The Shape and Color of Politics

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The Shape and Color of Politics
How citizens process political information and its consequences

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2.1. Introduction

Are colors important to politics? This chapter argues that they are; at least that they convey information that voters and campaigns care about.

2.2. The role of visual information in politics

Though there is not much literature on visual information in politics, a concurrent recognition of it with the growth of image-based social media necessitates a shift in this trend by scholars of political communication. As the rise of Television consumption rose in the United States and news papers and magazine subscriptions became less common, this necessitated a change in the focus of the medium in the research for political communication scholars [CITATION] to focus on audio-based information. For a number of methodological and disciplinary reasons, the visual aspects of television were not of much focus in the literature (Bucy and Joo 2021). However, with the increasing ubiquitous use of the public to use image-dominant social media platforms like TikTok and Instagram, news organizations and politicians have followed and are relatively active on this platforms as well. We need to make this transition to integrate the role of simple visual information into our theories of political information processing (abbreviated as *pip*) and attitude formation.

A number of scholars make this argument. An edited issue of *The International Journal of Press/Politics* is centered around making the point that visual politics is understudied, yet important (Lilleker 2019). Those who are engaged in these sorts of question attribute these challenges to methodological and the requirement for interdisciplinary theorizing to engage in such a questions (Gerodimos 2019; Bucy and Joo 2021).

How does politically-relevant visual information matter to politics? From a evolutionary-biological perspective, visual information is a common source of information that organisms have relied upon for millions of years to evaluate their environment (see Grabe and Bucy 2009, chap. 1 for a useful discussion). As an ancient biological invention, the brain is

organized around the processing of visual information. Reflecting this, many scholars of neuroscience consider visual information to be the fastest form of information processing. For example, even with complex visual information like the warmth expressed in someone's facial features are automatically and subconsciously processed in only about `33ms` (Ames, Fiske, and Todorov 2012).

At a higher level, as the public are cognitive misers , visual information provides efficient information to voters about politically-relevant actors and events (Lilleker 2019). Evidence suggests that voters rely on simple visual information in the background of an image to impute the ideological position (Dan and Arendt 2021) and that their coverage reflects electability perceptions (Stewart et al. 2021) – which influences reported desire to vote for the candidate. Images posted on social media by politicians provide more personalized information about them and that they take on their own styles (Lindholm, Carlson, and Högväg 2021; Peng 2021); reflecting that it is an alternative source of information curated to attract support.

While visual politics is enjoying more attention, there is still little focus on the simplest visual information: color. In the context of the United States, the "Republican red" and "Democratic blue" are a relatively recent invention that has significant import in a era of significant effort by the parties to distinguish themselves from each other (Clifford 2020) and voters to toe the party line (Utych 2020). Since the 2000 presidential election, the media have consistently used the color red on their electoral maps in "horserace" journalism to represent Republicans and blue to represent Democrats (Elving 2014). The consequence of this is that Democrats now report preference for the color blue over the color red; and Republicans report a preference for the color red over the color blue (Schloss and Palmer 2014). Like visual politics, as a field of study, theorizing about the use of color as a form of information is quite limited. Much of this literature argues that colors are a source of visual information to classify more abstract concepts for voters. For example, in western Europe, voters are better at connecting the ideological positioning of a party with the color they use in their branding, the longer-surviving and more prominent the party is (Casiraghi, Curini, and Csumano 2022). The use of politically-relevant colors activate biases toward pre-existing ideological and partisan preferences among voters in a Spanish sample (Maestre and Medero 2022). It remains unclear, however, what the particular psychological mechanism drives this and how even colors as a form of political information is organized into a schema that allow voters to quickly access and form political attitudes.

2.3. Integrating color into a model of political information processing

Existing models of *pip* are largely focused on non-visual political information. As individuals process visual information before other sorts of information, they may form the snap-judgement or the initial appraisal of an object. This has a number of important implications for derived theoretical expectations from the mechanism underlying *pip*. First, let me describe the leading theories of *pip*. Then, I will describe the adjustments that need to be made to account for this new type of information by taking a broader, and more interdisciplinary perspective to attitude formation and retrieval.

The first prominent model of *pip* is derived from rational choice perspectives. The memory-based model of *pip* views attitudes as a weighted collection of prior information (see J. R. Zaller 1992). As individuals receive new information, they organize it in a schema that is relative to prior objects they already have encoded. With the encoding of this new information, the model predicts that individuals incorporate this new object with similar objects to form an attitude. While the Receive-Accept-Sample (RAS) model accepts the view that expressed attitudes are based on a weighting that is most accessible at the time of attitude expression (Zaller John and Feldman 1992), it still presupposes that the weighting is an average of prior information.

