The Power of Perception:

Beliefs about Crime in Rochester, New York

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"It's all in the mind." – George Harrison

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This paper provides an analysis of perceptions of crime, specifically murder levels, in Rochester, New York. It is based on a survey of 295 attendees at Rochester Institute of Technology's Innovation Festival in May, 2013. The major findings are as follows:

1. Most respondents significantly underestimated the number of murders occurring in the United States as a whole.
2. Respondents dramatically overestimated the number of murders occurring in Rochester.
3. There was a strong tendency for respondents to see Rochester as having a much higher proportion of all US murders than is actually true.
4. Despite the tendency to overestimate the actual number of murders in Rochester, when compared to other cities, respondents incorrectly ranked Rochester much lower than the other cities.
5. Overall, people seemed to overestimate danger in their most familiar city but saw other cities as even more dangerous. This is suggestive about both the power of perceptions about crime and the potential value of improved communication about the topic.

Understanding public perceptions of crime is important because they can exert important influences over attitudes and behaviors and have significant implications in people's private and political lives. At Rochester Institute of Technology's annual Imagine RIT festival we distributed

brief surveys attempting to capture public perceptions of murder levels. In our analysis, we found that respondents' perceptions of murder were often inaccurate. Overall, respondents overestimated the number of murders which occurred in Rochester, but they underestimated the number of murders that took place throughout the entire US. Despite overestimating the number of murders in Rochester, when asked to compare Rochester to other specific cities, respondents ranked Rochester as having one of the lowest murder rates compared to other US and international cities. These seemingly contradictory findings highlight the difficulty people have in making sense of the information about crime to which they are routinely exposed through the media.

We asked respondents to give a raw estimate of the number of murders that they think took place in Rochester in 2012. Almost 70% of respondents overestimated the actual number of murders in Rochester by twenty percent or more, while just 15% of participants underestimated murders in Rochester by at least twenty percent. The opposite situation took place when respondents estimated the raw number of murders which occurred in the US in 2012. Only a third of respondents overestimated the number of murders throughout the US by twenty percent or more. Sixty-two percent of participants underestimated the number of murders in the US by at least twenty percent, and only 5% of respondents estimated within twenty percent of the actual total of US murders. Rochester was ranked as having one of the lowest murder rates when respondents ranked the city against nine other US and international cities. Rochester was ranked as having the second lowest murder rate by almost 28% of respondents. Over 70% of participants ranked Rochester has having one of the three lowest murder rates out of the ten cities.

The Context

Crime, particularly violent crime, is a topic which is embedded in our television, news media, and popular culture. As the general public we digest a vast amount of information pertaining to violent crime, but how much of this is accurate? How much do these portrayals of violent crime shape our perceptions? And how much do our perceptions of crime differ from actual crime occurrences? This is an important question as public policy is often shaped around the views of the public. Additionally, resources are often devoted to the area which is identified as having the most need. Arguably, it is important that citizens in a country have an accurate perception of crime in their nation, but even more essential that residents have an accurate portrait of crime in their community. In this paper, we will examine public perceptions of murder in Rochester, New York.

Past studies have found that survey respondents have tended to vastly overestimate murder in the United States. One study, which captured college undergraduate criminal justice students' knowledge of murder in the US, found that almost half of the students thought that over 250,000 murders were committed each year in the US (Vandiver & Giacopassi, 1997). In the year that the survey was based on, the US had a total of 23,305 murders. The students clearly did not have an accurate portrait of murder across the country.

Methodology

We are interested in capturing public perceptions of murder, the most serious violent crime, especially as it relates to Rochester. In order to gather data, we used the FBI's Uniform Crime Report definition of murder, "murder and nonnegligent manslaughter as the willful (nonnegligent) killing of one human being by another" (Federal Bureau of Investigaions, 2011).

We wanted to create a brief survey with a limited number of questions. This way we could restrict the amount of time it took to complete the survey and as a result attract more participants. We asked respondents to estimate the number of murders that occurred in the United States as well as the city of Rochester in 2012. We then created a section where the respondent would rank Rochester against other randomly generated international and US cities. In addition, we included basic demographic questions such as age, gender, and hometown[1]. Using these variables we hoped to compare how perceptions would vary based on demographic characteristics. For example, how do Rochester residents perceive crime in their city compared to how non-residents view crime in Rochester? How do males view murder compared to females? And in what way do answers vary across age? We administered this survey at Rochester Institute of Technology's annual Imagine RIT event. This event typically attracts not only students, but it is also a community event which many local and out of town families attend. We asked all visitors of our exhibit to participate in the survey.

We asked respondents to provide a raw number for their estimates of both US and Rochester murders in 2012. In order to examine how respondents believed that Rochester compared to other cities around the country, we asked that they rank the cities against each other. We used a total of nine cities (excluding Rochester) that we were interested in for comparison. These included six US cities and three international cities; these cities were chosen based on how recognizable they would be for respondents. We also wanted to be sure that the group of selected cities would have murder rates that were both higher and lower than that of Rochester. When asking respondents to rank the cities, we used the language, "*Please rank these cities from lowest (1) to highest (5) based on the* percent *of each city's population that you think is murdered in a year*." By using this phrase, we hoped to capture the idea of murder *rate*, without actually using

[1] An example of the survey is made available in the appendix of this paper.

