EXPLAINING CRIME RATES: IT'S NOT THAT SIMPLE:

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Introduction

Crime rates in major metropolitan areas across the United States vary widely. This is particularly the case for property crime rates. For example, property crime rates in New York City are less than half those in Chicago, two cities with a relatively similar population (U.S. Census Bureau 2000). How do we explain variations in property crime rates across major metropolitan areas of the United States?

For the purposes of this paper, major metropolitan areas in the United States will be those defined as Standard Metropolitan Statistical Areas (SMSA's) as of June 30, 1999. Twenty-five metropolitan areas were chosen for this paper and are listed in Appendix A. Property crime rates are determined by using the Uniform Crime Reports (UCR's) released by the Federal Bureau of Investigation on an annual basis. Uniform crime reports are gathered from law enforcement agencies in major metropolitan areas monthly and reported to the FBI. Property crimes are reported as Part I offenses to the FBI and include robbery, larceny-theft and motor vehicle theft. Property crime rates are taken from the 1992-2000 UCR's.

Variations in property crime rates significantly affect how a community views particular crimes and the significance of those crimes. One community may focus more attention on property crimes while another may be more rigid in punishing prostitution. In attempting to explain variation in property crime rates, we are endeavoring to understand why some communities focus their attention on certain crimes. This determination of crimes contributes significantly to the crime rate in any given community, which in turn affects the stableness of that community. Areas, which have higher property crime rates, are undeniably less attractive. In an age where the inner city is falling far behind, it is important that we begin to delve deeper beneath the surface and attempt to determine the true causes of inner-city decline.

Clearly, the level of attention devoted to a particular crime by law enforcement agencies affects the crime rate. Therefore, understanding how a given community determines which crimes will be considered significant is essential to solving the question before us today. In addition, understanding the role the media plays in this equation will help to clarify if property crime rates do essentially vary widely, or if in actuality it is the attention, which is placed upon particular crimes and metropolitan areas which creates higher or lower crime rates. This paper will attempt to explain variations in property crime rates across major metropolitan areas as a result of population density and resulting media attention to crime.

The Debate

There are four theories explaining variation in crime rates: the class distinction theory, the culture of poverty theory, the demographic theory and the welfare theory respectively. The class distinction theory begins with the premise that social recognition of deviance is essential to an understanding of the differences in crime reports (Black). Different metropolitan areas report, and respond to crimes differently. This theory suggests that class distinction as well as the role of both the offender and the complainant contribute to varying crime rates (Black). Crimes, which are considered to be deviant behavior in one city, may not be considered so in another city.

Several factors contribute to the likelihood of a crime being reported. These include the amount of relational distance between the offender and the complainant, the complainant's role in regard to the officers who are called to report the incident and the class of the complainant (Black). The social standing of the complainant is very important in determining if a crime is reported and further if it is taken seriously by the police. White-collar status seems to have a large impact on the number of crime reports actually filed. According to Black, blue-collar workers report fewer crimes and are less likely to believe that their reports will be taken seriously or lead to any police action.

Another essential component of this theory are the patterns of police behavior in so far as they affect which crimes are reported (Black). There are varying degrees of attention given to different crimes, by the police. Crime reports reflect the preferences of law enforcement officers in respect to which crimes they will report and which ones they

tend to let pass. The class distinction theory suggests that patterns of police behavior directly affect crime rates. This paper will support this assertion to the degree that it supports the idea that law enforcement agencies have varying preferences when it comes to reporting crime in so far as those preferences are shaped by the media.

The second theory is the culture of poverty theory. This theory has been used to explain the incidence of crime for decades. The culture of poverty suggests that crime is related to income and race (Blau & Blau). When controlling for race, many theorists find that income is a key indicator of violence in a given area. What this suggests is that areas that have a larger poor population will have a greater incidence of crime. The United States is well known for its metropolitan ghettos. Canada, in comparison has few to no ghettos. Comparing Canada's metropolitan areas with those in the United States, there is a much higher crime rate in the latter (Ouimet). Some political scientists suggest that the concentration of the poor in ghetto areas promotes a culture of poverty, which in turn leads to a higher incidence of crime. In effect, this theory suggests that the existence of ghettos generates crime and violence. Therefore, in metropolitan areas with significant ghetto areas, we should expect a higher rate of crime.

