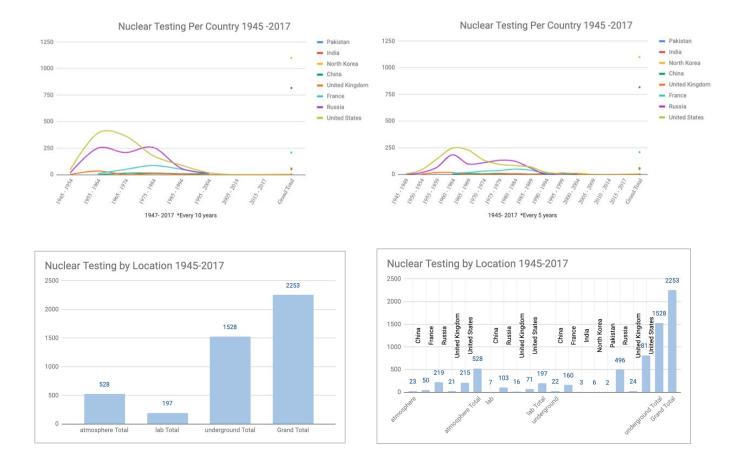
Lee Kuczewski 10.15.19 Sketches/Charts of <u>A Thousand Suns Data</u>

Summary:

The attached charts are sample ideas of how to gather insights from the Nuclear Testing Data Per Country from 1947-2017. Each has a brief description of a feature to explore.

Source: Google Sheets

Here you can quickly see the largest testing per country and the years that the testing occurred. The United States (in green) had the highest testing numbers during the range from 1960-1964, followed by Russia in the same time period. This tells me from a macro level, we need to zoom in (micro-level) to what was happening in that decade (1960-1970). Samples for both 5 and 10 year increments are shown.



Source: Tableau *Three Samples

The next two charts are similar, but look at different retinal variables. I wanted to think about the retinal variables of size, shape, and value from light (being low activity) and dark (being high activity). Still needs more work, but the first one is that you will be able to see the clustering of shaded areas to the right-hand side more quickly and zoom in on that activity to find out again, what the activity was in the 1960-1964 range for Russia and the United States.

| Dates | Pakistan | India | North Korea | China | United Kingdom | France | Russia | United States | Grand Total |
|-------------|----------|-------|----------------|-------|-------------------|--------|--------|------------------|----------------|
| 1945 - 1949 | | | | | | | | | |
| 1950 - 1954 | | | | | | | | | |
| 1955 - 1959 | | | | | | | | | |
| 1960 - 1964 | | | | | | | | | |
| 1965 - 1969 | | | | | | | | | |
| 1970 - 1974 | | | | | | | | | |
| 1975 - 1979 | | | | | | | | | |
| 1980 - 1984 | | | | | | | | | |
| 1985 - 1989 | | | | | | | | | |
| 1990 - 1994 | | | | | | | | | |
| 1995 - 1999 | | | | | | | | | |
| 2000 - 2004 | | | | | | | | | |
| 2005 - 2009 | | | | | | | | | |
| 2010 - 2014 | | | | | | | | | |
| 2015 - 2017 | | | | | | | | | |
| Grand Total | | | | | | | | | |

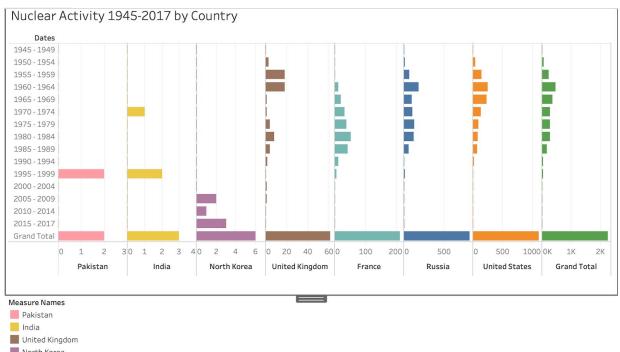
Nuclear Activity 1945-2017 by Country

Similar thing is happening here, where we instantly see the activity as a sideways normalish curve to the right hand-side and instantly recognize the US and Russia as being most active in testing within those years of 1960 -1970. Just another way to think about visualizing the data using size and shape.

| Nuclear Activity 1945-201 | 7 by Country |
|---------------------------|--------------|
|---------------------------|--------------|

| Dates | Pakistan | India | North Korea | China | United Kingdom | France | Russia | United States | Grand Total |
|-------------|----------|-------|----------------|-------|-------------------|--------|--------|------------------|----------------|
| 1945 - 1949 | | | | | | | | | |
| 1950 - 1954 | 1.0 | | | | | | 1.0 | × | |
| 1955 - 1959 | | | | | | | | | |
| 1960 - 1964 | | | | | 1.0 | | | | |
| 1965 - 1969 | | | | | | - A. | | | |
| 1970 - 1974 | | | | | | - A | | | |
| 1975 - 1979 | | | | | | 1 A 1 | | | |
| 1980 - 1984 | | | | | | | | | |
| 1985 - 1989 | | | | | | - A. | | | |
| 1990 - 1994 | | | | | | | | | 1.1 |
| 1995 - 1999 | | | | | | | | | |
| 2000 - 2004 | | | | | | | | | 1.0 |
| 2005 - 2009 | 1.0 | | | | | | | | |
| 2010 - 2014 | | | | | | | | | |
| 2015 - 2017 | | | | | | | | | |
| Grand Total | | | | | | | | | |

Tableau Continued: will need to refine colors palette here.



- North Korea
- France Russia
- United States
- Grand Total

Source: Data Wrapper

Here I wanted to use a tool to Micro in on the Time periods that I looked at above. As you can see we have the Micro/Macro look between the examples above and now the years are highlighted to show the actual testing numbers. Also we see the totals as well.

| Pa | kistan | India | North Korea | China | United Kingdom | France | Russia | United States |
|---------------|--------|-------|----------------|-------|-------------------|--------|--------|------------------|
| 1945 - 1949 | | | | | | | 1 | 6 |
| 1950 - 1954 | | | | | 3 | | 17 | 43 |
| 1955 - 1959 | | | | | 18 | | 67 | 145 |
| 1960 - 1964 | | | | 1 | 18 | 12 | 185 | 248 |
| 1965 - 1969 | | | | 9 | 1 | 19 | 99 | 230 |
| 1970 - 1974 | | 1 | | 6 | 1 | 32 | 110 | 136 |
| 1975 - 1979 | | | | 10 | 4 | 37 | 133 | 96 |
| 1980 - 1984 | | | | 6 | 8 | 51 | 125 | 84 |
| 1985 - 1989 | | | | 2 | 4 | 41 | 62 | 71 |
| 1990 - 1994 | | | | 8 | 2 | 12 | 1 | 21 |
| 1995 - 1999 2 | | 2 | | 6 | | 6 | 13 | 8 |
| 2000 - 2004 | | | | 4 | ì | | 5 | 12 |
| 2005 - 2009 | | | 2 | | 1 | | | 1 |
| 2010 - 2014 | | | 1 | | | | | |
| 2015 - 2017 | | | 3 | | | | | |

Here I would like to think about ways of being able to see the Macro Grand Total without making the individual years smaller in scale.

| Grand Total 2 3 | 6 | 52 | 61 | 210 | 818 | 1,101 | 2,253 | |
|-----------------|---|----|----|-----|-----|-------|-------|--|
|-----------------|---|----|----|-----|-----|-------|-------|--|