Understanding Partisan Cue Receptivity: Tests of Predictions from the Bounded Rationality and Expressive Utility Perspectives

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Why do citizens rely on partisan cues when forming political judgments? We assess the relative importance of two motives for partisan cue-following using a series of survey experiments. We find no support for the bounded rationality hypothesis that cue receptivity is highest among citizens with low cognitive resources. Meanwhile, we find mixed support for the expressive utility hypothesis that cue receptivity is highest among people with both a strong partisan social identification and high cognitive resources. The strength of this latter evidence varies across studies, cognitive resource measures, and cue condition comparisons. The results suggest that partisan cue receptivity more often involves an effort to harness cognitive resources for the goal of identity expression than an effort to compensate for low cognitive resources.

Over the last five decades, politically engaged Americans have become substantially more likely to hold issue attitudes that are consistent with those of their respective party elites and distant from those of opposing partisans (Levendusky 2009). This phenomenon is not merely a consequence of citizens adopting party affiliations that are consistent with their preformed attitudes; it also reflects a tendency of partisans to adopt issue attitudes that are cued as party consistent in the political information environment (Arceneaux and Vander Wielen 2017; Bullock 2011; Kam 2005).

One line of thinking within political science touts cue-taking as an effective way of dealing with the "democratic dilemma" (Lupia and McCubbins 1998). Cue receptivity, in this view, reflects the use of judgmental heuristics that allow one to make reasonably good political decisions without expending costly effort or possessing substantial cognitive resources. Another perspective suggests that cue-taking reflects motivation to bolster and protect valued political identities by expressing and rationalizing the viewpoints cued to be consistent with these identities (Kahan 2013; Petersen et al. 2013).

This research represents an effort to test these two explanations of partisan cue receptivity. The *bounded rationality perspective* on cue-taking implies that cue-taking will be most prevalent among citizens least inclined to think effortfully about politics (Kam 2005). The *expressive utility perspective*, however, implies that the highest levels of cue-taking will occur among citizens who are strongly identified with a party and are willing and able to think effortfully about politics (Kahan 2013).

We report the results of five primary survey experiments using four American samples and two ancillary survey experiments, conducted in the United States and Denmark (reported apps. H and I; apps. A–I are available online), that each involved the manipulation of partisan cues associated

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with a political policy. In each study, both partisan social identity strength and at least one cognitive resource variable were measured before the manipulation. Across all of the studies, we found no evidence that cue receptivity is strongest among those low in cognitive resources. We did, however, find some evidence that cue receptivity is strongest among those who combine a strong partisan social identification with high cognitive resources, although this evidence varied across studies, cognitive resource measures, and specific cue condition comparisons. These results suggest that partisan cue-taking is more often rooted in motivation to channel cognitive resources to the pursuit of identity expression than motivation to compensate for low cognitive resources. This implies that political cues are less likely to improve decision-making among low-information voters than to exacerbate the issue differences of committed and thoughtful partisans.

THE BOUNDED RATIONALITY MODEL OF PARTISAN CUE RECEPTIVITY

Large segments of the electorate in Western democracies are uninformed about basic political matters (Delli Carpini and Keeter 1997), a finding that raises challenging questions about the viability of popular sovereignty. Some have argued that heuristics offer a solution to the low levels of political knowledge in the general population (e.g., Lupia and McCubbins 1998). A prominent example of this concerns receptivity to political cues. Rather than research the costs and benefits of a particular policy, people can base their degree of support on their feelings toward groups that support or oppose the policy (Brady and Sniderman 1985), most prominently the major political parties. According to this "bounded rationality perspective" (Simon 1972), cues allow partisans to adopt value-consistent and interest-consistent political positions without expending costly effort.

Some prior evidence is consistent with this perspective on cue-taking. Kam (2005), for example, found that low political awareness was associated with greater cue-following. Arceneaux and Vander Wielen (2017), meanwhile, found that a disinclination to think effortfully predicted greater cue-following, but only among people who were likely to feel strong emotional pressure to support their party. Thus, at least in some cases, situational and personal characteristics that render effortful political thinking less likely coincide with greater partisan cue-taking.

The expressive utility model of partisan cue receptivity

In contrast to the bounded rationality perspective, the "expressive utility perspective" (Kahan 2013) on cue-taking implies that partisans follow cues in an effort to bolster and protect valued social identities (Groenendyk 2013; Kahan 2013; Lodge and Taber 2013; Malka and Lelkes 2010; Petersen et al. 2013; Slothuus and de Vreese 2010). A social identity is an emotionally involved self-categorization as a member of a particular social group (Huddy, Mason, and Aarøe 2015; Tajfel and Turner 1979). Within political science, a venerable tradition has emphasized how political reasoning is often motivated by the desire to reach conclusions that are consistent with valued political identities, most notably partisan identity (Layman and Carsey 2002). Such "motivated reasoning" involves acceptance and promotion of identity-consistent information and critical scrutiny of, and counter-argumentation against, identity-inconsistent information (Groenendyk 2013; Lodge and Taber 2013). Crucially, in this view, citizens' cue-following involves effortful reasoning "to produce arguments for the correctness of their party's position" (Petersen et al. 2013, 831).

Some evidence does indeed suggest that political cognition is often motivated by a desire to express relevant identities. Kahan (2013), for example, found that those most inclined to engage in effortful processing were most likely to perceive bias in a test promoting a counterattitudinal position on climate change (although see Tappin, Pennycook, and Rand 2018). But regarding the applicability of the expressive utility perspective to partisan cue-following, evidence to date is mostly indirect and suggestive. Petersen et al. (2013) found that including party cues in a policy description increased information processing effort, suggesting motivation to effortfully rationalize the adoption of party-cued positions. Furthermore, some evidence shows a positive relationship between political sophistication and cue-following, suggesting that cue receptivity involves sophisticated mental effort toward some type of goal (for a review, see Arceneaux and Vander Wielen 2017). But such studies have not directly measured degree of motivation to bolster and express one's partisan identity. Arceneaux and Vander Wielen (2017) have come closest to doing so and found that high need for affect—reflecting a strong emotional investment in one's attitudes—was associated with greater cue-following. Arceneaux and Vander Wielen emphasized how such emotionally triggered cue-following could be exacerbated among those who are disinclined to cognitively override their intuitive feelings. However, they acknowledged that strong cognitive resources could also exacerbate this intuitive influence by providing a capability to channel the intuitive inclination into a rationalized policy position. We focus on this possibility in developing the key prediction from the expressive utility model.

Distinguishing the perspectives on partisan cue receptivity

If a person shifts a political position on the basis of exposure to a political cue, how do we know whether this signifies heuristic use (as the bounded rationality perspective suggests) or identity-based motivated reasoning (as the expressive utility model suggests)? This is a complicated matter, because it is likely that multiple interacting motives underlie instances of cue-taking (Arceneaux and Vander Wielen 2017; Groenendyk 2013). We attempt to shed light on the relative plausibility of the perspectives described above by exploring the implications of partisan social identity strength and cognitive resources for partisan cue receptivity.

