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Routine Activities Theory: An Empirical Test in a Rural Setting

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ROUTINE ACTIVITIES THEORY: AN EMPIRICAL TEST IN A RURAL SETTING

by

Eric M. Heiple

B.A., Southern Illinois University Carbondale, 2008

A Thesis

Submitted in Partial Fulfillment of the Requirements for the
Master of Arts degree in Administration of Justice

Department of Criminology and Criminal Justice
in the Graduate School
Southern Illinois University Carbondale
May, 2010

THESIS APPROVAL

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Eric M. Heiple

A Thesis Submitted in Partial
Fulfillment of the Requirements
for the Degree of
Master of Arts
in the field of Administration of Justice

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AN ABSTRACT OF THE THESIS OF

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TITLE: ROUTINE ACTIVITIES THEORY: AN EMPIRICAL TEST IN A RURAL SETTING

MAJOR PROFESSOR: Dr. Joseph A. Schafer

Crime is a problem that many Americans would undoubtedly want to curtail. Routine activities theory provides a rather straightforward way of conceptualizing and then predicting criminal activity at the macro and micro levels. Cohen and Felson (1979), the original authors of routine activities theory, suggested that crime occurs during the simultaneous convergence of a motivated offender, suitable target, and a lack of capable guardians. Thus, as the authors alluded to, all three of the components are required in order for a criminal act to take place. Therefore, it is easy to see that citizens can take proactive steps to decrease their likelihood for criminal victimization. Several scholars have tested RA theory and have found support in urban and large national samples (e.g., Spano & Freilich, 2009). However, scholars have failed to provide insight into the adult rural population throughout the United States (in relation to RA theory). Therefore, the current study utilized a 2009 telephone survey of rural adults in order to test RA theory's applicability when attempting to explain burglary victimization in a rural environment. It is shown that motivation (percent in poverty) is the only component of the three to yield support for RA theory in the current study. Implications of the findings for theory, research, and policy are discussed.

DEDICATION

I dedicate this thesis to my wife, Alec. Writing a thesis undoubtedly requires a considerable amount of time. With that said, I began working on this thesis during the first year and a half of our marriage. During a time when one should be spending as much time with his/her spouse as humanly possible, Alec graciously provided moral support during the entire process. Thank you so very much.

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TABLE OF CONTENTS

<u>CHAPTER</u>	<u>PAGE</u>
ABSTRACT.....	i
DEDICATION.....	ii
ACKNOWLEDGMENTS	iii
LIST OF TABLES.....	v
CHAPTERS	
CHAPTER 1 – Introduction.....	1
CHAPTER 2 – Literature Review	6
CHAPTER 3 – Methodology.....	27
CHAPTER 4 – Findings	34
CHAPTER 5 – Discussion and Conclusion.....	40
REFERENCES	47
VITA	50

LIST OF TABLES

TABLE

PAGE

Table 1	29
Table 2	35
Table 3	37
Table 4	39

CHAPTER 1

INTRODUCTION

The ever elusive explanation for crime and deviant behavior has for so long been the target of investigation among the world's most elite criminologists. Researchers have toiled and debated over theories of crime that would move to explain an individual's actions, his/her proneness to crime, all the way to an individual's risk of personal and property victimization. This manuscript will move to further this continuing investigation into the causes and explanations for criminal activity and the wavering levels of risk for victimization. Particularly, routine activities theory will be the criminological explanation of focus throughout this empirical analysis. As in previous studies, routine activities theory will be referred to as "RA theory" throughout this document in order to avoid redundancy.

RA theory was introduced to criminological literature by Cohen and Felson in 1979. The criminologists were attempting to explain variation in aggregate crime rates while using large scale social patterns as the independent variables. Namely, the authors introduced the idea that crime can be explained by the convergence of a suitable target, motivated offender, and the absence of a capable guardian in time and space. The idea was that World War II caused a large number of housewives to leave the home in order to work in the absence of the men who were fighting in the war. The sudden change in the everyday activities of individuals was thought to explain the variation in crime that occurred during that time. For example, when housewives entered the workforce, it left a large number of homes vulnerable to property crime. In reference to RA theory, the capable guardians are no longer watching over the homes, the home and the many items inside are obviously suitable targets, and the motivated offenders need only to stumble across the opportunity to commit the crime. Cohen

and Felson (1979) constructed a household activity ratio (“adding the number of married, husband-present female labor force participants to the number of non-husband-wife households, and dividing this sum by the total number of households in the U.S.,” pg. 600), and found significant relationships between changes in official crime rates (UCR) and the household activity ratio.

RA theory was introduced and tested at the macro level. However, Cohen and Felson (1979) stated that the theory was actually constructed to be tested at the individual or micro level. The authors point to the explanation that it was important to test the theory in a broad context before spending time and effort to investigate at the micro level. Thus, the significant findings at the macro level provided the impetus needed in order for fellow researchers and scholars to pursue and test RA theory on an individual level. Multiple studies have since focused on testing RA theory at both the macro and micro levels, while attempting to explain criminal victimization and even criminal offending (e.g., Bennett, 1991; Kennedy & Forde, 1990; Mustaine & Tewksbury, 2000; Osgood, Wilson, O’Malley, Bachman, & Johnston, 1996). The studies have generally found support for RA theory. For example, most of the studies predicting victimization were able to find positive relationships between a lack of capable guardians and victimization, suitability of targets and victimization, as well as the increased presence of motivated offenders and victimization (e.g., Kennedy & Forde, 1990; Miethe, Stafford & Long, 1987; Mustaine & Tewksbury, 2000). Studies that focused on criminal offending were also able to identify positive relationships between the above concepts and the likelihood to commit criminal acts (Osgood et al., 1996).

The Problem

One very recent and notable study conducted by Spano and Freilich (2009) highlights the problem at hand. The authors conducted a meta-analysis of all lifestyle/routine activities studies that were published in higher tier academic journals from 1995 to 2005. The authors did find that a good amount of studies (33) were conducted in regards to RA theory, and that there is a good amount of support for RA theory and its ability to explain crime (“219 significant findings”; 2009, pg. 307). However, they found only one study that was conducted with a rural sample (Spano & Nagy, 2005). Thus, nearly all of the RA theory studies were conducted using urban or national probability samples and virtually ignored the importance of testing the theory in a rural environment (Spano & Freilich, 2009). Spano and Nagy’s (2005) rural study was conducted using a sample of rural adolescents. Although these two specific areas (rural and adolescents) have been highlighted to be lacking in the application of RA theory, it is difficult to compare the results of these rural findings with other studies due to the target group being studied (2005).

In other words, the majority of RA theory studies were conducted with adult or at least college level samples and therefore, it is difficult to make any comparisons between the one rural study and the many urban and national probability studies. Many scholars have argued that studies should focus on rural crime, as well as explaining the differences between rural and urban environments (Spano & Nagy, 2005). Spano and Nagy explained that few studies have attempted to apply criminological theory to rural areas, and that some research indicates higher crime rates in rural versus urban counties. The 2000 U.S. Census revealed that 59,274,456 individuals lived in rural areas (areas that fall outside of census blocks or groups of blocks consisting of more than 1,000 people per square mile, and the areas that

directly surround these blocks that have at least 500 people per square mile; U.S. Census Bureau, n.d.) which accounts for nearly 20 percent of the total U.S. population (U.S. Department of Transportation, 2004). The present study's purpose is to address this obvious gap in the academic literature and provide valuable insight into RA theory's ability to explain victimization in a rural setting.

Present Study

In an attempt to address the gap in RA theory literature, data from a rural survey was used in order to identify if relationships exist between the three components of RA theory (i.e., suitable target, lack of capable guardian, and motivated offender), and the increased or decreased likelihood for burglary crime victimization. Respondents' routine activities were assessed in order to provide an account of the average amount of time that they spend away from their home. This allowed for a representation of the level or lack of capable guardians in or near the home. Target suitability was accounted for through the inclusion of five protective measures. Although early studies of RA theory tended to simply assume the presence of motivated offenders, later studies began to include measurements of the presence of motivated offenders in certain areas (e.g., Stahura & Sloan III, 2001). Thus, the present study accounted for the presence of motivated offenders with a measure of the percent of residents in poverty for each rural county. The specific operationalizations and their limitations will be discussed later in this manuscript. As noted earlier, the majority of RA theory studies have found support for the theory (Spano & Freilich, 2009). However, these studies were largely conducted using urban or national probability samples and therefore, do not provide an accurate representation of the likelihood for property crime victimization in rural environments.