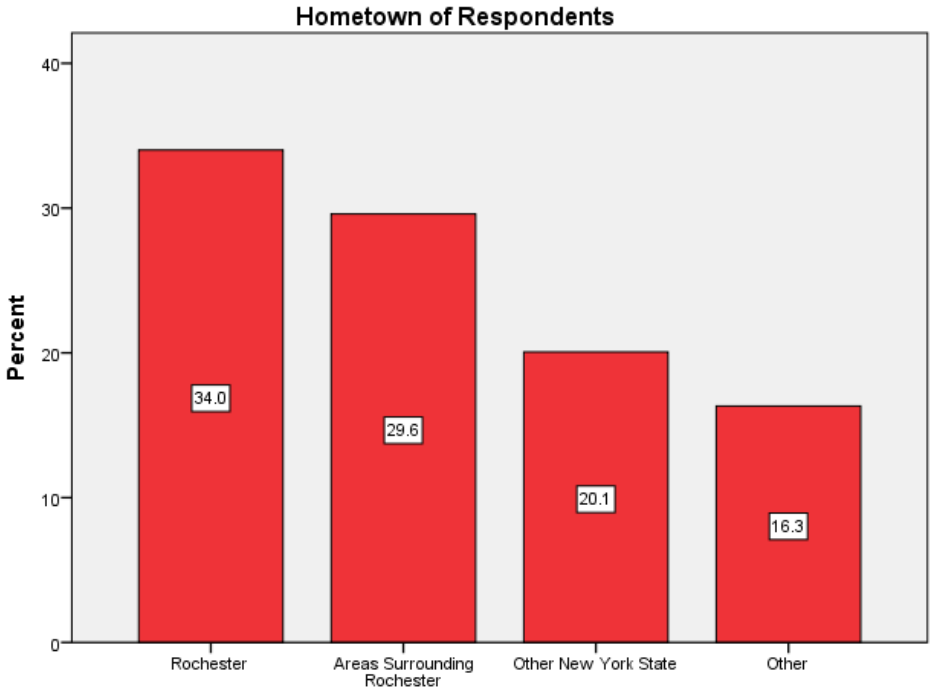
the word "rate," thus confusing respondents. Most often, when comparing large metropolitan areas, rates are calculated per 100,000 people. The formula used here is [(number of homicides/population) x 100,000]. This way data can be analyzed between cities in a way that is practical and understandable. We also wanted to avoid giving the respondents the idea that the city's population size would influence what ranking they might give. We did not provide respondents with any background information, this way their responses were based only on their perceptions (Vandiver & Giacopassi, 1997).

We used several statistical measures to examine the rank that each city was given by the respondents. In order for this measure to be legitimate, we needed a large enough sample size so that we could meaningfully average the ranks. To keep the survey brief, we did not include all cities on every survey, instead we asked respondents to rank only five cities per survey. Since Rochester was to be on each survey, we had nine other cities which we needed to have included in our combinations. Each set would have four randomly generated cities out of the nine total possibilities. Using combination calculations, in which order and repetition were both not allowed, it was determined that we would need 126 different versions of the survey in order that each city would occur an equal number of times.[2] We utilized a randomizing tool in order to ensure that each of the nine cities would be evenly distributed across all surveys. To avoid bias due to placement, Rochester was randomly assigned a location in the cities listed on each survey. Selecting cities from the larger list meant that, assuming a large enough sample size, we could calculate average rankings against all possible combinations of cities. This meant we could compare Rochester against all nine cities even though respondents ranked only five of them.

[2] Combination Formula: [n!/(n-r)!(r)!]
Where n=9 and r=4

Results

We received a total of 298 surveys and 295 surveys that were usable for at least some type of analysis. We had to discard 3 surveys because they did not offer any meaningful information. In a few cases, we were able to use some of the information provided by the respondents, but we were unable to use their answers for other questions. For this reason, the sample size may differ for each response set. Participants ranged from teenagers to 84 years old, and the mean of all ages was 37.9 years. Males made up 53% of all respondents, females accounted for 46%, and one respondent did not indicate their gender. We also asked participants to indicate which town or city they lived in.



We divided the locations into four different categories: Rochester, areas surrounding Rochester, other New York State, and other. One respondent did not provide their hometown,

which gave us a sample size of 294. Rochester residents made up the largest proportion of our population. All respondents who were placed in the "other category" were from other US states.

United States

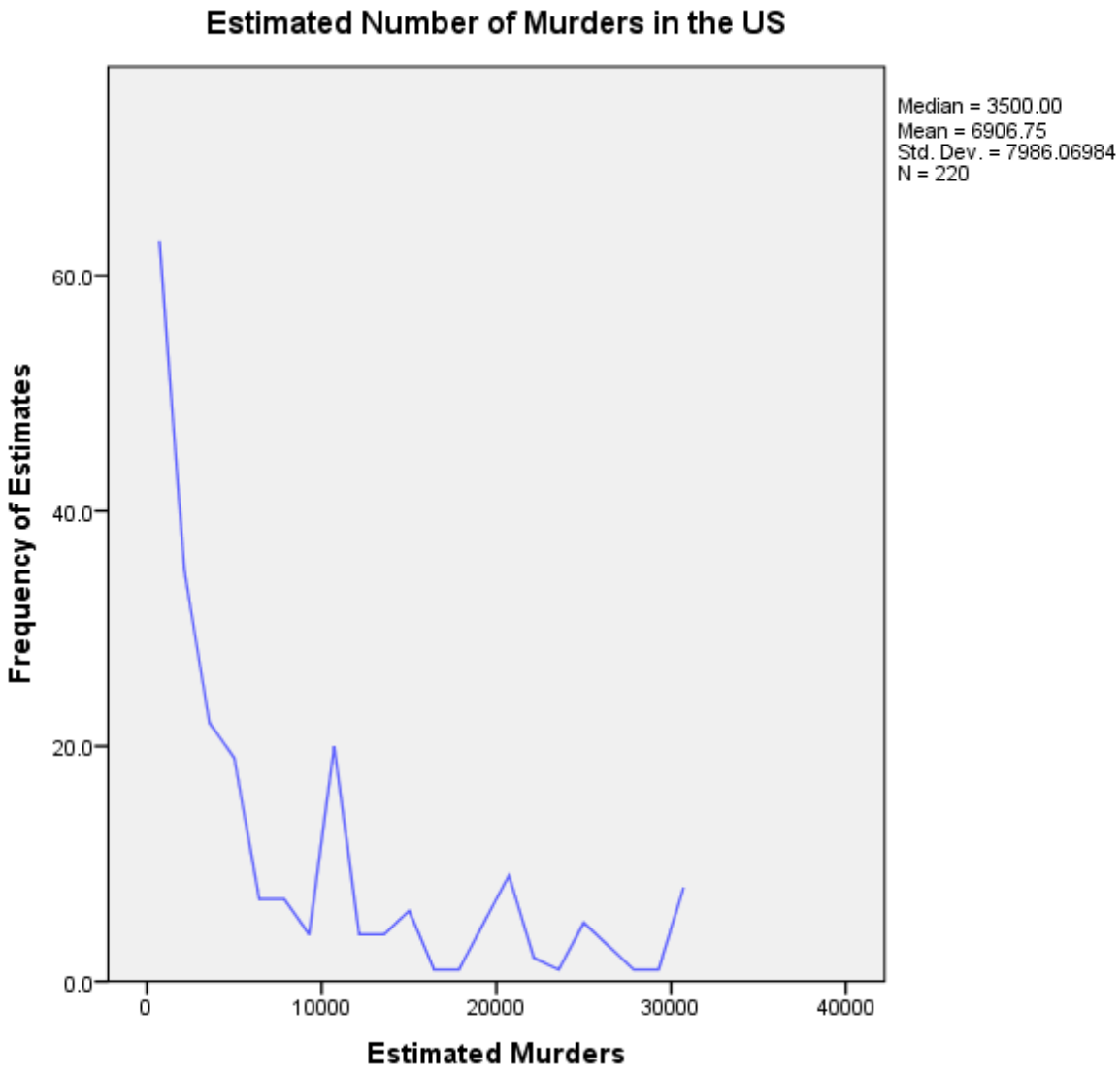
The full UCR crime publication for 2012 is not yet available at the time of the completion of this paper. While we are unable to give the exact number of murders for the US in 2012, we can be fairly confident as to the range that this number may fall into. In 2011, there were 14,612 murders (Federal Bureau of Investigations, 2012). Prior to 2011, murders in the US steadily declined since 2006. It is our estimate that the US probably experienced a similar number of murders as in 2011. For analysis in this paper, we will use the 2011 murder total when examining the US.

