The Negativity Bias and The Effect of Policy Change on Evaluations of Political Incumbents

Andrew Owen*
Department of Politics
Princeton University
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Abstract

Psychological research finds robust and pervasive evidence that negative stimuli tend to have a greater impact on individuals than do positive stimuli. This paper seeks to incorporate this cognitive trait into our understanding of retrospective voting. While scholars have found evidence of such an asymmetry in macro-level studies of economic voting, survey based studies tend to conclude the opposite - that individuals exhibit no 'negativity bias' in responses to economic conditions. This paper experimentally tests whether citizens respond to incumbent actions in an asymmetrical fashion. In the experiments, subjects were randomly assigned to treatment conditions which received either negative, positive, or neutral information about a specific policy change occurring during an incumbent's term in office and asked to evaluate the incumbent. Results from the experiment suggest citizens do indeed respond asymmetrically to objectively equivalent positive and negative policy changes but that this asymmetry is more a product of citizens' expectations of elected officials than an inherent negativity bias in information processing. Results also suggest that responses to positive and negative policy information are moderated by the quality of the prior policy status quo and generally unaffected by partisanship.

1 Introduction

Claims that negative information tends to exert greater effects than positive information occur frequently in popular analysis of politics. Media coverage of election campaigns frequently attends to the amount of negativity in campaign communications and offers predictions about when and why a candidate will 'go negative'. Similarly, while many speak of the constant threat that the electorate will opt to 'kick the rascals out' we rarely hear of an electorate rewarding good behavior through re-election. Indeed, for some politicians, avoidance of negative outcomes is the first and most important consideration in political decision making.[1]

These beliefs are well-grounded in studies of human psychology. The tendency for individuals to be more sensitive to negative stimuli than positive stimuli is well established in psychological research and figures prominently in many theories of human cognition and behavior (Rozin and Royzman 2001; Taylor 1991; Cacioppo & Berntson 1994). This literature suggests that this 'negativity bias' affects human behavior and information processing in a variety of ways. A wide-ranging review of numerous psychological studies cites evidence of a negativity bias in physiological arousal, sensation and perception, attention and salience, learning, motivation, memory, impression formation, and attributional activity (Rozin and Royzman 2001).

While asymmetrical responses to positive and negative information may plausibly affect how a range of different types of considerations influence politically relevant beliefs and attitudes, this trait of human cognition has had relatively little influence in the study of political behavior. The basic idea has motivated an extensive body of research on the effects of negative advertising and campaigning, but this literature has focused more on advertising and campaign tone and provides few studies focused specifically on the narrow question of the relative influence of negative and positive information. The negativity bias has also animated studies on the effect that specific candidate traits and general candidate evaluations have on vote choice, though evidence of an asymmetry appears mixed.[2] In general, however, most models of individuals' political opinion formation assume that positive and negative considerations tend to exert symmetric influence.

This paper considers the impact that information about an incumbent's record in office has on the incumbent's re-election chances. I report the results of an experiment designed to explore if and when voters respond to the policy actions of elected officials in an asymmetric manner. In doing so, I aim to incorporate the negativity bias into our understanding of voter responsiveness to incumbent policy actions. In addition to finding clear evidence of such an asymmetry, I test two alternative accounts of why this asymmetry exists.

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[1] For instance, Canada's longest-serving Prime Minister's approach to politics is often summed up with his statement "I really believe my greatest service is in the many unwise steps I prevent" (William Lyon Mackenzie King).

[2] Kernell 1977 is the pioneering effort on this topic. Lau (1982) replicates and expands Kernell's analysis. See also Klien and Ahluwalia (2005), and Blais and Aarts (forthcoming).

This paper proceeds as follows. In the first section I discuss the broad topic of voter responsiveness to policy change, its importance, and the limited and conflicting evidence of an asymmetry in individuals' responses to the actions of incumbent politicians. I then carefully consider the theoretical foundations of the negativity bias in order to identify two plausible explanations for why such an asymmetry exists. In addition to the widely cited claim that negative information is simply more salient in decision-making processes, I also suggest that asymmetrical responses to objectively symmetric policy changes may derive from the fact that citizens adopt rather optimistic standards in evaluating elected officials. After a brief summary of the my experimental design, I then test for the existence of a negativity bias and evaluate the competing explanations for this bias by discussing the results of two experiments in which the information subjects receive about change in two policy domains varies across treatment groups.

I find strong evidence of asymmetrical responses to objectively symmetric changes in the unemployment rate and average school class size. Results further suggest that this asymmetry is not a function of the greater salience of negative information but derives from the fact that individuals tend to expect policy improvements and compare actual outcomes against this optimistic standard. I also find that the quality of the prior policy status quo moderates individuals' responses to information about policy change. The final empirical section considers the potential moderating effect of partisanship and finds little evidence that partisans engage in the sort of 'motivated reasoning' that might interact with a negativity bias.

2   Asymmetries in voters' responses to policy change

Understanding how citizens decide for whom to vote is important, in part, because this decision-making process should influence the policy choices elected officials make. If re-election seeking politicians are responsive to the opinions of their constituents (Mayhew 1974), then understanding how constituents' opinions arise is central to explaining the actions of political elites and, in turn, public policy decisions. Voter responsiveness to policy change is a critical aspect of this general dynamic since the nature of voters' reactions to policy change should ultimately affect the decisions elected officials make. This 'retrospective voting', has been the subject of considerable scholarly inquiry.[3] With few exceptions, however, models of retrospective voting tend to assume symmetric responses to positive and negative changes. In contrast, the negativity bias suggests a rather different model of voter responsiveness; one in which improvements in policy conditions have modest positive effects on incumbents' electoral fates while declining policy conditions tend to result

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[3]The seminal works on this topic are Key (1968), Kramer (1977), and Friorina (1981). For recent reviews of retrospective voting in the economic domain see Lewis-Beck & Stegmaier (2000), and Andersen (2007).

in much more substantial consequences.

A handful of studies, both at the macro level and micro level, have considered whether a negativity bias influences voter responsiveness but evidence of a bias has been mixed and attention to the topic has been scattered and fleeting. Two early macro-level studies of the relationship between economic conditions and evaluations of incumbents found evidence of an asymmetry. Mueller (1971) finds an asymmetrical relationship between change in the unemployment rate and aggregate presidential approval. In fact, these results suggest a rather marked asymmetry with the public reacting to unemployment only when it exceeds the value of the unemployment rate at the start of an incumbent president's term. Despite pioneering the study of presidential approval, Mueller's model of the effect of economic conditions has not been replicated in the vast bulk of research on presidential approval.[4] Similarly, Bloom and Price (1975) finds that in the 37 US federal elections from the late 19th century through 1970 change in real per-capita income is positively associated with both presidential and congressional voting when income declines and unrelated to the vote when income increases. Subsequent studies of economic voting at the aggregate level, however, have generally neglected to test for a negativity bias.

