004). However, the interaction term was not statistically significant. These findings indicated that although gang members reported a higher level of violent misconduct, other violent risks and background factors played a more important role in explaining prison violence (DeLisi et al., 2004).

Unlike other studies, Wulf-Ludden (2013) interviewed 816 inmates and collected data on gang membership, in-prison misconduct, and other criminal and non-criminal related variables. The result from a logistic regression model showed that self-reported street gang membership did not have an effect on self-reported prison violence and self-reported prison gang members were more likely to engage in self-reported prison violence than non-gang members (Wulf-Ludden, 2013). In sum, similar to studies only on street gang membership and prison gang membership, studies including both measures typically used official data. However, fewer statistically significant results were found compared to those in single-measure studies.

Several interesting patterns were found among four levels of studies on gang membership and misconduct. First, prior studies highly relied on official data on both gang membership and misconduct. Findings from studies using official data mostly found a positive relationship between street or prison gang membership and misconduct. However, some studies failed to support this relationship after controlling both individual

and unit level covariates. Only two studies used the self-identified measurement of gang membership and misconduct, and both of them found a positive relationship between prison gang membership and misconduct (Mears et al., 2013; Wulf-Ludden, 2013). Second, studies including both official measures of street and prison gang membership tended to find non-significant results (DeLisi et al., 2004; Drury & DeLisi, 2010). When looking at the gender difference, prison gang membership was found to play a more important role explaining misconduct among female inmates, rather than male inmates (Berg & DeLisi, 2006; Drury & DeLisi, 2010). Third, gang members were found to be positively related to gang activity and gang misconduct (DeLisi et al., 2012, 2011), but it could be expected that gang members would engage in more gang activities than non-gang members since they are already in the gang. However, more research is needed on whether prison gang members are involved in more non-gang related misconduct than non-gang members. Therefore, the current dissertation explores the relationships between prison gang membership and misconduct, gang-related misconduct, and non-gang related misconduct, using self-reported measures of prison gang membership and controlling for self-reported street gang history. Since prison gang members are likely to have higher levels of misconduct and violence than non-gang members, and given the fact of the reciprocal nature of violence in prison (Tasca et al., 2010), one can expect that gang members would experience more victimization than non-gang members. Thus, the prior studies on gang membership and victimization in prison will be reviewed in the next section.

Prison gang membership and victimization in context

Gang members are disproportionately engaged in in-prison misconduct, and some research has studied this group of individuals as perpetrators, but less effort has been put toward the study of gang members as victims in prison. Studying gang members' victimization can help understand the nature of gang violence in prison. Studying gang misconduct and violence tells us whom gang members are attacking and the frequency of these behaviors. Adding knowledge of gang members' victimization provides a more complete story of gang violence by understanding the source and the frequency of gang members' victimization. Also, potentially studying gang members as victims may also be beneficial to develop gang violence reduction programs because by knowing the network of gang violence, one can design certain management strategy to break down the connection between perpetrators and victims.

As prison gang members' counterpart, street gang members were found to have more victimization than non-gang members on the street (Curry, Decker, & Egley, 2002; DeLisi et al., 2009; Gibson, Swatt, Miller, Jennings, & Gover, 2012; Ozer & Engel, 2012; Pyrooz et al., 2014; Wu & Pyrooz, 2016). This positive relationship was confirmed in studies using bivariate analyses (e.g., Curry et al., 2002; Katz, Maguire, & Choate, 2011; Webb, Ren, Zhao, He, & Marshall, 2011), multivariate analyses (e.g., Barnes, Boutwell, & Fox, 2012; Pyrooz et al., 2014; Taylor, Freng, Esbensen, & Peterson, 2008; Taylor, Peterson, Esbensen, & Freng, 2007), and more rigorous designs that controlled for the selection effect of street gang membership (e.g., DeLisi et al., 2009; Ozer & Engel, 2012; Wu & Pyrooz, 2016). Although empirical studies have found that street gang members had more victimization and even more violent victimization than non-gang members,

many teenagers still joined street gangs for protection (Decker & Van Winkle, 1996; Melde et al., 2009). Melde and colleagues (2009) used the psychometric paradigm to understand the fear of victimization, perceived risk of victimization, and actual victimization of street gang members. The psychometric paradigm argues that individuals feel fearful when the risks are unknown and uncontrollable, and vice versa (Melde et al., 2009). In terms of victimization of gang members, after teenagers join a street gang, the source of risk becomes predictable, which includes internal disciplinary punishment and rival gang violence. Therefore, even though teenagers would have an even higher level of victimization than before, they still want to join because they would have a lower level of fear of victimization. This hypothesis was confirmed by Melde and colleagues (2009) that street gang members had higher levels of actual victimization and perceptions of victimization risk, but lower levels of fear of victimization. At the same time, street gang members are more likely to carry weapons than non-gang members, such as firearms, knives, and mace, as protective behaviors (Rufino, Fox, Cramer, & Kercher, 2013). This risky lifestyle can put gang members into a risky environment that facilitates both high offending and victimization, as suggested in Pyrooz and colleagues (2014). Using multinomial logistic regression, Pyrooz and colleagues (2014) revealed that street gang members were more than twice as likely than non-gang members to be both offenders and victims, after controlling for demographic characteristics, low self-control, code of the street, and routine activities. The authors also found that street gang membership was positively related to both violent offending and violent victimization beyond the reciprocal relationship between offending and victimization, using logistic item response theory models (Pyrooz et al., 2014). After controlling for the selection effect, Wu and

Pyrooz (2016) found that street gang membership changed gang members' routine activities and lifestyles, such as engaging in more delinquent behaviors, which in turn mediated the relationship between gang membership and violent victimization. Both Pyrooz and colleagues (2014) and Wu and Pyrooz (2016) suggested that there is a high overlap of offending and victimization among street gang members. Since prior studies mostly found a positive relationship between prison gang membership and misconduct, it is logical to predict that prison gang members would have more in-prison victimization as well.

As the deprivation model holds, prison environment is dangerous and stressful (Sykes, 1958), and victimization is a major source of danger and stress. One possible explanation of inmate victimization is lifestyle theory, which argues that one's daily routine activities influence his/her opportunities to be victimized (Wooldredge, 1998). Engaging in more prosocial activities, such as legitimate recreational activities, education programs, training programs, work assignments, and visitation in prison, would reduce inmates' likelihood of being exposed to risks of victimization (Wooldredge, 1998; Wooldredge & Steiner, 2012). Usually, there is enough guardianship from correctional officers when inmates are engaging in these types of prosocial activities, which reduces inmates' opportunities of personal victimization (Wooldredge & Steiner, 2012). However, participating in such activities leaves their property in a cell lacking guardianship, which may increase their probability of being a victim of property misconduct (Wooldredge, 1998; Wooldredge & Steiner, 2012). On the other hand, criminal association and exposure to violence or risks are two key factors that change one's likelihood of victimization (Hindelang, Gottfredson, & Garofalo, 1978). In terms of

prison gang members, since they are more likely to engage in misconduct, including violence and selling contraband, they would have a higher level of victimization, especially violent victimization, than non-gang members. Additionally, prison gang members usually enjoy a high status in prison, so other inmates, typically rival prison gang members, are more likely to challenge them to enhance their own reputation in prison, which makes prison gang members vulnerable targets (Wooldredge & Steiner, 2014).

However, prison gang membership could also mean a protection mechanism of prison gang members themselves and their property as well (Wooldredge & Steiner, 2012). As described earlier in this chapter, the main purpose of prison gangs in the 1970s was to provide protection for their members from theft and predation (Buentello et al., 1991). Thus, many inmates joined prison gangs with the same race or ethnicity for protection at that time (Skarbek, 2014). However, many inmates still join prison gangs for protection in recent years as prison gangs became more organized crime groups (Tapia, 2013; Tapia, Sparks, & Miller, 2014; Winterdyk & Ruddell, 2010). The Texas Joint Crime Information Center found that many inmates joined prison gangs with the same race or ethnicity for protection (Texas Department of Public Safety, 2015; Texas Department of Public Safety, 2017). In a survey to all American federal and state prisons in 2009, inmates were asked why they joined a STG (Security Threat Group) (Winterdyk & Ruddell, 2010). The result showed that the approximately 90 percent of the respondents believed that the most important reason for inmates to join a prison gang was fear of other inmates/gangs, followed by a sense of belonging (82 percent), increasing their status (70 percent), access to contraband (60 percent), and economic benefits (58

percent). Although protection is a popular reason to join a prison gang, it is unknown whether prison gang membership actually protects members from victimization or facilitate more victimization through engaging in more risky activities like lifestyle theory predicts.

Several studies have tested the relationship between gang membership and in-prison victimization (see Table 2). Using official data from federal prisons in Canada, Ruddell and Gottschall (2011) compared both major and minor victimization between gang members and non-gang members. The results of the bivariate analysis showed that gang members were more likely to be a victim of a major incident, but less likely to be a victim of a minor incident (Ruddell & Gottschall, 2011). Also using a Canadian sample, with surveys of 423 male inmates, Ireland and Power (2013) compared the frequency of victimization between prison gang members and non-gang members, also at the bivariate level. Prison gang members were found having more victimization than non-gang members (Ireland & Power, 2013). After separating the total victimization into aggressive and disruptive victimization, prison gang members had more aggressive victimization but had fewer disruptive victimization than non-gang members (Ireland & Power, 2013).

Table 2

Studies examining the relationship between gang membership and in-prison victimization

Study	Key findings
Ireland & Power (2013)	Total victimization (+); Aggressive victimization (+); Disruptive victimization (-)
Ruddell and Gottschall (2011)	Major victimization (+); Minor victimization (-)
Wolff et al. (2009)	Personal victimization by inmates (+); Personal victimization by staff (ns); Total personal victimization (+); Property theft victimization by inmates (+); Property theft victimization by staff (ns); Total property theft victimization (+)
Wooldredge and Steiner (2012)	Assault victimization among White (ns); Theft victimization among White (-); Assault victimization among Black (ns); Theft victimization among Black (ns)
Wooldredge and Steiner (2013)	Assault victimization (ns); Theft victimization (+)

Note. A positive effect of gang membership on in-prison misconduct is symbolized by (+), negative effect by (-), and no effect by (ns).

Wolff and colleagues (2009) conducted survey interviews of 6,964 male inmates and studied the factors that related to inmate victimization. The gang measure used was the respondent's perception of whether gang activity was high at the unit, instead of self-gang membership or self-gang affiliation. They also controlled for other individual and unit level factors in the models. Individual-level predictors included demographic characteristics, mental health status, offense types, time at facility, age at first arrest, and prior victimization. Unit level predictors included percent dissatisfied with treatment by other inmates and officers. By separating the type and source of victimization, the results showed that the perception of gang activity was positively related to the likelihood of being a victim of personal misconduct and personal victimization by other inmates but was not significantly associated with the likelihood of personal victimization by staff. Similarly, the perception of gang activity was positively associated with the likelihood of property theft victimization in general and property theft victimization by other inmates, but not related to the likelihood of being a victim of property theft by staff.

Adopting lifestyle theories as the framework, Wooldredge and Steiner (2012, 2014) attempted to understand the mechanism of inmate victimization. Not only including demographic characteristics and criminal history variables in the model, Wooldredge and Steiner (2012) also controlled for inmate experiences and routines, such as number of hours in recreation, number of hours in education or vocational training, number of hours in job per week, number of visits during preceding month, officer legitimacy, involvement in violent and property misconduct, and the length served in facility. The results suggested that gang membership was not related to assault victimization both among White and African American inmates. Also, gang membership

was negatively related to theft victimization among White but not African American inmates. Wooldredge and Steiner (2014) went one step further in that they grouped lifestyle variables into individual activities/guardianship, target antagonism, target vulnerability, and unit level guardianship. Officially measured gang membership was treated as an indicator of target vulnerability because gang membership creates more opportunities for physical conflicts. The findings revealed that gang membership was positively related to theft victimization but not assault victimization (Wooldredge & Steiner, 2014).

As a conclusion, although bivariate analyses from Canadian samples revealed a positive relationship between prison gang membership and in-prison victimization, studies using official data on unspecified gang membership in America did not confirm this positive relationship. Therefore, the current dissertation examines this relationship using self-reported data, and again as mentioned above, further explores the relationship between prison gang membership and both gang and non-gang related victimization. By doing so, it provides a more detailed view of prison gang members' victimization source – whether it is through gang-related activities, non-gang related activities, or both.

Current study

To advance the knowledge on prison gang misconduct and victimization behind bars, the current dissertation explores two of research questions on between and within gang difference on in-prison misconduct and victimization, including (1) What is the relationship between prison gang membership and in-prison misconduct? (2) What is the relationship between prison gang membership and in-prison victimization? In each research question, misconduct and victimization are tested three times, including

misconduct or victimization in general, gang-related misconduct or victimization, and non-gang related misconduct or victimization.

Many prior studies have studied the between gang difference on misconduct and victimization, and the current dissertation advances prior research by adding two components. First, the current dissertation separates misconduct and victimization into two parts, including gang and non-gang related misconduct/victimization. These two separate measures offer an in-depth examination of misconduct and victimization, by telling the purpose of misconducts and the source of victimization. A few studies have found a positive relationship between gang membership and gang-related misconduct, but this result is to be expected since gang members are already in the gang and they are expected to participate in more gang-related activities than non-gang members. However, it is unknown that whether joining a prison gang also increases gang members' involvement in non-gang related criminal activities or it drives gang members away from non-gang related criminal activities. Therefore, the current dissertation improves our understanding of the influence of prison gang membership on misconduct/victimization by testing gang and non-gang related behaviors separately. Second, the current dissertation uses a self-reported measure of gang membership and misconduct/victimization, while most prior studies used official records of these variables. Official records determine whether an inmate is a gang member through a validation process based on physical features (such as tattoos and symbols), oral reports (such as self-admissions and officers' confirmation), and written documents (such as court documents and juvenile records) (Specter, 2014). However, this measurement of gang membership does not necessarily mean the current status of gang membership but

includes the history of gang membership. Using self-reported prison gang membership provides a more precise measurement of the current status of prison gang membership. Additionally, because not every incident will be reported to correctional officers, official data on misconduct/victimization often suffer from systematic biases of underreporting (Reisig, 1998; Steiner & Wooldredge, 2012). Using self-reported data will expand our knowledge on in-prison misconduct and victimization by uncovering the dark figure in official data (Huebner, 2003; Mears et al., 2013; Tasca et al., 2010).

