For replication, go to: https://github.com/DamonCharlesRoberts/visual_information_and_political_participation.

How does visual information influence social interactions?

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ABSTRACT Though talking politics with others have a number of positive effects for a number of democratic outcomes, skepticism remains of whether it has any benefits. While some literature suggests that conversations about politics can encourage formal democratic participation and can reduce political polarization, other work argues that the context around the conversation neutralize these benefits. Some of this literature suggests that conversations with out-partisans are quite unlikely as we are motivated to avoid such conversations. The mechanism by which we know prior to a conversation about another's political viewpoints are quite unclear. I argue in this chapter that we rely on simple visual cues to help us make inferences about another's political views; specifically color. Such simple information, though error-prone, has important behavioral implications. Beyond that, I argue that those snap-judgments made have potent influences upon the content and effects of the conversation if it happens. This snap-judgment model of political information processing argues that we cue on simple visual information like the color of clothing people wear and that shapes the tendency to engage in conversations and our feelings about the conversation after it is over. Not only does this model have implications for the role that color plays in signaling partisanship in the United States but it also has implications for our understanding of the mechanisms underlying the limited benefits that political conversation has on democratic outcomes.

Introduction

The project argues that colors are important to politics. It argues that, as a pre-conscious form of information, they have downstream consequences on our attitude expression and behavior. This chapter seeks to address the question of "well do they actually have an influence on our attitude expression and do they influence our behavior?" Demonstrating that people recognize color in politics is not sufficient to say that they matter in politics.

There are a wide landscape that capture both formal and informal forms of political behaviors and an extremely wide net to cast when trying to capture attitudes. To not turn this chapter into an impossibly long read, I'll focus a bit on what attitudes and behaviors I explore.

Having conversations about politics are regarded as an important part of participatory democracy (Huckfeldt 2007). They encourage many different forms of more formal political engaement (Verba, Schlozman, and Brady 1995; Klofstad 2007; Eveland and Hively 2009; Matthes et al. 2019), are a useful resource that people can tap into for information about candidates and current events (McClurg 2003; Eveland and Hively 2009), is argued to be capable of buffering animosity towards those in "the other party" (Levendusky and Stecula 2021), and even a source of persuasion (Beck et al. 2002; Sokhey and Stapleton 2020).

Though having conversations are important for the Aristotlean conception of a democratic citizen, some evidence suggests that we are relatively reluctant to have conversations where there is disagreement (Mutz 2006; Carlson and Settle 2022). Though we often experience emotions associated with discomfort when about to talk politics, there is significant support for the idea that these conversations are still helpful as a source of information (see Shapiro

et al. 2020) and as a source of meaningful persuasion (Levendusky and Stecula 2021; see Sokhey and Stapleton 2020).

As others have demonstrated that there are more considerations than just partisan-congruency that determine whether you engage in a conversation before it starts (Wolak and Sokhey 2022), I argue that color can be one such example. Fitting with my larger argument, I argue that color activates particular pathways in one's cognitive schema which activate positive or negative feelings (a valanced affective state) and this can drive behavior and resulting information processing for attitude expression and encoding. Specifically, I explore whether the color of someone's clothes can effect the propensity by which someone is willing to have a conversation with them and whether these evaluations can be changed.

This argument has a number of implications for the current ways we think about politics. The first is that we should consider the ways in which *all* forms of information have an influence on attitude expression and the motivations guiding politically-relevant behaviors. Second, as I hope will become clear, the argument I make in this chapter provides an example for how conversations about politics can persuade people while also how they are limited in doing so.

Before I elaborate on how this process occurs and on my exact set of expectations, I first want to elaborate on some fundamentals of the social neuroscience and social psychology literature that I am borrowing concepts from to build my model and therefore the expectations I derive from it.

The cognitive architecture of attitudes

Neuroscientists and psychologists often conceptualize attitudes as any form of evaluation upon some external object (Fazio 2007). While this is a much more broad conceptualization than the one we often have when we think of political attitudes (see Zaller 1992; Zaller and Feldman 1992), at their core attitudes about politics are much the same – they are some positive or negative reaction to taxes; to letting a woman choose what is best for her physical health, to making it harder for someone to buy a gun. Conceptualizing attitudes as an object-evaluation simplifies but, more important, it aids in helping us get a sense of how they work.