Interest in this topic may well have declined due to the very weak micro-level evidence of asymmetrical responses to economic conditions. Two widely cited survey-based studies (Kiewet 1983 and Lewis-Beck 1988) find no support for the negativity bias. Whether or not such studies provide definitive evidence, however, remains unclear. First, micro-level survey-based studies rely on respondent evaluations of economic conditions which are now viewed with considerable skepticism for reasons of endogeneity (Wlezein et al 1997, Anderson et al 2004, Van der Eijk & Franklin 2007). Specifically, if prior beliefs about an incumbent tend to influence how individuals perceive economic conditions and/or answer questions about these conditions, then identifying the causal effect of economic conditions on vote choice becomes problematic. Moreover, among supporters of the current incumbent, biased perceptions may offset the negativity bias. Second, it may also be the case that the 'negativity bias' affects how objective economic conditions influence perceptions of economic conditions, but that these perceptions affect candidate evaluations in a symmetric fashion. Since survey-based studies consider only the second of these two stages, these studies would not capture any asymmetries present in the first stage. In general, the utility of cross-sectional, survey-based studies for exploring the causal effect of information about policy conditions on incumbent evaluations is limited.[5]

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[4]See, for example: Nicholson et al 2002; Burden and Mughan 2003; Clarke et al 2004; Nickelsburg and Norpoth 2000; Fox and Phillips 2003; McAvoy 2006; Marra et al 1990; Ostrom and Simon 1985; Newman 2002; Gronke and Brehm 2002; Eichenberg et al 2006; Erickson et al 2002.

[5]Interestingly, two recent studies which combine objective economic conditions and survey-based measures of candidate support find support for the negativity bias (Nannestad and Paldam 1997; Soroka 2006).

In this paper I argue that the apparent inconsistency between results from micro-level and macro-level research on the negativity bias derives in part from an overly casual consideration of the theoretical foundations of this topic. In particular, interpretation of results from tests of the negativity bias depend critically on correctly identifying the reference point individuals use when evaluating policy changes as either positive or negative.

In general, a test of the negativity bias requires a comparison of the relative effects of a positive and a negative stimulus on some response. The size of each effect depends on both the magnitude and valence of each stimulus. I use the term magnitude to refer to the size of a stimulus while valence refers to the affective categorization of the stimulus as positive or negative. Both the magnitude and valence of a stimulus are not apparent without a comparison between the stimulus and some alternative, or 'reference point'. For instance, we cannot know the valence and magnitude of receiving ten dollars unless we know the dollar amount against which this stimulus is compared. If the reference point is zero dollars, then receiving $10 is positive and has a magnitude of 10. If, however, the reference point is $15, then receiving $10 has a negative valence (since it is $5 worse than the reference point) and a magnitude of 5. Accordingly, identifying the impact of some change in policy depends importantly on locating the reference point against which individuals compare the change because this reference point indicates whether a policy change is perceived as positive or negative and how much so.

Work on retrospective voting quite reasonably considers responses to change in some policy domain over a period of time during which an incumbent was in office. That is, current policies (e.g. spending on education) or policy outcomes (e.g. unemployment rate) are compared with some prior reference point be it the 12 months mentioned in many survey questions or the full term in office memorably stated in President Reagan's question: "Are you better off than you were four years ago". Such comparisons clearly identify the reference point against which current policies can be compared and imply both the magnitude and valence of the difference between then and now. The negativity bias model of retrospective voting suggests that responses to negative policy changes are much larger than are responses to positive changes of the same magnitude (that is, a positive change that is equidistant from the reference point).

How individuals respond to objectively symmetric policy changes of different valence is of obvious political importance. If, for example, the effects of spending or tax cuts are not symmetric with those of similar sized increases, then politicians face a distinct set of incentives. In particular, elected officials may avoid budget reforms (such as reduced spending in one area with a symmetric increase in another) because, all else equal, the political costs of the negative action will outweigh the benefits of the positive action. The first step in my

empirical analysis below therefore tests whether or not individuals respond to objectively symmetric policy changes in a symmetric fashion.

The next stage of the inquiry considers why such an asymmetry exists. I consider two alternative explanations for asymmetrical responses to objectively symmetric policy changes. The predominant explanation considered in the political science literature suggests that individuals place greater weight on negative information. In this 'salience-based' explanation, negative stimuli have a greater influence on numerous aspects of cognition and ultimately have a greater impact on subsequent attitudes than do positive stimuli. This explanation of the negativity bias finds support in much psychological research and is reflected in the concept of 'loss aversion', which figures importantly in behavioral theories of economics. Explanations of the greater salience of negative stimuli include Lau's 'cost-orientation' theory that derives from the claim that individuals are more concerned with avoiding costs than approaching gains (Lau 1985) and McDermott et al's related emphasis on the evolutionary benefits of loss aversion (McDermott et al, forthcoming).

An ideal test of this 'salience-based' explanation requires a comparison of the effects of positive and negative stimuli that are equal in subjective magnitude. Two stimuli are equal in magnitude, when they are equidistant from the neutral point of some dimension. In the study of retrospective voting, the dimension of interest is policy change (the difference between policy at the end of the incumbents' term and some prior period). Along this dimension, it may seem reasonable to assume that no change in policy is the neutral point of the dimension and the reference point against which positive and negative policy changes a re compared, but this may not always be correct. Indeed it is easy to think of situations where no change in policy is perceived to be quite good or, in other cases, quite bad. In these cases, the neutral point of the dimension is no longer located at 'no change'. By way of illustration, consider responses to change in the unemployment rate. While it is reasonable to assert that the absence of change (0%) can be labeled as objectively neutral, it does not necessarily follow that individuals will perceive 0% change as neutral. In fact, the subjective neutral point might be a more optimistic decline of a half percent or, perhaps because of a world-wide recession, a more pessimistic increase of 1%. When testing the salience-based explanation of the negativity bias, it is necessary to compare the effects of two policy changes that are equidistant from an individual's subjective neutral point.

The potential difference between the objective and subjective neutral points on the policy change dimension points to a second, and to my knowledge unexplored, explanation for asymmetric responses to objectively symmetric policy changes. This approach takes seriously the idea that people do not simply compare current and previous policy conditions but that perceptions of policy change are also affected by

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additional concerns relevant to the task of evaluating an incumbent's performance. For instance, if a country experiences a natural disaster, citizens may adjust their expectations for policy change downward to reflect this exogenous event. Similarly, people may be generally optimistic and thus, all else equal, will tend to expect improvement in all policy domains. In either case, the subjective neutral point of the policy change dimension is no longer identical to the objective neutral point (no change in policy). Accordingly, two policy changes of equal magnitude and symmetric around this objective neutral point will not be equidistant from the subjective neutral point and will therefore differ in subjective magnitude. If an individual's responses to information about these policy changes differ, this difference may be explained simply by their differing magnitudes (i.e. deviations from the subjective neutral point). For instance, if the content of political debate leads an individual to expect taxes to decline by \$500 then her subjective neutral point becomes -\$500 and two objectively symmetric changes (e.g. +\$1000, -\$1000) will not be equal in subjective magnitude (+\$1500, -500). Thus even if negative information receives no greater weight (in contrast to the predictions of the salience based explanation), this individual's responses to these stimuli will not be symmetric. In general, if individuals compare policy change with some benchmark other than 'no change' then we may see asymmetric responses to objectively symmetric policy changes.

This 'benchmark' explanation of the results finds support in the 'figure-ground' theory of the negativity bias. This theory posits that negative information tends to stand out more against a background of generally positive experiences (see for example Lau 1985). In a related effort, Niven (2000) explains low levels of political trust as the result of overly optimistic political expectations and average political outcomes. If individuals tend to be optimistic and expect policy improvements, then simply maintaining the prior status quo will be evaluated as a negative outcome. This benchmark account offers a clear alternative to the salience-based explanation of asymmetrical responses to objectively symmetric policy changes.

