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Jalen Smith

Winthrop University, smithj133@winthrop.edu

Brad Tripp

Winthrop University, trippb@winthrop.edu

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Examining Longitudinal Data of Juvenile Delinquents in Rock Hill, SC

Jalen Smith
Brad Tripp, Ph.D. (Mentor)

ABSTRACT

Examining factors that contribute to the initiation, continuation, and desistance of criminal activities is crucial in determining how the criminal justice system can be reformed in an effort to decrease recidivism rates, as well as halt the initiation of juveniles into the criminal realm in the first place. This study examined longitudinal data from the daily reports of the Rock Hill Police Department, as organized by the Crime Mapping Division. The study examines juvenile suspects between the ages of 10-17 during 2003-2007. Wave One looked at subjects ages 10-13 in 2003/2004. Wave Two looked at subjects ages 12-14 in 2005/2006, and Wave Three looked at subjects ages 15-17 in 2007/2008. Using the concepts of Criminal Careers and recidivism, the goal was to examine continuation or desistance of criminal behavior over six years. Indicators of race, gender, residence in gang areas, hotspots, as well as residence in a single dwelling or an apartment were used to predict continued criminal behavior. The majority of the subjects were black or white with all other races representing less than ten percent of the population. Therefore, only suspects coded as black or white were utilized. The data was examined using Linear Regressions Analysis and Chi Squares test. The Linear Regressions Analysis found that there was no significant association between offending and race, gender, gang areas, and residence in a single dwelling or apartment for Wave One only, Wave One and Three only, and Wave One and Two only. When examining offending across all three waves, there was a significant association between residents in hotspots and gang areas, as well as race.

INTRODUCTION

The purpose of this research was to identify variables that may correlate with early delinquency, continued delinquency, and recidivism. Previous research has explored life-course persistent delinquents versus adolescent-limited delinquents in terms of mental state and familial factors, but has not gone far enough to identify how variables like: gender, race, gang areas and/or hotspots, and place of residence in a single dwelling or an apartment affect the initiation, continuation, and desistance of a person's criminal career (Bacon, Paternoster, & Brame, 2009; Elder, 1998; Farrington, 1986). The present study sought to explain the initiation and continuation of juvenile offending utilizing longitudinal data.

Sherman and Gartin (Sherman, Gartin, & Buerger, 1989) created the term hotspots in reference to the concentration of certain crimes. They found that the routine activities of hotspots may either be generators of crime or

receptors of crime (Sherman, Gartin, & Buerger, 1989). The routine activities theory is premised by a criminal event occurring by an offender, suitable targets, and the absence of a capable guardian against crime converging together in time and space predictably (Sherman, Gartin, & Buerger, 1989). In regards to hotspots and crime mapping, this study aimed to use the geographic location of adolescents to gain insight as to what environmental factors influence individuals to offend. We predict strong, positive, correlations for the variables of gender, race, gang areas and/or hotspots, and place of residence in a single dwelling or an apartment.

REVIEW OF LITERATURE

The criminal career approach provides the field of criminology the notion that chronic offenders are a unique group (Sampson & Laub, 2003). Chronic offenders were believed to be a unique group because they offend persistently at

a higher rate than others, even as they grow older (Sampson & Laub, 2003). The term criminal career itself is defined as within-individual trajectories that occur over time (Sampson & Laub, 2003). Within-individual trajectories is movement of a person, individually, in a sequence of activation, aggravation, or desistance of criminal activities throughout the life course (Sampson & Laub, 2003). Sullivan and Piquero (2016) analyzed criminal career research over the past 30 years and expressed the importance of development of the concept criminal career itself. Their article reviewed past reports on criminal careers so that the strengths, as well as limitations, of those reports could help future research. The key dimensions of criminal careers (frequency, participation, duration, and seriousness) have remained an integral component in the criminal career debate. Previous research has explored what life course criminology, as well as criminal careers, mean for the field of criminology; but, it has not gone as far to identify how specific variables like gender, race, social class, place of residence, and birth year affect one another and how all of those variables can ultimately affect the initiation, continuation and desistance of a person's criminal career (Bacon, Paternoster, & Brame, 2009; Elder, 1998; Farrington, 1986). This research examined the initiation and continuation of juvenile offending utilizing longitudinal data.

