08 February 2016

1 Overview

The main tasks I set out to accomplish over week as per our last meeting were as follows:

- Check that we were sorting lopsided and close votes correctly
- Figure out who is being sorted as an extremist and not as complying to party calls
- Redo DV/IV regressions with both IVs by party and majority/minority status
- Test adding different levels of randomness to the initial lopsided/close vote seeding

After checking the first item, I worked on the others. I include the plots and tables most relevant to these below.

Over the course of this week, I continued digging into the old functions and comparing them with the new functions. I found four differences which I had previously missed. The first of these I discussed with you through email. We had moved to allowing the function to stop not only when the number of switched votes dropped below a certain threshold, but also when the number of switched votes began rising again. This is in line with the 2013 paper. Having run the algorithm with our new stopping rule, I find it to have only a negligible impact on vote sorting. Summary tables for this sorting are included.

The second through fourth, I found later in the week and thus saved for the update. None of them seem promising. The first is that we have begun dropping votes which had 4 or fewer Senators on one side. I was unable to find anything which mentioned their exclusion or inclusion in the 2013 paper or its appendices, so I looked into them. Running a single iteration of the sorting function manually initially led to more party calls than a counterpart without them, but running the algorithm all the way through proved to lead to a much larger increase in noncalls. Additionally, in the previous Senate Party Calls we were sorting votes by OLS rather than a bias-reduced logit and had party line votes dropped rather than coded as definite party calls. The first of these leads the current algorithm to be more like the one used for the 2013 paper and the second makes sense theoretically and could not possibly be driving the differences we are seeing.

2 Tables and Figures

2.1 Digging into p ¡ 0.05 Party Call Coding

I first show plots in which characteristics I thought likely to go along with non-responsiveness are broken down by party. I do this by providing plots with separate colors for points based on the value in that area, with separate Loess curves fitted to each category. I found that the switch in responsiveness seems to happen around the ideological extremism value of 1 for both Democrats and Republicans and so I provide tables of MCs who are above this threshold and non-responsive to party calls. Finally, I conducted regression analysis with party call responsiveness as the DV and noncall response and extremism as IVs.

Table 1: Democrats With Extremism > 1 and Party Call Response < 75%

congress	mc	votes	pres vote	extremism	pfrate100	pirate100
95	ABOUREZK (D SD)	642	0.49	1.14	70.56	70.55
96	LEAHY (D VT)	972	0.44	1.00	86.56	74.76
97	RANDOLPH (D WV)	964	0.52	1.02	85.06	72.58
97	WILLIAMS (D NJ)	443	0.43	1.20	84.57	71.67
97	KENNEDY (D MA)	880	0.50	2.04	82.68	71.12
97	PELL (D RI)	951	0.56	1.12	77.89	72.11
97	CRANSTON (D CA)	873	0.41	1.49	79.21	74.81
97	METZENBAUM (D OH)	883	0.44	1.74	85.37	73.96
97	TSONGAS (D MA)	865	0.50	1.39	78.63	70.44
97	BRADLEY (D NJ)	917	0.43	1.25	82.76	74.65
101	BIDEN (D DE)	626	0.44	1.03	79.17	73.29
101	BRADLEY (D NJ)	625	0.43	1.19	75.73	73.46

