Partisanship, Political Knowledge, and Changing Economic Conditions

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May 29, 2012

*Prepared for presentation at the 2012 Annual Meeting of the Society for Political Methodology, Chapel Hill, North Carolina, July 19–21, 2012. This paper is based on data released from the 2008–09 ANES Panel Study and 2010 ANES Panel Recontact Study, both conducted by the American National Election Studies at Stanford University and the University of Michigan. I thank the Office of Graduate Studies and Research at Texas A&M International University for a research travel grant, and participants at the 2010 American Political Science Association, 2011 Western Political Science Association, and 2011 European Political Science Association conferences, along with Michelle Dion and Boris Shor, for their helpful comments on previous iterations of this research. Any errors in analysis or interpretation are the sole responsibility of the author.

Abstract

Existing research is replete with evidence that individuals' perceptions of the state of the economy are seemingly only loosely connected to more objective evaluations of its state and are contaminated by partisan influences. This paper provides further evidence of why these partisan influences come about, by advancing the hypothesis that citizen political knowledge moderates the effect of partisanship on economic evaluations, grounded in Zaller's Receive-Accept-Sample model of opinion formation and articulation. The paper also advances the hypothesis that more knowledgeable partisans will respond to changes in elite messaging regarding the economy fairly rapidly after a change in control of the government.

I examine these propositions using data from the ANES panel study of public opinion between January 2008 and June 2010, and find evidence affirming the essential interactive role of knowledge and partisanship in the formation and articulation of evaluations of the national economy.

A core finding of the last sixty years of systematic social scientific research on voting behavior in the United States and other democracies (Berelson, Lazarsfeld and McPhee 1954; Campbell et al. 1960) is that citizens, for the most part, cast their ballots with a remarkable lack of information about the candidates for public office who are seeking their votes and the political context surrounding the election. At the same time, researchers have found—in a seeming contradiction—that the overall outcomes of elections respond as if voters are engaged in holding elected officials accountable for their performance in office (Key 1966); voters seem to rationally reward or punish incumbent elected officials based on factors such as the success or failure of the government's conduct in war and the performance of the economy, and aggregate-level outcomes of elections appear to reflect broad shifts in the policy preferences of the public.

Accordingly political scientists have since attempted to reconcile this individual-level lack of attentiveness—justified with the label "rational ignorance"—with the "aggregate rationality" displayed by the public at large. A seemingly-promising approach is to argue that voters are simplifying their voting decisions by looking at the performance of officials in office, either in terms of their ability to follow-through on their policy agenda as proposed by the party responsibility model (APSA Committee on Political Parties 1950), or by evaluating their handing of the economy while in office and voting accordingly (Lewis-Beck 1988). The latter *economic voting* approach appears particularly compelling, not just in the United States but in other democracies as well (Powell and Whitten 1993). However, as Duch, Palmer and Anderson (2000) and Evans and Andersen (2006) note, there is an endogenous relationship between partisanship and perceptions of the national economy; citizens' views of the economy are biased by their own partisan preconceptions, perhaps limiting the potential for citizens to vote rationally based on this information. Furthermore Gomez and Wilson (2001) find distinctions based on voters' political

knowledge in the degree to which citizens hold elected officials accountable for national economic conditions, with more sophisticated voters tending to attribute *less* responsibility to the president for the state of the national economy than their less sophisticated kin.

This paper expands upon the research of Duch, Palmer and Anderson to consider two open questions regarding the nature of partisan effects: first, to identify the extent to which political turnover affects perceptions of the economy at the individual level, and second, to examine how partisan effects are moderated or amplified by differences in political knowledge between citizens. Data from six waves of the 2008–09 American National Election Studies Panel Study along with the single-wave 2010 Panel Recontact Study (2010; 2011) are employed, along with state-level estimates of change in unemployment rates from the Bureau of Labor Statistics (2011), to look at the effects of a transition from a Republican to Democratic president while at the same time considering the effects of knowledge using a comprehensive set of questions administered in the survey. The findings indicate that partisan turnover in perceptions of the economy is quite rapid after a political transition, consistent with the findings of Gerber and Huber (2010), and that citizens with higher levels of political knowledge are more likely to have perceptions of the economy that are affected by political turnover.

1 Citizens' Evaluations of the Economy and Partisanship

Since the discovery after the development of the modern sample survey that most citizens are not "pure" issue voters, who decide how to vote based on the issue positions taken by political candidates and parties on the concerns of the day (Berelson, Lazarsfeld and McPhee 1954; Campbell et al. 1960), political scientists have sought to understand how voters make sufficient sense of their political environment to cast their ballots. In addition to the theories of social group identity and party affiliation advanced in the Elmira and Michigan studies, respectively, other promising approaches have been suggested, foremost among them that voters base their decisions on the past performance of incumbent office holders and parties, and reward or punish them based on this performance (Fiorina 1981; Kiewiet and Rivers 1984; Woon forthcoming).

In particular, the performance of the economy has been seen to be a reasonable predictor of citizens' voting behavior (Fiorina 1978; Lewis-Beck and Stegmaier 2007; Duch and Stevenson 2008), to the extent that the state of the national economy is considered a key predictor of aggregate voting outcomes (Gleisner 1992), although occasionally—such as in the case of the 2000

presidential election, in which Al Gore won a narrow popular vote plurality but failed to secure Florida's electoral votes (and thus an electoral college majority) by a 537-vote margin—the state of the economy is not necessarily dispositive (Fiorina, Abrams and Pope 2003). While the importance of retrospective economic voting is generally non-controversial, some scholars have suggested that the evidence for it is more limited. For example, Evans and Andersen (2006), in a study spanning the 1992–97 electoral cycle in Great Britain, argue that while voters' perceptions of the economy were influenced by feelings toward the governing Conservative Party under John Major, there is little evidence that these evaluations in turn influenced vote choice in the 1997 contest that led to a Labour victory (but see Lewis-Beck 2006 and Anderson, Mendes and Tverdova 2004), while a multinational study by van der Brug, van der Eijk and Franklin (2007) suggests that the incidence of economic voting varies depending on the degree to which voters can clearly attribute economic conditions to parties and their candidates for office.

Potentially more problematic is the question of what aspect or aspects of the economy voters consider when making choices. This dispute comes down to the question of whether voters are making decisions based on their own personal financial and employment circumstances—"pocketbook" voting—or whether they are deciding in reference to broader, "sociotropic" economic circumstances. In general, despite strong theoretical reasons to believe both factors are important, evidence for sociotropic voting has tended to be stronger than that for pocketbook voting (see, for example, Funk and Garcia-Monet 1997).[1] Gomez and Wilson (2001) suggest that variation in voters' political knowledge plays a role in the lack of evidence of pocketbook voting; they argue, based on data from the 1992, 1996, and 1998 elections, that pocketbook voting mostly takes place among more sophisticated voters, while sociotropic voting is more common among less sophisticated voters. They believe this disparity emerges because more knowledgeable voters are more aware that the president has only limited control over national economic circumstances, and thus it is irrational to vote based on the broader economy. They also demonstrate that this theory of heterogeneity in attributions appears to be valid in Canada, Hungary, Mexico, and Taiwan (Gomez and Wilson 2006). However, in an extension and replication of Gomez and Wilson, considering the 1988–2004 U.S. presidential elections, Godbout and Bélanger (2007) argue that the evidence that perceived economic conditions affect vote choice

[1] A third approach to economic voting, "patrimonial" voting, suggests that citizens vote based on their own economic interests, such as investments and property ownership. This dimension has historically been neglected in the study of U.S. politics, but is of greater concern to scholars in Europe (see, for example, Nadeau, Foucault and Lewis-Beck 2010 and Lewis-Beck and Nadeau 2011).

is limited, at best, although Gomez and Wilson (2007) dispute these findings.