The remainder of this manuscript will include an in-depth literature review to include the relevant studies regarding RA theory and the common issues with studying and testing this theory. Findings throughout the literature will be discussed and applied to the present study. The literature review will be followed by a comprehensive methodology section to include information on the instrumentation, survey methods, and specific operationalization of key variables in the present study. The findings/discussion section will follow the methodology and will include a review of the relevant findings that were reached through data analysis. The manuscript will end with a conclusion section which will include implications for policy, future research, and the empirical validity of RA theory when attempting to explain burglary victimization in a rural context.

CHAPTER 2

LITERATURE REVIEW

It is first important to grasp the exact conceptualization of each component before considering the various studies that have tested RA theory. Cohen and Felson (1979) stated that a motivated offender is someone who possesses both the motivation/“inclination” to commit the crime and the “ability” to successfully complete the criminal act associated with that inclination (1979, pg. 590). Target suitability is concerned with “value, physical visibility, access, and the inertia of a target against illegal treatment by offenders” (1979, pg. 591). The authors refer to the inertia as including any resistance against the taking or completing the act against the target. It is also important to note that this would include the weight and/or size of the target as well. It is obvious that something very large and difficult to carry would be a less suitable target.

Essentially the authors state that a capable guardian is someone “capable of preventing violations” (1979, pg. 590). Thus, it becomes difficult to differentiate the conceptualizations of capable guardianship and target suitability. In other words, it is easy to infer that installing extra locks is increasing guardianship, as well as decreasing the suitability of a target. Bursik and Grasmick (1993) discussed the work of Cohen and Felson, stating that at different points in their research, the authors referred to guardianship as both a human (human presence or physical guardianship) and a non-human (e.g., locks, alarms) phenomenon. This similarity between the two concepts (guardianship and suitability) makes it difficult to provide an empirical test that separates the two concepts. Therefore, the current study will include measures of guardianship that refer strictly to human behavior, and suitability measures that strictly refer to mechanical (non-human) behavior (specific measures will be discussed in the

methodology section of this manuscript). Once one has grasped an understanding of the three main components of RA theory, it is obvious what the hypotheses for the current study will be. An increased presence of guardianship should yield a decreased likelihood for property crime victimization. Decreased target suitability should result in a decreased likelihood for property crime victimization. Likewise, an increased presence of motivated offenders should result in an increased likelihood for property crime victimization. Precise operationalized statements will be given in the methodology section of this manuscript.

It might be easy to assume that RA theory is designed to simply address the likelihood of victimization and nothing else. The truth is that RA theory has been used by scholars in attempts to explain property crime victimization, violent crime victimization, and even the proclivity or likelihood to commit criminal acts. Although victimization is the most popular dependent variable, it is important to note that it is not the only focus of the theory and that the types of victimization being explained can differ as well. This literature review will be used to provide the reader with an overview of the current literature regarding RA theory, the findings associated with the various empirical tests of the theory, methodological techniques used across the literature, as well as the issues that arise when testing the theory and comparing it across studies.

Differing Scopes of Analysis

As stated earlier, scholars have attempted to explain variations in a variety of dependent variables. Spano and Freilich's (2009) meta-analysis of RA theory studies shows that out of the thirty three articles that were identified between 1995 and 2005, three focused on property crime victimization, thirteen focused on explaining violent crime victimization, ten attempted to explain both property and violent crime victimization, while seven studies

attempted to explain the literal acts of crime and deviance (difference between explaining offending and actual victimization). According to the authors, one of the “crime/deviance” studies actually attempted to explain victimization as well. It is important that this literature review would revolve around these main areas of study concerning RA theory.

Several studies have focused on just explaining violent crime victimization. Spano and Nagy (2005) focus on assault and robbery victimization among adolescent youth living in rural areas. This is actually the only rural study that was identified by Spano and Freilich (2009). Mustaine and Tewksbury (2000) conducted surveys of college students in order to measure the likelihood of assault victimization while using routine activities theory conceptualized independent variables. Other areas of testing RA theory in the explanation of violent victimization include sexual assault victimization (e.g., Cass, 2007; Tewksbury & Mustaine, 2001), and even homicide, (e.g., Kennedy & Silverman, 1990). Some studies that focused on violent victimization simply constructed a “violent victimization” dependent variable that included various operationalizations (e.g., Koo, Chitwood, & Sanchez, 2008; Schreck & Fisher, 2004; Spano, Freilich, & Bolland, 2008). Specific operationalizations of key variables will be discussed further in the remainder of this manuscript.

Scholars have also used RA theory in attempts to explain property crime victimization. It comes as no surprise that the main focus of property crime victimization is the actual theft of the property. Mustaine and Tewksbury (1998) surveyed over a thousand college students in an effort to see if routine activities had an effect on theft victimization. Researchers have also looked at the incidence of burglary in attempts to use RA theory in order to explain its occurrence (e.g., Tseloni, Wittebrood, Farrell, & Pease 2004), while

others constructed a “property crime index” to include several different property crimes to be combined into one dependent variable (e.g., Massey, Krohn, & Bonati, 1989).

According to Spano and Freilich’s (2009) findings, violent crime victimization is the most popularly used dependent variable among the RA theory studies (13 of 33 reviewed studies). However, ten of the thirty three studies were identified to have taken on dual roles of explaining both violent crime victimization and property crime victimization. While essentially combining the focal points of the two areas of concern (violent and property crime victimization), there is a noticeable similarity among RA studies that attempted to explain both phenomena. There seems to be a common usage of aggregate level data, or data from large national and even international studies of victimization (e.g., Bennett, 1991; Miethe, Stafford, & Long, 1987; Stahura & Sloan III, 2001), although the latter is not the case for every study that included both property and violent crime victimization as dependent variables (e.g., Kennedy & Forde, 1990). It is arguable that data derived from large national and international studies are popular among these particular RA theory studies due to issues concerning the availability of data. Researchers can then analyze the always readily available UCR data that includes information on both property and violent crimes. This method is cheaper and faster than constructing surveys for a given sample group, cramming the required questions into the survey, seeking approval for the questions, and keeping the survey length within an acceptable range as to stay within budgetary constraints. Researchers can also rely on national studies such as the National Crime Victimization Study (NCVS) to ask respondents the necessary questions and collect the relative data, as these studies have already been approved and are funded in an on-going basis.

One should also remember that victimization is not the only dependent variable of interest when considering RA theory. In other words, the victim is not and does not always have to be the unit of analysis. Scholars have attempted to explain the fluctuation of aggregate crime rates instead of individual victimization. It is also possible to look at actual offenders and their likelihood of offending. Perhaps the most frequently cited RA study that focused on offenders and their likelihood of offending is that of Osgood et al. (1996). After conducting a survey of adolescents, the authors used routine activities variables in an effort to see if the respondent's activities had an effect on their likelihood to commit criminal acts. Nofziger and Kurtz (2005) also attempted to explain offending while linking one's exposure to violence with their own proclivity to commit violent acts. Another study that attempted to explain deviant behavior is that of Bernburg and Thorlindsson (2001). The authors conducted a survey of adolescents that included items regarding routine activities as well as peer association variables. In this particular piece the authors attempted to fuse RA theory with differential social relations, stating that routine activities will have a varying affect on deviance depending on the relationships that the individual has. The point at hand is that RA theory can be used to explain more than just the likelihood of victimization.

Routine Activities and Violent Crime Victimization

The convergence of a motivated offender, suitable target, and lack of a capable guardians in time and space, should explain the variation in victimization. For example, an individual who spends his or her day behind the safety of locked doors, alarm system, and in the constant presence of a vigilant neighborhood watch, should have a much lower likelihood of stumbling across a motivated offender and falling victim to a predatory violent crime. On the reverse side of things, the individual who spends most of their nights going to night clubs

and hanging out with acquaintances should have a higher likelihood of violent crime victimization. If one thinks of the individual as a target then the theoretical concept becomes much clearer. The target is constantly moving into the public arena in the midst of motivated offenders whom are looking for a suitable target. A nightclub or bar is a perfect example of an area that is populated by people who are either casual acquaintances or complete strangers. The target who is frequenting these areas is also routinely consuming alcoholic beverages. This, as most individuals will attest, impairs the judgment and ability of an individual to properly reason (in this case, to properly protect oneself). The individual then becomes a more “suitable target” for the predator or “motivated offender”, and leaves the individual more vulnerable to violent victimization. However, this situation could be mediated by the presence of capable guardians (bouncers, friends, local police, and even the concerned citizen). This is a simple account of the reasoning behind RA theory and its theoretical ability to explain violent crime victimization. The question is whether or not empirical studies have been able to link RA theory variables with violent crime victimization.

