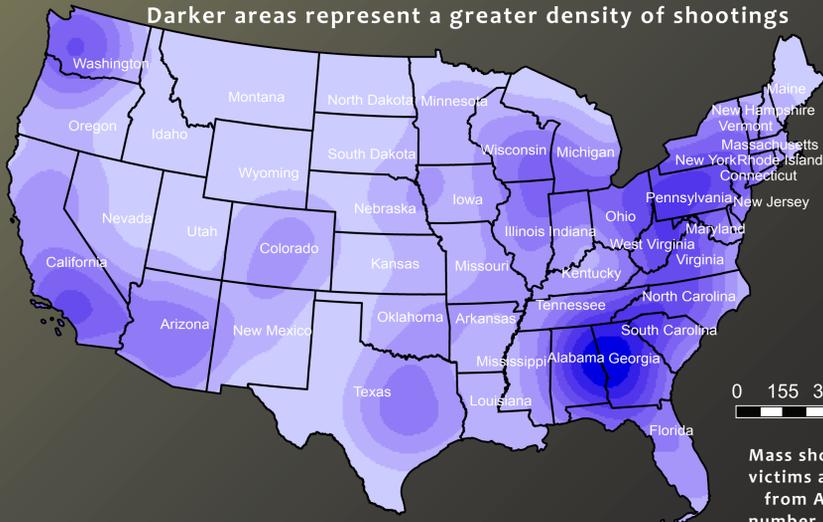


# GUN LAW CONTIGUITY AND MASS SHOOTINGS

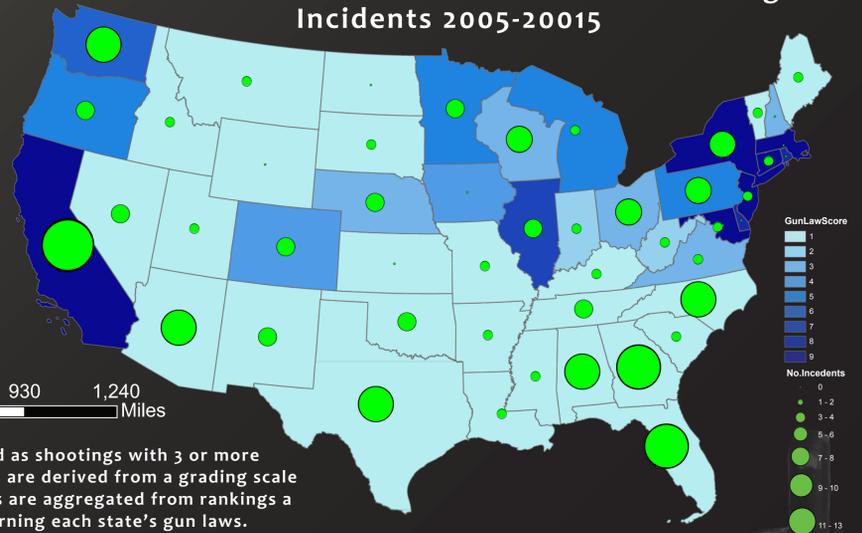
While there are a multitude of suspected motivations and circumstances for the mass shootings that have occurred in the U.S., two factors remain true for perpetrators of mass shootings; they were able to acquire firearms without great difficulty and they were able to execute their plans without intervention.

It is notable that over half of the states in the U.S. have remarkably lax gun laws and that the vast majority of ground transportation between states is virtually unregulated. Considering these factors, it may be possible to prove that the contiguity of states with lax gun laws compromises the effectiveness of stricter gun laws in neighboring states, resulting in higher incidence of mass shootings.

Density of Mass Shooting Locations 2005-2015  
Darker areas represent a greater density of shootings



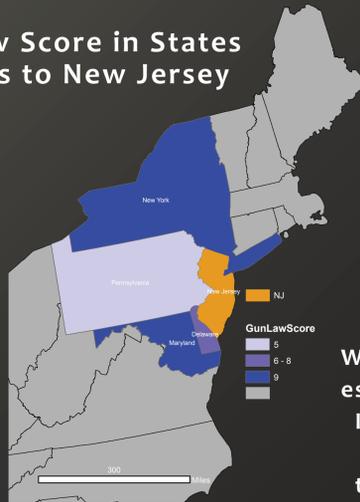
Gun Law Score vs. Number of Mass Shooting Incidents 2005-2015



0 155 310 620 930 1,240 Miles

Mass shootings are defined as shootings with 3 or more victims and gun law scores are derived from a grading scale from A to F. These scores are aggregated from rankings a number of variables concerning each state's gun laws.

