

A Different Kind of Disadvantage: Candidate Race, Cognitive Complexity, and Voter Choice

Melody Crowder-Meyer
Assistant Professor of Political Science
Davidson College
Box 7134, Davidson, NC 28035
[mecrowdermeyer@davidson.edu](mailto:mecrowdermeyer@ davidson.edu)
ORCID 0000-0002-5952-6870

Jessica Trounstine (**corresponding author**)
Associate Professor of Political Science
School of Social Sciences, Humanities, and Arts,
University of California, Merced
5200 North Lake Road, Merced, CA 95343
jtrounstine@ucmerced.edu
[ORCID 0000-0003-4364-2719](https://orcid.org/0000-0003-4364-2719)

Shana Kushner Gadarian
Associate Professor of Political Science
Maxwell School, Syracuse University
Syracuse, NY 13210
sgadaria@maxwell.syr.edu
ORCID 0000-0003-4240-7944

Kau Vue
Graduate Student in Political Science
School of Social Sciences, Humanities, and Arts,
University of California, Merced
5200 North Lake Road, Merced, CA 95343
kvue7@ucmerced.edu

Abstract: Voters use heuristics to help them make decisions when they lack information about political choices. Candidate appearance operates as a powerful low-information cue. However, widely held stereotypes mean that reliance on such a heuristic can reduce support for candidates of color. We argue that racial prejudices are more likely to dominate decision making when electoral environments require voters to expend more cognitive resources – such as when they must choose multiple candidates at once. Using two experiments we find that black candidates receive less support from cognitively taxed voters than from voters who have the cognitive space to intentionally limit their prejudices when voting. We also reveal that this pattern is particularly evident among ideologically liberal voters. Respondents who profess politically liberal views support black candidates more often than white candidates when the cognitive task is simple but are less likely to do so when they are cognitively taxed.

Keywords: race; local politics; experiment; cognitive complexity; voter behavior; heuristics

Conflict of Interest: The authors declare that they have no conflicts of interest.

Acknowledgements: Thank you to participants at Princeton University, Simon Fraser University, University of British Columbia, University of Michigan, Cornell University, MPSA 2016, and APSA 2016 for comments.

American voters are tasked with selecting more than half a million officials to govern their communities (Lawless 2011). The preponderance of elections for positions from dog-catcher to President, and everything in between, means that information about issues, offices, and candidates can be difficult to obtain. When faced with these challenges, voters draw on heuristics to cast a vote that aligns with their preferences (Popkin 1994, Lupia 1992, 1994, Lupia and McCubbins 1998, Huckfeldt et al. 1999). Information like partisanship, endorsements, and the state of the economy all help voters figure out how to vote, even when they know little about the candidates or policies in question (Lau and Redlawsk 2006). Candidate appearance can operate as a particularly powerful low-information heuristic, which is most privileged when other information is scarce (Lawson et al. 2010, Todorov et al. 2005).

But, what happens when voters harbor prejudices that are related to candidates' appearance and other politically relevant cues like partisanship are unavailable? Voters draw on stereotypes when they have little information (Riggle et al. 1992, McDermott 1998, Conover and Feldman 1989; Tesler 2012). Racial stereotypes and attitudes are readily accessible even to voters who pay little attention to politics (Kinder and Ryan 2017, Hutchings and Valentino 2004). Further, racial attitudes are a major building block of policy opinions on areas as varied as busing, crime, and healthcare (Kinder and Sanders 1996; Sears and Citrin 1985; Tesler 2012) and importantly for this paper, have been shown to affect candidate evaluations (Kalmoe and Piston 2013; Howell 1994; Ditonto, Lau, Sears 2013; Kinder and Ryan 2017). When information is absent or ambiguous, voters are more likely to draw on racial attitudes that may disadvantage candidates of color (Dovidio and Gaertner 2000, Mo 2015; Berinsky and Mendelberg 2005). We argue that this pattern is exacerbated when voting decisions are cognitively taxing.

This study makes a unique contribution to our understanding of contexts that can enhance or limit the selection of black candidates. We analyze how electoral institutions affect vote choice when they increase the mental difficulty of the actual voting decision. We argue that the cognitive complexity of the decision-making setting can exacerbate structural disadvantages that candidates of color may already face (Rahn 1993, Pratto and Bargh 1991). Some electoral environments require more cognitive effort than others by increasing the cognitive resources required to make a choice or decreasing the cognitive resources available to the voter (Garbarino and Edell 1997). In such settings, we argue that voters will be more likely to rely on simple heuristics for casting their vote, be less likely to suppress prejudices, and as a result, be less likely to select black candidates for office compared to contexts in which decision-making is easier.¹

We use two different conjoint-design voting experiments to test our theory. Both begin with an informationally ambiguous election and then add cognitive complexity. In the first experiment, cognitive complexity is imposed by distracting respondents while they vote. In the second experiment, we take advantage of variation in electoral institutions at the local level in the United States to generate increased cognitive complexity. We demonstrate that black candidates perform significantly worse than white candidates when voters are engaged in more effortful information processing. This effect, we argue, is the result of prejudices toward African American candidates that become more difficult to suppress in cognitively complex settings. This pattern is particularly evident among liberal voters. Respondents who profess politically liberal views support black candidates more often than white candidates when the cognitive task

¹ In our conception, prejudice may either be implicit (and thus, unknown to the respondent), or explicit but suppressed for some other reason (e.g. social desirability or conflicting egalitarian attitudes). In either case, we expect cognitive complexity to increase the role of prejudice in decisions.

is simple but when cognitively taxed, liberals become less likely to support black candidates over white candidates.

Our findings speak to the potential effects of any institution or environmental factor that increases cognitive complexity for voters – such as an increase in the number of seats up for election, a lack of partisan labels on ballots, complicated voting machine interfaces, or limited media attention – particularly in low information or low salience elections. Heuristics are undoubtedly helpful for voters, but not all heuristics are created equal. We find that black candidates do not face an even playing field; and similar inequities may exist for individuals from other negatively stereotyped groups. When voters lack politically relevant information, and when they face cognitively complex conditions, voters’ use of racial heuristics and prejudices are more likely to play a role in decision making, significantly affecting the support received by black candidates.