Table 2: Republicans With Extremism > 1 and Party Call Response < 75%

congress	mc	votes cast	pres vote	extremism	pfrate100	pirate100
93	GOLDWATER (R AZ)	788	0.67	1.81	73.70	72.83
93	MCCLURE (R ID)	967	0.71	1.38	76.39	72.28
93	SCOTT (R VA)	1000	0.69	1.55	69.64	67.52
93	HELMS (R NC)	1083	0.71	2.10	72.10	72.42
94	GOLDWATER (R AZ)	804	0.67	2.09	69.56	73.64
94	SCOTT (R VA)	1153	0.69	1.87	64.01	74.07
94	HELMS (R NC)	1276	0.71	2.04	65.90	74.62
95	YOUNG (R ND)	935	0.53	1.00	85.69	74.55
98	SYMMS (R ID)	615	0.73	2.38	70.79	72.95
98	HELMS (R NC)	648	0.51	1.96	70.49	67.76
98	EAST (R NC)	624	0.51	2.27	69.13	70.73
98	NICKLES (R OK)	646	0.63	1.54	74.26	66.36
99	NICKLES (R OK)	739	0.69	1.02	83.08	70.40
100	HELMS (R NC)	737	0.62	2.50	68.29	74.77
101	HELMS (R NC)	633	0.58	2.07	74.92	72.22
101	HUMPHREY (R NH)	615	0.63	1.44	75.74	71.88
110	BUNNING (R KY)	636	0.60	1.37	85.98	73.85
110	KYL (R AZ)	644	0.55	1.46	83.99	70.15
110	COBURN (R OK)	607	0.66	1.90	81.08	65.00
110	VITTER (R LA)	628	0.57	1.34	87.32	74.63
110	DEMINT (R SC)	634	0.59	2.12	82.44	66.67
110	SESSIONS (R AL)	643	0.63	1.15	88.37	70.15
110	ENZI (R WY)	636	0.70	1.39	87.62	72.46
112	DEMINT (R SC)	431	0.55	2.19	77.96	60.00
112	PAUL (R KY)	462	0.58	1.54	74.46	57.14
112	LEE (R UT)	472	0.65	1.84	76.15	59.09

Figure 1: Main DV and Ideological Extremism - Majority and Minority Party Democrats
Note: The light gray line and dots are for Congress 107.

