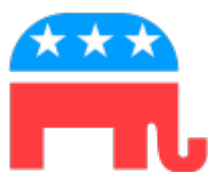


## General description of project and impact

Since the 2000 Presidential election the use of the color red has become synonymous with the Republican party, while the use of the color blue has become synonymous with the Democratic party (Elving, 2014). Though the two parties have leaned into the colors used in media depictions of electoral maps, see also 1, it remains unclear whether these associations are strong for the public, and whether these associations influence a political outcomes, including attitude expression and behaviors.<sup>1</sup> This project addresses these questions.



(a) Republicans pre-2000



(b) Democrats pre-2000

Figure 1: Party logos

Though some may consider color a small concern in the grand scheme of politics, this project argues the opposite. This dissertation lays out a cognitive model that explains how colors may have potent consequences for perceptions of the political affiliations of candidates, individuals, and groups. In the project I also consider how color influences a variety of significant (political) outcomes – these include vote choice in low information environments, the 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 this project vary, the underlying goal is to examine the ways in which visual information – and even one of the most simple forms of visual information, color – influences long-studied outcomes in political behavior and political psychology. I do this by developing a cognitive model of visual information processing.

Figure 2 provides a visual depiction of what I refer to as the snap-judgment model of visual information processing. Given space constraints, rather than going into all of the affective and social neuroscience and psychology theories used in this model, here I provide a couple of hypotheticals to illustrate it and to explain a number of predictions I derive from the model.

In the first empirical chapter, I explore whether the use of the colors red and blue convey information about the partisanship of a candidate to voters. Some descriptive

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<sup>1</sup>Additional work 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 parties 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 continues to strengthen the association between these particular colors and the parties. The goal of this project is to first establish what the cognitive mechanisms are for the public to establish 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.

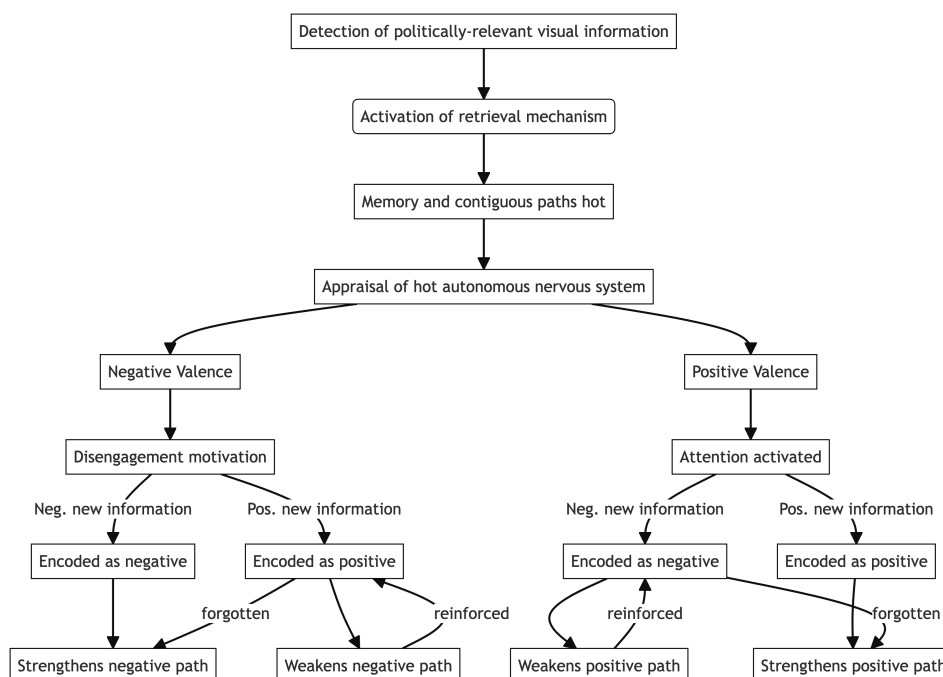


Figure 2: Snap-judgment model of politically-relevant visual information

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 of my dissertation, I argue that these colors do indeed provide such information.

When someone is driving down a highway and sees 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 the letters together to form a word and then to figure out what that word is connected to. That is, 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 is for a Republican candidate and a blue yard sign is for a Democratic candidate. 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 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, *et cetera*.

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. But secondly, and perhaps more importantly, this example communicates the idea that the information that these colors provide puts our mind down a particular path, and that the way we express our attitudes is potentially shaped by these colors. In the first example with the Mitch McConnell yard sign, you feel confused in your assessment that it is 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 example, this time 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. Your comfort with sitting next to that person or having them start up a conversation 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 – e.g., someone may start talking to you when they notice that you are watching a CNN segment on the recent *Dobbs* decision. Say a person tells 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. But what if instead they tell you, “yeah, I might like Trump, but the *Dobbs* decision is allowing state governments 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 willing to have a conversation with this person despite them clearly telling you that they are a Trump supporter. Months 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. Another wrinkle in my model is that 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. The same red hat will have differential effects on our initial impression depending on what is most accessible to our heads. In this case politics versus baseball. This is to say that this model does not predict that color will always matter, but that it matters when politics is a salient concern.