These results help explain conflicting findings about the level of support black candidates receive from white voters. While ample evidence of racially prejudiced voting behavior exists (e.g. Kam 2007; Huddy and Feldman 2009), other studies indicate that black candidates are not hindered by their race in higher-information partisan elections (Juenke and Shah 2015; Kirkland and Coppock 2018). We reveal that cognitively taxed voters seek simple shortcuts to cast their votes, and that race serves as one such shortcut. In electoral contexts in which other shortcuts are easily available – as in the partisan elections others have examined – voters should instead use these shortcuts (e.g., party ID) to cast their ballots. Thus, our research highlights the particular challenges black candidates face in contexts like local elections and party primaries, which tend to have low information, lack partisan cues, and often feature multiple candidates.

The Role of Racial Stereotypes in Elections

Although there has been substantial reduction over time in support for blatantly racist sentiments, particularly among those with lower levels of symbolic racism (Schuman et al. 1997, Valentino et al. 2018), negative stereotypes about racial and ethnic minorities persist and influence how voters behave (Yadon and Piston 2018). Stereotypes about blacks are particularly negative and persistent. When asked to evaluate whites and blacks on a variety of traits, Bobo et al. (2012) find that even as a social norm of racial equality has arisen from the 1990s through 2008, a substantial and consistent proportion of whites continue to rate blacks as less hardworking and less intelligent than whites (see also Sniderman and Piazza 1993, Peffley and Shields 1996, Gilens 1999, Sears and Henry 2003). Although there are partisan differences in the level of expression of these sentiments, negative stereotypes about blacks are held by both Republicans and Democrats. In the 2016 General Social Survey, 42% of white Republicans and 24% of white Democrats rated African Americans as lazier than whites and 26% of white Republicans and 18% of white Democrats rated whites as more intelligent than blacks (Blake 2017).² Recent surveys of both party leaders and the general public reveal that intelligence and being hardworking are among the most commonly prized traits mentioned when asked what qualities political candidates should have (Broockman et al. 2014). It is perhaps then unsurprising that experimental research has demonstrated that both explicit measures of stereotypes of minorities (e.g., whether they are viewed as hardworking, trustworthy, intelligent) and implicit racial views affect support for minority candidates, particularly in the absence of

² Our own analysis of General Social Survey Data from 1998-2008 confirms that both white liberals and white Democrats hold such stereotypes and that the differences in their ratings of whites and African Americans on these dimensions are significantly different from zero. Results available from the authors.

party cues (Kam 2007; Huddy and Feldman 2009).³ In fact, candidate skin tone affects evaluations of candidates across a diverse set of voters. Both white and black voters and conservatives and liberals are more likely to choose lighter skinned candidates (Stern et al. 2016, Caruso et al. 2009, though see Weaver 2012). Further, both conservatives and liberals perceive candidates with whom they agree as having lighter skin, while “darkening” the skin of candidates with whom they disagree (Caruso et al. 2009).

Ideological stereotypes about blacks are also persistent and affect voter behavior (Berinsky et al. 2011). Specifically, blacks are stereotyped as ideologically liberal (McDermott 1998). This stereotype is so strong that it appears even in experiments measuring ratings of otherwise identical black and white politicians, and even when conservative records are ascribed to the candidates (Jones 2013). Further, when comparing actual citizens’ ratings of their own congressional incumbents, Jacobsmeier (2015) finds that white Americans rate black candidates as more liberal than white candidates with ideologically similar roll-call voting records, leading “a significant number of white voters [to] fail to vote for black candidates even if those black candidates are more ideologically similar to those voters than opposing white candidates” (pg. 618). Simply adding images of African-Americans to a candidate’s campaign ad leads individuals to rate that candidate as more liberal on aid to blacks and affirmative action (Swigger 2012).

³ While implicit attitudes are automatic and unconscious, explicit attitudes are deliberate and intentional. Research shows that both implicit and explicit attitudes can affect vote choice and policy preferences (Mo 2015; Perez 2010; Payne et al. 2010; Galdi et al. 2008; Lodge and Taber 2000, 2005; Burdein et al. 2006), but studies show that explicit attitudes tend to dominate in studies of vote choice (Ditonto, Lau, Sears 2013; Kalmoe and Piston 2013; Kinder and Ryan 2015). Our theory focuses on how explicit attitudes – such as prejudicial negative stereotypes of blacks and beliefs about black candidates’ ideology – influence voter behavior.

How then do voters make decisions about candidates, given the existence of both prejudicial negative stereotypes about blacks and the common use of race as a heuristic for political ideology? When and how will racial stereotypes and heuristics influence voter behavior? A broad psychological literature “makes a strong case for the malleability of automatic stereotypes and prejudice in response to the perceiver’s motives and strategies, and to variations in the situation” (Blair 2002). Specifically, studies reveal that stereotype use is influenced by a need to understand individuals and make informed choices (comprehension goals), a desire to avoid prejudice, and the availability of cognitive resources. When asked to form an impression of an individual, particularly when full information is not available, people often draw on stereotypes (Allport 1954, Kunda et al. 2003, Kunda and Spencer 2003). For voters, stereotypes can aid in determining which candidates on a ballot to support. For instance, voters may use their assumption that black candidates are liberal to infer how close a candidate is to their own ideological position and may draw on stereotypes about black candidates’ work ethic or intelligence to determine if the candidate holds the qualities they seek in an elected official.

