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General discription of project and impact

Since the 2000 Presidential primary the use of the colors red and blue have seemingly become synonymous with the Republican and Democratic parties, respectively (Elving, 2014). Though the two parties seemingly have leaned into the colors the media use to depict them on electoral maps (Williams et al. (2022);see also Figure 1), it is a bit less clear whether these associations are strong for the public and whether these associations influence a variety of significant political outcomes through attitude expression and behaviors.[1] This project addresses these questions.

(a) Republicans pre-2000

(b) Democrats pre-2000
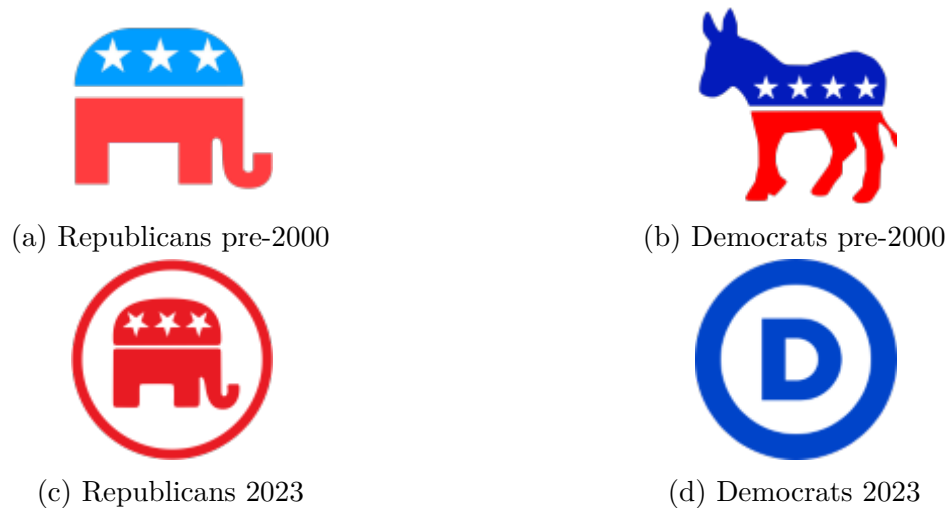

(c) Republicans 2023

(d) Democrats 2023

Figure 1: Party logos

Though colors may appear to be small in the grand scheme of politics, this project argues that they are in-fact not. This dissertation lays out a cognitive model that explains how colors have potent consequences for perceptions of political candidate's, other individual's, and a group of people's partisan affiliation as well as how it influences significant political outcomes such as vote choice in low information environments, willingness to have a conversation with another person about politics, the conditions under which persuasion can occur, and where people choose to live.

While the outcomes of interest for this project vary, the goal of this project is to examine the ways in which visual information – and even one of the most simple forms of visual information, color – influences outcomes that those studying political behavior and political psychology have long been asking by outlining a cognitive model of visual information processing.

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[1]There certainly is a branching area of work that should be done here to examine why the two political parties have gone with these two colors. This is especially true given that in other countries the color red is often picked up by left-leaning paries while the color blue is picked up by right-leaning parties (see Maestre & Medero, 2022). I imagine that there is a feedback loop between the parties and the public that continue to strengthen the association between these particular colors and the parties. The goal of this project is to first establish what the psychological mechanisms are for the public to make these associations. This work can then be helpful for those that want to build upon these ideas to explore the motivations for the parties to continue to use these colors.

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Univeristy of Colorado Boulder   Project description & research plan
damon.roberts-1@colorado.edu   July 14, 2023

