Motivation to Kill: The Relationship between Motive and Weapon Choice in Homicide

by

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ABSTRACT

The purpose of this study is to examine the factors that influence the choice of weapon in homicide. The study focuses on three research questions using data from Newark, New Jersey: what is the most commonly associated weapon with each motive? What factors influence the use of a particular type of weapon in a homicide? How does the method of weapon retrieval, or lack thereof, affect the choice of weapon? The cross-tabulation findings revealed that domestically-motivated homicides are most likely to be committed with knives and blunt objects; and drug-, gang-, dispute-, revenge, and robbery-motivated homicides were most likely to be committed using a firearm. The logistic regression demonstrated the method of weapon retrieval, the mode of how the homicide was carried out, the offender's gender, and the victim and/or offender being a drug dealer or a gang member were all significant in terms of how they affected the offender's use of a firearm to carry out the homicide. For knives and blunt objects, the method of weapon retrieval, the mode of how the homicide was carried out, the offender's gender, and the victim and/or offender being a drug dealer or a gang member were all significant in terms of how they affected the offender's use of a knife or blunt object to carry out the homicide. The results support the need for focused deterrence and conflict resolution interventions.

TABLE OF CONTENTS

Page

LIST OF TABLES

INTRODUCTION

Criminal homicide is defined as "the unlawful taking of a person's life with the expressed intention of killing or rendering bodily injury resulting in death, and not in the course of some other criminal activity" (Luckenbill, 1977, p. 176). According to the Federal Bureau of Investigation's Uniform Crime Report (UCR), there were 15,696 homicides and non-negligent manslaughters in 2015, a rate of approximately 4.9 per 100,000. This is a count of approximately 43 people per day; thus, this is a problem that demands the attention of researchers to understand the dynamics of homicide. Overwhelmingly, the weapon of choice in homicides is a firearm (Alvarez & Bachman, 2014; Catanesi, Carabellese, Troccoli, Candelli, Grattagliano, Solarino, & Fortunato, 2011; Pizarro, 2008; Wolfgang, 1957; Zeoli, Grady, Pizarro, & Melde, 2015). While there are a plethora of theories that seek to explain what motivates an individual to commit a homicide, there has been little research on which factors affect weapon choice in a homicide and how motivation alone influences that weapon choice.

The fact that there has been little research on which factors affect weapon choice in homicide presents two main problems. The two problems are that we do not know how an offender selects the weapon they will use in a homicide, or if the offender usually brings the weapon with them to the place where the homicide occurs. It is important to understand this because it can help with the creation of prevention strategies such as those that target violent interactions. The second problem that this lack of knowledge presents is that the most common factors, such as weapon retrieval and motive, that lead to the use of a firearm, or any other weapon, are unknown. This is important to know when making decisions about gun policy, particularly when there is a push for stricter

gun laws. If the factors that lead an individual to use a firearm in a homicide are better understood, legislators can be better informed when making the decision on gun policy. This information would also generate knowledge about the areas where implementing prevention strategies would work the best, and help scholars better understand the crime of homicide.

This study seeks to increase the knowledge base in this area by examining the factors that lead to weapon choice in homicide. A further aim of this study is to determine the most common situational factors that lead to the initial decision to use a weapon in a homicide, and which factors are most predicative of the use of a firearm in a homicide (location of weapon, weapon retrieval, gender, race, etc.). The first research question that this study seeks to answer is, "What is the most commonly used weapon associated with each motive?" A second research question that this study seeks to answer is, "What factors (i.e. motive, weapon availability, etc.) influence the use of a particular type of weapon in a homicide?" The third research question this study seeks to answer is, "How does the method of weapon retrieval, or lack thereof, affect the choice of weapon?"

This study will begin to unpack this problem first by looking at the literature on homicide events, weapon choice and homicide, and then firearms and homicide specifically. After completing a literature review, this study will describe the theoretical framework that help to explain homicide events and will then further discuss the purpose of the study. After describing the source of the data, a clear description of the methods and the findings will be presented followed by a discussion and conclusion of the results. Implications and recommendations for future research will also be given.

GENERAL PATTERNS IN HOMICIDE: REVIEW OF THE LITERATURE

Wolfgang's seminal 1957 study, *Patterns in Criminal Homicide*, discussed the general trends of homicide in Philadelphia. He found that males were more likely than females to be involved in homicides and, when females were involved in a homicide, females were more likely to be the victim of a beating that resulted in their death. Additionally, he found that homicides tended to be male-on-male or male-on-female. His research suggested that females were most likely to be killed in the bedroom and were most likely to be killed by males. In terms of prior crime, female victims had a tendency of not having a record while male victims tended to. He found that this effect increased when the male victim was African American. In terms of racial background, Wolfgang found that the majority of homicides were intraracial, meaning that they did not cross racial backgrounds, with African Americans and Latinos being more likely the victims and the offenders. Additionally, Wolfgang found that most offenders had a criminal record that consisted of one or two offenses when they committed the homicide. This effect increased when African American males were involved in the homicide. He also found that offenders were generally between the ages of 20 and 29 while victims were between the ages 25 and 35.

Wolfgang also demonstrated that victims tended to be killed by someone they had a relationship with prior to the homicide occurring. While this study found that females had a greater likelihood of dying in the bedroom, homicides in general occurred more frequently in public areas than in private areas. Alcohol was also likely to be present in homicides in both the offender and victim. More importantly, he demonstrated that most homicides were committed with a firearm and went as far to as to suggest that some

homicides would not have occurred if a firearm was not present at the scene of the homicide.

Recent research has confirmed these patterns. In terms of gender, males are more likely than females to be involved in a homicide (Alvarez & Bachman, 2014; Cooper & Smith, 2012; Pizarro, 2008; Weaver, Martin & Petee, 2004). As Wolfgang (1957) suggested, homicides continue to have the tendency to be male-on-male or male-on-female (Alvarez & Bachman, 2014; Cooper & Smith, 2012; Weaver et al., 2004). In terms of race, African Americans and Latinos are still found to have a higher likelihood of being involved in a homicide as both the victim and the offender (Alvarez & Bachman, 2014; Cooper & Smith, 2012; Felson & Messner, 1996; Weaver et al., 2004). Polk (1999) found that offenders are generally between the ages of 20 and 29 while victims are between the ages 25 and 35, which is similar to the results found by Wolfgang in 1957. This is still consistent with more recent research (Alvarez & Bachman, 2014; Cooper & Smith, 2012; O'Brien & Stockard, 2009).

Additionally, the majority of studies still consistently show that victims and offenders have some relationship prior to the homicide occurring (Cooper & Smith, 2012; Pizarro, 2008; Salfati, 2003; Weaver et al., 2004). Recent research suggests that homicides occur more frequently in public areas than in others, and has continued to demonstrate that the majority of homicides are intraracial (Alvarez & Bachman, 2014; Cooper & Smith, 2012; Weaver et al., 2004). Finally, recent research has maintained that alcohol is likely to be present in homicides in both the offender and victim (Alvarez and Bachman, 2014; Decker, 1996; Polk, 1999).

Research has also continued to demonstrate that the most frequently used weapon in homicides is a firearm (Alvarez & Bachman, 2014; Catanesi et al., 2011; Cooper & Smith, 2012; Pizarro, 2008; Zeoli et al., 2015). Per the Bureau of Justice Statistics, 70% of all homicides from 1993 to 2011 were caused by firearm violence (Planty & Truman, 2013). Catanesi and colleagues (2011) found that gender plays a role in the choice of weapon in a homicide: males are more likely to use firearms or knives, and females are more likely to use weapons that are easily accessible in the moment when the homicide occurs, as women are more likely to kill someone they are romantically involved with.

This section has demonstrated the most common patterns in homicide. The review began with a discussion of Wolfgang's findings from his seminal study that expanded the area of homicide studies in criminology. This was followed by a discussion of the patterns of homicide in more recent studies. In the majority of studies, the major findings from the studies were that firearms are the most common weapon used in homicide, males are more commonly involved in homicides, and the victim, and the offender knew each other in most circumstances. The next section will discuss the difference in weapon choice and trends by homicide motivation.

Differences in Weapon Choice and Trends by Homicide Motivation

Homicide trends vary when disaggregated by type. Researchers have created a variety of typologies, including one focusing on motive. Although earlier scholars have categorized motive dichotomously as instrumental (i.e., a homicide that occurs when, in terms of their position, an offender stands to gain something from the crime, whether that be power, control, financial or something else) and expressive (i.e., a homicide that is committed in the "heat-of-the-moment," impulsive kill and is not premeditated nor

rational) due to the lack of knowledge about motive, more recent scholars have employed more refined motive typologies such as: domestic, drug, gang, robbery, and disputes (Cook, 1987; Kubrin, 2003; Pizarro, 2008; Tardiff et al., 2002). The importance of disaggregating homicides by motive cannot be stressed enough in order to clarify the effect of situational and structural characteristics on homicide (i.e. the location where the homicide took place, alcohol and/or drug involvement, etc.). When homicides have been disaggregated by type, differences that were previously unclear. These differences are important to understand when trying to create prevention strategies for different types of homicides.