[3]

When including all 287 surveys which provided a response to this question, the mean estimate for US murders in 2012 was 14,130,776. Overall these estimates ranged from 20 to 3 billion. After eliminating extreme outliers, the mean estimate was 6,907, which is much lower

[3] (Federal Bureau of Investigations, 2012)

than the actual number of murders. Using the median (the number for which half the respondents estimate above and half below), respondents underestimated how many murders occurred in the US. Even when the median of 3,500 is multiplied by four, it is not close to the actual US murder total.



The US Census Bureau estimates that the US population in 2012 was 313,914,040 (United States Census Bureau, 2013). Using the respondents' estimated mean of 6,907 murders, the US would have had a murder rate of 2.2 per 100,000 people. Using the median, the US would

have a murder rate of 1.1 per 100,000. The actual US murder rate in 2011 was 4.7 per 100,000 people (Federal Bureau of Investigations, 2012). To put this into even more perspective, the highest murder rate in the world is in Honduras, with a rate of 82 per 100,000, next is El Salvador at 65 per 100,000, followed by the Ivory Coast at 51 per 100,000. Some of the lowest murder rates in the world belong to Australia at 1 per 100,000, Japan with a rate of .4 per 100,000, and Singapore at .3 per 100,000 (United Nations Office of Drugs and Crime, 2011).

Demographic Characteristics and US Murder Estimates

We were interested in examining whether the respondents' age or gender had any effect on their murder estimates.

Estimated Number of Murders in the US by Age of Survey Respondent						
	Age of Respondent in Years					
Estimated Number of Murders	Under 16	16-30	31-45	46-60	Over 60	Total
0-5,000	52.4%	46.9%	54.3%	46.8%	40.5%	47.4%
5,001-10,000	19.0%	12.4%	8.6%	15.2%	21.6%	14.4%
10,001-18,000	0.0%	5.3%	0.0%	8.9%	8.1%	5.6%
18,001-25,000	0.0%	6.2%	5.7%	6.3%	8.1%	6.0%
25,001-100,000	9.5%	14.2%	14.3%	13.9%	13.5%	13.7%
Over 100,000	19.0%	15.0%	17.1%	8.9%	8.1%	13.0%
Total	21	113	35	79	37	285
	100%	100%	100%	100%	100%	100%

Over 60% of all respondents underestimated how many murders took place in each year in the United States. Almost half believed that 5,000 or fewer murders occurred. In order to reach the US murder total of 14,612 in 2011, that estimate of 5,000 could almost be tripled. Regardless of age, the highest percentage of respondents in each age group estimated that

between 0-5,000 murders occurred in 2012. Of the 5.6% of respondents who accurately estimated between 10,001 and 18,000 murders, more than half were over 45 years of age. Of the 13% of respondents who thought that the US experienced over 100,000 murders, almost three-quarters were 45 years of age or younger. Across all ages, the majority of respondents underestimated the total number of murders, although it seems that younger respondents were more likely to vastly overestimate the number of murders than older respondents.

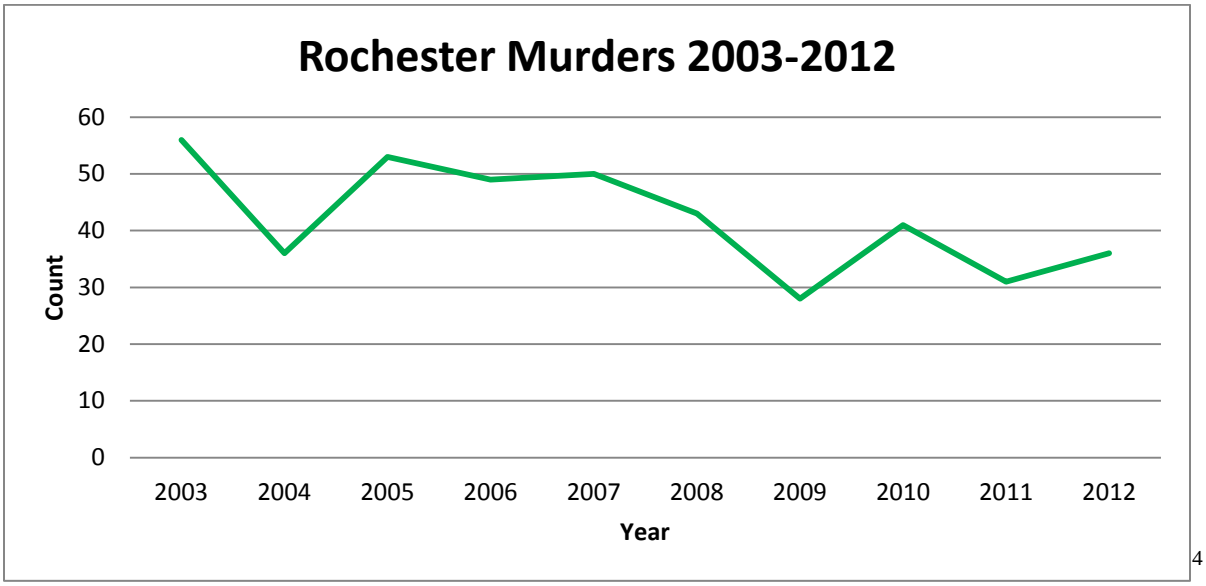
Regardless of gender, respondents were most likely to underestimate the number of murders in the US.