The next section of this paper reports the results from an experimental test of the negativity bias model of retrospective voting. I created and implemented an experimental study of individuals' responses to information about policy change that allows me both to test for the existence of asymmetrical responses to objectively symmetric policy changes and to consider the competing explanations for this asymmetry discussed above. In addition, I also consider whether this asymmetry is moderated by i) the congruence between candidate and voter partisanship, and ii) individuals' satisfaction with policy prior to the incumbent's term

in office. The theoretical motivations for each potential moderator are discussed in further detail below.

3   Experimental Design

To test whether or not citizens respond to policy changes in an asymmetric fashion, I conducted a survey experiment in which subjects were provided with information about change in policy conditions during an incumbent's term in office and then asked to evaluate the incumbent candidate. Subjects were randomly selected from the population of undergraduate students at Princeton University and then contacted by email and asked to complete a 10-minute online survey.[6] After completing a standard consent form, subjects were informed that they would be asked to read summaries of hypothetical incumbent politicians who are seeking re-election and to evaluate these candidates on a seven-point favorability scale.

In all, 1,018 subjects read and reacted to six different candidate summaries, answered a small number of demographic questions, and then responded to questions about a specific policy change mentioned in each of the candidate summaries.[7] Each candidate summary mentioned a different gubernatorial incumbent and involved a change in a distinct policy domain. Each of these different experiments was designed to answer a different theoretical question relating to the negativity bias. In this paper I discuss the results of the two experiments most relevant to the theoretical questions raised in the preceding discussion.[8] Table 1 summarizes the policy issues and experimental dimensions for these experiments and detailed question wording appears in Appendix 2.

For all of the experiments, the valence and magnitude of policy change in a specific policy domain varied across treatments. Each experiment included a 'no information', a 'no change in policy', and at least one 'negative' and one 'positive' policy information condition. Note that the 'no information' condition did

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[6]In all 2,500 students were contacted for a response rate of 40%. The usual caveats about the generalizability of estimates derived from a sample of undergraduate students apply. While the unconscious psychological mechanisms which motivate this study likely do not vary much within the US population, the experimental focus on specific political issues is of obvious concern. The generalizability of these results depends considerably on the representativeness of the sample's opinions on the political issues discussed. For instance, if these subjects are relatively less concerned with unemployment than the population at large, these results will likely underestimate the true size of the effect that information about unemployment conditions has on incumbent evaluations. My intention is to use the results from this pilot study to inform a second study which will employ a nationally representative sample.

[7]At the conclusion of the survey, subjects were asked to evaluate the specific pieces of information about policy change to which they were intentionally exposed in the previous candidate summary. Subjects evaluated these specific policy changes on a seven-point positive-negative scale. These questions were included as a check to ensure that all subjects did indeed evaluate a particular type of policy change in the expected direction (e.g. negative reactions to an increase in unemployment).

[8]All subjects completed the six experiments in the same order. Since each separate experiment involved reading one candidate summary and responding to two questions, completing each experiment took only a few minutes and thus I sought to maximize my use of this sample by conducting multiple experiments on the same subjects. I opted not to randomize the order of the experiments in order to ensure that the results of the first experiment were not contaminated by the information presented in any other experiment. The decision to use the same subjects thus has no effect on the first experiment which is discussed below and involves changes in the unemployment rate. For all other experiments it is plausible that information about candidates presented in the preceding experiments affected responses to information in subsequent experiments. I plan to empirically test this possibility as my analysis of these data continues.

Table 1: Summary of experimental design

	Experiment 1
Policy area	Unemployment
Policy change information	+2%, 'no change', -2%
Additional experimental dimensions	Candidate partisanship (Republican, Democrat, not mentioned)
Total treatment groups	10
	Experiment 2
Policy area	Class size
Policy change information	+5 students, 'no change', -5 students
Additional experimental dimensions	Pre-existing class size (30, 25, 20 students)
Total treatment groups	10

receive information about the candidate but this summary included no information about the policy domain in question and the same content appears in the summaries read by subjects in all treatment conditions.

Including both a 'no information' and 'no change in policy' group allows me to identify the effect of a particular piece of policy change information in comparison with two potential counterfactuals. First, we might reasonably ascertain the effect of information about a policy change by asking what candidate evaluations would have looked like if an individual had no information about change in this policy domain. This comparison indicates the effect of this information on an individual who would otherwise know nothing about change in the policy area. This type of effect would be important, for example, when candidates choose which issues to emphasize during a campaign. For candidates with limited resources, facing potential voters with limited knowledge of the candidates, identifying what sort of information will have the greatest effect on candidate evaluations is obviously an important political calculation. Moreover, if it is in fact the case that negative information tends to have large effects, then politicians should tend to emphasize negative information when possible. To measure this type of effect, I compare candidate evaluations in a treatment group receiving some piece of information about policy change with a control group that receives no information about this policy domain.

A second approach compares candidate evaluations among individuals who learn of a specific change in policy with people informed that policy did not change over the same time period. The difference in candidate evaluations indicates the effect of a change in policy compared to maintaining the status quo. This effect is frequently of interest to re-election seeking politicians who often face choices about whether and how to change public policy. Again, the presence or absence of an asymmetry has implications for how we would expect politicians to behave. In this case, a negativity bias might result in a status quo

bias in policy-making. For instance, if a politician is uncertain whether a policy change will result in an improvement or deterioration in policy conditions, then asymmetrical public reactions to these potential outcomes should encourage maintenance of the status quo since there is more to be lost by policy failure than gained by success. To measure this effect, I compare candidate evaluations in a treatment group that receives information about some change in policy with a control group that learns that policy did not change during the incumbent's term in office.

Under some conditions, these two measures of the effect of policy information will yield the same results. Specifically, when individuals perceive the absence of policy change as neither negative nor positive, then we should expect candidate evaluations to be similar between subjects in a 'no change' group who learn that policy did not change and subjects in a 'no information' group who are not informed about this policy domain.[9] If, however, people perceive no policy change as non-neutral, (that is, they perceive the absence of change to be either a good or bad thing) then the two comparisons will yield different results since candidate evaluations will be affected by the fact that policy did not change.

4 Asymmetries in voter responsiveness to unemployment conditions

Treatment materials in the first experiment varied along two dimensions: information about change in unemployment conditions (+2%, 0%, -2%) and the partisanship of the incumbent candidate (Democrat, Republican, not mentioned). Along with these nine conditions (3x3=9), there is an additional control group that received no information about unemployment and no mention of the candidate's partisanship.[10] Analysis of results from the incumbent partisanship manipulation is presented later in the paper and speaks to the moderating effect of partisanship on the negativity bias. For now, I focus on the manipulation of policy information across the conditions in which candidate partisanship is not mentioned. As an example, the candidate summary in the 'negative information' condition reads:

> Michael Davis, who just completed his first term as governor in a medium sized state, is running for re-election. Before being elected, Mr. Davis was a state legislator for five years during which he met frequently with federal officials to discuss issues facing his state. He has three grown children and is separated from his wife. During the four years that Governor Davis has been in office, unemployment in the state increased by 2% while national unemployment did not change. Compared to the start of his term, 50,000 fewer people were employed at the end of Governor Davis's term.