Partisan social identity. Scholars have distinguished between instrumental versus expressive notions of partisanship (e.g., Huddy et al. 2015), with some thinking of party identification as a reflection of substantive political positions and judgments (instrumental partisanship) and others viewing it as a social group attachment akin to a tribal affiliation (expressive partisanship). To the extent that partisanship is instrumental, following party cues reflects an effort-saving strategy to adopt the "correct" political position without engaging in costly information processing or possessing substantial cognitive resources. However, to the degree that partisanship is expressive, cue-taking reflects motives to bolster and act consistently with an identity.

People who identify with a social group will, of course, vary in their strength of identification with this group. Recent work has validated a partisan social identity strength measure that directly assesses this variation with respect to party attachment (Bankert, Huddy, and Rosema 2017; Huddy et al. 2015). To the best of our knowledge, however, strength of partisan social identification has not been tested directly as a moderator of cue receptivity. Indeed, a finding that cue receptivity is stronger among people with stronger partisan social identities would be consistent with the expressive utility model. However, such a finding could also be reconciled with the bounded rationality model, as strong identification with a party might signify trust in party elites to "do the thinking" for oneself. We therefore focus on the interaction of partisan social identity with a second type of variable, cognitive resources.

Cognitive resources. We conceptualize cognitive resources as an interrelated set of individual differences reflecting inclination and capability to think effortfully and systematically about politics (Arceneaux and Vander Wielen 2017). The bounded rationality and expressive utility perspectives yield different predictions regarding the relationship between cue-taking and cognitive resources. According to the bounded rationality perspective, cue receptivity occurs when one does not have the knowledge and inclination to think systematically about politics. This yields the straightforward hypothesis that cue receptivity will be strongest among those with the lowest levels of cognitive resources (Kam 2005). In contrast, the dominant versions of the expressive utility perspective posit that cue receptivity involves more effortful thinking, as political identities motivate people to reason about politics in a manner that is biased toward reaching identity-consistent conclusions (Kahan 2013; Lodge and Taber 2013; Petersen et al. 2013). Thus, while the bounded rationality model predicts more cue-taking among those low in cognitive resources, the expressive utility model predicts that citizens with both a strong partisan social identity and the cognitive resources to defend and rationalize partisan views will be most receptive to cues.

Of course, an individual may adopt a cued issue stance for identity-expressive reasons without devoting strong cognitive effort (Arceneaux and Vander Wielen 2017). However, if the combination of strong social identity and low cognitive resources were to predict cue-following, it would be unclear whether this reflects identity-expressive motivation or rational deference to trusted party elites. Furthermore, key perspectives underlying the expressive utility model posit that identity-expressive attitude adoption tends to involve effortful reasoning aimed at justifying the party's position (Kahan 2013; Lodge and Taber 2013; Petersen et al. 2013). We, therefore, regard enhanced cue-following among those with strong partisan social identities and ample cognitive resources as a key distinctive hypothesis of the expressive utility perspective.

RESEARCH DESIGN OVERVIEW

We report five primary survey experiments with four American samples in the main text (see table 1 for an overview). The first two are adapted versions of Kam's (2005) food irradiation experiment (study 1) and Malka and Lelkes's (2010) farm subsidy experiment (study 2). The next two were preregistered replications of (*a*) both experiments using a single sample (study 3) and (*b*) the food irradiation experiment using a fourth sample (study 4). The main goal of these latter studies was to examine the hypotheses with a design and analysis plan specified before data collection.[1] In the main text we provide a relatively detailed report of the results of studies 1 and 2 and (because of space limitations)

1. Preanalysis plans can be found on the Open Science Framework; see https://osf.io/4zx3f/.

Table 1. Overview of the Main Studies

Study	Cognitive Resources	Partisan Social Identity Strength	Mechanism	Sample	Results In
1. Food irradiation	Cognitive reflection (3), need for cognition (18), cognitive resources (21)	(8)	. . .	SSI, July 2016, $N = 883$	Main text
2. Farm subsidy	Cognitive reflection (7), need for cognition (18), political knowledge (10), cognitive resources (35)	(8)	. . .	Qualtrics, June 2017, $N = 1,302$	Main text
3. Replication studies 1 and 2 assessment mechanism	Cognitive reflection (7), need for cognition (10), cognitive resources (17)	(8)	Reading time, thought listing, quiz	Bovitz Forthright, October 2018, $N = 1,911$	Appendix C
4. Replication study 1 assessment mechanism	Cognitive reflection (7)	(8)	Reading time, thought listing, quiz	MTurk, October 2018, $N = 2,509$	Appendix D

Note. Number of items for each measure is provided in parentheses. SSI = Survey Sampling International; MTurk = Amazon Mechanical Turk.

briefly summarize the results of studies 3 and 4 (detailed results are in apps. C and D; see table 1).

In these experiments, participants received information about a political policy and were informed—based on random assignment—that the policy was supported by the party with which they identify and opposed by the other party (in-party cue condition), supported by the out-party and opposed by the in-party (out-party cue condition), or supported by some groups and opposed by others (the control condition). Participants were then asked to rate their level of support for the policy.

In gauging cue receptivity, we primarily focus on two experimental comparisons: one contrasting the in-party cue to the no-cues condition and one contrasting the out-party cue to the no-cues condition. These comparisons allow us to directly address how presence versus absence of partisan cues affects attitudes, gauge "baseline" partisan differences in attitudes absent partisan signals, and explore differences in cue effects depending on whether the cue indicates in-party or out-party policy support (e.g., Kam 2005; Nicholson 2012). We report results for these comparisons in studies 1–4 and also report an individual-data meta-analysis summarizing those results.

We also address, in a second individual-data meta-analysis, a comparison that contrasts receiving an in-party versus an out-party cue. This meta-analysis includes studies 1–4 as well as two additional experiments (described in apps. H and I) that did not include a no-cues control condition. Although this comparison does not inform the matter of how presence versus absence of cues affects attitudes, it does capture ecologically realistic variability in the messages that citizens receive about policies that are a matter of dispute. Specifically, real-life messages about policies that are the subject of partisan or ideological dispute tend to involve either a message that one's in-party supports (and the out-party opposes) the policy or a message that the out-party supports (and one's in-party opposes) the policy. Thus, exploring the effect of in-party versus out-party cue, and how it differs across subgroups, provides important information about the processes that guide attitude formation in a polarized political environment.

The key moderator variables of partisan social identity strength and cognitive resources were always measured before the manipulated policy description. Participants who identified with or leaned toward a party were administered the eight-item partisan social identity strength measure, worded appropriately for their in-party (Bankert et al. 2017). A sample item from this measure is, "When I speak about the [Democratic/Republican] party, I usually say 'we' instead of 'they.'"[2] In each study, we averaged the eight items and rescaled the measure to range from 0 to 1.[3]

A total of four measures of cognitive resources were employed across the studies. First, we administered the

2. For this measure, respondents rated items on a four-point scale (never = 0, sometimes = .33, often = .67, always = 1) in study 1 (Bankert et al. 2017), on a five-point scale (strongly disagree = 0, somewhat disagree = .25, neither agree nor disagree = .5, somewhat agree = .75, strongly agree = 1) in study 2, and on a four-point scale in studies 3 and 4 (strongly disagree = 0, somewhat disagree = .33, somewhat agree = .66, strongly agree = 1; Bankert et al. 2017).