Estimated Number of Murders in the US by Gender of Survey Respondent			
	Gender of Respondent		
Estimated Number of Murders	Female	Male	Total
0-5,000	57.9%	38.6%	47.6%
5,001-10,000	14.3%	14.4%	14.3%
10,001-18,000	2.3%	8.5%	5.6%
18,001-25,000	4.5%	7.2%	5.9%
25,001-100,000	9.0%	17.6%	13.6%
Over 100,000	12.0%	13.7%	12.9%
Total	133	153	286
	100%	100%	100%

The largest proportion of both males and females believed that the US experienced between 0 and 5,000 murders in 2012. Almost 60% of all females also believe this to be true, along with almost 40% of all males. A larger percentage of males had a more accurate estimation, but both genders were least likely to estimate in the correct range. A similar percentage of males

and females believed that there were over 100,000 murders in the US. Overall, the largest percentage of females underestimated murders in the US, while males' estimates were more equally distributed across low and high estimates.

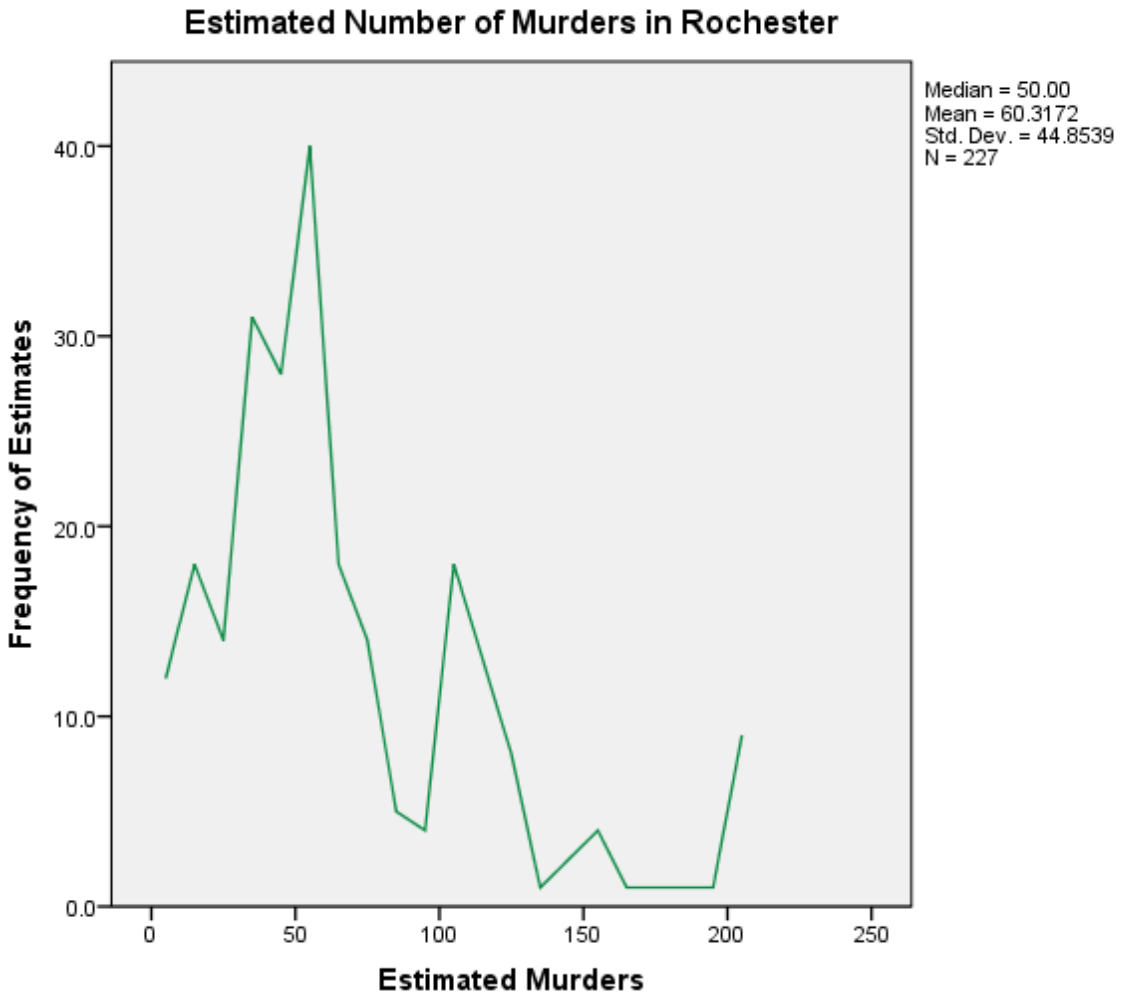
Rochester



[4]

In 2012, Rochester experienced a total of 36 murders (Division of Criminal Justice Statistics Office of Research and Performance, 2013). Using all of the surveys which provided a response, the mean estimate of murders in Rochester for 2012 was 5,978. Participants' responses ranged from 3 to 1.5 million. After eliminating outliers, the mean estimate became 60 murders, and the median was 50.