As noted above, many scholars have attempted to explain violent victimization while using a variety of routine activities variables. All of the studies include a measure of violent victimization, whether it is simply a measure of assault, robbery, or simply some combination of possible survey responses. Researchers have attempted to explain this phenomenon by using individual survey data (micro) as well as relying on aggregate crime rates (macro) and broad social/economic trends to explain the changes in overall victimization. The general findings throughout the violent victimization literature suggest overall support for RA theory (Spano & Freilich, 2009). However, the variation in

independent variables and even dependent variables requires that specific consideration be given to individual studies.

While some scholars attempted to explain a single criminal victimization such as robbery or assault, the majority of studies included a dependent variable of “violent victimization” (e.g., Miethe et al., 1987; Schreck & Fisher, 2004; Spano et al., 2008). In these cases the authors took multiple items that are considered “violent crimes” (e.g., assault, robbery, personal larceny) and formulated one dependent variable with a “yes” answer for any of the items corresponding to a “yes” for violent victimization. In some instances the violent victimization variable included items that were situation specific (e.g., ever been threatened with a knife or gun; ever been shot at?). For example, Schreck and Fisher (2004) conducted a study in which they used first wave data from the Add Health study from 1994 to 1995. The survey targeted 7th through 12th graders in an effort to measure their personal activities, attachment to parents, and peer association. The authors operationalized the dependent variable “violent victimization” as a yes or no response to whether or not the youth had been “threatened with a knife or gun,” involved in a shooting, stabbing, or had been jumped. If the respondent answered yes to any of the listed situations, then he/she was deemed to have been a victim of a violent crime. This operationalization is comparable to the more recent studies of Koo et al. (2008), and Spano et al. (2008).

Schreck and Fisher (2004) discovered that increased routine activities such as driving around, sneaking out, and exercising were all associated with a higher likelihood of violent victimization. The authors also found that increases in peer delinquency were associated with increases in the individual’s risk for violent crime victimization. The authors argue that when juveniles spend more time with delinquent peers, they are increasing the amount of

time that they will be in the proximity of motivated offenders, and the lack of present capable guardians then increases the likelihood that the individual has become a more suitable target for the motivated offenders. When considering the same theoretical milieu, it is easy to understand why the simple routine activities (driving around, etc...) have also been found to be associated with the respondents' violent crime victimization. Those youths who sneak out, drive around, and exercise are putting themselves in an environment where motivated offenders are arguably plentiful. Sneaking out would obviously indicate that there will be a lack of capable guardians (e.g., parents), as the adolescent is avoiding capable guardians from the very start.

Schreck and Fisher's (2004) study is comparable to that of Spano et al. (2008), in the sense that young individuals are the target of investigation and more importantly, Spano and his colleagues also constructed a "violent victimization" variable. The researchers operationalized the dependent variable as being whether or not the respondent had been "threatened with a knife or gun during the past 90 days, cut bad enough to see a doctor in the past year, or shot at in the past year" (2008, pg. 392). Again, if a respondent answered yes to any of the three scenarios then he/she was considered to have been a victim of a violent crime (identical to Schreck & Fisher, (2004)). Spano and his colleagues specifically looked at the effects of gang membership, employment, and gun carrying on the outcomes of violent victimization.

While using survey data that was collected in waves from twelve high poverty neighborhoods in Mobile, Alabama, the researchers conducted a logistic regression analysis and were able to identify that employment (number of hours the respondent worked) and personal violent behavior were associated with an increased risk for violent victimization

(Spano et al., 2008). In relation to RA theory, the authors explain that the more the respondent works, the more money he/she will obviously have. This then makes the respondent a more suitable target for motivated offenders (keep in mind that these are highly impoverished neighborhoods). It is also argued that individuals who work long hours are more likely to leave work during the night time hours, thus, creating a lack in capable guardianship due to darkness and the amount of people who are in their homes. It is perhaps obvious that violent behavior will lead to an increase in violent victimization, simply due to the increased placement in high risk situations. It is important to note, however, that once employment was controlled for, the positive relationship of drugs and alcohol use on violent victimization became insignificant. This particular finding is important in the sense that it contradicts RA theory and is contradictory to the findings of Koo et al. (2008).

At this point both Schreck and Fisher (2004) and Spano et al. (2008) have found support for RA theory while using a combined variable of violent victimization. In a recent study of 900 active drug users, Koo et al. (2008) also found support for RA theory while using a combined variable of violent victimization. In contrast to Spano et al. (2008), Koo and his colleagues found that frequent crack and powder cocaine use was associated with a higher risk for violent victimization. This finding is consistent with other RA theory literature that suggests that drug use increases the likelihood for violent crime victimization (Cass, 2007; Tewksbury & Mustaine, 2001). The argument is that drug use leaves an individual impaired, and lowers his/her ability to protect them self. This translates into the respondent being a more suitable target for motivated offenders, and obviously decreases the level of capable guardianship. The authors also found that stealing drugs and carrying a gun were associated with higher levels of risk. The authors argue that stealing drugs creates a

reaction of retaliation. This retaliation creates motivated offenders and makes the individual stealing the drugs a suitable target. The increased risk due to carrying a firearm is explained by the authors to be associated with the fact that those carrying guns are more likely to enter risky situations. This makes theoretical sense in that someone with a weapon might feel that they can “get through” or “handle” situations that they normally would not put themselves in. The important point is that a combined variable of violent victimization has been explained by RA theory variables in empirical studies.

Other scholars have attempted to explain violent victimization in terms of the actual crime itself (i.e., assault, robbery, sexual assault) (e.g., Kennedy & Forde, 1990; Miethe et al., 1987; Mustaine & Tewksbury, 2000). In 1987 Miethe and his colleagues conducted a very well cited study in which they used 1975 National Crime Survey data in order to test RA theory. In this case the authors constructed variables that measured the frequency of major daytime activities (i.e., work, school) and major nighttime activities (i.e., going out for entertainment). The authors then conducted a logistic regression analysis which revealed that individuals with a higher frequency of nighttime activity had an increased risk for violent crime victimization (robbery, assault, personal larceny). It is likely that these individuals would have a higher likelihood to be in risky situations as opposed to being at work or school, which are places that foster structured environments. Nonetheless this early study found support for RA theory when explaining crime specific variations.

Building upon the early work of Miethe et al. (1987), Kennedy and Forde (1990) used telephone survey data from the Canadian Urban Victimization Study of 1984 in order in order to test RA theory in a more specific light. While Miethe and his colleagues used “composite” measures of routine activities (i.e., major daylight and major nighttime),

Kennedy and Forde included specific activity measures such as going to the movies, going to the bar, and playing sports. The idea was that by providing specific measures of routine activities, it would be possible to separate the interaction effects of demographic and activity variables that were originally found by Miethe and his colleagues (1990). Kennedy and Forde found that the frequency of going to the movies and walking/driving was associated with an increased risk for robbery and assault victimization. The authors also found that being married was associated with a decrease in the risk for robbery/assault victimization. It is possible to explain this phenomenon by simply considering the fact that married individuals are more likely to have someone (capable guardian) with them during many of their activities. Overall, the authors were able to identify specific activities that were associated with increases in violent victimization while controlling for specific demographic variables (income, sex, age, employment status, etc.).

Mustaine and Tewksbury (2000) and Spano and Nagy (2005) also looked at the effects of RA theory variables on assault and robbery victimization. Mustaine and Tewksbury utilized data from a college student survey while Spano and Nagy used data from a survey of rural adolescents. Mustaine and Tewksbury found that individuals who frequently became inebriated and who had disruptive neighbors were more likely to become victims of assault. Frequently being involved in community events and activities was associated with a lower likelihood of assault victimization. These findings directly correspond with the idea behind RA theory. As stated earlier, the intoxication of an individual makes them a prime target for motivated offenders. Having disruptive neighbors is arguably a measure of motivated offenders, which is similar to measuring the condition of

one's neighborhood. It is difficult however to achieve a true measurement of motivated offenders, as will be discussed in the methodology section of this manuscript.