The third theory is the demographic theory. This theory suggests that demographic factors are the primary contributors to an area's crime rate. The theory is based on the idea that demographic factors such as age, sex and race affect criminal behavior (Messner). Men of a certain age and race tend to be over represented in crime statistics, therefore some theorists suggest that there must be a connection between people who are located together spatially and the social structures of the area which lead to a higher crime rate. A metropolitan area, which has deteriorated, will not provide the strong social structures needs to support its citizens. For example, densely populated metropolitan areas, which have a higher population of young African-American males, according to this theory, would have a higher crime rate.

The fourth and final theory, welfare theory, suggests that welfare payments have a direct effect on the crime rates in a given area. In particular, property crime rates seem to be largely affected by welfare payments (Zhang). The theory suggests that individuals who receive certain types of welfare payments have less idle time to spend on illegal activities, and therefore the crime rates in their areas are measurably lower. However,

this theory does not show a correlation between other types of crime and welfare payments. Most often the correlation between welfare payments and crime is among crimes of a lower classification, such as property crimes.

I will present a theory based upon several notions presented in this review of the academic debate. Initially, the link between density and crime rate, a much-discussed link, will be supported. However, the following research will attempt to show the link between previous density, as opposed to current density, and current crime rates. Research that suggests there is a correlation between media attention to crime and the public's perception of crime will also be paramount to the theory that I will develop.

Hypothesis & Theory

As many theorists have suggested, in some major metropolitan areas there seems to be a significant flight of people out of the inner city. Many theorists have attributed this flight to the incidence of crime in those inner areas. Marshall suggests that it may ultimately be lack of space, not density, which affects the movement of people from major metropolitan areas (Marshall). Density can be defined as population per square mile of the central city. As people are pushed closer and closer together, they begin to move out of the central city in search of suburbs and rural areas, which provide more space. While this is not a new concept, this paper will suggest that crime rates in fact are due to this flight, which in turn is attributable to the density of a major metropolitan area.

As people flee a city center, more attention is focused on that particular area. However, crime rates in major metropolitan areas are not push variables, as Marshall has defined them. As Marshall suggests, it is really the amount of media attention to crimes in a given area that leads to increased public focus. The media helps to shape patterns of police behavior by focusing attention on particular crimes. This media focus is heightened by the flight of people from inner areas. Media attention given to crimes raises public awareness, regardless of the actual incidence of those crimes. When the media increases public awareness, the public will exert pressure on law enforcement to be tougher on particular crimes. In effect, the public shapes which crimes the police will report and which ones will go unrecognized. Donald Black supports this idea when he suggests that social recognition of deviance is essential to what he refers to as the

production of crime rates. Police in certain areas may increase the number of patrols due to public pressure. The patterns of police reports will also shadow public pressure.

Actual reporting of misdemeanor crimes is therefore dependent on patterns of police behavior shaped by the public, who are informed by the media, which is influenced by flight from metropolitan areas due to changes in density. Ultimately when various law enforcement agencies focus their attention on different crimes, we see variations in misdemeanor crime rates across major metropolitan areas of the United States.

Data & Method

Data for the dependent variable, crime rates, were gathered for five years: 2000, 1998, 1996, 1994 and 1992. The crime rates are calculated per 100,000 population in each metropolitan statistical area. Property crime rates include burglary, larceny-theft and motor vehicle theft; they do not include arson. (The 2000 crime rates were taken from the index of crime by metropolitan statistical area reported in the Uniform Crime Reports and released by the United States Department of Justice. Property crime rates for 1992, 1994, 1996 and 1998 were also taken from the Crime in the United States reports.) Kansas City, Miami, St. Louis, Seattle and Tampa for the year 1994 were reported in the Statistical Abstract of the United States and released by the U.S. Census Bureau and Chicago; Kansas City and St. Louis for the years1996 and 1998 were also reported in the Statistical Abstract of the United States.

Data measuring the population density in each metropolitan area were collected for the years 1988, 1990, 1992, 1994, 1996, 1998 and 2000. The density of each metropolitan area was calculated using the population of each metropolitan area as estimated by the U.S. Census Bureau in Statistical Abstract of the United States for each year. The population for each year was then divided by the land area of each metropolitan area, as presented in the State and Metropolitan Area Data Book. All land areas are based upon the land area in square miles as of 1990, determined by the U.S. Census Bureau Geography Division.