The discussion of the three models borrowed from street gang literature (Thornberry et al., 1993) possibly explain the potential positive relationship between prison gang membership and misconduct/victimization. The facilitation and enhancement models emphasize on the gang group process that makes gang members more embedded into prison gang culture and lifestyle, which increases their propensity to both misconduct and victimization (Thornberry et al., 1993; Thornberry, Lizotte, Krohn, Smith, & Porter, 2003; Wu & Pyrooz, 2016). Specifically, the gang group process gets prison gang members more involved in gang activities, which automatically increases their gang-related misconduct and victimization. At the same time, joining a gang may change a member's attitudes, belief, and behavior patterns that in turn increase their offending/victimization (Melde & Esbensen, 2011; Wu & Pyrooz, 2016). Also, the acceptance of gang culture may make gang members accustomed to using violence to deal with non-gang related conflicts (Scott, 2018), which increases the risk of non-gang related victimization as well. If a positive relationship is found between prison gang membership and misconduct/victimization, it supports either facilitation or enhancement model but cannot determine which one is superior to the other because the current

dissertation cannot account for the selection effect of prison gang membership. To limit the influence from other predictors of misconduct/victimization, the current dissertation controls for the harsh living condition in prison and other risk/protection factors imported from the streets under deprivation and importation perspectives. Similar to DeLisi and colleagues (2004), street and prison gang memberships are tested simultaneously in statistical models, as well as the interaction term of street and prison gang membership. One step further than DeLisi and colleagues (2011, 2012), the current dissertation not only looks at gang-related misconduct and victimization but also non-gang related misconduct and victimization to provide a larger picture of prison gang members' behavior pattern in prison.

CHAPTER III

Methods

Data

The data used are from the Study of Offender Trajectories, Associations, and Reentry (LoneStar Project). The study employed a disproportionate stratified random sampling strategy of male inmates in the Texas Department of Criminal Justice (TDCJ), who were close to their release date when selected. Two prisons, the Huntsville Unit and Estelle Unit, were selected for the study sites for specific reasons. Huntsville Unit is largest release center for male inmates in Texas, and releases about 90 percent of the male inmates in Texas every year. Because the study focused on the reentry of gang members into the community and many of them were housed in high-security units, Estelle Unit was selected for its administrative segregation cells. Although they would be released in Huntsville Unit, it would be safer to conduct interview surveys with these high-risk inmates in a more secured setting within the administrative segregation visitation area in Estelle Unit.

Due to a focus on gang members, the study oversampled gang members by using a disproportionate stratified random sampling strategy. The sampling frame included inmates scheduled for release from Huntsville Unit in Texas between April 19, 2016, and December 12, 2016 ($N = 15,644$). The weekly release population data were given to the research team from the TDCJ Executive Services in advance. Inmates were stratified by TDCJ classification of gang membership, where gang members included TDCJ-identified former, suspected, and confirmed gang affiliates. For each interview day, stratified TDCJ classified gang and non-gang members were randomly selected from the population

release data using a random number generating program. Sampling fractions differed by official gang classification, where individuals with non-zero levels of gang affiliation were oversampled by a factor of five. The final sample size included 802 individuals, 368 TDCJ-identified gang members and 434 non-gang members. Because TDCJ-identified gang members were oversampled, to apply the results from the sample to the population, a weight variable was created based on the proportion of the TDCJ-identified gang members in the population and the sample.¹ All statistical models in the current dissertation use this weight variable as the sample weight.

A computer assistance interview tool, Blaise, was used to conduct the interview surveys on laptops. During the survey, interviewers read each question and response items to the respondents and recorded the answers from respondents into the laptop. Wave 2 and wave 3 data were collected through phone calls and jail/prison visits if reincarcerated 1 month and 9 months upon respondents' release respectively. For this dissertation, only the first wave of data is used, because it is the only wave that contains the data for in-prison misconduct and victimization. In total, 797 individuals with 183 self-identified current prison gang members and 614 self-reported non-gang members were included in the analyses after listwise deleting the cases with missing data. Listwise deleting was used because the data were missing completely at random. Independent sample *t*-tests were run for all dependent and independent variables, and no significant difference was found between the final sample group and the deleted group, indicating that listwise deleting would not generate biased estimates (Allison, 2001).

¹ The weight for TDCJ-identified gang members was calculated as $(1/\text{proportion of gang members in the sample}) / (1/\text{proportion of gang members in the population})$. The weight for TDCJ-identified non-gang members was computed as $(1/\text{proportion of non-gang members in the sample}) / (1/\text{proportion of non-gang members in the population})$.

Variables and measurements

Dependent variables. There are five sets of dependent variables, including violent misconduct, nonviolent misconduct, illicit sale, violent victimization, and nonviolent victimization. For each dependent variable, three measures will be created. The first one is the overall misconduct/victimization, the second one is gang-related misconduct/victimization, and the third one is non-gang related misconduct/victimization.

Violent misconduct includes ten items, namely, “carried a weapon for protection,” “attacked a correctional officer with a weapon,” “hit or struck a correctional officer without a weapon, such as fists,” “attacked another inmate with a weapon individually,” “attacked another inmate with a weapon in a group,” “hit, kicked, slapped, or bit another inmate individually,” “hit, kicked, slapped, or bit another inmate in a group,” “threatened to hurt someone,” “had sexual relations with someone against their will,” and “used a weapon or force to try to get money or things from people.” For each item, respondents were asked whether they had ever committed each type of violent misconduct during the current incarceration. If they said yes, then a follow-up question was asked that how many times each violent misconduct happened in the last six months. If the respondent reported more than once in the past six months, he was asked what percent of the time it was gang-related. In this way, three frequency measures of violent misconduct will be get, including the frequency of total violent misconduct in the prior six months, the frequency of gang-related violent misconduct calculated by the product of total violent misconduct and the percent of gang-related, and the frequency of non-gang related violent misconduct computed as the different value between the total violent misconduct and gang-related violent misconduct. Then, these three frequency measures were recoded

into ordinal level variables because of their distributions, which contain high frequency on zero with a low and flat right tail. Six categories were created based on the frequency they reported, which are zero times, at most once every two months, at most once a month, at most once every two weeks, at most once a week, more than once a week. The final continuous measures of total violent misconduct, gang-related violent misconduct, and non-gang related violent misconduct are the mean of each recoded item. If a respondent missed fewer than half of the items, he would still be included in the analysis. Lastly, three dichotomized variables were computed to present the prevalence of violent misconduct, gang-related violent misconduct, and non-gang related violent misconduct. About 22 percent of the respondents had at least one violent misconduct six months prior to the survey. On average, the level of violent misconduct among the whole sample is 0.05 with the standard deviation of 0.17 (see Table 3). About 4 percent and 21 percent of the respondents had at least one gang and non-gang related violent misconduct respectively in the prior six months. On average, the level of gang-related violent misconduct is 0.01 with the standard deviation of 0.11. The mean level of non-gang related violent misconduct is 0.04 with the standard deviation of 0.13.

Table 3

Descriptive statistics for variables (N = 797)

Variables	Full sample			Non-gang members			Gang members			P
	Mean (%)	S.D.	Min.-Max.	Mean (%)	S.D.	Min.-Max.	Mean (%)	S.D.	Min.-Max.	
Violent misconduct	0.05 (22%)	0.17	0.00-1.80	0.04 (18%)	0.13	0.00-1.50	0.18 (54%)	0.30	0.00-1.80	0.00*
Gang-related violent misconduct	0.01 (4%)	0.11	0.00-1.80	0.00 (1%)	0.03	0.00-0.70	0.10 (23%)	0.28	0.00-1.80	0.00*
Non-gang related violent misconduct	0.04 (21%)	0.13	0.00-1.50	0.03 (0.17)	0.12	0.00-1.50	0.12 (49%)	0.18	0.00-1.00	0.00*
Nonviolent misconduct	0.14 (36%)	0.28	0.00-1.83	0.13 (32%)	0.26	0.00-1.83	0.27 (60%)	0.34	0.00-1.83	0.00*
Gang-related nonviolent misconduct	0.01 (2%)	0.06	0.00-1.67	0.00 (1%)	0.03	0.00-0.67	0.04 (11%)	0.14	0.00-1.67	0.00*
Non-gang related nonviolent misconduct	0.14 (35%)	0.27	0.00-1.83	0.13 (32%)	0.26	0.00-1.83	0.25 (56%)	0.31	0.00-1.17	0.00*
Illicit sale	0.28 (10%)	1.00	0.00-5.00	0.20 (8%)	0.82	0.00-5.00	0.83 (24%)	1.69	0.00-5.00	0.00*
Gang-related illicit sale	0.06 (1%)	0.50	0.00-5.00	0.02 (1%)	0.26	0.00-5.00	0.33 (8%)	1.19	0.00-5.00	0.02*
Non-gang related illicit sale	0.25 (9%)	0.92	0.00-5.00	0.19 (8%)	0.79	0.00-5.00	0.67 (21%)	1.51	0.00-5.00	0.00*

(continued)

Variables	Full sample			Non-gang members			Gang members			P
	Mean (%)	S.D.	Min.-Max.	Mean (%)	S.D.	Min.-Max.	Mean (%)	S.D.	Min.-Max.	
Violent victimization	0.06 (25%)	0.15	0.00-1.25	0.05 (21%)	0.12	0.00-1.25	0.16 (49%)	0.26	0.00-1.25	0.00*
Gang-related violent victimization	0.02 (6%)	0.10	0.00-1.25	0.01 (4%)	0.06	0.00-1.25	0.08 (19%)	0.23	0.00-1.25	0.01*
Non-gang related violent victimization	0.05 (22%)	0.13	0.00-1.25	0.04 (20%)	0.11	0.00-1.00	0.11 (42%)	0.21	0.00-1.25	0.01*
Nonviolent victimization	0.08 (23%)	0.23	0.00-3.20	0.07 (22%)	0.18	0.00-2.20	0.13 (25%)	0.43	0.00-3.20	0.34
Gang-related nonviolent victimization	0.01 (2%)	0.14	0.00-2.80	0.00 (1%)	0.04	0.00-0.60	0.05 (5%)	0.36	0.00-2.80	0.28
Non-gang related nonviolent victimization	0.07 (22%)	0.21	0.00-2.80	0.07 (21%)	0.18	0.00-2.20	0.12 (24%)	0.38	0.00-2.80	0.32
Current prison gang membership	(13%)			(0%)			(100%)			--
History of street gang membership	(22%)			(18%)			(49%)			0.00*
Current prison gang * ever street gang	(6%)			(0%)			(100%)			--
Age ^a	40.23	12.10	18.50-73.26	41.53	12.07	18.50-73.26	31.36	7.90	19.60-56.88	0.00*
White	(33%)			(35%)			(23%)			0.05*

(continued)

Variables	Full sample			Non-gang members			Gang members			P
	Mean (%)	S.D.	Min.-Max.	Mean (%)	S.D.	Min.-Max.	Mean (%)	S.D.	Min.-Max.	
Hispanic	(30%)			(28%)			(46%)			0.00*
High school	(47%)			(50%)			(27%)			0.00*
Married	(22%)			(23%)			(18%)			0.28
Prior incarceration ^a	1.84	1.23	1.00-9.00	0.87	1.27	0.00-8.00	0.60	0.83	0.00-5.00	0.00*
Violent offender ^a	(40%)			(40%)			(38%)			0.73
Administrative segregation ^a	(9%)			(9%)			(0.13)			0.18
Time served in years ^a	4.44	5.40	0.04-34.98	4.58	5.63	0.04-34.98	3.48	3.37	0.05-24.51	0.01*

Note. Weighted sample statistics are reported. Statistical significance was determined using sampling weighted bivariate OLS and logistic regression between current prison gang members and non-gang inmates.

Abbreviations: S.D.= standard deviation.

^a Official data provided by TDCJ are used for these variables.

Nonviolent misconduct is comprised of six items, including “entered or attempted to enter someone’s cell or area to steal something,” “stole or tried to steal something,” “used counterfeit money, stolen checks, stolen credit card information, or other illegal means to pay for something,” “tried to cheat someone by selling them something that was worthless or not what you said it was,” “purposefully damaged or destroyed property that did not belong to the respondent,” and “refused to obey an order given by a member of the prison staff.” The recoding process of nonviolent misconduct is the same as violent misconduct. After recoding into an ordinal level variable, about 36 percent of the respondents had at least one nonviolent misconduct six months prior to the survey. On average, the level of nonviolent misconduct among the whole sample is 0.14 with the standard deviation of 0.48. Approximately 2 percent and 35 percent of the respondents reported at least had one gang and non-gang related nonviolent misconduct respectively in the prior six months. On average, the level of gang-related nonviolent misconduct is 0.01 with the standard deviation of 0.06. The mean level of gang-related nonviolent misconduct approaches to zero because 98 percent of the respondents never had one in the prior six months. The mean level of non-gang related nonviolent misconduct is 0.14 with the standard deviation of 0.27.

Illicit sale only includes one item, which is “sold something that was illegal.” No detailed drug sale related questions were asked because TDCJ did not allow the research team to do so. After recoding into an ordinal level variable, about 10 percent of the respondents had at least one illicit sale six months prior to the survey. On average, the level of illicit sale among the whole sample is 0.28 with the standard deviation of 1. About 1 percent of the respondents were involved in gang-related illicit sale, and 9

percent were engaged in non-gang related illicit sale in the prior six months. The average level of gang-related illicit sale is 0.06 with the standard deviation of 0.50, and the mean level of non-gang related illicit sale is 0.25 with the standard deviation of 0.92.

