

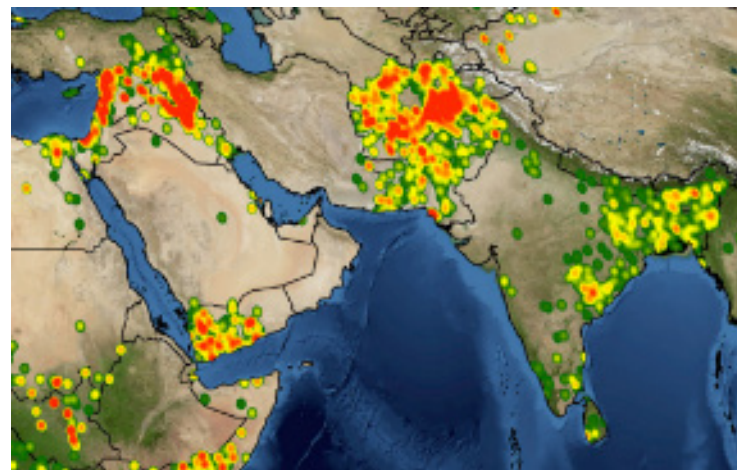
# Making Data Personal: Kidnapping by Terrorists

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CS448B: Data Visualization 2016

## PROBLEM

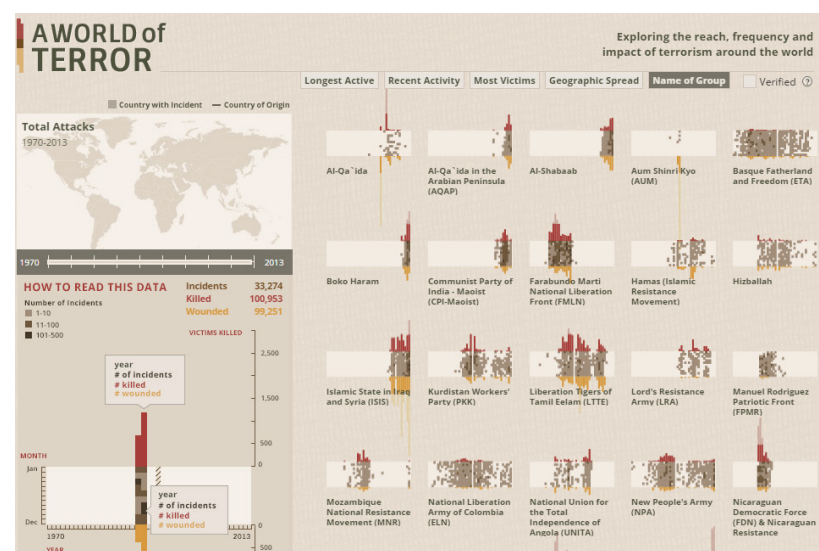
- Most previous works did not focus on a specific type of act of terrorism
- Most previous works use traditional ways of showing information
- How can we convey kidnapping-by-terrorist information without loss of data and still increase relevancy to the audience?