Sampson and Laub (2016) believed that there was a need for breadth and depth when it came to trying to understand individuals and institutions in relation to criminal career patterns over that individual's life course. The Criminal Career report (2016) helped emphasize the need to describe and understand offending patterns, which is why criminologists pay homage to both its advantages and disadvantages. By viewing the Criminal Career report (2016) and other reports related to criminal offending, researchers can develop more distinct frameworks that delve deeper into patterns of desistance and persistence. As the term criminal career began to gain acceptance in the field of criminology, criminologists believed that studying the history of the criminal career concept, the elements of a criminal career, as

well as the methodology involved with studying criminal careers was vital to understanding the term and its meaning.

Criminal Careers

The topic of criminal careers, as well as the length of a criminal career, has become increasingly popular within the past few decades due to the changing nature of research. Piquero and Brame (n.d.) attempted to access more information about criminal career length due to the fact that most knowledge about this topic is more than 30 years old and does not factor race into delinquency and recidivism. In order to measure criminal career length, Piquero and Brame took the difference in ages between the last and first criminal justice contact. They found that parolees who scored higher on cognitive abilities tests had shorter criminal careers and that those who came into first police contact at a later age had longer lengths of prison stay. However, parolees who were older at first police contact tended to have shorter criminal careers. Piquero and Brame's research showed that early age was a significant predictor of a long criminal career and that the duration of time a person spends in jail affected their overall criminal career length. While researching criminal career length through the observation of parolees is important, knowing the basis of why individuals offend throughout the life course is just as equally important, which is why Sampson and Laub's opinions and findings are examined.

Sampson and Laub (2016) took part in an important debate surrounding life-course criminology in which the National Research Council's (NRC) report was the center of attention. The major argument of the NRC report was that scientific knowledge about crime and delinquency had been prohibited by the lack of data. Sampson and Laub created a coding scheme that was longitudinal for the basis of criminal offending in order to combat the shortcomings of the Glueck's coding scheme. Sampson and Laub used the life-course perspective of criminology because this perspective holds the notion that individuals have continuity and change in behavior as they age. Concepts that were important in relation to crime over the life span were turning points and

trajectories. They demonstrated how turning points in a person's life could lead to desistance of criminal careers/activities. Their findings reflect the changing nature of thought in the field of criminology and outlines specific concepts, like life-course criminology, that may produce variables that demonstrate how the decisions a person makes in their life affect the course of their offending (Sampson & Laub, 2016). To understand why an individual offends, researchers must examine that individual's history and that includes their childhood, as well as the environment surrounding said childhood.

A study conducted by Farrington and Ttofi (2011) found that the relationship between bullying and later offending juveniles was significant, even after controlling for early risk factors. They also found that bullying was a strong predictor of antisocial outcomes, which can contain elements of offending behavior. This study was longitudinal, indicating the importance of examining life-course criminology. This article demonstrates how bullying is a unique action and that there is a possibility that interventions that aim to reduce school bullying can ultimately shape reductions in a person's criminal lifestyle. In observing adolescents, monitoring the change in behavior over a period of a few years can yield paramount findings and possibly pinpoint when and where non delinquency meets delinquency.

Loeber and Stouthamer-Loeber (1991) addressed the concurrent and longitudinal patterns of offense seriousness for boys in their research. They found correlations within initiation, escalation, and desistance. They found that of the three age cohorts studied, the largest proportion of the youngest cohort were a part of the non-delinquency category. On the opposite end of the age cohort, the oldest cohort held the smallest proportion of the non-delinquent group category. Non delinquents in the young adults sample decreased over time, while the proportion of moderate to serious delinquents doubled. These findings are important for researchers today because this study allows the public to see how changes in the percentage of adolescents go from non-delinquent to delinquent in relation to changes

in age. This study observed the initiation, as well as escalation of a criminal career. The Life-Course Perspective examined three processes within offending and those were activation, aggravation, and desistance (LeBlanc and Loeber, 1998). Activation was referred as the way in which the development of criminal activities once stimulated was continued, frequented, and diversified (LeBlanc and Loeber, 1998). After the process of activation came aggravation, and aggravation to LeBlanc and Loeber (1998) meant that a developmental sequence of delinquent activities increased in seriousness over time. The final process in Life Course and Developmental Criminology was desistance (LeBlanc and Loeber, 1998). Desistance was the slowing down in frequency or seriousness of offending (LeBlanc and Loeber, 1998). An important element in life-course criminology is the presence of re-offending. Re-offending, also known as recidivism, can often arise for a number of reasons (Sampson and Laub, 2003).