Violent victimization is comprised of eight items, including “threatened to hurt you with a weapon by another inmate,” “threatened to hurt you without a weapon by another inmate,” “physically attacked you with a weapon by a group of people,” “physically attacked you with a weapon by another inmate,” “hit you with fists, kicked you, slapped or bit you by a group of people,” “hit you with fists, kicked you, slapped or bit you by another inmate,” “someone has or attempts to have sexual relations with you against your will,” and “another inmate used a weapon or forced to try to get money or things from you.” The same recoding process was applied to violent victimization as well. Overall, 25 percent of the respondents had at least one incident of violent victimization during the recall period. On average, the level of violent victimization of the whole sample was 0.06, with the standard deviation as 0.15. About 6 percent of the respondents experienced gang-related violent victimization, and about 22 percent of the respondents experienced non-gang related violent victimization in the past six months. The mean level of gang-related victimization is 0.02 with the standard deviation of 0.10, and the average level of non-gang related victimization is 0.05 with the standard deviation of 0.13.

Nonviolent victimization contains five items, including “someone sold you something that was worthless or not what they said it was,” “someone used your identity to open up accounts,” “someone purposefully damaged or destroyed your property,” “another inmate entered or attempted to enter your cell to steal something from you,” and

“another inmate stole or tried to steal something from you.” Following the same process as other dependent variables, nonviolent victimization was also recoded into three ordinal level variables. Overall, 23 percent of the respondents experienced at least one nonviolent victimization six months prior to the survey. On average, the level of nonviolent victimization was 0.08, with the standard deviation as 0.42. Approximately 2 percent of the respondents had gang-related nonviolent victimization, and about 22 percent had non-gang related nonviolent victimization in the past six months. The average level of gang-related nonviolent victimization is 0.01 with the standard deviation of 0.14 and the mean level of non-gang related nonviolent victimization is 0.07 with the standard deviation of 0.21.

Key independent variable. The key independent variable is self-reported prison gang membership. Each respondent was asked for his history of gang involvement, from the most recent gang he was in back to the very first gang that he joined. For each gang involvement, questions were asked about the time the respondent joined the gang, the type of the gang (street, prison, or both), and whether the respondent had left the gang. If a respondent self-reported being at least in a prison gang and did not leave one prison gang, then he is identified as a current prison gang member. Overall, 183 respondents were identified as current prison gang members, and 614 respondents were not currently involved in prison gangs. Question was also asked to the respondents for the estimated time of joining the prison gang and all of the current prison gang members joined at least one year before the interview day, which means all the misconduct/victimization incidents they reported in the prior six months happened during their current prison gang membership.

Control variables. The control variables include deprivation covariates, which are administrative segregation and time served, and importation covariates, which contain the history of street gang membership, age, race, ethnicity, educational level, marriage status, prior incarceration, and offense type. Sentence length, as a deprivation covariate, is not included in the analyses because all the respondents were interviewed when they were close to their release date. Time served should be almost identical to sentence length, and it may cause multicollinearity problem in statistical models if including two variables together.

Deprivation covariates are from official data provided by TDCJ. On average, about 9 percent of the respondents were housed in administrative segregation units. The mean length of time served is 4.44 years with the standard deviation of 5.40.

Importation covariates are from both self-reported data and official data. The history of street gang membership was measured by the same questions to identify the current prison gang membership. If a respondent self-reported being at least in a street gang, then he is identified as having a history of street gang membership. In total, 178 respondents were found having a history of street gang membership. To capture the interaction and potential continuity of gang membership from street to prison, an interaction term between prison gang membership and street gang membership is also included in the models. By creating an interaction term of current prison gang membership and history of street gang membership, 105 respondents continued their gang membership from street to prison.²

² All models were tested with the interaction term between current prison gang membership and prior street gang membership, but it was not statistically significant in any models. Including the interaction term also did not improve the model fit, so it was deleted in final models as showed in Chapter IV.

Age is calculated based on their birth date provided in the official data. The average inmate age is 40 years old with the standard deviation of 12.10.³ Race and ethnicity were from self-reported data.⁴ About 33 percent were self-identified as White, and 30 percent were self-identified as Hispanic. Educational level and marriage were also self-reported data. Respondents were asked the highest education training they completed, and the result showed that about 47 percent at least had a high school degree. In terms of marital status, about 22 percent were married. Prior incarceration and offense type were both from the official data provided by TDCJ. On average, inmates had 0.84 prior incarcerations, and 40 percent of them were violent offenders.

Analytical strategy

Each dependent variable is tested three times using three measurements, including the overall, gang-related, and non-gang related misconduct/victimization. The statistical models used for the analyses are a binary logistic regression, multinomial logistic regression, count models, and zero-inflated count models, based on the distribution of the dependent variable, which are discussed below.⁵

The first research question is whether there is a relationship between prison gang membership and in-prison misconduct. Three types of misconduct that are examined include violent misconduct, nonviolent misconduct, and illicit sale. For each type of misconduct, the analysis starts with a binary logistic regression for the dichotomized overall measure of misconduct to see whether there is a relationship between prison gang

³ Raw age is used because it is an inmate sample, in which the minimum value is 19 years old, so linear relation between age and misconduct/victimization is proposed, instead of quadratic relationship. Also, scatter plots have been checked and they confirm the linear relationship between age and misconduct/victimization.

⁴ Official data on race and ethnicity are also checked. About 33 percent are recorded as White and 36 percent are Hispanic.

⁵ No multicollinearity issues were found in each model.

membership and the prevalence of this type of misconduct. Then a count model is used to examine the relationship between prison gang membership and the level of misconduct. Violent ($s^2 = 0.03, \bar{x} = 0.07$) and nonviolent misconduct are not overdispersed ($s^2 = 0.09, \bar{x} = 1.65$), meaning the variance is not larger than the mean, so Poisson regression models are used for these two dependent variables. Illicit sale ($s^2 = 1.32, \bar{x} = 0.37$) is overdispersed, with a variance is much larger than the mean, so negative binomial regression model is used.

After testing the relationship between prison gang membership and an overall measure of misconduct, separate models are run for gang and non-gang related misconduct. Gang-related misconduct is a rare event among the sample. Specifically, only 4 percent, 1 percent, and 1 percent of the sample have committed any gang-related violent misconduct, nonviolent misconduct, and illicit sale, respectively. Therefore, regular binary logistic regression may not fit in this rare event analysis, because maximum likelihood estimate used in logistic regression would generate biased results (Firth, 1993; Heinze & Schemper, 2002; Wang, 2014). Instead, Firth logistic regression is proposed to analyze rare events, using penalized likelihood estimated (Firth, 1993; Ridout, Demétrio, & Hinde, 1998; Wang, 2014). The Firth method modifies the likelihood estimate score equation by replacing the maximum likelihood function with the penalty function, which is known as Jeffery invariant (Heinze & Schemper, 2002). This new function can reduce bias caused by a small number within the sample with an event (Heinze & Schemper, 2002; Wang, 2014). Thus, Firth logistic regression models are used to test the relationship between prison gang membership and gang-related violent misconduct, nonviolent misconduct, and illicit sale. Also, because gang-related

misconduct is a rare event, no count models are able to be used to examine their association with prison gang membership.

Non-gang related misconduct is not a rare event, but its zeros have a different meaning in terms of prison gang membership. Most non-gang inmates do not have gang-related misconduct, so if he reported a zero for non-gang related misconduct, probably he would have no misconduct at all. However, for prison gang members, if he reported a zero for non-gang related misconduct, it is possible that he can be involved in gang-related misconduct. Therefore, the zero in non-gang related misconduct may mean two different types of inmate, including good inmates who do not commit any misconduct and prison gang members who only commit gang-related misconduct. Thus, binary logistic regression is not suitable for these non-gang related misconduct measures. To consider the possible difference in the zero group, zero-inflated count models are used to examine the relationship between prison gang membership and non-gang related misconduct. In a zero-inflated count model, the occurrence of zero is due to different reasons (Bohning, Dietz, Schlattmann, Mendonca, & Kirchner, 1999; Lambert, 1992). That is why it essentially includes two parts of the formula, with one predicting zeros and the other one predicting values larger than zero (Famoye & Singh, 2006; Hall, 2000; Lambert, 1992). In this case, therefore, current prison gang membership is inflated to predict the zeros in non-gang related misconduct, and all the other independent and control variables are to predict the values larger than zero in non-gang related misconduct. Because non-gang related violent misconduct ($s^2 = 0.02, \bar{x} = 0.05$) and non-gang related nonviolent misconduct ($s^2 = 0.08, \bar{x} = 0.16$) are not overdispersed, zero-inflated Poisson regression models are used. Non-gang related illicit sale

($s^2 = 1.13, \bar{x} = 0.32$) is overdispersed, so zero-inflated negative binomial regression model is used instead.

The second research question is whether there is a relationship between prison gang membership and in-prison victimization, including violent and nonviolent victimization. The same procedure of data analysis is conducted as the first research question. First, binary logistic regression and Poisson regression models are used for an overall measure of violent ($s^2 = 0.02, \bar{x} = 0.05$) and nonviolent victimization ($s^2 = 0.05, \bar{x} = 0.08$). Second, firth logistic regressions are used for gang-related violent and nonviolent victimization, because there are only 6 percent and 2 percent respondents in the sample reporting they experienced gang-related violent and nonviolent victimization in the past six months respectively. Third and lastly, zero-inflated Poisson regression models are used for non-gang related violent ($s^2 = 0.02, \bar{x} = 0.05$) and nonviolent victimization ($s^2 = 0.04, \bar{x} = 0.07$).

CHAPTER IV

Findings

Bivariate analyses

Table 3 displays the bivariate differences between current prison gang members and non-gang inmates on all the dependent and control variables. Overall, there was a significantly positive bivariate relationship between current prison gang membership and misconduct. Current prison gang members reported higher prevalence and level of violent misconduct, nonviolent misconduct, and illicit sale. The same pattern was found among gang-related and non-gang related violent misconduct, nonviolent misconduct, and illicit sale. Violent victimization also followed the same pattern as misconduct. Current prison gang members had higher prevalence and level of violent victimization, gang-related violent victimization, and non-gang related violent victimization than non-gang inmates. However, there was no significant bivariate relationship between prison gang membership and an overall measure of nonviolent victimization, gang-related nonviolent victimization, and non-gang related nonviolent victimization.

Among control variables, there were also some difference between current prison gang members and non-gang inmates. Unsurprisingly, prison gang members had a higher percentage on the history of street gang membership than non-gang inmates. On average, prison gang members were younger than non-gang inmates. Prison gang members had a lower percentage on White but higher percentage on Hispanic. They also had lower level of educational attainment. Prison gang members had fewer prior incarceration experience and shorter incarceration length than non-gang inmates maybe because they were younger and at an earlier stage of their “criminal career.” However, there was no

statistical difference between prison gang and non-gang inmates on marriage status, offender type, and whether housed in administrative segregation units. Pairwise correlations among dependent, independent, and control variables are displayed in Appendix A.

Multivariate results for misconduct

As mentioned in the analytical strategy, each type of misconduct is examined in three forms, so the following result section is presented in the same order as overall misconduct, gang-related misconduct, and non-gang related misconduct.

Overall misconduct. Binary logistic regression models were used to examine the relationship between prison gang membership and the prevalence of violent misconduct in the previous six months (see Table 4).⁶ Three variables were found to be statistically significantly related to the prevalence of violent misconduct. Current prison gang membership and the history of street gang membership were positively related to violent misconduct, while age was negatively related to violent misconduct. The likelihood of prison gang members reporting at least one violent misconduct in the prior six months was 3.81 times greater, compared to that of non-gang inmates. Those with a history of street gang membership were 1.79 times more likely to report violent misconduct in the prior six months than those without street gang membership. With each year increase in age, the probability of reporting a violent misconduct in the past six months decreased by 7 percent. White, Hispanic, and the number of prior incarceration were marginally

⁶ The prevalence of violent misconduct during the current incarceration was also computed. A binary logistic regression was estimated for this measure and similar results were found, so only results for the past six months measure is presented here. It also applies to other four dependent variables. See results for the prevalence of misconduct and victimization during the current incarceration from Appendix B to Appendix F.

significantly related to the prevalence of violent misconduct, where White inmates and inmates with more prior incarceration were more likely to commit at least one violent misconduct and Hispanic inmates were less likely to commit a violent misconduct. The interaction term of current prison gang membership and the history of street gang membership was originally included in the model, but it was not significantly associated with any dependent variable, meaning the data did not find support for an effect of continuity of gang membership on any types of misconduct and victimization. Additionally, models with the interaction term did not improve the model fit, so it was deleted from the models that are presented here for the parsimony purpose.

Table 4

Binary logistic regression model for violent misconduct (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	3.81***	1.07	4.75	0.00
History of street gang membership	1.79*	0.45	2.29	0.02
Age	0.93*	0.01	-4.68	0.00
White	1.65†	0.47	1.79	0.07
Hispanic	0.61†	0.18	-1.66	0.10
High school	1.30	0.32	1.05	0.29
Married	0.65	0.20	-1.41	0.16
Prior incarceration	1.23†	0.14	1.86	0.06

(continued)

Variables	Odds ratio	se	z	P value
Violent offender	0.84	0.25	-0.57	0.57
Administrative segregation	1.23	0.46	0.55	0.58
Time served in years	1.01	0.04	0.41	0.68
Constant	2.17	1.14	1.47	0.14

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=75.8$; log likelihood=-352.90; pseudo $R^2=.16$; $p=0.00$.