Recent research disaggregating homicides by motive has demonstrated differences in the situational covariates such as place where the homicide is occurring and weapon of choice. Studies on both the national and city level have demonstrated that domestically-motivated homicides are more likely to occur within a residence, and were least likely to involve firearms and be committed by multiple offenders when compared with other categories of homicide (Mares, 2010; Pizarro, 2008; Pyrooz, 2012). However, findings on the national-level from Cooper and Smith (2012) suggest that, in overall trends in domestic homicides, firearms are increasing in the number of cases they are used in. National-level research has also found that husbands who kill their younger wives have an increased likelihood of using hands-on methods, such as strangulation, knives, or drowning, than those with older wives (Mize, Shackelford, & Weekes-Shackelford, 2011). Further on a national level, husbands who are a part of a younger couple are more likely to use strangulation and no weapon when they kill their wives while husbands who are a part of an older couple are more likely to use long firearms,

blunts objects, and other types of weapons (Allen & Fox, 2014). Overall, Cooper and Smith (2012) found that the use of a firearm in homicides involving intimate partners has been on increasing and the use of other weapons, such as knives, blunt objects, or body parts, has been increasing. A similar trend was found for homicides involving other family members from 1980 to 2008.

In both national and city-level studies, drug-motivated homicides are more likely to involve a firearm as their murder weapon (Kubrin & Ousey, 2009; Nielsen, Lee & Martinez, 2005; Pizarro, 2008; Tardiff, Marzuk, Lowell, Portera & Leon, 2002). Further, findings on a national and city-level basis indicate that these incidents are also twice as likely to occur in public housing complexes and more likely to involve both victims and offenders who were under the influence of drugs and/or alcohol, and involve acquaintances (Kubrin & Ousey, 2009; Nielsen, Lee & Martinez, 2005; Pizarro, 2008; Tardiff et al., 2002). Similarly, national- and city-level studies indicate gang-motivated homicides show similar patterns in firearm use and have a higher likelihood of occurring in public areas as opposed to private areas (Decker & Curry, 2002; Kubrin & Ousey, 2009; Pizarro & McGloin, 2006).

Dispute-motivated and robbery-related homicides have also been found to be more likely to involve a firearm in city-level data (Cook, 1987; Kubrin, 2003; Pizarro, 2008; Tardiff et al., 2002). In terms of city-level data, dispute homicides, are also three and a half times more likely to involve drugs and/or alcohol (Pizarro, 2008), least likely to involve intimate partners or family members, more likely to involve female victims, acquaintances, occur on the weekends, involve firearms, involve innocent bystanders, and involve African Americans (Pizarro, 2008; Tardiff et al., 2002). Further, robbery

homicides are less likely to involve an intimate partner, family member, friend or acquaintance (also see Miethe, McCorkle & Listwan, 2011; Zahn & Sagi, 1987), more likely to occur when there are multiple offenders, and victims in this category of homicide are more likely to be older, more likely to occur in areas of residential instability (see Kubrin, 2003), and less likely to be African American when compared to other categories (Kubrin, 2003; Parker, 1989; Pizarro, 2008). Additionally, when looking at city-level data, robbery-motivated homicides were found to be more likely to involve strangers and the likelihood of a homicide occurring during a robbery increases with the lethality of a weapon used; thus, if a firearm is used, a homicide is three times more likely to occur (Cook, 1987). For more information on how city-level and national-level data vary, please see the Table in Appendix 2.

These sections have demonstrated that there are distinct features that differentiate homicides when disaggregated by motive. Domestically-motivated homicides are more likely to be committed with a knife, blunt object or personal weapon than a firearm (Mares, 2010; Pizarro, 2008; Pyrooz, 2012). Drug- and gang-motivated homicides are more likely to be committed with a firearm than any other type of weapon (Decker & Curry, 2002; Kubrin & Ousey, 2009; Nielsen et al., 2005; Pizarro, 2008; Tardiff et al., 2002). Similarly, dispute- and robbery-motivated homicides are more likely to be committed with a firearm (Cook, 1987; Kubrin, 2003; Pizarro, 2008; Tardiff et al., 2002).

Studies that have examined other typologies also suggest the prevalence of firearms in distinct types of homicides. For example, firearms are more often employed in homicides that involved strangers and acquaintances when compared to homicides that involve family members or friends (Fox & Zawitz, 1999). Recently, Cooper and Smith's

2012 study, homicides committed by a friend/acquaintance and homicides committed by a stranger were more likely to involve a firearm than those committed by an intimate or family member.

This section demonstrated that homicide trends vary when disaggregated by motive type. Domestically-motivated homicides are least likely to involve firearms but more recent research has demonstrated that use of firearms in domestically-motivated homicides is increasing. Drug- and gang-motivated homicides are more likely to involve firearms as well as dispute- and robbery-motivated homicides. The next section is a discussion of studies that look at motivation and weapon choice in homicide.

Trends in Motivation and Weapon Choice in Homicide

Few studies have specifically measured the relationship between motivation and weapon choice in homicide. Decker (1996), is among the few scholars who have examined this issue. He found that when the motive was instrumental, a firearm was used in homicides involving family members, close friends, and other intimates. He also found that the motive was more likely to be expressive in 1) acquaintance-involved homicides that involved physical force, and 2) in stranger homicides that involved a firearm. Decker suggests that "motive has clear implications for the choice of means by which death is inflicted" (1996, p. 437). This implies that the rationale behind why a homicide is committed affects the weapon choice made by the offender when committing the homicide. This clearly demonstrates the need for further study on the relationship between motive and weapon choice in homicide. Because of the lack of study in this area, more research is needed to determine the relationship between motive and weapon choice in homicide.

THEORETICAL FRAMEWORK

Social Interactionist Theory

Tedeschi and Felson (1994) presented a social interactionist theory designed to explain violence. According to Tedeschi and Felson, people are socialized to think that blameworthy actions require punishments which motivates them to establish and maintain what they believe is just and fair. This theory argues that violence falls within a continuum of coercive actions, which are goal-oriented behaviors that come as a result from various social interactionist processes. Coercive actions are events that are intent on causing pain or forcing compliance through use of threats, deprivation of some positive stimuli as a form of punishment, or physical infliction of pain. Social interactionist theory suggests that there are three primary social motives for why an offender uses coercive actions: 1) to influence others to attain compliance to acquire some gain, financial or otherwise, 2) to acknowledge that there has been an insult issued and seek recompense, and 3) maintain or defend a social identity (Tedeschi & Felson, 1994). These motives are not mutually exclusive; they can all be present in the reasoning for a coercive interaction and can be directly applied to homicide motivation since homicides can result from an individual attempting to gain something, settle a score, or to "save face" and, in certain instances, is the result of being under duress while influenced by alcohol or some extreme emotion.

According to Tedeschi and Felson, social interactionist theory also posits that coercive actions are meant to generate some change in the targeted person and stresses that the social interaction between all relevant parties in the coercive interaction. For example, an insult can be used to attack the social identity of the targeted individual or a

contingent threat can be used to acquire compliance (Tedeschi & Felson, 1994). In order for a coercive action to occur, the individual generally experiences a stressful life event, which causes their role performance to suffer. They then become the target of grievances to their failure to maintain their performance in their role in life. Next, an individual must perceive that some norm has been violated and an injustice has been done to them. These norm violations can include unfair treatment, conflicts of interest, violations of rights, and unjust treatment of feelings. The individual then further assesses their surroundings, registers any expectations of appropriate behavior, and determines the behavior most appropriate to alleviate any negative judgements they may receive from both the aggressor and any present third parties. This is also when both the actors and the third parties attribute blame to those involved and determine their intentions.

Similar to rational choice theory—which will be discussed in a following section—offenders follow a decision-making process when committing an offense. Based on this theory, offenders make the decision to use coercive actions by making "rational choices" after balancing the odds of achieving a desired outcome with the possible cost of engaging in such actions. However, these "rational" decisions are made under duress, in a short period of time, and while often under the influence of alcohol or some emotion thus resulting in the failure to fully evaluate the true costs of the actions or any alternative options that may be available (see: Tedeschi & Felson, 1994, pp. 197-201). Similarly, individuals who have set rational patterns and pre-learned scripts of violence may be predisposed to look for alternative solutions to present situations but may also choose to stop their original course of action if the cost is recognized as being too high. The accumulation of events, the need for retribution, the stress of a given situation, the short

period of time in which all these events occur, the presence of alcohol and firearms all create the perfect storm for a homicide to occur.

This process is exemplified by Luckenbill's classic study of homicide interactions. A homicide is a collective transaction between the victim, offender, and possibly an audience where each individual contributes to the development and shaping of the other players in the transaction (Goffman, 1967; Luckenbill, 1977). These transactions that result in homicide often occur in non-work or leisure settings and is often populated by people who have an intimate knowledge of each other (Decker, 1993, 1996; Luckenbill, 1977; Tardiff et al., 1995; Wolfgang, 1957). Within these occasions, each role is developed and shaped by the other people present in the transaction. In stage one, the victim does something that is seen as offensive by the offender (Dobash & Dobash, 1984; Felson, 1984; Luckenbill, 1977). This offense can be some direct verbal expression that is offensive in nature, or there is some other physical or non-verbal gesture that sets the event in motion but does not necessarily occur at the time of the violent event (Athens, 1985; Dobash & Dobash, 1984; Felson, 1984; Luckenbill, 1977; Polk, 1999). In stage two of the transaction, the offender puts the offensive act into the context based on the audience and the setting in which the transaction is taking place (Athens, 1985; Dobash & Dobash, 1984; Luckenbill, 1977).

