Behind the Gavel: Unveiling the Statistics of Death Penalties in the United States

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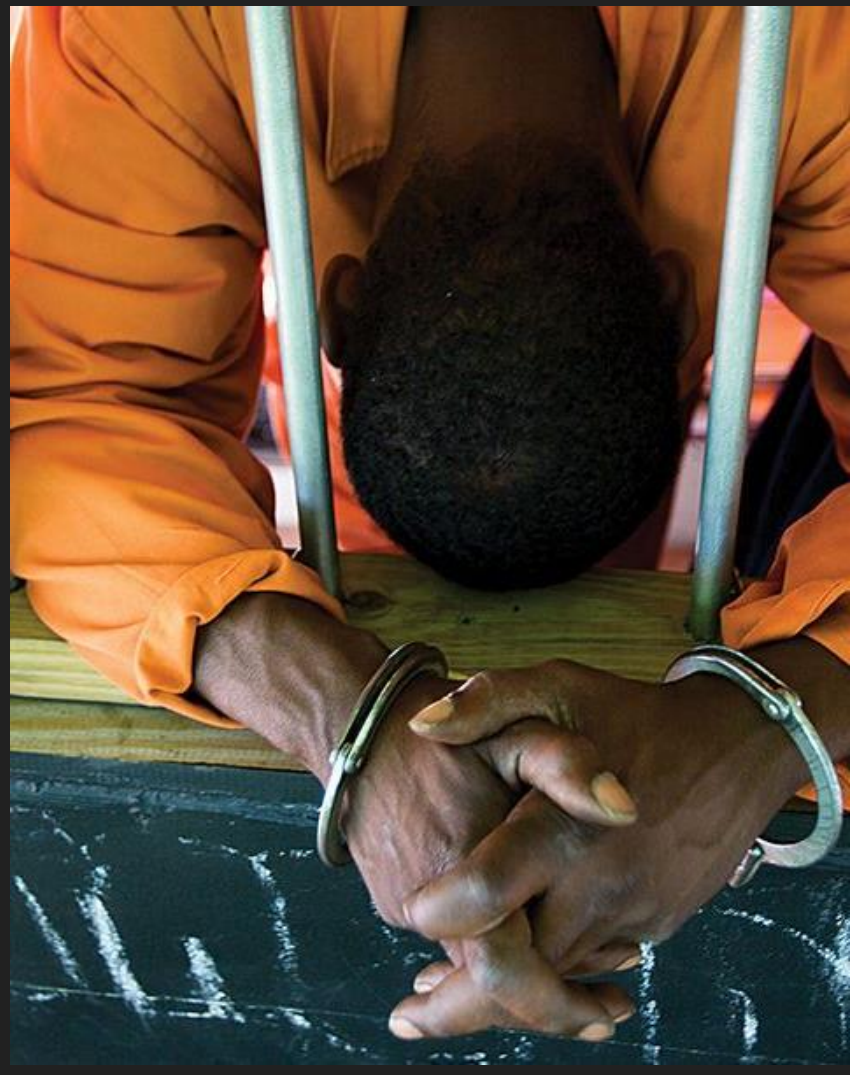
Introduction

Capital punishment has been a controversial issue in the United States for decades, raising questions about ethics, justice, and human rights.

In 1972 under Furman v. Georgia, the U.S. Supreme Court ruled that capital punishment was unconstitutional. However, in 1976, because of public support, the Supreme Court reinstated the death penalty.

Our research analyzes the executions as a result of this decision. We hope to shed light on underlying patterns, disparities, and trends.

Our group believes that understanding this data will enable us to foster informed discussions, encourage empathy, and potentially contribute to the ongoing national dialogue on criminal justice reform.