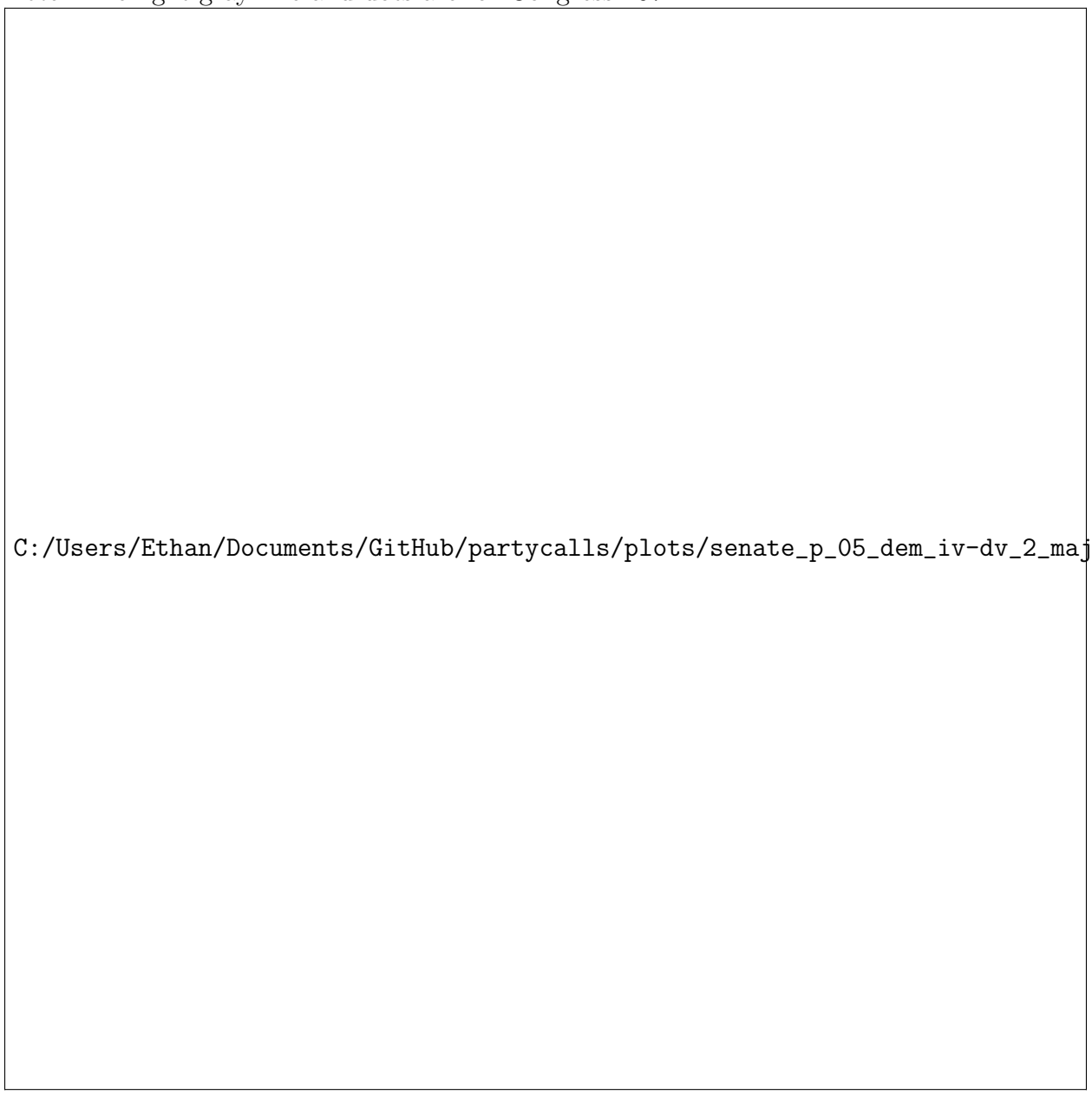

Figure 2: Main DV and Ideological Extremism - Southern and Other Democrats

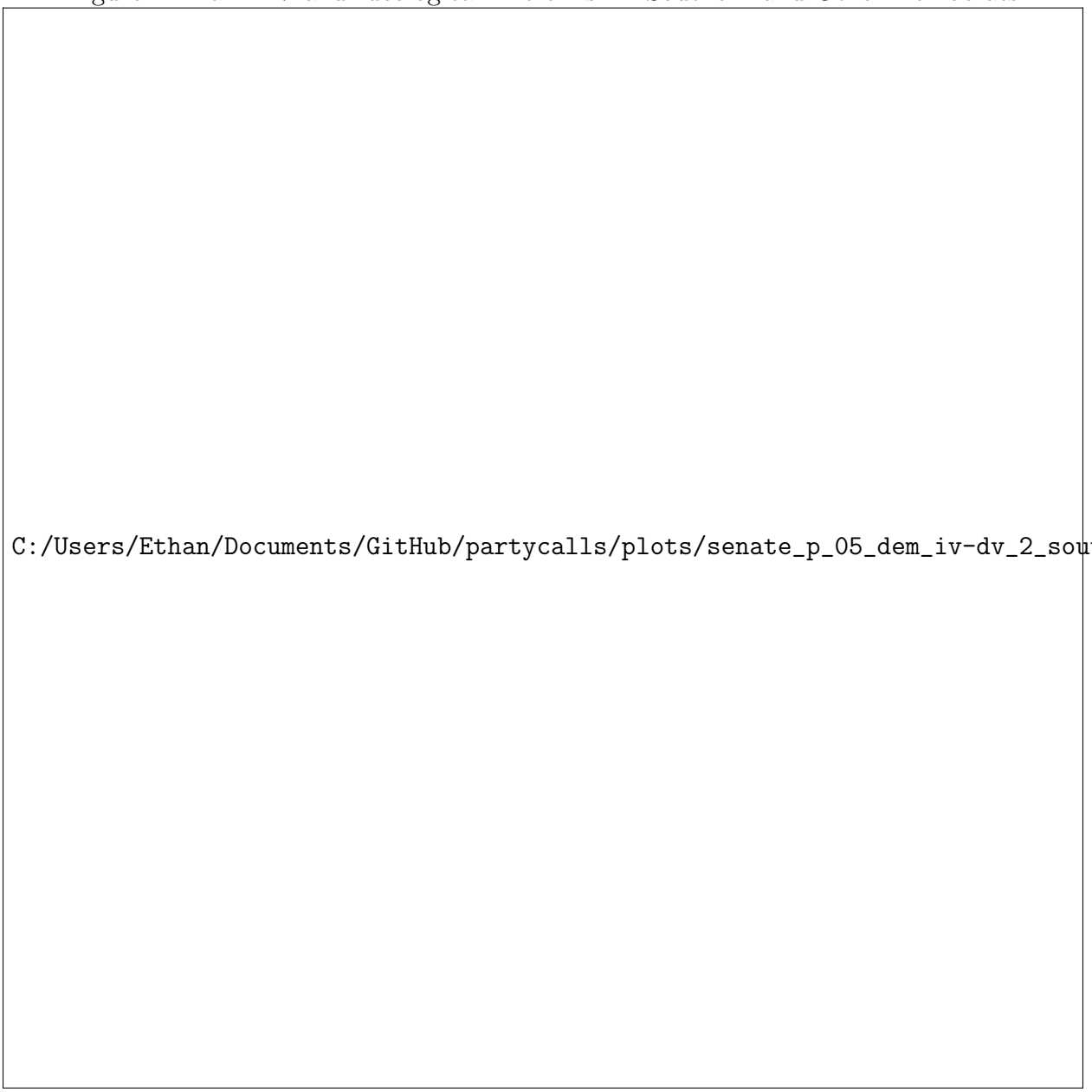

Figure 3: Main DV and Ideological Extremism - Majority and Minority Party Republicans
Note: The light gray line and dots are for Congress 107.