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[9]Unless, of course, the mere mention of a policy area has some effect.

[10]Tables in the appendix report the number of subjects per treatment condition for both experiments discussed here

Figure 1: Effects of information about change in unemployment
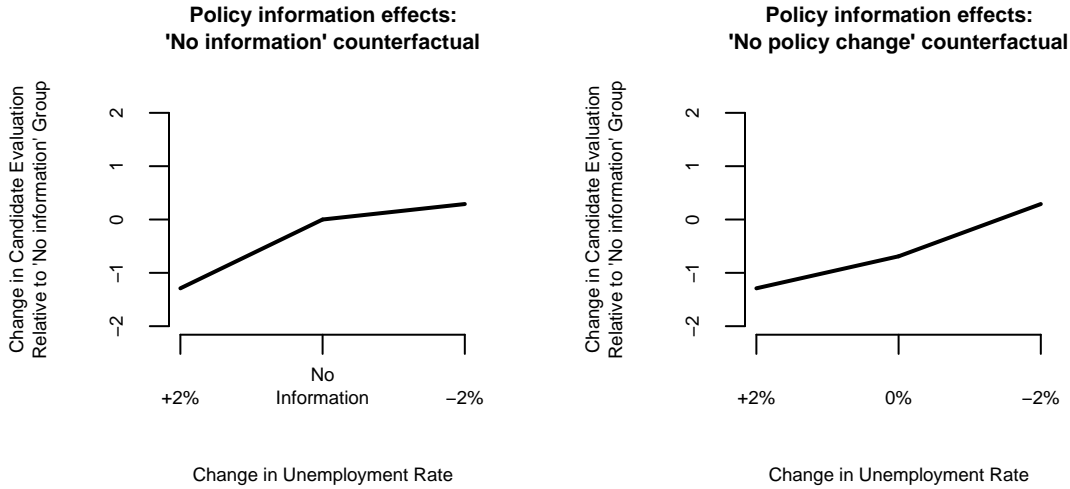
Notes: This figure presents estimates of the effect of each type of policy information included in the treatments on candidate evaluations. Effects are presented as deviations from the 'no information' conditions where the mean was 4.76. Lines in the left-hand plot displays the relative impact of positive and negative information against the 'no information' counterfactual and are consistent with the negativity bias. The right hand plot displays effects relative to the 'no change in policy' condition and suggests more symmetric responsiveness to policy change. For full results and standard errors, see Table 4 in the appendix.

Figure 1 displays information about mean candidate evaluation for each of the four policy change conditions (no information, +2%, 0%, +2%) (full results including standard errors appear in Table 4). Mean candidate evaluations (on a seven-point 'favorability' scale) for each treatment group are plotted in comparison to the mean evaluation in the 'no information' group (which in this case was 4.76). The plot on the left presents the effects of positive and negative unemployment information compared to the control group that received no information about the candidate's record in this domain. It is immediately apparent that positive and negative changes in unemployment do not have symmetric effects. A 2% increase in unemployment has a much larger effect on candidate evaluations than does a 2% decline. Compared to the group that received no information about unemployment, mean evaluation in the positive policy condition was only 0.29 higher. In contrast, average candidate evaluation in the negative group was 1.29 lower than the control group. The relative difference between these two effects is large (1.00), statistically significant, and offers initial support for the negativity bias model of voter responsiveness.

Notice, however, that mean evaluation in the 'no policy change' condition, which appears in the right-hand

plot, is substantially lower than in the 'no information' group. In this case the difference (-.69) is quite large and indicates that subjects perceived the lack of change in unemployment to be a rather undesirable outcome. The fact that candidate evaluations are much lower in the 'no change' condition than the 'no information' condition suggests rather different conclusions about the negativity bias than those derived from a comparison between the positive and negative information conditions and the 'no information' control group. In this case, comparing the effects of negative and positive stimuli against the 'no change' counterfactual yields empirical results inconsistent with the predictions of the negativity bias model. Compared to candidate evaluations in the 'no policy change' group, evaluations among those learning that unemployment deteriorated (+2%) were .65 lower while evaluations among those exposed to the positive unemployment information (-2%) were .94 higher than the 'no change' group. That is, the effect of the negative policy information is not larger than the effect of positive information. In fact, positive information appears to have a slightly larger effect. This difference (.30), however, is not statistically significant, and thus these results are most consistent with a model of voter responsiveness that predicts a linear relationship between policy changes and candidate evaluations regardless of the affective valence of these changes.

Results from the left-hand plot clearly suggest that when positive and negative policy information is compared with the absence of information, negative information has a much stronger effect on candidate evaluations than does positive information of the same magnitude. These results further suggest that this asymmetry is best explained by the 'benchmark' account of the negativity bias. Turning first to the 'salience' explanation, results presented in the right-hand plot indicate no support for this account. The fact that candidate evaluations are lower in the 'no change' group than in the 'no information' group indicates that subjects did not perceive 0% change in unemployment to be neutral and thus we do no have an ideal test of the 'salience' explanation because the positive and negative stimuli are not equidistant from the subjective neutral point.[11]

Fortunately, however, the results of these experiments can still speak to the existence of a 'salience-based' negativity bias. Since both negative (+2%) and 'no change' (0%) policy information are perceived as negative outcomes, the difference in mean candidate evaluations between these two groups should provide a reasonable estimate of the relationship between candidate evaluations and change in unemployment when this change is subjectively perceived to be negative. In the plot on the right side of Figure 1, the portion of the line to the left of 0% identifies this relationship. The slope of this line (0.6) indicates the change in candidate evaluations associated with a change in unemployment stimuli from 0% to +2%.

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[11]For instance, if we assume that the subjective neutral point is a 0.5% decrease in unemployment, then a 2% decrease is in fact -1.5% from the neutral point while the objectively symmetric 2% increase is 2.5% worse than the subjective neutral point.

Because the subjective neutral point is located somewhere between 0% and -2%, however, the portion of the line on the right of 0% is not an accurate estimate of the relationship between evaluations and change in unemployment when this change is perceived to be positive. We cannot, therefore, compare the two effects in order to estimate precisely the relative weight of negative and positive information. That said, the relative slopes of the two lines do provide us with insight into the relative weight of negative and positive information. In the event that both types of information receive equal weight, we should see a straight line connecting the points at +2%, 0%, -2%. Any asymmetry around the 0% point will reflect the relative difference between positive and negative information. A negativity bias is apparent when the line on the right-hand side of 0% is flatter than the line on the left-hand side and a positivity bias is apparent when the reverse is true. In Figure 1 we see a slightly steeper slope on the positive side of 'no change', which suggests a very mild positivity bias. The difference between the two effects (-0.6 vs. 0.98) is small (0.3) and not statistically significant, which suggests that there is no asymmetry and thus no support for the 'salience-based' negativity bias.

The fact that subjects perceive no change in unemployment to be a negative outcome further implies support for the 'benchmark' account of the negativity bias. This negative effect suggests that subjects evaluated unemployment change against some expectation of improved employment conditions (that is, the subjective neutral point is somewhere between 0% and -2%). Accordingly, the subjective magnitude of the +2% and -2% change in unemployment are not in fact equal. Thus the asymmetry in responses to objectively equivalent changes in policy appears to derive from the fact that people expect some degree of improvement over time. The asymmetry evident in the plot on the left in Figure 1 can therefore be explained by interpreting policy changes in light of people's expectations.