At the same time, many scholars argue that contemporary politics entails a commitment to norms of equality, and a desire to avoid making decisions based on race (Mendelberg 2001). Indeed, “highly motivated individuals can modify the automatic operation of stereotypes and prejudice” when, for example, “doing so would be beneficial to their self-image,” when “stereotypes appear to be discrepant with social norms,” or if they are deeply committed to and identify with egalitarian goals (Blair 2002 pgs. 247-248, Sinclair and Kunda 1999, Sechrist and Stangor 2001, Moskowitz et al. 1999). Thus, to avoid prejudice, some voters may seek to

intentionally ignore prejudicial stereotypes about black candidates when making voting decisions.⁴

However, even a voter motivated to avoid prejudice may be constrained in their ability to do so. Social psychological research on cognitive processing in non-political contexts shows that suppressing or overriding prejudicial attitudes is mentally taxing. Crandall and Eshleman (2003) explain, “Suppression takes mental energy, and a resultant mental fatigue can lead to suppression failures, inadvertent slips, and less ability to self-regulate” (pg. 423). Thus, researchers have found that individuals who are cognitively fatigued are more likely to draw on negative racial and gender stereotypes in a variety of contexts (Gilbert and Hixon 1991, Spencer et al. 1998, Bodenhausen 1990, Jamieson and Zanna 1989).

Consequently, we expect the effects of racial stereotypes on voters’ choices between candidates to vary *both* by the characteristics of the voters and by the cognitive resources available to voters while making a given decision. Generally, black candidates should fare worse when voters’ cognitive resources are taxed as this is when prejudicial stereotypes are most likely to be utilized. On the other hand, when cognitive resources are plentiful, we expect ideological stereotypes to dominate negative prejudicial stereotypes; and so, should see divergence between political liberals and conservatives in support of black candidates.

In general, ideologically liberal voters should be more likely to support black candidates due to their use of race as an ideological heuristic, but this support will be moderated due to the existence of other negative stereotypes about blacks that conflict with the work ethic and intelligence voters generally desire in their elected officials (Broockman et al. 2014). For

⁴ Some egalitarians may be expressing what is known as social desirability bias – the belief that revealing one’s racism is inappropriate (Krumpal 2013), while others might feel firmly committed to egalitarian ideals or hold genuine racial sympathy toward non-whites (Devine and Monteith 1993; Tesler 2016).

ideologically liberal voters, then, the cognitive resources available to voters should significantly affect support for black candidates. When liberal voters are making choices under low cognitive load, their motivation to avoid prejudice will lead them to suppress their use of negative stereotypes about black candidates, leaving them to make a voting decision by drawing on the other racial heuristic available to them regarding ideology. Thus, liberal voters who have ample cognitive resources available will support black candidates at high rates. But, when liberal voters' cognitive resources are depleted, their ability to suppress their use of prejudicial stereotypes will be lower. In this case, liberal voters may still support black candidates due to their assumption that black candidates are ideologically liberal, but their level of support will be lower than in electoral circumstances in which they are better able to suppress their use of negative racial stereotypes.⁵

Among voters who are ideologically conservative, black candidates should fare less well. When these voters are prompted by comprehension goals to use racial stereotypes, both the prejudicial negative views they may hold about blacks and their use of race as a heuristic for liberal ideology should lead them away from supporting black candidates. This low support for black candidates should be less affected by the level of cognitive resources available to conservative voters because ideologically conservative voters will be disinclined to support (stereotypically liberal) black candidates even if they are motivated and able to suppress negative racial stereotypes (when cognitive load is lower).

Local electoral institutions in the United States offer a perfect opportunity to test these claims because they represent environments in which voters are asked to make cognitively

⁵ Political liberals may also have a greater commitment to diversity/racial equality than political conservatives. Such a commitment will produce an observationally equivalent outcome in which liberals are more likely to select black candidates than conservatives under low cognitive load.

complex choices with limited information. There are two dominant methods for electing city councilors. In some cities councilors are elected by ward or district. Each voter selects one candidate for city council – typically choosing between two clear contenders. In other cities councilors are elected at-large, and voters are asked to pick multiple candidates from a large field. We posit that district elections present a cognitively simpler task than at-large elections. When the cognitive task is simplified, voters are more likely to be able to suppress prejudices that are inconsistent with their other beliefs or desire to respond in a socially appropriate way. While prejudice undoubtedly plays a role in all political contests, it is likely to be especially important when voters have access to little relevant information about the political choice that they must make (Riggle et al. 1992; McDermott 1998). Dovidio and Gaertner (2004) argue that “bias will not be expressed when a person is clearly qualified or unqualified for a position, because the appropriate decision is obvious,” (pg. 16). But when a candidate’s qualifications are less clear or when the candidate’s qualifications are conflicting (some weak and some strong), prejudice will play a more powerful role. Local elections are often low information environments. Perhaps the most important piece of information used by voters, partisanship, is absent in most local elections. Further, local elections typically receive little public or media attention. In the absence of party cues or other relevant information, voters should be more likely to rely on available heuristics such as racial cues, when determining for whom to vote. As a result, prejudices about candidates could strongly influence who wins local elections – particularly in more cognitively complex electoral contexts.⁶

⁶ Some research (Oliver 2012, Anzia 2014, Berry 2009) suggests that because of the general low levels of interest in local politics, local *electorates* are often disproportionately comprised of knowledgeable, motivated residents like home owners and municipal employees. Thus, the level of knowledge among voters may interact with cognitive complexity to affect the extent to which voters use racial stereotypes when casting ballots in real elections. In the Online Appendix we take advantage of distinctions in voter knowledge across real election contexts to test this possibility. Our analyses in Figure OA1. suggest that

Hypotheses

We expect that under conditions of low information, voting decisions that are more cognitively difficult will disadvantage black candidates vis-à-vis white candidates because voters will be less able to reduce the role of racial prejudice in casting their votes. This expectation is tested in two experiments that invoke cognitive complexity using different approaches. First, to directly test our cognitive complexity mechanism, we distract respondents by asking them to count their eye blinks while voting. *We expect black candidates to be disadvantaged among respondents who are counting their eye blinks compared to respondents who are able to pay more attention to the voting task.* Then, we draw on variation in electoral rules to generate cognitive complexity. Some respondents are assigned to vote in two candidate races and others to vote in six candidate races. *We expect black candidates to be advantaged in two candidate (“district”) races as compared to six candidate (“at-large”) races where the more complex voting task makes suppression of negative attitudes more challenging.*

Because we theorize that the cognitive load effects should particularly influence voting decisions among liberal voters, for whom the direction of ideological and prejudicial stereotypes conflict, we next split our analyses to examine respondents who explicitly express politically liberal views separately from those who express politically conservative views. *Because of ideological stereotypes, we expect that political liberals will be more likely to select black candidates when cognitive resources are plentiful. But, we expect taxing cognitive load will decrease this preference.*

more cognitively complex elections (at large contests where voters must select multiple candidates versus district contests where they select only one) do yield fewer black officeholders particularly in elections that are more likely to have low-information voters (on-cycle elections with higher turnout versus off-cycle elections with lower turnout). These tests suggest support for our theory in real elections and indicate the effects of cognitive complexity in provoking use of racial stereotypes among voters should be more common among lower than higher information voters.

