

Table 2.1: Driving Distances Between 11 U. S. Cities

	Atlanta	Boise	Bos	Chi	Cin	Dal	Den	LA	Mia	DC	SF
Atlanta	0	2340	1084	715	481	826	1519	2252	662	641	2450
Boise	2340	0	2797	1789	2018	1661	891	908	2974	2480	680
Boston	1084	2797	0	976	853	1868	2008	3130	1547	443	3160
Chicago	715	1789	976	0	301	936	1017	2189	1386	696	2200
Cincinnati	481	2018	853	301	0	988	1245	2292	1143	498	2330
Dallas	826	1661	1868	936	988	0	797	1431	1394	1414	1720
Denver	1519	891	2008	1017	1245	797	0	1189	2126	1707	1290
Los Angeles	2252	908	3130	2189	2292	1431	1189	0	2885	2754	370
Miami	662	2974	1547	1386	1143	1394	2126	2885	0	1096	3110
Washington	641	2480	443	696	498	1414	1707	2754	1096	0	2870
San Francisco	2450	680	3160	2200	2330	1720	1290	370	3110	2870	0

Figure 2.1: U. S. Map From Driving Distances

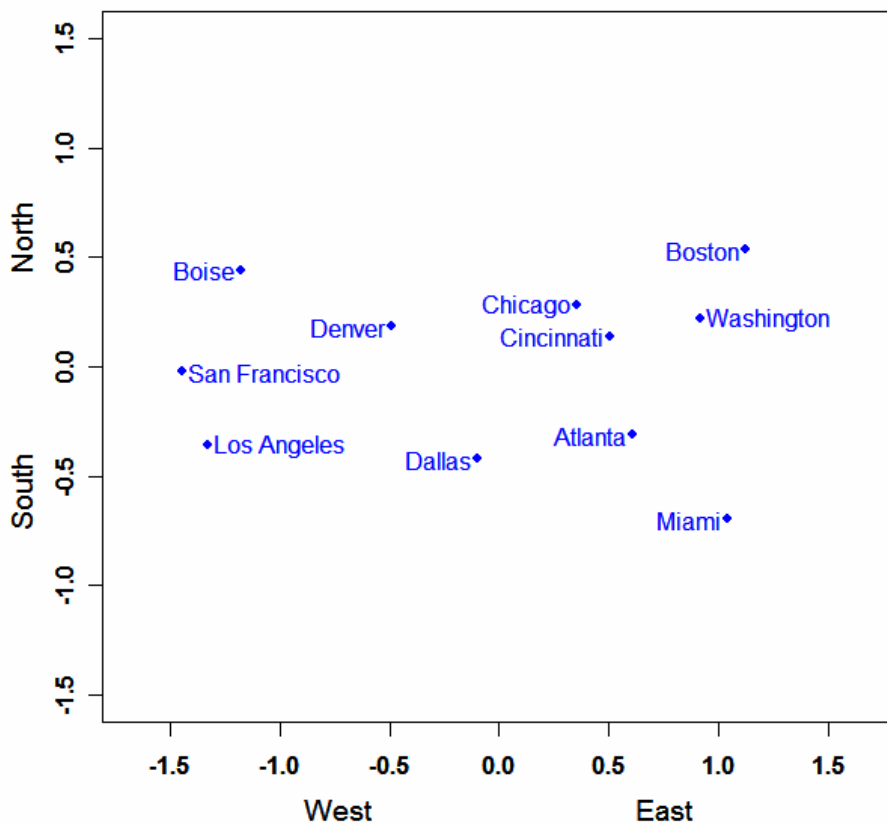


Table 2.2 Disagreement Scores for 108th Senate

	Bush	Sess.	Shel	Murk.	Stev	Kyl	McCa	Pryor	Linc	Boxer	Fein
Bush (R-US)	0.000	0.048	0.111	0.130	0.084	0.024	0.169	0.687	0.634	0.925	0.852
Sessions (R-AL)	0.048	0.000	0.087	0.132	0.108	0.059	0.193	0.743	0.705	0.874	0.813
Shelby (R-AL)	0.111	0.087	0.000	0.099	0.084	0.117	0.228	0.694	0.661	0.822	0.757
Murkowski (R-AK)	0.130	0.132	0.099	0.000	0.064	0.144	0.235	0.672	0.639	0.797	0.733
Stevens (R-AK)	0.084	0.108	0.084	0.064	0.000	0.125	0.224	0.680	0.649	0.826	0.761
Kyl (R-AZ)	0.024	0.059	0.117	0.144	0.125	0.000	0.172	0.771	0.738	0.884	0.820
McCain (R-AZ)	0.169	0.193	0.228	0.235	0.224	0.172	0.000	0.692	0.672	0.747	0.723
Pryor (D-AR)	0.687	0.743	0.694	0.672	0.680	0.771	0.692	0.000	0.074	0.180	0.177
Lincoln (D-AR)	0.634	0.705	0.661	0.639	0.649	0.738	0.672	0.074	0.000	0.208	0.177
Boxer (D-CA)	0.925	0.874	0.822	0.797	0.826	0.884	0.747	0.180	0.208	0.000	0.089
Feinstein (D-CA)	0.852	0.813	0.757	0.733	0.761	0.820	0.723	0.177	0.177	0.089	0.000