Abbreviations: se=standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

A Poisson regression model was then estimated to examine the relationship between prison gang membership and the level of violent misconduct (see Table 5). Consistent with the prevalence model, current prison gang membership was positively related to the level of violent misconduct. Prison gang members compared to non-gang inmates were expected to have a rate 2.81 times greater for the level of violent misconduct. Also, the history of street gang membership was positively related to the level of violent misconduct. Two other control variables, age and Hispanic, were negatively related to the level of violent misconduct in the past six months. High school, married, and prior incarceration were marginally related to the level of violent misconduct, where inmates with high school or higher degree and more prior incarceration were expected to have higher level of violent misconduct, and married inmates were expected to have lower level of violent misconduct.

Table 5

Poisson regression model for violent misconduct (n=797)

Variables	IRR	Robust se	z	P value
Current prison gang membership	2.81***	0.74	3.95	0.00
History of street gang membership	1.99**	0.44	3.12	0.00
Age	0.93***	0.02	-3.69	0.00
White	1.25	0.33	0.83	0.41
Hispanic	0.61*	0.15	-1.96	0.05
High school	1.59†	0.42	1.78	0.08
Married	0.64†	0.17	-1.73	0.08
Prior incarceration	1.16†	0.10	1.79	0.07
Violent offender	1.17	0.35	0.51	0.61
Administrative segregation	1.02	0.28	0.07	0.95
Time served in years	0.95	0.04	-1.32	0.19
Constant	0.37†	0.22	-1.70	0.09

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=120.56$; log likelihood=-132.06; $p=0.00$.

Abbreviations: IRR=incident rate ratio; se=standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

Nonviolent misconduct models also started with a binary logistic regression on the overall measure of the prevalence of nonviolent misconduct (see Table 6). Like the

results from the prevalence of violent misconduct, current prison gang membership was positively associated with nonviolent misconduct. Current prison gang members were 1.97 times more likely than non-gang inmates to commit nonviolent misconduct in the past six months. Not surprisingly, age was negatively related to nonviolent misconduct. With a one-year increase in age, there was an associated 6 percent decrease the likelihood of committing nonviolent misconduct. Marriage was also a protective factor in committing nonviolent misconduct, meaning that married inmates are less likely to be engaged in nonviolent misconduct than unmarried inmates. Lastly, there was a positive relationship between prior incarceration and nonviolent misconduct. Each additional prior incarceration increased the likelihood of committing nonviolent misconduct by 38 percent. However, the history of street gang membership was only marginally related to the prevalence of nonviolent misconduct.

Table 6

Binary logistic regression model for nonviolent misconduct (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	1.97*	0.56	2.39	0.02
History of street gang membership	1.47†	0.33	1.73	0.08
Age	0.94***	0.01	-5.89	0.00
White	1.15	0.29	0.54	0.59
Hispanic	0.75	0.19	-1.16	0.25

(continued)

Variables	Odds ratio	se	z	P value
High school	0.94	0.20	-0.28	0.78
Married	0.60*	0.16	-1.93	0.05
Prior incarceration	1.38***	0.13	3.42	0.00
Violent offender	1.06	0.24	0.24	0.81
Administrative segregation	1.71	0.57	1.59	0.11
Time served in years	1.01	0.02	0.51	0.61
Constant	4.08***	1.67	3.43	0.00

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=72.47$; log likelihood=-459.47; pseudo $R^2=0.12$; $p=0.00$.

Abbreviations: se=standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

The scaled nonviolent misconduct was then examined, which is shown in Table 7.

The same as the prevalence model, current prison gang membership was positively related to the level of nonviolent misconduct. Among control variables, age was negatively related to the level of nonviolent misconduct and prior incarceration was positively associated with the level of nonviolent misconduct.

Table 7

Poisson regression model for nonviolent misconduct (n=797)

Variables	IRR	Robust se	z	P value
Current prison gang membership	1.44*	0.24	2.13	0.03

(continued)

Variables	IRR	Robust se	z	P value
History of street gang membership	1.32 [†]	0.21	1.72	0.09
Age	0.95***	0.01	-5.01	0.00
White	1.03	0.22	0.13	0.89
Hispanic	0.74	0.14	-1.55	0.12
High school	1.13	0.19	0.71	0.48
Married	0.84	0.19	-0.77	0.44
Prior incarceration	1.22***	0.07	3.30	0.00
Violent offender	0.98	0.19	-0.12	0.90
Administrative segregation	1.10	0.22	0.49	0.63
Time served in years	1.02	0.02	1.17	0.24
Constant	0.79	0.28	-0.67	0.50

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=70.13$; log likelihood=-295.91; $p=0.00$.

Abbreviations: IRR=incident rate ratio; se=standard error.

[†] $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

The last type of in-prison misconduct being examined is illicit sale. Table 8 presents the binary logistic regression model for illicit sale. Current prison gang membership was positively related to the prevalence of illicit sale. Prison gang members were 3.63 times more likely to commit any illicit sale than non-gang inmates in the past six months. Prior incarceration was also positively associated with the prevalence of illicit sale. With each additional prior incarceration, the probability of committing an

illicit sale increased by 28 percent. Age, Hispanic, and administrative segregation were negatively related to illicit sale, meaning that older inmates, non-Hispanic inmates, and inmates who were housed in lower secured settings were less likely to commit an illicit sale. Like violent and nonviolent misconduct, the history of street gang membership was not statistically significantly related to the prevalence of illicit sale.

Table 8

Binary logistic regression model for illicit sale (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	3.63***	1.33	3.52	0.00
History of street gang membership	1.22	0.43	0.55	0.58
Age	0.95**	0.02	-2.80	0.01
White	1.78	0.67	1.52	0.13
Hispanic	0.35*	0.15	-2.46	0.01
High school	0.93	0.29	-0.21	0.83
Married	1.93†	0.69	1.84	0.07
Prior incarceration	1.28*	0.15	2.21	0.03
Violent offender	0.89	0.30	-0.34	0.73
Administrative segregation	0.34*	0.17	-2.14	0.03
Time served in years	0.98	0.04	-0.58	0.56

(continued)

Variables	Odds ratio	se	z	P value
Constant	0.45	0.27	-1.31	0.19

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=44.94$; log likelihood=-226.25; pseudo $R^2=0.12$; $p=0.00$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

Following the same procedure, a negative binomial regression model was estimated for illicit sale (see Table 9). Similar to the prevalence model of illicit sale, current prison gang membership was positively related to the level of illicit sale. Also, prior incarceration was positively related to the level of illicit sale while age and age and administrative segregation were negatively associated with the level of illicit sale. Marriage was marginally significantly and positively related to the scaled illicit sale.

Table 9

Negative binomial regression model for illicit sale (n=797)

Variables	IRR	Robust se	z	P value
Current prison gang membership	5.00***	1.70	4.73	0.00
History of street gang membership	0.82	0.27	-0.59	0.55
Age	0.96**	0.02	-2.58	0.01
White	1.43	0.59	0.87	0.38
Hispanic	0.49	0.23	-1.55	0.12
High school	0.62	0.20	-1.50	0.13

(continued)

Variables	IRR	Robust se	z	P value
Married	1.97†	0.70	1.90	0.06
Prior incarceration	1.34*	0.20	1.97	0.05
Violent offender	0.68	0.24	-1.07	0.28
Administrative segregation	0.35**	0.14	-2.59	0.01
Time served in years	0.98	0.04	-0.61	0.54
Constant	1.09	0.74	0.13	0.90

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=97.83$; log likelihood=-388.83; pseudo $R^2=0.05$; $p=0.00$.

Abbreviations: IRR=incident rate ratio; se=standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

Gang-related misconduct. After examining three overall measures of misconduct, each type of misconduct was further tested by separating whether it was gang-related or not. As mentioned previously chapter, a firth logistic regression model was used for gang-related dependent variables, because they are rare events. As Table 10 shows, current prison gang membership, White, and violent offender were significantly related to the prevalence of gang-related violent misconduct. Current prison gang membership was positively related to gang-related violent misconduct. Specifically, current prison gang members were 11.49 times more likely to commit a gang-related violent misconduct in the past six months than non-gang inmates. Both White and violent offender were negatively associated with gang-related violent misconduct. The history of street gang membership was not significantly related to gang-related violent misconduct.

Table 10

Firth logistic regression model for gang-related violent misconduct (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	11.49***	4.27	6.58	0.00
History of street gang membership	1.20	0.40	0.55	0.58
Age	0.96	0.02	-1.55	0.12
White	0.35*	0.19	-1.95	0.05
Hispanic	0.73	0.26	-0.88	0.38
High school	1.52	0.50	1.25	0.21
Married	0.92	0.37	-0.22	0.83
Prior incarceration	0.94	0.17	-0.32	0.75
Violent offender	0.44*	0.17	-2.08	0.04
Administrative segregation	1.06	0.52	0.11	0.91
Time served in years	0.99	0.05	-0.10	0.92
Constant	0.13*	0.11	-2.47	0.01

Note. Unweighted sample statistics are reported because sample weight function is not allowed in firth logistic regression in Stata.

Model statistics: Wald $\chi^2=69.51$; log likelihood=-125.64; p=0.00.

Abbreviations: se=standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

The relationship between prison gang membership and gang-related nonviolent misconduct was supposed to be estimated by a first logistic regression model, but too few people had committed any gang-related nonviolent misconduct, even among prison gang members (see Table 11). In consequence, there is not enough variation in gang-related nonviolent misconduct in a multivariate regression model. Therefore, a first logistic regression model was not estimated.

Table 11

Tabulate between prison gang membership and gang-related nonviolent misconduct

	Gang-related nonviolent misconduct	
	Yes	No
Prison gang member	16	3
Non-gang member	167	611

Note. Model statistics: $\chi^2 = 41.28, p = 0.00$.

Also using a first logistic regression model, Table 12 shows the results for gang-related illicit sale. Not surprisingly, current prison gang members were 13.09 times more likely to commit a gang-related illicit sale than non-gang members. However, the history of street gang membership was only marginally significantly related to gang-related illicit sale. Prior incarceration and violent offender were both negatively related to gang-related illicit sale.

Table 12

Firth logistic regression model for gang-related illicit sale (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	13.09***	8.40	4.01	0.00
History of street gang membership	2.71†	1.61	1.68	0.09
Age	0.99	0.03	-0.44	0.66
White	0.88	0.68	-0.16	0.87
Hispanic	0.55	0.31	-1.07	0.29
High school	1.80	0.91	1.17	0.24
Married	2.06	1.20	1.24	0.21
Prior incarceration	0.43*	0.16	-2.24	0.03
Violent offender	0.20*	0.14	-2.34	0.02
Administrative segregation	1.01	0.69	0.01	0.99
Time served in years	1.03	0.06	0.47	0.64
Constant	0.02**	0.02	-3.08	0.00

Note. Unweighted sample statistics are reported because sample weight function is not allowed in firth logistic regression in Stata.

Model statistics: Wald $\chi^2=33.97$; log likelihood=-49.16; p=0.00.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

Non-gang related misconduct. Lastly, non-gang related misconduct was tested using zero-inflated Poisson regression model. As mentioned in the analytical strategy

section above, reporting a zero on non-gang related misconduct could mean differently to prison gang members and non-gang inmates. For non-gang inmates, not engaging in non-gang related misconduct probably means they would not commit any type of misconduct. However, for prison gang members, even if they did not commit non-gang related misconduct, they could still be highly engaged in gang-related misconduct. Therefore, zero-inflated Poisson regression model captures the difference in the zero group by separating the model into an inflated and noninflated part.

In Table 13, which presents the results for non-gang related violent misconduct, there are two parts of the regression. The first part displays the inflated part of the regression model. It shows that current prison gang members were less likely to get a zero on non-gang related violent misconduct (Odds ratio = $\exp(-1.32) = 0.27$), which means current prison gang membership increased the likelihood of being engaged in non-gang related violent misconduct. The second part of the regression is the non-zero part of the regression model. Both current prison gang membership and history of street gang membership were positively related to non-gang related violent misconduct. Specifically, the expected level of non-gang related violent misconduct for a prison gang member was $\exp(0.62) = 1.86$ times the expected level of non-gang related violent misconduct for a non-gang member. The expected level of non-gang related violent misconduct for a street gang member was $\exp(0.81) = 2.26$ times the expected level of non-gang related violent misconduct for a non-gang member. Age, Hispanic, and marital status were negatively related to the level of non-gang related violent misconduct. Time served was marginally significantly related to non-gang related violent misconduct. Based on this model, current prison gang membership was significantly associated with whether engaged in non-gang

related violent misconduct in the past six months, as well as the scaled non-gang related violent misconduct.

Table 13

Zero-inflated Poisson regression model for non-gang related violent misconduct (n=797)

Variables	b	se	z	P value
Inflate				
Current prison gang membership	-0.58**	0.21	-2.71	0.01
Constant	-30.63***	0.12	-251.42	0.00
Level of non-gang related violent misconduct				
Current prison gang membership	0.62*	0.27	2.29	0.02
History of street gang membership	0.81***	0.24	3.35	0.00
Age	-0.07**	0.02	-3.26	0.00
White	0.37	0.28	1.33	0.18
Hispanic	-0.53*	0.28	-1.92	0.05
High school	0.36	0.27	1.31	0.19
Married	-0.61*	0.29	-2.11	0.03
Prior incarceration	0.14	0.09	1.54	0.12
Violent offender	0.48	0.32	1.49	0.14
Administrative segregation	0.26	0.29	0.88	0.38

(continued)

Variables	b	se	z	P value
Time served in years	-0.07	0.04	-1.62	0.11
Constant	-1.31*	0.63	-2.09	0.04

Note. Weighted sample statistics are reported.

Model statistics: number of zero=620; Wald $\chi^2=104.75$; log likelihood=-116.22; pseudo $R^2=0.13$; $p=0.00$.