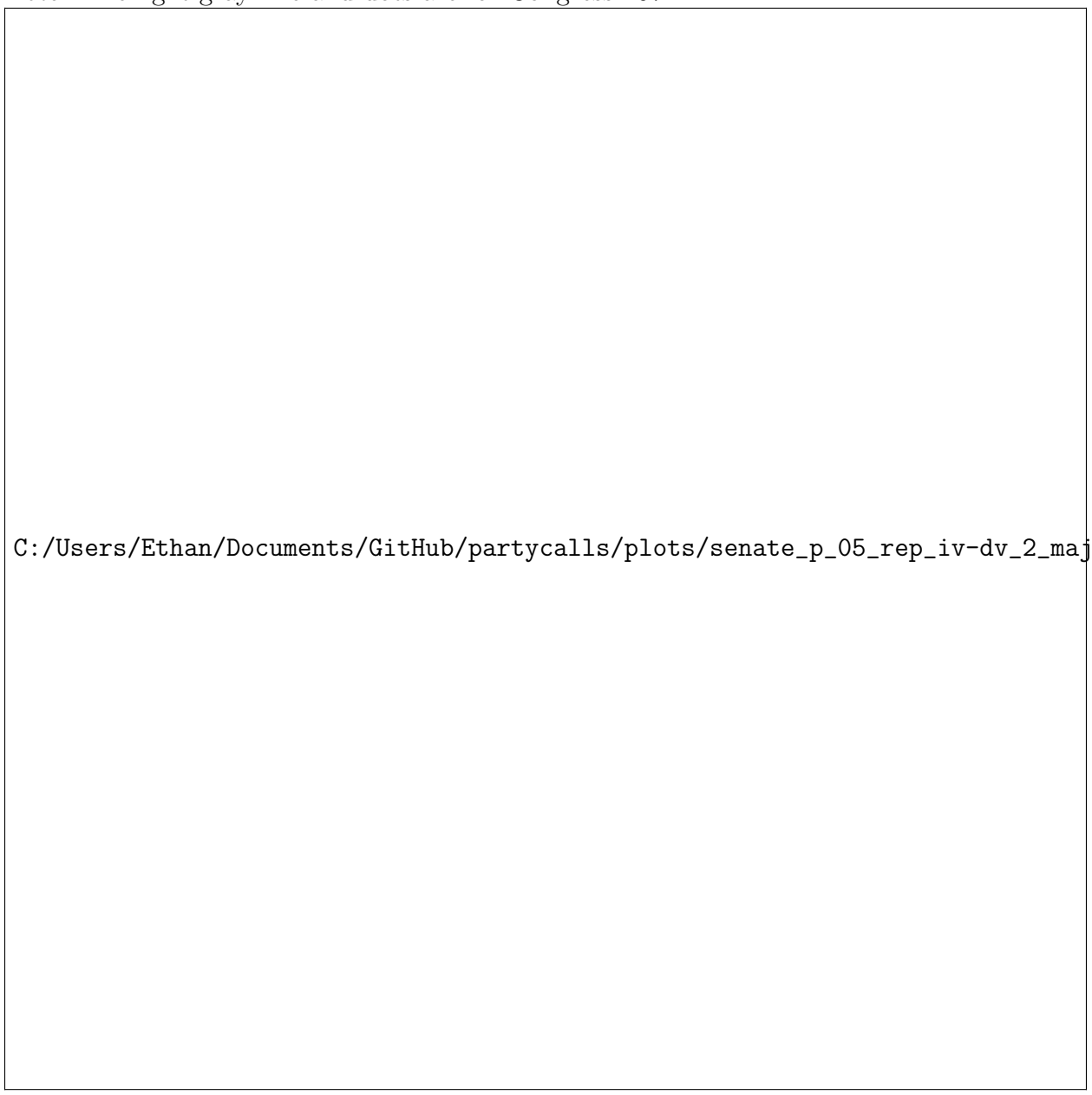

Figure 4: Main DV and Ideological Extremism - Southern and Other Republicans