108th Senate From W-NOMINATE

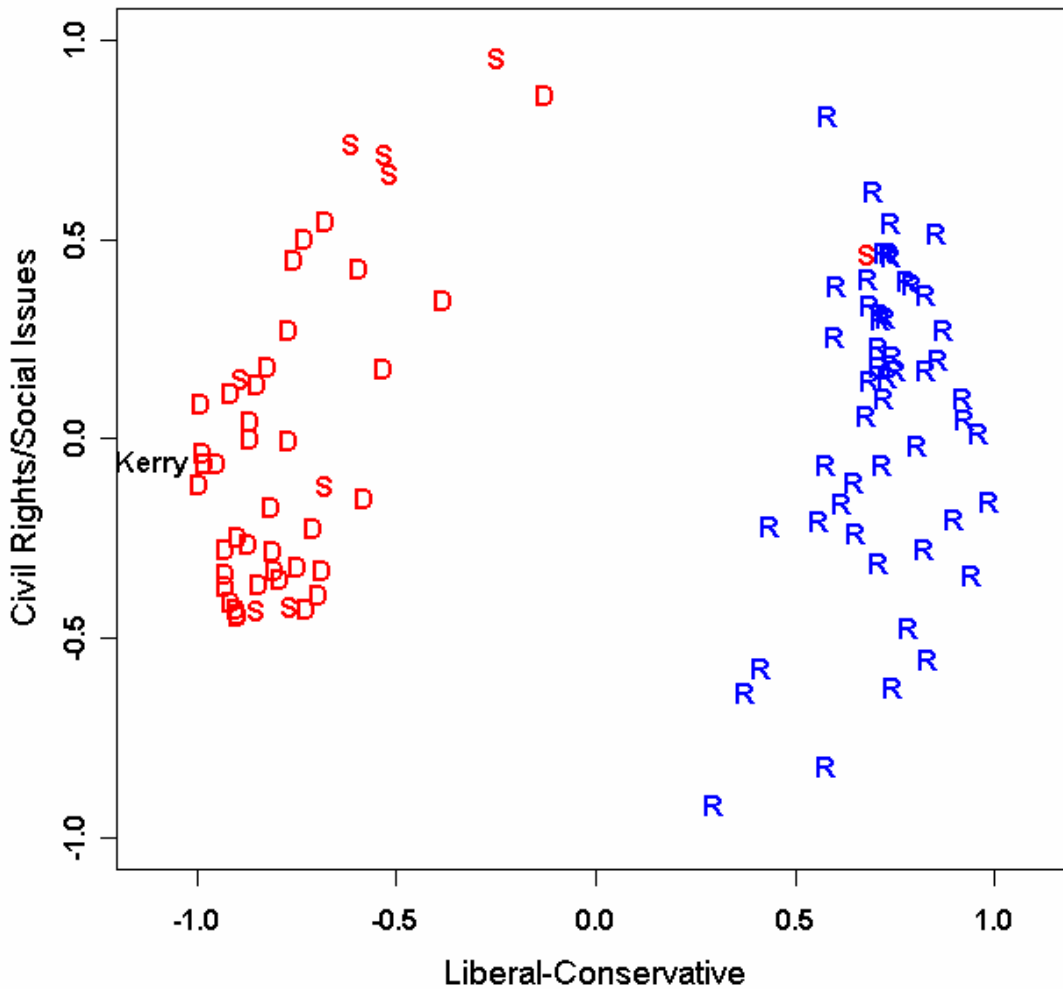


Table 2.3 Disagreement Scores for 90th Senate

	LBJ	Spar.	Hill	Grue.	Bart	Hayd	Fann	Fulb	McCl	Kuch	Murp
Johnson (D-US)	0.000	0.389	0.490	0.476	0.349	0.300	0.629	0.550	0.574	0.278	0.574
Sparkman (D-AL)	0.389	0.000	0.101	0.490	0.350	0.150	0.344	0.297	0.211	0.360	0.372
Hill (D-AL)	0.490	0.101	0.000	0.470	0.372	0.214	0.302	0.293	0.191	0.432	0.355
Gruening (D-AK)	0.476	0.490	0.470	0.000	0.238	0.417	0.565	0.313	0.510	0.456	0.556
Bartlett (D-AK)	0.349	0.350	0.372	0.238	0.000	0.296	0.523	0.306	0.437	0.363	0.501
Hayden (D-AZ)	0.300	0.150	0.214	0.417	0.296	0.000	0.426	0.307	0.314	0.365	0.468
Fannin (R-AZ)	0.629	0.344	0.302	0.565	0.523	0.426	0.000	0.416	0.215	0.378	0.124
Fulbright (D-AR)	0.550	0.297	0.293	0.313	0.306	0.307	0.416	0.000	0.327	0.472	0.430
McClellan (D-AR)	0.574	0.211	0.191	0.510	0.437	0.314	0.215	0.327	0.000	0.430	0.275
Kuchel (R-CA)	0.278	0.360	0.432	0.456	0.363	0.365	0.378	0.472	0.430	0.000	0.324
Murphy (R-CA)	0.574	0.372	0.355	0.556	0.501	0.468	0.124	0.430	0.275	0.324	0.000

90th Senate From Double-Centered Agreement Score Matrix (Torgerson)