Net population loss was measured using data collected from the U.S. Census Bureau for the years 2000, 1998, 1996, 1994, 1992 and 1990. 1988 population figures

for each metropolitan area were collected from the U.S. Census Bureau's Statistical Abstract of the United States for the year 1990. Subtracting the population of the previous year from the population of the current year and then dividing the difference by the population for the previous year calculated population loss. This number represents the net population loss for each metropolitan area for the given year. Criticisms of this method may be that it does not account for births and deaths, however these rates are very similar across each area therefore we should not expect any significant influence on the results.

Testing the affect of the media on variations in crime rates across metropolitan areas required a way to measure media attention to crime. I have chosen to operationalize this variable using data collected from a search for newspaper stories focusing on the police and crime rate in each of the twenty-five metropolitan areas. Using circulation rates for the top 100 newspapers in the country I identified the most read newspaper in each of the twenty-five metropolitan areas. The newspapers used are listed in Table 1 below.

Table 1: Media Attention to Crime

NEWS SOURCE	1990 -92	1992-94	1994-96	1996-98	1998-2000
Atlanta Journal & Constitution	59	133	149	189	150
Boston Globe	106	107	101	98	101
Chicago Sun Times	0	107	115	75	62
The Columbus Dispatch	0	27	49	29	45
The Denver Post	0	0	40	41	53
Houston Chronicle	30	120	124	101	75

Kansas City Star	0	0	61	67	46
Los Angeles Times	496	509	489	437	301
Miami Herald	2	7	3	5	5
Star Tribune	6	101	86	86	62
The New York Times	128	111	156	275	215
St. Louis Post Dispatch	129	131	124	100	109
San Diego Union Tribune	0	0	0	0	2
The San Francisco Chronicle	11	14	11	7	5
The Seattle Times	61	48	50	43	39
Washington Post	197	209	197	222	198
The Tampa Tribune	0	0	13	8	10
Philadelphia Enquirer	500	500	500	500	500
Pittsburgh Post-Gazette	127	194	286	273	246
Detroit Free Press	97	119	117	139	113
Portland Oregonian	160	111	178	230	190
Fort Wayne News Sentinel	33	36	81	84	54
Charlotte Observer	244	265	327	191	211
San Jose Mercury News	184	256	291	191	184
Greensboro News & Record	120	132	127	99	109

Data were collected in two-year increments: 1990-1992, 1992-1994, 1994-1996, 1996-1998 and 1998-2000. A search of headline and lead paragraph stories in each newspaper using the words police and crime rate yielded the number of stories published for each time period.

There are several tests that must be conducted in order to determine if there is a relationship between the dependent variable current crime and the three independent

variables of density, outflow and media attention. The purpose of these tests will be to reject what is called the null hypothesis. The null hypothesis says that there is no relationship between the dependent and independent variable. In this case it would say that there is no relationship between current crime (the dependent variable) and previous density, outflow and media attention (the independent variables). If the following tests can prove the null hypothesis wrong, then current crime is related to the three proposed independent variables.

Linear regression was used to determine the effects of the independent variables on the dependent variable. Using regression allows us to determine the relative strength of the correlation between the variables and measure the strength of the independent variables on variation in the dependent variable. Performing linear regressions on each of the three independent variables shows which has the strongest influence on current crime rates. The strength of the relationship between density in previous years and current crime will be measured by the standardized coefficient (B) of the independent variable. A larger B number indicates a stronger relative impact on the dependent variable of current crime. The independent variable with the largest B has the strongest affect on variation in the dependent variable. The R-square is a summary of the variation in the dependent variable attributed to all of the independent variables. The significance level of each of the standardized coefficients tells us the likelihood of reaching a slope (the amount of change in the dependent variable with a unit change in the independent variable) of that magnitude if the null hypothesis were true. This significance level should be below .05 in order to reject the null hypothesis.