The second prominent model challenges this latter point. The online model of *pip* contends that individuals do not evenly weigh information, but that whether they even store it into their long-term memory to access later is biased in the direction of supporting pre-existing attitudes (Lodge and Taber 2013); this is referred to as motivated reasoning (Kunda 1990). This model suggests that people ignore new information that goes against their prior beliefs and that information confirmatory of their preferences are quicker to access – referred to as hot cognition (Lodge and Taber 2013).

The online model conceptualizes this underlying mechanism of information encoding and attitude retrieval as automatic (Lodge and Taber 2013). This occurs as a result of the information's strong associations with valanced appraisals of the information guiding the attitude (Lodge and Taber 2013). This brings political scientists closer to the dominant conceptualizations among neuroscientists and psychologists concerned with memory retrieval and encoding (see Fazio 2007). Namely, that attitudes are encoded and retrieved based on associations and are quickly done so as a result of their association with valanced appraisals (Kensinger and Fields 2022).

Though the online model of information processing goes a long way to inform us about the ways that our physiology engages attitude formation and retrieval, the information it considers necessarily limits the applicability of the theory to other forms of political information. Color and other forms of visual information are processed much more quickly

and occurs more frequently than text-based information (Mehta and Zhu 2009). As color and other types of visual information are processed differently, we should consider its use as political information differently as well. As visual information is affectively encoded (Cimbalo, Beck, and Sendziak 1978), this means that it has the potential to effect the affective state and processing of more complex information, such as text, is a downstream effect of the visual information. That is, the visual information provides a snap-judgement or an impression of the object through faster processing and activates particular neurological processes that influence subsequent information appraisals (Ames, Fiske, and Todorov 2012).

Before expanding upon the role that colors have on shaping political attitudes, let me first define an attitude. An attitude represents an accessible evaluation of associated prior information and experiences. This conceptualization fits with that of the Object-Evaluation Associations Model (Fazio 2007). As opposed to viewing attitudes as a latent collection of memories, as is done in the memory-based model of *pip* (Zaller John and Feldman 1992), it views attitudes as measurable evaluations of memories. As memories, are at the core of an attitude, the association of memories with its evaluative component (see Kensinger and Fields 2022) contribute to the perspective that attitudes are affective.

In line with the existing models of *pip*, I view attitudes as associative. This means that attitudes may be unstable - not stochastically, though. As attitudes are associative, they appear slightly different depending on the associative paths that are activated (Fazio 2007). The retrieval of relevant memories to the attitude depend on a number of factors such as the recency of the event, the similarity of the context, and the importance or salience of the memory (Kahana, Diamond, and Aka 2022). This means that the memories that are retrieved to contribute to an attitude are quite variable.

Colors are associative and are affectively encoded (Cimbalo, Beck, and Sendziak 1978). When individuals access a memory, they do not just recall an object but they may recall visual information such as the color of an object. As visual information like colors are quickly processed and encoded, they are also quickly retrieved with their associative memories and can do so unconsciously (Mehta and Zhu 2009). As they are affectively encoded, their associations with particular memory contribute to the evaluative component of the memory. For example, colors like red are associated with anger, arousal (Valdez and Mehrabian 1994); whereas blue is associated with things like happiness and pleasure (D'Andrade and Egan 1974).

What this means, is that when we view political events or consume political information that has a visual component, we are going to encode visual information along with it. Taking expectations formed from theories of motivated reasoning (see Kunda 1990), I'd expect that the visual information that we encode with it is likely congruent with the evaluation of the object; we are likely to expend less effort to encode the visual information that is

not congruent with the visual information as we do with text-based political information (see Lodge and Taber 2013).

- Colors are processed; associations are retrieved along with their valanced evalatuions; then based on the congruency with it, they are then encoded.

2.4. The systematic use of colors in campaign branding

- Descriptive analysis of the use of color in yard signs
- Consider using district level fixed effects in a regression to show District PID → Color selection

To examine whether the use of colors on yard signs vary in systematic ways, I collect images from the 2018, 2020, and 2022 Congressional elections for the House of Representatives across the United States. These yard signs are pulled together on one website by the Center for American Politics and Design[1]. From this website, I am able to extract over 1,100 images for these three elections. I then combine this information with district-level data provided by the MIT election lab on election returns for candidates in these House elections [2].

With these data, I detect the percentage of the "Republican Red" and "Democratic Blue" on the yard signs and examine whether the 5-year smooth moving average of Democratic candidate vote share in that given district correlate. The purpose of this analysis is to examine the hypothesis that campaigns respond to the preferences of partisan voters and adjust their branding as a result. In this case, the branding being the color on the yard sign.