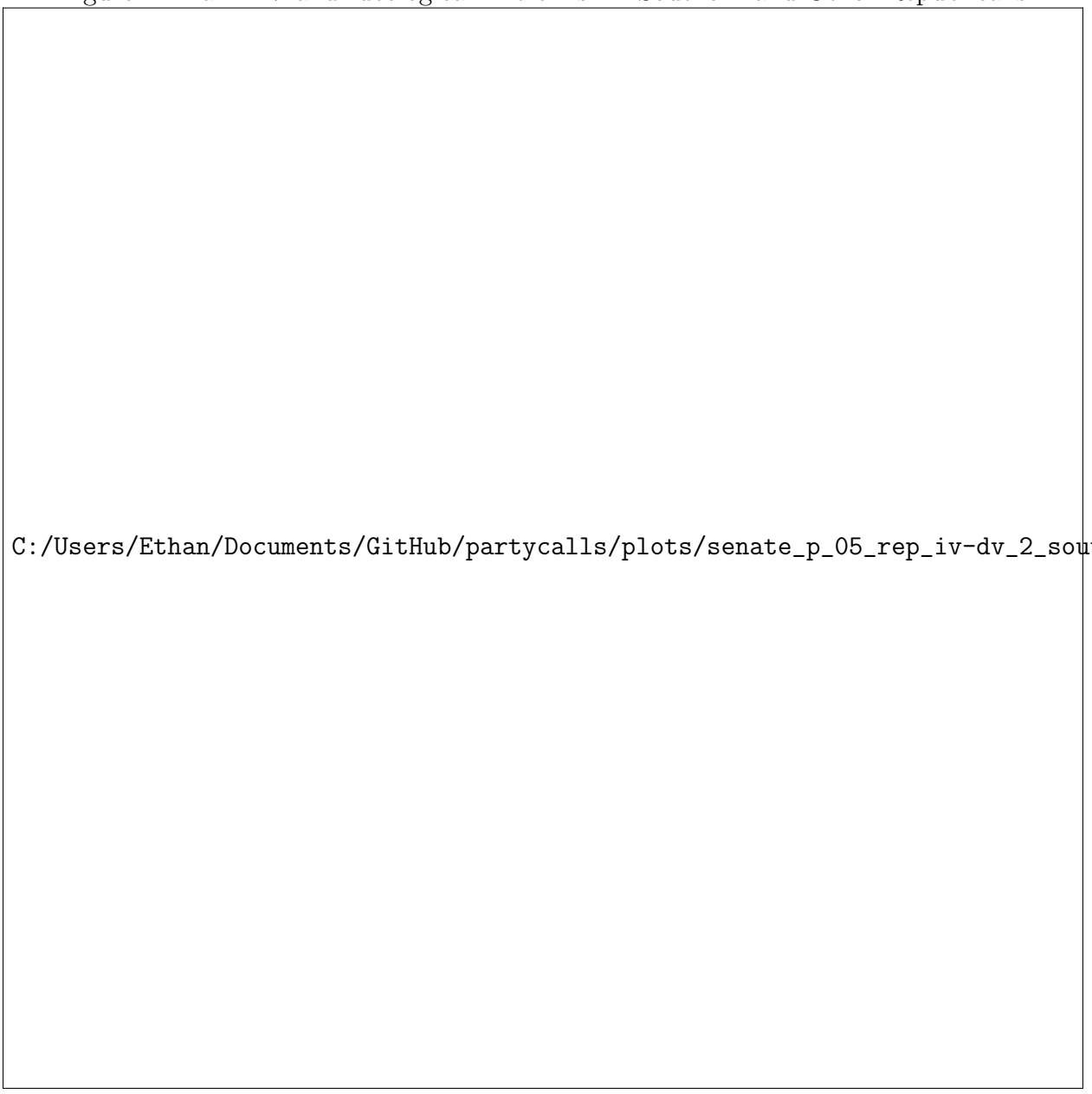

Figure 5: Main DV and Ideological Extremism - Gingrich Senators and Other Republicans