Methodology

We use two experiments to evaluate the way in which cognitive complexity affects minorities' representation because they allow us to precisely manipulate the complexity of the voting environment, a task which cannot be accomplished using observational data. Underrepresentation of minorities may occur through multiple processes - they may run less often than their white counterparts, be excluded or blocked by donors or parties, or be systematically chosen less often by voters. We overcome these inference problems by utilizing voting experiments that randomly assign cognitive complexity and candidate race, allowing us to isolate the role that *voters* play in different institutional settings.⁷

Our experimental design combines insights from two different literatures. Work by scholars like Lawson et al. (2010), Todorov et al. (2005), and Buckley et al. (2007) reveals that candidate appearance can be a powerful driver of vote choice. With no further information about candidates, brief exposure to candidate photos produces election results that are remarkably similar to real world elections. We are specifically interested in the role of candidates' race in respondents' decision making, but each candidate photo inherently represents a bundle of traits. So, we draw on work from conjoint survey design to analyze our data. This allows us to estimate the expected causal effect of the candidate's race on the likelihood that the candidate will be selected, conditional on all of the other attributes in the choice set (Hainmueller et al 2014). Typically, conjoint designs present a text list of attributes for each candidate, and the values are varied randomly across respondents and across tasks. Our experiments use photos instead.

Specifically, in both experiments, we asked our respondents to act like voters, choosing their preferred candidate(s). In each experiment, subjects were randomly assigned to a condition

⁷ Replication materials are available in the Political Behavior Dataverse at doi:10.7910/DVN/MNAO24.

that made the voting decision either cognitively easier or more complex, and then asked to vote in three different elections for city council, county board of supervisors, and a parks and recreation board. Within each *election* we randomized the race and ethnicity (white, black, Asian, Latino) of the candidates that subjects encountered. After selecting candidates for each office, respondents answered a series of demographic (e.g., partisanship, ideology, gender, education) and attitudinal (e.g., racial attitudes, partisan identification, interest in politics) questions.⁸

In all the elections in our experiments, respondents were presented with photos of a set of candidates and were asked to choose which candidate(s) they preferred for the office. There was no additional information about the candidates – just the photo which signaled the race of the candidate – either white, black, Latino, or Asian. We chose to use photos rather than more detailed text descriptions of the candidates to ensure that our candidates’ qualifications were ambiguous.⁹ We do not include other information about the candidates such as partisanship since this information is not typically present in city elections (McDermott 1997). By asking respondents to make decisions quickly with limited information, we are reproducing the decision-making process of some voters in lower-level elections, who may have little incentive to devote much effort to their candidate selections (Downs 1957, Schaffner et al. 2001).

⁸ In total, there were 46 survey questions in Experiment 1 and 41 questions in Experiment 2.

⁹ This paper is focused particularly on testing the role of cognitive complexity in shaping voter behavior – a test not present in existing research on candidate race and vote choice. Our experiments are designed to mimic one type of electoral context – low information elections, in which voters may see images of candidates on campaign mailers, etc. but have little other information about the candidates. Studies in Ireland, where ballots for local office include photographs, find that voters rely heavily on photographs as shortcuts for decision-making in low information elections (Buckley et al. 2007). To evaluate the effects of candidate race and ethnicity, we sought to remove as many other cues from our experimental ballots as possible – for example, we chose to cue candidate race using images of individuals in professional dress rather than names which could potentially also signal socioeconomic status or other cues.

Recognizing that images can convey a variety of cues to voters, we took steps to ensure all the images we used ranked similarly on traits like competency and attractiveness.¹⁰ These photos were selected from pictures of governors and senators from prior studies on candidate faces, and supplemented with similar images of state or local legislators. In all of the images our candidates were dressed as professionals and the photographs have a similar professional headshot quality. It is in such ambiguous settings that Dovidio and Gaertner (2004) and Mo (2015) find that racial prejudices are most likely to influence decision making.

Using separate samples, we also confirmed that our images were conveying the two pieces of information most fundamental to our theory: candidate race and ideology. In additional surveys, we asked respondents from Amazon's MTurk to identify the racial or ethnic group with which they would most associate our candidates and to estimate the ideology of our candidate photos. Doing so first confirmed that our photos effectively signaled candidate race or ethnicity – particularly for black, white, and Asian candidates – paving the way for racial prejudices and stereotypes to influence voter choices. Second, the ideology ratings of the photos followed the same pattern as existing research – black candidates were rated as significantly more liberal than white candidates – laying the groundwork for black candidates to receive different levels of support from liberal and conservative voters.¹¹

¹⁰ We used a total of 80 pictures in our experiments. These include 40 pictures of governors and senators from prior studies (Olivola and Todorov 2010; Todorov et al. 2005) that were calculated to be within two competency score standard deviations from one another and an additional 40 pictures of state or local elected officials from Arizona, Florida, Georgia, Hawaii, North Carolina, and Texas gathered online. Using MTurk, a separate sample of 966 participants rated each photo on attractiveness, competency, and trustworthiness similar to Todorov et al. 2005. There is no significant difference between the two sets of pictures with regard to competency. Our photos were judged to be very slightly more attractive and trustworthy. Summary statistics on these measures are in the Online Appendix table OA2.