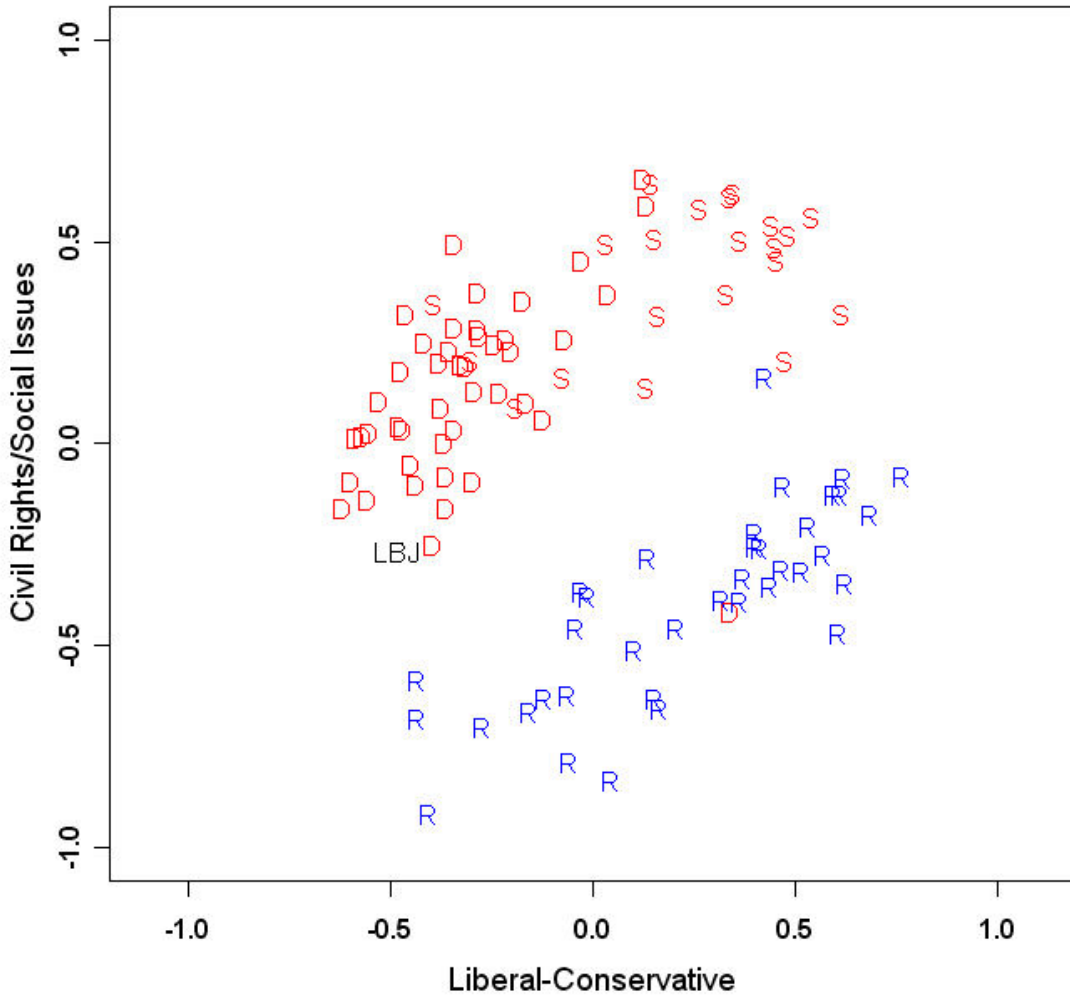