Recidivism

Recidivism is the risk of continued offending across unique groups, as defined by Grunwald, et al. (2010). Criminologists study recidivism and variables associated with criminal careers in order to better understand patterns of offending. Before criminologists can study recidivism, they must first have a concrete idea of what this term means. In a study concerning juvenile offenders who were housed in a rehabilitation center, Ganzer and Sarason (1973) found that there was only a slightly higher proportion of recidivists who came from a broken home, than non-recidivists. Ganzer and Sarason (1973) also found that males who offended but later did not become recidivists, were significantly older at the time of their first commitment than either male recidivists or female non recidivists. The most prominent predictors of recidivism found were: family background, age at first offense/commitment, and diagnostic classification. In this research, they used diagnostic classification to mean mental and behavioral disorders like antisocial personality disorder and neuroticism. These predictors help explain how external factors in a person's life can influence their criminal career.

Ganzer and Sarason's (1973) article showed that there are sex differences in offending, as well as reasons why individuals offend. While Ganzer and Sarason chose to examine factors that surround recidivism, Livingston and Stewart (2008) chose to turn their attention to trajectories and whether or not juvenile trajectories lead to adult offending.

Livingston, Stewart, Allard, and Ogilvie (2008) examined how many distinct offending trajectories could be identified. They discussed how sex, indigenous status, and other variables were related to trajectory membership. They also examined whether or not juvenile offending trajectories are predictors of adult offending. Sex, indigenous status, and socioeconomic disadvantage were shown to be related to offending trajectory group membership, although remoteness was not. Remoteness, in this study, was viewed as remoteness of residence. Remoteness of residence was based off of where the juvenile resided at the time of their court appearance or where cautions were given. Regarding juvenile offending trajectories and their ability to predict adult offending, Livingston, et. al., (2008) found that chronic offenders were twice as likely as other offenders (early peaking-moderate offenders or late onset-moderate offenders) to have finalized adult court appearances. Findings that chronic offending trajectories were five to 15 percent of the total cohort reinforce prior studies' results. This shows that group membership, a social factor, is related to juvenile offending (Livingston, et. al., 2008). Family life plays a humungous role in shaping an adolescent's future; whether that be socially, economically, or otherwise. It is logical to believe that familial demographics would have a hand in juvenile offending as well.

Spatial Variations

Spatial variation in crime is linked to both the physical and social environment of a neighborhood (Sherman, Gartin, & Buerger, 1989). This concept is important to criminology because where a crime takes place matters just as much as how many crimes occur. Sherman and Gartin (1989) attempted to provide a better description of how crime varies across place. They found that police call data is one of the

most reliable ways of getting information about time and place variations in crime. Sherman and Gartin created the term hotspots in reference to the concentration of certain crimes. They found that the routine activities of hotspots may either be generators of crime or receptors of crime (Sherman, Gartin, & Buerger, 1989). It is also important to note that according to research and implementation of new practices, routine activities of people do not necessarily have to change in order for places to be less criminogenic. Lastly, in relation to crime and space, it was thought that variation of crime within communities is larger than variation of crime across communities. Hotspots tell police agencies and the public where crime is most concentrated. If agencies can know who is committing crime the most and where, intervention methods and prevention methods for present and future crime can be implemented (Sherman, Gartin, & Buerger, 1989). Sherman and Gartin (1989) focused on crime varying across place, but failed to mention how a community's structure and culture affect crime, so Sampson and Wilson (1995) attempted to do that.

Sampson and Wilson (1995) attempted to incorporate structural and cultural aspects of society into race, crime, and inequality for the purposes of demonstrating how those variables affect and are affected by community life. They found that structural factors like low economic status, ethnic heterogeneity, and residential mobility gave way to community social organization being disrupted, which thus caused variations in crime and delinquency rates. Sampson and Wilson (1995) also found that family disruption had an effect on juvenile violence and juvenile delinquency. A main point found is the distinction between poor blacks versus poor whites and their ecological dynamic. With the emergence of social isolation, institutions faltered which made social bonds weak. The weakening of social bonds has the potential for other aspects of society to change, which can lead to an individual's decision of a turning point to be affected. Changes in the urban structure of minority communities in the 70's and 80's spurred changes in the activities of juveniles. Sampson and Wilson's (1995) article

provided the historical context of how affecting the residency of people also affects criminal activities. In keeping with the theme of community in relation to crime, Roncek and Maier (1991) examined specifically the relationship between crime and bars/taverns.