Another major concern in the economic voting literature is the issue of endogeneity; in short, while perceptions of the national economy appear to influence individuals' voting decisions, those perceptions themselves are influenced by voters' partisan and ideological predispositions. For example, Duch, Palmer and Anderson (2000) find that perceptions of the national economy are influenced by a variety of factors, including variation in political attitudes and knowledge, media exposure, and personal characteristics. The extent and effect of this potential endogeneity is disputed; Evans and Andersen (2006) argue that once this endogeneity is removed, there is no evidence of economic voting, while others (Lewis-Beck 2006; Lewis-Beck, Nadeau and Elias 2008) suggest that economic voting persists despite perceptions of the economy being influenced by partisan and other predispositions. Moreover, Gerber and Huber (2009) find evidence that perceptions of the economy have real consequences beyond voting, identifying change in consumer behavior as a result of individuals' changing economic sentiments.

Because the bulk of the evidence suggests that individuals' perceptions of the economy do influence voting and other forms of behavior, we might reasonably be concerned about the origins of these perceptions and sources of bias in these perceptions, and how the political environment might be altered to lead citizens to form less biased views of the economy.

The role of party identification, particularly in the United States, in affecting political behavior is well-explored in the political science literature, dating back to the dawn of the behavioral revolution in the discipline. Both the Elmira studies (Lazarsfeld, Berelson and Gaudet 1944; Berelson, Lazarsfeld and McPhee 1954) and the early Michigan studies (Campbell et al. 1960) indicated that both opinion formation and voting behavior are substantially affected by partisan ties, even if they differed on what the nature of partisanship is. Whether we conceive of partisanship as a form of social group identity (Conover 1984; Green, Palmquist and Schickler 2002), a running tally of past political behavior (Key 1966), or, as is most common in the American politics literature, an "affective orientation" toward the two major parties, partisanship appears to have substantial effects on the opinions that are formed and articulated by voters (Belknap and Campbell 1951; Feldman 1988; Goren 2005).

One might naïvely assume that these effects of partisanship should decline among citizens with higher political knowledge; more sophisticated voters are more attentive to politics and thus should have a more complete and objective view of what is going on politically. Instead Zaller (1992) illustrates this is not the case. His "receive-accept-sample" model of political information

processing and opinion formation instead posits that voters' propensity to accept new political information[2] is dependent on their level of political expertise; more knowledgeable voters are more likely to *resist* or filter out new information that is inconsistent with their prior beliefs.[3] Thus, when exposed to an information environment in which partisan elites are giving contradictory signals about the state of the economy—such as a political campaign, during which we might reasonably expect the incumbent party to accentuate the positive aspects of its record while the opposition would emphasize the negatives—sophisticated voters at higher levels of knowledge may arrive at very different political viewpoints due to differing partisan predispositions.

Accordingly we would expect both political knowledge and party affiliation to have substantial effects on how individual citizens form their opinions on politicized subjects, including (but by no means limited to) the state of the national economy. Furthermore we would expect an *interactive* effect between knowledge and partisanship; per Zaller and others, not only would we would presume that in-partisans will have generally more positive views of national economic conditions than out-partisans, but also that these effects will be amplified among more knowledgeable citizens with the ability to "resist" political information flows that contradict their prior beliefs.

The transition between the Bush and Obama administrations provides an ample opportunity to test this theory. A change in partisan control of the government should be reflected in the electorate by shifts in perceptions of economic conditions as the former "out-partisans" become in-partisans and *vice versa*. This proposition is already supported by past research; notably, Gerber and Huber (2010) identified rapid turnover in perceptions of the economy due to the shift in control of Congress at the 2006 midterm elections. We should also expect that these effects will be more dramatic among more sophisticated voters, as they are more likely to be attentive to politics and thus will be both more exposed to updated political information and more likely to update their beliefs to the new "party line" articulated by in-partisan opinion leaders in the information environment.

[2]Zaller refers to pieces of political information as "considerations."

[3]This insight is not necessarily confined to Zaller; for example, see Hovland and Weiss (1951) and Sobel (1985).

2 Data and Models

To examine these questions more closely, data collected as part of two recent survey research projects conducted by the American National Election Studies—the 2008–09 ANES Panel Study and 2010 ANES Panel Recontact Study (2010; 2011)—were analyzed. The Panel Study was originally conducted over 21 waves between January 2008 and September 2009, with followup interviews of the same panel conducted in October 2009 and June 2010. Panel members were recruited in two phases: a first cohort was interviewed beginning in January 2008, while the second began participation in September 2008. Panel recruitment of American adults took place by telephone using random-digit dialing, while wave interviews were conducted over the Internet by Knowledge Networks, Inc., with free Internet access using an MSNTV2 appliance for the duration of the study provided to panelists who did not have Internet access prior to recruitment. In all, 4,194 respondents were recruited across the two cohorts; the maximum participation rate in any wave was 2,665, in the November 2008 wave.

Ten of the 22 waves, along with the 2010 Recontact wave, included questions in whole or in part designed by the ANES primarily on political issues; the remaining waves had a mix of political and non-political questions produced by Knowledge Networks or other clients who shared the costs of producing the panel study. As such, even though there were monthly interviews, the key outcome variable in this study—the respondent's perception of national economic conditions—is only measured in seven waves: January 2008, June 2008, October 2008, November 2008, May 2009, July 2009, and June 2010.

This outcome variable is measured as the response to the question: "Now thinking about the economy in the country as a whole, would you say that as compared to one year ago, the nation's economy is now better, about the same, or worse?" Respondents who responded with "better" or "worse" were then offered a followup to determine if they believed the economy was "somewhat" or "much" worse or better. In the 2009 waves, the question wording was slightly changed to read "Now thinking about the economy in the country as a whole, would you say that as compared to *January 2009*, the nation's economy is now better, about the same, or worse?" (emphasis added), with the same follow-ups for "better" or "worse" responses, presumably to ensure respondents were evaluating the Obama administration rather than the Bush administration in their responses to the question. These responses were recoded on a five-point ordinal scale from "much worse" to "much better."