Latitude	Longitude
56.2936	-132.1292
55.2245	-161.9472
52.6802	-92.4881
63.6716	-150.0117
69.3634	-153.5106
64.8078	-146.5654
55.4885	-131.0305
61.1483	-149.1886
62.1600	-163.5255
59.5600	-135.3367
58.4439	-134.2303
55.7272	-133.1930
57.6603	-153.7492
60.1194	-151.6981

3	Denali	AK	63.671642	-150.011715	Denali, AK
4	North Slope	AK	69.363412	-153.510606	North Slope, AK

```
In [14]: df2 = pd.merge(df, dfc, on="County & State")

In [15]: df2.columns

Out[15]: Index(['Date', 'Name', 'Age', 'Sex', 'Race', 'Crime', 'Victim Count',
       'Victim Sex', 'Victim Race', 'County_x', 'State_x', 'Region', 'Method',
       'Juvenile', 'Volunteer', 'Federal', 'Foreign National', 'Year', 'Month',
       'County & State', 'County_y', 'State_y', 'Latitude', 'Longitude'],
      dtype='object')

In [16]: df3 = df2.loc[:,['Date', 'Month', 'Year', 'Name', 'Age', 'Sex', 'Race', 'Victim Count',  'Method', 'County_x', 'State_x', '

In [17]: df3 = df3.rename(columns={"County_x": "County", "State_x": "State"})

In [18]: df3.info()

<class 'pandas.core.frame.DataFrame'>
Int64Index: 1422 entries, 0 to 1421
Data columns (total 13 columns):
 #   Column        Non-Null Count  Dtype
---  ------        --------------  -----
 0   Date          1422 non-null   datetime64[ns]
 1   Month         1422 non-null   int64
 2   Year          1422 non-null   int64
 3   Name          1422 non-null   object
 4   Age           1422 non-null   int64
 5   Sex           1422 non-null   object
 6   Race          1422 non-null   object
 7   Victim Count  1422 non-null   int64
 8   Method        1422 non-null   object
 9   County        1422 non-null   object
 10  State         1422 non-null   object
 11  Latitude      1422 non-null   float64
```

Our Resources

We used two datasets:

Executions in the United States, 1976-2016 | Kaggle

This dataset had inmate's information, the state they were executed, as well as the method which was used for the execution.

US County Boundaries — Opendatasoft

Our second dataset was geographic data published by U.S. Census Bureau that had longitude & latitude columns that we needed to make an interactive map.

Research Questions

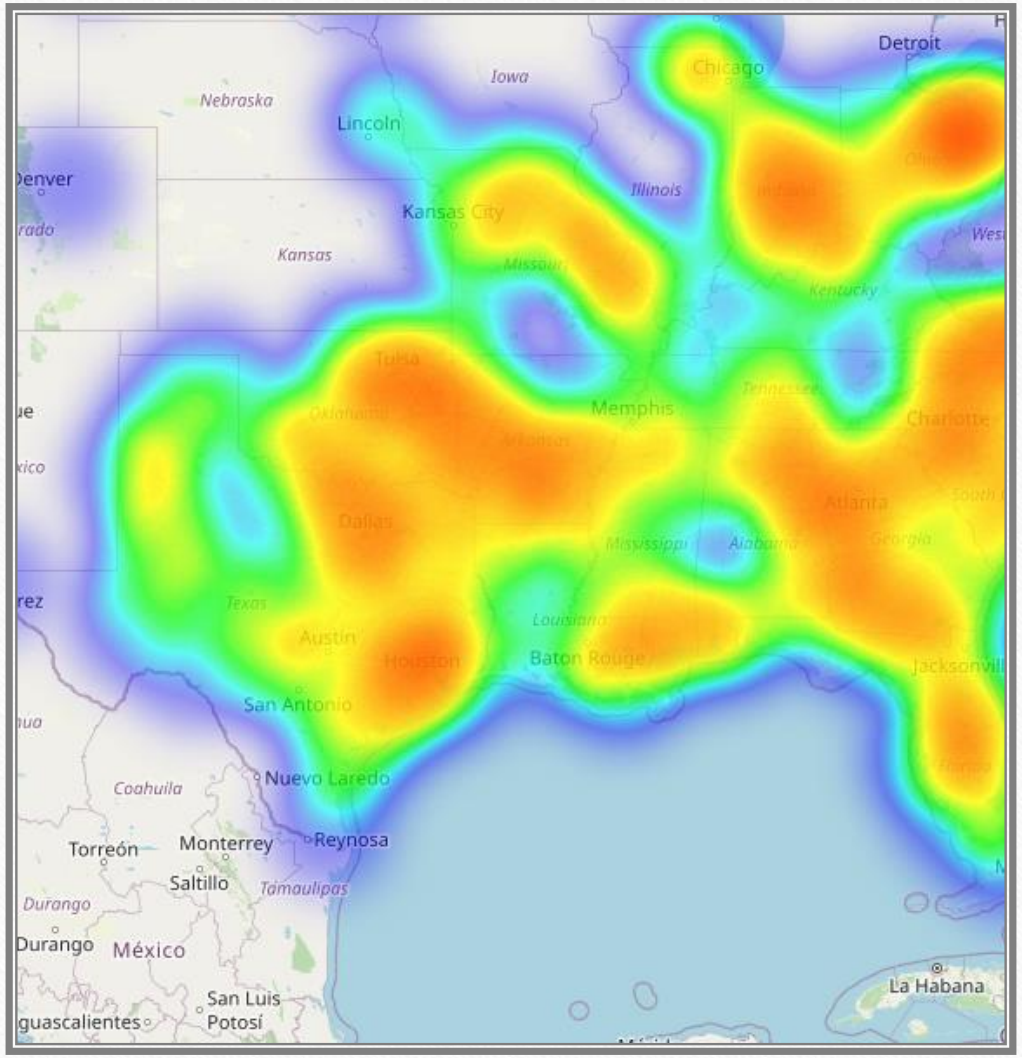
- Which states had the most executions ?
- Is there a trend over time when it comes to a certain method of execution, number of executions, or demographic of the executed ?
- What region in the United States are death penalties more common ?