In comparison to the findings of Mustaine and Tewksbury (2000), Spano and Nagy (2005) found that peer drug use and personal criminal behavior were associated with higher levels of risk for violent victimization. This finding is consistent with other studies that focused on explaining crime specific victimization and offending (Osgood et al., 1996; Spano & Freilich, 2009). However, the authors did not find a significant relationship between personal drug use and the risk for violent crime victimization. This finding seems to be in direct opposition to the finding that drinking and using drugs are associated with higher levels of victimization (e.g., Koo et al., 2008). With that said, this particular study continues to provide support for RA theory in the sense that personal deviant behavior and peer deviant behavior influence the likelihood for respondents to become victims of violent crime. These tendencies place respondents in situations where capable guardians are scarce, motivated offenders are plentiful, and due to the nature of the activity, the respondent becomes a suitable target.

Before discussing property crime victimization, it is important to consider the studies that have used RA theory when explaining violent crime victimization at the macro level. The studies discussed above focused on the explanation of individual victimization. The original study that introduced RA theory by Cohen and Felson (1979) was conducted at the macro level. The authors were able to conclude that major social trends affect the household activities of individuals and thus, changes in the overall crime rate (UCR) are at least in part attributable to the changes in household activities. The sudden flow of men out of the country created a need for female workers across the nation. This change in routine activities

meant that women would be venturing from the home far more often, while taking on more individualistic roles. Thus, the increased flow out into the community would mean that more suitable targets would be in the presence of motivated offenders. This is then argued to have explanatory power when considering the changes in violent UCR crime rates.

Stahura and Sloan III (1988) attempted to replicate Cohen and Felson's findings while incorporating changes to the independent variables. While Cohen and Felson had originally assumed the actual presence of motivated offenders, Stahura and Sloan III included variables in an effort to capture the prevalence of motivated offenders (this was measured by including the percent poor, percent black, percent youth, and the percent unemployed into the analysis). The authors argue that the above indicators have been shown to be correlated with high crime rates. The researchers utilized UCR data for a sample of 676 suburbs that had similar demographic attributes. The study revealed that fluctuation in capable guardians, suitable targets, and offender motivation was associated with changes in the UCR violent crime rates. It should be noted however that the authors found a positive relationship between guardianship and violent crime. This finding runs contrary to RA theory and the original findings of Cohen and Felson (1979). However, as the authors note, their measure of guardianship was the amount of police presence in the study neighborhoods (1988). This in and of itself creates a temporal ordering issue that cannot be accounted for in a cross-sectional design. The authors state that communities with more crime usually respond by hiring more police officers and spending more money on crime prevention/control. Thus, it is not possible to conclude which of the two came first. The macro level findings of Cohen and Felson (1979) and Stahura and Sloan III, (1988) are strengthened even further by similar findings at the cross-national level (Bennett, 1991).

It is important to note that individual level studies of RA theory are much more plentiful than the macro level analyses described above. Cohen and Felson (1979) state that the theory was designed to be tested at the individual level. The purpose of testing the theory in a broad context was to simply test its ability to explain crime through general crime rates. The idea is that if the theory is unable to predict changes in the overall crime rate, why would it be able to predict changes in individual risk levels for criminal victimization? Thus, the original authors simply wanted to test its validity before researchers moved on to test the theory at a more intricate level.

It has been shown throughout this section that RA theory possesses explanatory power in the realm of violent crime victimization. Studies have successfully predicted victimization risk for combined variables of violent victimization and even crime specific variables of victimization. It is also important to note that some studies have found differing effects for guardianship (e.g., police presence) and suitable target variables (e.g., drinking/using drugs) on the risk values for violent crime victimization (e.g., Spano & Nagy, 2005; Stahura & Sloan III, 1988). The majority consensus is that RA theory is able to account for variation in the risk for violent crime victimization as well as variation in aggregate violent crime rates, as indicated by Spano and Freilich's (2009) recent meta-analysis of RA theory studies.

Routine Activities and Property Crime Victimization

RA theory's ability to account for property crime victimization is perhaps the most important matter for the current study. One will see that the theoretical grounding is much clearer when considering property crime victimization as the dependent variable. An individual might have a nice home that houses expensive electronic equipment that is small

and easy to handle. This same individual might work long hours and might not have any roommates or family members to share the home with. He/she might not be too concerned with the likelihood of becoming a victim of property crime, and in light of that, they might not have installed deadbolt locks or any alarm system in their home. It is arguable that the goods inside this individual's home are very suitable targets, as they are expensive and very easy to move around. The items are even more suitable considering the fact that the home is not occupied very often and it is not protected by any form of alarm system. Thus, the lack of capable guardians and presence of suitable targets need only a motivated offender for the completion of a criminal act. This is the theoretical ability of RA theory to explain the fluctuation in the risk for property crime victimization. However, how will RA theory fair at explaining property crime victimization in the academic literature?

As noted earlier, scholars have attempted to explain the variation in different types of property crime victimization variables. Some researchers have identified one specific crime or a few different types of crime (such as burglary, breaking and entering, and larceny) and separated them out in their analyses (e.g., Kennedy & Forde, 1990; Tseloni et al., 2004). Researchers have also created a property crime index in which several different property crimes are included in one dependent variable (e.g., Massey et al., 1989; Miethe et al., 1987). Then either the frequency of victimizations is calculated for each individual respondent or household (e.g., Massey et al., 1989), or the property crimes are fused in one dichotomized dependent variable (e.g., Miethe et al., 1987). It is now easy to see that there are many ways to capture property crime victimization as the dependent variable.

Perhaps two of the earliest RA studies that attempted to explain individual property crime victimization are those of Massey et al. (1989) and Miethe et al. (1987). Both studies

include a property crime index, or several crimes to be included into the property crime definition. Miethe and his colleagues attempted to explain the dichotomous variable of property crime victimization (yes or no for burglary, household larceny, and motor vehicle theft) by analyzing survey data from thirteen major U.S. cities. One might recall this study from the above discussion of violent crime victimization. The authors found strong support for their RA theory variables of major daytime and nighttime activities (employment, school, entertainment). There was a statistically significant increase in property crime victimization when the respondent spent more time away from the home. It is important to note however that the authors found an increased likelihood for property crime victimization among married respondents and a lower risk for victimization among those with higher income. RA theory would suggest that married individuals would have a lower risk for property crime victimization due to the higher likelihood of having someone in the home. However, it is possible that couples work similar hours (e.g., 8 to 5) which would offset any benefit of guardianship. It is also possible that individuals with a higher income live in more affluent neighborhoods with a decreased prevalence of motivated offenders.

In comparison to Miethe et al. (1987), Massey et al. (1989) constructed a property crime index that included the frequency of crimes against the home, such as a “break in of the residence,” and or “vandalism” to the residence. Massey and his colleagues were only able to identify two RA theory variables that had the predicted effect on the risk for property crime victimization (housing type and neighborhood crime). Thus, the type of housing served as a measure of target suitability (“attractiveness”) and the neighborhood crime served as a measure of motivated offenders. In contrast to the findings of other scholars (Kennedy & Forde, 1990; Miethe et al., 1987), the authors found that increased time away from the

home did not amount to an increase in the risk for property crime victimization. It is also important to note that the authors found increased levels of guardianship (security measures) to be associated with increases in property crime victimization. This finding is in direct opposition to the thesis behind RA theory and the findings of other RA theory studies (e.g., Mustaine & Tewksbury, 1998). The authors attribute this finding to an issue of temporal ordering. In other words, in a cross-sectional study it is not possible to identify if the security measures came before or after the victimization.

Other scholars have focused on explaining the variation in a specific type of property crime victimization. Kennedy and Forde (1990) used Canadian survey data in order to test the ability of RA theory variables to predict the crimes of breaking and entering and vehicle theft. The findings associated with breaking and entering are more important in relation to the focus of this particular study. In contrast to the findings of Massey et al. (1989), the authors found that increased time away from the home was indeed associated with increases in the risk for property crime victimization (breaking and entering). It is also important to note that being married resulted in a statistically significant decrease in the risk for property crime victimization. This finding runs in contrast to the earlier finding of Miethe et al. (1987) that marriage had the reverse effect on the risk for property crime victimization.