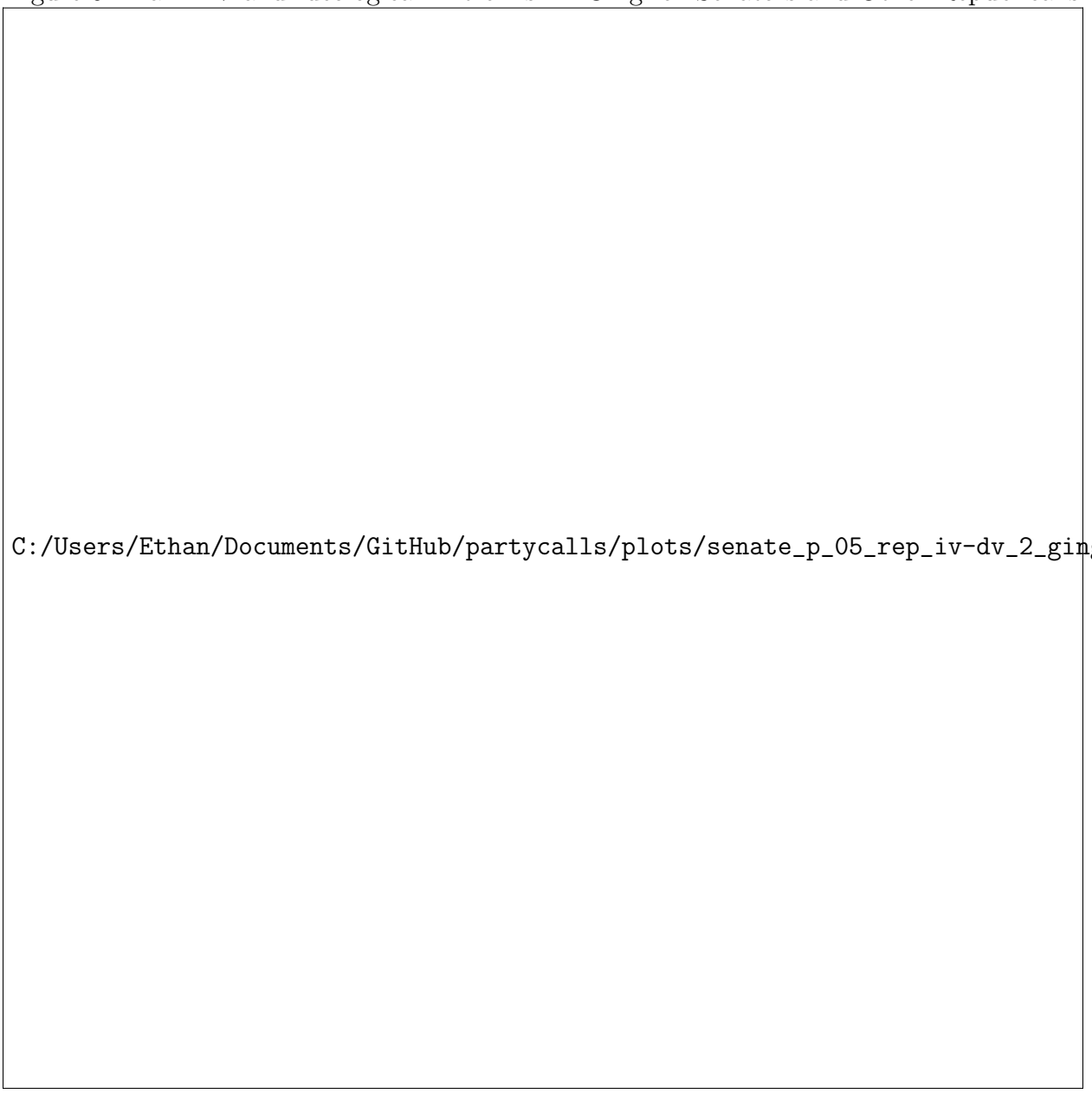

Table 3: Main DV and IV Regressions

	Democrats	Republicans	Majority	Minority
pfrate100	0.879***	0.847***	0.895***	0.777***
	(0.028)	(0.026)	(0.026)	(0.030)
ideological_extremism	0.810	2.350***	1.442**	2.471***
	(0.527)	(0.444)	(0.481)	(0.529)
(Intercept)	7.695***	10.332***	6.442**	15.341***
	(2.098)	(1.955)	(2.026)	(2.192)
R^2	0.666	0.669	0.694	0.631
Adj. R^2	0.665	0.668	0.694	0.630
Num. obs.	1039	951	1049	843
RMSE	6.433	6.758	6.093	7.120

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

2.2 Senate Vote Coding With Semi-Random Initial Noncalls

In order to test a combination of first round noncalls being selected by lopsided or close votes and random chance I added a model parameter which can randomly switch a certain percent of the close and lopsided votes. In order to test this, I ran the algorithm with 25, 50, and 75 percent of these switched as well as one with all selected at random. Of these, the 50% would be the most similar in its parameters to random selection and the 75% is like reverse selection with a 25% switch. These otherwise matched the current sorting algorithm we have been using (with the agreed upon $p < 0.05$ threshold). These performed roughly the same as one another, showing that our initial selection has little to no influence on the performance of the sorting function.

Table 4: Senate Coding with 25% of Votes Initially Switched by Congress

congress	party calls	noncalls	gray votes
93	350	590	4
94	407	689	0
95	277	710	2
96	348	535	3
97	322	424	30
98	216	316	8
99	186	445	5
100	213	378	13
101	162	322	4
102	132	323	5
103	135	473	13
104	157	598	36
105	89	365	12
106	110	394	10
107	69	367	7
108	70	418	11
109	87	414	5
110	71	442	10
111	94	499	12
112	44	344	4
Total:	3539	9046	194
Mean:	177.0	452.3	9.7
sd:	109.9	117.8	8.9

Table 5: Senate Coding with 25% of Votes Initially Switched by Lopsided/Close

	party call	noncall	gray
Lopsided	1397	4180	109
Close	2142	4866	85

Table 6: Senate Coding with 50% of Votes Initially Switched by Congress

congress	party calls	noncalls	gray votes
93	350	590	4
94	407	689	0
95	277	710	2
96	348	535	3
97	323	423	30
98	219	315	6
99	184	441	11
100	212	378	14
101	160	324	4
102	131	325	4
103	136	474	11
104	158	605	28
105	90	364	12
106	109	393	12
107	69	367	7
108	72	418	9
109	87	414	5
110	71	444	8
111	92	500	13
112	42	346	4
Total:	3537	9055	187
Mean:	176.9	452.8	9.4
sd:	110.2	118.1	7.8

Table 7: Senate Coding with 50% of Votes Initially Switched by Lopsided/Close

	party call	noncall	gray
Lopsided	1398	4179	109
Close	2139	4876	78

Table 8: Senate Coding with 75% of Votes Initially Switched by Congress

congress	party calls	noncalls	gray votes
93	350	590	4
94	407	689	0
95	277	710	2
96	348	535	3
97	336	429	11
98	217	322	1
99	185	444	7
100	212	376	16
101	160	324	4
102	132	324	4
103	129	468	24
104	158	604	29
105	89	365	12
106	109	391	14
107	67	367	9
108	71	419	9
109	86	415	5
110	71	441	11
111	93	499	13
112	42	346	4
Total:	3539	9058	182
Mean:	177.0	452.9	9.1
sd:	111.4	117.6	7.5

