Serial Killer Trends in the United States

**Report Topic**

A serial killer is defined as a person who has killed two or more people with cooling off periods in between. In this report, I want to investigate the following questions:

* + How has the number of active serial killers changed over time?
  + Which states have had the most serial killers?
  + What are the traits of serial killers? What are the traits of their victims?
    - Both: Age, Race, Gender, relationship between killer and victim
    - Killers: Mental disorders, Criminal History, IQ (Compare with rates of general Population)
  + What methods are most frequently used for killing?
  + What were the motivations for the killings?

**Visualization Tool**

To create the visualizations necessary for this report, I will use Tableau because of its flexibility and ease of use. I think that this is the best choice because Tableau produces very visually appealing charts and maps. It also has the capability to create all the graphs described below and makes adding extra features and making changes easy and straightforward. I want to use only Tableau because I think the use of a single tool makes the presentation look cohesive and better overall.

**Visualization Choices**

Each of the questions mentioned above will have a separate visualization. In order to best show the change in number of serial killers over the years, I want to use a line chart with a tooltip providing exact numbers. I think that this is the best choice because line graphs are straightforward and make it easy for the reader to understand the overall trend. The tooltip provides the exact data in case the reader wants to know exact data for a specific year. In order to show the states with the most serial killers, I intend to use a choropleth of the United States, which will make it easy for the user to just look at the colors of the states and see which ones have higher and lower numbers. Again, I think a tooltip would be useful here so that the reader can get the exact data.

In order to show the traits of serial killers, I want to have several visualizations. To show the racial makeup and genders of serial killers and how they have changed over time, I want to have a stacked bar chart of the proportions for each. I think this is the easiest way to show the trends of so many different groups at the same time and it is easy for the reader to understand. In order to show the diagnoses of mental disorders and the criminal histories of serial killers, I want to use bar charts because there are a lot of different categories and I think a bar chart conveys the numbers for each category in a clear way. In order to show the IQs of serial killers, I want to use a box plot because the median is much lower than the average, meaning the data is skewed, so a box plot is the best choice to represent the spread of IQs of serial killers.

To show the traits of the victims, I also want to have several visualizations. For starters, I want to show the racial and gender makeup of victims in the a pictogram chart. I think using people (male and female to represent the two genders) and different colors to represent races shows the reader instantly the proportions of the different demographics. I also want to include a histogram of the ages of victims. I think this is a good choice for the visualization because it is easy to see the trend and the unexpected fact that those under 1 year are killed at a high rate. Lastly, I also want to include bar charts that show the relationship between the killer and victim, the methods, and the motivations of the murders. I think a bar chart is necessary in all three cases because each has a lot of categories and a bar chart is an easy way to spread them out and make them readable. Also, bar charts are easy for people to compare groups and read proportions off of.

**Schedule**

4/10-4/18: Data cleaning and preparation

4/18-4/29: Create visualizations

4/29-5/10: Build narrative

5/10-5/15: Finalize project

**SWOT Analysis**

My main strength is that I am good at data cleaning and preparation. I am also good at creating visualizations in my head and knowing what would look good stylistically. Although I have a lot of programming experience, my main weakness for this project is that I am new to using Tableau. I have only used it one other time, which was the last assignment I did for this class. I do not see this being a major issue though, since it is easy to find documentation and even YouTube instructional videos on how to create most types of visualizations in the software. The main threat that I have found is that there is not as much data available as I would like. I have found lots of FBI data on subsets of serial killers that is not necessarily indicative of serial killers as a whole, but few things that have data for all serial killers.

**Data Sources**

Radford University and Florida Gulf Coast University put together a Serial Killer Database in 2016 that contains data for all serial killers since 1900. I will get the majority of my data from there. I have also found several sources from the Department of Justice and the Federal Bureau of Investigation.

<http://maamodt.asp.radford.edu/Serial%20Killer%20Information%20Center/Project%20Description.htm>

<https://www.fbi.gov/file-repository/serialmurder-pathwaysforinvestigations.pdf/view>