Once the offender decides to retaliate against the perceived offense, in either a verbal or nonverbal way, the third stage has occurred (Luckenbill, 1977). In stage four, the victim has the opportunity to decide if they should save face by responding to the retaliation or exit from the transaction (Athens, 1985; Dobash & Dobash, 1984; Felson, 1984; Luckenbill, 1977; Polk, 1999). In stage 5 of the transaction, both the offender and

the victim have committed to the "battle" of characters (Luckenbill, 1977). This is a "working" agreement between the offender and the victim that favors the use of violence (Luckenbill, 1977). However, Athens (1985) suggested that both parties do not need to consent to the violence in order for it to occur; thus, calling question to the necessity of this stage and Cheatwood (1996) suggested that the offender makes the decision to use lethal force prior to the final stage occurring. The battle then ensues and the final stage occurs: the victim falls and the offender exits the transaction (Luckenbill, 1977).

According to Tedeschi and Felson (1994), these coercive actions are events that have the intention of causing pain or forcing compliance through use of threats, deprivation of something as a form of punishment, or physical infliction of pain . Weapons are often used to facilitate compliance, inflict pain, or met out punishment. This can be in the form of firearm, blunt object, knife, body part, or something else. Further, social interactionist theory suggests these actions are meant to create some change in the targeted person and stresses the social interaction between all relevant parties in the coercive interaction. One way in which change can come about, which is often favorable means for the offender, is the threat of physical violence and the presentation of a weapon. For example, a robber may produce a firearm to better assist him in his robbery and force compliance from the victim. As previously discussed, "rational" decisions are made under duress, in a short period of time, and while often under the influence of alcohol or some emotion in coercive interactions (see: Tedeschi & Felson, 1994, pp. 197-201). This may make the use of weapon a greater occurrence in these interactions because it appears to be a rational choice under the circumstance of coercive interactions.

The stress of a given situation and the presence of a weapon may create the perfect storm for a homicide to occur.

In Luckenbill's (1977) study a weapon may factor into the offender's decision to commit a homicide at any stage. During stages one and two, when the insult to the offender occurs and the offender puts the offense into context, the presence of a weapon may make the offender more likely to respond in a way that is verbally or physically aggressive (Luckenbill, 1977). In stages three and four, when the offender decides to retaliate and the victim decides to continue the interaction, the presence of a weapon may escalate the situation from either side; as it is known that the victim and offender roles are not fully determined until the end of the interaction. In stage 5 of the transaction, both the offender and the victim have committed to the "battle" and will both use whatever means necessary to come out with the upper hand (Luckenbill, 1977). A weapon can come into play at this stage as well if it has not already. This "battle" between the offender and the victim often favors the use of violence and a weapon is likely to be a part of this violence as it gives either party a better chance of coming out on top of this interaction (Luckenbill, 1977).

Rational Choice Theory

As previously stated, the accumulation of events, the need for retribution, the stress induced by a given situation, the short duration of time in which all these events occur, the presence of a weapon and the presence of alcohol all create the perfect opportunity for a homicide to occur (Luckenbill, 1977; Tedeschi & Felson, 1994). Situational theories of crime can shed light on these patterns.

Situational theories accentuate the large role that environmental characteristics play and underline that it is not simply enough to know why an individual commits a crime but the importance of where, when and what creates the opportunity for a crime to occur (Clarke, 1997; Cohen & Felson, 1979). Rational choice theory suggests that the offender will only opt to commit the crime when the characteristics of the situation weigh the benefits more heavily than the costs and meets the needs of the offender, whether they be monetary, status-related, or something else (Clarke, 1997). As Luckenbill (1977) demonstrated, offenders are most likely to kill when they are in a setting that clearly calls for them to "save face" after interpreting the victim's actions as insulting to their status. This finding clearly exemplifies the main crux of Clarke's (1997) argument that a crime will occur when an individual is driven by their need for status.

Further, the use of firearms in the majority of homicides is supported by rational choice theory. When committing a crime that has such personal risk to one's self if caught or bested in the struggle, rational choice theory suggests that the offender would bring the necessary equipment to get the job done quickly and efficiently. A firearm clearly demonstrates the two main cruxes of rational choice theory. First, it facilitates the completion of the homicide, where the goal is to kill with the most efficiency while providing the offender the least amount of personal risk. Second, it provides the offender with the lowered risk of being caught for the homicide since a firearm requires no physical contact between offender and victim thus making it the least likely weapon to leave behind evidence from the offender. As discussed in Cook's 2015 study, the use of a firearm, as opposed to other weapons, dramatically increases the fatality rates. Further, this study demonstrates that firearms are easily obtained by dangerous individuals

through underground channels and tend to change hands between offenders rapidly (Cook, 2015). This protects the individual from being linked to any homicide incident since they are not in the registered firearm user database and are not often found in possession of the firearm used in the incident.

On the opposing side, the use of knives or blunt objects is not consistent with rational choice theory. As previously discussed, when an offender is deciding to commit such a high-risk crime, rational choice theory suggest that the proper tools would be brought to the scene of the crime. A knife or blunt object is not the most efficient weapon to bring to a murder. As discussed by Wright and Decker (1997) in their book, *Armed Robbers in Action: Stick-ups and Street Culture*, the use of a deadly weapon is the best way for an offender to gain compliance from their victims and to avoid getting caught and punished by being able to control the situation and their intended victim . Therefore, firearms are seen as the most commonly used weapon in robbery-related homicides. This reasoning is applicable to homicide as both knives and blunt objects require close contact between the offender and the victim; which gives the victim an opportunity to best the offender and get away or murder the offender themselves. The use of a knife or a blunt object also does not provide the offender with the lowest risk of being caught for the homicide due to the fact that the offender has to come with in physical contact distance of the victim to commit the homicide (Wright and Decker, 1997). This heightens the chance that the offender may leave some form of identifying evidence behind at the scene of the homicide.

On a similar note, the use of body parts for inflicting death, such as hands or feet, is not consistent with the concepts in rational choice theory. In a crime with such high

personal risk to the offender, rational choice theory would suggest that the offender would bring the adequate tools in which to get the homicide done in a quick and efficient way. The use of a body part as the weapon in a homicide suggests a deep emotion, a lack of planning and less consideration given to the method in which it is committed. By using a body part to commit a homicide, the risk of detection and getting caught for the homicide increases drastically. There is a greater chance for the offender to leave behind some form of evidence that could be used to identify them; whether that's skin under the victim's nails from the struggle or hair being pulled out. This greatly heightens the risk posed to the offender for this type of crime.

--Figure one inserted here--

CURRENT FOCUS

A schematic diagram of the different variables that are related to the occurrence of homicide can be seen in figure one. This study seeks to increase knowledge in this area by examining the factors that lead to weapon choice in homicide. A further aim of this study is to determine the most common situational factors that lead to the use of a firearm in a homicide (location of weapon, weapon retrieval, gender, race, etc.). The first research question that this study seeks to answer is, *"What is the most commonly associated weapon with each motive?"* A second research question that this study seeks to answer is, *"What factors influence the use of a particular type of weapon in a homicide?"* A third research question this study seeks to answer is, *"How does the method of weapon retrieval, or lack thereof, affect the choice of weapon?"* Based on research that was previously presented, the necessity to answer these research questions has become apparent. While it is abundantly clear that firearms are the most common

weapon used in homicide, there is very little known about how offenders determine what weapon they use to commit a homicide and if motive plays any role in that selection. By answering these research questions, we can begin to unpack the area of weapon selection in homicide.

There are three hypotheses that this study will seek to test:

1. The motive of the homicide will be predictive of the weapon of choice used to commit the homicide
2. When the weapon must be retrieved from somewhere outside of the initial altercation, the most common weapon used will be a firearm and the motive will be instrumental in nature (i.e. to gain something from the homicide)
3. When the weapon was an object at the scene of the homicide incident, the most common weapons used will be a knife, blunt object or the offender's hands or feet and the motive will be expressive in nature

The first hypothesis is supported by prior research (e.g., Pizarro, 2008; Decker, 1995, 1996) and thus, this study seeks to find further support. The second hypothesis is logical because an offender would try to bring back the most brute force of commonly used weapons' capabilities to help their cause. To parallel this, a third hypothesis is that when the weapon was an object at the scene of the homicide incident, the most common weapons used will be a knife, blunt object or the offender's hands or feet and the motive will be expressive (i.e. committed in the heat-of-the-moment due to high emotions). This follows the logic that the offender did not have access to a firearm and was under extreme emotion and may not be able to think rationally.

These hypotheses are supported by prior research such as Decker's 1993 and 1996 studies. Further, both social interactionist and criminological theory suggest that there is evidence for a relationship between motivation and weapon choice in homicide that can be predicted by the dynamic nature of the homicide. As suggested by Corsaro, Pizarro and Shafer (2016), violent encounters that occur when the offender has traveled to the residence of the victim are more likely to have some pre-meditation thus implying that the motive would be more likely to be revenge, dispute, or robbery related. Further, the study suggested that there is an inverse relationship with premeditated violence and victim mobility, thus making those incidents more spontaneous and reactive in nature and making them more likely to be domestically-motivated (Corsaro et al., 2016).