The respondent's party identification was measured using the traditional ANES seven-point scale approach, based on the branching question format commonly used in past ANES studies.[4] Responses were coded on a seven-point ordinal scale from −3 (strong Democrat) to +3 (strong Republican). In order to avoid potential endogeneity due to party identification being affected by changes in economic circumstances (Lewis-Beck, Nadeau and Elias 2008), the response from the first wave the panel member participated in was used—either January or September 2008.[5]

Respondents' levels of political knowledge were measured using an item-response theory model, utilizing items reflecting objective knowledge about American politics and candidates for the presidency as well as items based on the correctness of relative placement of the candidates on the ideological spectrum and correctly identifying the issue positions of those candidates; the measure and rationale is described in more detail in Appendix A. For this analysis the recovered knowledge measure was transformed from its (approximately) standard normal distribution to a percentile ranking ranging from 0 to 1 for ease of interpretation.

To include an objective measure of economic conditions that varied across respondents within waves, state-level unemployment estimates produced by the Bureau of Labor Statistics of the U.S. Department of Labor were obtained (2011). For most waves, a twelve-month change in the state's seasonal unemployment rate was used as this measure; however, in the May and July 2009 waves, due to the different time-frame solicited from respondents in the question, the change in the state-level seasonal unemployment rate since January 2009 was used instead. Descriptive statistics for each variable in the models are presented in Table 1.

As the dependent variable is measured on an ordinal scale, an ordinal regression model would ordinarily appropriate; in political science, the most commonly-employed models are the ordered logit (ordered logistic) and ordered probit models, which typically produce similar results for the same data (Aldrich and Nelson 1984; Long 1997; but see Lawrence 2007*a*). However, the inclusion of individual-level and aggregate-level covariates in the model introduces correlation between subjects that should be accounted for in the model, either by employing cluster-robust standard errors or hierarchical modeling (Gelman and Hill 2007; Primo, Jacobsmeier and Milyo

[4]Respondents are asked "Generally speaking, do you usually think of yourself as a Republican, a Democrat, an independent, or what?"; professed Republicans and Democrats are then given a followup question that asks "Would you call yourself a strong [Democrat/Republican] or a not very strong [Democrat/Republican]?" while independents are asked "Do you think of yourself as closer to the Republican Party or to the Democratic Party?"

[5]As there is a model based on the first wave, the potential endogeneity issue is not completely absent; however, as the results of January 2008 model are consistent with the models based on other waves in which this endogeneity could not be an issue, the findings based on that wave are included as well.

Variable	n	Min	q_1	$\widetilde{x}$	$\bar{x}$	q_3	Max	s	IQR	#NA
Knowledge	2606	0.0	0.3	0.5	0.5	0.8	1.0	0.3	0.5	0
Party.ID	2526	-3.0	-2.0	0.0	-0.1	2.0	3.0	2.2	4.0	80
wave1econ	1372	-2.0	-2.0	-1.0	-1.1	0.0	2.0	0.9	2.0	1234
wave6econ	1270	-2.0	-2.0	-2.0	-1.4	-1.0	2.0	0.7	1.0	1336
wave10econ	2488	-2.0	-2.0	-2.0	-1.7	-2.0	2.0	0.6	0.0	118
wave11econ	2602	-2.0	-2.0	-2.0	-1.7	-2.0	2.0	0.6	0.0	4
wave17econ	2232	-2.0	-2.0	-1.0	-0.7	0.0	2.0	1.1	2.0	374
wave19econ	2219	-2.0	-2.0	-1.0	-0.7	0.0	2.0	1.0	2.0	387
suppecon	1566	-2.0	-1.0	0.0	-0.3	1.0	2.0	1.1	2.0	1040
unempw1	2606	-0.7	0.1	0.3	0.4	0.7	1.4	0.5	0.6	0
unempw6	2606	-0.6	0.7	0.9	1.0	1.5	2.4	0.6	0.8	0
unempw10	2606	0.1	1.2	1.6	1.7	2.4	3.1	0.7	1.2	0
unempw11	2606	0.5	1.5	1.8	2.1	2.9	3.4	0.7	1.4	0
unempw17jan	2606	0.4	1.2	1.5	1.4	1.7	2.2	0.4	0.5	0
unempw19jan	2606	0.4	1.4	1.8	1.7	2.0	3.1	0.4	0.6	0
unempsupp	2606	-1.2	-0.4	0.1	0.1	0.5	2.4	0.7	0.9	0

Table 1: Descriptive Statistics

2007); in this case the latter approach was employed, using random effects at the state level to capture the between-subjects correlation.

The diagrams in Figures 1 and 2 illustrate the expected relationships in the model for the variables for waves during the Bush and Obama administrations, respectively. The models were estimated using the `clmm2` procedure in the `ordinal` package for R 2.15.0 (Christensen 2011; R Development Core Team 2011); post-estimation measures were calculated and model results tables were formatted using the `memisc` package (Elff 2011).

3 Results

Results from the model for the 2008 waves, during the Bush administration, are in Table 2, while results for the waves in 2009 and 2010 are presented in Table 3.[6] Separation plots for each model (Greenhill, Ward and Sacks 2011) are presented in Appendix B. While the statistical significance and magnitude of the variables' effects tend to vary between waves, some common trends can be identified in both the Bush administration and Obama administration waves.

The "objective" state-level economy does seem to have important effects on economic perceptions across waves. Although the question asked of respondents requests that they evaluate the *national* economy, it stands to reason that citizens are perceiving national economic conditions

[6]Models including controls for respondents' age, income, race, gender, and employment status in addition to those presented in the tables were also estimated, with substantively similar results. These model results are omitted from the paper but available from the author upon request.