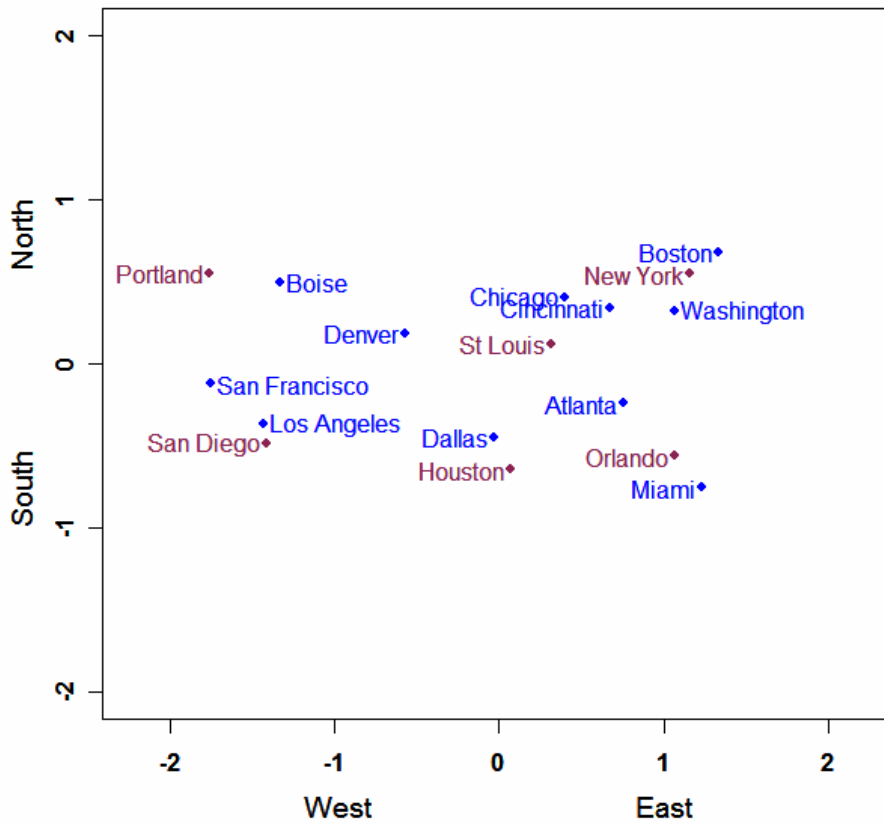