Gun Law Score in States Contiguous to New Jersey

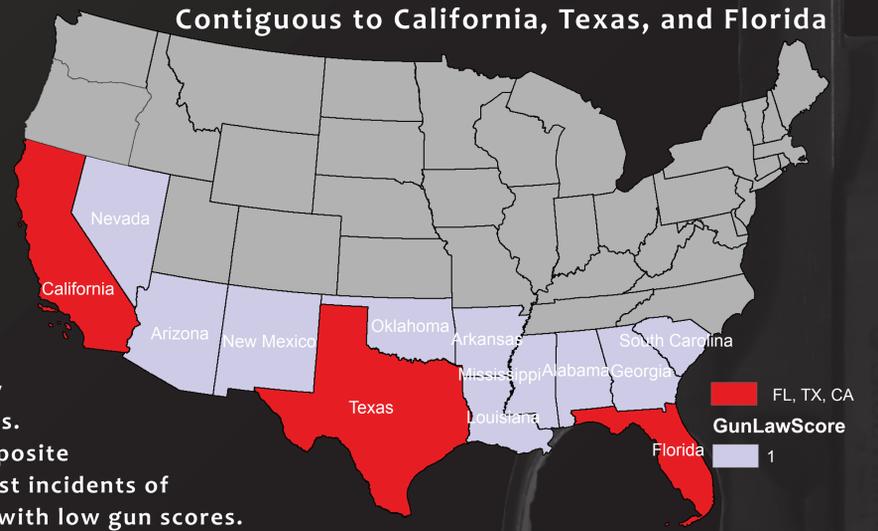


## Looking Deeper

Initial visual observations suggest a correlation between a state's number of mass shooting incidents and the gun law score of its bordering states.

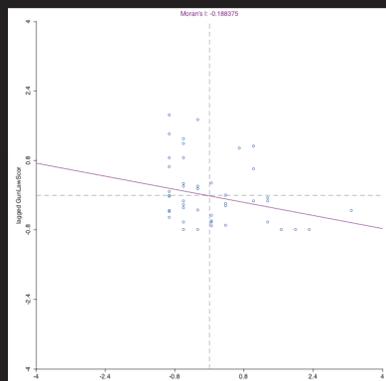
The best examples are illustrated by New Jersey, California, Texas, and Florida. With a low number of mass shootings, especially considering population, New Jersey is buffered by states with high gun law scores. California, Texas, and Florida display the opposite trends. These states have amongst the highest incidents of mass shootings and are surrounded by states with low gun scores.

Gun Law Score in States Contiguous to California, Texas, and Florida

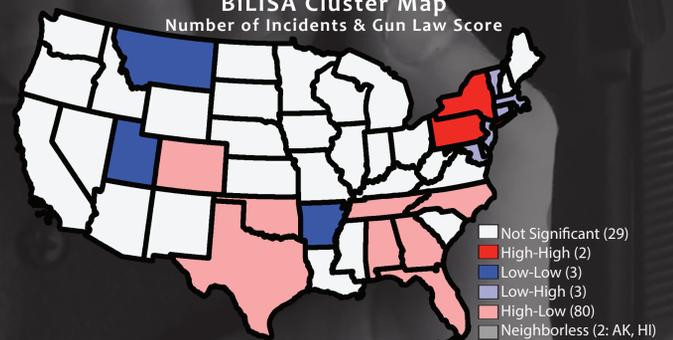


**Statistical Analysis:** To further verify the hypothesis, a regression was run to find statistically significant correlations between the number of incidents (dependent variable) and gun law score, (independent variables) in contiguous states. Population, poverty per capita, and median income were used as controls. Unfortunately the relationship between these variables proved negative with the exception of population. The probably score for all dependent variables was close to 1, with the exception, population, scoring virtually zero. Further statistical spatial analysis looking at the relationship between mass shooting incidents and gun laws in contiguous states were more encouraging, but ultimately also proved negative.

BiLISA Significance Map  
Number of Incidents & Gun Law Score



BiLISA Cluster Map  
Number of Incidents & Gun Law Score



While my hypothesis was not supported by this analysis, a number of refinements could go a long way in developing my hypothesis. Finding a method to integrate the gun law and population variables could produce more significant results. The isolation of states like New Jersey, with low incidents and high gun law score, contrasted with California's high incidents and high gun law score continue to make me suspect that exposure to states with low gun law scores is meaningful. Perhaps comparing border lengths or road access from adjacent states and state gun laws would reveal statistical significance. States such as Hawaii and New Jersey, and countries like Australia continue to be compelling examples of gun law efficacy in instances of isolated and buffered exposure to lax gun laws.