This study contributes to homicide research in several ways. The first contribution to the field will be a better understanding of how an offender selects the weapon they use in a homicide and in what instances the offender is most likely to retrieve a weapon from outside of the initial interaction location. This would fill a gap in the research as well as provide more information and understanding for investigators for the crime of homicide, such as understanding the factors that go into an offender choosing to retrieve a firearm as opposed to using a weapon that can be found at the scene. A better understanding of weapon choice in homicide is important in the context of the current world. It is important to shed more light on to this crime and the factors that go into it in order to create better informed prevention strategies, which may lie outside the realm of stronger gun legislation, such as training on how to recognize the signs of a situation escalating to lethal violence and how to diffuse it for cops and other security officers. This area has not

been looked at in depth and extensively by researchers and thus would give a better understanding as to how factors influence the outcome of a coercive interaction.

DATA AND METHODS

Setting

This study employs data from Newark, New Jersey from 1999 to 2007. This data has been used extensively in other studies on homicide (see Corsaro et al., 2016; Pizarro, 2008). From 1999 to 2007, Newark was one of the most violent cities in the state with roughly 28 homicides per 100,000 residents and this rate has been increasing over the years while clearance rates for homicides have been declining (Pizarro, 2008). The homicide problem in Newark may be caused by the subculture of violence that has been present in the city along with the availability of firearms and drug trade operations (Pizarro & McGloin, 2006). Recent research has suggested that homicide occurs throughout the city (Zeoli, Pizzaro, Grady & Melde., 2014). However, the homicides are often concentrated in neighborhoods throughout the city characterized by racial isolation and economic deprivation.

Data

The data for this study comes from the Newark Police Department homicide unit. Investigation files were used to get the necessary information about the homicide incident including the race and gender of the victim and offender, the motive and mode of the homicide, the type of weapon used in the homicide, and criminal histories for both the offender and the victim. Prior to this study, many of the incident level variables were previously coded by a team of researchers who then created a homicide narrative for each of the incidents (see Pizarro, 2008 and Corsaro et al., 2016 for more information). These

homicide narratives were then coded for this study for the following variables: method of weapon retrieval and warning signs, which will be further defined in a later section.

From 1999 to 2007, there were 705 homicide incidents that occurred in the city of Newark. Three hundred and thirty-eight incidents were removed from the analysis for various reasons. Of these, 260 incidents were removed from the dataset since they were classified as open; thus, the motive is unknown as well other important variables for these analyses. Further, 31 observations that had motives that could not be clearly determined were dropped from the study. Further, eight observations where the method of weapon retrieval was unknown were dropped from the study to stabilize the models. Any variables that had unknown or missing information were reviewed in order to determine if the observation could be recoded so that the information was not unknown or missing. The 38 observations where the information could not be recoded were removed from the study. However, by removing all these cases, there may have been a bias introduced in to the study. By removing the cases with unknown variables, this study could be excluding some important factors that affect weapon choice and explain more of the variation in it. This should be noted when reading the findings of this study. The final number of observations used in the analyses in for study is three-hundred and sixty-seven (n=367).

Measures

Dependent variables. This study examines two different dependent variables based on the research questions: weapon and method of weapon retrieval. The first variable, weapon, is split into the following categories: firearms, knives/cutting instruments and blunt objects, and other weapons (see Table 1 for coding schema). The firearm variable is made up of all kinds of firearms: handguns, shotguns, semi-

automatics, etc. The firearm variable consists of a total of 260 observations (70.9%). The knife and blunt object variable is made up of all weapons that had a sharp or blunt side that was used to commit the homicide: switchblades, kitchen knives, plastic tubing, metal pipes, etc. The knives and blunt objects variable consists of a total of 68 observations (18.5%). This other variable consisted of 39 observations (10.6%) and consisted of weapons that were not common enough to have their own category within the coding, such as feet, hands, arson, and bricks. This study chose not to disaggregate weapons into smaller groups due to the nature of the study and the small number of observations that would be in each group. The decision to do this was based on and supported by prior research (Pizarro, 2008).

Method of weapon retrieval was coded as the offender left the scene to retrieve the weapon and returned (numerically coded as 1), the offender had the weapon on them (numerically coded as 2), and other method of retrieval (numerically coded as 3). The weapon of method retrieval was left the scene to retrieve the weapon in 6.54% of the observations, the offender had the weapon on hand at the scene in 80.93% of the observations, and the method of weapon retrieval was something else in 12.53 % of the observations. This variable was categorized as such due to the small amount of cases that had a method of weapon retrieval that was something other than the offender leaving the scene or the offender having the weapon on them.

Independent variables. The main independent variable for this study is homicide motive. A motive typology was chosen over use of a victim-offender relationship typology, gender typology or age typology due to the nature of the research questions.

Motive provides more information as to why the homicide occurred and why the offender chose to kill the victim, while these other typologies do not give this information.

This study focuses on one independent variable disaggregated into four categories: domestic, drug and gang, dispute and revenge, and robbery homicides. Domestic motives made up 16.0% of the observations, drug and gang motives made up 27.3% of the observations, dispute and revenge made up 45.0% of the observations, and robbery motives made up 11.7% of the observations. The classifications for these motives come from Pizarro (2008). The classifications are as follows: Domestic homicides are defined as homicide incidents that resulted from any type of abuse involving a family member, disputes between intimate partners, revenge for infidelities, disputes between family members, and disputes between individuals who lived in the same residence (p. 330). Drug homicides are defined as homicide incidents that resulted from the sale or distribution of drugs or disputes over drug turf. Gang homicides are defined as homicide incidents that resulted from the desire to further the any of the interests of gang (p. 330). Dispute homicides are defined as homicides that resulted from an argument or physical altercation that escalates to lethal violence that is not related to domestic, drug, gang, robbery, or revenge reasons (p. 330). Revenge homicides are defined as homicide incidents that resulted from the offender or victim wanting to get even for a prior incident that is not related to domestic, drug, gang, robbery, or revenge reasons (p. 330). Robbery homicides are defined as homicide incidents that resulted from a non-drug related incident where the offender or victim attempted to or actually took money or some other material possessions using force that escalated to lethal violence (p. 330).

For all variables, the coding schema is described in Table 1. Location was coded as outside (numerically coded as 0) or inside (numerically coded as 1) and incident mode was coded as face-to-face (numerically coded as 1) or other (numerically coded as 2). In terms of the location of the homicide, the incident occurred outside in 69.5% of the observations and occurred inside in 30.5% of the observations. For incident mode, the homicide was carried out face-to-face in 74.7% of observations and was carried out by some other means in 25.3% of observations.

In his 1996 study, Decker suggested that a perceived threat begins a social interaction that can escalate to violent retaliation. This variable was coded as such based on if the violence was sparked by a "threat" that was issued against a group that the offender belonged to or the offender's status within a group and then escalated to a homicide. Thus, the variable is coded as follows: yes, it was preceded by a perceived threat (numerically coded as 1) or no, it was not (numerically coded as 0). There was no perceived threat in 64.6% of the observations and there was a perceived threat in 35.4% of the observations. Planned aggression was coded as no (numerically coded as 0) or yes (numerically coded as 1) and warning sign was coded as no, there was no warning signs present in the homicide narrative (numerically coded as 0) or yes, there was warning signs present in the homicide narrative (numerically coded as 1). Warning signs were coded as yes if there was one or more of several things present in the homicide narrative: a threat issued by the offender to the victim, a history of domestic disputes, a history of drug turf wars, and/or the presence of rival gangs. The lethal aggression was reactive in 50.1% of the observations and instrumental in 49.9% of the observations.

Victim and offender gender was coded as female (numerically coded as 0) or male (numerically coded as 1) and victim and offender race was coded as Black (numerically coded as 1) or other (numerically coded as 2). The victim was female in 14.2% of the observations and male in 85.8% of the observations. The offender was female in 4.6% of the observations and male in 95.4% of the observations. The victim was African American in 84.5% of the observations and another race in 15.5% of the observations. The offender was African American in 88.8% of the observations and another race in 11.2% of the observations. Drug and alcohol involvement in the homicide was coded as neither drugs nor alcohol were involved in the homicide incident (numerically coded as 0), either drugs or alcohol were involved in the homicide incident (numerically coded as 1), and both drugs and alcohol were involved in the homicide incident (numerically coded as 2). Neither drugs nor alcohol was involved in the homicide incident in 39.5% of the observations, either drugs or alcohol was involved in the homicide incident in 54.2% of the observations, and both drugs and alcohol was involved in the homicide incident in 6.3% of the observations. Gang membership and being a drug dealer was coded as no, neither the victim nor offender was a gang member or a drug dealer (numerically coded as 0) or yes, either the victim or offender was either a gang member or a drug dealer (numerically coded as 1). The victim and/or offender was neither a gang member nor a drug dealer in 42.5% of the observations and either a gang member or a drug dealer in 57.5 % of the observations.