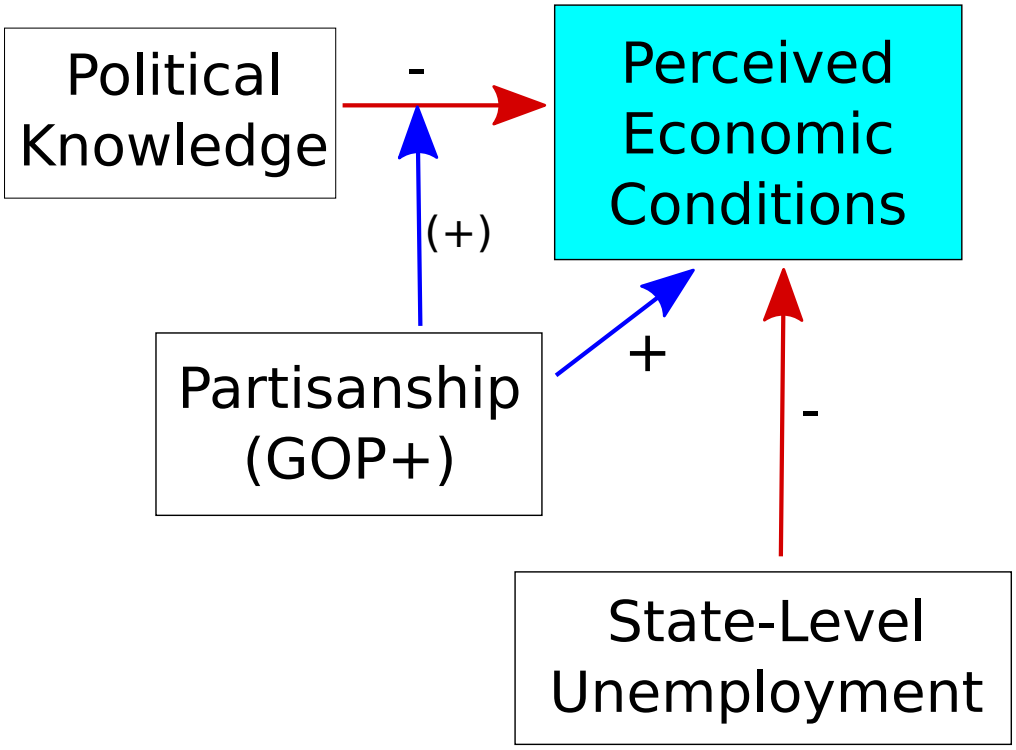

Figure 1: Model expectations: Bush administration waves

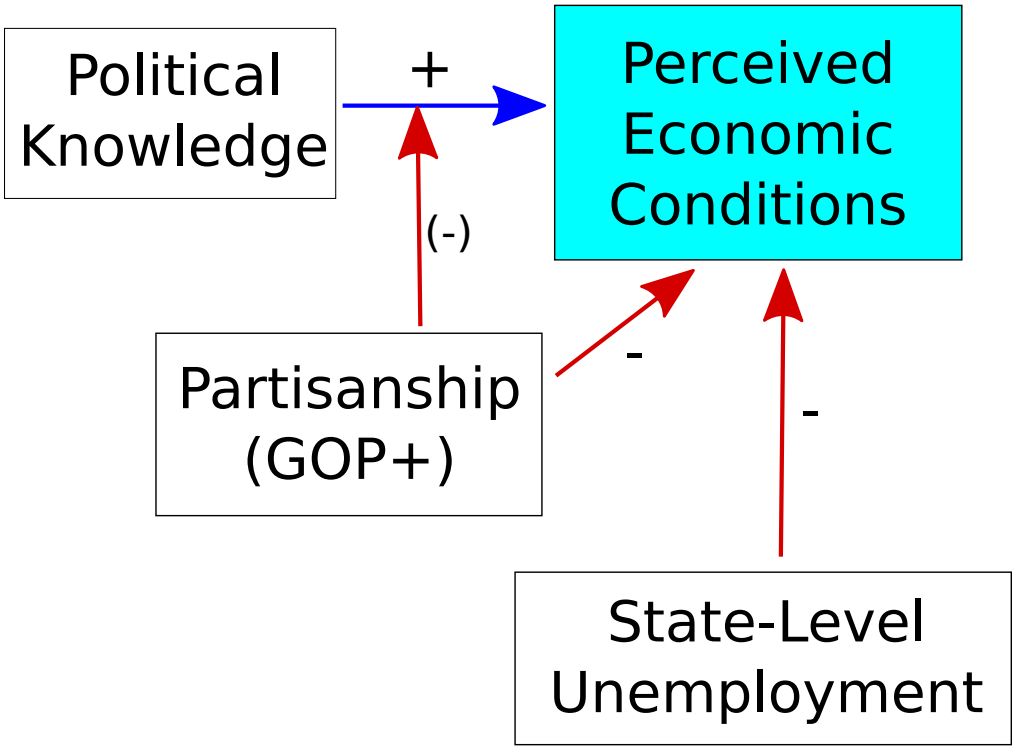

Figure 2: Model expectations: Obama administration waves

Table 2: Model: 2008 Waves

	Jan 08	Jun 08	Oct 08	Nov 08
12 mo. Δ Unemployment	-0.420^{**}	-0.156	-0.378^{***}	-0.272^{***}
	(0.134)	(0.094)	(0.078)	(0.079)
Party ID (SD=−3, SR=+3)	0.030	-0.011	0.083	0.055
	(0.051)	(0.057)	(0.050)	(0.046)
Pol. Knowledge	-0.351^{*}	-0.108	-0.845^{***}	-1.431^{***}
	(0.173)	(0.196)	(0.200)	(0.189)
PID × Knowledge	0.432^{***}	0.489^{***}	0.465^{***}	0.437^{***}
	(0.083)	(0.094)	(0.091)	(0.085)
μ_1	-1.055^{***}	0.085	0.407^{*}	0.088
	(0.124)	(0.145)	(0.160)	(0.182)
μ_2	0.819^{***}	1.881^{***}	2.015^{***}	1.614^{***}
	(0.121)	(0.159)	(0.174)	(0.191)
μ_3	3.285^{***}	4.432^{***}	4.807^{***}	4.107^{***}
	(0.187)	(0.293)	(0.366)	(0.310)
μ_4	4.787^{***}	6.463^{***}	5.214^{***}	5.211^{***}
	(0.335)	(0.721)	(0.435)	(0.479)
McFadden R-sq.	0.050	0.053	0.100	0.086
Likelihood-ratio	163.634	134.530	327.584	314.910
p	0.000	0.000	0.000	0.000
Log-likelihood	−1556.403	−1192.641	−1478.197	−1665.416
ePCP	45.7%	57.8%	78.6%	76.9%
ePRE	19.1%	26.4%	39.7%	38.8%
N	1372	1268	2410	2523

- Dependent variable: perceived change in economic conditions over the past 12 months, five-point scale.
- Entries are mixed-effects ordered logit regression estimates with standard errors in parentheses (with random effects by state).
- $\dagger : p \leq .10; * \leq .05; ** \leq .01, * * * \leq .001$ (two-tailed).

through the prism of their everyday experiences; we might reasonably expect a voter in Michigan, one of the hardest-hit states during 2008, to have a very different perspective than a Texan, for example. In states where the unemployment rate increased the most, voters were substantially more likely to give negative evaluations of current economic conditions; in five of the seven waves, these effects are statistically significant and we thus can be confident these effects are present in the underlying population. These findings would indicate that voters are, at least to some extent, rationally reacting to economic change.

However, it is also apparent that subjectivity is an important factor in explaining citizens' views of the economy. Across all the waves, we find rather dramatic effects for the interaction

between partisanship and political knowledge. Moreover these interactions are consistent with our posited relationship: higher political knowledge *amplifies* the effects of partisanship on economic perceptions.[7]

The combined effects of knowledge and party identification are better illustrated in Figure 3, which shows the combined marginal effects of partisanship and political knowledge on having a rosier view of the economy for respondents during the January 2008 wave.[8] The effects display clearly demonstrates that, all other factors remaining constant, Republican identifiers were substantially more likely than Democrats to think the economy was "somewhat worse" or better than it was 12 months earlier. Moreover, these effects are amplified among partisans with high levels of political knowledge; among respondents in the 80th percentile, strong Democrats had a 61.7% predicted chance of offering the response that the economy was "much worse" than it was in January 2007, while strong Republicans' chances of offering this response were only about 14.5%. Similar effects are seen in all of the waves administered while the Bush administration was in office (June, October, and November 2008).