Table 9: Senate Coding with 75% of Votes Initially Switched by Lopsided/Close

	party call	noncall	gray
Lopsided	1418	4177	91
Close	2121	4881	91

Table 10: Senate Coding with 75% of Votes Initially Sorted Randomly by Congress

congress	party calls	noncalls	gray votes
93	350	590	4
94	407	689	0
95	277	709	3
96	348	535	3
97	321	424	31
98	218	312	10
99	185	442	9
100	213	376	15
101	154	327	7
102	132	322	6
103	137	474	10
104	158	604	29
105	90	365	11
106	106	391	17
107	69	367	7
108	71	416	12
109	87	414	5
110	74	439	10
111	94	499	12
112	42	346	4
Total:	3533	9041	205
Mean:	176.7	452.0	10.3
sd:	110.0	118.2	8.0

Table 11: Senate Coding with Votes Initially Sorted Randomly by Lopsided/Close

	party call	noncall	gray
Lopsided	1403	4167	116
Close	2130	4874	89

2.3 Senate Vote Coding Other Tests

In this section I provide tables for the vote coding provided by different stopping rules and inclusion of very lopsided votes. The first of these, much like different selection of initial noncalls, has little influence on the vote sorting. The second Gives us many more noncalls while having little impact on the number of party calls.

Table 12: Senate Vote Sorting by Congress, 1% Vote Switch Stopping Rule

congress	party calls	noncalls	gray votes
93	350	590	4
94	407	688	1
95	278	709	2
96	348	535	3
97	336	428	12
98	225	310	5
99	186	445	5
100	235	363	6
101	164	318	6
102	132	324	4
103	136	472	13
104	158	606	27
105	89	364	13
106	109	394	11
107	69	367	7
108	71	418	10
109	86	414	6
110	73	443	7
111	94	499	12
112	44	344	4
Total:	3590	9031	158
Mean:	179.5	451.6	7.9
sd:	111.5	119.1	5.8

Table 13: Senate Vote Sorting by Lopsided/Close, 1% Vote Switch Stopping Rule

	party call	noncall	gray
Lopsided	1397	4180	109
Close	2142	4866	85

Table 14: Senate Vote Sorting by Congress, 0.5% Vote Switch Stopping Rule

congress	party calls	noncalls	gray votes
93	350	590	4
94	407	688	1
95	277	709	3
96	348	535	3
97	318	420	38
98	224	311	5
99	185	441	10
100	236	363	5
101	165	318	5
102	132	324	4
103	135	473	13
104	158	605	28
105	89	365	12
106	109	392	13
107	69	367	7
108	71	418	10
109	87	414	5
110	71	444	8
111	94	499	12
112	43	344	5
Total:	3568	9020	191
Mean:	178.4	451	9.6
sd:	110.4	119.1	8.9

Table 15: Senate Vote Sorting by Lopsided/Close, 0.5% Vote Switch Stopping Rule

	party call	noncall	gray
Lopsided	1395	4187	104
Close	2173	4833	87

Table 16: Senate Vote Sorting by Congress, Keep Very Lopsided Votes in Analysis

congress	party_call_count	noncall_count	gray_vote_count
93	356	779	3
94	409	902	0
95	278	876	2
96	346	704	4
97	324	553	89
98	228	432	3
99	176	526	38
100	238	548	13
101	171	461	6
102	133	408	9
103	145	559	20
104	165	720	34
105	99	508	5
106	117	540	15
107	77	552	4
108	79	585	11
109	91	550	4
110	78	574	5
111	105	583	8
112	47	436	3
Total:	3662	11796	276
Mean:	183.1	589.8	13.8
sd:	108.5	138.4	20.4

Table 17: Senate Vote Sorting by Lopsided/Close, Keep Very Lopsided Votes in Analysis

	party call	noncall	gray
Lopsided	1476	7048	116
Close	2186	4748	160