Table 2.4 Driving Distances as an *Unfolding* Problem

	Houston	NYC	Orlando	Portland	St Louis	San Diego
Atlanta	790	850	430	2660	570	2150
Boise	1820	2490	2640	430	1670	980
Boston	1830	210	1300	3140	1210	2880
Chicago	1090	810	1150	2120	290	2090
Cincinnati	1150	470	1000	2430	320	2290
Dallas	250	1560	1100	2040	660	1350
Denver	1030	1790	1880	1260	860	1100
Los Angeles	1540	2790	2430	960	1840	130
Miami	1190	1330	230	3260	1230	2680
Washington	1370	240	850	2780	860	2600
San Francisco	1890	2960	2850	670	2150	490

Figure 2.2: U. S. Map From Driving Distances Using Unfolding



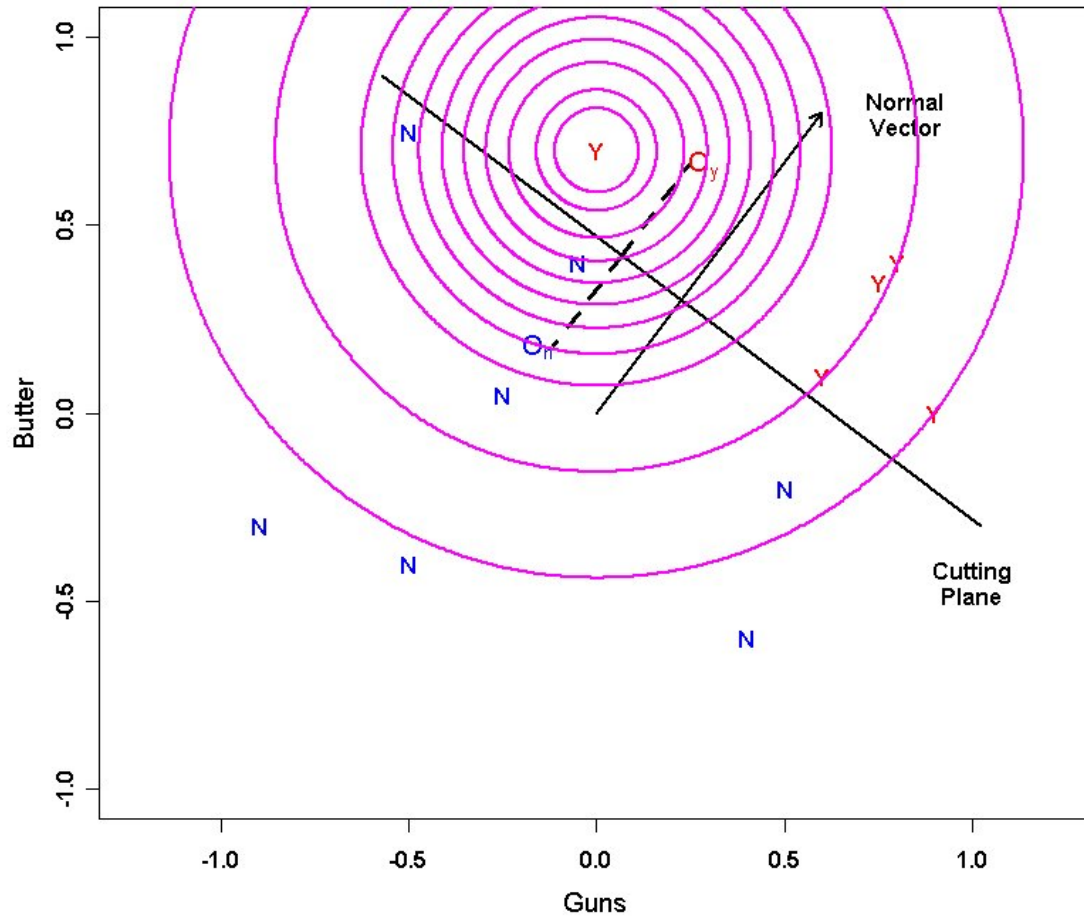
A Spatial (Geometric) Model of Roll Call Voting