[4] (Division of Criminal Justice Statistics Office of Research and Performance, 2013)



In 2012, Rochester had a murder rate of 17.1 per 100,000 people. Using the estimated mean of 60 murders for 2012, Rochester would have had a murder rate of 28.5 murders per 100,000 people. When using the median of estimates, Rochester's murder rate would have been 23.7 per 100,000. For comparison, in 2012, Oakland's murder rate was 33.1 per 100,000, Tijuana, Mexico had a murder rate of 28.0, and Philadelphia had a murder rate of 21.5 (Galik, 2013; Leigh; Davis, 2013; Blumgart, 2013; United States Census Bureau, 2013). Camden, New Jersey had one of the nation's the highest murder rates at 86.7 per 100,000 people (Queally, 2013; United States

Census Bureau, 2013). Respondents drastically overestimated the number of murders that they believe occurred in Rochester.

Demographic Characteristics and Rochester Murder Estimates

Age and gender seemed to play a role in respondents' estimates of murder in Rochester.

Estimated Number of Murders in Rochester by Age of Survey Respondent						
	Age of Respondent in Years					
Estimated Number of Murders	Under 16	16-30	31-45	46-60	Over 60	Total
0-25	19.0%	16.8%	8.3%	15.0%	13.2%	14.9%
26-50	28.6%	18.6%	47.2%	32.5%	28.9%	28.1%
51-75	4.8%	12.4%	11.1%	25.0%	26.3%	17.0%
76-100	4.8%	5.3%	11.1%	10.0%	15.8%	8.7%
Over 100	42.9%	46.9%	22.2%	17.5%	15.8%	31.3%
Total	21	113	36	80	38	288
	100%	100%	100%	100%	100%	100%

Regardless of age, the largest proportion of respondents' thought that Rochester had over 100 murders. However, the second largest percentage of respondents did estimate closely to the actual number of murders. Respondents aged 30 years and younger were most likely to estimate that over 100 murders occurred in Rochester. Those respondents over the age of 30 were most likely to estimate quite closely to the correct number of murders. In this case it seems as though age may be a factor which affects perceptions of murder in Rochester.

The estimates of both genders seem to be similar.

Estimated Number of Murders in Rochester by Gender of Survey Respondent			
	Gender of Respondent		
Estimated Number of Murders	Female	Male	Total
0-25	14.9%	15.5%	15.2%
26-50	32.8%	23.9%	28.0%
51-75	11.9%	21.3%	17.0%
76-100	8.2%	9.0%	8.7%
Over 100	32.1%	30.3%	31.1%
Total	134	155	289
	100%	100%	100%

Almost one third of females and almost a quarter of males estimated closely to the number of murders in Rochester. For both males and females almost a third of respondents believed that Rochester experienced over 100 murders for the year. It is interesting that the most frequent estimates for each gender are the most accurate and the least accurate.

Rochester Residents' Estimates of Rochester Murders

Many Rochester residents reported a high estimate of the number of murders that occurred in the city in 2012.

Estimated Number of Murders in Rochester by Hometown of Respondent					
	Hometown of Respondent				
Estimated Number of Murders	Rochester	Areas Surrounding Rochester	Other New York State	Other	Total
0-25	12.0%	10.3%	16.9%	27.1%	15.0%
26-50	32.0%	35.6%	15.3%	18.8%	27.6%
51-75	15.0%	24.1%	13.6%	10.4%	16.7%
76-100	5.0%	6.9%	13.6%	12.5%	8.5%
Over 100	36.0%	23.0%	40.7%	31.3%	32.3%
Total	100	87	59	48	294
	100%	100%	100%	100%	100%

Using categories defined above, 56% of Rochester residents overestimated the number of murders in Rochester by at least 25. Thirty-six percent of all Rochester residents thought that the city experienced over 100 murders. Those living in the areas surrounding Rochester were most likely to estimate the number of murders correctly. Many residents of New York outside of the Rochester area also believed that Rochester had over 100 murders, and overall only 27.6% of all respondents estimated close to the correct number of murders. The largest percentage of respondents (32.3%) guessed that Rochester experienced over 100 murders.

Ratios of Estimated Rochester Murders

Based on respondents' mean estimates of murders, many participants seemed to have a skewed sense of the ratio between Rochester and US murders. Murders in Rochester were overestimated, while murders in the US were more often underestimated.

	Rochester	US	Ratio of Rochester Murders: US Murders
Mean of Estimated Murders	60	6,907	1:115
Actual Murders	36	14,612[5]	1:405.9

[5] 2011 US murder total (Federal Bureau of Investigations, 2012)

Using the respondents' mean estimates of both US and Rochester murders which exclude extreme outliers, respondents believed that for every 115 murders which happened in the US, 1 would occur in Rochester. When utilizing the actual totals, for every murder in Rochester, 405.9 murders occur in the US. Respondents seemed to believe that Rochester accounted for a large proportion of all US murders, or .9% of all murders in the US. Rochester actually accounts for .25% of all murders in the US. Respondents thought that Rochester accounted for almost four times the amount of murders in the US than it actually does. New York City's 414 murders in 2012 accounted for less than 3% of all murders in the US. New York City had over eleven times as many murders as Rochester and accounted for fewer than 3% of all US murders. Similarly, Chicago's 506 murders made up 3.5% of the US murder total. Chicago had fourteen times the number of murders as Rochester. Together New York City and Chicago's 920 murders account for less than 6.5% of all US murders, while respondents believed that Rochester's 36 murders made up almost 1% of the US total.

Correlation Between Rochester and US Murder Estimates

After observing the many overestimates and underestimates given by respondents for both Rochester and US murder estimates, we became interested in examining whether a strong correlation existed between these two responses. Did those who tended to overestimate Rochester murders also overestimate US murders?