To provide an example of how the color detection works, I collected the GOP logo used on their official Twitter account during the 2022 midterm election cycle. I load this image and convert it to a three-dimensional array that contains information about the GBR (reversed RBG) values for the pixels in that image. I then resize the images to be a standardized 224 x 224 pixels. The computer is trained to detect a range of GBR values that encompass the official "Republican Red"[3]. For the broader exercise, I do it for the color white[4] and "Democratic blue"[5]. Once this range of values is specified, the computer detects the pixels that do not contain values within this pre-specified range and converts those values to represent the color black. Figure 2.1 presents this process.

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[1]See: https://www.politicsanddesign.com/
[2]See: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/IG0UN2
[3]lower values: (93, 9, 12), higher values: (236, 69, 75)
[4]upper and lower values: (255, 255, 255)
[5]lower values: (0, 18, 26), higher values: (102, 212, 255)

2. How do colors convey political information and effect individual attitudes?

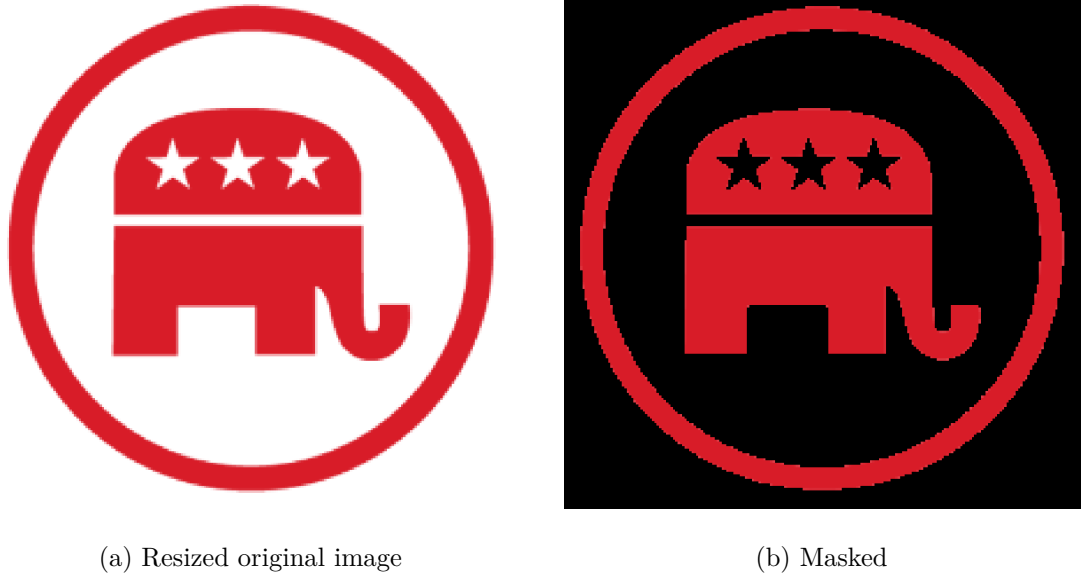(a) Resized original image   (b) Masked

Figure 2.1.: Detecting colors in the GOP logo

I then extract the values in the array that are non-black and calculate the percentage of non-black pixels (as depicted in Equation 2.1).

$$\mathrm{Color}\% = \frac{\mathrm{Non\text{-}black}}{\mathrm{Transformed}} \times \frac{\mathrm{Original_{Height}} + \mathrm{Original_{Width}}}{2\mathrm{Transformed_{Height}} + 2\mathrm{Transformed_{Width}}} \qquad (2.1)$$

For the example in Figure 2.1, about 32.26 of the image is red.

3.

4. **How does visual information influence social interactions?**

5. Does visual political information influence perceptions of your environment?

6. Conclusion

References

Ames, Daniel L., Susan T. Fiske, and Alexander T. Todorov. 2012. "Impression Formation: A Focus on Others' Intents." In *The Oxford Handbook of Social Neuroscience*, edited by Jean Decety and John T. Cacioppo. New York: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195342161.013.0013.

Bucy, Erik P., and Jungseock Joo. 2021. "Editors' Introduction: Visual Politics, Grand Collaborative Programs, and the Opportunity to Think Big." *The International Journal of Press/Politics* 26 (1). https://doi.org/10.1177/1940161220970361.

Casiraghi, Matteo C. M., Luigi Curini, and Eugenio Csumano. 2022. "The Colors of Ideology: Chromatic Isomorphism and Political Party Logos." *Party Politics*. https://doi.org/10.1177/13540688221080539.

Cimbalo, Richard S, Karen L Beck, and Donna S Sendziak. 1978. "Emotionally Toned Pictures and Color Selection for Children and College Students." *The Journal of Genetic Psychology* 133 (2): 303–4.