Mustaine and Tewksbury (1998) and Tseloni et al. (2004) also tested RA theory while looking at specific property crime dependent variables. Mustaine and Tewksbury (1998) conducted a survey of more than a thousand college students in order to predict the risk for major and minor larceny theft victimization (“major: > \$50; minor: < \$50”, pg. 837). The authors found that increases in simple RA theory variables such as, frequently eats out, and leaves home often for studying, to be associated with increases in the risk for both major and

minor larceny theft victimization. The idea remains that one leaves him/herself more vulnerable to property crime victimization when he/she is frequently out of the home or living space. In contrast to the finding of Massey et al. (1989), Mustaine and Tewksbury found that respondents that utilized security measures (installed locks and having a dog) were less likely to be victims of property crime. Again, the overall effect of guardianship is hard to grasp given the cross-sectional nature of these studies.

Tseloni et al. (2004) were concerned with explaining the incidence of burglary and RA theories ability to explain the risk for this crime across international borders. This is similar to Bennett's (1991) international study of RA theory; however Bennett utilized data at the aggregate level. Tseloni and his colleagues found that urbanization (proximity to motivated offenders) and being a single parent were associated with increases in burglary victimization. These findings provide support for RA theory in the sense that urbanization will likely result in an increase of motivated offenders or higher levels of crime, and being a single parent indicates a lower likelihood for a capable guardian to be present within the home. Like Massey et al. (1987), the authors found prevention measures (increased guardianship) to be associated with increases in burglary victimization. The authors follow suit by providing an explanation of temporal ordering to account for the inverse finding.

As with the discussion on RA theory and violent crime victimization, it is important to briefly describe the findings of macro level RA theory studies in the realm of property crime victimization. While using UCR data, both Cohen and Felson (1979) and Stahura and Sloan III (1988) found support for RA theory variables when explaining the fluctuation of property crime rates. As noted earlier however, Stahura and Sloan found guardianship to have the opposite effect on property crime victimization. This again has been explained by

the presence of temporal ordering issues in cross-sectional designs. Importantly, for providing the impetus for more intricate level studies on RA theory, these two early and major macro level studies provide general support for RA theory. It is also important to note that this support in macro level studies is strengthened further by the findings of Bennett's (1991) international study of crime rates in which guardianship measures were found to be strongly associated with the fluctuation in property crime rates in the predicted direction.

It is important to consider how scholars have specifically measured the three main components of RA theory (capable guardianship, target suitability, motivated offenders), before concluding the literature review. As noted earlier, there are conceptual issues with target suitability and capable guardianship as they are theoretically very similar concepts (Bursik & Grasmick, 1993). Guardianship has been measured throughout the literature as the amount of time individuals spend away from the home (including where they are going and who they are hanging out with, if anyone), whether or not they are enrolled in neighborhood watch programs, all the way to the amount of police presence in the study areas (e.g., Mustaine & Tewksbury, 1998; Stahura & Sloan, III, 2001). Thus, guardianship tends to be accounted for through the observation of individuals' actions (e.g., human instead of non-human; Bursik & Grasmick, 1993).

Target suitability seems to be typically measured along the lines of the main premise of suitability defined by Cohen and Felson (1979) ("value, physical visibility, access, and inertia..." pg. 591). Scholars have attempted to measure these concepts by including indicators of income, employment, housing type, security/protective measures (e.g., alarm systems and extra locks), and even the number of cars the respondents have (e.g., Massey et al., 1989; Mustaine & Tewksbury, 1998; Spano et al., 2008). It is easy to see that target

suitability is a concept that is related to the non-human aspects of everyday life. In other words, suitability tends to be measured using tangible objects or indicators of tangible things instead of routine physical activities of respondents. The problem is that authors do not always indicate that protective measures are either indicators of guardianship or target suitability. Thus, as discussed earlier, it is important for researchers to distinguish between these two concepts within their studies. The explanation above provides reasoning for the argument that tangible security measures are indicators of target suitability (accessibility).

Motivation is also a difficult concept to measure. This concept was not even accounted for by the original authors of the theory (Cohen & Felson, 1979). However, future scholars attempted to include measures of motivated offenders in their studies. Examples of measures of this concept include the level of urbanization, percent poor, black, youth, and the percent unemployed (e.g., Stahura & Sloan III, 1988; Tseloni et al., 2004). The difficulty with measuring this concept is the fact that all of these measures are “proxy” measures for the prevalence of motivated offenders in a given area. Thus, it is not possible to get an exact number of motivated offenders in a given area. However, these measures do provide an idea of the amount of motivation in a specified locale.

Overall, the various studies of RA theory and its ability to account for the variation in property crime victimization have shown support for the theory. All three components of RA theory (lack of capable guardian, suitable target, and motivated offender) have been found to be directly related to the likelihood for property and violent crime victimization. The recent meta-analysis of Spano and Freilich (2009) confirm that the majority of all RA theory studies successfully predict property and violent crime in the expected directions. However, it is apparent that the various studies have used different techniques for capturing victimization

and measuring each of the three components of RA theory. The major issue at hand is the blatant lack of RA theory studies that have focused attention on rural samples. As noted earlier, only one study is reported to have used a rural sample (2009). The lone rural study was conducted with a sample of rural adolescents which creates a problem when trying to generalize the findings to other studies of urban and even national probability studies of adults (Spano & Nagy, 2005). There also seems to be a lack of recent RA theory studies in the realm of property crime victimization. Spano and Freilich (2009) indicate that 29 of the 33 studies between 1995 and 2005 utilized data that were collected in the 1990's. Thus, these important issues provide the impetus for the current study, which will use 2009 data from a rural sample of adults in order to test RA theories ability to explain the risk for property crime victimization.

CHAPTER 3

METHODOLOGY

The current study utilized a secondary data analysis of a 2009 telephone survey of more than 1,000 adults living in thirty-six rural counties across the United States. At least twenty-five households were randomly selected from each of the thirty-six randomly selected rural counties. Failed completions were mediated by the random selection of other households in order to fulfill the goal of twenty-five households or more for each county and a total of more than 1,000 completed surveys. This moves to ensure that a representative sample is obtained. Data were collected between July and September of 2009 by the University of Illinois Survey Research Center. Callers asked for the youngest male household member (at least 18) and then asked for the youngest female household member (at least 18) if it was not possible to speak with a male of at least 18 years of age. This technique ensures that there is variability in the demographics of survey respondents. The survey response rate was approximately twenty-five percent (for those answering the phone), and the survey included items related to perceptions of fear, neighborhood cohesion, protective measures, as well as the routine activities of individuals. For ease of analysis, only full survey completions were included in the current analysis (resulting in 1,097 cases).

Dependent Variable

As noted above, the purpose of this study is to test RA theory's ability to explain the variation in the risk for property crime victimization in a rural setting. The survey included dichotomous questions of whether or not respondents had been the victim of specific crimes in the past 12 months. The two variables related to property crime victimization were burglary and larceny victimization. Burglary victimization (dichotomized as 1 = no, 2 = yes)

is the dependent variable used in the current study. It would perhaps be beneficial to include both variables of burglary and larceny in order to measure the individual effects of RA theory on these specific types of crime, as has been the case for more recent studies of RA theory and property crime (e.g., Kennedy & Forde, 1990; Mustaine & Tewksbury, 1998). However, the protective measures included in this study, revolve around the resident's home. Since larceny is a crime that can occur anywhere inside and outside of the home, it would be difficult to make any grounded inferences about the independent variables' effects on larceny.

Independent Variables

The independent variables included in the logistic regression are described in Table 1 below. **Guardianship** was accounted for by capturing the overall amount of time an individual spends away from their home, the number of adults residing in the respondent's home, and whether or not the respondent was involved in some form of neighborhood watch at the time of the study. In order to account for the amount of activity that occurs away from the respondents' residence, several routine activity measures were adopted from Mustaine and Tewksbury's (1998) study of college students. The authors were able to find that specific activities away from the respondents' residence were correlated with higher risks for property crime victimization. Other scholars have also used similar measures of routine activities to account for an individual's activity outside of the home (e.g., Kennedy & Forde, 1990).