When the subjective neutral point on the policy change dimension is unknown, it is not possible to tease out the precise extent to which the 'benchmark' and 'salience' theories explain the observed asymmetries. When the slopes of the two lines in the right-hand plot are relatively similar (that is, when the effects of negative and positive policy information relative to 'no change' are symmetric), then any asymmetry in the left-hand plot (the comparison of positive and negative conditions with the 'no information') appears to derive from the fact that subjects compare change in policy against some benchmark that is different from 'no change'. In this case, the evidence clearly supports the 'benchmark' account.

5 Asymmetries in voter responsiveness to class sizes and the moderating role of the status quo

The results from the unemployment experiment suggest that the effect of information about policy changes is related to individuals' expectations about these changes. The origins of these expectations, or benchamarks, therefore seems important to our understanding of voter responsiveness to policy change. One plausible interpretation of the above results is that the presentation of information in the 'no policy change' condition prompted a specific sort of expectation. In the 'no change' condition of that experiment, subjects are informed:

> During the four years that Governor Davis has been in office, unemployment in the state did not change while national unemployment also did not change. Compared to the start of his term, there was no change in the number of people who were employed at the end of Governor Davis's term.

It may be that subjects interpreted the inclusion of information about the lack of change as an indication that the unemployment rate at the start of the Governor's term was quite high. That is, if no news is good news, then some news must be bad news. If unemployment was high, it seems reasonable for individuals to expect an improvement and to therefore perceive 'no change' as a negative outcome. In contrast, had subjects believed that unemployment had previously been quite low, then 'no change' might actually have been seen as positive. More generally, benchmarks for policy change may be influenced by individuals' satisfaction with the state of policy prior to an incumbent's time in office. A second experiment I conducted sheds light on the role played by these evaluations of the prior state of policy.

In this experiment, treatment materials included information about change in state-wide average class sizes and varied along two dimensions. In addition to the baseline 'no information' group, subjects learned that the average public school class size in the state either increased or decreased by 5 pupils or did not change following a reorganization of the state's education system (-5, 0, +5). The second experimental dimension was the quality of the prior status quo and subjects were informed that prior to this reorganization the state's average class size was either 20, 25, or 30 students and that the national average class size was 25 students. Crossing these two dimensions yields nine treatment groups which differed in terms of the quality of the prior status quo and the change in policy outcomes.

This design allows us to consider whether the relative effects of positive and negative information are conditional on the quality of the prior status-quo and whether individuals' responses to 'no policy change' vary depending on the prior state of policy. Figure 2 (and Table 5) presents the results of this experiment.

Figure 2: Effects of information about change in average class size
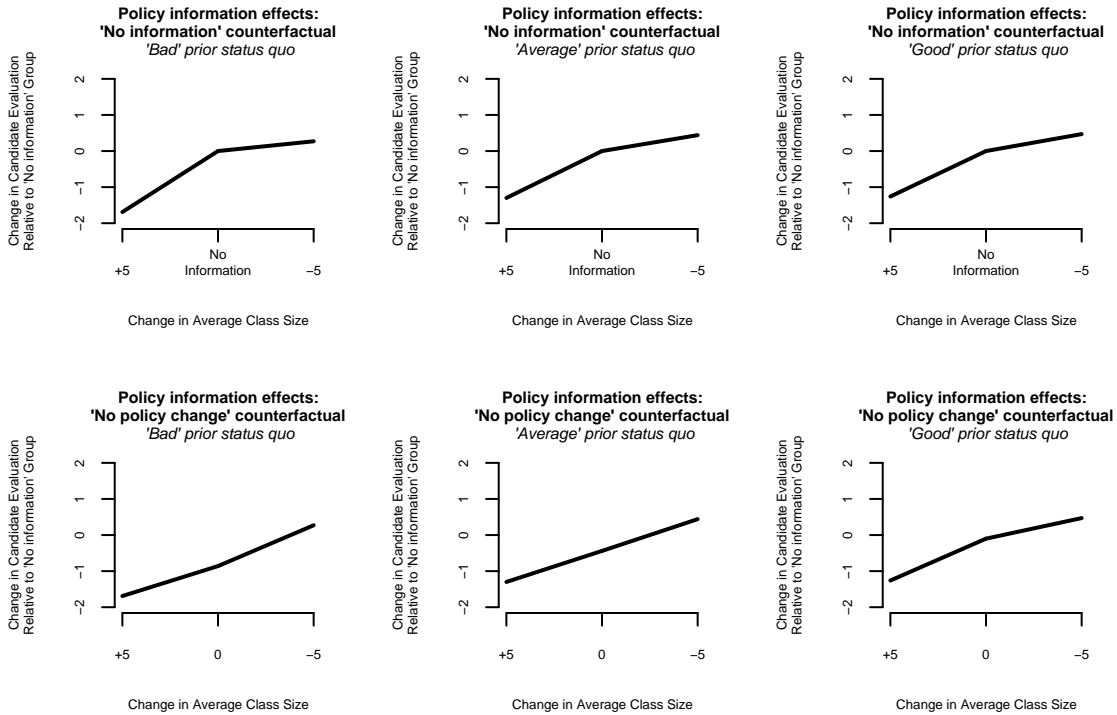
Notes: This figure presents estimates of the relative effect of positive and negative information about change in average class size on candidate evaluations. The three columns present these estimates conditional on a particular quality of prior status quo. Plots in the top row present estimates of effects compared to the 'no information' counterfactual while the bottom row displays estimates derived from a comparison with 'no change' in class sizes. The figure suggests that the relative weight of positive and negative information about policy change varies as a function of the quality pre-existing policy conditions. For full results and standard errors, see Table 5 in the appendix.

As with the unemployment experiment, we again see evidence of a negativity bias when evaluations in the positive and negative policy conditions are compared with those in the 'no information' condition (see the plots in the top half of Figure 2). The effect of negative information is significantly larger than the effect of positive information regardless of the status quo. While there are almost identical asymmetries when the status quo is either equal to, or better than, the national average, the negativity bias is much more pronounced among subjects who learned that the prior status quo was worse than in the rest of the country. In this case, results suggest both smaller rewards for policy improvement and larger punishments for declining conditions.

Turning to comparisons with the 'no change condition', in two of three cases we again find no evidence

of a salience-based negativity bias. When the prior status quo was either 'bad' (30 students) or 'average' (25 students) the difference in the effects of positive and negative information is small and not statistically significant (.29 and .03 respectively). In contrast, when the prior status quo was substantially better than the national average, there is a significant difference in the effect of negative and positive policy information.

This comparison is particularly interesting because the effect of 'no policy change' is very close to zero (-0.1) and thus provides the cleanest test of the 'salience' explanation of the asymmetry. Recall that when the 'no change' stimulus has no effect on candidate evaluations relative to the 'no information' stimulus, then we can be fairly certain that 'no change' is close to the subjective neutral point. If so, then the positive and negative conditions are equidistant from this subjective neutral point, and we can therefore estimate the relative effect of two pieces of information that are similar in subjective magnitude and different in valence. Results from this comparison provide clear evidence of a negativity bias. While a decrease in the number of students increases candidate evaluations by 0.57, an increase in the average class size decreases evaluations nearly twice as much (1.16). The difference between these two effects is substantial (0.59) and statistically significant. These results suggest that when times are good, politicians stand to lose much more support for a decline in policy than they will gain if policy improves by a similar amount. This result, however, appears to be conditional on the quality of the status quo.