Our Website

ExecutionXplore (dannyphantom2023.pythonanywhere.com)

Leaflet Map

Thanks to our Leaflet, we can see where the majority of executions have occurred. As seen with our heat map filter, we can see that majority of executions are all in southern counties.

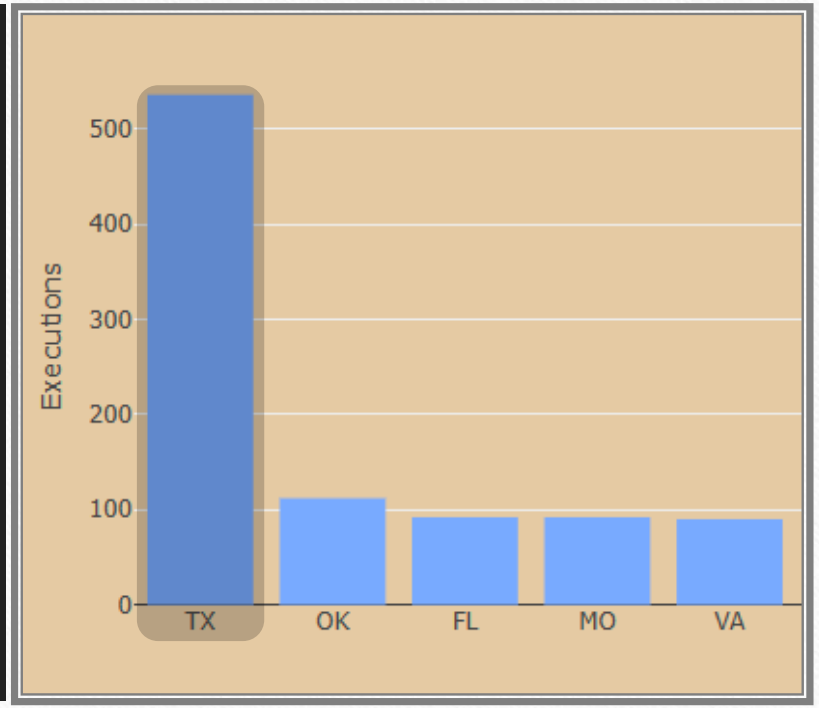


Conclusions

Our bar chart confirms our observation from our map.