The first foundation that I rely upon is that our brain operates through a vast and complex network of connected bits of information. Despite popular science interpretations of it, the brain is not organized as a compartmentalized file system of memories (Ralph and Anderson 2018) – what I'll use as a short-hand to refer to pre-existing information that we have stored in our brain and access to evaluate new information. Rather, our brain is stored as a series of interconnected information. Some connections are stronger than others. The strength of these connections is determined by a dizzying number of things (Kahana, Diamond, and Aka 2022), however, affective responses to the information (positive or negative) and sensory information are often encoded with quite strong ties (see Winkielman, Berridge, and Shlomi 2011).

The second foundation I rely upon is making a conceptual distinction between emotion and affect to explain the connection between them and attitudes. Emotion is an incredibly complex concept and is a key debate in the affective neuroscience literature since the 18^th

century with Hume, Smith, and later taken up by Darwin. Modern conceptualizations of emotion by affective neuroscientists see it as a set of distinct and conscious classifications meant to describe one's appraisal of their reaction to some object. Affect, on the other hand, is conceptualized as a more simplistic, but pre-conscious, valanced appraisal of an object. That is, affect is conceptualized as you feeling positive or negatively toward something. This appraisal happens extremely quickly and is often thought of as an unconscious process (Sander 2013; Ralph and Anderson 2018). When exposed to new information, we often have a physiological reaction to it and have a valanced appraisal of it (Dror 2017). This is where attitudes and affective responses to information collide. To evaluate some new information to form an attitude about it, we often rely on valanced appraisals of it (Fazio 2007). As a result, this information is central to our encoding of this information when forming a memory (Cunningham, Haas, and Jahn 2012).

The third foundation I rely upon is that we can rely on sensory receptors to collect information and to use it to form an attitude of an object while also using that information when encoding it. Visual information in particular is a powerful biological advantage for survival. For example, pokeberries look a lot like grapes. However, they grow on a red stem instead of a green one. If we eat too many pokeberries, it can cause significant digestive problems for us. Being able to rely on vision and to remember that visual information is quite valuable for us. Not only does vision aid in helping us remember what visual characteristics of some plant made us sick and which one did not, but we also store visual information from social interactions. Visual forms of information are among the fastest to be processed (see Ames, Fiske, and Todorov 2012).

The fourth foundation that is very related to third is that our cognitive schemas are heavily structured by information of social hierarchy. As social psychologists have spent more than the past five decades laying out a case for the importance of social groups on how we see our world [see TAJFEL AND TURNER], social neuroscientists have also been opening up the drywall to explore how we keep that information straight in our heads. It turns out, that another central characteristic of the strength characterizing a connection in our head is how it fits with relevant social groups (Zink and Barter 2012). This explains how social groups lend themselves to such *strong* affective responses to threats (Zahn, Oliveira-Souza, and Moli 2011; Huddy 2001).

To tie things together, the fifth foundation is to conceptualize these connections as being multi-dimensional. An encoded memory depends on more than just the valanced, sensory, and social group information connected to it. These components each can extend beyond a memory to connect memories of positive things, of red objects, and of Liverpool F.C. fans. The relevance by which a particular memory matters to evaluate an object depends on more than just these similarities but on things like the recency by which we engaged with the information (Kahana, Diamond, and Aka 2022; Zaller and Feldman 1992).

These five foundations are a glossing over of really complex debates in various subfields of neuroscience and psychology. However, they are useful starting points for political scientists to borrow from to engage in interdisciplinary conceptualizations of related and common theories we use in political psychology and behavior. These five foundations paint a picture of a brain that acts as a interconnected structure. This structure relies on different pieces, each of which have their own purpose. Each piece of information, however, connect a memory to other memories. Relying upon these structures, it allows us to quickly access information

to evaluate new information. We can take relevant features of our existing memories and use those to construct a valanced reaction to the information coming in. Though this complicates our ability to construct a geneology of an attitude's associated memories (Kahana, Diamond, and Aka 2022), it enables us to have a coherent imagining of how the brain functions and it's tendencies.

The cognitive architecture and color in politics

You are out-and-about running errands on a Sunday morning. While doing so, you see someone wearing a red hat. They are approaching us. Now, all you've seen so far is that they have a red hat and they look like they intend to want to start a conversation with you. There are a couple of things that are occurring inside of our head based on our cognitive architecture. The first is that the hat is red. But you've seen *lots* of red things. You need to narrow this down.

You know that there was a political event that is happening just down the street later today and you know that it involved the Republican party. Suddenly, you know quite quickly that this person is a Republican. You have one of two feelings: "cool", or "shoot" (perhaps with more colorful language). How did you make this leap?

