Poisson and Negative Binomial Regressions: Applications

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What type of data? (e.g. occurrence of events, integer rates)

- Number of times lightning strikes...
- Number of kids you have...
- How many times a dog will bite people...
- Three point shots made in a game...
- Number of years to complete dissertation...
- Number of students in a cohort...
- Number of spouses (throughout a lifetime)...
- How many job offers you receive...
- How many publications you have by year...
- How many entrees you order at Panda...
Terrorism Event Dataset

- Global Terrorism Database
- 1970-2011
- 100,000+ Terrorism Events
- All countries of the world
- Details about event
  (e.g. number killed, number of perps, precise location, etc.)
Trimming the Dataset

- **104,681 Events:**
- **104,681 Events:** 1970-2011
- **2,878 Events:** United States, Mexico, Canada
- **422 Events:** At least one fatality
- **42 years per country, 126 observations**
Dependent variable

Number of Fatal Terrorist Events - by country
What we are going to do?

1. Run OLS regression.
2. Show why OLS may be inappropriate for count data.
3. Run Poisson regression.
4. Show why a Poisson regression may be inappropriate for count data.
5. Run Negative Binomial regression.
6. Have Dave, using my set of knowledge as a practical example, show us why running regressions in Stata can be dangerous.