Chapter 6

Student Exercise

Road safety is a real concern for hundreds of millions of drivers around the world, and data from the World Health Organization can help us identify the safest and most dangerous places to drive, in terms of fatal accidents. The WHO data estimates the rate of highway deaths per 100,000 residents in most countries. To tell this story to our audience, we'll make a choropleth map.

Remember that a choropleth map is best used to display a rate that normalizes data across geographic areas that may have different populations and/or sizes. This is why we won't display the raw number of fatal accidents by country.

This assignment is completed most easily using Google Fusion Tables or Carto (formerly CartoDB) because you can join the necessary files right in the online service. If you are using ArcGIS Online, you should first join the tables in a GIS program such as ArcMap or QGIS, then upload the joined table to ArcGIS Online to make the choropleth map. GIS programs and their uses in journalism are discussed in Chapter 7 of *The Data Journalist* and its associated tutorials.

For this map you will need two files. The first is a CSV file of the deaths per 100k people, per country in 2013. The file is available from http://apps.who.int/gho/data/node.main.A997. You should choose CSV list as the format, then use Excel or a database program to filter the **GHO (DISPLAY)** field for Estimated road traffic death rate (per 100 000 population) before making a new CSV containing just the rate data. If you like, you can download the file, already filtered, from the companion website to *The Data Journalist.*

For country boundaries, we'll use the 1:50 million scale countries file available from Natural Earth, an open-source repository of map layers. Download the Admin-0 Countries file available at http://www.naturalearthdata.com/downloads/50m-cultural-vectors/ We're using the 1:50m scale map as it will display the entire world while also having a file size suitable for display in online mapping services. The data is in shapefile format with an unprojected WGS84 coordinate system, so it will display correctly in any of these services. If you want to upload the file to a Google service, you'll need to first convert it to a KML file. Of if you like, you can download a KML version file from the companion website.

You will need to complete the following tasks:

1. Obtain the two data files.
2. Examine the two files to determine which fields can be used to join the data in the tables. You can view the CSV in Excel or a text editor. For the shapefile, you can either view the table after uploading to a web mapping service, or use a program such as Open Office for Windows or Mac, or Excel for Windows to open and view the .dbf file component of the shapefile.
3. For ArcGIS Online only: Using a GIS program such as ArcMap or QGIS to join the shapefile and CSV file, then export the joined data to a new shapefile.
4. Upload the two files to a web mapping service and join them, or upload the joined table you made in task 3 to ArcGIS Online.
5. Build a choropleth map in the service of your choice. Use the Colorbrewer.org website to select appropriate colours, as discussed in Chapter 6 of *The Data Journalist*.
6. Optional: embed your map in a website.
7. Extra challenge: Get the data on the number of registered vehicles in each country, work out the rate of fatalities per 100,000 registered vehicles in 2013, then make a choropleth map with the results. This data is available at apps.who.int/gho/data/node.main.A995

When you are done your map, research and write a 500-word story based on insights gained from the map.