¹¹ Regarding *racial and ethnic identification*, respondents correctly identified the race or ethnicity of black and white candidates 89% of the time and Asian candidates 74% of the time. Latino candidates were only identified as Latino 39% of the time. When respondents made mistakes, Black and Asian candidates were nearly always categorized as some other racial minority (they were only perceived as white 2.6% of the

In Experiment 1 we test our key argument – that requiring voters to expend more cognitive effort in an election leaves them more susceptible to drawing on prejudices when choosing candidates – by directly manipulating voters’ cognitive load. Specifically, after respondents completed a series of tasks, we asked half of our respondents to keep a count of their eye blinks until offered a question where they could report their total number of blinks.¹² Counting eye blinks draws on an individual’s cognitive resources (Ülkümen et al. 2008; Fitzsimons and Williams 2000), increasing their cognitive load relative to not counting their eye blinks.¹³ Finally, all respondents (both those counting their eye-blinks and non-counters) voted in three elections, with each election asking respondents to select one candidate out of two candidates offered in that election.

Experiment 2 tests whether *electoral institutions* that demand more cognitive resources have the same effect as inducing cognitive complexity through counting eye blinks. In this experiment respondents saw either two (district condition) or six (at-large condition) photos per election and were asked to pick one or three candidates to serve.¹⁴ As in Experiment 1, respondents were randomly assigned to a cognitive complexity condition that was either easier

time). But, Latino candidates were generally perceived as white (47% of the time). As many Latinos racially identify as white, this may simply reflect the complexity of Latino identification in the broader population and in actual elections with Latino candidates. Regarding *ideology*, when estimating the ideology of our candidate photos on a 7-point scale, with higher values meaning more conservative, on average respondents rated black candidates at 3.168 (i.e. solidly liberal) and white candidates at 4.701 (i.e. moderate leaning toward conservative) – a highly significant, one standard deviation difference (see appendix table OA3).

¹² Prior to the cognitive load manipulations, respondents completed a set of text-based voting tasks separate from the dependent variables in this analysis. These are discussed in (Crowder-Meyer, Gadarian, and Trounstein 2017) but do not test the cognitive difficulty mechanism and are not discussed here. After the text-based voting task, all respondents engaged in two simple cognitive processing tasks – completing an analogy and an anagram – prior to being randomly assigned to the eye blink manipulation.

¹³ As this was an online, anonymous survey we had no way to check the accuracy of the eye blink totals. On average our eye blink counters reported 22 blinks while answering 5 questions.

¹⁴ In cities where councilors are elected at-large, there are commonly twice as many candidates as seats available for election in at-large contests (Trounstein 2008).

(choosing 1 of 2 candidates) or more challenging (choosing 3 of 6 candidates). Within each election, the race of each candidate was separately randomized. In district elections there were 16 different possible combinations of candidate race (4 racial/ethnic identities possible for candidate 1 \times 4 racial/ethnic identities possible for candidate 2). In the at-large elections the complexity increases substantially with 4,096 possible combinations of race across the six candidates. Respondents were required to vote for all available positions in each election. Figure 1 displays a screenshot of a type of decision that a respondent made in the at-large condition in Experiment 2.

In both experiments, respondents saw each election on a separate screen and each candidate photo was separately randomly selected from the larger pool of pictures. Within each election, respondents did not see any duplicate pictures. The set of photos from which candidates were selected for each election included equal numbers of candidates from the four racial groups.¹⁵ Importantly, the probability that a respondent was presented a candidate of color was random rather than driven by candidate strategy or institutional rules, enabling us to directly test the effects of cognitive load on voter choices unaffected by other factors. Table 1 summarizes the manipulations within each experiment. By comparing respondents who counted eye blinks while voting with those who did not, the design of Experiment 1 tests directly whether a respondents' cognitive exhaustion leads to reliance on candidate race when voting. By comparing respondents who selected 3 of 6 candidates in "at-large" elections to those who selected 1 of 2 candidates in "district" elections, the design of Experiment 2 tests whether a common real-world electoral context that imposes cognitive load leads respondents to rely on candidate race when voting.

¹⁵ We have exactly ten photos for each of eight categories: white men, white women, black men, black women, Latino men, Latina women, Asian men, and Asian women.

Figure 1: Sample Voting Task in an At-Large Election in Experiment 2

These candidates are running for county board of supervisors. The top three vote getters will win.
Which three candidates would you be most inclined to vote for?



Note: Participants in the at-large condition are presented with a set of six candidates and vote for three. In the district elections respondents are presented two candidates and vote for one.

Table 1: Experimental Designs

	Experiment 1	Experiment 2
Electoral rules	District (select 1 of 2 candidates)	District (1 of 2) v. At-large (3 of 6)
Cognitive Load Manipulation	Eye-blinks (random assignment to half of respondents)	None

We administered our experiments between November 2014 and November 2015 on Amazon’s Mechanical Turk (MTurk) workplace.¹⁶ We recruited separate samples for each experiment. MTurk respondents have been found to be more representative of the American population than other types of convenience samples (Berinsky, Huber, and Lenz 2012; Huff and Tingley 2015) and experiments conducted with national probability samples that have been replicated on MTurk yielded similar results (Berinsky, Huber, and Lenz 2012). However, MTurk samples are younger and more likely to contain Latino and Asian respondents (though not

¹⁶ For details on the task and samples, see the Online Appendix.

African Americans) than nationally representative samples. MTurk respondents are also more likely to be liberal and to identify with the Democratic party than nationally representative surveys (Huff and Tingley 2015). Experiment 1 uses a prescreening survey to create a more representative sample by partisanship. This enabled us to generate a survey population that approximated the party identification of Americans based on the 2012 American National Election Study (46% Democrats, 14% Independents, and 39% Republicans). However, if young, liberal respondents are motivated to support diversity and more likely to self-monitor use of racial stereotypes when possible (Pew Research Center 2010), these are the people most likely to be affected by cognitive complexity, making this an appropriate test of how cognitive difficulty undercuts the diversity of elected officials. Our first experiment resulted in 961 respondents and our second experiment has 960 respondents. Online Appendix table OA1 displays the characteristics of our samples in each experiment.