In the current study, the data included information on how many days a week on average (0 to 7) respondents went out to eat, walk/jog, at night for entertainment, shopping, gym, bar or club, spent time away from home during the day, and spent time away from

home at night. Each of these variables was then summed into one “timeaway” scale for each respondent. Respondents spending more time away from their home (scoring higher on the timeaway scale) should have an increased risk for property crime victimization.

Table 1

Variable Descriptions

Variables	Description
Guardianship	
Timeaway	Summation scale of the number of days a week on average a respondent spends away from the home, and doing various activities outside of the home.
Number of Adults	Number of adults residing in the respondents' household.
Neighborhood Watch	Has respondent made agreements with neighbors to watch out for each other's safety, or participate in a neighborhood watch? (1 = no, 2 = yes).
Protective Measures	
Alarm System	Installed alarm system? (1 = no, 2 = yes).
Installed Extra Locks	Installed extra locks? (1 = no, 2 = yes).
Locks Home	Routinely lock home? (1 = no, 2 = yes).
Guard Dog	Dog for protection purposes? (1=no, 2 = yes).
Outside/Auto Lighting	Installed outside and/or automatic lighting? (1=no, 2=yes).
Motivation	
Percent in Poverty	Percent of residents in poverty for each respondent's respective county.
Controls	
Sex	(1 = female, 2 = male).
Race	(1 = white, 2 = minority).
Marital Status	(1 = no, 2 = yes).
Employment	Full-time? (1 = no, 2 = yes).
Age	Age in 2009, whole number.

Target suitability is a rather difficult concept to measure. As stated earlier, there are conceptual issues between target suitability and capable guardianship. One might recall that the definition of target suitability is concerned with the ease in which a criminal act can be completed against a target (Cohen & Felson, 1979). Thus, in this particular study target

suitability was measured in regards to the protective measures listed in Table 1. These measures include installing an alarm system, extra locks, routinely locking one's home, having a guard dog, and having installed outside and/or automatic lighting. The idea is that all of these measures directly relate to the accessibility component of Cohen and Felson's definition of a suitable target. However, it should be noted that when it was attempted to combine the five suitability measures into one suitability scale, the Cronbach's alpha was below 0.60. Thus, the items were separated in the analysis to pinpoint which item might be having the most effect. It would have also been possible to include an annual income variable as another indicator of target suitability. However, the literature shows that burglars tend to target homes that are in close proximity to where they live (e.g., Bernasco & Nieuwbeerta, 2005; Tseloni et al., 2004). Considering that higher crime rates are prevalent in low-income neighborhoods, it is unlikely that income would serve as an adequate indicator of target suitability due to the separation of neighborhoods (2004).

Motivation is perhaps the most difficult concept to measure when testing RA theory. As stated earlier, several scholars have simply assumed the presence of motivated offenders and thus, failed to include any measure of motivated offenders in their studies (e.g., Cohen & Felson, 1979). In the current study, the presence of motivated offenders was measured through one proxy variable, which is the percent of residents in poverty (based on 2000 Census) within each rural county included in the study. Thus, the poverty percentage for each respondent's county has been attached to their case within the data file. Although this measure provides an indication of the amount of poverty within the respondent's entire county, it does little to explain the situation specific to each respondent's neighborhood. This is a noted weakness in this particular measure of motivation. Another limitation is the fact

that this variable is based on poverty levels in the year 2000. However, it is unlikely that drastic changes in counties' economic situations would occur over a nine year span, as this would be a rather short period for large economic shifts. It should also be noted that several concentrated disadvantage variables (percent in poverty, unemployed, no high school diploma, etc.) failed to coalesce into a single scale (the Cronbach's alpha was below 0.60). Therefore, the percent in poverty is thought to provide an overall picture of economic disadvantage within each respondent's county. It is thought that increases in poverty would likely result in increases in motivation and thus, increases in the likelihood for burglary victimization.

Demographic/control variables were included in the analysis as age, race (dichotomized as white = 1 or minority = 2), sex (female = 1, male = 2), marital status (dichotomized no = 1, yes = 2), as well as employment (dichotomized as full-time, no = 1 and 2 = yes). All of these variables have been found to have varied effects on violent and property crime victimization in RA theory studies (e.g., Cass, 2007; Mustaine & Tewksbury, 1998).

Data Analysis/Hypotheses

Due to the dichotomous nature of the dependent variable (burglary victimization), the current study used logistic regression analysis. This technique allows the researcher to identify the effects that the RA theory and control variables are having on the respondents' personal risk for property crime victimization. The study includes the following hypotheses:

H1: *Increased levels of guardianship will result in a decrease in the likelihood for burglary victimization.*

H2: *Decreased levels of target suitability will result in a decrease in the likelihood*

for burglary victimization.

H3: *An increased prevalence of motivated offenders will result in an increased likelihood for burglary victimization.*

Methodological Limitations

The main limitation associated with the current study is the fact that the design is cross-sectional. This is an issue that seems to be all too common in the RA theory literature. The cross-sectional design makes it difficult to make inferences about the protective variables as they relate to guardianship (neighborhood watch) and target suitability (alarm, extra locks, routinely locks home, has a guard dog, and installed outside and/or automatic lighting). However, in the current study, guardianship is also measured in terms of the amount of time an individual spends away from their home (timeaway scale). Thus, this second measure of guardianship provides a fail-safe that allows the researcher the ability to capture a true measure of guardianship for the respondents (e.g., temporal ordering is less of an issue). The survey questions are also asked in the context of the past 12 months. The fact that respondents are being asked about protective measures and victimization in this short time frame prevents issues related to respondents referencing crimes well in the past and then reporting protective measures years later.

Another noted limitation is the current study's measure of motivated offenders. The percent in poverty is based on the 2000 census, while the current study is based on a 2009 survey. However, as stated earlier, it is unlikely that any major socio-economic changes occurred among the counties over a nine year span. Also, although the measure does provide an overall view of the poverty situation in an entire county, it does not provide valuable insight into the socio-economic situation surrounding the respondent's home and

neighborhood. However, as stated above, the presence of motivated offenders was originally assumed, and thus not measured, by Cohen and Felson (1979) and has not been included as a measure in other RA theory studies that focused on individual victimization (e.g., Kennedy & Forde, 1990; Tewksbury & Mustaine, 2001). It is arguable that RA theory does not need a specific measure of the amount of motivated offenders in a given area. The idea is that a person can put them self into a situation in which all three components of RA theory converge in time and space. Although an increase in motivated offenders might make it more likely for an offender to stumble across a target, that target must be a suitable target and there must also be a lack of capable guardians. However, the 2009 survey and the 2000 census also represent two different levels of data. Thus, inferences are being made between county level characteristics and the characteristics of individual respondents. This is another noted weakness in the current study.

It should also be noted that an overwhelming majority of the sample indicated that they were not victims of burglary. The analysis showed that only two of the sixty-four predicted burglaries were correctly classified; thus, indicating that there is not a lot of variation in the dependent variable. However, an ROC curve analysis indicated that the model is doing at least an average job of explaining the variation in the dependent variable (0.754 was the amount of variation under the curve).

CHAPTER 4

FINDINGS

Before one is to delve into the various findings of the current study, it is first important to explore the dynamics of the data set. Table 2 below, shows each variable that was included in the logistic regression and the percent of respondents who answered positively to each relevant item, as well as the mean response for each item. It is interesting to note the fact that the majority of this rural sample is female (61.60% female, 38.40% male). As Table 2 shows, the majority of the sample is white (83.90% white; 16.10% minority), around the age of fifty five (mean age is 55.68) and married (60.20%). Surprisingly, only thirty-one percent of the sample is employed full-time. It is important to note however, that the employment variable does not account for full-time students, or individuals who might be working multiple part-time jobs. Thus, it was up to the respondent to convey that they work two or more part-time jobs, which might have placed them into the full-time employment category. It is also interesting to note that the majority of households had at least two occupying adults (mean for number of adults is 1.91). The average percentage of residents in poverty for all of the rural counties included in the study was approximately eighteen percent.