3. See app. E.1 for the distributions of partisan social identity strength across studies.

Cognitive Reflection Test (CRT), which is designed to assess variation in intuitive, "gut" reasoning versus effortful and systematic thinking (Frederick 2005). Each CRT question has an obvious, but incorrect, answer, and thus a correct response requires overriding the initial intuitive response. We used the classic three-item CRT (Frederick 2005) in study 1, the expanded seven-item CRT (Toplak, West, and Stanovich 2014) in studies 2 and 3, and a seven-item scale combining the four-item CRT-2 (Thomson and Oppenheimer 2016) with three items from the CRT-7 in study 4. Scores on the CRT were computed as the proportion of questions answered correctly.

Need for cognition (NfC), which gauges self-reported variation in the degree to which individuals enjoy versus dislike effortful thinking (Cacioppo, Petty, and Kao 1984), was measured in studies 1–3. NfC consists of items such as "I would prefer complex to simple problems," and these were rated on a five-point scale coded to range from 0 ("extremely uncharacteristic of me") to 1 ("extremely characteristic of me"). We used the 18-item NfC scale (Cacioppo et al. 1984) in studies 1 and 2 and a 10-item scale in study 3 (Bakker and Lelkes 2018). We averaged item responses (after reverse coding appropriate responses) and rescaled the measure to range from 0 to 1.

In study 2, political knowledge was included as an additional test-based measure of resources to think effectively about politics (Lodge and Taber 2013). Participants responded to 10 multiple choice questions about policies, institutions, and political actors with items adapted from the American National Election Studies and Clifford and Jerit (2016; e.g., "How long is the term of office for a senator in the United States Senate?"). Scores were computed as the proportion of questions answered correctly, ranging from 0 to 1.

In studies 1–3 we formed a latent measure of cognitive resources representing the shared variation across the cognitive resource items (see table 1). This was operationalized as the extracted scores from a confirmatory factor analysis that included as indicators all available CRT, NfC, and (in study 2) political knowledge items. The measure was rescaled to range from 0 to 1.

Finally, to provide an initial examination of the processes underlying the bounded rationality and expressive utility perspectives, studies 3 and 4 included measures intended to gauge the extent to which people exerted cognitive effort while reading the policy description. These included time taken to read the policy description, thoughts generated in response to an open-ended question following the policy description, and tests of factual information from the policy description (see table 1).

Hypotheses were tested using ordinary least squares regression models. To test the main effects of party cues, we regressed policy support on in-party and out-party cue condition dummies (control condition was the omitted category), partisan social identity, one of the cognitive resource variables, and the covariates gender (male [0] vs. female [1]), age (in years), education (high school or less [1], some college [2], or college [3]), race (white [0] vs. nonwhite [1]), and respondent's party (Democrat [0] vs. Republican [1]; for a similar approach, see Arceneaux and Vander Wielen 2017, chap. 4).

The bounded rationality hypothesis was tested by regressing policy support on in-party cue, out-party cue, a cognitive resource variable, partisan social identity, the two-way interactions between each of the condition dummies and the cognitive resource variable, the two-way interactions between each of the condition dummies and partisan social identity, the two-way interaction between the cognitive resource variable and partisan social identity, and the covariates. Of interest were the interactions between cognitive resources and the cue condition dummies.

To test the expressive utility hypothesis, we regressed policy support on the two cue condition dummies; a cognitive resource variable; partisan social identity; all two-way interactions (excluding between the dummies); the three-way interactions between the cognitive resource variable, partisan social identity, and each of the cue condition dummies; and the covariates. We examine the three-way interactions by plotting the marginal effects of the condition dummies on policy support as a function of partisan social identity for those that score low (i.e., 1 SD below the mean), medium (i.e., at the mean), and high (i.e., 1 SD above the mean) on each cognitive resource.

STUDY 1: FOOD IRRADIATION EXPERIMENT

Respondents were 747 Survey Sampling International panelists who identified with or leaned toward a party (136 out of 883 respondents were excluded because they indicated no party identification or leaning) and completed the partisan social identity scale ($M = .43$, SD $= .25$, $\alpha = .91$; app. A.3), the three-item CRT scale ($M = .15$, SD $= .26$, $\alpha = .62$; app. A.4), and the 18-item NfC scale ($M = .59$, SD $= .14$, $\alpha = .82$; app. A.4). A latent cognitive resources variable was computed ($M = .62$, SD $= .18$, $\alpha = .81$; app. A.4).[4] After completing these measures, respondents were exposed to a

4. CRT correlates positive with NfC ($r = .18$, $p < .01$) and latent cognitive resources ($r = .16$, $p < .01$), and NfC correlates positive with the latent cognitive resources variable ($r = .76$, $p < .01$). Party identity strength was weakly negatively correlated with CRT ($r = -.11$, $p < .01$), not correlated with NfC ($r = .01$, NS), and weakly positively correlated with latent cognitive resources ($r = .14$, $p < .01$).

short article about a proposed ban on food irradiation (see app. A.1 for sample characteristics, A.2 for wording of the experiment, and A.5 for and randomization checks).

Starting with the main effects, we found that support for food irradiation decreased by about .06 points (on a 0–1 scale, $p < .01$) when the respondent's out-party supported the policy relative to the no-cues condition (see app. A.6). The in-party cue resulted in .03 points more support for the policy, but this effect fell short of significance. High CRT was associated with somewhat lower policy support, and no other predictors (NfC, cognitive resources, or partisan social identity) had significant main effects.

The bounded rationality model predicts a stronger positive influence of in-party cue and a stronger negative influence of out-party cue to the degree that the person is low in cognitive resources. However, as displayed in models 1, 3, and 5 of table 2, this was not the case. None of the interactions between party cues and the cognitive resource variables were significant. Moreover, in five of six cases, the sign of the interaction was opposite of what the bounded rationality model would predict: positive effects of in-party cue and negative effects of out-party cue were (nonsignificantly) strengthened among those high in cognitive resources. In addition, cue receptivity did not significantly vary as a function of partisan social identity strength.

Our first test of the expressive utility model—using the CRT (model 2, table 2)—shows that neither of the three-way interactions was significant. The top row of figure 1 displays effects of in- and out-party cues on policy support across levels of partisan social identity and CRT. There were no relations between partisan social identity and magnitude of cue effects among those low, medium, or high in CRT.

In the model with NfC, the three-way interaction involving the in-party cue, NfC, and partisan social identity was positive and significant ($b = 1.08$, SE $= .49$, $p = .027$), whereas that involving the out-party cue was negative but not significant ($b = -.53$, SE $= .51$; see model 4, table 2). As displayed in figure 1 (middle row), among those low and moderate in NfC, partisan social identity strength was unrelated to the effects of in-party and out-party cues. However, among those high in NfC, the marginal effect of the in-party cue—compared to the control condition—on policy support became stronger as partisan social identity increased ($b = .26$, SE $= .11$, $p = .019$). A similar pattern—although not significant—is shown for the out-party cue ($b = -.14$, SE $= .11$).