## MOTIVATION



< Typical heatmap of terrorism occurrence

One of the better > visualizations but still lacks personal relevancy



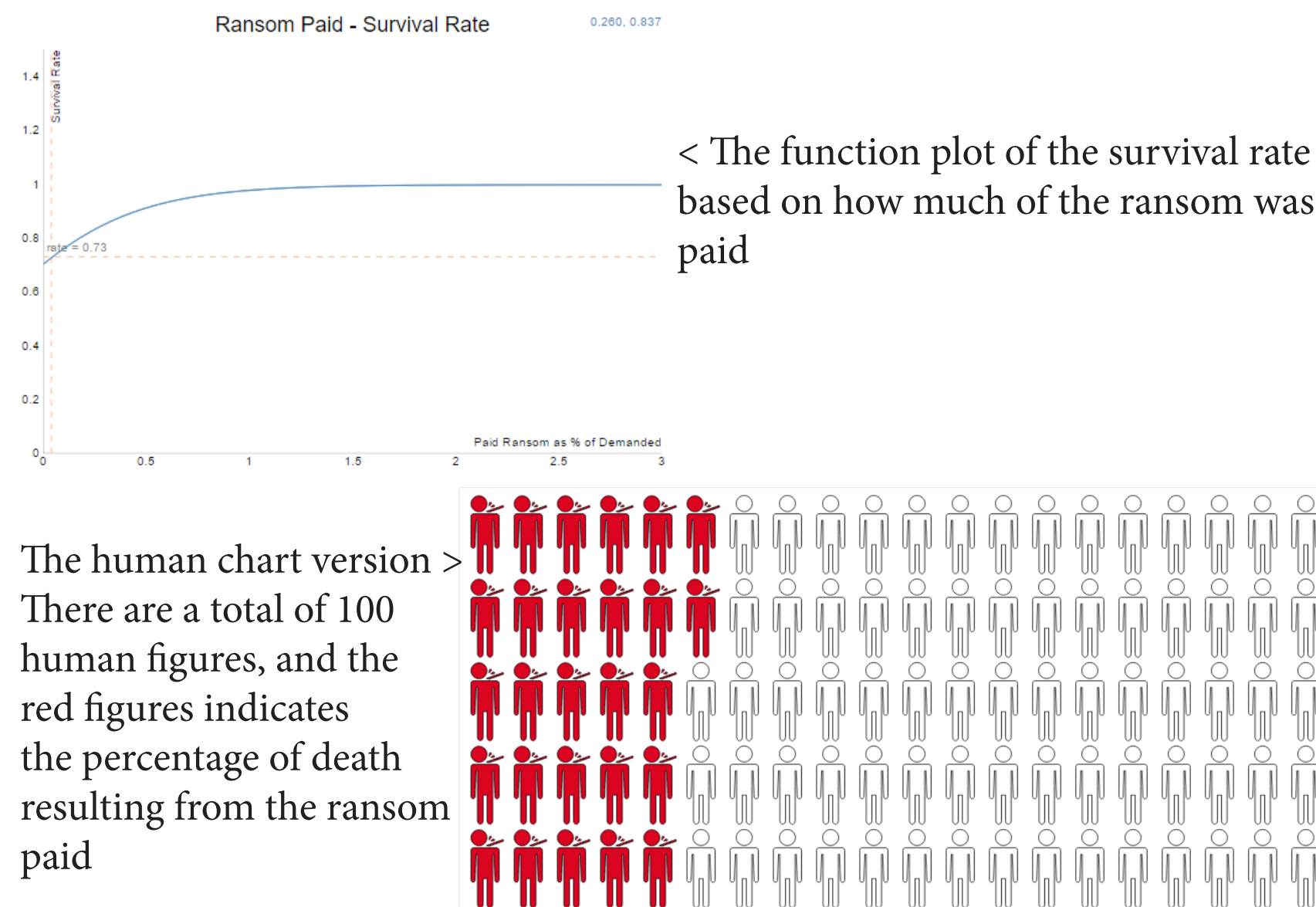
- Previous works covered very broad topics of terrorism and were very impersonal
- Main objectives for our visualization:
  - To create a visualization that emotionally impacts people
  - To give a high level year-over-year overview, and enable seeing details about each year at the same time

## DATASET

- Global Terrorism Database (GTD): open-source database including data from 1970~2014 (University of Maryland)
- Total of 8677 data entries
- 7700 incidents where no ransom demanded
- 530 cases with known amount of the ransom.

## APPROACH

- Phase 1: Gauging emotional response
  - Two versions of visualization on kidnapping victim's survival rate based on the amount of ransom asked and paid

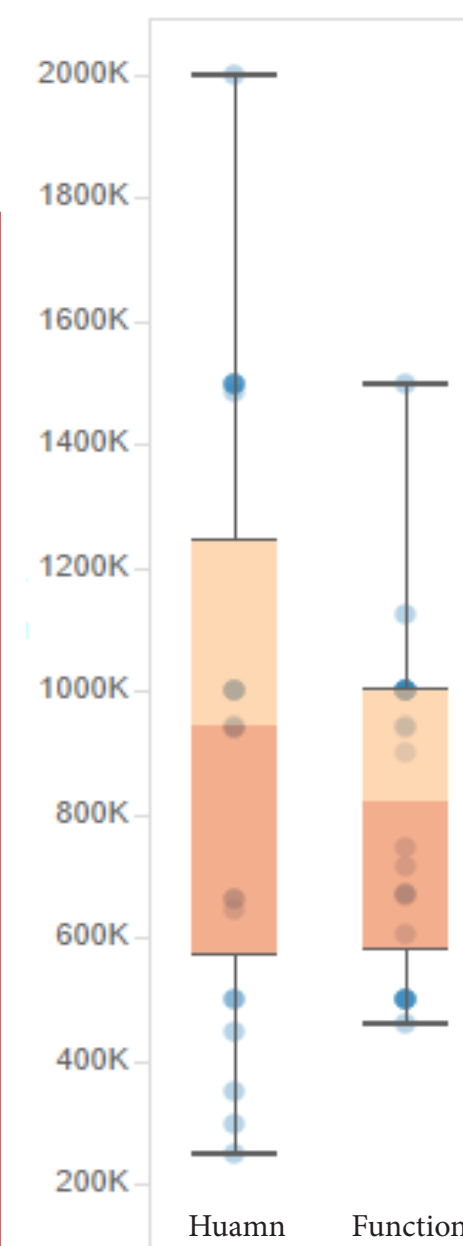


- A/B testing: comparing the willingness to pay ransom between groups shown the human chart and the simple line chart (sample size: 30 each)