Well, you captured some visual information, identified it and went through your index of red things. However, knowing that it could very well be related to politics, you went through your index of red things in politics. You connected that the Republican party uses a lot of the color red, particularly more recently (see Elving 2014). You have strong affective reactions to the Republican party. Not because the Republican party is an organism that

is a preditor of humans, but because you know that you are either opposed to them as a group of people or you like them as a group of people because you are also Republican. This is how many political scientists conceptualize our valanced responses to the political parties (Iyengar and Westwood 2015; Mason 2018).

Now say that instead of there being a political rally down the street, it instead was a basketball game and the Miami Heat are playing. Instead of assuming they were a Republican, you may assume that they are a Miami Heat fan. Instead of thinking "they are a Republican, I want to talk to them because I like Republicans", you may now think "they are a Miami Heat fan, I want to talk to them because I like the Miami Heat!"

This process communicates a couple important features for how color may be relevant in shaping one's tendency to engage in a conversation about politics. The first is that the saliency of that color in politics and whether politics is relevant in the first place is an important feature. Second, it argues that we can connect information as simple as color, connect it to a social group, and to then have our feelings toward that social group come to the forefront of our thought process. Beyond politics, evidence suggests that color can be a strong visual cue to identify social group membership (Pietraszewski et al. 2015). In the context of politics, the colors red and blue have been used consistently since the 2000 election on electoral maps (Elving 2014), and as previous work has demonstrated, including the previous chapter, the connection between Republicans with the color red and Democrats with the color blue. Specifically red with the republican party and blue with the Democratic party (see Williams, Horsting, and Ramirez 2022).

Once you have had this reaction, you are motivated to either avoid or participate in this conversation. This is because we have a tendency to avoid things we evaluate as negative or

to approach them (Valentino et al. 2011). Many take evidence of strong affective polarization among the public on the grounds of partisanship as being an intractable issue for society due to these features. When we fall into this track of negative or positive thinking and are now motivated to engage with new information a particular way depending on whether we are motivated to engage or disengage with the information, many make the reasonable assumption that we cannot learn anything new. We either support our pre-existing beliefs or we shut down and limit exposure to countervailing information (Taber and Lodge 2006). Partisanship is a social group (Mason 2018) that motivates this behavior for a numbe of people (Lodge and Taber 2013). While some hope that there are other social groups that may provide some cross-cutting forces to reduce these impacts, some evidence suggests that partisan identification has become the central politically-relevant social group that guides the rest of them (Mason 2018).

In the context of conversing about politics, many have taken these features as a condemnation on conversations about politics. As we seek to avoid disagreeable conversations, particularly with those we are close to (Mutz 2006), evidence of increasing homogeneity in our networks, in terms of partisan identification (Butters and Hare 2022), may make it easy to assume that we are always going to avoid conversations with those we disagree with and that our attitudes cannot be shifted on that.

There are some reasons why we may push back on such a pessimistic perspective, however. From the cognitive architecture standpoint, these tracks are not bowling alleys where you can only go down one way and cannot change course. Classic theories on motivated reasoning suggest that we are biased to seek information that fits with our prior beliefs, but that we also seek out accuracy motivations as well (Kunda 1990). Evidence in political science

suggests that exposure to a lot of new information that runs counter to our preferred pre-existing beliefs can persuade us (Redlawsk, Civettini, and Emmerson 2010). Under the right emotional conditions, we can persuade people as well (Albertson, Dun, and Kushner Gadarian 2020). However, a handful of studies do not necessarily mean this is actually occuring. So, a recent hurculean effort to perform a meta-analysis on existing experiments on persuasion and attitude change in political science demonstrates that persuasion is actually possible and that these effects are not some coincidence, in fact, they seem to be about the same strength across several contexts (Coppock 2022). One such context is by having people be motivated to collect accurate information (Bayes et al. 2020). Coincidentally, conversations about politics are often motivated by a desire to collect information (Beck et al. 2002; Huckfeldt 2007; see also Gastil, Deess, and Weiser 2002; Shapiro et al. 2020). Further evidence suggests that the deleterious effects on democratic behavior of political conversation often occur in the context where someone is in the political minority beyond just that conversation as well (McClurg 2006). While we are not particularly motivated to seek out conversations with those we disagree with, it does not necessarily mean that it leads to this motivated backlash where political conversations only act as echo-chambers. This seems especially true given that we are not always able to pick when and where we have conversations about politics.