Multiple offenders were coded as yes there was multiple offenders and no there was not multiple offenders. 69.2% of the observations had a single offender and 30.8% of

the observations had multiple offenders. The average age of the victims was 29.9 years old and the average age of the offender was 25.6 years old.

--Insert Table 1 here—

-- Insert Table 2 here--

Analysis

The analytic strategy used in this study is a series of chi-squared tests and a cross-tabulation along with logistic regression models. To answer the first research question (i.e., what is the most commonly associated weapon with each motive?), a chi-square test and cross-tabulation were run in order to determine which variables were significant in terms of what made weapon choice unique when compared by motive type and method of weapon retrieval, and what percentage of each variable by weapon type. Chi-square tests were run due to the nature of the data being categorically structured, and ANOVAs were run with the continuous variables. The logistic models were used to determine what variables make weapon choice unique statistically when compared to all other weapon choices and motives. Thus, the logistic models are used to answer the second and third research questions: what factors influence the use of a particular type of weapon? and how does the method of weapon retrieval, or lack thereof, affect the choice of weapon? A logistic regression is the appropriate analytic method to use in this study given the dichotomous nature of the main variable of interest.

FINDINGS

This section discusses the results of the analyses. The first section discusses the cross-tabulations and chi-square results. The second section discusses the results of the

logistic regressions conducted to answer the second and third research questions. Table 2 lists the descriptive statistics for each of the variables in the analyses along with the chi-square results and their significance. Table 3 lists the results of the logistic models by weapon type, including the co-efficient, standard error, and odds ratio for each of the variables in the model. Table 4 includes the results of the logistic models by weapon retrieval, including the co-efficient, standard error, and odd ratio for each of the variables in the model.

Bivariate Results

Descriptive statistics for all the variables used in the analyses are displayed in Table 2; and while each of the variables showed statistically significance difference across weapon, there are some noteworthy patterns. Firearms were most likely to be used in dispute- and revenge-motivated homicides, followed by drug- and gang-, robbery-, and domestic-. Knives and blunt objects, on the other hand, were also most likely to be used in dispute revenge cases, followed by domestic, then drug gang, and then robbery. The results are not surprising based on prior research (Decker & Curry, 2002; Kubrin & Ousey, 2009; Mares, 2010; Nielsen et al., 2005; Pizarro, 2008; Pyrooz, 2012; Tardiff et al., 2002). Differences of weapon retrieval by type also emerged. Overall, offenders most often had the weapon on their person, however, firearms were more likely to be had on hand, as were knives, blunt objects, and other types of weapon. The majority of homicides occurred outside, but the majority of homicides that involved knives or blunt objects occurred indoors. This demonstrates that location may play a role in the selection of weapon in homicide. Future research should look more into this relationship. The homicide was committed with face-to-face in a majority of the cases but knives and blunt

objects were least likely to be used when the mode of how the homicide was committed was something other than being face-to-face. The offender did not perceive the threat in the majority of cases but firearms equally likely to be used, whether or not there was a threat perceived.

184 of the observations had reactive aggression and 183 of the observations had instrumental aggression. In incidents that involved firearms, the aggression was more likely to be instrumental. In incidents that involved knives, blunt objects and other weapons, the aggression was more likely to be reactive. Warning signs, such as threats issued or prior altercations, were present in the majority of homicide narratives that were used in the analyses. Firearms, knives, and blunt objects were all more likely to be used in homicides with warning signs present.

The victims and offenders were largely males and African-American. Firearms were more likely to be used in observations where the victim and the offender were male and were less likely to be used in observations where the victim and offender were female. Firearms were more likely to be used in interactions where the victim and offender were African-American and less likely to be used in observations where the victim and offender were a race other than African-American. Knives, blunt objects, and other weapons followed a similar patterns by gender and race for both the victim and the offender. Drugs and alcohol were involved in the majority of cases. However, a large percentage of knife and blunt object observations had no drugs involved, but in observations where there was either drug or alcohol involvement, a firearm was more likely to be used.

Firearms were more likely to be used in interactions where the victim and/or offender was a gang member and/or a drug dealer while knives and blunt objects were more likely to be used in observations where they were not a gang member or a drug dealer. Other weapons were more likely to be used in observations where the victim and/or offender was not a gang member or drug dealer. Nearly 70% of the observations involved single offenders. A firearm, knife, or blunt object were all equally likely to be used, although a greater percentage of the observatinos involved firearms.

The average victim age was close to 30 and the average age for the offender was around 26. Victims tended to be slightly younger (around 28) than the average in homicides that involved firearms and tended to be older (around 36) than the average in homicides that involved knives or blunt objects. Victims tended to be slightly older (around 31) than the average in homicides that involved weapons other than a firearm, knife, or blunt object. Offenders tended to be slightly younger (around 24) than the average age in homicides that involved a firearm and tended to be older (around 31) than the average age in homicides that involved a knife or blunt object. Offenders tended to be slightly older (around 28) than the average age in homicides that involved weapons other than a firearm, knife, or blunt object. Overall, victims tended to be older than the offenders in the homicide incidents that were examined in this study.

Logistic Models

Before discussing the results of the logistic models, it is important to note that those observations that were categorized as other weapon. This decision was made due to the fact that there was a small number of observations (less than 100) in this category. The models that compared firearms to other weapons and knives and blunt objects to

other weapons caused the co-efficients, odds ratios, and standard errors from the regressions to be unstable. Thus, these categories caused a problem with the model's stability and had to be removed from the regression models. Tables 3 and 4 demonstrate the results of the logistic regression that were run.

Table 3 Model 1. Domestic motive, the offender leaving the scene to retrieve a weapon, no drug or alcohol involvement, being neither a gang member nor a drug dealer are all reference categories in these analyses. Table 3 model 1 suggests that method of weapon retrieval, mode of homicide, the perception of a threat, offender gender, and if the victim and/or offender was a gang member or a drug dealer increases the likelihood that a firearm will be used. The offender having to retrieve the weapon in some other method than to leave the scene to retrieve a weapon or having the weapon on hand makes the offender 76.9 times less likely to use a firearm, when compared to the offender retrieving a weapon from outside the scene. Committing the homicide by some other mode than face-to-face manner makes it almost 10 times more likely for the offender to use a firearm rather than some other mode. The offender perceiving a threat makes it approximately 5 times more likely for the offender to use a firearm than when a threat was not perceived. The offender being a male, rather than female, makes it 47 times more likely that they would use a firearm to commit the homicide. Additionally, the victim and/or offender being a gang member or a drug dealer makes it almost 5 times more likely to use a firearm to commit the homicide than the victim and/or offender being neither a gang member nor drug deal.

Table 3 Model 2. The knives and blunt objects model suggests that the method of weapon retrieval, the mode of the homicide (how it was carried out), the perception of a

threat, the offender gender, and the victim and/or offender being a gang member or a drug dealer decreases the likelihood that a knife or blunt object will be used. The offender having to retrieve the weapon in some other method makes the offender almost 78 times more likely to use a knife or blunt object when compared to the offender leaving the scene to retrieve a weapon. The offender committing the homicide in some other method than face-to-face makes it 9.7 times less likely that a knife or blunt object would be used in the homicide incident. The offender perceiving a threat made it 5.1 times less likely for that a knife or blunt object would be used. The offender being a male made it 47.6 times less likely that a knife or blunt object would be used in the homicide incident. Finally, the victim and/or offender being a gang member or a drug dealer made it 4.9 less likely that a knife or blunt object would be used in the homicide incident. This shows that offenders are less likely to use knives or blunt objects in face-to-face incidents where the offender perceived a threat to their group or their status and was a gang member or a drug dealer.

--Insert Table 3 here--

Before discussing the results of these logistic models, it is important to note that those observations that were categorized as other method of weapon retrieval were removed from these analyses. This decision was made due to the fact that there was a small number of observations (less than 100) in this category. The models that compared the offender having to leave the scene to retrieve a weapon to other method of weapon retrieval and the offender having the weapon on hand at the time of the incident to other method of weapon retrieval caused the co-efficients, odds ratios, and standard errors from the regressions to be unstable. Thus, these categories caused a problem with the model's stability and had to be removed from the regression models.

Table 4 Model 1. This section refers to the results in Table 4. Domestic motive, firearms, no drug or alcohol involvement, being neither a gang member nor a drug dealer are all reference categories in these analyses. In terms of the offender leaving the scene to retrieve a weapon, only planned aggression significantly differentiated the offender leaving the scene to retrieve a weapon from the offender having the weapon on hand. When the aggression was not planned, the offender was 4 times more likely to leave the scene to retrieve a weapon than they were to have the weapon on hand. This is logical because the offender planned to have some form of aggressive interaction with their victim so the offender would bring the weapon in which they planned to use.

Table 4 Model 2. In terms of the offender using a weapon that was on scene at the time of the homicide incident, the motivation being drug- and gang-related and weapon used to commit the homicide significantly differentiated the offender having the weapon on scene from the offender having to leave to retrieve the weapon. When the homicide was drug- and gang-motivated, the offender was almost 6 times more likely to have the weapon on hand at the time of the homicide incident when compared to domestic motivated. The weapon was 2.8 times less likely to be a knife or blunt object when the offender had the weapon on hand at the time of the homicide when compared to incidents that involved firearms. These results are logical because gang members and drug dealers are more likely to carry a weapon with them for protection or to be used in situations where there is escalating violence (Decker & Curry, 2002; Kubrin & Ousey, 2009; Pizarro, 2008; Pizarro & McGloin, 2006).