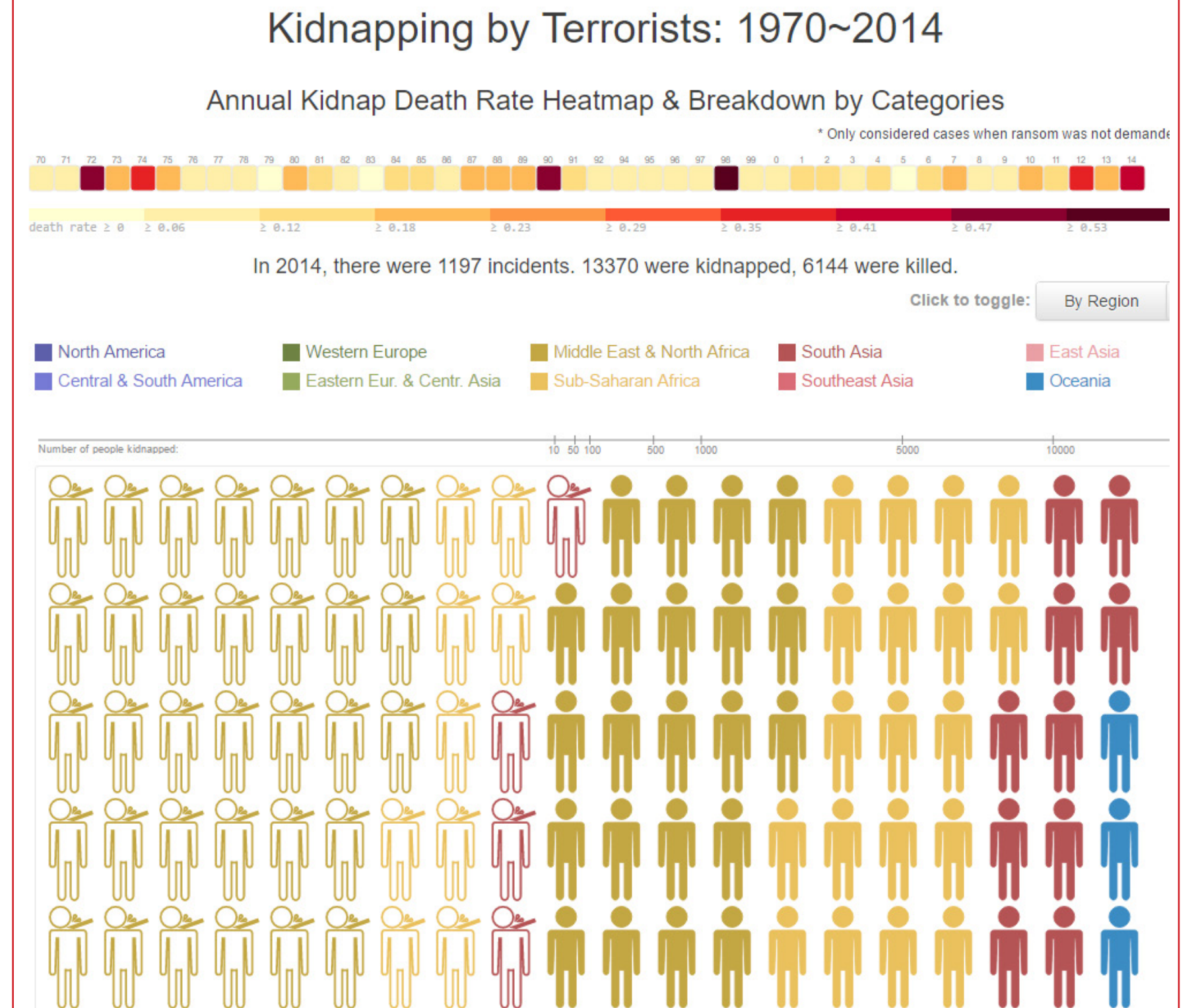
- Phase 2: Create new visualization on kidnapping data
  - Come up with a visualization that reflects our learnings

## RESULT: HUMAN CHART RAISES EMOTIONAL RESPONSES

- Group shown the human chart was willing to pay ~\$200,000 more on average
- Group shown the human chart had more emotional qualitative feedback:
  - "Line chart made it feel like they're just numbers, but human figures made it hard for me to pay less."



## RESULT: FINAL OVERVIEW VISUALIZATION



^ This is a screenshot of when 2014 is selected on the heatmap slider. The color legend is by region but can be by kidnapping target type when the toggle button is clicked.

- Conveys 6 dimensions of information on one visualization
  - Heatmap slider for timeline and general trend of kidnapping results
  - Color for region or target type
  - Size of the container for total kidnappings per year
  - Different human figures for result of kidnapping
- Full visualization: [kidnapping-a.herokuapp.com](http://kidnapping-a.herokuapp.com)

## FUTURE WORKS

- Gauge how much emotional response is 'good enough' vs distracting
- Explore more ways to visualize multivariate and probabilistic outcomes
- Provide more context for individual terrorism incidents besides the typical hover over for more information.

THANK YOU CS448B INSTRUCTORS!  
We would like to thank the professor and TAs for all the help!