## Global Terrorism Plots: Variable Descriptions

Go to the Grinnell College RStudio site, http://shiny.grinnell.edu/, and select the Global Terrorism Plots. This app is used to visualize data from the Global Terrorism Database (GTD). The GTD contains information about more than 140,000 terrorist incidents occurring between 1970 and 2014. The data in the GTD is gathered from news reports, and the database managers try to verify all the information they gather through multiple news sources (LaFree, Dugan, & Miller, 2015).

In the Scatterplot tab, each point represents a particular country and year (referred to as a **country-year**). For example a particular point could represent the total number of incidents that occurred in the United States in 1984. The Stacked-Line Plot tab, each incident is counted separately.

The X-axis contains numerous variables collected from the Gapminder website, including:

- *Population*: The total number of people in a country in millions
- *GDP per capita*: This value is a measure for the amount of economic production that takes place in a country divided by the population.
- *Life Expectancy*: The average number of years a newborn child would live if current mortality patterns were to stay the same. (Gapminder, 2014)
- *Unemployment Rate (Female)*: Percentage of women, age 15 or older, who are unemployed. Only has data from 1991-2007.
- *Labor Rate*: The percentage of the population, age 15 or older, who are participating in the labor force. Only has data from 1980 to 2007.
- *Children per woman*: The average number of children a woman is expected to have.
- *Electricity per Capita*: How much electricity in generated per person in Kilowatt hours. No data for 2012, 2013.
- *Child Mortality*: The average number of children, aged zero to five, that die per 1,000 born

The Y-axis options are:

- *Incidents*: The total number of successful and unsuccessful terrorist attacks in a country-year.
- *Fatalities*: The total number of deaths caused by terrorist attacks in a given country-year. The figure includes deaths of perpetrators and is an average of the numbers given by the news reports about the event.
- *Wounded*: The total number of individuals wounded by terrorist attacks in a country-year. Like fatalities, wounded includes perpetrators injured and is calculated based on the news reports of the event.

Sometimes it is easier to see patterns in variables that are highly skewed if you use the logarithm (**Log**) option.

Additionally, there are other options in the app that allow you to change the display or restrict the data based on your question of interest:

- **Type of Plot**: (only in Scatterplot) the *ggvis* version of the scatterplot allows us to hover over points and see the country, year, X-variable, and Y-variable of the data point in question. In contrast, the *ggplot* version of the scatterplot allows us to facet (create distinct plots).
- **Facets**: (*only in ggplot*) allows us to create distinct plots by *Region, Religion, Weapon Type, Attack Type, Target Type,* or *Success*.
- **Color By**: gives the options of coloring the points using by *Region, Religion, Weapon Type, Attack Type, Target Type,* or *Success* (only *Region* and *Religion* in the Scatterplot option).
- **Success Only**: When checked, only successful incidents are displayed. Successful means that an act of terror was committed, not that the terrorists succeeded in their goal.
- **Year of Incidents**: Allows you to control the years for which incidents are displayed.
- In the **Filters** tab (next to the **Axes** tab in Scatterplots), there are four menus which give the option to restrict the data to specific *Regions, Attack Types, Target Types, and Weapon Types*.
- The **Minimum Number of Incidents per Country by Year** (found in the **Filters** tab) restricts the data to only country-years with a certain number of incidents. For example, when the minimum number of incidents is set to 100, only country-years where there were 100 or more attempted terrorist attacks will be included.

Note that the *Region* and *Religion* variables represent the area in which the attack occurred. It is important to recognize these graphs show the primary religion of the country that was attacked, as defined by the World Fact Book, not the motivation for each incident