- 1. Each Legislator is represented by an ideal point and has a symmetric, single-peaked utility function centered at her ideal point over the policy space.**
- 2. Each Roll Call Vote is represented by Two points**
 - One Corresponding to the Yea Outcome -- O_y**
 - and One Corresponding to the Nay Outcome -- O_n .**
- 3. Legislators vote *Probabilistically* for the closest outcome:**

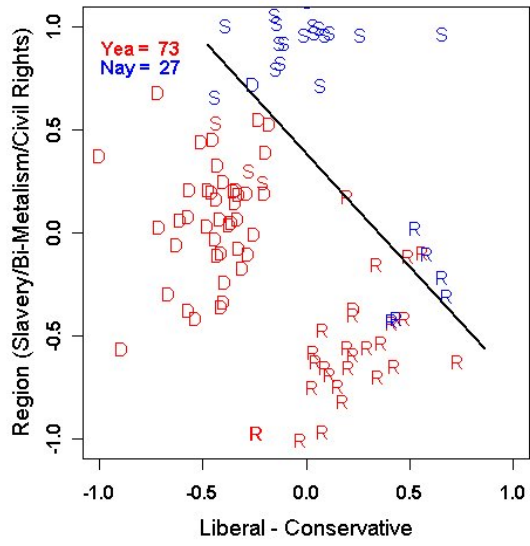
Probability of Yea = $P[U(O_y) > U(O_n)]$

Probability of Nay = $P[U(O_y) < U(O_n)]$

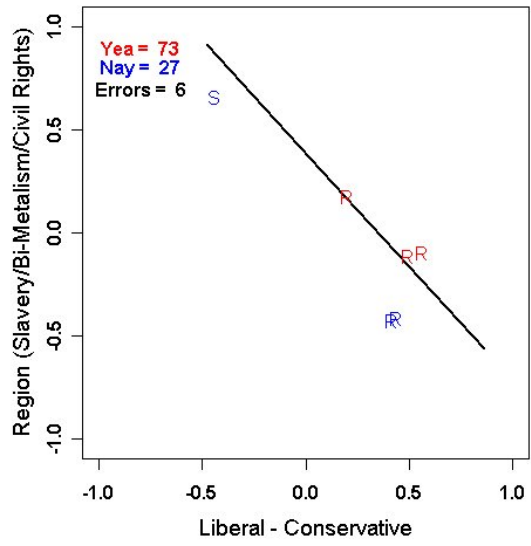
Figure 2.7: Twelve Legislators in Two Dimensions