Finally, in the model with latent cognitive resources, neither of the three-way interactions was significant (see model 6, table 2). We do, however, see that partisan social identity strength is linked with stronger in-party cue effects only among those with great cognitive resources (bottom row of fig. 1). The findings from the food irradiation experiment thus provide no support for the bounded rationality perspective and some traces of support for the expressive utility perspective on partisan cue receptivity.

STUDY 2: FARM SUBSIDY EXPERIMENT

Respondents were 1,302 Qualtrics panelists who identified or leaned toward a party (647 Democrats and 655 Republicans).[5] We measured partisan social identity strength ($M = .64$, SD $= .21$, $\alpha = .96$; app. B.3), CRT ($M = .19$, SD $= .24$, $\alpha = .77$; app. B.4), NfC ($M = .54$, SD $= .16$, $\alpha = .85$; app. B.4), and political knowledge ($M = .59$, SD $= .29$, $\alpha = .81$; app. B.4), and we formed a latent cognitive resources variable ($M = .50$, SD $= .14$, $\alpha = .85$; app. B.4).[6]

Participants were randomly assigned to one of three farm subsidy policy descriptions that differed only in terms of partisan cues.[7] After the treatment, respondents provided a rating in response to the question "Do you support or oppose the US government policy of giving money to American farmers?" on a seven-point scale ranging from strongly oppose (0) to strongly support (1; $M = .71$, SD $= .25$).

Support for farm subsidies decreased by about .07 points (on a 0–1 scale) when the out-party was said to support them, while the in-party cue did not influence policy support (see app. B.6). Respondents with a stronger partisan social identity were more supportive of the policy, while those with higher levels of CRT and political knowledge were less supportive of the policy.

Turning to the test of the bounded rationality model, we found no evidence that cue-taking effects are stronger for those low in cognitive resources. In fact, all eight of the interactions between cues and cognitive resources were in the direction opposite of that predicted by the bounded rationality model; seven nonsignificantly so and one (political knowledge × out-party cue) significantly so. As in study 1, cue receptivity did not differ across levels of partisan social identification (see table 3).

Testing the expressive utility perspective using the CRT measure (see model 2 in table 3), the three-way

5. See app. B.1 for sample characteristics.

6. CRT correlated positively with NfC ($r = .19$, $p < .01$), political knowledge ($r = .34$, $p < .01$), and cognitive resources ($r = .39$, $p < .01$), while political knowledge correlated positively with NfC ($r = .18$, $p < .01$) and cognitive resources ($r = .42$, $p < .01$). NfC correlates positively with cognitive resources ($r = .39$, $p < .01$). Partisan social identity strength was weakly correlated with CRT ($r = -.13$, $p < .01$), NfC ($r = .07$, $p < .05$), political knowledge ($r = -.13$, $p < .01$), and cognitive resources ($r = .05$, $p = .06$).

7. See app. B.2 for the wording and app. B.5 for randomization checks.

Table 2. Food Irradiation: Policy Support, Party Cues, Cognitive Resources, and Social Identity Strength

	Policy Support					
	CRT		NfC		Cog Res	
	(1)	(2)	(3)	(4)	(5)	(6)
In-party cue	.02	.04	−.06	.18	−.03	.02
	(.04)	(.04)	(.08)	(.14)	(.06)	(.12)
Out-party cue	−.01	.004	.06	−.07	.03	.07
	(.04)	(.04)	(.08)	(.15)	(.07)	(.14)
Partisan identity strength (PSID)	.04	.06	.17	.29	.06	.13
	(.05)	(.06)	(.13)	(.20)	(.11)	(.16)
Cognitive resource	−.05	.04	.02	.11	−.02	.03
	(.07)	(.10)	(.12)	(.16)	(.10)	(.14)
In-party × PSID	.05	.01	.06	−.54	.06	−.04
	(.07)	(.08)	(.07)	(.28)	(.07)	(.21)
Out-party × PSID	−.09	−.12	−.08	.25	−.07	−.15
	(.07)	(.08)	(.07)	(.31)	(.07)	(.27)
In-party × cognitive	−.12	−.26	.12	−.32	.05	−.03
	(.07)	(.14)	(.12)	(.23)	(.10)	(.20)
Out-party × cognitive	−.07	−.19	−.14	.07	−.09	−.16
	(.07)	(.14)	(.12)	(.25)	(.11)	(.22)
PSID × cognitive	.10	−.11	−.19	−.40	−.01	−.11
	(.13)	(.21)	(.21)	(.33)	(.15)	(.25)
In-party × PSID × cognitive		.35		1.08*		.17
		(.31)		(.49)		(.33)
Out-party × PSID × cognitive		.29		−.53		.13
		(.31)		(.51)		(.40)
Age	−.001	−.001	−.001	−.0005	−.001	−.001
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Female	.03	.03	.04*	.04*	.04*	.04*
	(.02)	(.02)	(.02)	(.01)	(.02)	(.02)
Race: nonwhite	.01	.01	.01	.01	.01	.01
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Education:						
Some college	.01	.01	.01	.01	.01	.005
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
College	−.03	−.03	−.03	−.03	−.03	−.03
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Party: Republican	.01	.01	.01	.01	.01	.01
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Constant	.55*	.55*	.52*	.47*	.55*	.52*
	(.04)	(.04)	(.08)	(.10)	(.07)	(.09)
R^2	.08	.08	.07	.08	.07	.07

Note. CRT = Cognitive Reflection Test; NfC = need for cognition; Cog Res = cognitive resources. $N = 747$.
* $p < .05$.

interaction involving out-party cue was negative and significant ($b = -.78$, SE = .34, $p = .02$), whereas that involving in-party cue was positive but not significant ($b = .29$, SE = .37). Among respondents with low and medium cognitive resources (upper left and middle panels of fig. 2), neither in- nor out-party cues had significant effects on policy support at any level of partisan social identity strength. But among respondents high in CRT (upper-right panel), highly socially