The state of Texas has a total amount of executions of 536. This is an outlier. With the next highest number of 112 coming from Oklahoma.

The majority of executions took place in states located in the southeast.

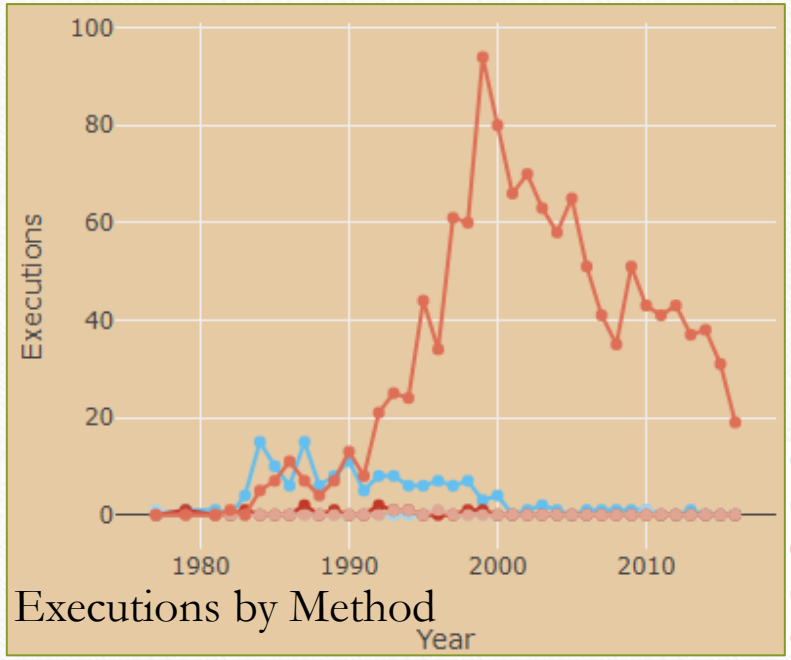


Rise and Fall of Executions Over Time

Measuring our data over time, we noticed that the 'popularity' of lethal injections increased from the late 1980's to replace electrocution as the preferred method of execution.

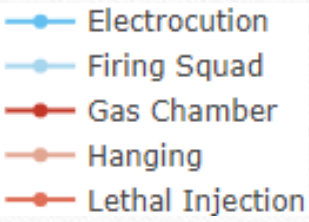
Some type of societal event must have taken place in the 1990's to account for the drastic increase in executions. Likewise, some event must have taken place after 1999 to account for the decline.

Executions per Year



Executions by Method

It is our belief that the 'humane' approach of lethal injection may have accounted for the increase. With potential mistakes and errors in the execution process could account for the decrease.