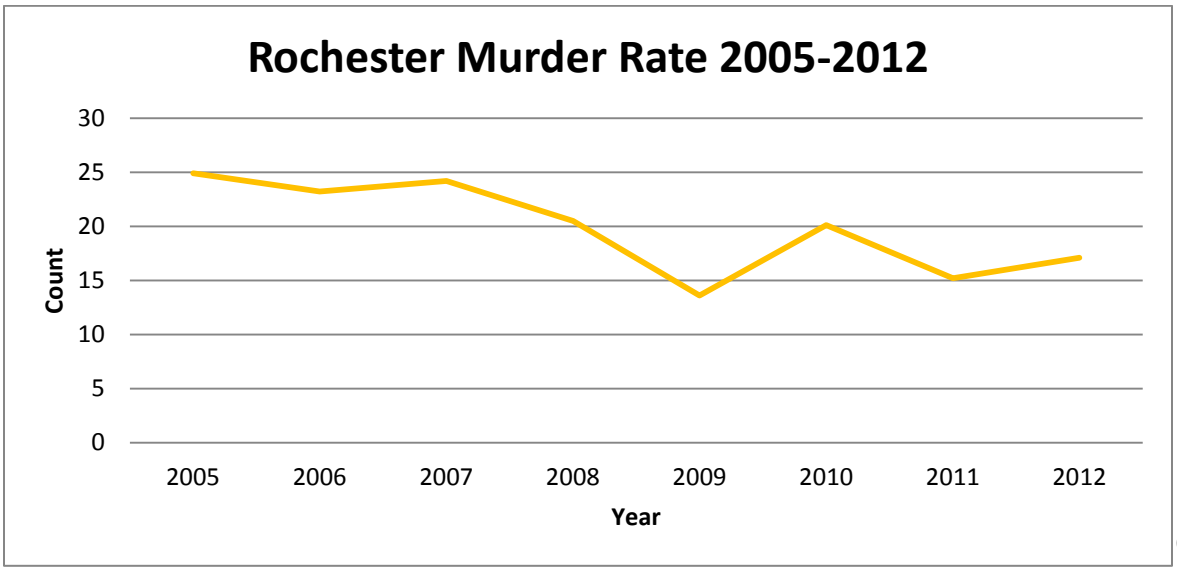
There was a correlation of .13 between those who ranked one variable high and the other variable low. This means that there is almost no relationship between how respondents estimated murders in the US compared to estimates of murder in Rochester. Correlation ranges from -1.00 to 1.00, with -1.00 being a perfect negative correlation, 1.00 being a perfect positive correlation,

and 0 meaning there is no relationship between the two variables. Many respondents both underestimated US murders and overestimated Rochester murders. Similarly, the reverse situation was also common enough as to limit any correlation between the two response sets.

City Comparisons

In this section of the paper we examine respondents' rankings of cities from lowest to highest in their rate of murders. These analyses showed substantial differences from the raw number estimates discussed above.

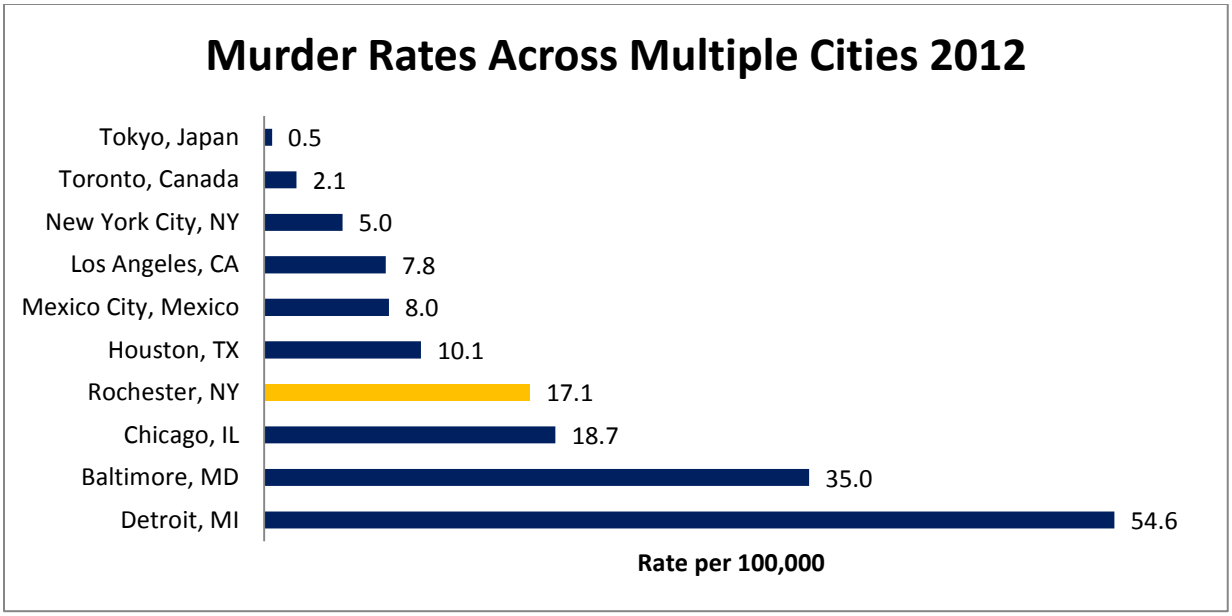
In 2012, Rochester had an estimated population of 210,855 (United States Census Bureau, 2013). The city experienced 36 murders, giving it a murder rate of 17.1 per 100,000 people.



[6]

It is hard to understand exactly what this means without comparison. This table presents the actual rankings and murder rates of the selected cities. The respondents were given four of these cities to rank in addition to Rochester.

[6] (Division of Criminal Justice Statistics Office of Research and Performance, 2013)



[7]