Figure 4 demonstrates the dramatic changes in the effects of partisanship that emerge after Barack Obama took office, specifically looking at responses in the July 2009 wave. In this graph, it is apparent that Republicans are now more likely to have negative views of the economy than similarly-situated Democratic identifiers, across all levels of political knowledge. The effects of political knowledge continue to amplify these differences; when called on to judge the economy since January 2009, Democratic identifiers at the 80th percentile of political knowledge are predicted to offer the response that the economy is "much worse" only 9.4% of the time, while 50.1% of Republican identifiers are projected to offer the same response. Again similar patterns are seen across all three waves administered during the Obama administration (May and July 2009, along with the June 2010 recontact).

[7]Due to the nature of the model when including an interaction term, the "base" coefficients for partisanship and political knowledge alone are difficult to interpret substantively on their own, as they reflect the marginal effect of the variable in question when the variable they interact with is set to zero. For example, the coefficient for party identification reflects the effects of partisanship among voters at the base of the political sophistication scale, while that for political knowledge reflects the effect of knowledge for independent voters. Accordingly an extended discussion of those effects is omitted.

[8]In these effects displays, the level of state unemployment was set to the median level of state-level unemployment change for that month. "High knowledge" corresponds to the 80th percentile score on the knowledge scale, "medium knowledge" corresponds to the median score, and "low knowledge" reflects the 20th percentile score.

Table 3: Model: 2009–10 Waves

	May 09	Jul 09	Jun 10
Δ Unemployment	-0.300^{**}	-0.224^{*}	-0.072
	(0.105)	(0.101)	(0.065)
Party ID (SD=−3, SR=+3)	0.024	-0.121^{**}	0.017
	(0.039)	(0.039)	(0.047)
Pol. Knowledge	0.721^{***}	0.318^{*}	1.148^{***}
	(0.136)	(0.138)	(0.163)
PID $\times$ Knowledge	-0.364^{***}	-0.323^{***}	-0.500^{***}
	(0.063)	(0.065)	(0.076)
μ_1	-1.089^{***}	-1.282^{***}	-0.922^{***}
	(0.171)	(0.193)	(0.103)
μ_2	0.050	0.099	0.010
	(0.169)	(0.191)	(0.097)
μ_3	1.763^{***}	1.954^{***}	1.584^{***}
	(0.175)	(0.198)	(0.107)
μ_4	5.054^{***}	5.069^{***}	4.567^{***}
	(0.307)	(0.327)	(0.197)
McFadden R-sq.	0.053	0.073	0.070
Likelihood-ratio	327.205	439.928	317.155
p	0.000	0.000	0.000
Log-likelihood	−2923.640	−2793.234	−2091.665
ePCP	35.7%	39.1%	37.8%
ePRE	12.6%	16.5%	16.7%
N	2177	2166	1535

- Dependent variable: perceived change in economic conditions since January 2009 (2009 waves)/over the past 12 months (June 2010), five-point scale.
- Entries are mixed-effects ordered logit regression estimates with standard errors in parentheses (with random effects by state).
- $\dagger : p \leq .10; * \leq .05; ** \leq .01, * * * \leq .001$ (two-tailed).