Abbreviations: se=standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

Table 14 presents the results of the zero-inflated Poisson regression model for non-gang related nonviolent misconduct. Based on the inflated part of the regression model, current prison gang membership did not relate to being zero in non-gang related nonviolent misconduct. According to the non-zero part of the regression model, age was negatively related to the level of non-gang related nonviolent misconduct, while prior incarceration was positively associated with the level of non-gang related nonviolent misconduct. Based on this model, current prison gang membership was not associated with whether engaged in non-gang related nonviolent misconduct in the past six months and was only marginally significantly related to the level of non-gang related nonviolent misconduct.

Table 14

Zero-inflated Poisson regression model for non-gang related nonviolent misconduct

($n=797$)

Variables	b	se	z	P value
Inflate				

(continued)

Variables	b	se	z	P value
Current prison gang membership	-0.23	0.19	-1.18	0.24
Constant	-22.39***	0.10	-233.42	0.00
Level of non-gang related nonviolent misconduct				
Current prison gang membership	0.29†	0.17	1.66	0.10
History of street gang membership	0.23	0.16	1.44	0.15
Age	-0.06***	0.01	-5.03	0.00
White	0.01	0.22	0.06	0.95
Hispanic	-0.29	0.20	-1.48	0.14
High school	0.11	0.17	0.66	0.51
Married	-0.16	0.23	-0.69	0.49
Prior incarceration	0.20***	0.06	3.40	0.00
Violent offender	0.00	0.20	-0.01	0.99
Administrative segregation	0.09	0.21	0.45	0.66
Time served in years	0.03	0.02	1.25	0.21
Constant	-0.22	0.36	-0.60	0.55

Note. Weighted sample statistics are reported.

Model statistics: number of zero=490; Wald $\chi^2=64.32$; log likelihood=-291.85; pseudo $R^2=0.07$; $p=0.00$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

Following the same procedure, Table 15 presents the results for non-gang related illicit sale. Current prison gang membership was not statistically significantly related to being zero in non-gang related illicit sale, based on the result in the inflated part of the model. Current prison gang membership was positively related to the level of non-gang related illicit sale according to the non-zero part of the regression model. The history of street gang membership was marginally significant, and it was negatively related to the level of non-gang related illicit sale. Age was negatively related to the scaled non-gang related illicit sale, while prior incarceration was positively related to the level of non-gang related illicit sale.

Table 15

Zero-inflated negative binomial regression model for non-gang related illicit sale

(*n*=797)

Variables	b	se	z	P value
Inflate				
Current prison gang membership	-1.04	1.68	-0.62	0.54
Constant	0.67	3.09	0.22	0.83
Level of non-gang related illicit sale				
Current prison gang membership	0.91*	0.45	2.03	0.04
History of street gang membership	-0.58†	0.33	-1.74	0.08
Age	-0.05*	0.02	-2.08	0.04
White	0.08	0.44	0.19	0.85

(continued)

Variables	b	se	z	P value
Hispanic	-0.74	0.64	-1.16	0.25
High school	-0.19	0.32	-0.61	0.54
Married	0.45	0.36	1.24	0.22
Prior incarceration	0.41*	0.18	2.27	0.02
Violent offender	-0.26	0.34	-0.77	0.44
Administrative segregation	-0.83	0.55	-1.50	0.13
Time served in years	0.00	0.04	-0.09	0.93
Constant	1.33	1.56	0.86	0.39

Note. Weighted sample statistics are reported.

Model statistics: number of zero=708; Wald $\chi^2=23.48$; log likelihood=-364.35; pseudo $R^2=0.02$; $p=0.02$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

In sum, current prison gang membership is positively related to the prevalence and the level of in-prison misconduct, including violent misconduct, nonviolent misconduct, and illicit sale. After separating each type of misconduct into gang-related and non-gang related, prison gang members are more likely to commit gang-related violent misconduct, gang-related nonviolent misconduct, and engage in gang-related illicit sales. In terms of non-gang related misconduct, prison gang membership is only associated with the non-gang related violent misconduct and non-gang related illicit sale.

Multivariate results for victimization

The presentation of the results for victimization also follows the order of overall victimization, gang-related victimization, and non-gang related victimization.

Overall victimization. A binary logistic regression model was used to examine the relationship between prison gang membership and the prevalence of violent victimization in the previous six months (see Table 16). Current prison gang membership was positively related to the prevalence of violent victimization. Prison gang members were 2.66 times more likely to be violently victimized than non-gang inmates. Age was negatively related to the prevalence of violent victimization. With a one-year increase in age, the likelihood of being violently victimized decreased by 4 percent. Compared to non-White inmates, White inmates were 1.65 times more likely to experience violent victimization in the past six months. The same as the results from the misconduct models, the history of street gang membership was not statistically significant.

Table 16

Binary logistic regression model for violent victimization (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	2.66***	0.72	3.62	0.00
History of street gang membership	1.18	0.28	0.69	0.49
Age	0.96***	0.01	-3.35	0.00
White	1.65*	0.42	1.97	0.05
Hispanic	0.69	0.19	-1.35	0.18

(continued)

Variables	Odds ratio	se	z	P value
High school	0.74	0.17	-1.31	0.19
Married	0.75	0.20	-1.08	0.28
Prior incarceration	1.13	0.12	1.19	0.23
Violent offender	0.99	0.25	-0.04	0.97
Administrative segregation	0.98	0.35	-0.05	0.96
Time served in years	1.00	0.03	0.09	0.93
Constant	1.28	0.60	0.53	0.59

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=45.71$; log likelihood=-409.68; pseudo $R^2=0.08$; $p=0.02$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

A Poisson regression model was then estimated to test the relationship between prison gang membership and the level of violent victimization (see Table 17). Same as the prevalence model of violent victimization, prison gang membership was positively related to the level of violent victimization. Again, age and Hispanic were negatively associated with the level of violent victimization.

Table 17

Poisson regression model for violent victimization (n=797)

Variables	IRR	Robust se	z	P value
Current prison gang membership	2.29***	0.45	4.22	0.00

(continued)

Variables	IRR	Robust se	z	P value
History of street gang membership	1.23	0.23	1.12	0.26
Age	0.97**	0.01	-3.01	0.00
White	1.10	0.25	0.40	0.69
Hispanic	0.48**	0.12	-2.99	0.00
High school	0.72	0.15	-1.61	0.11
Married	0.73	0.17	-1.38	0.17
Prior incarceration	1.05	0.10	0.49	0.63
Violent offender	1.10	0.26	0.42	0.68
Administrative segregation	1.17	0.37	0.50	0.62
Time served in years	0.98	0.03	-0.64	0.52
Constant	0.25**	0.12	-2.97	0.00

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=79.98$; log likelihood=-162.64; $p=0.00$.

Abbreviations: IRR=incident rate ratio; se=standard error.

$\dagger p < 0.1$, $* p < .05$, $** p < .01$, $*** p < 0.001$.

Unlike the results from violent victimization, the whole model of binary logistic regression (see appendix G; $p = 0.24$) and Poisson regression (see appendix H; $p = 0.07$) for nonviolent victimization was not statistically significant, meaning that all the independent and control variables together did not explain the variation in nonviolent victimization.

Gang-related victimization. Table 18 presents the results for gang-related violent victimization. Only current prison gang membership and violent offender were statistically significantly associated with the prevalence of gang-related violent victimization. Prison gang members were 3.25 times more likely than non-gang inmates to experience gang-related violent victimization. However, the history of street gang membership was not statistically significant. Violent offender was negatively related to gang-related violent victimization.

Table 18

Firth logistic regression model for gang-related violent victimization (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	3.25***	1.01	3.78	0.00
History of street gang membership	1.50	0.46	1.31	0.19
Age	0.97	0.02	-1.49	0.14
White	1.22	0.49	0.50	0.62
Hispanic	1.07	0.37	0.19	0.85
High school	0.89	0.28	-0.37	0.71
Married	1.31	0.44	0.80	0.42
Prior incarceration	0.94	0.15	-0.39	0.69
Violent offender	0.47*	0.16	-2.19	0.03

(continued)

Variables	Odds ratio	se	z	P value
Administrative segregation	1.15	0.47	0.34	0.74
Time served in years	1.06†	0.03	1.76	0.08
Constant	0.12**	0.09	-2.95	0.00

Note. Unweighted sample statistics are reported because sample weight function is not allowed in firth logistic regression in Stata.

Model statistics: Wald $\chi^2=33.13$; log likelihood=-161.42; $p=0.00$.

Abbreviations: se=standard error.

*† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.*

However, like the bivariate results, there was no relationship between prison gang membership and gang-related nonviolent victimization. The whole model of the firth logistic regression for gang-related nonviolent victimization was also not statistically significant (see Appendix I; $p = 0.41$).

Non-gang related victimization.

Table 19 shows the results for non-gang related violent victimization. First, in the inflated part of the regression model, current prison gang membership was marginally significantly related to getting a zero on non-gang related violent victimization. Second, in the non-zero part of the regression model, current prison gang membership was positively related to the level of non-gang related violent victimization. The history of street gang membership, however, was not significantly associated with the level of non-gang related violent victimization. Age and Hispanic were negatively related to the level of non-gang related violent victimization, meaning that younger inmates and non-Hispanic inmates would experience more non-gang related violent victimization.

Table 19

*Zero-inflated Poisson regression model for non-gang related violent victimization**(n=797)*

Variables	b	se	z	P value
Inflate				
Current prison gang membership	-0.40†	0.23	-1.77	0.08
Constant	-25.56***	0.11	-225.08	0.00
Level of non-gang related violent victimization				
Current prison gang membership	0.54**	0.21	2.64	0.01
History of street gang membership	0.23	0.20	1.16	0.25
Age	-0.04***	0.01	-3.48	0.00
White	0.15	0.25	0.57	0.57
Hispanic	-0.85**	0.28	-3.08	0.00
High school	-0.24	0.22	-1.08	0.28
Married	-0.35	0.26	-1.34	0.18
Prior incarceration	0.11	0.09	1.15	0.25
Violent offender	0.23	0.25	0.92	0.36
Administrative segregation	0.31	0.37	0.84	0.40
Time served in years	-0.05	0.03	-1.60	0.11

(continued)

Variables	b	se	z	P value
Constant	-1.28*	0.51	-2.48	0.01

Note. Weighted sample statistics are reported.

Model statistics: number of zero=625; Wald $\chi^2=65.53$; log likelihood=-140.35; pseudo $R^2=0.08$; $p=0.00$.

Abbreviations: se=standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

The same as overall nonviolent victimization and gang-related nonviolent victimization, the whole model of the zero-inflated Poisson regression model was not statistically significant (see Appendix J; $p = 0.09$).

A summary of significant results for both misconduct and victimization is displayed in Table 20. In sum, a similar pattern is found among violent victimization models compared with misconduct models. There was a positive relationship between prison gang membership and the prevalence and the level of violent victimization. After separating violent victimization by whether it was gang-related or not, prison gang membership was positively associated with both gang-related violent victimization and non-gang related violent victimization. However, there was no relationship found between prison gang membership and nonviolent victimization, gang-related nonviolent victimization, and non-gang related nonviolent victimization.

Table 20

Summary table for significant results in all misconduct and victimization models

Variables	Violent misconduct	Nonviolent misconduct	Illicit sale	Violent victimization
(continued)				
Current prison gang membership	a+, b+, c+, d+, e+	a+, b+, c+	a+, b+, c+, e+	a+, b+, c+, e+
History of street gang membership	a+, b+, e+	c+		
Age	a-, b-, e-	a-, b-, e-	a-, b-, e-	a-, b-, e-
White	c-			a+
Hispanic	b-, e-		a-	a-, b-, e-
High school				
Married	e-	a-		
Prior incarceration		a+, b+, e+	a+, b+, c-, e+	
Violent offender	c-		c-	c-
Administrative segregation			a-, b-	
Time served in years				

Note. Nonviolent victimization models are not presented because none of the models are significant.

- a. Significant in overall misconduct/victimization prevalence models.
 - b. Significant in overall misconduct/victimization count models.
 - c. Significant in gang-related misconduct/victimization models.
 - d. Significant in inflated part of non-gang related misconduct/victimization models.
 - e. Significant in noninflated part of non-gang related misconduct/victimization models.
- A positive relationship is symbolized by +, negative effect by -.

CHAPTER V

Discussion and Conclusion

Discussion

The current dissertation explored two research questions in general, including (1) what is the relationship between prison gang membership and in-prison misconduct? And (2) what is the relationship between prison gang membership and in-prison victimization? For each type of misconduct and victimization, three measures, including an overall measure of misconduct/victimization, gang-related misconduct/victimization, and non-gang related misconduct/victimization, were examined.

Consistent with many prior studies, the current dissertation found a positive relationship between prison gang membership and misconduct (Cunningham & Sorensen, 2006, 2007; DeLisi & Munoz, 2003; Ireland & Power, 2013; Mears et al., 2013). Specifically, results support the hypothesis that prison gang membership was positively related to the overall measure of violent misconduct (Cunningham & Sorensen, 2006, 2007; DeLisi & Munoz, 2003; Ireland & Power, 2013; Mears et al., 2013; Wulf-Ludden, 2013) and illicit sale (Ireland & Power, 2013; Morris & Worrall, 2014). Unlike the nonsignificant findings between prison gang members and nonviolent misconduct in some prior studies (Drury & DeLisi, 2010; Morris & Worrall, 2014; Worrall & Morris, 2011), a positive relationship between these two variables was also discovered in the current dissertation.

Not surprisingly, prison gang membership was found positively related to gang-related violent misconduct, gang-related nonviolent misconduct, and gang-related illicit sale. This finding is consistent with the previous studies, which revealed that gang

members were engaged in more gang-related activity and misconducts (DeLisi et al., 2011; 2012). In terms of non-gang related misconduct, a significant positive association was found between prison gang membership with non-gang related violent misconduct and non-gang related illicit sale, but not non-gang related nonviolent misconduct.