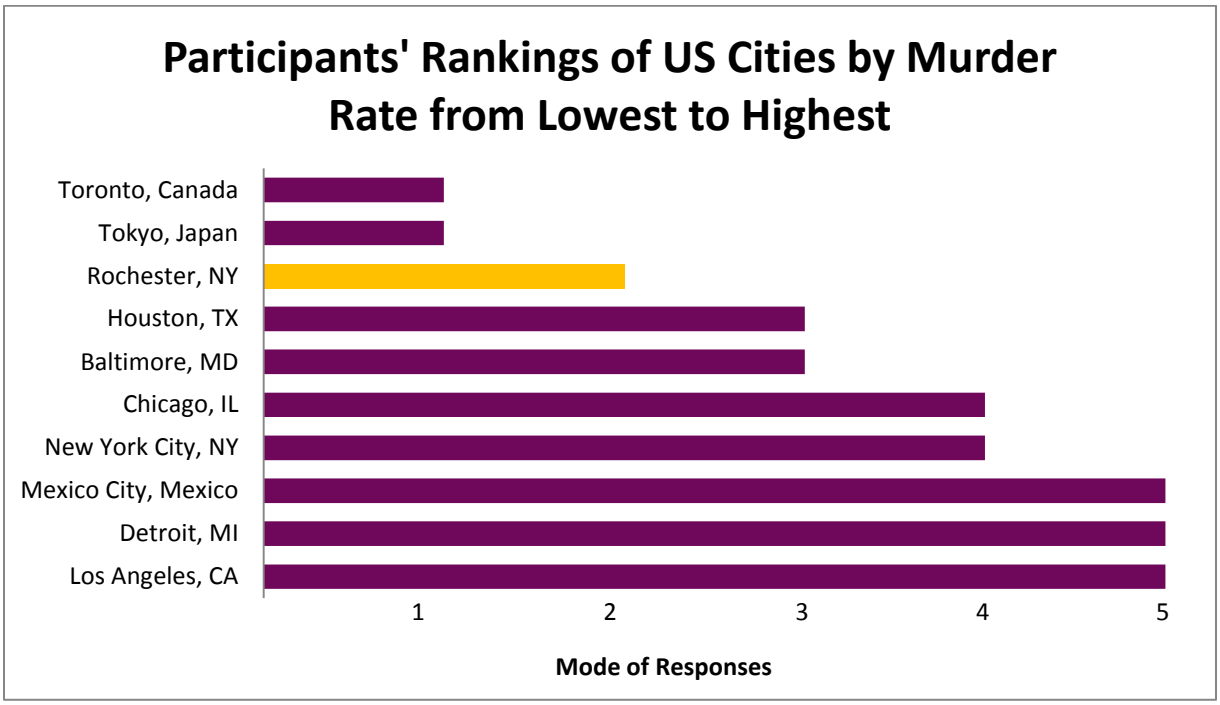
The table below represents the ranking of cities as determined by survey participants. Rochester appeared on all surveys, and we were able to use the data from 291 surveys. The remaining cities were ranked by varying numbers of respondents.[i] In order to calculate this ranking, we took the mean of all ranks that each city was given.

Actual Rankings	City	Respondents' Rankings
1	Tokyo, Japan	1
2	Toronto, Canada	3
3	New York City, NY	6
4	Los Angeles, CA	7
5	Mexico City, Mexico	10
6	Houston, TX	5
7	Rochester, NY	1
8	Chicago, IL	9
9	Baltimore, MD	4
10	Detroit, MI	8

According to respondents, Rochester is tied with Tokyo as the city with the lowest murder rate. Respondents seemed to have more of an accurate perception of murder in cities such as Tokyo,

[7] (McClelland, 2012), (Pagliaro, 2012), (Pagliaro, 2012), (Kelleher & Allen, 2012), (Knowles, 2013), (McClelland, 2012), (Turner, 2012), (Division of Criminal Justice Statistics Office of Research and Performance, 2013), (Galik, 2013), (United States Census Bureau, 2013)

Toronto, Houston, Detroit, and Chicago. However, Rochester and Baltimore were both underestimated, while Los Angeles, Mexico City, and New York City were all overestimated in terms of murder rate.



By using the mode to compare the respondent's rankings, Rochester is again ranked as one of the lowest cities. It was most often ranked as the second lowest by those who participated in the survey. Again, respondents place New York City, Mexico City, and Los Angeles in a much higher position than their actual rank.

Hometown and Rochester Murders

We were interested in examining how Rochester residents perceived murder in their own community. In order to do this, we examined the rank that each city was given based on the respondents' residence. Rochester residents accounted for the largest proportion of respondents at 33.6%. Those who live in the areas surrounding Rochester accounted for 29.8%, those residing

in the remainder of New York State made up 20.4%, and all others represented 16.3% of all respondents.

Rochester Ranking by Hometown of Respondent					
	Hometown of Respondent				
Rochester Rank	Rochester	Areas Surrounding Rochester	Other New York State	Other	Total
1	25.8%	14.0%	28.8%	19.1%	21.8%
2	21.6%	27.9%	32.2%	31.9%	27.3%
3	24.7%	27.9%	18.6%	8.5%	21.8%
4	16.5%	16.3%	11.9%	23.4%	16.6%
5	11.3%	14.0%	8.5%	17.0%	12.5%
Total	97	86	59	47	289
	100%	100%	100%	100%	100%

This table shows that almost half of all participants believed that Rochester had one of the two lowest murder rates of the cities that they ranked, and almost 75% of Rochester residents ranked the city as having one of the three lowest murder rates. Just over a quarter of those who ranked Rochester in the number one position were residents of the city, and well over a quarter of those who ranked Rochester as having the lowest murder rate were from elsewhere in the state. Of those who ranked Rochester as second lowest in terms of murder rate, most lived outside of the Rochester area. Fewer respondents thought that Rochester had one of the highest murder rates. Fewer than 30% of all respondents thought that Rochester had one of the two highest murder rates. Very few participants from New York outside of the Rochester area ranked Rochester in the two highest positions. The group which had the largest percentage of its participants rank Rochester as having one of the two highest murder rates did not even reside in New York. Rochester has the seventh highest murder rate out of the selected ten cities. If a respondent happened to receive a survey containing the cities which have the five highest murder

rates, the lowest position Rochester could have would be two. Due to the randomization of the surveys, it is unlikely that this situation could have occurred more than a few times at most. It also happens that the three cities with murder rates higher than Rochester (Chicago, Baltimore, and Detroit), were the three cities which appeared the least amount of times throughout all of the surveys. In most surveys, Rochester probably should be ranked in the fourth, fifth, and even the third position.

It seems as though Rochester residents' responses were distributed mostly towards the lowest three rankings. When examining the responses of those who live in the areas surrounding Rochester, the responses peak towards the middle of the rankings, and fewer respondents ranked Rochester as the lowest or the highest. Those who were from the rest of New York State mostly ranked Rochester lower. Finally, those from outside of New York generally placed Rochester as the second lowest or second highest in terms of murder rate.

