Supplementary information to a Pre-analysis plan

How do colors convey political information and affect individual attitudes?

Anonymized for peer review

ABSTRACT Colors are important to politics as a form of political information. Building upon existing theories of political information processing, attitude formation, and affect in neuroscience, I present a snap-judgement model of political information processing. In this model, colors provide automatic information about a politically-relevant object that may shape subsequent processing of more complex information. The model has important implications for how we consider the role that visual information has on political information processing and attitude formation. The model additionally provides clarity on motivations behind party branding and the ways in which information may activate partisan biases pre-consciously. I test this model using a survey experiment tracking participants' mouse movements to view different parts of yard signs that vary the use of partisan and non-partisan colors. I additionally leverage congressional redistricting to examine changes in color use for political yard signs as a strategic choice for attracting voters by communicating partisanship.

Pre-test

Stimuli

Figure 1: Blue

Figure 2: Red

Vote for Riley 2020

Figure 3: White

Measures

Measure	Question	Response options	Coded as

Table 1: Pre-test measures

Measure	Question	Response options	Coded as
PartyId	• pid = Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent or what? • dem1[rep1] (if pid == 2[1]) = Would you call yourself a strong Democrat[Republican] or a not very strong Democrat[Republican]? • ind1 (if pid == 3 | 4) = Do you think of yourself as closer to the Republican or Democratic party?	• 1 = Republican • 2 = Democrat • 3 = Independent • 4 = Other • 1 = Strong Democrat[Republican] • 2 = Not a very strong Democrat[Republican] • 1 = Republican party • 2 = Democratic party • 3 = Neither party	• -3 = Strong democrat – pid == 2 & dem1 == 3 • -2 = Democrat – pid == 2 & dem1 == 2 • -1 = Leans Democratic – pid == 3 & ind1 == 2 • 0 = Independent – pid == 3 & ind1 == 3 • 1 = Leans Republican – pid == 3 & ind1 == 1 • 2 = Republican – pid == 1 & rep == 2 • 3 = Strong Republican – pid ==

Measure	Question	Response options	Coded as
Party	• dr_pid = If you had to guess, is the politician who owns this yard sign a Republican, a Democrat or neither?	• 1 = Republican • 2 = Democrat • 3 = Neither - An independent or Third party	• 1 = Democrat • 2 = Neither - An independent or Third party • 3 = Republican
Vote	• dr_info_4 = When you see this yard sign do you want to: Vote for this candidate? • dr_info_5 = When you see this yard sign do you want to: Avoid this candidate?	• 1 = Yes • 2 = No	• 1 = dr_info_4 == No & dr_info_5 == Yes • 2 = dr_info_4 == Yes & dr_info_5 == No • 2 = dr_info_4 == No & dr_info_5 == No • 3 = dr_info_4 == Yes & dr_info_5 == No

Results

Table 2: Color on Yard Signs shape perceptions and vote intentions of candidate

	Party	Candidate evaluation
Blue treatment	−2.510	0.008
	[−3.034, −2.066]	[−0.559, 0.565]
Red treatment	2.725	−0.044
	[2.205, 3.297]	[−0.620, 0.510]
Party ID		−0.212
		[−0.390, −0.022]
Blue treatment × Party ID		−0.179
		[−0.459, 0.074]
Red treatment × Party ID		0.734
		[0.472, 1.005]
Intercepts		
Threshold 1	−1.256	−1.940
	[−1.582, −0.933]	[−2.424, −1.531]
Threshold 2	0.713	2.968
	[0.423, 0.998]	[2.498, 3.501]
N	520	463

95-percent credible intervals in brackets.
Median estimate from fitted model with 6 chains and 2000 iterations.
Data source: Pre-test experiment.