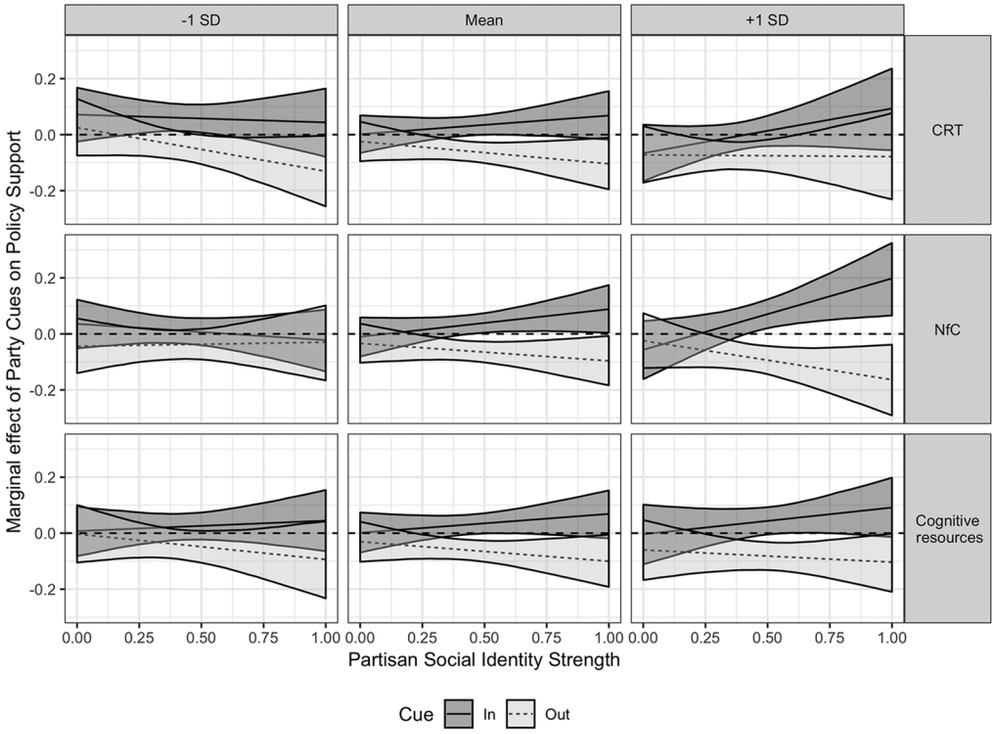

Figure 1. Food irradiation: marginal effect of in-party and out-party cues on policy support across levels of partisan social identity and cognitive resources. Results based on table 2, model 2 (CRT), model 4 (NfC), and model 6 (cognitive resources).

identified partisans were more influenced by out-party cues than were low social identification partisans ($b = -.27$, SE $= .12$, $p = .02$). However, this finding did not extend to the effect of in-party cue.[8]

For the analyses with NfC (see model 4 in table 3), the three-way interactions were in the expected directions but not significant, and the pattern of simple effects approximate what the expressive utility model would predict (see fig. 2). In the analyses with political knowledge (see model 6 in table 3), the interaction between political knowledge, out-party cue, and partisan social identity was negative and significant ($b = -.68$, SE $= .28$, $p = .02$), while the interaction between political knowledge, in-party cue, and partisan social identity strength was positive and nearly significant ($b = .54$, SE $= .28$, $p = .05$). The third row of figure 2 illustrates that the effects of cues as a function of partisan social identity did differ across levels of political knowledge in a manner conforming to the prediction of the expressive utility model.

8. The contrast between this finding and that of study 1 might be attributable to use of the longer and more reliable CRT in the current study (Toplak et al. 2014). Indeed, when we reran our models using the three-item CRT battery, the relevant three-way interaction was not significant in study 2 (see app. B.8) or study 3 (app. C.15).

Finally, for the analyses with the latent cognitive resources variable, the three-way interactions were in the expected direction but not significant (see model 8 in table 3), and the pattern of simple effects approximate what the expected utility model would predict (see fig. 2). Overall, then, study 2 provided no support for the bounded rationality model and mixed support for the expressive utility model of cue receptivity.

STUDIES 3 AND 4: REPLICATIONS OF THE FOOD IRRADIATION AND FARM SUBSIDY EXPERIMENTS AND EXPLORATION OF THE MECHANISM

In October 2018, we conducted two preregistered studies: one containing replications of the food irradiation and farm subsidy experiments using a Bovitz Forthright sample (study 3) and the other containing a replication of the food irradiation experiment using an Amazon Mechanical Turk (MTurk) sample (study 4). In these studies, we undertook an initial test of the mechanism through which the findings emerge by measuring cognitive processing of policy information. The expressive utility model, which was partially supported in studies 1 and 2, posits that partisan cues will enhance cognitive processing of policy information to the degree that the individual has both strong cognitive resources and a strong social identification with his or her party. Therefore, we measured three variables thought to

Table 3. Farm Subsidy Experiment: Policy Support, Party Cues, Reflection, and Social Identity Strength

	Policy Support							
	CRT		NfC		Knowledge		Cog Res	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
In-party cue	.02	.04	−.05	.08	.01	.23^{+}	.02	.16
	(.06)	(.07)	(.07)	(.16)	(.06)	(.13)	(.06)	(.17)
Out-party cue	.003	−.08	.01	−.14	.12^{+}	−.13	.003	−.19
	(.06)	(.07)	(.07)	(.15)	(.07)	(.12)	(.06)	(.17)
Partisan identity strength (PSID)	.27*	.24*	.40*	.38*	.40*	.37*	.27*	.40*
	(.06)	(.07)	(.11)	(.17)	(.09)	(.13)	(.06)	(.19)
Cognitive resource	.11	−.02	.16	.15	.10	.07	.11	.13
	(.10)	(.16)	(.13)	(.18)	(.09)	(.14)	(.10)	(.23)
In-party × PSID	−.01	−.05	−.01	−.22	−.01	−.34^{+}	−.01	−.34
	(.08)	(.09)	(.08)	(.25)	(.08)	(.18)	(.08)	(.27)
Out-party × PSID	−.08	.06	−.08	.16	−.12	.24	−.08	.31
	(.08)	(.10)	(.08)	(.25)	(.08)	(.17)	(.08)	(.27)
In-party × cognitive	.02	−.16	.13	−.10	.03	−.32^{+}	.02	−.28
	(.07)	(.23)	(.10)	(.28)	(.06)	(.19)	(.07)	(.33)
Out-party × cognitive	−.09	.37^{+}	−.05	.23	−.18*	.26	−.09	.36
	(.07)	(.22)	(.10)	(.28)	(.06)	(.19)	(.07)	(.34)
PSID × cognitive	−.37*	−.15	−.30^{+}	−.28	−.30*	−.25	−.37*	−.33
	(.15)	(.26)	(.18)	(.30)	(.11)	(.20)	(.15)	(.36)
In-party × PSID × cognitive		.29		.37		.54^{+}		.65
		(.37)		(.44)		(.28)		(.52)
Out-party × PSID × cognitive		−.78*		−.47		−.68*		−.80
		(.34)		(.44)		(.28)		(.53)
Age	−.02*	−.02*	−.02*	−.02*	−.01^{+}	−.01*	−.02*	−.02*
	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)
Female	.02	.02^{+}	.03^{+}	.03*	.03^{+}	.03^{+}	.02	.03*
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Race: nonwhite	−.04*	−.04*	−.03^{+}	−.03^{+}	−.06*	−.06*	−.04*	−.04^{+}
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Education:								
Some college	−.03^{+}	−.03^{+}	−.04*	−.04*	−.02	−.02	−.03^{+}	−.04*
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
College	−.07*	−.07*	−.09*	−.09*	−.05*	−.05*	−.07*	−.08*
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Party: Republican	−.002	−.002	−.001	−.001	−.01	−.005	−.002	−.001
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Constant	.68*	.70*	.61*	.61*	.59*	.61*	.68*	.62*
	(.05)	(.06)	(.08)	(.11)	(.07)	(.10)	(.05)	(.12)
R^2	.11	.12	.10	.10	.13	.14	.11	.10

Note. CRT = Cognitive Reflection Test; NfC = need for cognition; Cog Res = cognitive resources. N = 1,258.

