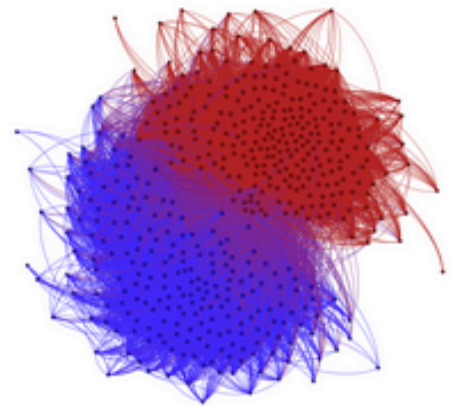# Using Text and Network Analysis to Study Politics

- John Myles White, Department of Psychology, Princeton University

- Drew Conway, Politics Department, New York Univerity

What do we care about in Political Science?

Fundementally, a study of **collective action, or decision making** among people.

State level

- How and why to people create formal institutions?
- Why to nations go to war?

Individual level

- Why do people join revolutions?
- What motivates someone to vote?

Let's talk about voting.

Specifically, how might we predict how people will vote?
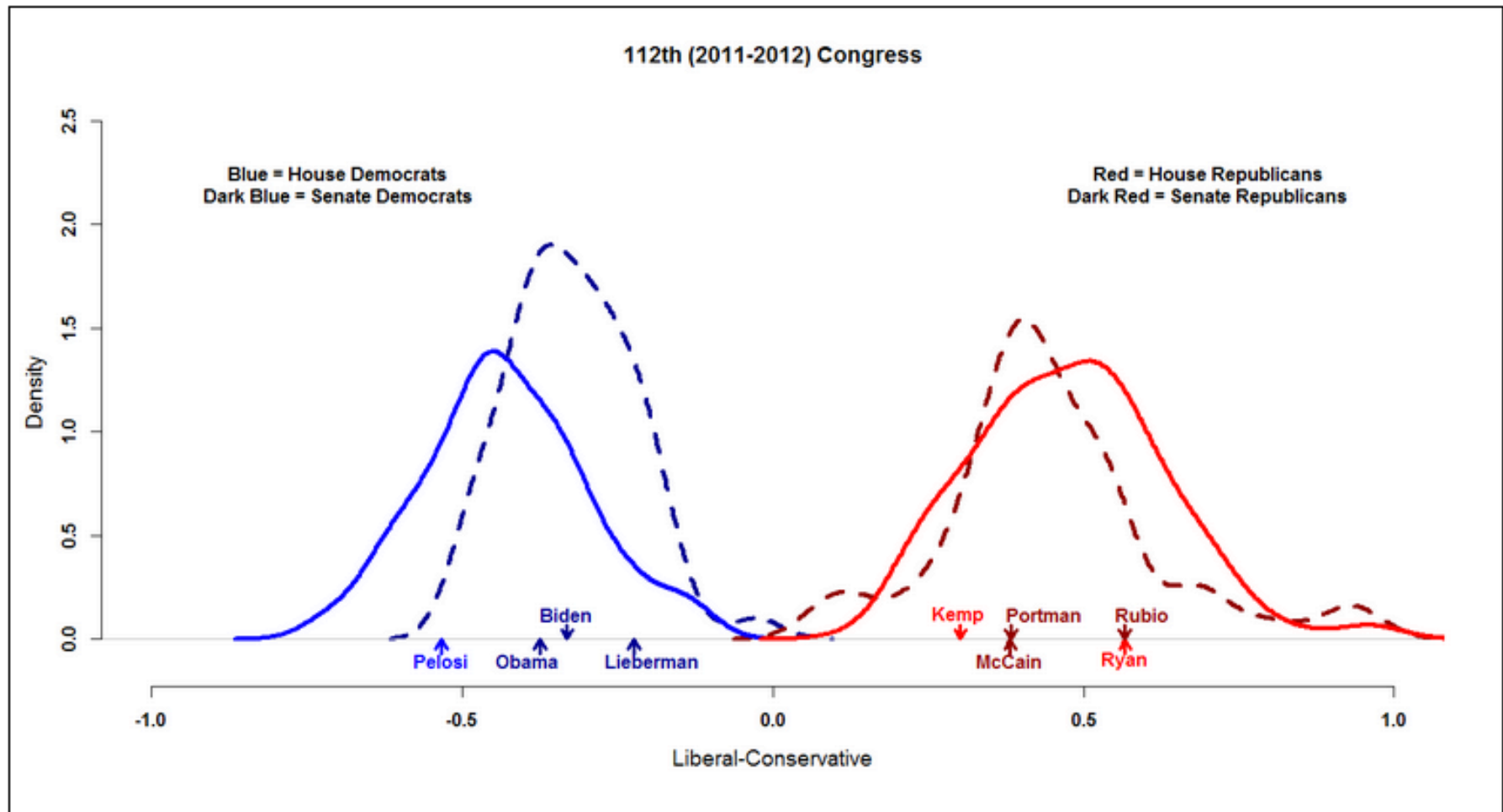
Meaursing political ideology
How can we measure politcal ideology?

DW-NOMINATE Scores

- Developed by Keith T. Poole and Howard Rosenthal in the early 1980s

- Use Roll Call votes to create large N x M matrix of votes

- Use multidemsional scaling

- High-dimensional voting space $\rightarrow$ two-dimensions

Now we have a numeric representation of the "left-right" scale of politics

DW-Nominate for 112th Congress

112th (2011-2012) Congress

Blue = House Democrats
Dark Blue = Senate Democrats

Red = House Republicans
Dark Red = Senate Republicans

Density axis: 0.0, 0.5, 1.0, 1.5, 2.0, 2.5

Biden

Pelosi   Obama   Lieberman

Kemp   Portman   Rubio
McCain   Ryan

Liberal-Conservative axis: -1.0, -0.5, 0.0, 0.5, 1.0

"Forecasting Polorization in 113th Congress," voteview blog, September 10, 2012, http://voteview.com/blog/?p=567

Moving beyond roll call votes

What's good about roll call votes

- Availability
- Interpretablity

What's **not so** good about roll call votes

- Temporal comparisons
- Single signal

Are there alternative data sources?

Today we have LOTS of alternative sources

Text Data

- Constiuent communication
- Floor and campaign speech transcript
- Social media

Network Data

- Byproduct of social media
- "Who follows who" additional signal
- Many different platform context