Across all misconduct models, the history of street gang membership was only a significant predictor of violent misconduct, but not for nonviolent misconduct and illicit sale. Among all other control variables, age was the only consistent predictor of overall measure of misconduct and non-gang related misconduct. Similar to prior studies on age and crime in general population (Hirschi & Gottfredson, 1983) and age and misconduct in prison (Cunningham & Sorensen, 2006, 2007; DeLisi & Munoz, 2003; Drury & DeLisi, 2010; Griffin & Hepburn, 2006; Huebner, 2003; Kuanliang et al., 2008; Morris & Worrall, 2014; Worrall & Morris, 2011, 2012), age was negatively associated with misconduct in an adult inmate sample. As age increases, inmates tend to desist from criminal behaviors.

On the victimization side, in line with Ireland and Power (2013), Ruddell and Gottschall (2011), and Wolff and colleagues (2009), a positive relationship was found between prison gang membership and the overall measure of violent victimization. After separating violent victimization by whether it was gang-related or not, positive relationships were also discovered between prison gang membership and gang-related violent victimization and non-gang related violent victimization, which is consistent with the prediction. However, opposite to previous studies (Wolff et al., 2009; Wooldredge & Steiner, 2013), no association between prison gang membership and any measure of nonviolent victimization was found. Both the history of street gang membership and the

interaction between current prison gang membership and street gang membership history did not play an important role in explaining the variation in victimization in prison.

The findings from the current dissertation suggest that current prison gang membership is a strong and positive predictor of violent misconduct, illicit sale, and violent victimization, beyond the influence from major deprivation and importation covariates. Three main points, including the violent and profit-oriented nature of prison gang activities, gang and non-gang related misconduct/victimization, and the use of self-reported membership and misconduct/victimization data, will be discussed to illustrate the importance of the findings from the current dissertation.

Violent and profit-oriented nature of prison gang activities

As the results showed, prison gang members were more likely to be engaged in violent misconduct and committed more violent misconducts than non-gang inmates. Like street gang culture, violence is also a key element of prison gang culture (Curry, 1994; Scott, 2018). It is a commonly used tool for prison gang members to enhance their status in prison and solve their daily problems with other inmates (Scott, 2018; Skarbek, 2014). Prison gang members do not negotiate when they have conflicts with others, instead they fight against others. From the historical perspective, violence helped prison gangs reach their high status in prisons (Buentello et al., 1991; Skarbek, 2014), so members nowadays maintained this habit to keep and increase their status. Use of violence is even in some prison gangs' rules of conduct or constitution, which rationalizes the use of violence as a part of members' identity (Scott, 2018; Skarbek, 2010; 2014). When one member's status is threatened, he may use violence to defend his reputation. Sometimes, this threat can be shared within the gang through the group

process, which forms a group identity among members. Therefore, the whole gang would execute violence even if only some members are threatened, because every member represents the whole group's reputation.

At the same time, prison gang members were more likely to be violently victimized and encountered more violent victimization than non-gang inmates. As lifestyle theory predicts, inmates who are involved in more violent behaviors would put themselves in more risky environment, which in turn increases their chance of being violently victimized (Wooldredge, 1998; Wooldredge & Steiner, 2012). This logic applies properly in prison gang settings because prison gang members are the ones who inflict violence on others and put themselves in such a risky environment.

The high prevalence and level of violent misconduct and violent victimization suggests a violence-violent victimization overlap among prison gang members. As stated in the oath during the La Nuestra Familia recruiting process, "if I am killed, avenge me" (Skarbek, 2010, p. 183). This oath vividly reveals the violent nature of prison gang life that members would expect to use and receive lots of violence. The oath also suggests a reciprocal relationship between violence and violent victimization. That is, a prison gang's violent behavior attracts retaliation from others, which pushes this prison gang to retaliate against others again (Tasca et al., 2010). Consequently, violent conflicts may remain for a long time. As the contagion perspective of offending-victimization overlap argues, victimization causes offending or/and offending causes victimization (Ousey, Wilcox, & Fisher, 2011). Although the current dissertation does not directly test the relationship between violent misconduct and violent victimization, it does show that prison gang members reported both high involvement for both activities, and misconduct

and victimization have high correlation on the bivariate level (see Appendix A). This violent nature of prison gang activities, to some extent, supports this contagion assertion.

Except for the violent nature of prison gang activities, prison gang members also focused more on profit-oriented behaviors – illicit sale – than non-gang inmates, as found in the current analysis. As Skarbek (2014) found, monetary gain was many prison gangs' primary goal. Illicit sale apparently opens a door for prison gang members to achieve this goal. Compared to non-gang members, prison gang members have more resources on illicit goods, since prison gangs have certain control over the black market in prison (Skarbek, 2014). Also, prison gangs, as illicit goods dealing groups, would have higher credits than individual sellers, because they must guarantee the quality of the illicit goods to keep their business running (Skarbek, 2014). Also, if buyers deceive during the trade process, prison gangs have the capability to use violence to regain their loss. Therefore, it would be easier for prison gang members to engage in illicit sales than non-gang inmates.

Gang and non-gang related misconduct/victimization

The current dissertation explores the gang and non-gang related misconduct and victimization separately. The findings revealed some interesting patterns of gang and non-gang related misconduct and victimization. Being a prison gang member is associated with engaging in more gang and non-gang related violent misconduct and illicit sale and experiencing more gang and non-gang related violent victimization. However, prison gang members are only involved in more gang-related nonviolent misconduct than non-gang inmates, but not non-gang related nonviolent misconduct. Rational choice theory may help understand this disparity on the effect of prison gang

membership on gang and non-gang related misconduct and victimization. Basically, the theory argues that people make decisions, including criminal behavior decisions, by benefit and cost analysis (Clarke & Cornish, 2001; Cornish & Clarke, 1986). Deciding to commit a crime is just like planning for any other conventional behaviors (Siegel, 1989). If the estimated benefit is overweight the potential cost, then the individual would possibly undertake the behavior. And if the estimated cost is overweight the potential benefit, then the individual would probably cancel the action. Also, rationality is bounded by individuals' own perspective and living environment (Gilbert, 2009), which means that prison gang members' rationality can be based on their own gang culture.

As discussed above, there probably exists a reciprocal relationship between violence and violent victimization among prison gang members. Therefore, if the conflict is gang-related, then the violent misconduct and violent victimization caused by this conflict will also be gang-related; and vice versa. It means once prison gang members accept the prison gang culture of using violence, it changes their rationality of using violence, which leads to behavior pattern change. The violent culture is embedded into gang members' norms, so they would like to use violence to enhance their reputation and deal with both gang and non-gang related conflicts. If they are challenged, they know violence is the best option to react. As a consequence, they would experience more gang and non-gang related violent victimization as predicted by lifestyle theory (Wooldredge, 1998; Wooldredge & Steiner, 2012).

However, prison gang members were only found to be more likely involved in gang-related nonviolent misconduct, but there was no difference on non-gang related nonviolent misconduct between prison gang members and non-gang inmates. Again,

prison gang members earn reputation in prison through violence, but not through committing more nonviolent misconduct. Therefore, aside from gang-related nonviolent misconduct that is assigned to certain members or decided by a group of members, committing extra non-gang related nonviolent misconduct would not give prison gang members much benefit, such as building ones' reputation. Lack of benefit may be why prison gang members were only associated with more gang-related nonviolent misconduct, but not more non-gang related nonviolent misconduct.

In addition to reputation, monetary gain is another main goal of prison gang. As discussed above, prison gangs have advantages on illicit sale over individual sales, including more resources, higher credit, lower possibility of being deceived. Thus, for prison gang members, they already enjoy the advantages of being a part of the prison gang illicit trade. At the same time, they can use these credits for their own illicit sale. For potential buyers, they would know that this seller is a prison gang member, and possibly they would not necessarily distinguish whether this prison gang member is selling goods for the gang or for himself. As long as the buyers know the seller is a prison gang member and can guarantee the quality of the goods, they would not deceive during the trade process. Therefore, the benefit of non-gang related illicit sale is also high because of the identity of prison gang member, so prison gang members would engage in more both gang and non-gang related illicit sale.

Notably, in non-gang related models, one can tell the effect of prison gang membership on the prevalence and the scaled frequency of misconduct/victimization. Interestingly, prison gang membership has a consistently positive association only with the prevalence and the scaled frequency of non-gang related violent misconduct.

However, prison gang membership has a positive relationship with the scaled frequency but not the prevalence of non-gang related illicit sale and violent victimization. It means that being a prison gang member would not influence the decision making of whether selling illicit goods through non-gang related motivation, but for those who engage in non-gang related illicit sale, prison gang members are involved in more incidents than non-gang inmates. The same logic applies to non-gang related violent victimization. Being a prison gang member does not increase the likelihood of being violently victimized through non-gang related activities but for those who are violently victimized for non-gang related motivation, prison gang members have more incidents than non-gang inmates. It may be true that there is a disparity on the prevalence and scaled frequency measures of non-gang related misconduct/victimization, but it is also possibly an artifact disparity due to the measurement of scaled misconduct/victimization. Since it is the first study that examines non-gang related misconduct/victimization, future studies need to reexamine the relationship between prison gang membership and non-gang related misconduct/victimization using the same and different measures.

In sum, prison gang members would be more likely engaged in gang and non-gang related violent misconduct because violence is a part of their culture and norms, which associate with more probability of experiencing more gang and non-gang related violent victimization. They would also be more involved in gang and non-gang related illicit sale, maybe because their prison gang membership identity helps them build a high reputation in the black market, which could bring them more money. In terms of nonviolent misconduct, prison gang members would not be more likely involved in non-gang related nonviolent misconduct, maybe because it does not worth it.

Use of self-reported membership and misconduct/victimization data

Unlike most prior studies on gang members' in-prison misconduct and victimization, the current dissertation used self-reported data instead of official data. For prison gang membership, it is a dynamic status and people join and leave during their incarceration. Usually, inmates are identified whether they are former, suspected, and confirmed gang members upon entering prisons, based on their criminal records, tattoos, and other features (Burris & Miller, 2017). There might be reclassification process during the incarceration term, such as gang renouncement and disassociation process in Texas Department of Criminal Justice ("Correctional Institutions Division," 2018). During this process, the Security Threat Group Management Office closely looks at inmates who pose a threat to the safety in correctional facilitations and reidentifies their gang status. However, this kind of reclassification process cannot reach every inmate in prison on a regular basis. Thus, the official measurement of current prison gang membership may do a good job of identifying the history of gang membership, but not capturing the dynamic change on the membership status. A self-identified measure of prison gang membership, on the other hand, may be a better option for measuring the current gang membership status. Additionally, among street gang literature, self-reported gang membership has been proved to be valid and reliable (Finn-Aage Esbensen, Winfree, He, & Taylor, 2001). Additionally, using a self-reported measure of gang membership makes sure that the reported misconducts and victimization experiences occur during their current prison gang status. It helps to create a proper time order between prison gang membership and misconduct/victimization. If an official record of prison gang membership is used, it is possible that inmates have left the gang in the middle of the recall period of

misconduct/victimization, because the official record may miss the dynamic change in gang status. Therefore, the self-identified measurement in the current dissertation may offer a more valid and reliable measure of current prison gang membership than official data and provide a more precise estimate of its association with misconduct and victimization.

Also, official misconduct and victimization data were commonly used among prior studies, instead of self-reported data. However, the official measurement usually underestimates inmates' misconduct and victimization. Like the arrest data in the free world, there is a dark figure that is not reported to the police (Skogan, 1977). Many victims do not report crime to the police for multiple reasons, and that is why the National Crime Victimization Survey (NCVS) plays an important role on providing a more completed picture of crime and victimization in the society (Baumer & Lauritsen, 2010; Murphy & Barkworth, 2014). The same logic applies in prison that correctional officials cannot supervise all the inmates for every minute and not every misconduct will be reported to correctional officials. Even worse, the prison culture of no snitching prevents more incidents from being reported to correctional officials (Reiter, 2012). Especially for prison gang members, they may prefer handling violent incidents by themselves, using retaliation as an alternative. Non-gang inmates may also select an unofficial way to deal with incidents, for instance, turning to prison gangs for help (Daggett & Camp, 2009). Also, nonviolent incidents are even less likely to either be reported or draw correctional officials' attention (Irwin & Owen, 2004). Correctional officials have discretion to decide whether an incident will be recorded, especially for nonviolent incidents (Freeman, 2003). They may not be willing to keep records for every

nonviolent or minor harassment incident. Therefore, official data on misconduct and victimization only includes those incidents being detected by correctional officials and being reported to correctional officials. Additionally, because the respondents of this study were housed in different prisons, it is possible that the standard in each prison to keep records of misconduct varies. Under this circumstance, using official data may produce a measurement error with systematic bias (Griffin & Hepburn, 2006). Consequently, highly relying on official data on misconduct and victimization may not only miss a part of the unreported incidents, but also lead to a biased measurement.

Limitations

Of course, the current dissertation is not without limitations. First, Griffin and Hepburn (2006) found that in-prison misconduct tend to concentrate in the first three years of incarceration. Given the fact that all the inmates included in this study were close to their release date, their misconduct level may be low compared to their beginning stage of incarceration. Also, it is possible that inmates reduce involvement in misconduct purposively at this point of time because they may be delayed for release if they are caught violating certain rules. Therefore, misconduct and victimization in the last six months of one's incarceration may not be representative to his whole prison term. Being that said, the significant relationship found in this study between prison gang membership and misconduct/victimization is only a conservative estimate of this relationship. It only tells that prison gang members have more misconduct and victimization than non-gang inmates at this period before their release. It is unknown that whether prison gang members would desist more or less from misconduct and victimization than non-gang

inmates, so future studies may want to track gang and non-gang inmates' trajectories of misconduct and victimization through the whole incarceration.

Second, the current dissertation only used a cross-sectional research design.