RESULTS

I conducted a linear regression with current crime rates from the year 2000 as the dependent variable. Density for the year 2000 was used as the independent variable. Many theorists focus on the correlation between density and current crime rates, however I am attempting to explain current crime as affected by density in previous years. The results of the initial regression using current density, listed in Table 2, allows us to compare the differences between what is most often thought to increase crime and the theory that I propose. I also conducted a regression with density lagged two years from

current crime rates to examine if a higher statistical significance might be reached. The results of this regression are also listed in Table 2 as density lag2.

Table 2: Impact of Density on Current Crime

Independent Variable	B (standardized coefficient)	Adjusted R Square	Significance
Current Density 2000	-.189	.027	.046
Density lag3	-.176	.022	.065
Density lag2	-.191	.028	.043

Dependent variable: Current crime 2000

The model I am attempting to formulate utilizes current crime as a result of previous density. Therefore, I next performed a regression using current crime as the dependent variable and density with a four-year lag as the independent variable. This means current crime rates in 2000 are regressed with 1996 density figures, 1999 crime rates with 1995 density and so forth for a ten-year period. Lagging a variable allows us to see if it will affect other variables in a linear relationship across time. The results of this regression are listed in Table 2 as density lag3. In examining the standardized coefficients in Table 2, we can see that density lag2 has the largest relative impact on current crime rates. The significance of the B is .043, lower than the .05 necessary to reject the null hypothesis. The adjusted R square of density lag2 tells us that this particular independent variable accounts for 2.8% of the variance in current crime. Therefore, although the B is statistically significant, there are other variables that account for 97.2% of the variance in current crime rates. The results of this test show that density lag2 is a better indicator of current crime than current density; something which goes against previous suggestions.

This model builds on previous models not only because it attempts to show a correlation between density in previous years and current crime rates, but also because it includes the affect of population loss and media influence on the public as well. Therefore, linear regressions including these variables are also conducted. Newspaper

data were calculated for a two-year lag from current crime to determine the effect of previous reporting on current crime rates. A regression with current crime in 2000 as the dependent variable and newspaper data from 1998-2000 was performed to test the relationship between media attention in previous years to current crime rates. The results of this regression are listed in Table 3 as media lag1.

Table 3: Impact of Media Attention on Current Crime

Independent Variable	Constant	B	Standardized Coefficient	Adj. R Square	Significance of Media Attention
Media Lag1	5735.640	-4.419	-.281	.069	.005

Dependent variable: Current crime 2000

Media attention, in this regression accounts for 6.9% of the variation in the dependent variable current crime, as shown in the column labeled Adjusted R Square. The significance of media attention on current crime is .005, much less than the .05 necessary to reject the null hypothesis. The slope of the regression equation, -4.419 can be seen in the column labeled B. The constant in the second column is the point of interception on the y-axis. With this number we can create the following equation to show the influence of media attention on a metropolitan area's current crime rate:

current crime = 5735.640 + (Media x -4.419)

The theory I propose suggests that population loss, caused by high density, affects media attention. As we can see from the results, there is a significant correlation between media attention to crime and current crime rates.

The next test measures population loss and its affect on current crime rates. Population loss, with a four-year lag from current crime is represented as outflow lag 2 in Table 4. Outflow with a smaller lag of two years from current crime is represented as outflow lag1.

Table 4: Impact of Population Loss on Current Crime

Independent Variable	B (standardized coefficient)	Adjusted R Square	Significance
Outflow lag1	-.149	.013	.118
Outflow lag2	-.498	.097	.256

Dependent variable: Current crime 2000

As can be seen from the test results in table 4, outflow lag2 is not statistically significant given the very high significance level of .256. This tells us the likelihood of getting a B of -.498, if the null were true, is 25.6%. Therefore, we cannot reject the null hypothesis that there is no correlation between population loss, lagged four years, and current crime. Outflow lag1 has a greater significance level, .118, however it is still not high enough to reject the null hypothesis. This variable only explains 1.3% of the variation in current crime leaving 98.7% of the variation in current crime to be explained by other variables. The affect of population loss on current crime seems to be negligible.

In order to test if the theory I propose is reasonable, I conducted a linear regression with each of the three independent variables in the order in which I initially felt that they affect current crime rates most significantly. The order is as follows: Density lag3>Outflow lag 2>Media attention lag1>Current crime. Density is lagged four years behind current crime, outflow numbers represent the loss of population two years previous to current crime and media attention represents the two years up to current crime rates. The results of this test are listed below in Table 5 as model one.