Each respondent voted in three different elections per experiment. Respondents in Experiment 1 and in the district condition of Experiment 2 chose three candidates total across those elections while respondents in the at-large condition chose a total of nine candidates in the three elections. In analyzing conjoint data like these, respondent's votes from each election are transposed into a new data set in which each observation represents a candidate that was presented to a voter. The quantity of interest (i.e. the dependent variable) is whether that candidate was selected. The independent variable is the candidate's race.¹⁷ Overall, respondents made 5,772 decisions in the first experiment and 11,352 decisions in the second. Since each respondent makes multiple choices, we cluster the standard errors by respondent to account for

¹⁷ We present the results for black candidates relative to white candidates. Estimated effects for Asian and Latino candidates are discussed in footnotes and are available from the authors by request.

individual differences that may systematically influence each choice made by a given respondent. Even though the dependent variable is dichotomous, we use OLS for our analysis because Hainmueller et al (2014) demonstrate that it provides an unbiased estimator of the attributes' marginal effects without imposing functional form assumptions.

Cognitive Complexity Affects Support for Racial Minority Candidates

We first test our hypothesis that black candidates receive more support when elections are less cognitively complex. We begin by testing the cognitive load mechanism directly, asking respondents to vote in a two-candidate election while counting their eye blinks (or not). Then, we use election type to impose a higher or lower cognitive load on respondents. We expect that black candidates will receive less support from cognitively taxed voters than from voters who have the cognitive space to intentionally limit their use of racial prejudices.

To model the effect of candidate characteristics on voters' choices, we use a linear regression with dummy variables for candidate race (African American, Latino, Asian-American with white candidates as the baseline category) interacted with the cognitive load condition (eye blinking vs. no eye blinking; at-large vs. district).¹⁸ The coefficients for each candidate attribute are the Average Component Interaction Effect (ACIE) (Hainmueller et al 2014). The ACIE represents the average *difference* in Average Marginal Component Effects (AMCE), in this case, under high and low cognitive load manipulations.¹⁹ Figure 2 contains the results of these two experiments (full regression results are in Online Appendix Table OA4).

¹⁸ No controls for respondent attributes are needed because candidate race was randomized across respondents. Including characteristics like age, gender, marital status, and income does not affect the conclusions and the coefficients on such variables are essentially zero.

¹⁹ Hainmueller et al (2014) define the AMCE as “the increase in the population probability that a profile would be chosen if the value of its l th component was changed from t_0 to t_1 , averaged over all the possible values of the other components given the joint distribution of the profile attributes $p(t)$ ” (p. 11).

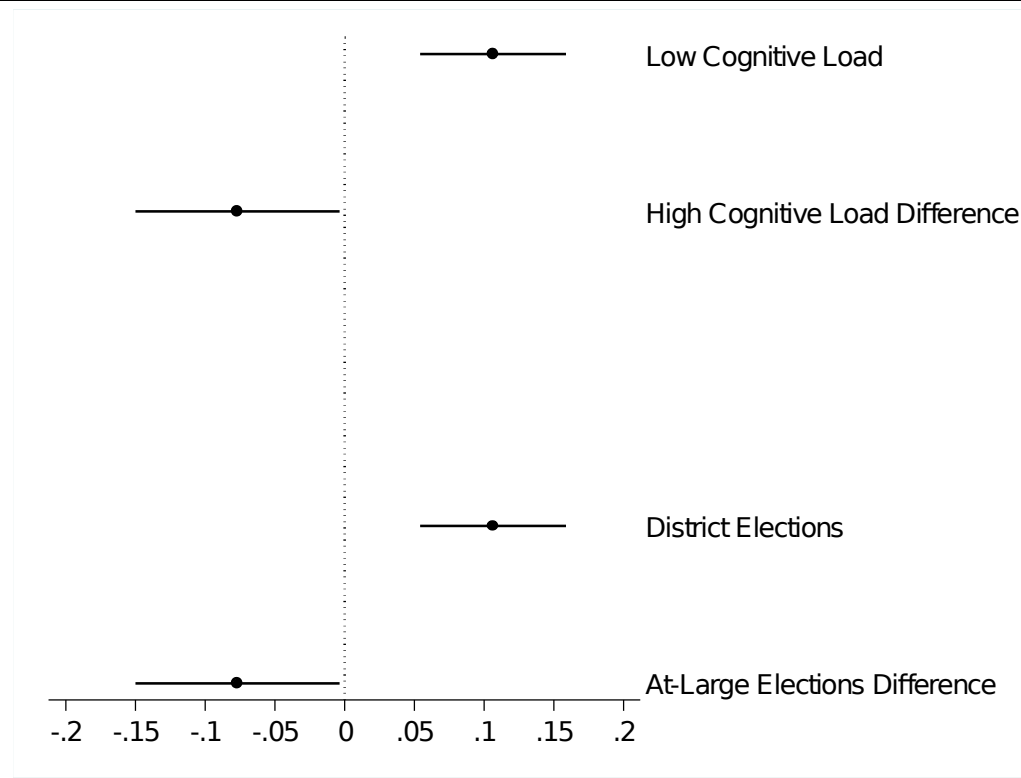
The coefficients in Figure 2 can be interpreted as the difference in the likelihood that a voter selects a black candidate compared to a white candidate when the respondent is voting under a lower cognitive load (no eye blink counting/districts) and the difference in marginal effects under a higher cognitive load (counting eye blinks/at-large). The results demonstrate support for our hypothesis that black candidates receive less support from voters in more complex electoral contexts. The coefficients to the right of the dotted line in Figure 2 mean that a black candidate has a greater chance of being chosen (compared to a white candidate) in the low cognitive load and district conditions. Conversely, coefficients to the left of the line indicate that black candidates are less likely to be chosen when voters have a more complex voting task.