Figure 2 provides a visual depiction of my model that I refer to as the snap-judgment model of information processing. Rather than going into all of the affective and social neuroscience and psychology theories used in this model, I'll provide a couple of hypothetical to illustrate it and to explain a number of predictions I derive from it in the project.
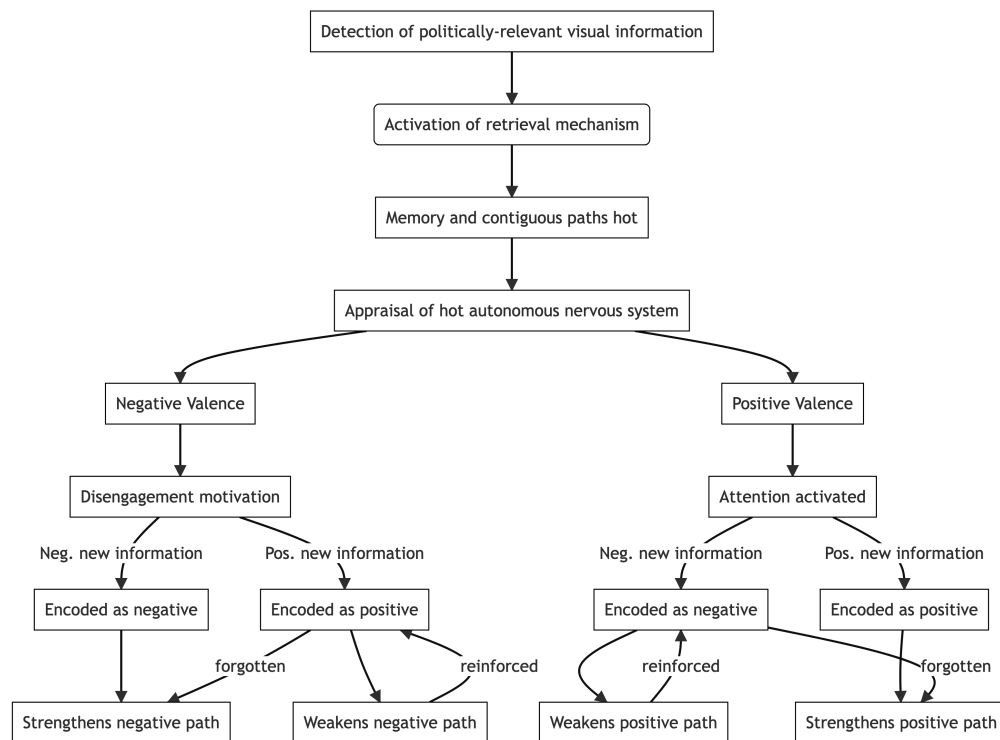

Figure 2: Snap-judgment model of politically-relevant visual information

In the first empirical chapter, I want to explore whether the use of the colors red and blue convey information about the partisanship of the candidate to voters. Some descriptive evidence (Williams et al., 2022), evidence from my own data-collection efforts, and some informal conversations I have had with consultants employed in political marketing firms suggest that candidates use the colors red and blue to convey their affiliation to either the Republican or Democratic parties. It is unclear, however, whether this actually has any effect on the mass public. In the first empirical chapter, I argue that these colors do indeed provide such information.

When someone is driving down a highway and see a yard sign in a split second, the neuroscience literature would suggest that the color may be processed before any text-based information (see Ames et al., 2012). This is a rather intuitive idea. It takes longer to connect

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the letters together to form a word and then to figure out what that word is connected to. Instead, there are fewer connections you have to make in your brain between colors and what they represent. As you are seeing a political yard sign, your brain is going to seek out connections between the color red or blue and how those are relevant in politics. Given that there seem to be descriptive differences between the parties in their usage of the colors red and blue, we should expect that people will first assume that a red yard sign was for a Republican candidate and a blue yard sign was for a Democratic canddiate. This is the snap-judgment we form. Now we are going to have some sort of valanced response to that information: a negative or a positive reaction. Theories of hot cognition would then suggest we are on a track. New information that comes in such as the name of the candidate, if we recognize it, will still be processed and will still have an impact on our final impression, however, our snap-judgment already set the perspective we are coming from. For example, if you see a blue yard sign but you recognize it was for Mitch McConnell, you may be confused once you realize it's for *that* Mitch McConnell – the prominent Republican. Now, say that you don't recognize the name: you might then just assume that the candidate must be a Republican. After all, for years when you think of Republicans you think of the color red from their logo, from election night maps, etcetera. What this hypothetical example demonstrates is that I have theoretical expectations that Republicans are associated with the color red and that Democrats are associated with the color blue. Secondly, and perhaps most important, is the idea that the information that these colors provide puts our mind down a particular path and the way we express our attitudes are shaped by these colors. In the first example with the Mitch McConnell yard sign you feel confused about the conflicting information. In the situation where you do not recognize the name, the color seems to tell you what you need to know. As a voter with limited time, you may cast your vote based on the combination of the name and the color of the yard sign. This means that colors do have potent and downstream consequences.