It is then interesting to consider the routine activity variables that are ultimately included in the logistic regression analysis. The majority of respondents (62.60%) had asked their neighbors to look out for their safety, or indicated that they participated in a neighborhood watch program. A small minority of the sample indicated that they had installed a home alarm system (10.90 percent), while approximately 27.60 percent had

installed extra locks in their homes. When asked whether or not they routinely locked their home, 77.30 percent indicated that they consistently lock their home, while 32.70 percent had

Table 2

Descriptive Statistics

Variables	Percent	Mean
Burglary Victimization	6.3	1.06
Guardianship		
Timeaway		12.85
Number of Adults		1.91
Neighborhood Watch	62.60	1.63
Protective Measures		
Alarm System	10.90	1.11
Installed Extra Locks	27.60	1.28
Locks Home	77.30	1.77
Guard Dog	32.70	1.33
Outside/Auto Lighting	47.00	1.47
Motivation		
Percent in Poverty		0.18
Controls		
Sex		1.38
Male	38.40	
Female	61.60	
Race		1.16
White	83.90	
Minority	16.10	
Married	60.20	1.60
Employment	31.20	1.31
Age		55.68

*Missing responses range from 0 to 52 among the variables

a guard dog and 47.00 percent had outside and/or automatic lighting. It is then interesting to consider that a very small minority of the sample were actually victims of burglary (6.3 percent).

Before proceeding to the various findings, it is important to note that all of the variables included in the logistic regression were checked for multicollinearity and that no

issues were found. Table 3 below, shows the results for the first three models of the logistic regression. The analysis in model 1 includes the three guardianship variables (timeaway, number of adults in the household, and neighborhood watch), and five suitability measures (protective measures), and their effect on the likelihood for burglary victimization. Model 1 reveals that all three of the guardianship measures failed to have a statistically significant effect on the logged likelihood for burglary victimization. Only one of the protective measures had a statistically significant effect on the likelihood for burglary victimization, and the effect is surprisingly in the opposite direction of what was expected. Individuals who had installed extra locks were found to be almost two times more likely to be victims of burglary ($\text{Exp}(B) = 3.007$).

In model 2, the motivation variable (percent in poverty) and the control variables were added to the equation. The Nagelkerke R^2 changed from .089 to .162 once these variables were included, suggesting that model 2 is explaining more variation when compared to the constant. A quick look at Table 3 reveals that the motivation variable (percent in poverty) is having the greatest effect on the respondents' likelihood for burglary victimization. Thus, for every one unit increase in the percent of poverty, respondents were almost twenty-eight times more likely to be victims of burglary ($B = 3.358$; $\text{Exp}(B) = 28.725$). This particular finding is statistically significant at the .05 level. It is also shown that individuals who were employed full-time were less likely to be victims of burglary. Although this effect is very small ($B = -0.704$; $\text{Exp}(B) = 0.595$). The remaining variables in the equation were not found to have a statistically significant effect on one's likelihood for burglary victimization. Model 3 shows the logistic regression outcomes with the inclusion of

Table 3

Logistic Regression/Routine Activities & Burglary Victimization

Variables	Model 1 (n = 1017)			Model 2 (n = 970)			Model 3 (n = 970)		
	B	s.e.	Exp(B)	B	s.e.	Exp(B)	B	s.e.	Exp(B)
Guardianship									
Timeaway	0.020	0.019	1.021	0.015	0.020	1.016	-0.031	0.059	0.969
Number of Adults	0.093	0.148	1.097	0.030	0.168	1.030	0.040	0.168	1.041
Neighborhood Watch	-0.457	0.276	0.633	-0.522	0.294	0.593	-0.510	0.294	0.600
Protective Measures									
Alarm System	0.398	0.341	1.489	0.402	0.362	1.495	0.394	0.362	1.484
Installed Extra Locks	1.101**	0.297	3.007	0.971**	0.318	2.640	0.968**	0.317	2.632
Locks Home	0.833	0.453	2.299	0.677	0.463	1.968	0.677	0.463	1.967
Guard Dog	0.374	0.269	1.454	0.113	0.288	1.120	0.115	0.288	1.122
Outside/Auto Lighting	-0.067	0.295	0.935	0.055	0.309	1.056	0.064	0.309	1.066
Motivation									
Percent in Poverty				3.358*	1.321	28.725	3.412**	1.321	30.311
Controls									
Sex				0.303	0.280	1.354	0.308	0.281	1.360
Race				0.402	0.360	1.496	0.387	0.362	1.473
Marital Status				-0.412	0.294	0.662	-0.874	0.625	0.417
Employment				-0.704*	0.332	0.495	-0.723*	0.332	0.485
Age				-0.012	0.009	0.988	-0.013	0.009	0.987
Interactions									
Timeaway X Marital							0.035	0.041	1.035
Nagelkerke R2 = .089			Nagelkerke R2 = .162			Nagelkerke R2 = .164			

* Indicates significance at .05 level and ** at .01 level

one interaction term (timeaway x marital status). The B coefficient (0.035) and the Exp(B) (1.035), suggest that being married and spending more time away from the home had virtually no effect on one's likelihood for burglary victimization. The installed extra locks, percent in poverty, and employment variables maintained direction and significance, while the remaining variables remained statistically insignificant.

Table 4 below, shows the logistic regression results for models 4 through 6. In model 4, the interaction term of timeaway x neighborhood watch was added to the equation. One can see that spending more time away and also being enrolled in some form of neighborhood watch had virtually no effect on a respondent's likelihood for burglary victimization. Installing extra locks, and living in a county with higher levels of poverty, continued to increase the respondents' likelihood for burglary victimization. Full-time employment also continued to decrease one's likelihood for burglary victimization.

The interaction terms of employment x marital status and timeaway x employment were added to the equation in models 5 and 6 respectively. One can see (as shown in models 5 and 6 in Table 4), that installing extra locks and living in counties with higher poverty rates continued to increase the likelihood for burglary victimization (these variables maintained direction and significance throughout all six regression models). Tables 3 and 4 reveal that none of the interaction terms statistically and significantly affected one's likelihood for burglary victimization. Employment actually lost statistical significance when the interactions of employment x marital status and timeaway x employment were added to the equation. This finding is rather trivial however, when one considers the very low effect sizes of employment in models 2 through 4.

Table 4

Logistic Regression/Routine Activities & Burglary Victimization

Variables	Model 4 (n = 970)			Model 5 (n = 970)			Model 6 (n = 970)		
	B	s.e.	Exp(B)	B	s.e.	Exp(B)	B	s.e.	Exp(B)
Guardianship									
Timeaway	-0.033	0.069	0.967	0.016	0.020	1.016	0.008	0.066	1.008
Number of Adults	0.027	0.168	1.027	0.040	0.170	1.041	0.032	0.169	1.032
Neighborhood Watch	-0.912	0.599	0.402	-0.529	0.294	0.589	-0.521	0.294	0.594
Protective Measures									
Alarm System	0.417	0.363	1.517	0.410	0.362	1.507	0.404	0.362	1.498
Installed Extra Locks	0.960**	0.317	2.611	0.966**	0.318	2.628	0.969**	0.318	2.635
Locks Home	0.680	0.463	1.974	0.678	0.463	1.970	0.677	0.463	1.968
Guard Dog	0.118	0.288	1.125	0.117	0.288	1.124	0.113	0.288	1.119
Outside/Auto Lighting	0.048	0.309	1.050	0.057	0.308	1.059	0.057	0.309	1.058
Motivation									
Percent in Poverty	3.365*	1.328	28.926	3.297*	1.320	27.018	3.364*	1.323	28.913
Controls									
Sex	0.307	0.281	1.359	0.308	0.280	1.361	0.303	0.280	1.354
Race	0.407	0.361	1.503	0.408	0.360	1.503	0.400	0.361	1.492
Marital Status	-0.402	0.294	0.669	0.210	0.844	1.234	-0.413	0.294	0.662
Employment	-0.686*	0.333	0.504	0.039	0.988	1.039	-0.795	0.871	0.452
Age	-0.012	0.009	0.988	-0.012	0.009	0.988	-0.012	0.009	0.988
Interactions									
Timeaway X Marital									
Timeaway X NgbrdWatch	0.030	0.040	1.030						
Employment X Marital				-0.506	0.645	0.603			
Timeaway X Employment							0.006	0.054	1.006
Nagelkerke R2 = .164			Nagelkerke R2 = .164			Nagelkerke R2 = .162			

* Indicates significance at .05 level and ** at .01 level

CHAPTER 5

DISCUSSION AND CONCLUSION

Discussion

The results of the current study are undoubtedly mixed. It is important to recall the three main hypotheses put forth in this manuscript. It was hypothesized that increased levels of guardianship would be associated with a lower likelihood for victimization (and vice-versus), decreased levels of target suitability would result in a decrease in the likelihood for burglary victimization, and increases in the presence of motivated offenders would result in increases in burglary victimization. In order to effectively address the results per each hypothesis, each hypothesis and the related variables will be considered separately throughout this discussion.