$^{+}$ $p < .1$.

* $p < .05$.

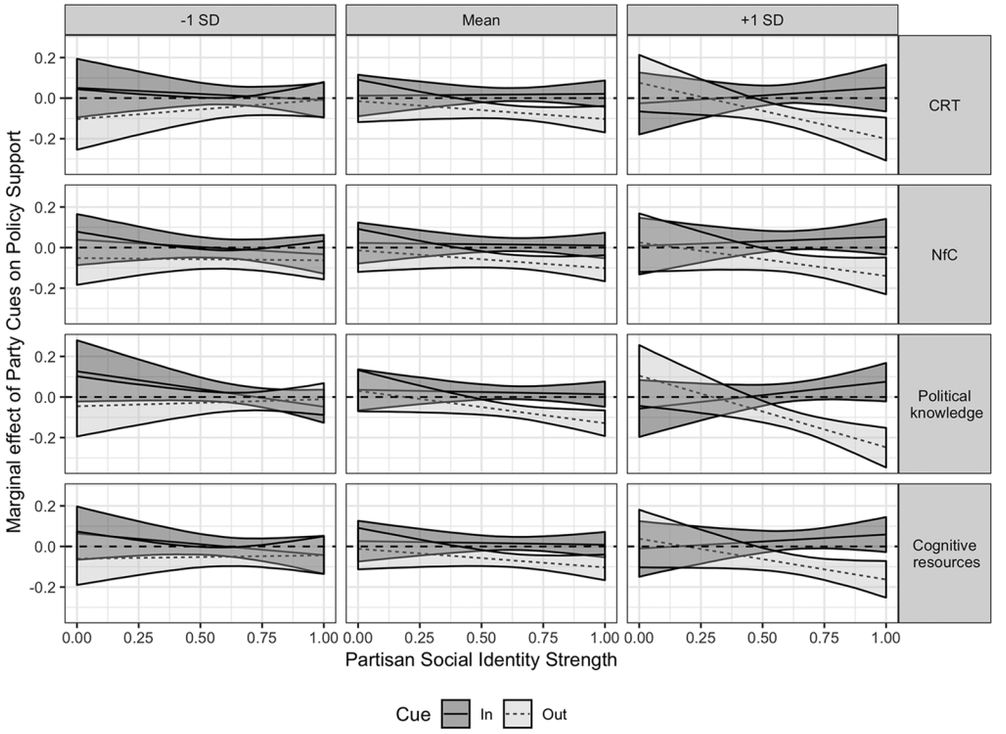

Figure 2. Farm subsidy experiment: marginal effect of in-party and out-party cues on policy support across levels of partisan social identity and cognitive resources. Results based on table 3, model 2 (CRT), model 4 (NfC), model 6 (political knowledge), and model 8 (cognitive resources).

reflect the degree to which the policy information was processed deeply and preregistered the expressive utility prediction with respect to each.[9]

The first measure was the amount of time spent reading policy information, recorded in all three experiments across studies 3 and 4. The second was the number of words reported in response to a prompt to list thoughts that came to mind while reading the policy description, administered immediately after the dependent measures in the food irradiation experiments (in both studies 3 and 4) but not the farm subsidy experiment of study 3. The third was a multiple-choice quiz querying factual information about the policy descriptions: a four-item quiz following the thought listing in the food irradiation experiments (in both studies 3 and 4) and a two-item quiz following the dependent variable assessment after the farm policy description in study 3.

Because of space constraints, we present the main effects and tests of the bounded rationality and expressive utility perspectives in the appendixes. In the study 3 experiments, we again found no support for the bounded rationality perspective and mixed support for the expressive utility perspective on partisan cue receptivity (see apps. C.1 and C.2).[10] In the study 4 food irradiation experiment using an MTurk sample, we found no support for either the bounded rationality or expressive utility models (apps. D.1–D.5).

Finally, in studies 3 and 4, we sought to test the mechanism underlying the expressive utility model. We preregistered the prediction that highly reflective and strongly socially identified partisans would process policy information more deeply. However, as we describe in appendixes C.3–C.5 for study 3, and D.3 for study 4, we found no evidence for this using any of the depth-of-processing measures.[11] We return to this matter in the discussion.

9. In the preanalysis plans we did not specify whether we would or would not control for the covariates. For consistency we show all results here with covariates. But in the replication files all models can be replicated without the covariates.

10. All background information about the study is presented in the remainder of app. C. We also directly replicated Kam (2005) in study 1 (app. A.7) and study 3 (app. C.12) and show that we arrive at similar conclusions when we analyze each item of the dependent variable separately in study 1 (app. A.8), study 3 (app. C.13), and study 4 (app. D.4). We also show that the effects of the food irradiation experiment in study 3 do not spillover to the farm subsidy experiment; see app. C.18.

11. We also conducted an exploratory analysis in which we follow Petersen et al. (2013, study 1) and ranked reading times but again find no evidence for the proposed mechanism. Results can be derived from the replication files.

INDIVIDUAL-DATA META-ANALYSES

We conducted a meta-analysis of individual data from studies 1–4 to provide more powerful tests of the key hypotheses. We pooled the data across the experiments and ran mixed-effects regression models with dummy variables for the studies and random intercepts for studies and individuals to account for clustering.

Starting with the main effects, out-party cue lead to .07 points less policy support, while in-party cue lead to .03 points more policy support (see app. E.2), effect sizes that are comparable to those observed in previous cue studies (Bullock 2011; Kam 2005).[12] In the same model, citizens with stronger partisan social identities were more supportive of the policies, while those with higher levels of cognitive resources (CRT, NfC, and latent cognitive resources) were less supportive of the policies. Contrary to the bounded rationality model, the meta-analyses showed no evidence for larger cue effects among those with low cognitive resources. In most cases, there was no significant moderation by cognitive resources, but in one case (in-party cue × NfC) the effect was in the opposite direction.[13]

Next, we meta-analytically examined the evidence for the expressive utility model. All six of the three-way interactions were in the direction predicted by the expressive utility model, although only two reached statistical significance. Specifically, for NfC and the latent cognitive resource variable, three-way interactions between the in-party cue, partisan social identity strength, and cognitive resources (NfC $b = .45$, SE $= .17$ in model 4 and latent cognitive resources $b = .50$, SE $= .20$ in model 6 of table 4) were positive and significant, while the interaction with CRT (model 2) was positive but not significant ($b = .09$, SE $= .10$). The three-way interactions with the out-party cue were negative but not significant (see models 2, 4, and 6 of table 4).

Figure 3 shows that the effects of the in-party and out-party cues were not conditioned by partisan social identity when cognitive resources were low—as made evident by the horizontal slopes of the marginal effects for the in-party and out-party cues. Yet, when cognitive resources were high, the effect of the in-party cue became stronger as partisan social identity strength increased. This can be seen by the positive and statistically significant slope in the CRT analysis ($b = .09$, SE $= .04$, $p < .05$), the analysis with NfC ($b = .15$, SE $= .05$, $p < .01$), and the analysis with latent cognitive resources ($b = .15$, SE $= .05$, $p < .01$). These effects are substantial: for latent cognitive resources, for instance, this means that among those with strong cognitive resources, the effect of in-party cue increases by about 15 percentage points when moving from those with the lowest to the highest level of partisan social identity. Finally, the effect of out-party cue on policy support became more strongly negative as a function of partisan social identity among those with high cognitive resources, but, with the exception of the CRT analysis ($b = -.09$, SE $= .05$, $p < .05$), the effects were not significant.