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 (and 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 may have downstream consequences for how we process more substantive political information such as a candidate's or a discussion partner's policy positions; this mirrors what 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 – I aim to focus attention on 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 occurring given the hyper-polarized environment of the United States), 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 to be able to work with different colors, be tweaked for different circumstances, and still produce useful predictions for political attitude expression and behavior. That is, while the focus at present is on the colors red and blue, the goal of the project is to lay the ground work for a theoretical framework of visual information processing which other scholars can continue to build upon.

## **Research activities in the project**

### **Existing data collection**

At this point, I have collected and analyzed the data for the first empirical chapter. In this chapter, I use a survey experiment to examine the degree to which the colors red and blue (in different amounts) shape perceptions of a candidate and subjects' reported willingness to vote for a candidates. In this study, I collected data on the cursor movements of participants' screens while blurring most of the yard sign to emulate an eye-tracking experiment. 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; this indicates that respondents did not need to spend as much time exploring the text-based elements of the yard sign to evaluate it. My findings also indicate that a fictional candidate with more red on their yard sign is presumed to be more Republican, whereas candidates with more blue on their yard sign are presumed to be more Democratic. Yard signs that used less red or used a combination of red and blue 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 for candidates with red or white yard signs.

To demonstrate that these perceptions have real-world influences on campaigns' decisions about the colors included on yard signs, I collected yard sign images from the Center for American Political Design website and used a machine learning library to clas-

sify the color for each pixel 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 running within competitive congressional districts were less likely to use mixes of the colors 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 have been less electorally successful. 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 color and the parties in political settings influences deliberation, persuasion, and perceptions of neighborhoods (a whole group of people as opposed to individual political actors). The timeline for completing the remainder of these studies is the end of next Spring (May 2024).

While it would be nice to study all my questions with a combination of observational and experimental research designs, the outcomes in my remaining chapters are less easy to collect observational data on. For example, of the handful of common observational studies used in the United States, few ask detailed questions about people's conversations with others in politics. Moreover, no available studies 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 these characteristics, I would be highly suspicious of people's memories about the color of the clothing that others were wearing, due to memory decay. While color is important as a form of information to form snap-judgments, it is a form of subtle information that people may use only initially and then forget later. Because experimental designs are preferred (for the previously mentioned reasons), this grant will greatly improve my ability to complete the project.

I am currently in the process of implementing a study to examine this model on the effects of these associations on deliberation in an upcoming module of the Cooperative Election Study. For a second study for that chapter, I am considering alternative internal funding sources.

For the third chapter, I would like to recruit an online sample to examine how the effects of these associations influence our perceptions of residents in a neighborhood. Some research suggests that under experimental and survey conditions that people do care about the partisan composition of a prospective neighborhood to move to. These findings build on a growing body of work demonstrating how political polarization is not simply a distinct set of policy preferences, but it shapes many different facets of our lives. The conclusions from such data are that people report that they are unwilling to move to neighborhoods where they feel they may be in the partisan minority. However, other work has used observational evidence suggesting that these preferences do not appear in actual behavior.

The goal of the study in the third empirical chapter is to use the snap-judgment model

to address an open substantive question: Why is it that people report a preference to live in a neighborhood or to avoid one based on inferred partisan composition, but do not do so in practice? Using the snap-judgment model, I argue in the third empirical chapter that these sources of information to infer partisan composition are too noisy as information signals in practice and that individuals would rather base decisions on weightier factors that are considered more often such as quality of school, cost, *et cetera*. That is, even though politics may be at the top of people's minds (based on the self-reported data) and they may be motivated to infer the partisan composition of a neighborhood, the information they have is not conclusive enough to outweigh information that they are more sure about.

To examine this argument, I will use the color of the cars in a neighborhood as an example of "noisy" information about the partisan composition of a neighborhood. There is some existing evidence demonstrating that we can make relatively accurate inferences about the partisanship of an individual and a neighborhood based on the cars parked there. This evidence is often limited to examining the make of a car (e.g., sedan versus pick-up truck). However, the snap-judgment model suggests that it doesn't even need to be that complex as information. Therefore, The study for the chapter, will see whether people will assume that a neighborhood is more Republican if the modal car color is red as opposed to blue or more Democratic if the modal car color is blue based on a real-estate flyer. I will vary wither I prime participants to think of politics or not to see whether there are differences between inferred partisan composition depend on the degree to which politics is salient and important to someone when making decisions to move there. Finally, I will vary whether participants see a real estate flyer reporting a modal car as being red or blue to see whether it matters in the face of more substantive information such as the ratio of cost to wages, distance from basic goods such as grocery stores, and quality of school. While this cannot get me a direct test of behaviors, the experimental design for the chapter directly pits inferred partisan composition up against other factors that are argued to matter more to the public than the politics of the neighborhood.

An APSA grant would be a significant help for me to complete this chapter. As I have received support for some of the other chapters, it is quite hard to find resources to fund a sample with sufficient power for the remainder of the dissertation. The grant support would help me complete that study and to complete the dissertation as I have many of the other pieces completed (or in progress). In addition, with support from this grant this study would be one that I would not need to re-do as I would be able to include all of the treatment conditions that I need to sufficiently test my argument on a high quality sample.

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