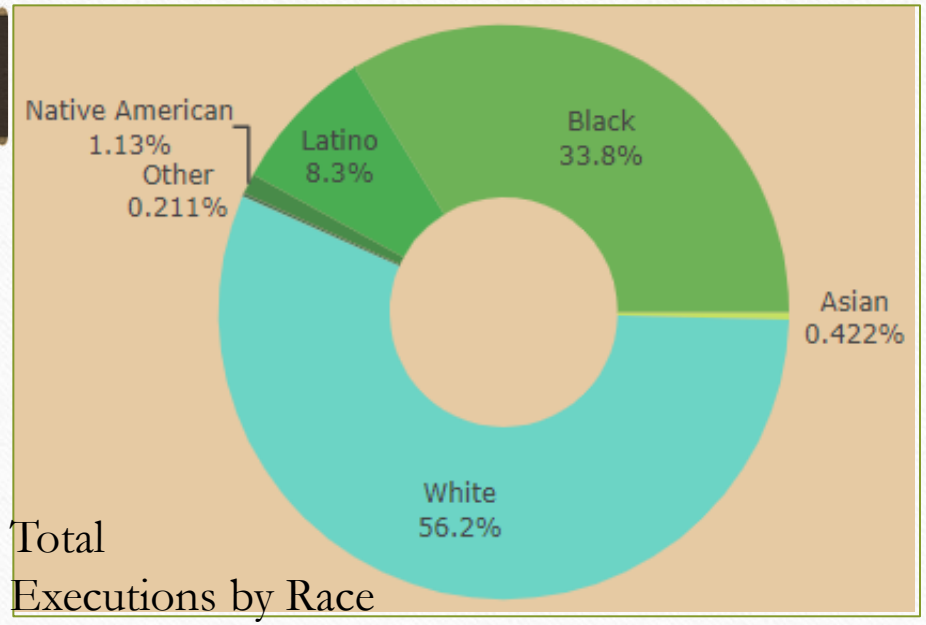


There IS a Racial Bias in Executions

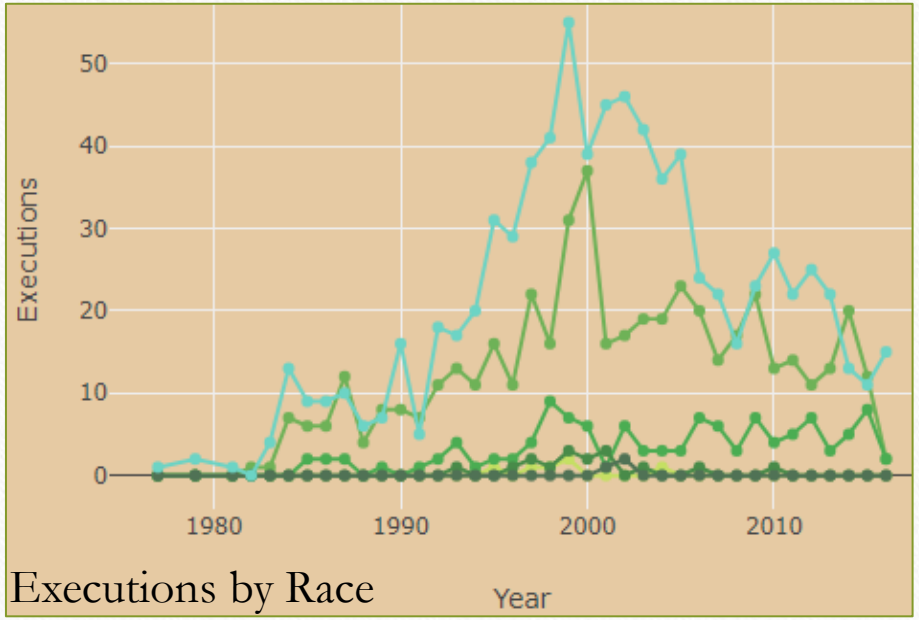
The percent of Black Americans in the US during this time frame was never higher than 15%. However, 33.8% of the total executed were black.

Overtime, the amount of the black consistently hit disproportionate values, while other minorities stayed low or non-existent. In 1987, 1989, 2008, 2014 and 2015, there were more black executed than any other race.

This indicates a strong racial bias and probable systemic issue with death row sentencing against black Americans.



Total Executions by Race



Executions by Race

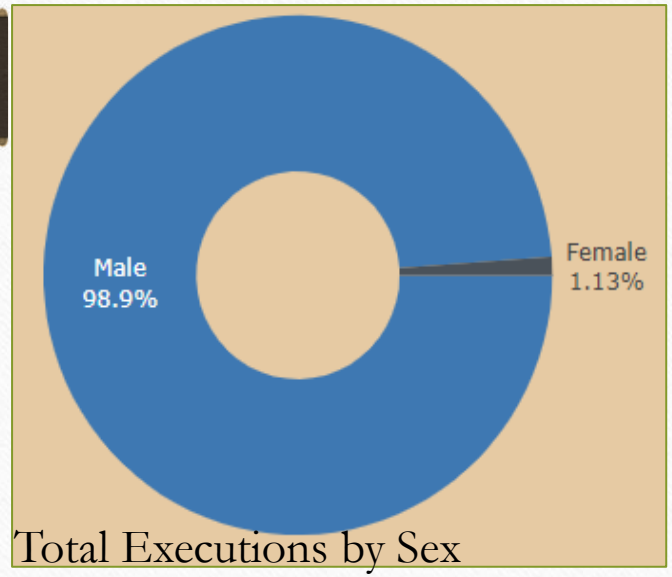
Femal Executions are Rare

Executions have a definitive bias against men.