--Insert Table 4 here—

DISCUSSION

The focus of the present study was to address the following three research questions: what is the most commonly associated weapon with each motive? What factors influence the use of a particular type of weapon in a homicide? How does the method of weapon retrieval, or lack thereof, affect the choice of weapon? The cross-tabulation findings revealed that domestically-motivated homicides are most likely to be committed with knives and blunt objects; and drug-, gang-, dispute-, revenge-, and robbery-motivated homicides were most likely to be committed using a firearm. Weapons other than firearms, knives, and blunt objects were not commonly associated with any of the motives. These results demonstrate support for hypothesis one. The first hypothesis for this study was that the motive of the homicide will be predictive of the weapon used to commit the homicide. These results from the bivariate models demonstrate support for this hypothesis. However, the results of the logistic regression do not demonstrate support for this hypothesis.

The logistic regression identified the most significant factors that differentiate weapons in homicide incidents. For firearms, the mode of how the homicide was carried out, the perception of a threat, the offender's gender, and the victim and/or offender being a drug dealer or a gang member were all significant in terms of increasing the likelihood of using a firearm to carry out the homicide. The offender having to retrieve the weapon by some other method decreased the likelihood of a firearm being used in the homicide incident when compared to leaving the scene to retrieve it or having the weapon on hand. For knives and blunt objects, the mode of how the homicide was carried out, the perception of threat, the offender's gender, and the victim and/or offender being a drug

dealer or a gang member were all significant in terms of decreasing the likelihood of using a knife or blunt object to carry out the homicide. The offender having to retrieve the weapon by some other method increased the likelihood of a knife or blunt object being used in the homicide incident when compared to leaving the scene to retrieve it or having the weapon on hand.

A second set of logistic regressions demonstrated the significant factors that differentiated the offender leaving the scene to retrieve a weapon from the offender having the weapon on hand. The aggression not being planned increased the likelihood of the offender leaving the scene to retrieve a weapon when compared to when the offender having the weapon on hand at the scene. Again, this is logical because if the offender did not plan to have some form of aggressive interaction with their victim, then they would have to leave the scene to retrieve a weapon with which to commit the homicide. On the opposite side, if the offender did plan to have an aggressive interaction with their victim, then they would have the weapon on hand at the time of the homicide incident. This finding follows the logic as discussed in rational choice theory (Clarke, 1997; Cohen & Felson, 1979).

In terms of the offender having the weapon on scene at the time of the homicide incident, the homicide being drug- and gang-motivated and weapon type significantly differentiated the offender having the weapon on scene at the time of the homicide incident from the offender having to leave to retrieve the weapon. The homicide being drug- and gang-motivated increased the likelihood of the offender having the weapon on hand when compared to the offender having to leave the scene to retrieve a weapon when compared to domestic incidents. The weapon being a knife or blunt object decreased the

likelihood that the offender had the weapon on hand at the time of the homicide incident when compared to the offender having to leave the scene to retrieve a weapon. These results are in line with what has been found by prior research for drug- and gang-motivated homicides (Decker & Curry, 2002; Kubrin & Ousey, 2009; Pizarro, 2008; Pizarro & McGloin, 2006). Further, these results found the reverse of what hypothesis two predicted: when the weapon must be retrieved from somewhere outside of the initial altercation, the most common weapon used will be a firearm and the motive will be instrumental in nature. In terms of the cross-tabulations, the majority of homicides that had the weapon on hand were instrumentally-motivated (drug and gang) and had the highest percentage of the use of a firearm or a knife or blunt object. On an opposing note, the logistic regressions revealed that none of the motivations were statistically significant, with the exception of Table 4, Model 1 where drug- and gang-motivated homicides were significant in determining the method of weapon retrieval. However, the findings demonstrated some support for hypothesis three. The majority of homicides that the offender had to leave the scene to retrieve the weapon were expressively-motivated (domestic, dispute, and revenge) but had the highest percentage of firearms used.

The findings from this study build on homicide research and rational choice theory in several ways. This study reaffirms the findings of previous research in terms of what weapons are most common based on motives. Further, this study demonstrates that the motive may play a role in the selection of the weapon used in the homicide incident, though further research in this area is need. In terms of rational choice theory, this study demonstrates its (the theory's) applicability to homicide. Firearms were found to be the weapon that the offender was more likely to have on hand at the scene of the homicide

incident. In this study, this was the case in 234 out of 260 observations involving a firearm. On the same note, firearms were also the most common weapon that offenders left the scene to retrieve (22 out of 24 cases where the offender left the scene to retrieve a weapon). This supports the idea that offenders choose the weapon that has the least amount of personal risk, is most likely to have the greatest brute force capabilities to efficiently kill the victim, and the least likely chance of being involved in close contact with their victims.

The use of knives and blunt objects to commit a homicide is not consistent with rational choice theory and the results of the study demonstrate this. Knives and blunt objects were only retrieved by the offender in 2 out of 24 cases where the offender left the scene to retrieve a weapon and were a weapon that the offender had on hand at the time of the homicide incident in 39 out of 297 observations that involved the offender having the weapon on hand. This demonstrates that offenders are more likely to choose weapons that have the lowest personal risk to themselves and knives and blunt objects do not provide this for the reasons discussed in the theory section. The rational offender is less likely to use a weapon that puts them in personal contact with their victim and does not have the same brute force capabilities as a firearm. Other weapons, which were often times a personal weapon such as the offender's hands or feet, follow the same logic.

In terms of social interactionist theory, this study demonstrated some support for this theory. According to this theory, violence falls on the continuum of coercive actions and coercive actions are used to settle scores for perceived insults, seek revenge, and gain compliance from another party. Support for this can be demonstrated by the fact that warning signs (i.e. threats issued, history of domestic disputes or drug turf wars, rival

gangs, etc.) were present in 270 of 367 observations used in the study. Further, revenge-, dispute-, and robbery-motivated homicides made up 208 out of the 367 observations in the study. Finally, the homicide was precipitated by a perceived threat in 130 out of 367 observations, meaning that the offender perceived the victim as threatening them, whether the threat was directed at their physical being or their status within their community. These results offer further support for the applicability of social interactionism to homicide incidents.

In terms of policy implications, this study has some indirect policy effects. Homicide is arguably the worst crime that can occur and the lethality of it is a public health concern. The more we learn about what factors play into a homicide occurring, the more opportunities we have to prevent it from happening. For instance, this study demonstrates that mode of how the homicide is carried out and the method of weapon retrieval are important in lethal violence. Though what is known about the method of weapon retrieval still needs further exploration, policy makers can attempt to target this area by training individuals and educating the public on how to diffuse a situation before it becomes lethal and the offender pulls out a weapon or goes to retrieve one. There have been several examples of successful preventive interventions in cities that have firearm problems, such as Operation Ceasefire in Boston and the Cure Violence Program in Illinois. Studies have demonstrated that these interventions have been successful in reducing firearm violence (see Braga, Hureau & Papachristos, 2014; Butts, Roman, Bostwick & Porter, 2015). Based on this, a similar model of a preventive strategy that can target firearms to decrease all homicide typologies, except for domestically-motivated homicides.

This study also demonstrates that we still have more to learn and explore about how and why homicides occur and can be used as support for the decisions made in firearm legislation. It is clear by the results of this study that firearms are still the most common weapon for all but domestically-motivated homicides. The possibility of having stricter firearm laws may have an effect in some areas, as the homicide incidents in this study were often planned, instrumental aggression (183 out of 367 observations). However, a lot of firearms are obtained by offender through illegal markets (see Decker, Pennell & Caldwell, 1995). This would make it difficult for law enforcement to reduce the number of homicides committed using firearms as these firearms are not being obtained in a legal way. A stricter firearm law may make it more difficult for those who obtain a firearm the legal way, but will have no effect on the illegal market; thus, a prevention program similar to those mentioned above would more than likely be the best way to reduce firearm-related homicides. Further, focused deterrence interventions that target youth who are involved in firearm crime and people in general can also assist in decreasing firearm-related homicides, even if the firearms used are obtained illegally (see McGarrell, Chermak, Wilson, & Corsaro, 2006).

However, this study is not without its limits. First and foremost, these results should be taken with caution as the sample size was rather small as was the breakdown of observations between categories in the variables. Second, a third category of weapons had to be dropped from the logistic regression models. Third, a lot of the variables had observations dropped from them due to their missing or unknown status and some variables had to be combined into categorical variables. If there were more observations in the categories, this may not have needed to be done. Fourth, it is important to note that

this data is over ten years old and is not generalizable to most cities in the United States. Newark is made up of many ethnic minorities and has a violent history that still plays a role in the interactions that take place today.

Future research should attempt to expand the amount of observations used by using more years of data or data from several different cities. This would not only increase the sample size but also would allow for the possibility of comparisons between different cities and see if the same results are found between different cities in the United States. This would also increase generalizability of the findings of the study. Future research should also try to employ inter-rater reliability to ensure that the coding of method of weapon retrieval, warning signs, and prior altercations are coded correctly. Finally, future research should ideally further disaggregate other weapons into personal weapons and other weapons. This would allow for researchers to garner a better understanding about what makes an offender choose to use their hands or feet over any other type of weapon.

