POIR 613: Measurement Models and Statistical Computing

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Today

1. Solutions for last week's challenge
2. Project deadlines:
   - Feedback submitted
   - First full draft on November 17 (**optional**)
   - Presentation on November 28: 8 minutes presentation + 2 minutes feedback
3. Other announcements:
   - Guest lecture November 14: **Franziska Keller** (Hong Kong University of Science and Technology, UCSD), social network analysis of Chinese elites
   - Talk, November 29: **Dean Knox** (MSR/Princeton) & **Chris Lucas** (Harvard), audio as data
   - No class on November 21st
   - Office hours 2-4pm on Thursday
4. Today:
   - GIS

Geographic Information Systems

example

GIS

Motivation

- Large advances in mathematical modeling and data analysis in social sciences
- Slower to adopt advances in Geographic Information Systems (GIS), despite increasing availability of disaggregated geographical data

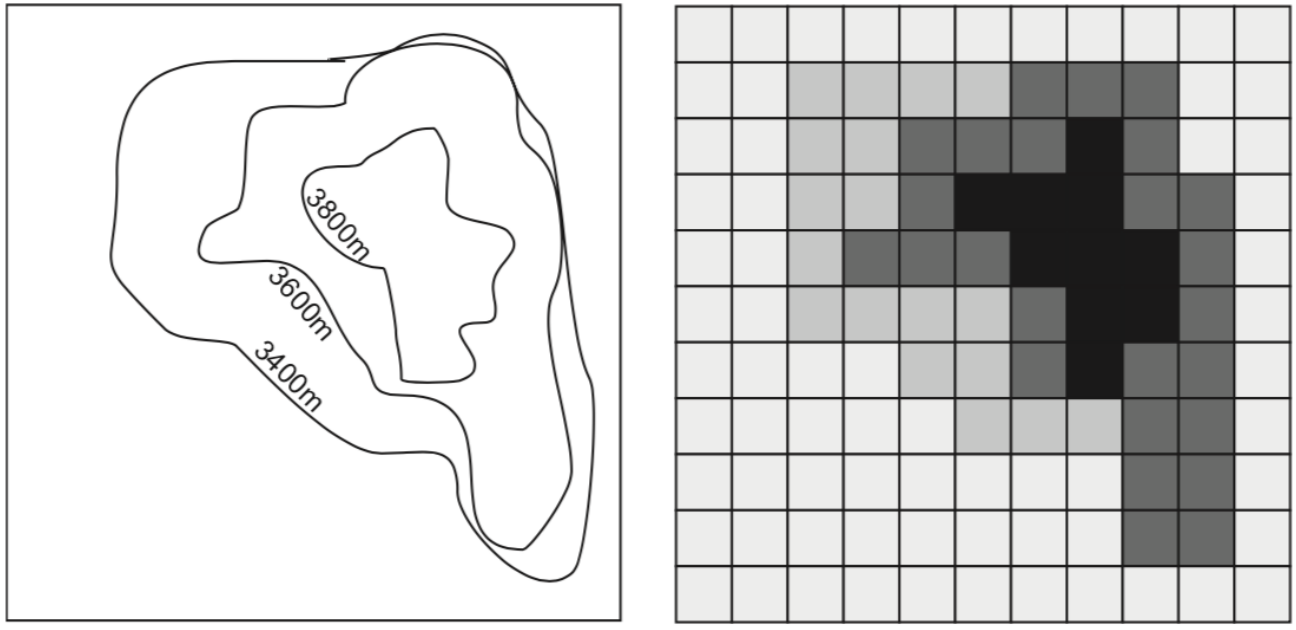
Goals of GIS methods:

- **Spatial disaggregation**: data at smaller units of analysis, more closely approximate local actors and mechanisms of interest
- **Spatial variables**: such as extent of conflict zone, spatial concentration of ethnic groups, proximity to a border... that can have a causal impact

GIS: core concepts

Definition: family of software tools to collect, visualize, and analyze data.
Data is often represented in one of two formats:

1. Vector data: dots, lines or polygons (as sets of long, lat pairs)
2. Raster data: divides space into equal-sized cells, value of variable of interest is provided



GIS: variables

Many datasets can be characterized as GIS data:

- National and subnational political borders
- Conflict
- Demographic data
- Socioeconomic data
- Environmental data

For more examples and discussions, see **Gleditsch and Weidmann (2012)**