Correlation Between Demographic Characteristics and Rankings

We were interested in seeing if there were differences in accuracy of city rankings based on variables such as gender and age. In order to see if demographic characteristics affected how people ranked cities, we used rank order correlation (Spearman's rho). This correlation allows you to use rank to determine if there is a correlation between variables. Rho correlation also ranges from -1.00 to 1.00, where -1.00 is a perfect negative relationship, 1.00 is a perfect positive relationship, and 0 represents no relationship.

Rankings and Rank Order Correlations of Respondent Groups Compared with Actual Rankings									
		Ranks by				Residency			
Actual Rank	City	Males	Females	45 and Younger	Over 45	Rochester	Areas Surrounding Rochester	Other NY	Other
1	Tokyo, Japan	1	6	5	1	2	2	2	1
2	Toronto, Canada	2	3	2	2	3	1	5	2
3	New York City, NY	6	4	7	4	7	3	8	3
4	Los Angeles, CA	5	10	6	10	5	10	4	10
5	Mexico City, Mexico	10	5	10	7	10	9	9	7
6	Houston, TX	4	9	3	6	6	5	3	5
7	Rochester, NY	3	1	1	3	1	4	1	4
8	Chicago, IL	9	8	8	9	9	7	10	8
9	Baltimore, MD	7	2	4	5	4	6	6	6
10	Detroit, MI	8	7	9	8	8	8	7	9
	rho	**0.65**	**-0.04**	**0.20**	**0.53**	**0.33**	**0.53**	**0.28**	**0.64**

Males were the group which was most accurate in ranking the cities. A correlation of .65 is considered to be a strong correlation. Females ranked the cities least accurately; a correlation of -.04 is very weak. Older respondents, those over 45 years of age, were also much more accurate than younger respondents who were aged 45 and younger. The older respondents' correlation of .53 is considered to be strong while the younger respondents' correlation of .20 is weak. Based on residency, those who did not live in New York were most accurate in ranking the cities. The correlations of those who live outside of New York and those who live in the areas surrounding Rochester are strong. The relationships of .33 and .28, Rochester and others in New York respectively, are considered to be moderate. It seems as though there is some relationship between accuracy in ranking and different demographic characteristics.

Potential Limitations

By phrasing the question "What town or city do you live in?" it is possible that students or other respondents in a similar situation reported the city in which their school is located instead of their hometown as we intended to capture. If this is the case, many of the RIT or other local college students may have reported Rochester as their city of residence, but they actually live elsewhere. Similarly, those who live in the suburbs or other areas surrounding Rochester may have identified Rochester as their hometown. This may have some impact on our section examining how Rochester residents view the city's murders.

We also encountered situations in which the respondents confused the ranking system. We asked that 1 be the lowest chance of being murdered and 5 being the highest. In a preliminary test it was discovered that many of the respondents reversed the order of the rankings. After this test, we did alter the survey as to emphasize the ranking directions. However, there is no way to determine if it was completed correctly, and we assumed that all surveys were ranked according to instructions. Considering that many cities such as Toronto, Tokyo, and Chicago were ranked relatively accurately, it becomes difficult to tell what, if any, impact that this may have had.

This survey was administered at a college event to display innovations in science and technology. Taking this into consideration, our respondents are made up of a population that is interested in such educational events and is not representative of the population in general. However, this may mean that their estimates may be more accurate than a general random sample of the entire city or the US.

Implications

It can be difficult to estimate serious crime levels. In our study, Rochester residents overestimated murder in their city. If this holds true in other places, it suggests that people have a strong tendency to overestimate murder close to where they live. Most respondents had a hard time estimating murder across the country. It seems as though in a large country like the US, national assessments are very difficult to make. Most interestingly, even though people see their own local numbers of murders as unrealistically high, they also view their city as favorable when compared to others.

It is clear that estimating serious crime is difficult, but the tendency to overestimate local crime while also seeing other cities as higher than your own is troubling. It is especially troubling given the implications for policy which could include supporting legislation and policy changes based on distorted and elevated view of crime risk. It would seem important that the political process include significant efforts to accurately inform the public about crime levels and risks. Likewise, it is possible that the distortions noted here are related to the extensive fictional portrayals of violence on television and in other media. This suggests the needs for news media to pay particular attention to accuracy in reporting and to developing approaches to better inform the public and to compensate for the many possible sources of distortion.

Conclusion

It is interesting to examine how respondents' perceptions of murder varied. Respondents tended to overestimate the number of murders in Rochester, but underestimate murder in the entire US. Respondents believed that Rochester contributed to a large percentage of overall murders in the US. Rochester was also most often ranked as the having second lowest murder rate, even though raw estimates of murder were high. This leads one to question whether

respondents think that other cities around the US have many more murders than Rochester or if many participants confused the ranking instructions.

Rochester residents' perceptions of murder in the city were not very accurate. Rochester residents overestimated the number of murders in the city, yet they still ranked Rochester has having one of the lowest murder rates compared to other cities. Those people who should know the city best, actually did the worst when examining different aspects of murder in their city.

Whether respondents overestimated or underestimated, their perceptions of murder were still skewed from reality. The origin of this misunderstanding may come from a variety of sources. Regardless of what these happened to be, it is important that people are properly informed. It is arguably the responsibility of each citizen to have at least a basic understanding about crime in their country and their community. Only then can they use this information to challenge outlets of misinformation and hold law enforcement and political authorities accountable.

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Appendix

Sample Survey

CPSI Innovation Festival Survey

Thank you for your help with this brief survey about crime.

1. Approximately how many murders do you think happened in Rochester NY in 2012?

   _____

2. Approximately how many murders do you think happened in the United States in 2012?

   _____

3. Please rank these cities from **lowest (1)** to **highest (5)** based on the ***percent*** of each city's population that you think is murdered in a year.
   ____Houston, TX
   ____Los Angeles, CA
   ____Tokyo, Japan
   ____Toronto, Canada
   ____Rochester, NY
4. What is your age? _____yrs.
5. Gender? Male____ Female_____
6. What town or city do you live in? _____

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[i] Number of responses for each city: Total surveys = 295

City	Count
Rochester	290
New York City, NY	137
Los Angeles, CA	133
Houston, TX	138
Baltimore, MD	111
Detroit, MI	111
Chicago, IL	121
Toronto, Canada	141
Tokyo, Japan	132
Mexico City, Mexico	139