The association between traditional index crimes and property crimes as well as violent crimes was examined by Roncek and Maier in 1991. Roncek and Maier (1991) found that 499 residential city blocks with either taverns or lounges had 21,099 index crimes committed. They also found that crime of every type except murder was significantly higher on blocks with taverns or lounges than on blocks without them. The first two predictors of assaults, which had the strongest effect of any individual crime type, was block population and residualized crime potential (Roncek & Maier, 1991). Bars and taverns were looked at specifically due to their affiliation with a suspect, a victim, and a chance opportunity that may not have happened if the location was different. Their research used routine activities theory to link crime to specific establishments in a city. Routine activities theory could also work for establishments like stores in which delinquents may visit. An establishment's acquired environment can further increase the probability that crime will occur and that the individuals who have a presence in that certain environment have previously been or will be associated with crime. Crime and the circumstances of where or when it occurs shapes not only a criminal's career, but the reputation or mark on a specific place.

DATA

With the occurrence of a disproportionate amount of crimes in a certain location comes the term "hot spots." A hot spot is a group of incidents that are clustered together. Data collected from the Rock Hill Police Department Crime Mapping Division allows conclusions to be drawn as to specifically what types of crimes are being committed and where geographically. The articles discussed previously all present the theme that crime is a product of many dimensions of society being poorly affected in some type of way; whether

that be socially, economically, environmentally, or otherwise. Previous research on the topic of crime over the life course lacks a broad overview of an adolescent's life and the criminal activities they engage in that could potentially signal the initiation of a criminal career. Many factors that make up the broad overview of an adolescent's life were examined in this study. Another unique trait of this study is that it was longitudinal, so criminal activities over the life course of an individual were studied. With regards to crime mapping, this study aims to use the geographic location of adolescents to gain insight as to what environmental factors may influence them to offend. We predicted strong, positive correlations, main effects, and interactions for the variables of gender, race, social class, place of residence, and birth year.

METHODS

Participants

Subjects were studied from a population of 10-17 year olds who were suspects in Rock Hill, SC according to the Rock Hill Police Department. This was a longitudinal cohort study. Data was broken up into three waves with Wave One beginning in 2003-2004, and subjects being ages 10-13. Wave Two encompassed the years 2005-2006, in which subjects were between the ages of 12-15. Lastly, in Wave Three, subjects were between the ages of 14-17 during the years 2007-2008. The majority of the data focused on black and white subjects since there was minimal data on individuals of other racial classifications. Subjects were coded according to gender and race, with females being coded as "0," males as "1," and Whites coded as "0," Blacks as "1."

The other key variables were based on residence in particular areas. Not living in a hotspot was coded as "0," while living in a hotspot was coded as "1." Not living in a gang area was coded as "0," while living in a gang area was coded as "1." Finally, living in a single dwelling was coded as "0," while living in an apartment was coded as "1."

The dependent variable was an examination of offending over different waves and patterns across these waves. Patterns of offending were coded, with Wave One only

coded as “1,” Wave One and Two only coded as “2,” Wave One and Three only coded as “3,” and Wave One, Two, and Three only coded as “4.”

Waves	Black Males	White Males	Black Females	White Females	Total
One only	84	57	38	18	197
One and Two only	17	10	13	3	43
One and Three only	28	17	14	4	63
One, Two, and Three	50	11	13	6	80
Total	179	95	78	31	383

Table 1-1 indicates the race and gender of the juveniles suspected of criminal offenses, as well as the number of times they offended in a given time period, further indicated by the category waves.

PROCEDURES

Two different forms of statistical analysis were utilized, and those were Log linear analysis and chi-squares test. Both Log linear analysis and chi-squares test were used because the study dealt with dichotomous variables, (0, 1) or (yes, no), and because the study wanted to examine variables that could predict offending. As noted above, independent variables examined across the different waves were gender, race, residents in gang areas, residents in hotspot, and residents in single dwelling or apartment.

RESULTS

Log Linear Analysis was run first with minimal findings. Gender was the only variable that had some significance using Log Linear Analysis. Wave One, Two, and Three only was the only wave that showed gender predicted

offending. There was marginal significance for men offending in all three waves, $\chi^2 (1) = 3.72$, $p = 0.054$. These results showed that men were more likely to offend across all waves. A chi squares test was also run and results were examined by wave.