So where does this leave us? Coming to some conclusion about someone based on the color of the clothing they are wearing does not necessarily mean that we are unable to be willing to have a conversation with them if new information comes about. It also does not mean that the content of the conversation is unable to have an impact on us. As many of the scholars who push back against the claims that persuasion can occur readily admit, there are limitations

to the effects that new information can have. I am no different in that regard. From the perspective of the fundamentals of the cognitive architecture, new information can put us on branching paths in the network but it does not necessarily reverse course. The memories we accessed initially are a select set of memories and have limited connections. We are not forgetting all of that information and are starting from a naive position. We are accessing memories that are associated with those memories we initially accessed. This means that we can adjust our evaluation of the object, but we are not necessarily forgetting where we have been. From the perspective of existing in political science, which aligns with my more interdisciplinary perspective, we still have strong motivations to protect our pre-existing beliefs and do not necessarily "weigh" or equally consider this new information relative to eachother (Zaller 1992). The benefits of this new information often have a timestamp on it. The persuasive benefits of this new information are not necessarily gone after a predetermined amount of time, but it has diminishing returns. A meta-analysis reveals that after about ten days, the positive effects of new information on persuasion is about one-third the size as it was originally (Coppock 2022). This fits with conceptualizations of how attitudes are shaped by attitudes that are relatively recent (Kahana, Diamond, and Aka 2022).[1] If the new information fits with pre-existing beliefs, we continue down the same path. It perhaps gets even stronger because we now have more information to tap into that fits with our prior beliefs. Figure 1 provides a visual representation of this process.

1. See also Zaller (1992) for the political science perspective on this.

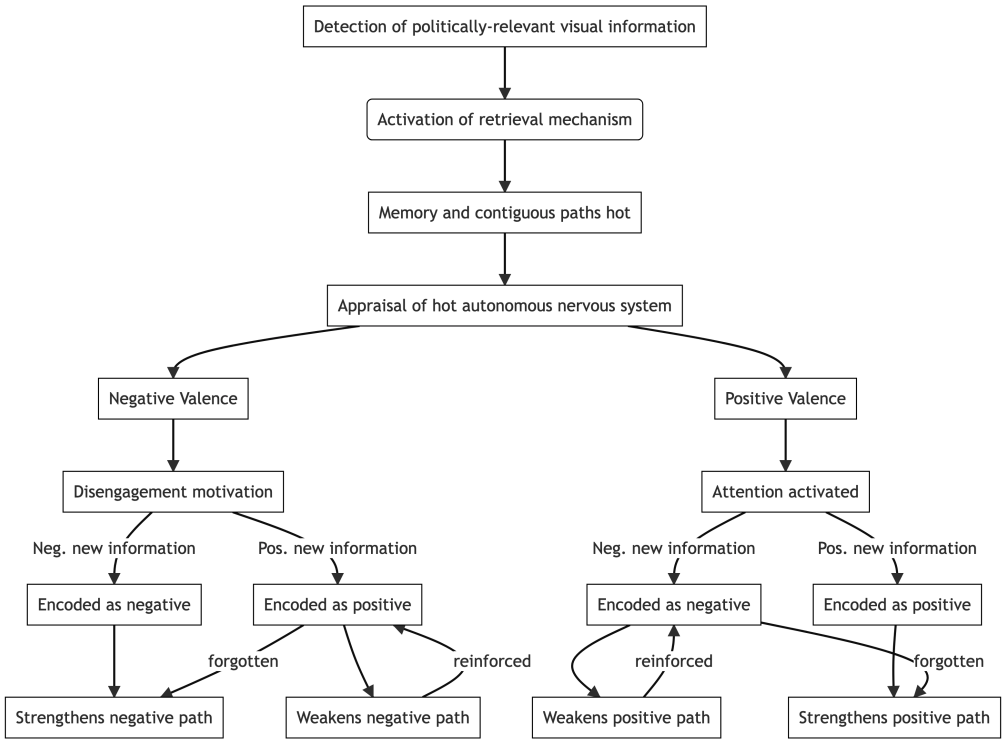

Figure 1: Snap-judgment model of political visual information

Table 1: Summary of hypotheses

Hypotheses	Expectation
H_1	People notice the color of clothing a potential conversation partner is wearing
H_2	When primed to think about politics, people are less likely to want to have a conversation with someone wearing a blue shirt if they are a Republican and a red shirt if they are a democrat.
H_3	When learning more information about someone that fits with our initial impression, our motivation of engagement or disengagement is stronger than if the information were incongruent with our initial impressions.
H_4	When learning more information about someone that does not fit with our initial impression, the new information can shift our motivations to have the conversation or to disengage. However, this difference is smaller than if both forms of information were congruent.