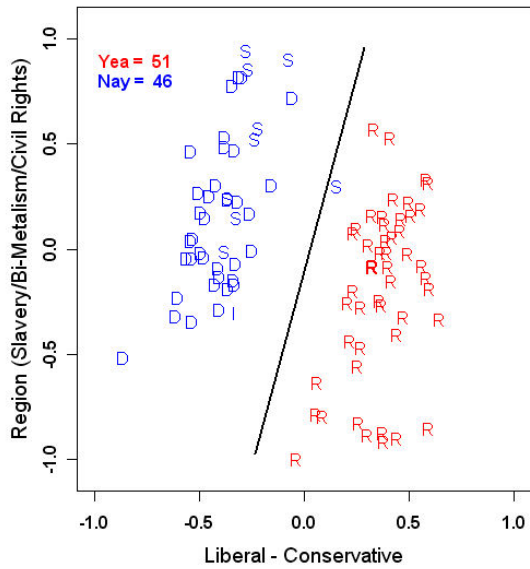
**Senate: 1964 Civil Rights Act
19 June 1964**



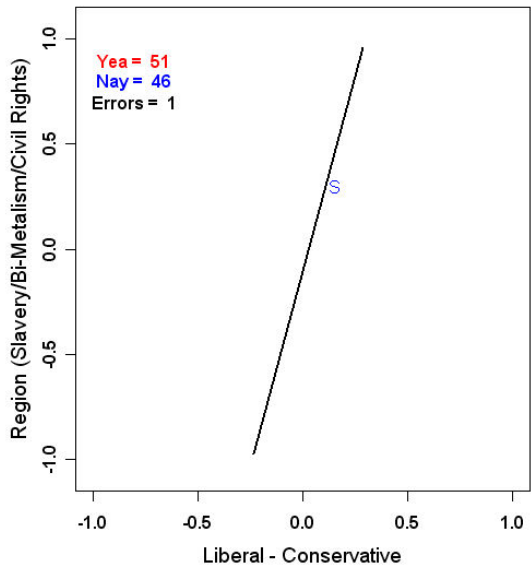
**Senate: 1964 Civil Rights Act
19 June 1964, Errors Only**



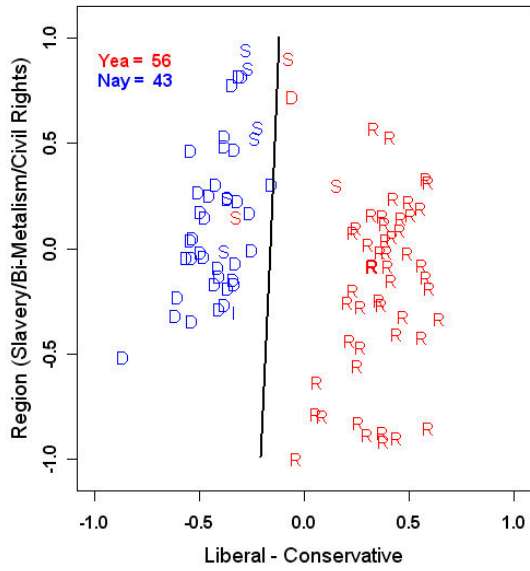
**Senate: Procedural Motion
7 January 2003**



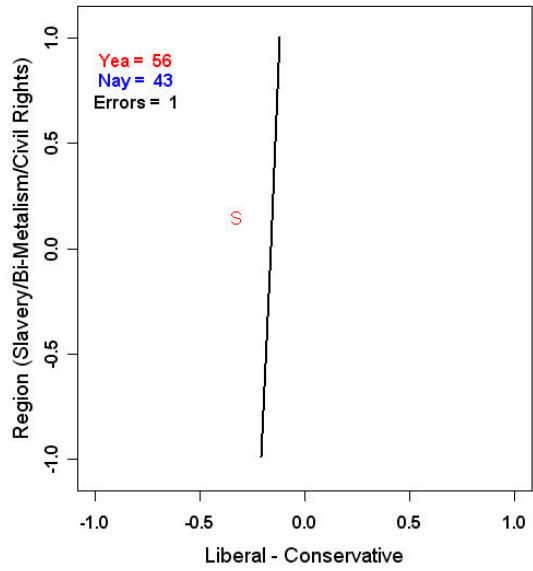
**Senate: Procedural Motion
7 January 2003, Errors Only**