For brevity's sake, I'll provide another analogy but examining a different set of political outcomes. Say you are watching the news on your phone while waiting at the gate for your flight. You see someone about to sit next to you and they are wearing a red hat – you don't see at first what logos or writing is on the hat, you just see it is a red hat. Now, since you are watching the news, the most accessible context where red hats matter is in politics. You therefore may assume that they are a supporter of Donald Trump's. Your comfort with sitting next to that person or having them start up a converstation will undoubtedly be shaped by whether you are also a Republican. We often are reluctant to have conversations in politics with those that are outpartisans (Carlson & Settle, 2022). Often times though, we cannot control the actions of others and they may start talking to you when they notice that you are watching a CNN segment on the recent *Dobbs* decision which allowed states to pass laws restricting abortion access. Say that they tell you, "yeah, the *Dobbs* decision was the right call." In that situation, you feel just the same as you did when the conversation started, perhaps even more strongly but in the same direction. What if instead they tell you, "yeah, I might like Trump, but the *Dobbs* decision is allowing state governments to do whatever they want to tell us what we can do with our own bodies. And that is wrong." You may instead have this internal reaction of, "What? Really?" Instead of making you dig into your initial snap-judgment, you may now be more or less willing have a conversation with this person despite them clearly telling you that they are a Trump supporter. Months

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after this interaction, however, those feelings that change your impressions of the average Trump supporter may weaken. That is to say, that because you run into a pro-choice Trump supporter once it does not continue to drive more moderate views about who Trump supporters are; those effects will weaken over time without other similar instances. Say instead of watching CNN, you were watching ESPN – you may instead assume that they are a Cardinal's fan and this information is much less relevant to shaping your conversations about political matters.

What these two examples highlight, and hopefully in an intuitive way due to the familiarity of these situations, is that this model of snap-judgments formed from visual information provides an intuitive set of predictions about how people should respond to color as a source of information under a number of different circumstances drawing on a number of theories from the affective and social neuroscience and psychological disciplines. Further, the model outlines a set of predictions for how this visual information has downstream consequences on the way in which we process more substantive political information such as a candidate's or a discussion partner's policy positions as has been done in studies relying on dominant theories of political information processing. The goal of this project is to make a broader argument about the importance of considering visual and other forms of information as political information and how this information shapes the processing of substantive information. While the partisan association of the colors red and blue may change (though, I am somewhat skeptical of that occuring given the hyper-polarized environment the United States finds itself in), the model relies on theories about how people cognitively tie visual information to more complex ideas and to social groups. Therefore, I expect that the overall argument and the model can plug in different colors, be tweaked for different circumstances, and can still produce useful predictions for political attitude expression and behavior. That is, while the focus is on the colors red and blue, the goal of the project is to set the ground work for a theoretical framework of visual inforamtion processing by which scholars can continue to build upon.

Research activities in the project

As the hypotheses I am testing in this project are derived from psychological and cognitive mechanisms, I primarily rely on experiments.