Study 1

Stimuli

Figure 4: Example of treatment with blur

Trial 1

Figure 5: Blue

Figure 6: Red

Figure 7: White

Trial 2

Figure 8: Blue

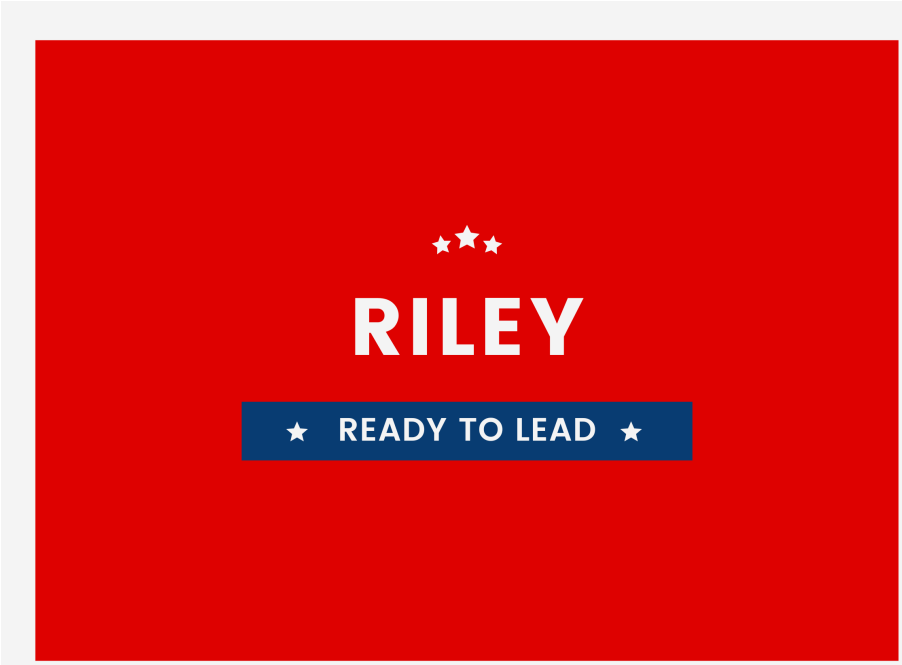

Figure 9: Red

Figure 10: White

Trial 3

Figure 11: Blue

Figure 12: Red

Figure 13: White

Measures

Table 3: Study 1 Measures

Measure	Question	Response options	Coded as
age	Confirm your age	Any integer	Any integer
gender	gender_id = What is your gender identity?	1 = Non-binary 2 = Trans-gender 3 = Female 4 = Male 5 = Prefer not to choose 6 = Other	1 = Male 2 = Non-binary, prefer not to choose,other 3 = Female
Sex	sex = What is your sex assigned at birth?	1 = Female 2 = Male 3 = Other	0 = Female/Other 1 = Male

Measure	Question	Response options	Coded as
White	race_id = Which ethnic or racial category best describes you?	1 = White, non-Hispanic 2 = Black, non-Hispanic 3 = Hispanic 4 = Asian or Native Hawaiian/other Pacific Islander 5 = Native American/Alaska Native or other race 6 = Multiple races	0 = Black, non-Hispanic | Hispanic | Asian or Native Hawaiian/other Pacific Islander | Multiple Races 1 = White, non-Hispanic

Measure	Question	Response options	Coded as
Color Blind	color_blind = Have you been diagnosed with any of the following visual impairments?	1 = Blurred vision 2 = Macular degeneration 3 = Glaucoma 4 = Cataract 5 = Diabetic retinopathy 6 = Color blindness (any form) 7 = None of the above	0 = None of the above 1 = Blurred vision | Macular degeneration | Glaucoma | Cataract | Diabetic retinopathy | Color blindness (any form)
Attention to Politics	attn_flipped = How often do you pay attention to what is going on in government and politics	1 = Always 2 = Most of the time 3 = About half the time 4 = Some of the time 5 = Never	1 = Never 2 = Some of the time 3 = About half the time 4 = Most of the time 5 = Always

Measure	Question	Response options	Coded as
Knowledge	know_promise = We are interested in the guesses people make when they do not know the answer to a question. We will ask you several questions. Some may be easy, but some are meant to be so difficult that you will have to guess. In fact, for some of these questions, if you answer correctly, we will know that you probably looked up the answer Please do not look up the answers you do not know. Instead, please just make your best guess. Will you please promise to try your best without looking up any answers? Or do you not want to make that promise? • know_senate = For how many years is a United States Senator elected -- that is, how many years are there in one full term of office for a U.S. Senator? • know_spend = On which of the following does the U.S. federal government currently spend the least? • know_house = Do you happen to know which party currently has the most members in the U.S. House of representatives in Washington? • know_catch = In what year did the Supreme Court of the united states decide Geer v. Connecticut?	• 1 = I promise to try my best without looking up any answers • 2 = I do not want to make the promise • Any integer • 1 = Foreign aid • 2 = Medicare • 3 = National defense • 4 = Social security • 1 = Democrats • 2 = Republicans • Any	For each question: 0 = Incorrect 1 = Correct Average of correct responses

Measure	Question	Response options	Coded as
PartyId	pid_3 = Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent or what? • pid_d_str[pid_r_str] (if pid == 2[1]) = Would you call yourself a strong Democrat[Republican] or a not very strong Democrat[Republican]? • ind_lean (if pid == 3 | 4) = Do you think of yourself as closer to the Republican or Democratic party?	• 1 = Republican • 2 = Democrat • 3 = Independent • 4 = Other • 1 = Strong Democrat[Republican] • 2 = Not a very strong Democrat[Republican] • 1 = Republican party • 2 = Democratic party • 3 = Neither party	• -3 = Strong democrat – pid == 2 & dem1 == 3 • -2 = Democrat – pid == 2 & dem1 == 2 • -1 = Leans Democratic – pid == 3 & ind1 == 2 • 0 = Independent – pid == 3 & ind1 == 3 • 1 = Leans Republican – pid == 3 & ind1 == 1 • 2 = Republican – pid == 1 & rep == 2 • 3 = Strong Republican – pid == 1 & rep == 1

Measure	Question	Response options	Coded as
Party	After viewing each image in each trial: Is this candidate a Republican, a Democrat, or Neither?	• 1 = Republican • 2 = Democrat • 3 = Neither	1 = Democrat 2 = neither 3 = Republican

Results

References

Allaire, J.J., Charles Teague, Carlos Scheidegger, and Yihui Xie. 2022. *Quarto*. https://doi.org/10.5281/zenodo.5960048. https://github.com/quarto-dev/quarto-cli.