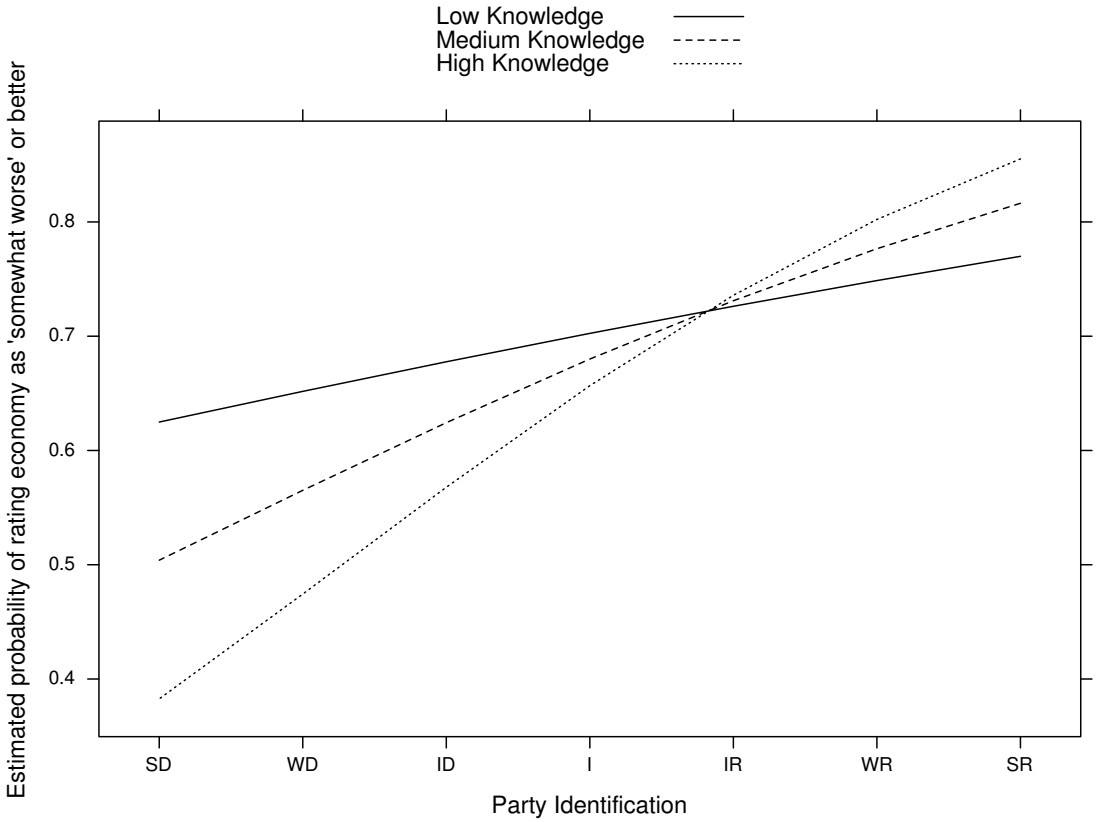

Figure 3: Within-Wave Effect: January 2008

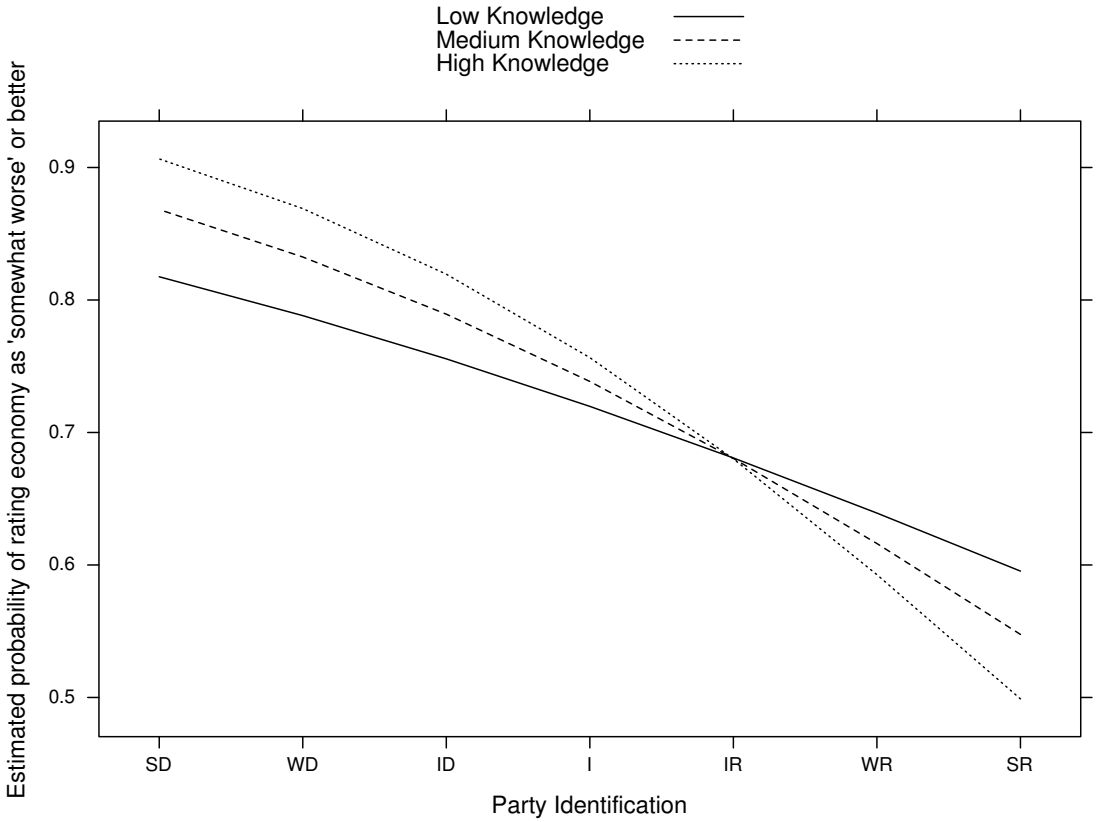

Figure 4: Within-Wave Effect: July 2009

4 Conclusions

As previously observed by Duch, Palmer and Anderson (2000), the partisan ties of voters have substantial and important effects on their perceptions of the state of the national economy. This research extends their findings to further demonstrate the critical role of political knowledge in exacerbating the partisan differences; ironically, it is the best-informed Republicans and Democrats who agree the least on the state of the national economy, while less knowledgeable voters' perceptions of the economy appear to be more consistent across partisan lines. These findings conform with those of Zaller (1992), who suggests that voters with the highest levels of political knowledge and attentiveness have a greater ability to "screen out" political information that is inconsistent with their prior beliefs. While voters can of course choose to only pay attention to particular partisan information flows, particularly in America's heterodox contemporary media environment, these findings further reinforce suggestions that even corrective or objective information may be effectively ignored by voters able to resist them (see e.g. Nyhan and Reifler 2010). They also suggest, contra Levendusky (2011), that political knowledge does play an important role in moderating political beliefs.

At the same time, however, we should not overstate the magnitude of these differences, particularly given the very subjective nature of the distinctions respondents are being asked to make; even among the most sophisticated respondents, the difference between the median Republican and the median Democratic respondent in the majority of waves is one category—the difference between rating the change in the economy as "somewhat worse" versus "much worse," or *vice versa*. Reasonable citizens might plausibly disagree with each other on these points, particularly if Republicans and Democrats have subtly different ideas about what "the economy" entails. For example, Republicans might view the stock market and national debt as key barometers of economic conditions, while Democrats might be more likely to consider unemployment to be the key indicator of the state of the economy; certainly these differences exist among policy elites in the major parties.[9]

It is noteworthy that objective economic conditions appear to have substantial and important effects on perceptions of the economy. While voters apparently can, to some extent, put on "partisan blinders" to filter out information about the economy that they are predisposed to

[9] Although there has been substantial research on differences between citizens' views of the economy and those of experts—see e.g. Blendon et al. (1997) and Caplan (2002)—there does not seem to be extant research on differences in these perceptions between Republican and Democratic identifiers.

disagree with, nonetheless it appears that they also react to changes in the real economy in meaningful ways. Individuals may not be fully rational in their observations of the economy, but neither are they fully *irrational* as much recent scholarship has suggested either. This finding suggests that further exploration of the additional effects of political knowledge demonstrated here may further clarify the question of how economic perceptions influence the vote.

A Measuring Political Knowledge in the 2008–09 ANES Panel Study

The measurement of political knowledge in the 2008-09 ANES Panel Study presents an unusual challenge to researchers used to the traditional ANES Time-Series Studies for two major reasons: first, the mode of interview (on-line instead of the traditional, face-to-face format), and second, because every respondent is not presented with the same complete set of political knowledge items due to different recruitment waves into the study.

Researchers have often used the interviewers' evaluation of the respondent's political knowledge, a question completed by the interviewer following the conclusion of an interview, as a valid indicator of political knowledge, following the findings of Zaller (1985) who suggested that this measure was highly correlated with other, more "objective" measures of knowledge and attentiveness. However, as the ANES Panel Study was conducted on-line without a human interviewer (with the exception of the panel recruitment stage conducted by telephone), by definition no interviewer evaluation exists; hence an alternative strategy is necessary in this instance.

The most common and straightforward approach for constructing a measure of knowledge in cross-sectional survey research is to simply produce an additive index of "correct" answers to knowledge items. The panel design of this study makes construction of such an index more difficult to achieve reliably. For example, interviewees recruited in different waves were asked similar questions, but at different times; if political campaigns lead to a (perhaps non-persistent) increase in political knowledge, as political science research suggests (Atkin and Heald 1976; Moore 1987; Brians and Wattenberg 1996), the probative value of identical questions may differ between waves. In other cases, certain items were only asked of a particular cohort of panel members; in an additive index, these items would need to be discarded due to the lack of comparable items administered to the other cohort, but we can produce a richer measure of knowledge if these data are included.

Accordingly an item-response theory model (Delli Carpini and Keeter 1993, 1996; Johnson and Albert 1999; Levendusky and Jackman 2003; Lawrence 2007*b*) of responses to items administered as part of the survey was constructed, including both "objective" political knowledge items as well as items reflecting correct knowledge of the issue positions and relative ideological positions of Barack Obama, Hillary Rodham Clinton, and John McCain on various political issues, reflecting the approach suggested by Luskin (1987; 1990);[10] the specific items are listed in Table 4. The IRT model was estimated using `MCMCpack` for R (Martin, Quinn and Park 2011) and the individual respondents' mean estimated level of political knowledge was recovered from the procedure for use in the analysis.

B Separation Plots for Estimated Models

Per the recommendations of Greenhill, Ward and Sacks (2011), separation plots are presented here in Figures 5–11 for each of the seven estimated models indicating the classification accuracy of each.