The probability that a voter will support a black candidate (relative to a white candidate) is 0.55 (SE=.018) when respondents are not counting eye blinks and only 0.47 (SE=.016) when they are counting blinks, and thus more cognitively distracted. This is the difference between a black candidate winning or losing an election. The probability of supporting black candidates in district elections is also higher than that probability in at-large elections. In Experiment 2, the estimated probability of selecting a black candidate in a district election is 0.57 (SE=0.015) compared to 0.52 (SE=0.011) in an at-large election.²⁰ In addition to the penalty black candidates receive in more cognitively taxing conditions, these findings reveal a general preference for

²⁰ Our results are more mixed for Asian and Latino candidates. In Experiment 2, Asian and Latino candidates were not significantly more or less likely to be selected than whites in at-large vs. district elections. In Experiment 1, Asian candidates even appear to benefit from the imposition of a higher cognitive load. Our theory predicts that voter behavior under heavy cognitive load is driven by racial stereotypes, thus these results are consistent with the presence of more mixed positive and negative stereotypes about Asians and Latinos in the US (see e.g. Kao 1995). Additionally, our findings for Asian candidates may indicate that positive stereotypes about Asian-Americans' work ethic and intellect lead voters to prefer Asian candidates when stereotypes play a larger role in their decision-making (Kinder and Kam 2010).

black candidates under conditions of lower cognitive load. As we discuss below, this preference is driven by liberal respondents.

Figure 2: Effect of cognitive load and institution on selection of black candidates



Note: This figure shows the AMCE for the low cognitive load/district condition and the estimated *difference* between high/low cognitive load and at-large/district conditions for black candidates compared to white candidates. Estimates are based on OLS regressions in which candidate race is interacted with election type (low vs. high cognitive load; district vs. at-large); standard errors are clustered on respondent; bars represent 95% confidence intervals. Coefficients can be interpreted as the difference in the likelihood that a voter selects a black candidate compared to a white candidate under a lower cognitive load and the difference in marginal effects under a higher cognitive load.

To further investigate the mechanism underlying our results, we conducted several additional tests. First, we considered data on the length of time it took respondents to vote in Experiment 1. While all respondents in Experiment 1 were choosing between the same number of candidates, if those whose cognitive resources were taxed by counting their eye blinks were more affected by racial prejudice, they should have relied more on quick, intuitive thinking (Kahneman 2003) relative to respondents under a smaller cognitive load. We find support for this proposition. Analyzing the second election in which respondents vote (assuming that the first election is essentially a practice round for all respondents) reveals that respondents who are counting their eye blinks make their selection significantly faster: 4.59 seconds (SE 0.10) compared to 5.60 seconds (SE 0.27). A similar gap appears in respondents' third election. If respondents are voting more quickly, they may be less likely to suppress undesirable attitudes. These findings are consistent with our theory that the reason black candidates are preferred in elections with less cognitive complexity is that these elections provide a context in which it is easier for voters to draw on cognitive resources to intentionally counter their prejudices and make a socially or personally desirable choice.

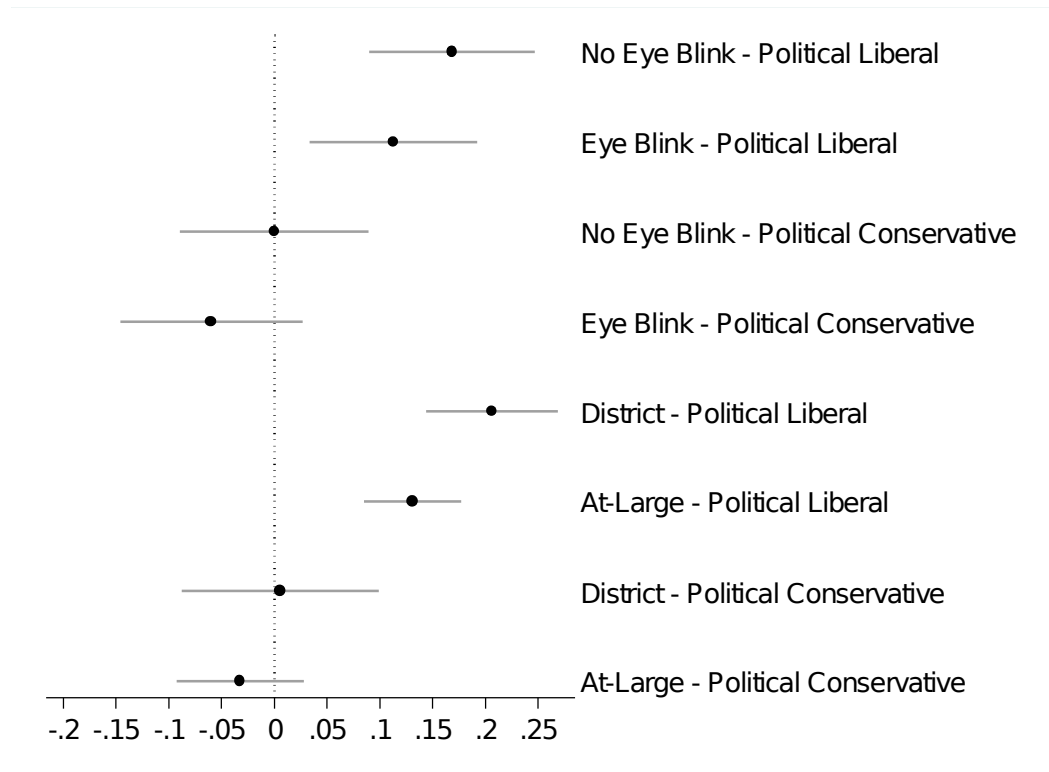
We have proposed that this effect should be different for liberal versus conservative voters.²¹ If higher cognitive load leads to less support for black candidates because it inhibits voters' ability to suppress prejudice against blacks and instead rely on alternative stereotypes to make their voting choices, there should be clear distinctions in how liberals and conservatives behave. Political liberals – who may presume to share ideology with black candidates – should

²¹ Respondents were asked their ideology on a 7-point scale. Liberals are those who said they are extremely liberal, liberal, or slightly liberal, while conservatives are extremely conservative, conservative, or slightly conservative. Respondents who insisted on choosing moderate even after a follow-up question prompting them to choose an ideological position or who said that they haven't thought much about it are excluded from the following analysis.

support black candidates more when they have the cognitive resources available to counter accessible negative stereotypes, but should have more difficulty doing so when their cognitive resources are more taxed. In contrast, we would not expect political conservatives to support black candidates more than white candidates regardless of cognitive load, due to a lack of assumed ideological overlap.