The results of the meta-analysis show no evidence in favor of the bounded rationality model and some evidence directly opposite of the key prediction of this model. Meanwhile, the results are partially supportive of the expressive utility model.[14]

Finally, we conducted two additional party cue studies: the trade policy experiment in the US (in July 2016) and the Danish ideology experiment in Denmark (in August 2017). The studies had the same basic design as studies 1–4, but both lacked a no-cues control condition.[15] These studies do not allow us to gauge how cues affect policy support relative to an absence of cues. However, they do permit tests of the bounded rationality and expressive utility models with respect to effects of in- versus out-party cues, a comparison that represents ecologically realistic variability in the messages that circulate about contentious policies. Therefore, we pooled the data from all seven experiments and conducted another meta-analysis in which we examined the degree to which the effect of in-party versus out-party cues on policy support is moderated by the relevant individual difference variables (see app. E.3).[16]

Again, we found no evidence that cue receptivity was stronger among individuals low in cognitive resources—in fact, we found the exact opposite in the analyses with NfC and latent cognitive resources (see app. E.3 for a detailed discussion of this meta-analysis). Meanwhile, all three in- versus out-party cue × cognitive resource × partisan social identity interactions were positive, with those for NfC

12. In the CRT model the increase is .04 points.

13. Also in the meta-analyses, we found that the effect of in-party cue on policy support became stronger as partisan social identity strength increased ($b = .06$, SE $= .03$ in model 1; $b = .07$, SE $= .03$ in model 3; $b = .07$, SE $= .03$ in model 5 of table 4), while the interaction between partisan social identity strength and the out-party cue yielded mixed findings.

14. We assess the assumed linear effect of partisan social identity strength in study 1 (app. A.9), study 2 (app. B.7), study 3 (app. C.14), and study 4 (app. D.4) and show that we arrive at similar conclusion when we rely on the traditional party identity strength question (app. F).

15. The Danish experiment involved assessments of ideological (not partisan) identity and manipulation of ideological (not partisan) cues.

16. See app. H for trade policy results and app. I for Danish study results. In the trade policy experiment we also manipulated the complexity of the framing. The effect of frame complexity is not moderated by partisan social identity strength or cognitive resources (see app. H.4).

Table 4. Individual-Data Meta-Analysis

	Policy Support					
	CRT		NfC		Cog Res	
	(1)	(2)	(3)	(4)	(5)	(6)
In-party cue	.01	.02	−.07*	.08	−.05+	.09
	(.02)	(.02)	(.03)	(.06)	(.03)	(.07)
Out-party cue	−.03+	−.05*	−.03	−.07	−.03	−.08
	(.02)	(.02)	(.03)	(.06)	(.03)	(.07)
Partisan identity strength (PSID)	.12*	.11*	.19*	.27*	.19*	.26*
	(.02)	(.03)	(.05)	(.07)	(.05)	(.08)
Cognitive resource	−.08*	−.09*	−.02	.04	−.07	−.002
	(.03)	(.04)	(.05)	(.07)	(.06)	(.09)
In-party × PSID	.06*	.04	.07*	−.20+	.07*	−.20+
	(.03)	(.04)	(.03)	(.10)	(.03)	(.11)
Out-party × PSID	−.06*	−.03	−.03	.03	−.03	.06
	(.03)	(.04)	(.03)	(.11)	(.03)	(.11)
In-party × cognitive	−.004	−.05	.10*	−.14	.10+	−.18
	(.02)	(.06)	(.04)	(.10)	(.05)	(.12)
Out-party × cognitive	−.01	.05	−.04	.02	−.04	.05
	(.02)	(.05)	(.04)	(.10)	(.05)	(.12)
PSID × cognitive	−.08*	−.07	−.14+	−.27*	−.15+	−.28+
	(.04)	(.07)	(.07)	(.12)	(.08)	(.14)
In-party × PSID × cognitive		.09		.45*		.50*
		(.10)		(.17)		(.20)
Out-party × PSID × cognitive		−.11		−.10		−.17
		(.10)		(.17)		(.20)
Sample:						
Study 2	.15*	.15*	.13*	.13*	.12*	.12*
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Study 3 food	−.01	−.01	−.03*	−.03*	−.04*	−.04*
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Study 3 farm	.16*	.16*	.14*	.14*	.13*	.13*
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
MTurk	−.01	−.01				
	(.01)	(.01)				
Age	−.01*	−.01*	−.01*	−.01*	−.01*	−.01*
	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)
Female	.04*	.04*	.04*	.04*	.04*	.04*
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Race: nonwhite	−.02*	−.02*	−.02*	−.02*	−.02*	−.02*
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Education:						
Some college	−.04*	−.04*	−.06*	−.06*	−.05*	−.05*
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
College	−.01	−.01	−.001	−.001	−.003	−.003
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Party: Republican	.02*	.02*	.02*	.02*	.02*	.02*
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Constant	.55*	.55*	.56*	.53*	.60*	.56*
	(.02)	(.02)	(.03)	(.05)	(.04)	(.05)

Table 4 (*Continued*)

	Policy Support					
	CRT		NfC		Cog Res	
	(1)	(2)	(3)	(4)	(5)	(6)
Observations	8,116	8,116	5,607	5,607	5,607	5,607
Akaike information criterion	−925.44	−925.74	−625.12	−632.99	−640.11	−648.50
Bayesian information criterion	−764.40	−750.70	−479.22	−473.82	−494.21	−489.34

Note. CRT = Cognitive Reflection Test; NfC = need for cognition; Cog Res = cognitive resources; MTurk = Amazon Mechanical Turk.
$^{+}$ $p < .1$.
* $p < .05$.

($b = .55$, SE = .16) and cognitive resources ($b = .56$, SE = .17) reaching significance and that of CRT falling short of significance ($b = .11$, SE = .08). This indicates that pooled across all the experiments, the combination of strong partisan social identity and high cognitive resources was associated with the strongest impact of in- versus out-party cues on policy support. This is consistent with the expressive utility perspective.