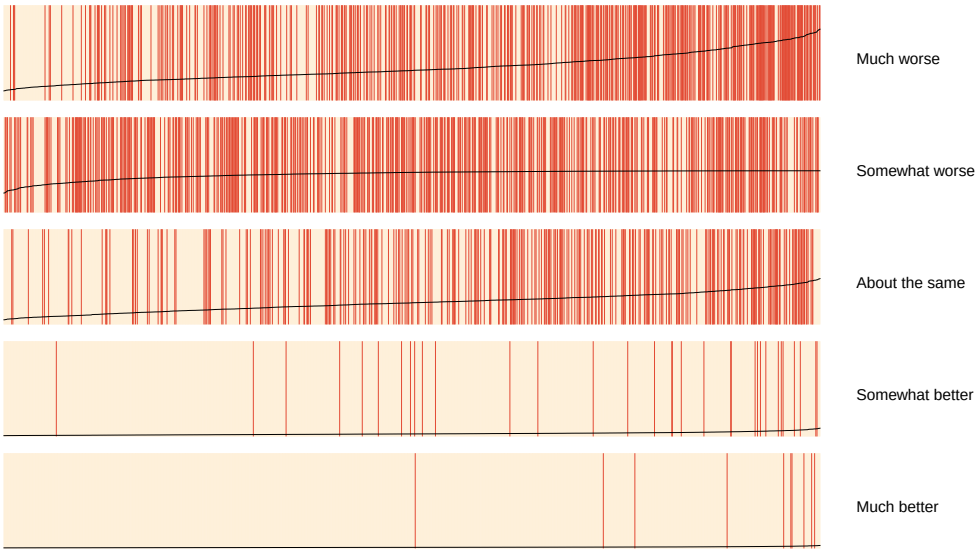

Figure 5: Separation plot: Wave 1 model, January 2008

[10]Due to the similarity of Obama's and Clinton's ideological positions, no comparison between these two candidates was constructed.

Wave(s)	Item
2, 11	Know # of terms president limited to
2, 11	Know length of senators' terms
2, 11	Know # of senators per state
2, 11	Know length of representatives' terms
2, 11	Knowledge of succession order
2, 11	Knowledge of veto override rule
6	Clinton more liberal than McCain?
6, 9, 10	Obama more liberal than McCain?
6	Know Clinton, Obama, McCain positions on:
	Same-sex marriage amendment to constitution
	Tax cuts for high-income earners
	Tax cuts for lower-income earners
	Rx. drugs for seniors
	Gov't healthcare system
	Habeas corpus for terror suspects
	Warrant for wiretapping terror suspects
	Guest worker program for immigrants
	Eventual citizenship for illegal immigrants
9	Know Obama, McCain positions on above issues
10, 11	Know Obama, McCain positions on above issues (except lower-income tax cuts)
9, 11	Know Obama, McCain positions on:
	Iraq withdrawal deadline
9	Know Obama, McCain positions on:
	Affirmative action for black college students
9, 11	Knowledge: state McCain represents in Congress
9, 11	Knowledge: state Obama represents in Congress
9, 11	Knowledge: previous occupation of McCain
9, 11	Knowledge: previous occupation of Obama
9, 10, 11	Know Obama, McCain positions on:
	Limiting power plant emissions
	Increasing fuel economy standards
	Higher gas taxes
10, 11	Know Obama, McCain positions on:
	Abortion legal when mother's health affected
	Abortion legal for sex selection