Table 5: Model One

Independent Variables	B (standardized coefficient)	Significance of B	R Square of the Model
Density lag3	.600	.310	.410
Outflow lag2	-.326	.571	.410
Media attention lag1	-.198	.717	.410

Dependent variable: Current crime 2000

The initial results of model one do not appear to be statistically significant. None of the three independent variables are significant enough to reject the null hypothesis. However, the adjusted R square of the model is .410 that tells us that the model explains 41% of the variation in the dependent variable of current crime. We can also see from the B value that Density lag3 has a greater affect on current crime, while holding the other two variables constant.

Table 6 represents my developing theory that current crime is influenced more by density with a two-year lag and the resulting outflow in the following two years, and their affect on media attention.

Table 6: Model Two

Independent Variables	B (standardized coefficient)	Significance of B	R Square of the Model
Density lag2	-.131	.189	.079
Outflow lag1	-.127	.198	.079

Dependent variable: Current crime 2000

The adjusted R Square of this model is lower than in model one. In the second model 7.9% of the variation in current crime rates can be attributed to the three independent

variables. The statistical significance of the B-value of media attention is much higher. The value .018 tells us that there is only a 1.8% chance of attaining a B-value of this degree if the null hypothesis were true. However, the significance levels of both density lag2 and outflow lag1 are much too high to reject the null hypothesis.

CONCLUSION

The statistical significance of the independent variable media attention is by far the most apparent. In initial tests, the affect of media attention was extremely significant as shown in Table 3. It is safe to say that there is a strong relationship between the amount of attention the media devotes to crime and its affect on crime rates. As the amount of media attention to crime increases, crime rates decrease. This finding goes to support the suggestion previously made that media attention helps to shape the publics perception of crime.

The original density data, lagged four years from current crime are not as significant as was hoped. Density lagged two years from current crime results in a higher significance. Density lag2 appears to have a greater impact on current crime than even current density when tested in a bivariate regression. However, in the multi-variate regression, using all three independent variables and density lag3, the amount of variation attributable to the independent variables is much higher. These findings also support the theory presented that it is previous density which affects current crime.

It appears that the model first proposed in this paper, if adjusted, may possibly explain variations in property crime rates across major metropolitan areas of the United States. The adjusted model, presented in Table 6, uses density lag2 instead of density lag3. The amount of variation in current crime explained by density, outflow and media attention to crime decreases in the second model.

FUTURE IMPLICATIONS

Certain metropolitan areas of the United States have much higher property crime rates. In the past, scholars have attributed these variations to many different factors including demographics and current density. In this paper I have tested numerous theories, which suggest that current density affects current crime rates. The empirical theory is that high current density creates high crime. However, I have suggested that it

is actually previous high density, which leads to population loss and increased media attention that affects current crime rates. I have found that there is a stronger statistical relationship between density lagged two years behind current crime and crime rates than between current density and crime. The affect of population loss on variations in property crime rates across major metropolitan areas of the United States appears to be negligible, however it remains to be seen if changes in the year's data are utilized would increase its significance. The most important implication of this paper is that the media has a very large influence on current crime. Through its reporting on the crime rate and police action, the media shapes the perceptions of the public and in turn the local crime rate. The public affects which crimes are reported and which crimes are punished more often. It is important to realize the power of the media in shaping this data because most often people attribute crime rates to a certain area or type of people when in fact the media is the variable which has a strong relative impact on current crime rates.

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APPENDIX A: METROPOLIAN AREAS CHOSEN FOR STUDY

Atlanta, GA
Boston, MS
Charlotte, NC
Chicago, IL
Columbus, OH
Denver, CO
Detroit, MI
Fort Wayne, IN
Greensboro, NC
Houston, TX
Kansas City, MO
Los Angeles, CA
Miami, FL
Minneapolis, MN
New York City, NY
Philadelphia, PA
Pittsburgh, PA
Portland, OR
Saint Louis, MO
San Diego, CA

San Francisco, CA
San Jose, CA
Seattle, OR
Tampa, FL

Washington D.C.