Figure 3 demonstrates support for this proposition, revealing the effects of our two cognitive load manipulations on support for black candidates separately for ideological liberals and conservatives. Here we regress candidate selection on candidate race and split the sample by cognitive load and ideology. Each dot represents a regression coefficient (the AMCE) from a separate regression and can be interpreted as the likelihood of choosing the black candidate compared to the white candidate under different conditions.

Figure 3: Effect of cognitive load on vote choice among political liberals and conservatives



Note: The figure shows the AMCE for each cognitive load condition separately for ideological liberals versus conservatives. Estimates are based on OLS regressions in which vote choice is regressed on candidate race split by election type and political ideology; standard errors are clustered on respondent; bars represent 95% confidence intervals.

Figure 3 reveals that among liberals, the preference for black candidates over white candidates in the two low cognitive load settings is substantial. But, when liberals vote while counting eye blinks or in at-large elections, this preference is significantly reduced (by about 7 percentage points), highlighting the difficulties liberals have acting on their ideological stereotypes under a higher cognitive load. Political conservatives, on the other hand, do not support black candidates over white candidates in any context.

To provide a sense of the substantive magnitude of these effects, we analyze the kinds of councils that ideological liberals create in district versus at-large settings. We use paired t-tests to quantify the difference between the share of black candidates and the share of black winners on a given elected body, conditional on being presented with at least one black candidate in that election. If voters are choosing candidates at random, there should be no significant differences between these quantities – without racial effects, the proportion of black winners should match the proportion of black candidates. This is not what happens. Instead, on average, liberals offered a 11-percentage point advantage to black candidates in district elections, compared to only a 3-percentage point advantage in at-large elections. In other words, liberals choose black candidates at rates that are better than random in both electoral settings, but the gap is considerably larger in the district elections, which we argue are less cognitively complex.²²

²² One alternative explanation for our findings is that liberal voters are simply creating more diverse councils in the at-large elections when they have the opportunity to select more than one candidate – choosing Asian or Latino candidates rather than black candidates among some of the three candidates they choose. We test this possibility by focusing on elections in which only one black candidate appeared. If our liberals are actually making more diverse slates, and are not affected by cognitive processing, the one black candidate should do equally well in district and at-large elections. This is not what we find. Instead, liberals are significantly less likely to choose the one black candidate in at-large elections than in district elections – with an effect size even larger than in the full sample. The coefficient on black candidates interacted with at-large elections is -0.19 (SE = 0.07) in this subset of the data compared to -0.07 (SE = 0.039) in the full sample.

Conclusions

Democracy asks a great deal of its constituents. In the US, citizens of voting age have the opportunity to vote in multiple elections every year or two. Sometimes these elections are straightforward contests between two clearly differentiated candidates (like when voting for president). More often, residents are presented with an array of choices for political outcomes that they may know (or even care) little about. A single ballot may be multiple pages long and request that the voter make a decision about candidates for many different kinds of offices and policies. As a result, we contend that participating in representative democracy can be cognitively challenging.

When individuals are confronted with cognitively complex situations they are more likely to rely on fast, intuitive thinking rather than slow, deliberative thinking in making choices (Kahneman 2003; Evans 2008). Prejudices can fall into the category of intuitive thinking, while suppression of these attitudes requires deliberate thought. When voters have little relevant information on which to base their decision, and when the voting task demands more cognitive resources, voters are more likely to fall back on stereotypical characterizations of candidates when determining who to support. The result is a lower probability of electing candidates from groups stereotyped as unequipped for political leadership – such as blacks – even among people who share presumed ideology with the candidate. When an election presents voters with a cognitively difficult task, such as selecting multiple candidates for a single legislature, they appear to be less able to overcome the effects of negative prejudices about the candidates they encounter.²³

²³ This finding that black candidates do better in district elections is consistent with existing research outside of the experimental lab. Racial and ethnic minorities are more likely to achieve descriptive representation in real district (as opposed to at-large) elections as well (Marschall, Ruhil, Shah 2010). To

These findings have implications for many different institutional settings and different groups. If, for instance, voters have biases against individuals from particular religious groups, older people, heavier people, or those with physical disabilities (Nosek et al. 2007), candidates from these groups may also suffer a penalty in more complex electoral settings. On the other hand, for groups subject to less consistently negative stereotypes (e.g., women), we might expect cognitive complexity to make little difference in voter choices.

A variety of institutional differences could affect the cognitive complexity of an election. While our experiments evaluated the effects of the number of candidates on a ballot, the results from our direct manipulation of cognitive load suggest that any other tasks that increase cognitive load could similarly increase voter reliance on stereotypes when casting ballots. Long ballots likely require more cognitive effort from voters, as might voting using complicated ballot designs or inefficient voting machines. Voters choosing between candidates on the same ballots as they are casting votes on complex referenda may also be more inclined toward stereotype use. Particularly in low information environments, in which candidate quality may be ambiguous, such institutional differences could play a significant role in suppressing the choice of diverse representatives.

Consequently, those interested in expanding the descriptive and substantive representation of members of negatively stereotyped groups should consider how to enable voters to make decisions under a lower cognitive load. Providing voters with simple shortcuts when casting ballots – whether partisanship or even (as ballots in California offer) occupation –

date, scholars have argued this effect is a product of geographic segregation (e.g., Trounstine and Valdini 2008, Sass 2000, Vedlitz and Johnson 1982). However, our results indicate that geography may not be the sole reason for this pattern. Districts may enhance descriptive representation of racial and ethnic minorities for an additional reason: the ease of decision making in a race with fewer candidates.

and institutional reforms that make the process of voting less cognitively difficult could help voters make choices between candidates that are consistent with their explicit attitudes and help voters avoid falling prey to biases inherent in quick decision-making.

Compliance with Ethical Standards

Ethical approval: “All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.”

Informed consent: “Informed consent was obtained from all individual participants included in the study.”