VISUALIZING
ETHNIC DIVERSITY, DISTANCES & CONFLICTS
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Context, Questions

• Current literature on ethnic fractionalization, distances, conflicts
  • Fearon, James, David Laitin. Ethnicity, Insurgency and Civil War. *American Political Science Review* 97, 1 (February 2003), 75-90

• Visualization seeks to:
  • Reveal internal ethnic structures of countries by spatializing linguistic, religious, genetic distances (proxy measures of culture & ethnicity)
  • Visually encode civil conflicts among ethnic groups within countries, and inter-state conflicts
  • Enable user-directed filtering and selecting of countries of interest for cross-country comparisons
Datasets

- Fractionalization Index (Fearon)
- Polarization Index (Fearon)
- Enthnolinguistic Fractionalization (USSR)
- Dataset on ethnic, language composition of 192 countries (Fearon)
- Linguistic Distances (Automatic Similarity Judgement Program)
- Religious Distance (Fearon)
- Genetic Distances (Cavalli-Sforza, Wacziarg)
Phylogenetic Tree of Human Populations
On mouse click on edge, show information of population number and distance value. Drop shadow is red, indicating conflict between groups. Default shadow color will be cool grey.
The Structure of Human Diversity

a data exploration platform

Hover over country of interest for a more detailed picture of the ethnic composition of country and linguistic/genetic distances. Double click to add country to dashboard for cross-country comparisons.

Hovering over country bubble gives more detailed chord diagram.

*not an accurate representation; just an example.

On color coding:
- Each ethnic group in dataset will be given a unique color code
  (so instead of the mass of orange and brown you see over the region colors
  you will see a greater variety of colors, and possibly also distribution of dominant
  ethnic groups around the world. e.g. you should see a higher concentration
  of ethnic Chinese in Asia, and ethnic Arabs in Middle East - and color of smaller bubbles
  should reflect that).
- Or we could alternatively choose not to show smaller bubbles so it’s less cluttered/confusing.

On size of bubbles - I decided to homogenize size of bubbles so as to give each country more or less equal visibility. We lose the population size dimension but we could enable that in the dashboard for cross-country comparison?

battle of Chechnya v. Russia (show link on hover-over?)

VISIT DASHBOARD
For cross-country analy
Case Study: The Second Congo War

http://en.wikipedia.org/wiki/Second_Congo_War

Idea is to allow users to select countries of interest (min 2, max tbd) and observe distances between countries. Color encoding of bubbles could add another dimension to visualization.

*Size of inner bubbles = size of ethnic group population (no scaling should be required since we will set a base pop size min for groups that will be included -- but should check fringe cases where country pop size is very small to begin with)

*Size of outer bubbles = size of country population

*Color of outer bubbles = [selected variable at user’s discretion?]

*Mouse-over large bubbles can enlarge bubble to reveal inner ethnic composition, mouseover/click edges provide info on distances and highlight nodes connected by edge.

*Not to scale in this diagram: Genetic distance
Problems with implementation & design

- Visualizing distances between multiple groups in 2D space
- Best way to position country-bubbles?