Study 1

Study design

Study 1 seeks to address H_1 and H_2. In study 1, I recruit participants from ***[YouGov/MTURK]***. First I ask participants a number of questions about their demographic background (i.e., age, gender identity, education, and income). I additionally present them with a battery to measure conflict avoidance and to measure the degree to which they are willing to spark up conversations with strangers as potential confounds.

After getting some background information on my participants, I randomly split the sample into two conditions. The first condition is a "political prime" condition and the second is a "no political prime" condition. For the participants in the political prime condition, I ask them a number of questions about their political attitudes. This includes questions about their partisan identification and their attention to politics. This is designed to make politics salient for them. Those assigned to the second condition, no political prime, participants are asked these questions after the main treatment, but not before. This is designed to test the scope conditions of the relevance of clothing color in conversation when politics has not been primed.

In the main treatment of the study, participants are assigned to one of two conditions. In both conditions, participants are instructed "You will have a conversation with this person". In these instructions, I take care to not state that this is going to be a "political conversation" or a "conversation about politics". I see these instructions as substantively different as the latter phrasings prime politics. The goal is that the priming (or no priming) done before this treatment will be what is making politics salient or not.

Below those instructions, participants are shown an image of a person with either a blue or a red shirt. The first hypothesis would suggest that there should be differences in how willing someone would be to have a conversation between the conditions if they were primed with politics. For those not primed with politics beforehand, we should expect that the color of the shirt should not matter and for there to not be any substantively different levels of willingness to have that conversation between the red shirt, blue shirt conditions; the color of the shirt is not particularly relevant information.

The second hypothesis would suggest that those given the political prime would be more willing to have a conversation with someone who is wearing the color affiliated with their partisanship (e.g., Democrats more willing to have conversations with a discussion partner with a blue shirt than a red shirt) and less so with those who is not. Those in the non-political priming conditions, we should expect that there would be no real substantive difference between conditions as politics is not primed and the color of the shirt should have no significant meaning to them.

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Study 2

Study design

The setup for Study 2 is largely the same. Like in Study 1, I ask participants a number of questions about their demographic background and ask them about conflict avoidance and willingness to have conversations with strangers. As well as Study 1, I randomly split the sample into two conditions. A political prime and a no political prime condition. The purpose of doing this is not necessarily to prime politics anymore but is done more so for counterbalancing so that I am not systematically introducing post-treatment bias nor am I strengthening the effects of the treatment through systematically priming politics. Like in Study 1, I instruct participants that they will be having a conversation with someone and will show them someone wearing either a red or a blue t-shirt.

Study 2 is different in that below the image I now include that person's policy preferences. Below the image, there is a "profile" for this person that describes their political positions by listing their party identification, whether they are supportive of universal basic income, abortion, and gun control. What varies in the four conditions is first whether the person is wearing a blue or a red shirt. The second dimension that the conditions vary on is whether that profile of political attitudes match with the presumed partisanship affiliated with their shirt color. For example, a participant seeing a discussion partner with a red t-shirt that identifies as a Democrat, is supportive of UBI, is pro-choice, and is supportive of gun control would be considered an incongruent condition as opposed to the same discussion partner with the red t-shirt that identifies as a Republican that is not supportive of UBI, is pro-life, and is not supportive of gun control.

I chose these particular policies for a number of reasons. The first reason being that these policies are hot-button issues. While some skeptics of my research design may be concerned with me activating strong valenced responses, I argue that these choices increase the external validity of my study in that it is realistic that most people have *some* opinion (support or do not support) on these issues. In addition to external validity, I would argue that these are the sorts of policies that my participants would have some opinion on and would be most concerned discussing with other people. As these are polarized issues, these are the sorts of policy issues that people are concerned about discussing with others. They are less concerned about talking politics when discussing something like a local zoning law that limits the number of unrelated people that can not live with each other (save for perhaps Boulder, Colorado).

After seeing this profile, participants are asked whether they are willing to have a conversation with this person. I still should expect for H_2 to hold in that Democrats will be more willing to talk with those wearing blue shirts and Republicans will be more willing to talk to those in red shirts. However, I should expect for the degree to which this occurs will be limited based upon whether their stated partisan identification and policy preferences to be congruent. I suspect for those that have political attitudes that are incongruent with the respondents' will recieve less support than those that have congruent policy attitudes. However, I suspect that those wearing shirts that are incongruent but with congruent policy preferences will be less popular as a potential discussion partner than one with both a congruent shirt and policy preferences. The snap-judgment model suggests that we are capable of overwriting our initial impressions. However, we are limited in our ability to do so.

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