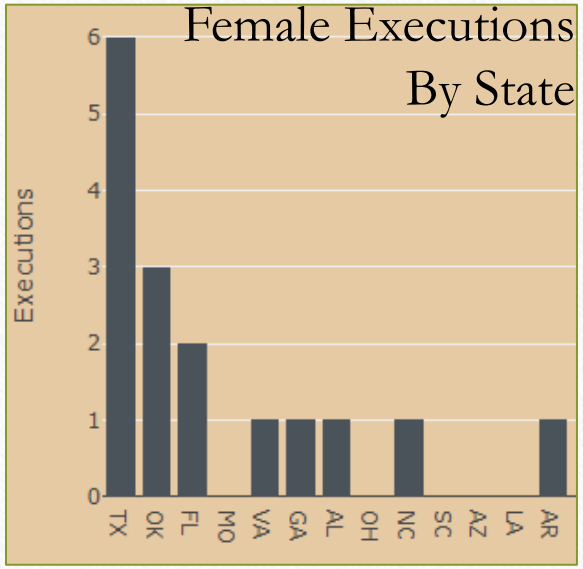
Only 8 states executed a female convict, and only three states executed more than 1 female.

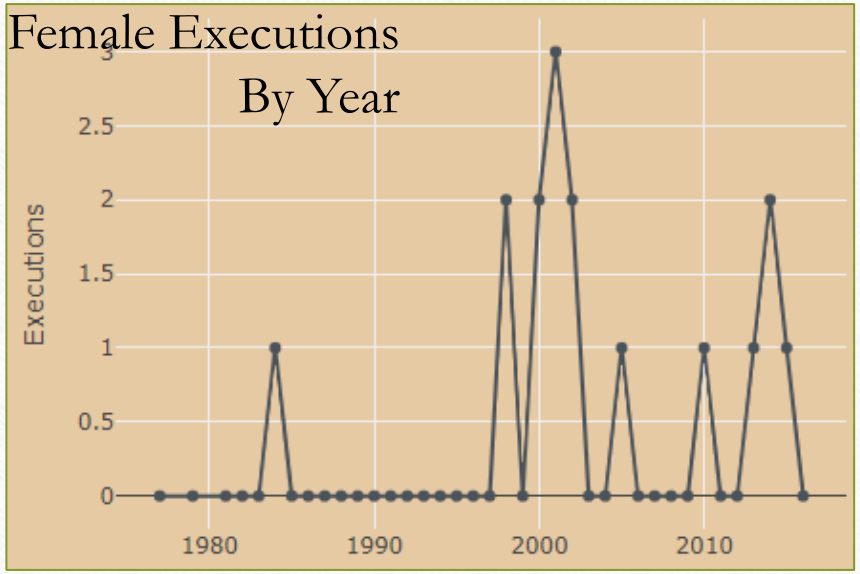
Female executions became more prevalent only after the dip in executions after 2000.

Our hypothesis is that it was originally viewed as inappropriate to execute females, but that image is changing.



Total Executions by Sex





Limitations

- Our Dataset didn't have much variety with certain values so we couldn't broaden our stories as much.
- Our 'Crime' column only had one unique value which was 'murder'. This didn't really give us an option to make a graph based on inmates who were executed due to other crimes as well. Which could have shown over time that the death penalty took stricter requirements to receive.
- Our Dataset was from the range of 1976-2016, this caused us to miss out on a story with recent data to show the rate of executions in this current time.

Future Work

Due to the size of our data as well as the time frame, we couldn't add other interesting topics. if we had more time & resources we would focus on:

- Making a graph that shows the different crimes committed that caused inmates to get a death penalty.
- Add another filter to our map to give viewers more options to choose from with the map.
- Compare current death row inmates to rates of execution.

THANK YOU

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