Clifford, Scott. 2020. "How Moral Motives Link Party Stereotypes." *Political Behavior*. https://doi.org/10.1007/s11109-020-09634-1.

D'Andrade, Roy, and Michael Egan. 1974. "The Colors of Emotion." *American Ethnologist* 1: 49–63.

Dan, Viorela, and Florian Arendt. 2021. "Visual Cues to the Hidden Agenda: Investigating the Effects of Ideology-Related Visual Subtle Backdrop Cues in Political Communication." *The International Journal of Press/Politics* 26 (1): 22–45. https://doi.org/10.1177/1940161220936593.

Elving, Ron. 2014. "The Color of Politics: How Did Red and Blue States Come to Be?"

Fazio, Russell H. 2007. "Attitudes as Object-Evaluation Associations of Varying Strength." *Social Cognition* 25 (5): 603–37. https://doi.org/10.1521/soco.2007.25.5.603.

Gerodimos, Roman. 2019. "The Interdisciplinary Roots and Digital Branches of Visual Political Communication Research." In *Visual Political Communication*. Cham, Switzerland: Palgrave Macmillon. https://doi.org/10.1007/978-3-030-18729-3.

Grabe, Maria Elizabeth, and Erik Page Bucy. 2009. *Image Bite Politics: News and the Visual Framing of Elections*. New York: Oxford University Press.

Kahana, Michael J., Nicholas B. Diamond, and Ada Aka. 2022. "Laws of Human Memory." In *Oxford Handbook of Human Memory*, edited by Henry L. Roediger III and Okyu Uner. New York: Oxford University Press. https://memory.psych.upenn.edu/Oxford/_Handbook/_of/_Human/_Memory.

References

Kensinger, Elizabeth A., and Eric Fields. 2022. "Affective Memory." In *Oxford Handbook of Human Memory*, edited by Henry L. Roediger III and Okyu Uner. New York: Oxford University Press. https://memory.psych.upenn.edu/Oxford/_Handbook/_of/_Human/_Memory.

Kunda, Ziva. 1990. "The Case for Motivated Reasoning." *Psychological Bulletin* 108 (3): 490–98.

Lilleker, Darren G. 2019. "The Power of Visual Political Communication: Pictoral Politics Through the Lens of Communication Psychology." In *Visual Political Communication*. Cham, Switzerland: Palgrave Macmillon. https://doi.org/10.1007/978-3-030-18729-3.

Lindholm, Jenny, Tom Carlson, and Högväg. 2021. "See Me, Like Me! Exploring Viewers' Visual Attention to and Trait Perceptions of Party Leaders on Instagram." *The International Journal of Press/Politics* 26 (1): 167–87. https://doi.org/10.1177/1940161220937239.

Lodge, Milton, and Charles S. Taber. 2013. *The Rationalizing Voter*. New York: Cambridge University Press.

Maestre, Roberto Losada, and Rubén Sánches Medero. 2022. "Color War. Does Color Influence the Perception of Political Messages?" *Psychological Reports*. https://doi.org/10.1177/00332941221114418.

Mehta, Ravi, and Rui (Juliet) Zhu. 2009. "Blue or Red? Exploring the Effect of Color on Cognitive Task Performances." *Science* 323: 1226–29.

Peng, Yilang. 2021. "What Makes Politicians' Instagram Posts Popular? Analyzing Social Media Strategies of Candidates and Office Holders with Computer Vision." *The International Journal of Press/Politics* 26 (1): 143–66. https://doi.org/10.1177/194016220964769.

Schloss, Karen B, and Stephen E Palmer. 2014. "The Politics of Color: Preferences for Republican Red Versus Democratic Blue." *Psychonomic Bulletin & Review* 21 (6): 1481–88.

Stewart, Patrick A., Austin D. Eubanks, Nicholas Hersom, and Cooper A. Hearn. 2021. "Visual Priming and Framing During the 2020 Democratic Presidential Debates: Electoral Status Predicts Favorable Camera Treatment." *The International Journal of Press/Politics* 26 (1): 256–76. https://doi.org/10.1177/1940161220952736.

Utych, Stephen M. 2020. "A Voter-Centric Explanation of the Success of Ideological Candidates for the US House." *Electoral Studies* 65: 102137.

Valdez, Patricia, and Albert Mehrabian. 1994. "Effects of Color on Emotions." *Journal of Experimental Psychology* 123.

Zaller, John R. 1992. *The Nature and Origins of Mass Opinion*. New York: Cambridge University Press.

Zaller, John, and Stanley Feldman. 1992. "A Simple Theory of the Survey Response: Answering Questions Versus Revealing Preferences." *American Journal of Political Science* 36 (3): 579–616.

A. Chapter 1 Appendix

B. Chapter 2 Appendix

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