In conclusion, this study has added to the literature by beginning to fill the void on how offenders select their weapons and the method of weapon retrieval. After a review of the literature, this study answered three research questions through statistical analysis: what is the most commonly associated weapon with each motive? What factors influence the use of a particular type of weapon in homicide? How does the method of weapon retrieval, or lack thereof, affect the choice of weapon? The policy implications, limitations, and future research were discussed. When compared to other crimes, homicide is a rare event. However, the effect it has on the public health and psyche is

often lasting. This study has demonstrated the need to continue to study homicide until there is nothing more that needs to be explained.

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TABLES

Table 1. *Variable Coding Schema*

Dependent Variables	
Weapon Used	1 = Firearm; 2 = Knife or Blunt Object; 3 = Other
Weapon Retrieval	1 = left scene and retrieved weapon and returned 2 = had weapon on hand; 3 = other
Independent Variables	
Incident Motive	1 = Domestic; 2 = Drug and Gang; 3 = Dispute and Revenge; 4 = Robbery
Control Variables	
Location	0 = Outside; 1 = Inside
Incident Mode	1 = Face-to-face; 2 = Other
Perceived threat	0 = No; 1 = Yes
Planned aggression	0 = No; 1 = Yes
Warning Signs	0 = No Warning Signs; 1 = Warning Signs Present
Victim and Offender Gender	0 = Female; 1 = Male
Victim and Offender Race	1 = Black; 2 = Other
Victim-Offender Relationship	1 = Intimate Partner and Family Member; 2 = Friends and Acquaintances 3 = Stranger
Alcohol/Drug Use	0 = No; 1 = Either drugs or alcohol were involved 3 = Both drugs and alcohol were involved
Gang Member and Drug Dealer	0 = Not a gang member or drug dealer; 1 = Either gang member or drug dealer
Multiple Offenders	0= No; 1=Yes
Age	Continuous

Table 2.
Descriptive Table

	Total	**Firearm**	**Knives**	**Other**	**Chi-Square**
	N=367	N=260	N=68	N=39	
	N (%)	N (%)	N (%)	N (%)	
Incident Motive					96.5546 ***
Domestic	59 (16.08%)	13 (05.00%)	26 (38.24%)	20 (51.28%)	
Drug and Gang	100 (27.25%)	91 (35.00%)	6 (08.82%)	3 (07.69%)	
Dispute and Revenge	165 (44.96%)	120 (46.15%)	33 (48.53%)	12 (30.77%)	
Robbery	43 (11.72%)	36 (13.85%)	3 (04.41%)	4 (10.26%)	
Method of Retrieval					111.6458 ***
Left Scene to Retrieve Weapon	24 (06.54%)	22 (08.46%)	2 (02.94%)	0 (00.00%)	
Had Weapon on Hand	297 (80.93%)	234 (90.00%)	39 (57.35%)	24 (61.54%)	
Other	46 (12.53%)	4 (01.52%)	27 (39.71%)	15 (38.46 %)	
Location					65.6361 ***
Outside	255 (69.48%)	213 (81.92%)	25 (36.76%)	17 (43.59%)	
Inside	112 (30.52%)	47 (18.08%)	43 (63.24%)	22 (56.41%)	
Incident Mode					34.3961 ***
Face-to -Face	274 (74.66%)	172 (66.15%)	66 (97.06%)	36 (92.31%)	
Other	93 (25.34%)	88 (33.85%)	2 (02.94%)	3 (07.69%)	
Perceived threat					44.9192 ***
No	237 (64.58%)	140 (53.85%)	62 (91.18%)	35 (89.74%)	
Yes	130 (35.42%)	120 (46.15%)	6 (08.82%)	4 (10.26%)	
Planned aggression					34.1559 ***
Reactive	184 (50.14%)	105 (40.38%)	49 (72.06%)	30 (76.92%)	
Instrumental	183 (49.86%)	155 (59.62%)	19 (27.94%)	9 (23.08%)	
Warning Signs					3.3127 ***
No Warning Signs	97 (26.43%)	74 (28.46%)	12 (17.65%)	11 (28.21%)	
Warning Signs Present	270 (73.57%)	186 (71.54%)	56 (82.35%)	28 (71.79%)	

Victim Gender					35.8852 ***
Female	52 (14.17%)	19 (07.31%)	23 (33.82%)	10 (25.64%)	
Male	315 (85.83%)	241 (92.69%)	45 (66.18%)	29 (74.36%)	
Offender Gender					43.7444 ***
Female	17 (04.63%)	1 (00.38%)	13 (19.12%)	3 (07.69%)	
Male	350 (95.37%)	259 (99.62%)	55 (80.88%)	36 (92.31%)	
Victim Race					5.3835
Black	310 (84.47%)	223 (85.77%)	59 (86.76%)	28 (71.79%)	
Other	57 (15.53%)	37 (14.23%)	9 (13.24%)	11 (28.21%)	
Offender Race					7.2789 *
Black	326 (88.83%)	237 (91.15%)	59 (86.76%)	30 (76.92%)	
Other	41 (11.17%)	23 (8.85%)	9 (13.24%)	9 (23.08%)	
Alcohol and Drugs Involved					26.2847 ***
No drugs or alcohol	145 (39.51 %)	81 (31.15 %)	40 (58.82%)	24 (61.54%)	
Either drugs or alcohol	199 (54.22 %)	160 (61.54 %)	25 (36.76%)	14 (35.90%)	
Both drugs and alcohol	23 (06.27 %)	19 (07.31%)	3 (04.41%)	1 (02.56%)	
Gang Members or Drug Dealers					94.4328 ***
Not a gang member or drug dealer	156 (42.51%)	69 (26.54%)	56 (82.35%)	31 (79.49%)	
Either a gang member or drug dealer	211 (57.49%)	191 (73.46 %)	12 (17.65%)	8 (20.51%)	
Multiple Offenders					14.2199 ***
No	254 (69.21%)	165 (63.46%)	58 (85.29%)	31 (79.49%)	
Yes	113 (30.79%)	95 (36.54%)	10 (14.71%)	8 (20.51%)	
	Mean	**Mean**	**Mean**	**Mean**	**F-Statistic**
Age					
Victim	29.89	27.95	36.46	31.38	13.70 ***
Offender	25.62	23.78	31.43	27.72	25.37 ***

* = p<0.05; ** = p<0.01; *** = p<0.001

Table 3.
Logistic Models by Weapon Type

	Firearm (Model 1)			Knives and Blunt Objects (Model 2)		
	b	*SE*	EXP(*b*)	*b*	*SE*	EXP(*b*)
Motive						
Domestic	--	--	--	--	--	--
Drug and Gang	-1.799	1.014	0.166	1.799	1.014	6.042
Revenge and Dispute	-1.436	0.777	0.238	1.436	0.777	4.206
Robbery	-0.261	1.165	0.770	0.261	1.165	1.298
Method of Weapon Retrieval						
Left Scene to Retrieve Weapon	--	--	--	--	--	--
Had Weapon on Hand	-1.310	1.062	0.270	1.310	1.062	3.706
Other	-4.327 ***	1.328	0.013	4.327 ***	1.328	75.713
Location	-0.693	0.511	0.500	0.693	0.511	2.000
Mode of Homicide	2.273 **	0.869	9.705	-2.273 **	0.869	0.103
Perceived Threat	1.637 **	0.594	5.140	-1.637 **	0.594	0.195
Planned Aggression	0.058	0.489	1.060	-0.058	0.489	0.943
Warning Signs	-0.565	0.672	0.568	0.565	0.672	1.760
Victim Gender	0.933	0.604	2.543	-0.933	0.604	0.393
Offender Gender	3.851 **	1.329	47.040	-3.851 **	1.329	0.021
Victim Race	1.125	0.866	3.080	-1.125	0.866	0.325
Offender Race	-0.024	0.842	0.976	0.024	0.842	1.024
Alcohol and Drug Involvement						
No Drug or Alcohol Involvement	--	--	--	--	--	--
Either Drug or Alcohol Involvement	0.451	0.533	1.570	-0.451	0.533	0.637
Both Drug and Alcohol Involved	1.104	1.064	3.016	-1.104	1.064	0.332
Drug dealer or gang member	1.594 **	0.615	4.926	-1.594 **	0.615	0.203
Multiple Offenders	0.342	0.542	1.407	-0.342	0.542	0.711
Victim Age	-0.037	0.021	0.964	0.037	0.020	1.038
Offender Age	-0.031	0.025	0.969	0.031	0.025	1.032
Constant	-3.035	2.237	0.048	3.035	2.237	20.809