Table 4: Political knowledge items included in IRT model

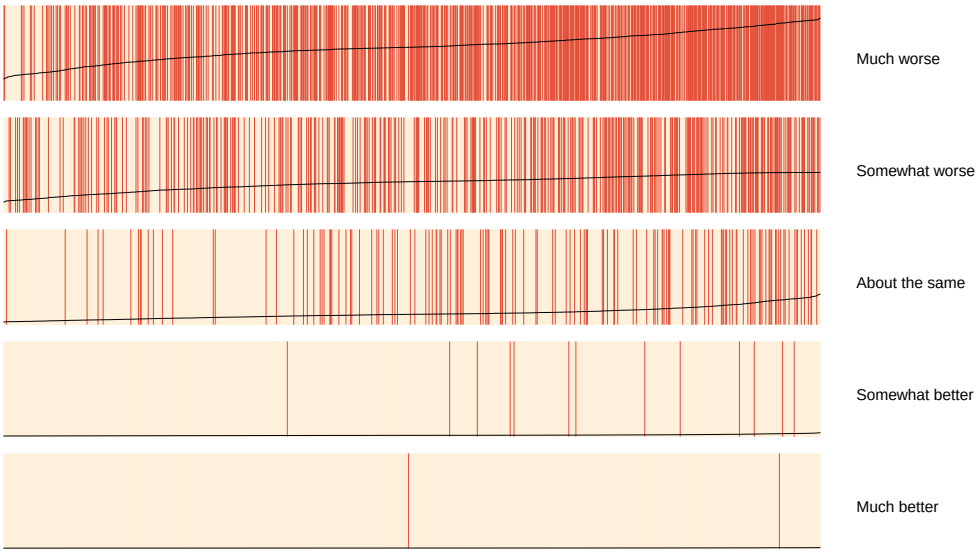

Figure 6: Separation plot: Wave 6 model, June 2008

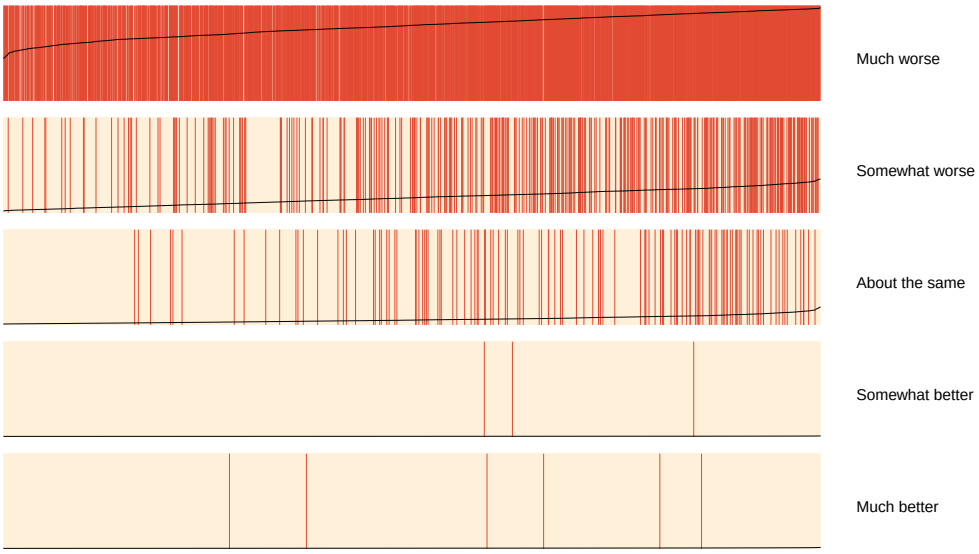

Figure 7: Separation plot: Wave 10 model, October 2008

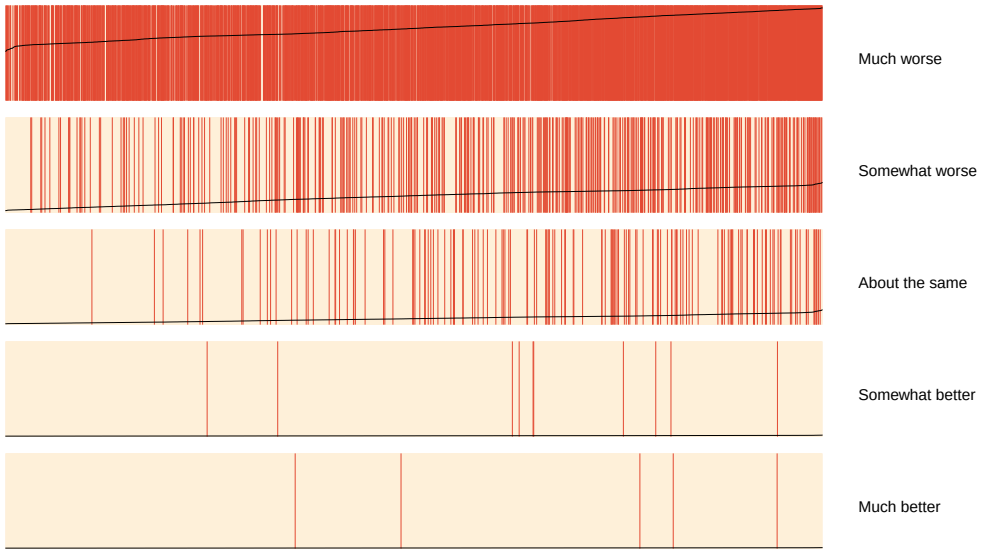

Figure 8: Separation plot: Wave 11 model, November 2008

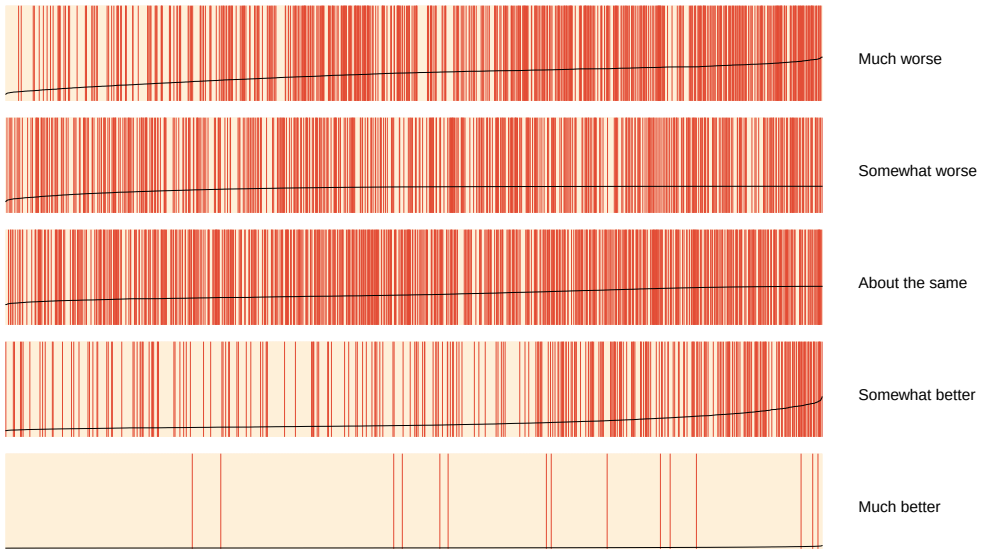

Figure 9: Separation plot: Wave 17 model, May 2009

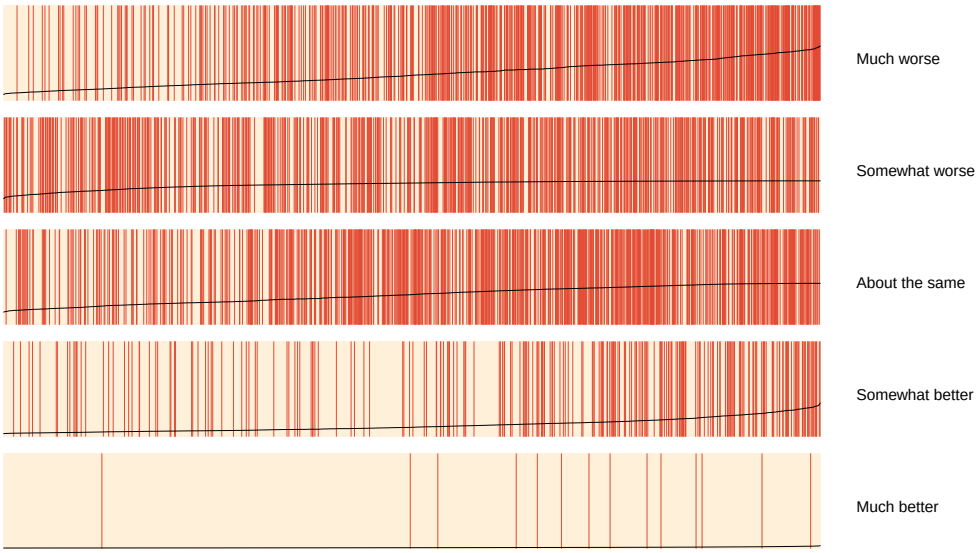

Figure 10: Separation plot: Wave 19 model, July 2009

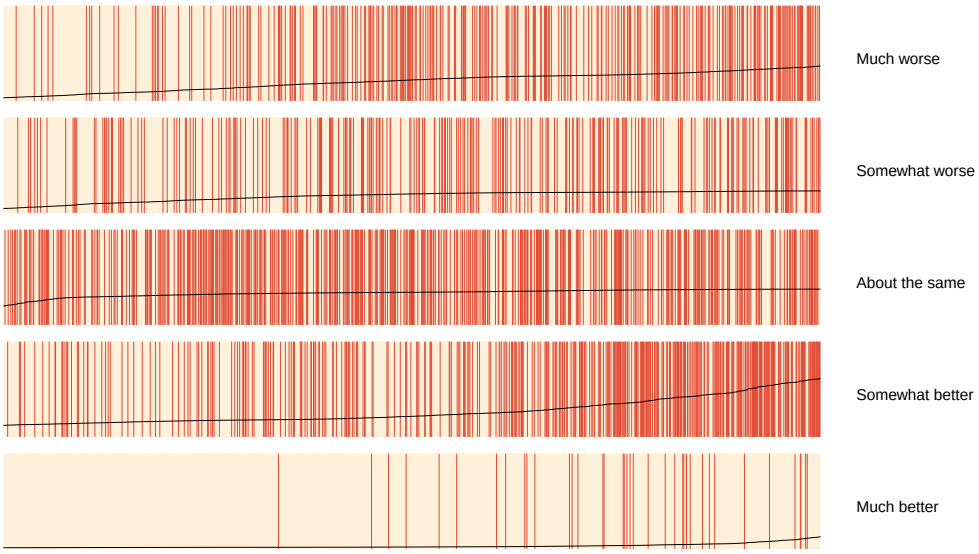

Figure 11: Separation plot: Supplemental wave model, June 2010

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