Although a positive relationship between current prison gang membership and misconduct/victimization was found, beyond the effect of deprivation and importation covariates, no causal relationship was determined. It is possible that those prison gang members were more likely to be engaged in misconduct and experienced more victimization before they joined prison gangs. In other words, the current dissertation cannot eliminate the selection effect as discussed in the selection model of gang membership and offending/victimization in Chapter 2. Future studies need to use a longitudinal design on prison gang membership and misconduct/victimization. By doing this, one can tell which theoretical model fits better in this relationship between prison gang membership and misconduct/victimization. Specifically, whether the positive relationship between prison gang membership and misconduct/victimization found in this dissertation is due to the selection effect or that prison gang membership does cause the increase in misconduct and victimization after joining.

Third, there might be a missing link between use of violence and illicit sale.

Skarbek (2012), based on qualitative evidence, argued that prison gangs execute violence not just for reputation, but also to allocate resource for illicit sale. For example, prison gangs sometimes sell illicit goods in yards and playgrounds, and rival gangs may also sell illicit goods in the same place or nearby area. Prison gangs need to fight for these areas, so they can make more money. At the same time, some prison gangs have regulations on how and when to use violence, because they do not want random violence attracting

attention from correctional officials, which may hinder their illegal business (Skarbek, 2012). The current dissertation found a positive correlation between violent misconduct and illicit sale, gang-related violent misconduct and gang-related illicit sale, and non-gang related violent misconduct and non-gang related illicit sale (see Appendix A) but did not test these relationships in multivariate level for three reasons. First, all misconduct and illicit sale items were measured simultaneously, so it is impossible to tell which one comes after the other one. Second, followed by the first reason, there may be a selection effect of prison gang membership. Probably both violence and illicit sale are two important predictors of prison gang membership, so estimating the relationship between simultaneously measured violent misconduct and illicit sale without taking account of selection effects will not reveal a valid picture of the relationship between the two variables. Third, both misconduct and illicit sale are dependent variables in the analyses, so testing this relationship in two models using misconduct and illicit sale as the dependent variable in turn with the same set of control variables will not tell much more than a positive correlation. Therefore, future studies should consider this potential association in a prospective research design to further explore the relationship among prison gang membership, misconduct, and illicit sale.

Lastly, the respondents of this study were from different prisons. It is possible that different prisons have different cultures and potentially different prison gang cultures. Specifically, people from prisons with serious prison gang issue may be more influenced by prison gang culture than those who were housed in prisons with little or no prison gang issue. Even for non-gang inmates, if they were exposed to prison gang culture long enough, it might change their attitude and behavior patterns. Therefore, future studies

may want to examine the relationship between prison gang membership and misconduct/victimization in one correctional facility or take consider of potential different prison gang cultures.

Implications

Although with some limitations, the current dissertation explores the behavior patterns of prison gang members, providing more detailed examination of gang and non-gang related misconduct and victimization. Therefore, it provides some thoughts on theoretical development and policy making. First, the analyses found a positive relationship between prison gang membership and violent misconduct, nonviolent misconduct, illicit sale, and violent victimization. These findings from contemporaneous models, controlling for deprivation and importation covariates, support either facilitation or enhancement models, both claiming that something unique about prison gang membership changes these members behavior after onset, other than the influence from deprivation and importation. Based on deprivation model, prison gang members might have more misconduct because they are housed in more depressed environment, which causes their more maladaptive reactions (Ruddell & Gottschall, 2011; Winterdyk & Ruddell, 2010). According to importation perspective, prison gang members would be expected to have more misconduct because they import their criminal orientated characteristics from outside to inside of prison (Irwin & Cressey, 1962). Based on the current analyses, prison gang membership itself is associated with misconduct and victimization beyond the effect of deprivation and importation, meaning that prison gang membership has an exclusive feature that is different from and more dominant than deprivation and importation covariates. Like their counterparts on the street, prison gang

members go through the gang group process, when they learn and accept the prison gang culture and rules, which triggers their involvement in multiple types of misconduct and victimization. This group process of prison gang membership is strong enough to wash out the effect of deprivation and importation covariates, which were believed to be related to in-prison misconduct and victimization. Therefore, the next question is what happens during this group process and how it differs from street gang group process. Based on prior work, we have known that prison gangs are usually more organized than street gangs and they have more rigorous rules on members' behavior (Pyrooz et al., 2011). Some prison gangs have sophisticated organizational structure, and even have different forms of structure during war time and peace time (Skarbek, 2012; 2014). However, researchers need to gain deeper understanding of this prison gang group process or prison gang culture. For example, what role do prison gang constitutions or behavior rules play on altering prison gang members' attitude and behavior after joining a prison gang? How do prison gang members interact with other gang and non-gang members in prison before and after joining a prison gang? Studying these detailed explorative, qualitative, and network research questions may add more knowledge on why prison gang membership increases these members' misconduct and victimization.

Second, since deprivation and importation covariates do not have a strong effect on in-prison misconduct and victimization, except for age, in the statistical models, it might indicate that prison environment does not play an important role on explaining criminogenic outcomes in prison. Instead, there may be a more general theory of offending/victimization regardless of the living condition – on the streets or in prison. Two variables are consistently significantly related to in-prison misconduct and

victimization, which are prison gang membership and age. Prison gang membership in prison plays the same role as street gang membership on the streets. On the surface, prison gang is a special production of prison environment while street gang is a production of street environment. However, theoretically, these gang members' high level of offending/victimization can be explained broadly by either facilitation or enhancement model. The facilitation model is aligned with social learning theory claiming that criminal behaviors are learned from other gang members through the gang group process (Thornberry et al., 1993). The enhancement model agrees with the combination of social learning theory (facilitation model) and social control theory (selection model), suggesting that that not only does gang membership increase members' offending/victimization after joining, but that gangs purposively attract and recruit people with already high propensity of offending/victimization (Thornberry et al., 1993). Therefore, although prison gangs are developed in prison and street gangs are operated on the streets, essentially, they are groups of people with high criminal propensity that can best be explained either by social learning or the combination of social learning and social control theories. That being said, there are more general theories that explain both offending and victimization both outside and inside of prison. The consistent negative relationship between age and in-prison misconduct/victimization confirms this notion. On the streets, age has a reversed bell-shaped relationship with offending and offending peaks around the age of 20 (Hirschi & Gottfredson, 1983). Since an adult sample is used in the current dissertation, it is reasonable to find a negative relationship between age and misconduct/victimization because people tend to desist from crime after early 20s (Hirschi & Gottfredson, 1983). These findings indicate that

prison may generate some prison-specific production, such as prison gang, but there are some more general and broader theories that can explain criminogenic outcomes both on the streets and in prison.

Third, after separating into gang and non-gang related measures, prison gang membership was found to have a positive association with gang-related violent misconduct, nonviolent misconduct, illicit sale, and violent victimization, and non-gang related violent misconduct, illicit sale, and violent victimization. This indicates that facilitation and enhancement models can not only be applied to the relationship between prison gang membership and overall misconduct/victimization, but also help explain gang and non-gang related misconduct/victimization. It is quite possible that the prison gang group process makes prison gang members more prone to execute violence for both gang and non-gang reasons and maximum monetary gain through both gang and non-gang related approaches. However, prison gang membership only enhances gang-related nonviolent misconduct, but not non-gang related nonviolent misconduct. It is possible that the prison gang process focuses more on violence and monetary gain, so prison gang members become more violent and more profit-orientated no matter whether the approach is gang or non-gang related. Instead, the prison gang process does not emphasize on nonviolent misconduct, so prison gang members would have more gang-related nonviolent misconduct only because they are ordered to, but not necessarily more non-gang related nonviolent misconduct, because committing nonviolent misconduct, unlike violence and profit-orientation, is not their instinct. As discussed above, rational choice theory may help understanding this asymmetric effect of prison gang membership on gang and non-gang related violent misconduct, nonviolent misconduct, and illicit sale.

As rational people, prison gang members try to maximize their benefit of high reputation and monetary gain. As a result, they would be engaged in more gang and non-gang related violent misconduct and illicit sale. However, they would not be involved in more non-gang related nonviolent misconduct because doing so would not bring them reputation or monetary profit. Combined with the suggestion from the previous point, future studies need to examine prison misconduct/victimization in a broader theoretical framework and possibly cooperate rational perspective to deeply understand prison gang members' decision makings on high risk behaviors.

In terms of policy implications, the current dissertation confirms that correctional officials should pay extra attention to prison gang members as a high-risk group, because they are posing a big threat to the safety of correctional facilities. Specifically, this high-risk group does not include street gang members, but only prison gang members. As found in the analyses, prison gang members were found to be positively related to more types of misconduct than street gang members. Therefore, prison gang members should be treated separately from street gang members as a high-risk group. Being that said, a more accurate gang status classification should be adopted by correctional facilities, at least in prisons with serious gang problem. Upon imprisonment, one should be checked for his prior prison gang status. What is more important, a more regular gang status check should be adopted, in order to capture the most active prison gang members in the facility. In this way, correctional officials can pay extra attention to these active members or come up with certain specific management strategy to these active prison gang members. Previously, to prevent or reduce gang violence in prison, many prisons treat gang members as a special group and adopt certain management strategies, such as

“segregation, specialized housing units, restriction on privileges, like visits, program participation, commissary, participation in employment, access to community, and access to communication, loss of good time credits, delay parole eligibility, control release destination, increase of security rating, and adopting gang free prisons” (Winterdyk & Ruddell, 2010, p. 733). Correctional officers believed only segregation and restrictions on visits were effective approaches to manage gang members in prison and no single strategy has been proved to be effective (Winterdyk & Ruddell, 2010). The ineffectiveness of management strategies may be due to too broad target. If correctional officials can narrow down to only active prison gang members, it may be easier to supervise on this comparatively small group of inmates. If segregation and restrictions on visits are the two most perceived effective way to manage gang problem, then correctional facilities can apply these effective management strategies to active prison gang members who are identified by the suggested more frequent prison gang status check.

Lastly, one of the important findings from the current dissertation is that prison gang members were more likely to be engaged in gang-related violent misconduct, gang-related violent victimization, non-gang related violent misconduct, and non-gang related violent victimization, which suggests a reciprocal and retaliative nature of prison gang violence. It aligns with the police effort on the street level to target on high risk population with both high offending and victimization (Kennedy, 2011; Papachristos et al., 2015). Offenders and victims are never two independent populations, but a highly overlapped population (Kennedy, 2011). In the prison settings, prison gang members comprise a big portion of this high risk population with high overlap on misconduct and

victimization. Therefore, if correctional officials can detect those active prison gang members who are engaged in both high level of violent misconduct and violent victimization, it may generate a good target of high risk population. Then, if efforts can be made to break down the retaliative connection between violence and violent victimization among prison gang members, for instance, separating rival gangs in different housing area, it will essentially decrease both violence and violent victimization in prison. Therefore, for both purposes, reducing gang threat and reducing violence and victimization in prison, the key point is to accurately define active prison gang members, which requires correctional facilities to develop a dynamic prison gang status check.

Conclusion

In summary, the current dissertation contributed to the extent prison gang misconduct/victimization literature by exploring gang and non-gang related violent misconduct, nonviolent misconduct, illicit sale, violent victimization, and nonviolent victimization. Three primary conclusions are presented based on the analyses: (1) prison gang membership is associated with more overall violent misconduct, nonviolent misconduct, illicit sale, and violent victimization, (2) prison gang membership is associated with more gang-related violent misconduct, nonviolent misconduct, illicit sale, and violent victimization, and (3) prison gang membership is associated with more non-gang related violent misconduct, illicit sale, and violent victimization, but not non-gang related nonviolent misconduct. The current dissertation contributes several important pieces of knowledge to this growing body of research, but there is much more to be learned about the relationship between prison gang membership and misconduct/victimization.

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APPENDIX A

Pairwise correlations

v	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	0.58																								
2	*																								
	0.83	0.28																							
3	*	*																							
	0.43	0.22	0.43																						
4	*	*	*																						
	0.34	0.32	0.22	0.26																					
5	*	*	*	*																					
	0.36	0.18	0.39	0.98	0.12																				
6	*	*	*	*	*																				
	0.39	0.27	0.30	0.34	0.22	0.31																			
7	*	*	*	*	*	*																			
	0.43	0.38	0.20	0.12	0.35	0.07	0.52																		
8	*	*	*	*	*	*	*																		

(continued)

V	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
9	0.32	0.19	0.31	0.34	0.16	0.33	0.93	0.28																	
	*	*	*	*	*	*	*	*																	
10	0.57	0.36	0.56	0.37	0.20	0.34	0.28	0.19	0.26																
	*	*	*	*	*	*	*	*	*																
11	0.43	0.44	0.30	0.18	0.22	0.15	0.26	0.28	0.18	0.62															
	*	*	*	*	*	*	*	*	*	*															
12	0.46	0.19	0.56	0.38	0.15	0.36	0.25	0.09	0.27	0.86	0.34														
	*	*	*	*	*	*	*	*	*	*	*														
13	0.30	0.21	0.21	0.26	0.22	0.25	0.19	0.20	0.18	0.31	0.27	0.30													
	*	*	*	*	*	*	*	*	*	*	*	*													
14	0.18	0.27				0.03	0.16	0.26	0.11	0.18	0.37	0.13	0.34												
	*	*	0.04	0.03	0.03	*	*	*	*	*	*	*	*												
15	0.28	0.16	0.21	0.26	0.21	0.25	0.17	0.17	0.17	0.30	0.24	0.29	0.97	0.20											
	*	*	*	*	*	*	*	*	*	*	*	*	*	*											
16	0.29	0.36	0.21	0.18	0.23	0.15	0.23	0.23	0.18	0.17	0.19	0.11	0.07	0.08	0.07										
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*										