For Wave One and Two only, there was no significant association between housing in a single dwelling or apartment, hotspot, gang area, race, gender and offending. Wave One and Three only saw similar insignificant associations between the above mentioned variables and offending as well. In examining Wave One, Two, and Three, there was no significant association between housing and offending, $\chi^2 (1) = 0.29$, $p \leq .6$ but $p \geq 0.05$. ***There was a significant association between hotspot status and offending, $\chi^2 (1) = 6.42$, $p = 0.011$. There was also a significant association between gang area and offending, $\chi^2 (1) = 7.53$, $p = 0.006$. Race and offending were found to be significantly associated with one another, $\chi^2 (1) = 7.26$, $p = 0.007$.*** There was, however, no significant association between gender and offending, $\chi^2 (1) = 0.63$, $p \leq 0.5$ but $p \geq 0.05$. Results showed that the variables hotspot residence, gang area, and race were more likely to predict offending across all three waves, while housing and gender were not.

Chi-Square Tests^a

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.720 ^b	1	.054		
Continuity Correction ^c	2.748	1	.097		
Likelihood Ratio	3.548	1	.060		
Fisher's Exact Test				.063	.051
Linear-by-Linear Association	3.678	1	.055		
N of Valid Cases	88				

a. Gender = Men

Table 1-2 indicates the marginal significance found for men offending in all three waves.

	Yes	No	Yes	No	Yes	No
Wave 1 & 2	23.1% (12)	16.5% (31)	21.4% (15)	16.5% (28)	22.1% (15)	16.3% (28)
Wave 1 & 3	24.5% (13)	24.2% (50)	24.7% (18)	24.1% (45)	27.4% (20)	23.0% (43)
Wave 1, 2, 3	25.9% (14)	29.6% (66)	39.6%* (36)	23.7% (44)	39.1%* (34)	24.2% (46)

Table 1-3 indicates a Chi Squares Relationship between Predictors and Percentage of Subjects who Offended in Each Wave.

DISCUSSION AND CONCLUSION

The present study examined variables that could potentially be associated with early delinquency, continued delinquency, and recidivism. The issue of which variables were associated with juvenile delinquency was addressed by the selection and examination of the variables race, gender, gang areas, hot spots and single dwelling or apartment.

Since subjects were chosen solely based on whether or not they had been a suspect in a crime, it was a weakness in this study. This was a weakness in the study because the criteria in which subjects were chosen failed to obtain a control group. In addition to how the subjects were chosen, another potential weakness of this

study was the small sample size, 383 subjects. For example, there were zero white women who

had offended in the second wave, lived in a single dwelling, lived in a gang area, but did not live in a hotspot. An additional weakness of this study was that there was no control group to compare with offenders. Without a control group, differences between delinquents and nondelinquents could not be examined. The data that was collected exhibited offending patterns of subjects, but the data cannot establish whether or not the subject desisted from crime, died, or moved away. Since this data was public, there were limitations as to what information, like mental state, was available about the subject.

While this study had a number of weaknesses, it also contained a number of strengths. Since this study was longitudinal, there was a greater amount of information that could be examined and thus used to support the findings. The data that was observed was official data obtained from the Rock Hill Police Department, so that was another advantage of this study. Another strength of this study was that the data showed variables that are associated with the continuation of offending.

The results of this study show that subjects who offend only in a maximum of two Waves, Waves One and Two or One and Three, do not have significant associations with the dependent variables studied. This study does, however, show that subjects who offended in Waves One, Two, and Three have significant associations with all of the independent variables with the exception of gender and housing. Previous literature had not shown associations in delinquency longitudinally with the combination of race, gender, gang areas, hot spots and housing as variables.

FUTURE STUDIES

Future research should contain a control group when examining longitudinal data of delinquents. In their study of institutionalized delinquent boys in Massachusetts, Glueck and Glueck (1950) matched a sample of delinquents and nondelinquents based on age, race, neighborhood characteristics, and intelligence. Their method of studying delinquency should be modeled in order to properly distinguish factors that predict offending in Rock Hill, SC specifically. Future research should examine social class as well as factors relating to time of offense committed and delinquency. Current research examined only participation and duration of juvenile delinquency, so future research will examine frequency and seriousness as additional dimensions of a criminal career.

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