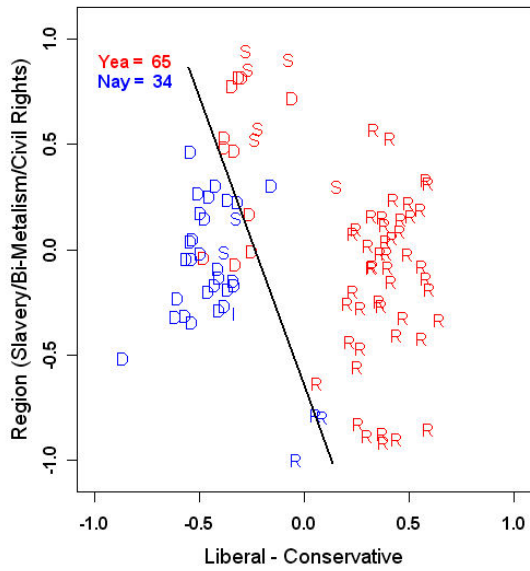
Senate: Estrada Cloture Motion
30 July 2003



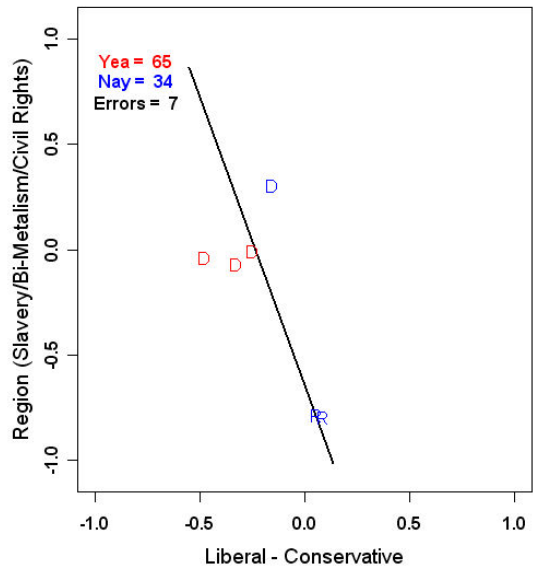
Senate: Estrada Cloture Motion
30 July 2003, Errors Only



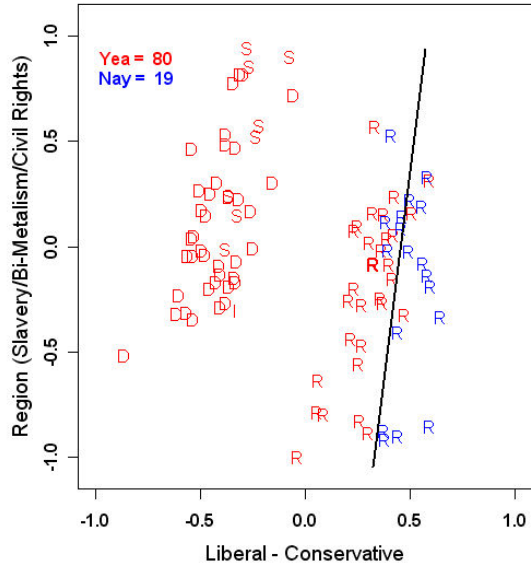
Senate: Late Term (Partial Birth) Abortion
21 October 2003



Senate: Late Term (Partial Birth) Abortion
21 October 2003, Errors Only



Senate: State Fiscal Relief
20 March 2003



Senate: State Fiscal Relief
20 March 2003, Errors Only