(continued)

v	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1 7	0.13	0.11	0.11	0.12	0.12	0.10	0.08	0.11		0.12	0.09	0.09				0.19									
	*	*	*	*	*	*	*	*	0.05	*	*	*	0.05	0.04	0.04	*									
		-	-		-	-	-	-	-	-	-	-	-		-	-	-								
1 8	-	0.16	0.23	-	0.08	0.24	0.15	0.10	0.14	0.19	0.10	0.19	0.10	-	0.09	0.30	0.18								
	0.23	*	*	0.24	*	*	*	*	*	*	*	*	*	0.02	*	*	*								
		-																							
1 9	-	0.11		-	-	-		-		-	-		-	0.07	-	0.14	0.20	0.12							
	0.04	*	0.00	0.00	0.02	0.02	0.03	0.04	0.03	0.01	0.02	0.02	0.05	*	0.03	*	*	*							
										-								-	-						
2 0		0.07	-	-		-	-		-	0.08		-	-		-	0.20		0.08	0.46						
	0.01	*	0.05	0.05	0.02	0.05	0.02	0.02	0.04	*	0.04	0.13	0.04	0.03	0.03	*	0.01	*	*						
2 1	-	-	-	-	-	-			-	-	-	-				0.13	0.12	0.14	0.14	0.17					
	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.00	0.07	0.04	0.05	0.04	0.04	0.03	*	*	*	*	*					
			-	-		-						-													
2 2	-	-	0.10	0.08	-	0.08	-		-	-		0.08	-		-	-	-	0.16		0.07	0.08				
	0.06	0.03	*	*	0.05	*	0.02	0.03	0.05	0.06	0.01	*	0.04	0.02	0.03	0.01	0.03	*	0.04	*	*				

(continued)

V	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
								-												-					
2	-	-	-	-		-	-	0.07		-	-	-				-	0.08	0.28	-	-	0.08	0.0			
3	0.06	0.04	0.05	0.01	0.01	0.01	0.01	*	0.01	0.06	0.03	0.04	0.04	0.02	0.04	0.05	*	*	0.03	0.05	*	4			
		-			-		-	-														-	-		
2	-	0.08		-	0.08	-	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.29		
4	0.05	*	0.01	0.01	*	0.00	*	*	0.05	0.01	0.06	0.01	0.03	0.05	0.03	0.02	0.00	0.00	0.04	0.05	0.03	2	*		
									-					-		0.07	0.10			0.08	-	0.0	-	-	
2	0.02	0.00	0.06	0.04	0.05	0.02	0.00	0.02	0.01	0.06	0.03	0.07	0.01	0.02	0.01	*	*	0.02	0.04	*	0.01	2	0.02	0.05	
5	-	-	-				-		-			-				-				-			-		-
2	0.09	0.08	0.10	-	-	-	0.09	-	0.08	-	-	0.09	-	-	-	0.10		0.32		0.08	-	0.0	0.20	0.29	0.0
6	*	*	*	0.05	0.04	0.04	*	0.04	*	0.05	0.00	*	0.02	0.04	0.02	*	0.05	*	0.02	*	0.07	2	*	*	2

Note. Variable list: 1=violent misconduct, 2=gang-related violent misconduct, 3=non-gang related violent misconduct, 4=nonviolent misconduct, 5=gang-related nonviolent misconduct, 6=non-gang related nonviolent misconduct, 7=illicit sale, 8=gang-related illicit sale, 9=non-gang related illicit sale, 10=violent victimization, 11=gang-related violent victimization, 12=non-gang related violent victimization, 13=nonviolent victimization, 14=gang-related nonviolent victimization, 15=non-gang related nonviolent victimization, 16=current prison gang membership, 17=history of street gang membership, 18=age, 19=White, 20=Hispanic, 21=high school, 22=married, 23=prior incarceration, 24=violent offender, 25=administrative segregation, 26=time served in years.

*p<0.05.

APPENDIX B

Binary logistic regression model for ever violent misconduct (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	4.96***	1.51	5.27	0.00
History of street gang membership	3.07***	0.73	4.69	0.00
Age	0.94***	0.01	-5.36	0.00
White	1.52	0.39	1.62	0.11
Hispanic	0.63†	0.16	-1.84	0.07
High school	1.09	0.24	0.41	0.68
Married	0.68	0.18	-1.48	0.14
Prior incarceration	1.10	0.11	0.96	0.34
Violent offender	0.92	0.22	-0.33	0.74
Administrative segregation	0.87	0.28	-0.43	0.67
Time served in years	1.15***	0.03	5.37	0.00
Constant	3.15**	1.34	2.70	0.01

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=116.55$; log likelihood=-437.83; pseudo $R^2=0.20$; $p=0.00$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

APPENDIX C

Binary logistic regression model for nonviolent misconduct (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	2.73***	0.80	3.44	0.00
History of street gang membership	1.77*	0.41	2.46	0.01
Age	0.94***	0.01	-6.21	0.00
White	1.18	0.29	0.67	0.50
Hispanic	0.58*	0.14	-2.21	0.03
High school	0.81	0.17	-1.03	0.30
Married	0.74	0.18	-1.23	0.22
Prior incarceration	1.38**	0.14	3.19	0.00
Violent offender	0.99	0.21	-0.06	0.95
Administrative segregation	2.03*	0.66	2.17	0.03
Time served in years	1.15***	0.03	5.56	0.00
Constant	6.17***	2.58	4.35	0.00

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=108.97$; log likelihood=-464.14; pseudo $R^2=0.16$; $p=0.00$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

APPENDIX D

Binary logistic regression model for ever illicit sale (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	2.75**	0.85	3.28	0.00
History of street gang membership	2.43***	0.64	3.39	0.00
Age	0.94***	0.01	-4.52	0.00
White	1.79*	0.53	1.97	0.05
Hispanic	0.64	0.19	-1.49	0.14
High school	0.81	0.20	-0.88	0.38
Married	1.07	0.31	0.24	0.81
Prior incarceration	1.32*	0.14	2.56	0.01
Violent offender	0.82	0.21	-0.79	0.43
Administrative segregation	0.67	0.28	-0.96	0.34
Time served in years	1.14***	0.03	5.16	0.00
Constant	1.03	0.50	0.06	0.95

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=74.55$; log likelihood=-343.58; pseudo $R^2=0.16$; $p=0.00$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

APPENDIX E

Binary logistic regression model for ever violent victimization (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	3.50***	0.96	4.57	0.00
History of street gang membership	1.57*	0.36	1.98	0.05
Age	0.95***	0.01	-4.52	0.00
White	1.82*	0.45	2.42	0.02
Hispanic	0.72	0.18	-1.34	0.18
High school	1.05	0.22	0.24	0.81
Married	0.66†	0.17	-1.67	0.10
Prior incarceration	1.01	0.10	0.09	0.93
Violent offender	0.98	0.21	-0.08	0.94
Administrative segregation	1.16	0.37	0.46	0.65
Time served in years	1.15***	0.03	5.42	0.00
Constant	2.18*	0.87	1.94	0.05

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=85.98$; log likelihood=-466.59; pseudo $R^2=0.15$; $p=0.00$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

APPENDIX F

Binary logistic regression model for ever nonviolent victimization (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	1.16	0.29	0.57	0.57
History of street gang membership	1.40	0.31	1.51	0.13
Age	0.97**	0.01	-2.85	0.00
White	1.34	0.30	1.30	0.19
Hispanic	0.59*	0.14	-2.24	0.02
High school	1.17	0.23	0.82	0.41
Married	0.92	0.21	-0.35	0.73
Prior incarceration	1.16†	0.10	1.77	0.08
Violent offender	0.85	0.18	-0.77	0.44
Administrative segregation	1.36	0.40	1.03	0.30
Time served in years	1.07***	0.02	3.46	0.00
Constant	1.22	0.49	0.50	0.62

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=34.79$; log likelihood=-509.33; pseudo $R^2=0.05$; $p=0.00$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

APPENDIX G

Binary logistic regression model for nonviolent victimization (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	0.94	0.28	-0.21	0.83
History of street gang membership	0.92	0.22	-0.34	0.73
Age	0.97**	0.01	-2.88	0.00
White	0.99	0.25	-0.04	0.97
Hispanic	0.81	0.21	-0.82	0.42
High school	1.10	0.26	0.41	0.68
Married	0.89	0.24	-0.43	0.67
Prior incarceration	1.25*	0.12	2.36	0.02
Violent offender	0.94	0.22	-0.25	0.80
Administrative segregation	1.42	0.49	1.00	0.32
Time served in years	1.01	0.03	0.30	0.76
Constant	0.93	0.43	-0.17	0.87

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=13.84$; log likelihood=-415.71; pseudo $R^2=0.03$; $p=0.24$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

APPENDIX H

Poisson regression model for nonviolent victimization

Variables	IRR	Robust se	z	P value
Current prison gang membership	1.51	0.59	1.05	0.29
History of street gang membership	1.09	0.27	0.34	0.73
Age	0.96***	0.01	-3.31	0.00
White	0.71	0.17	-1.40	0.16
Hispanic	0.58*	0.16	-1.99	0.05
High school	1.61	0.48	1.59	0.11
Married	0.74	0.17	-1.31	0.19
Prior incarceration	1.35**	0.14	2.84	0.00
Violent offender	0.78	0.18	-1.05	0.29
Administrative segregation	1.12	0.31	0.41	0.68
Time served in years	1.02	0.03	0.82	0.41
Constant	0.26***	0.10	-3.42	0.00

Note. Weighted sample statistics are reported.

Model statistics: Wald $\chi^2=18.49$; log likelihood=-201.57; $p=0.07$.

Abbreviations: IRR=incident rate ratio; se=standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

APPENDIX I

Firth logistic regression for gang-related nonviolent victimization (n=797)

Variables	Odds ratio	se	z	P value
Current prison gang membership	2.67†	1.42	1.86	0.06
History of street gang membership	1.22	0.62	0.38	0.70
Age	1.00	0.03	0.15	0.88
White	0.26	0.23	-1.49	0.14
Hispanic	0.91	0.48	-0.18	0.85
High school	1.95	0.98	1.34	0.18
Married	1.30	0.71	0.49	0.63
Prior incarceration	1.08	0.23	0.36	0.72
Violent offender	0.57	0.35	-0.92	0.36
Administrative segregation	0.67	0.60	-0.45	0.65
Time served in years	0.99	0.07	-0.09	0.92
Constant	0.02***	0.02	-3.45	0.00

Note. Unweighted sample statistics are reported because sample weight function is not allowed in firth logistic regression in Stata.

Model statistics: Wald $\chi^2=11.36$; log likelihood=-61.04; p=0.41.

Abbreviations: se=standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

APPENDIX J

Zero-inflated Poisson regression model for non-gang related nonviolent victimization

(*n*=797)

Variables	b	se	z	P value
Inflate				
Current prison gang membership	0.04	0.32	0.12	0.91
Constant	-22.65***	0.11	-198.98	0.00
Level of non-gang related nonviolent victimization				
Current prison gang membership	0.43	0.38	1.14	0.26
History of street gang membership	0.05	0.25	0.21	0.83
Age	-0.04**	0.01	-3.23	0.00
White	-0.25	0.25	-1.00	0.32
Hispanic	-0.54*	0.27	-1.96	0.05
High school	0.46	0.30	1.54	0.12
Married	-0.27	0.24	-1.10	0.27
Prior incarceration	0.32**	0.11	2.87	0.00
Violent offender	-0.19	0.24	-0.78	0.43
Administrative segregation	0.06	0.29	0.22	0.83
Time served in years	0.02	0.03	0.83	0.40

(continued)

Variables	b	se	z	P value
Constant	-1.42***	0.42	-3.42	0.00

Note. Weighted sample statistics are reported.

Model statistics: number of zero=633; Wald $\chi^2=17.51$; log likelihood=-189.87; pseudo $R^2=0.08$; $p=0.09$.

Abbreviations: se = standard error.

† $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$.

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Quantitative Research Method	Social Network Analysis

Peer Reviewed Publications

Pyrooz, D. C., J. J. Turanovic, S. H. Decker, & **J. Wu**. (2016). Taking stock of the
 relationship between gang membership and offending: A meta-analysis. *Criminal
 Justice and Behavior*, 43(3), 365-397.
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 violent victimization. *Journal of Quantitative Criminology*, 32(4), 531-559.
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Wu, J. (2017). Does peer network matter: Using social network characteristics to predict gang joining behavior.

Hu, X., **J. Wu**, & B. S. Fisher. (2017). Why don't people report crime to the police? An answer from NCVS school crime supplement.

Funded Research

Gangs on the street, gangs in prison: Their nature, interrelationship, control, and re-entry

Role: Data manager and survey developer

Funded by the National Institute of Justice, Research on Gangs and Gang Violence (2014-MU-CX-0111). \$840,807

Presentations

2013 Pyrooz, D. C., J. J. Turanovic, S. H. Decker, & J. Wu. Taking stock of the relationship between gang membership and offending: A meta-analysis. ASC in Atlanta.

2015 Wu, J. & D. C. Pyrooz. Uncovering the pathways between gang membership and violent victimization. ACJS in Orlando.

2015 Wu, J. Does peer network matter: Using social network characteristics to predict gang joining behavior. ASC in Washington D.C.

2017 Wu, J. & X. Hu. The relationship between motivations for joining gangs and criminogenic outcomes: A preliminary test on self-determination theory. ACJS in Kansas City.

Invited Presentation

2015 *Another path: Something about my research*
Zhejiang Police College, Hangzhou, China

Teaching

Criminology
Introduction to Methods of Research
Introduction to Methods of Research (Online)

Honors and Awards

- 2011 College of Criminal Justice, Sam Houston State University, the Third Criminal Justice Research Conference, poster group, second place
- 2013 Dan Richard Beto Scholarship in Correctional Leadership, College of Criminal Justice and Criminology, Sam Houston State University
- 2013 Outstanding Teaching Assistant Award Nominee

Certificates

Certificate for basic Blaise survey developing software
Certificate for online teaching from Sam Houston State University

Professional Affiliations

American Society of Criminology
Academy of Criminal Justice Science
The Association of Chinese Criminology and Criminal Justice in the US