The minor difference between candidate evaluations in the 'no change' and 'no information' conditions, when the status quo is relatively good, is also interesting in its own right. Despite the fact that class sizes were substantially smaller than the national average (20% better) maintaining this state of affairs does not result in improved candidate evaluations (compared to the 'no information' group). Results presented in the bottom half of Figure 2 further indicate that the negative effect of 'no change' in policy increases as the prior status-quo declines. When average class size in the state and entire country are the same, 'no change' causes a 0.44 decline in evaluations and when the prior status quo is worse than the national average, no change results in a 0.86 decrease. These results clearly suggest that subjects' interpretations of 'no change' depend importantly on the quality of the prior status quo. Indeed these results suggest that people tend to use rather optimistic benchmarks in evaluating elected officials. One important caveat is that the treatment materials link the change in class size to the incumbent by referring to the incumbent-led reorganization of the education system. Subjects might reasonably conclude that 'no change' in class sizes is an undesirable outcome of such a reorganization.

Results from this experiment also shed light on the findings of the unemployment experiment. Since the quality of the prior status quo affects both subjects' expectations about policy change (which is indicated

by the difference in evaluations between the 'no information' and 'no change' groups) and the asymmetry in responses to positive and negative policy changes (where effects are calculated in comparison to no change), the results of the unemployment experiment are likely influenced by subjects' beliefs about the quality of the prior status quo. The pattern of results from the unemployment experiment most closely resembles the results of the class size experiment when subjects were informed of a poor prior status quo. In both cases we see lower candidate evaluations in the 'no change' group compared to the 'no information' group, which suggests that subjects compared the absence of policy change against some expected improvement. In addition, we see no evidence of a salience-based asymmetry when the effects of positive and negative stimuli are calculated in reference to the 'no change' condition. Finally, in both cases an asymmetry exists when policy changes are compared to the 'no information' condition but this asymmetry appears to derive from subjects' expectations of policy improvement. The key point here is that when exposed to the unemployment candidate summaries, subjects may have assumed that the prior status quo was poor and responded accordingly.

Overall, results from the class size experiment indicate that both responses to 'no change' and the size of the 'salience-based' asymmetry are moderated by the quality of the prior status quo. I find evidence of the standard 'salience-based' conception of the negativity bias but only when the prior status quo was quite good. When times are bad, or even average, individuals appear to respond to subjectively equivalent positive and negative policy changes in a symmetric fashion. Asymmetries during these times do exist, however, when positive and negative changes are contrasted with the 'no information' condition but these asymmetries appear to derive from the optimistic expectations against which individuals compare incumbent performance.

6   Partisanship and responsiveness to unemployment

The final section of this paper returns to the unemployment experiment and explores the extent to which partisanship moderates voter responses to positive and negative information. Given the central role partisanship plays in citizens' political belief systems, a study of the relationship between incumbents' records and citizens' evaluations that omits partisanship would be both unrealistic and incomplete. A growing body of evidence suggests both that citizens do not process political information in an unbiased manner (Lodge and Taber 2001, Taber and Lodge 2006) and that these biases affect the formation of candidate evaluations (Redlawsk 2002). In the political arena, partisanship plays a central role in this 'motivated reasoning' by both affecting citizens' choices about the sources from which they will accept political information (Zaller

1992), and by influencing citizens' perceptions of real-world conditions (Bartels 2002).
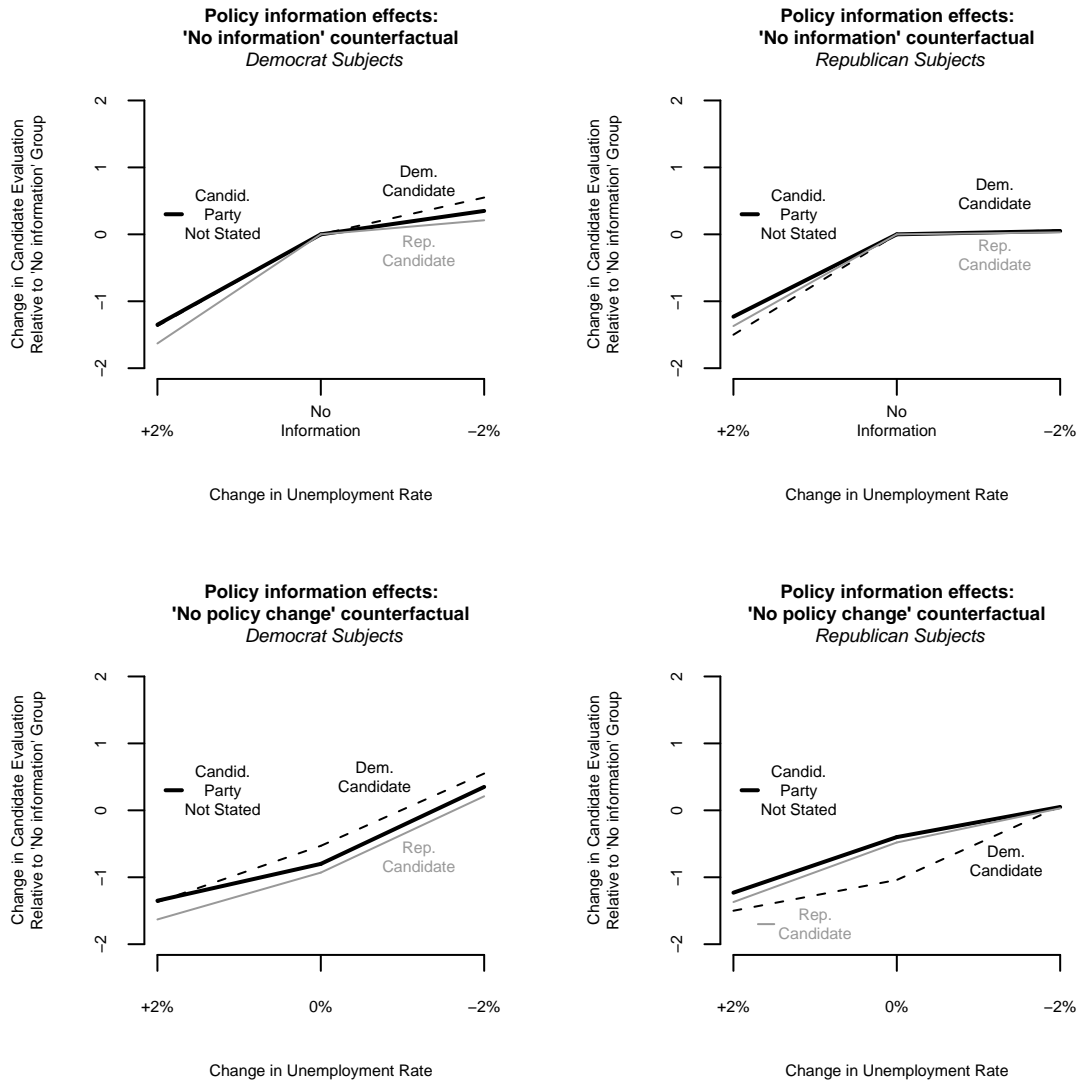
In addition to broadly coloring political information processing, there is good reason to suspect that partisanship interacts with the negativity bias. For instance, theories of motivated reasoning suggest that information processing can be influenced by a desire to maintain existing beliefs. Motivated partisans will thus tend to discount information incongruent with their partisan dispositions. The partisan and negativity biases interact because the congruency between information about an incumbent's record and an individual's partisanship is a function of both the valence of the information and the fit between the party affiliation of both the individual and incumbent. For individuals who identify with a party different from the incumbent ('out-partisans'), positive information is incongruent and therefore discounted. In contrast, for 'in-partisans' positive information reaffirms existing beliefs while negative information is incongruent. Accordingly, relative to non-partisan individuals, we should expect an even more severe negativity bias among out-partisans and a diminished bias among in-partisans. Indeed if the motivation to maintain partisanship-driven beliefs about an incumbent is strong, a positivity bias may be evident among in-partisans.