Existing data-collection

At this point, I have collected and analyzed the data to the first empirical chapter. In this chapter, I used a survey experiment to examine the degree to which the colors red and blue (at different amounts) shape perceptions of the candidate and subjects' reported willingness to vote for these candidates. In doing so, I collected data on the cursor movements of participants' screens while blurring most of the yard sign to emulate an eye-tracking experiment. In this study, I found that participants assigned to the red and blue yard sign conditions spent less time exploring the yard sign than participants assigned to a white yard sign condition indicating that they did not need to spend as much time exploring the text-based elements of the yard sign to evaluate it. It also demonstrated that a fictional candidate

with more red on their yard sign were often presumed to be more Republican whereas candidates with moreblue on their yard sign were often presumed to be more Democratic. Yard signs that used less red or used a combination of red and blue often produced more ambivalence between subjects. Finally, the study demonstrated that Republicans who saw a red yard sign were more likely to report supporting that candidate than Republicans who saw a blue or white yard sign. Similarly, Republicans who saw blue or white yard signs were not likely to report supporting those candidates. Democrats who saw a blue yard sign were much more likely to vote for that candidate than those with red or white yard signs.

To demonstrate that these perceptions have real-world influences on campaigns' decisions about the colors included on their yard signs, I collected yard sign images from the Center for American Political Design website and used a machine learning library to calculate the proportion of the colors red and blue on their yard signs. I then merged these data with data from the MIT Election Lab to examine whether candidates for the House of Representatives that are running within competitive congressional districts were less likely to use the color red and blue than if they were in a district where they'd be motivated to use one partisan color over another. The results from this study supported my hypothesis: candidates running in districts where Republicans have historically been more electorally successful used more red than those running in districts where Republicans are less electorally succesful. I find similar effects for the use of the color blue and historically Democratic-leaning districts.

A research plan and timeline

The remainder of the project seeks to build on this existing work to examine how this affiliation between the colors red and blue with Republicans and Democrats in political settings influences deliberation, persuasion, and perceptions of a neighborhood (a whole group of people as opposed to individual political actors). The timeline for completing the remainder of these studies would be to have them complete by the end of Spring (May 2024).

While it would be nice to study these with a combination of observational and experimental research designs, the outcomes of study for these remaining chapters are much less easy to collect observational data on. For example, of the handful of common observational studies used in the United States, few ask questions about people's conversations with others in politics. Further, none that I am aware of ask people to describe the visual and physical characteristics of the people that they are having conversations with. If I were to collect my own survey data on this, I am highly suspicious of people's memory about the color of the clothing that they are wearing despite its importance. This is because color is important as a form of information to form a snap-judgment, however, it is a form of subtle information that people may use only initially and forget later. Therefore, the use of this grant will be to help with the cost of performing experimental studies for both in-person samples as well as online samples.

I want to perform experimental designs with both in-person and online samples to accomplish a coupld of tasks. First, the online samples are designed to capture a more representative sample and to have a larger sample. However, the online samples are a bit more limited in terms of the treatments that I can assign subjects to. The in-person studies are meant to provide slightly more realistic treatments to my participants as well as making it less clear to participants that they have been introduced to a treatment in the first place. For example,

in one of my in-person studies, I will have participants meet at a building on the University of Colorado's campus. As they are entering the building, there will be a canvasser asking people to sign a petition. I will vary whether the color of the shirt that the person is wearing. While doing so, the behavior of the participants will be recorded to see whether they stop to talk to the person and whether they sign the petition. In the online experiment, instead participants will be shown an image of a person that they have been "matched to have a conversation with." Each of these treatments have advantages and disadvantages, and so do the samples. The goal is to perform these with different samples and slightly different designs in hopes of being able to replicate the conclusions I draw from them.

To perform multiple studies to replicate findings is quite costly for a graduate student at a public university. The grant would be a significant help to allow me to run these studies for the chapter on deliberation and on environmental cues in both in-person and online settings. It would also help me hire an RA to stand-in as the people they are interacting with in the in-person version of the studies as well as a "model" for the images in the online studies. Without this grant, I would likely be limited to a one-shot sample for each chapter and will need to do it with an online sample. The added ability for replication and to test it with both internally consistent and externally valid treatments would be a significant boost to the remaining chapters' empirical evidence. It would also allow me to include more treatment conditions to test how the effects of color on the outcomees are conditioned on whether the colors are presented in a way where politics is primed or for example if they seem irrelevant such as the color for a sports team instead. Adding these additional treatment conditions would help with directly testing the scope conditions of the way that color conveys political information.

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