Three separate variables were included in the logistic regression in order serve as measures of guardianship (timeaway, number of adults residing in each respondent's home, and involvement in some form of neighborhood watch). It was thought that increases in the amount of time spent away from the home would result in an increased likelihood for burglary victimization (due to the lack of capable guardians in the home). However, this variable failed to attain statistical significance. It was also predicted that an increased number of adults residing in each home would result in a lower likelihood for victimization due to the increased presence of capable guardians. This variable also failed to attain statistical significance. Respondents who participated in some form of neighborhood watch (or had an informal agreement with neighbors) were also not found to be less likely to be victims of burglary, as the finding was not statistically significant. Thus, all three of the guardianship measures failed to successfully predict the likelihood for burglary victimization.

The lack of explanatory power among the guardianship measures fails to provide support for the capable guardianship component of Cohen and Felson's (1979) routine activities theory. These findings also differ from the majority of RA theory studies (Spano & Freilich, 2009). However, the null findings among the guardianship measures are similar to the empirical findings of Massey and his colleagues, (1989). The authors found that spending more time away from the home (an obvious indication of a lack of capable guardianship) was not associated with any statistically significant increase in the likelihood for property crime victimization. It should also be noted that although the current study used only one measure of property crime victimization, Massey et al. (1989) included multiple property crimes and found a similar result.

Five variables were included in the regression in order to measure the accessibility component of Cohen and Felson's (1979) concept of target suitability. The regression revealed that only one of the protective measures statistically and significantly affected one's likelihood for burglary victimization, and surprisingly in the opposite direction (installing extra locks). This finding does not support the suitability component of Cohen and Felson's (1979) routine activities theory. Not only does the finding fail to support the hypothesized effect of target suitability on burglary victimization, it does not seem to make intuitive sense. Why and how would taking extra protective measures actually increase a person's likelihood for burglary victimization? Notably, other scholars have also found similar findings in relation to security or protective measures (e.g., Massey et al., 1989; Tseloni et al., 2004). In these instances, the authors attributed the reversed findings to a failure to establish temporal ordering in a cross-sectional design. Thus, it is likely that people who have experienced burglary are more likely to take extra precautions (more protective measures) than their

victimization-free counterparts. The problem with a cross-sectional design, is that it is difficult to establish if these occurred before or after the victimization. This same phenomenon is likely the case in the current study. In any case, the target suitability hypothesis is not supported in this rural study.

Support was found for RA theory in reference to Cohen and Felson's (1979) concept of motivated offenders. This concept was measured by including the percent of residents in poverty for each respondent's respective county. The results revealed that respondent's were nearly twenty-eight times more likely to be victims of burglary if they lived in a county with a higher level of poverty. This finding supports the third hypothesis that increased levels of motivated offenders would result in an increased likelihood for burglary victimization. The finding corroborates the majority of RA theory studies which have also found support for the motivated offender portion of RA theory (Spano & Freilich, 2009). However, one should remember that two levels of data (county and individual) were being considered in the analysis. Thus, findings might be different if one were to use individual indicators of poverty.

It is also important to consider the findings in relation to the control and interaction variables. Employment was the only control variable with a statistically significant effect on respondents' likelihood for burglary victimization. Surprisingly, individuals who were fully employed were actually less likely to be victims of burglary. RA theory would suggest that one's likelihood for property crime victimization would increase as they are spending more time away from the home. Thus, being employed full-time would result in someone being out of their home for at least forty hours a week. A possible explanation would be that fully employed individuals spend less time doing anything other than work. However, a cross-

tabulation of employment and timeaway did not support such a notion. In any case, as stated earlier, the effect size of employment was minute throughout the models, while it also lost statistical significance when it was included in the interaction terms in models 5 and 6. Thus, the findings in relation to this variable should be interpreted with caution.

The results of the current study provide very little support for RA theory and its ability to predict burglary victimization in a rural context. Increased levels of guardianship were not found to decrease one's likelihood for burglary victimization. Taking measures to lessen the suitability of targets (hinder accessibility) were also not found to decrease the likelihood for victimization. However, this finding is problematic when one considers the cross-sectional design of the current study. On the contrary, increased levels of motivation (percent in poverty) were associated with increases in the likelihood for burglary victimization. This finding provides the only support for RA theory in the current study.

Conclusion

RA theory has become a rather popular criminological explanation for victimization throughout the academic literature. A plethora of studies have been analyzed and discussed throughout this manuscript in order to establish the degree of knowledge surrounding this criminological theory. The review of the literature, including a recent meta-analysis, revealed overall support for RA theory and its ability to explain both violent and property crime victimization (Spano & Freilich, 2009). A noticeable gap in the literature involved a lack of research involving rural samples. Thus, the current study included a 2009 rural sample of adults. A logistic regression analysis was conducted in order to test the effects of several variables (measuring guardianship, target suitability, motivation, and controls) on respondents' likelihood for burglary victimization. The logistic regression revealed

extremely limited support for RA theory in a rural context. Motivation was the only component among the three main components of RA theory (capable guardianship, target suitability, motivated offenders) that yielded support for the theory in the current study. These findings provide interesting implications for policy and future research.

The findings suggest that policy makers should focus on socio-economic issues within their respective rural communities. The percent of residents in poverty within each county provided the strongest effects on the likelihood for burglary victimization. Therefore, policy makers should be concerned with creating situations that allow for socio-economic advancement (creating jobs, social assistance) within their communities. The current economic climate undoubtedly provides a barrier for policy makers and communities who are trying to improve upon these areas. Although this particular recommendation is by no means an easy task to accomplish, the findings provide evidence that addressing these issues might have the greatest effect on crime (in relation to other guardianship and target suitability issues in rural areas).

Although the current study's findings do not seem to provide support for individual protective and guardianship measures, it would be unwise to simply conclude that these issues are not important. One should recall the temporal ordering issue in regards to the protective measures (specifically installing extra locks; Massey et al., 1989; Tseloni et al., 2004). As stated earlier, it is likely that individuals were simply more apt to take protective measures after they had been victims of burglary (e.g., 1989; 2004). Simply leaving one's doors unlocked and refusing to take any sort of protective measures would seem to make opportunities that would be all too enticing to motivated offenders. Thus, individuals and

businesses should still take precautions that would prevent an easy criminal act from occurring. Perhaps the old adage of “better safe than sorry” is of importance here.

In reference to future research, scholars should keep in mind two main issues with the current study when they are attempting to conduct new studies of RA theory. It was noted that the current study utilized county level data to provide an indicator of the level of motivation within rural counties. Thus, two levels of data (county and individual) were combined into the logistic regression. This does not allow the researcher to make inferences about the specific neighborhoods that the respondents live in. In other words, the county poverty levels might have little to do with the actual situation in each respondent’s neighborhood. Researchers should work to obtain data on specific neighborhood characteristics (socio-economic) when attempting to test RA theory, as these indicators would provide a more accurate picture of the respondents’ situation. It would also be possible to use a more sophisticated analysis technique (such as hierarchical linear modeling) in order to account for the differing levels of data.

Although there are notable methodological issues, the overall lack of support for RA theory in the current study provides a new direction for criminological researchers. This is the first test of RA theory with a rural sample of adults. The results suggest that RA theory might not apply to rural samples as easily as it does within urban samples. Thus, researchers should continue to test RA theory in a rural context in order to provide additional insight into RA theory’s rural applicability. Future research might include ethnographic studies that would provide valuable insight into the everyday lives of rural residents. An effort should also be made to tap the minds of the criminals who operate in rural areas. Inferences could then be made about the patterns of behavior of rural burglars versus those operating in an

urban environment. Nonetheless, it is obvious (within the current study) that RA theory does not do as well of a job of explaining property crime victimization (burglary) when it is applied to a rural sample. Therefore, the differences in the daily patterns of rural/urban residents and criminals need to be compared in order to provide a better understanding of victimization and even the conceptualization of RA theory.

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