To assess these hypotheses, I draw on results stemming from the manipulation of candidate partisanship in the unemployment experiment treatment materials. Recall that treatment materials indicated that the candidate was a Democrat, Republican or did not mention the incumbent's party affiliation. Near the end of the survey, respondents were asked to indicate their own partisanship by responding to the standard two question partisanship measure. When those responding to the follow-up 'lean' question are coded as partisans, the sample breaks down into 65% Democrats, 27% Republicans and 7% independents. I can therefore compare the effects of different unemployment information stimuli among both 'in' and 'out' partisans.

Figure 3 and Table 6 present the results of this analysis and indicate very modest partisanship effects. Note that since I am not specifically interested in the unique effect of shared partisanship on candidate evaluations, I did not include conditions where candidate partisanship is mentioned along with no information about unemployment. Accordingly, all effects are calculated in reference to the 'no information - candidate partisanship not mentioned' condition.

Among democrats, (results presented in the two plots on the left side of the figure) candidate partisanship has very small effects on candidate evaluations. Democrat subjects tended to evaluate Democrat candidates more positively than Republican candidates in each of the negative, positive, and 'no change' conditions but this difference tends to be quite small (around 0.3). Moreover, asymmetries in responses to negative and policy information among Democrat subjects are similar regardless of candidate partisanship. The 'no

Figure 3: The moderating effect of partisanship on the impact of information about change in unemployment

Policy information effects:
'No information' counterfactual
Democrat Subjects

Policy information effects:
'No information' counterfactual
Republican Subjects

Policy information effects:
'No policy change' counterfactual
Democrat Subjects

Policy information effects:
'No policy change' counterfactual
Republican Subjects

Notes: This figure presents estimates of the effect of each type of policy information included in the treatments on candidate evaluations. Estimates are presented separately for each type of candidate-subject party affiliation dyad. All effects are presented as deviations from the 'no information' conditions where the mean was 4.76. The similarity of the lines in each plot suggests a very small moderating effect of partisanship. For full results and standard errors, see Table 6 in the appendix.

information' asymmetry (top left plot) is in fact more pronounced when the candidate is a Republican (-1.41) rather than a Democrat (-.82). This difference appears to derive, however, from the fact that Democrats responded less negatively to the 'no change' information when the candidate was a Democrat. These results provide no support for the notion that the negativity bias will be more pronounced among out-partisans and less pronounced among in-partisans.

Turning to the Republican subjects, we find similar results with very little evidence that candidate partisanship influences responses to policy information. The bottom right-hand plot does indicate that Republican subjects punished Democrat candidates to a much greater extent for 'no change' (1.04) than they did Republican candidates (.48). Coupled with responses to positive information that are unrelated to candidate party affiliation, this difference suggests a positivity bias in Republicans responses to the Democrat incumbent candidates (0.59, but this difference is not significant). This result is clearly at odds with the hypotheses presented above. Results from Republicans also reveal one interesting, albeit tangential, finding. Regardless of candidate partisanship, candidate evaluations among Republican subjects were almost identical in the 'no information' and positive change conditions. While these subjects were willing to punish candidates for declining employment conditions, they offered no reward for job creation. Though both types of partisans respond similarly to negative information about changes in unemployment, there is a clear partisan difference in responsiveness to improved economic conditions. Democrats tend to reward politicians for success in this domain while Republicans do not.

Overall the partisanship effects evident in these results are fairly small. It is certainly true that partisans tend to interpret a lack of change in policy in a manner that benefits candidates of their own stripe, but partisanship appears to be generally unrelated to the effect of positive and negative information and is also unrelated to the relative effect of these two types of information. These results are surprising given the important role partisanship plays in most all political attitudes and in individuals processing of political information. One plausible explanation is that the single mention of candidate partisanship was insufficient to prompt the motivated reasoning demonstrated in other studies.

7   Conclusion

The results presented above suggest voters' responses to incumbents' records are in fact quite nuanced. In general, I find very little evidence of the sort of 'salience-based' negativity bias that figures so prominently in psychological studies of person perception and numerous other psychological domains. I do find evidence

of such an asymmetry in one instance, but this effect only occurs when the prior policy status quo is quite good. Indeed, the quality of the status quo figures importantly in individuals' responses to policy change. Both reactions to news of 'no change' and the size of the 'salience-based' asymmetry appear to be moderated by the quality of the prior status quo.

I find considerably greater evidence that objectively symmetric outcomes do have asymmetric effects on candidate evaluations when effects are determined in relation to the absence of information about change in a policy domain. Given the absence of a 'salience-based' asymmetry, however, these asymmetric responses appear to derive from individuals' optimistic expectations for policy improvement. It appears that the more the status quo is undesirable, the more optimistic are individuals' expectations for policy change and thus the more asymmetric are their responses to objectively equivalent policy changes.

The findings presented here shed light on the conflicting results from macro-level and micro-level observational studies of the negativity bias. Consistent with micro-level survey-based studies which employ subjective perceptions of economic change, I find little evidence of a salience-based asymmetry. Recall, however, that some notable macro-level studies have found evidence of asymmetrical responses to economic conditions. As with the asymmetries I find when information effects are identified in comparison to the 'no information' condition, these macro-level asymmetries may have more to do with the benchmarks people adopt rather than with asymmetries in the salience of positive and negative economic change. For example, Mueller's work on presidential approval compares unemployment in a given month against the level of unemployment when the sitting president took office. If individuals tend to expect an improvement, then the subjective neutral point is not 'no change in unemployment' but some moderate decline in unemployment. Accordingly, small increases in unemployment are in fact much further from individuals' subjective neutral points than are small decreases, and approval of the president reflects these differences. These asymmetrical responses to objectively symmetric changes remain politically consequential, of course. The results presented here suggest, however, that this dynamic is less about some inherent negativity bias in information processing and more to do with the public's expectations of elected officials.