* p<.05 ** p<.01 *** p<0.001

Table 4.
Logistic Models by Method of Retrieval

	Left Scene to Retrieve Weapon (Model 1)			Had Weapon on Hand (Model 2)		
	b	*SE*	EXP(*b*)	*b*	*SE*	EXP(*b*)
Motive						
Domestic	--	--	--	--	--	--
Drug and Gang	-0.620	1.147	0.537	1.742 *	0.763	5.710
Revenge and Dispute	0.205	0.951	1.228	0.932	0.552	2.540
Robbery	-0.194	1.368	0.824	1.922	1.054	6.833
Weapon						
Firearm	--	--	--	--	--	--
Knives and Blunt Objects	-1.748	0.995	0.174	-1.004*	0.468	0.352
Location	-0.266	0.601	0.766	-0.702	0.393	0.496
Mode of Homicide	-1.151	0.615	0.316	1.102	0.589	3.011
Perceived Threat	0.111	0.511	1.117	-0.267	0.433	0.765
Planned Aggression	1.450 **	0.536	4.263	-0.524	0.388	0.592
Warning Signs	1.207	0.828	3.344	-0.671	0.554	0.511
Victim Gender	0.224	0.886	1.251	-0.314	0.532	0.731
Offender Gender	-1.280	1.380	0.278	-0.266	0.694	0.766
Victim Race	-0.328	0.878	0.720	0.186	0.726	1.205
Offender Race	0.202	0.911	1.224	0.052	0.734	1.054
Alcohol and Drug Involvement						
No Drug or Alcohol Involvement	--	--	--	--	--	--
Either Drug or Alcohol Involvement	0.300	0.595	1.350	-0.259	0.422	0.772
Both Drug and Alcohol Involved	0.526	0.917	1.692	-0.776	0.693	0.460
Drug dealer or gang member	-0.741	0.620	0.477	0.391	0.485	1.479
Multiple Offenders	-0.226	0.510	0.798	0.266	0.447	1.304
Victim Age	-0.010	0.030	0.990	-0.012	0.016	0.989
Offender Age	-0.013	0.037	0.987	0.006	0.020	1.006
Constant	-0.601	2.477	0.548	1.147	1.542	3.150

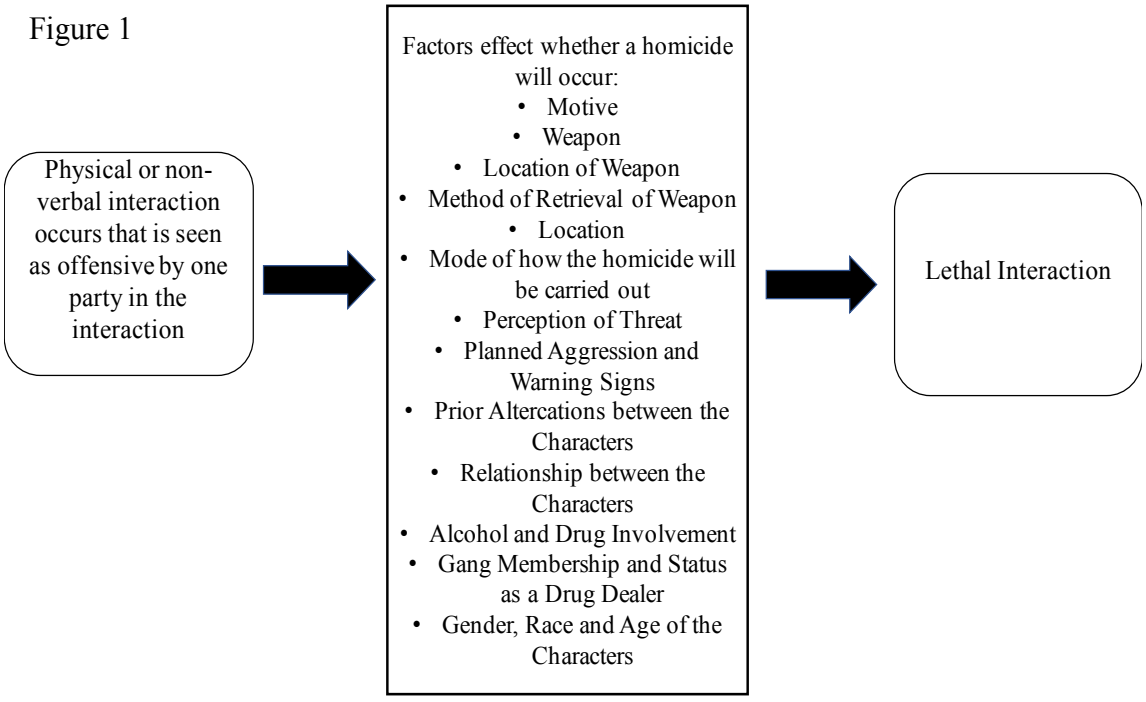
* p<.05 ** p<.01 *** p<0.001

APPENDIX A

SCHEMATIC DIAGRAM OF FACTORS THAT LEAD TO HOMICIDE

Schematic Diagram of Factors that Lead to Homicide

Figure 1



APPENDIX B

TABLE OF CITY LEVEL HOMICIDE RESEARCH

Table of City Level Homicide Research

Author	Year	City and Years Used for Data	Key Findings
Wolfgang	1957	Philadelphia, PA; 1958-1961	- African American males more likely to be involved in homicides - Victim was likely to know the offender
Voss & Hepburn	1968	Chicago, IL; 1965	- Firearms were the most frequently used weapon - Most common motives were robbery and domestic - Victim was likely to know the offender
R. Block	1975	Chicago, IL; 1965-1973	- Firearms were the most frequently used weapon - The two most common patterns of homicide were escalated domestic feuds and robberies
Luckenbill	1977	California County; 1963-1972	- Homicide is an interaction between the victim, offender and, often, bystanders - Violence is used as a tool for saving face/character when it is questioned
Zimring, Mukherjees & Van Winkle	1983	Chicago, IL; 1981	- Firearms were the most frequently used weapon - African Americans were more likely to be involved in homicides - Males were more likely to be involved in a homicide - Victim was likely to know the offender
Wilbanks	1984	Dade County, FL; 1989	- The most common types of motive (in order) were domestic, drug "rip-off," self-defense, and robbery - African Americans males more likely to be involved in homicides
Messner & Tardiff	1985	Manhattan, NY; 1981	- Those who remained close to home tended to be killed in their home by someone they knew - Weekday homicides were more likely to involve strangers
Cook	1987	NCS Data, 1981	- Robbery-motivated homicides were most likely to be committed by strangers - The likelihood of a homicide occurring during the robbery increases with the lethality of the weapon used (3x more likely)
Zahn & Sagi	1987	Philadelphia, Newark, Chicago, St. Louis, Memphis, Dallas, Oakland, San Jose, "Ashton"; 1978	- White victims and offenders tended to be older - African American and Hispanic offenders tended to be younger - Firearms were the most frequently used weapon - Victim was likely to know the offender - Males were more likely than females to be involved in a homicide

McDowall	1991	Detroit, MI; 1951-1986	- Firearm availability has a large effect on homicides in Detroit when other variables are controlled for
Decker	1993	St. Louis, MO; 1985-1989	- Guns were used most commonly in acquaintance and stranger homicides - Instrumentally- and expressively-motivated homicides occur across all types of relationships
Decker	1995	St. Louis, MO; 1985-1989	- Witnesses appeared to exacerbate violence or potential violence between groups - Homicide scenes determine the roles that actors play after the violence occurs, the roles are not pre-determined prior to the lethal violence occurring
Decker	1996	St. Louis, MO; 1985-1989	- Instrumental homicides occur between those who know each other - Expressive homicide is as likely to be found between strangers as it is to occur between intimates
Cheatwood	1996	Baltimore, MD; 1987-1989	- Decision to use lethal force was often made before the offender entered the setting - "Prior rehearsals" are important to understand when looking at violent interactions
Sorenson & Berk	2001	California; 1972-1993	- Handgun sales were positively associated with homicide - Males more likely to be involved in homicide
Kubrin	2003	St. Louis, MO; 1985-1995	- Economic disadvantage is consistently associated with all types of homicide - Residential instability is associated with felony homicides (homicides that occur during crimes other than robbery)
Kubrin & Weitzer	2003	St. Louis, MO; 1985-1995	- Residents are highly sensitive to disrespect and this increases the chance of responding violently to insults - Insults directed toward females who are associated with males are seen as an insult to the male and should be responded to as such
Decker	2007	East St. Louis, MO; 1976-2002	- Homicide trends in East St. Louis are similar to national homicide trends - Male victims and gun-related homicides have increased both nationally and in East St. Louis
Pizarro	2008	Newark, NJ; 1997-2005	- Domestic homicides are least likely to involve guns and involve multiple offenders, more likely to occur in a residence, victims are more likely to be younger and offenders are more likely to be older - Drug homicides occur most frequently in public housing during week days, frequently involve and lack drug and/or alcohol inhibition by those involved

			- Dispute homicides occur most frequently between a victim and offender who know each other, on the weekend and involve drugs and/or alcohol - Robbery homicides are more likely to involve strangers and victims are more likely to be older and less likely to be African American
Martinez, Stowell & Lee	2010	San Diego, CA; 1980-2000	- Increased levels of immigration resulted in fewer overall homicides
Ousey & Kubrin	2013	156 Cities Across US; 1980-2010	- Increased levels of immigration results in fewer overall homicides - Overall, homicide rates have been declining
Braga & Dusseault	2016	Boston, MA; 2007-2014	- Intervention increased the resources invested and investigation activities which led to an increase in cleared observations - Concluded that investigators can improve the ability to solve homicides