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Appendix 1: Tables

Table 2: Number of subjects: Unemployment experiment

Group	Unemployment Information	Candidate Partisanship	N All subjects	N Democrats	N Republicans
0	No information	Not mentioned	117	59	32
1	+2%	Not mentioned	119	71	24
2	No change	Not mentioned	118	64	31
3	-2%	Not mentioned	116	73	23
4	+2%	Democrat	117	57	32
5	No change	Democrat	120	64	28
6	-2%	Democrat	121	77	24
7	+2%	Republican	112	66	28
8	No change	Republican	127	77	29
9	-2%	Republican	113	73	25

Table 3: Number of subjects: Class size experiment

Group	Prior Average Class Size	Change in Average Class Size	N
0	No information	No information	123
1	20	-5	131
2	20	0	104
3	20	+5	126
4	25	-5	121
5	25	0	122
6	25	+5	109
7	30	-5	125
8	30	0	113
9	30	+5	106

Table 4: Effects of information about change in unemployment

		Effect Size	Std. Error
[1]	Negative Information vs No Information	-1.3	0.13
[2]	Positive Information (-2%) vs No Information	0.29	0.13
[3]	No Change (0%) vs No Information	-0.65	0.13
[4]	No Change vs Positive Information [1] -[3]	-0.65	0.13
[5]	No Change vs Positive Information [2] -[3]	0.94	0.13
[6]	No Information Asymmetry Test [1] +[2]	-1.00	0.23
[7]	No Information Asymmetry Test [4] +[5]	0.3	0.23

Notes: This table reports the effect of positive and negative information compared to the two relevant counterfactuals and estimates of the symmetry in responsiveness to these two types of information. All estimates are presented as deviations from the 'no information' control group where mean candidate evaluation was 4.76.

Table 5: Effects of information about change in average class size

	Poor Status Quo (30 students)		Average Status Quo (25 students)		Good Status Quo (20 students)	
	Effect Size	Std. Error	Effect Size	Std. Error	Effect Size	Std. Error
[1] Negative Information *vs* No Information	-1.69	0.15	-1.3	0.14	-1.26	0.14
[2] Positive Information (-2%) *vs* No Information	0.27	0.14	0.44	0.14	0.47	0.14
[3] No Change (0%) *vs* No Information	-0.86	0.14	-0.44	0.14	-0.1	0.14
[4] No Change vs Negative Information [1] -[3]	-0.83	0.15	-0.85	0.15	-1.16	0.14
[5] No Change vs Positive Information [2] -[3]	1.13	0.14	0.88	0.14	0.57	0.14
[6] No Information Asymmetry Test [1] +[2]	-1.42	0.24	-0.86	0.24	-0.78	0.24
[7] No Change Asymmetry Test [4]+[5]	0.29	0.26	0.03	0.25	-0.59	0.25

Notes: This table reports the effect of positive and negative information compared to the two relevant counterfactuals and estimates of the symmetry in responsiveness to these two types of information. All estimates are presented as deviations from the 'no information' control group where mean candidate evaluation was 5.06. All subjects learned that the national average class size was 25 students.

Table 6: Effects of information about change in unemployment by subject and candidate partisanship.

	Democrat Candidate		Republican Candidate	
	Effect Size	Std. Error	Effect Size	Std. Error
Democrat Subjects				
[1] Negative Information vs No Information	-1.37	0.17	-1.63	0.17
[2] Positive Information (-2%) vs No Information	0.55	0.16	0.22	0.17
[3] No Change (0%) vs No Information	-0.53	0.17	-0.93	0.16
[4] No Change vs Positive Information [1] -[3]	-0.84	0.17	-0.7	0.16
[5] No Change vs Positive Information [2] -[3]	1.08	0.16	1.15	0.16
[6] No Information Asymmetry Test [1] +[2]	-0.82	0.29	-1.41	0.29
[7] No Information Asymmetry Test [4] +[5]	0.24	0.24	0.45	0.26
Republican Subjects				
[1] Negative Information (+2%) vs No Information	-1.56	0.23	-1.37	0.24
[2] Positive Information (-2%) vs No Information	0.06	0.25	0.03	0.25
[3] No Change (0%) vs No Information	-1.04	0.24	-0.48	0.24
[4] No Change vs Positive Information [1] -[3]	-0.52	0.24	-0.89	0.25
[5] No Change vs Positive Information [2] -[3]	1.11	0.26	0.51	0.26
[6] No Information Asymmetry Test [1] +[2]	-1.5	0.42	-1.33	0.42
[7] No Change Asymmetry Test [4]+[5]	0.59	0.43	-0.37	0.43

Notes: This table reports the effect of positive and negative information compared to the two relevant counterfactuals and estimates of the symmetry in responsiveness to these two types of information. In order to illustrate the (absence of a) moderating effect of partisanship, results are present separately for each type of candidate-subject party dyad. All estimates are presented as deviations from the 'no information' control group where mean candidate evaluation was 4.76.

Appendix 2: Candidate Summaries and Question wording

Candidate Evaluation Question Wording:
"While your evaluations of elected officials usually involve a lot of information, based on what you have read please indicate your overall impression of Governor Davis:"

1. Extremely unfavorable

2. Very unfavorable

3. Somewhat unfavorable

4. Neither unfavorable nor favorable

5. Somewhat favorable

6. Very favorable

7. Extremely favorable

Unemployment Experiment Candidate Summary Examples

'No information' control group

"Michael Davis, who just completed his first term as governor in a medium sized state, is running for re-election. Before being elected, Mr. Davis was a state legislator for five years during which he met frequently with federal officials to discuss issues facing his state. He has three grown children and is separated from his wife."

Treatment groups

"[Democrat, Republican, ']Michael Davis, who just completed his first term as governor in a medium sized state, is running for re-election. Before being elected, Mr. Davis was a state legislator for five years during which he met frequently with federal officials to discuss issues facing his state. He has three grown children and is separated from his wife. During the four years that Governor Davis has been in office, unemployment in the state [increased by 2%, did not change, decreased by 2%]while national unemployment did not change. Compared to the start of his term, [50,000 fewer people, there was no change in the number of people, 50,000 more people]were employed at the end of Governor Davis's term"

Class Size Experiment Candidate Summary examples

'No information' control group:

"The final weeks of one Gubernatorial campaign pits Governor Graham Harding against an upstart challenger. Throughout the campaign, both candidates have focused on different aspects of Governor Harding's record in office. During his term, Governor Harding made a number of bold, and occasionally controversial, policy changes while overseeing strong economic growth. Governor Harding also led a broad restructuring of the state's education system."

Treatment groups:

"The final weeks of one gubernatorial campaign pits Governor Graham Harding against an upstart challenger. Throughout the campaign, both candidates have focused on different aspects of Governor Harding's record in office. During his term, Governor Harding made a number of bold, and occasionally controversial, policy changes while overseeing strong economic growth. Governor Harding also led a broad restructuring of the state's education system. Before these reforms, the average public school class size was [20, 25, 30]compared to a national average of 25. After these administrative reforms, the state's average class size [decreased by five students, did not change, increased by five students]to [15, 20 , 25, 30, 35]"

Sample policy response questions (asked at end of survey)
"Earlier you learned that: During one Governor's term, unemployment in the state decreased by 2% while national unemployment did not change. Compared to the start of his term, 50,000 more people were employed at the end of the Governor's term."
Please choose the option below that best describes your reaction to this information:"

1. Extremely negative

2. Very negative

3. Somewhat negative

4. Neither negative nor positive

5. Somewhat positive

6. Very positive

7. Extremely positive