DISCUSSION

Partisan cues have the potential to improve political decision-making among people who lack the cognitive resources to engage in informed and systematic political reasoning. At the same time, they have the potential to inform strongly identified partisans about the stances their leaders are adopting and to motivate these partisans to channel their cognitive resources to the goal of adopting and justifying identity-consistent stances. Under what circumstances, and why, each of these two motives is more salient is a complicated matter that no small set of studies can settle. Our goal in this article was to take a step toward addressing which motive tends to be more salient for partisan cue-taking. We found no evidence that cue receptivity typically involves compensation for low cognitive resources, as the bounded rationality model

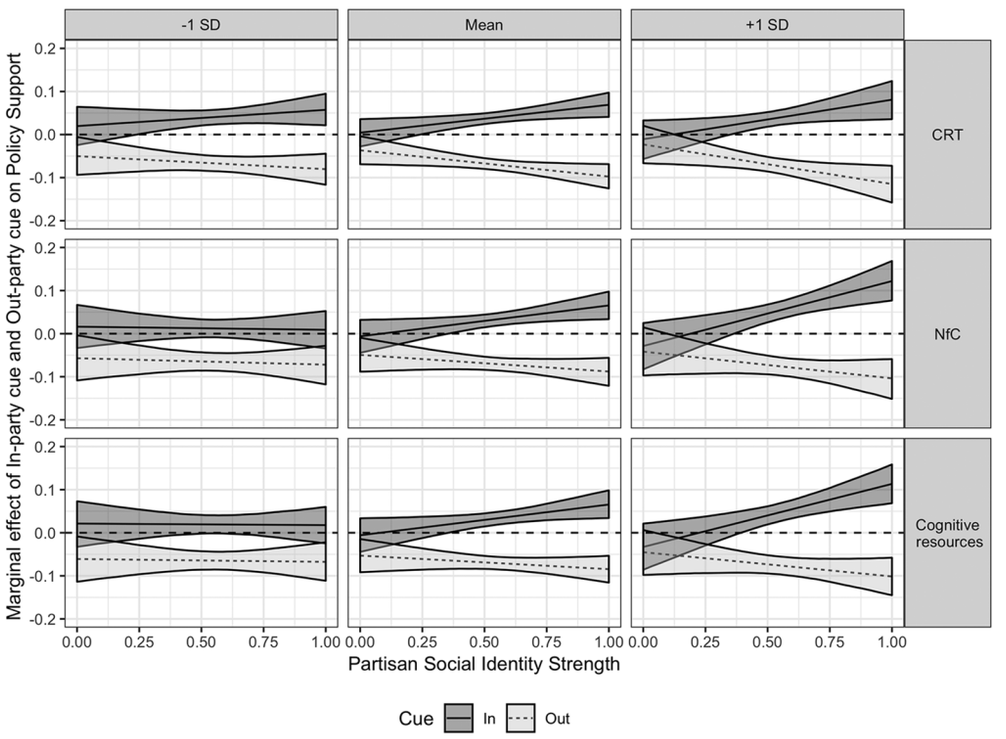

Figure 3. Individual-data meta-analyses. Results based on table 4, model 2 (CRT), model 4 (NfC), and model 6 (cognitive resources).

of partisan cue receptivity suggests. Meanwhile, we obtained mixed evidence that citizens are most inclined to follow cues when they combine strong cognitive resources with strong partisan social identification—as the expressive utility model suggests.

Needless to say, there is not one single motive underlying partisan cue receptivity. Individuals will sometimes follow political cues in order to save mental effort, sometimes do so to bolster and protect valued identities, and sometimes do so for a combination of these and other reasons. The inconsistent findings to date concerning the roles of effortful reasoning in cue receptivity (Bullock 2011; Kam 2005; Lodge and Taber 2013; Petersen et al. 2013) suggest that complex motivational dynamics underlie this behavior. They also suggest that various characteristics of the issues themselves (e.g., whether the issue is newly politicized) and the presentation of the cues (e.g., whether the cue is accompanied by supportive argumentative frames) might have implications for who follows the cues and why they do so (see also, Arceneaux and Vander Wielen 2017).

An advantage of the current studies is that they focused on issues on which there is not currently a strong ideological or partisan divide. Carrying out a convincing manipulation of party cues is rendered difficult when partisans initially differ in the issue stance or when the issue itself is inherently more appealing to one side of the partisan divide. However, across the food irradiation and farm policy experiments, Democrats and Republicans generally did not differ from one another in policy support absent partisan cues (see app. G). Thus, these experiments plausibly capture what happens when an issue goes from being nonpartisan (and not strongly influenced by ideological predispositions) to being partisan as a result of messaging (Lenz 2013).

Real-life messages about policies often involve both cues signaling the in-party's stance and cues signaling the out-party's opposite stance. This is especially so in a polarized elite context such as that of the United States. Consequently, research on partisan cues often uses an in-party cue condition that signals that the in-party supports and the out-party rejects the proposed policy and an out-party cue condition that signals that the out-party supports and the in-party rejects the policy (e.g., Bullock 2011; Kam 2005). We followed this approach and found that out-party support (in-party rejection) cues tended to be the most influential overall (i.e., in terms of main effects). However, when it came to tests of the expressive utility perspective, the meta-analysis showed that the findings involving in-party cues were more consistent with this model than were the findings involving out-party cues. A closer look at the individual studies suggests that the relative importance of the in-party and out-party cues in the expressive utility model may be conditional on the issue. Specifically, the findings with the in-party cue were stronger in the food irradiation experiments, while those with the out-party cues were stronger in the farm policy studies. One (post hoc and speculative) explanation for this pattern is that cues of in-party support induce motivation among high cognitive resource and strongly identified citizens to accept change-related policies (e.g., introduce a ban on food irradiation), while cues of out-party support induce motivation among these citizens to reject a status quo policy (e.g., reject the continuation of farm subsidies). However, different sampling schemes, methodological procedures, political environments during studies' field periods (2016–18), and other unknown factors might also explain the observed differences across studies. Future research might address this matter.

A good deal of recent work has explored the nature of the link between political position-taking and partisan cues. Here we note how our work builds on two such projects. First, Arceneaux and Vander Wielen (2017) argued that citizens are most likely to follow partisan cues when they combine a disposition favoring strong emotional attachment to partisan attitudes (i.e., high need for affect) with a weak tendency to engage in effortful reasoning (i.e., low NfC). They acknowledged, however, that emotional investment in a political party could yield cue-taking when cognitive resources are high, as the latter may be employed to rationalize party-cued stances. This is consistent with the key prediction of the expressive utility model. Indeed, there are probably some circumstances in which emotional investment in partisan attitudes will yield the most cue-following when cognitive resources are high and some circumstances in which they will do so when cognitive resources are low. Understanding when circumstances favor reflective versus unreflective identity-expressive cue-taking is an important task for future research.

Second, Groenendyk (2013) posited that citizens' reasoning about politics is the result of two motives: the motive to be accurate and the directional motive to support one's party. He found that partisans with great cognitive resources are the most likely to stick with their party, as they are able to rationalize their party's positions and denigrate those of the opposing party. The current findings that are consistent with the expressive utility model by and large reinforce this perspective. Those with strong partisan social identities may be said to have the strongest directional motivation, and those with strong cognitive resources may be said to have the greatest capability of forming convincingly reasoned and justified preferences. Those who combine these attributes are those who are most willing and able to justify their party's positions.

In contrast to the expressive utility perspective, we found (in studies 3 and 4) that strongly socially identified and high cognitive resource partisans were not the most likely to respond to cues with effortful processing of policy information. One possible reason for these null results is that our proposed mechanism is incorrect. That is, to the extent that strongly socially identified and high cognitive resource partisans are the most inclined to follow cues, this is not because they are putting the most effort into thinking through and rationalizing the party position. Another possibility, however, is that the proposed mechanism is correct but our measurement of cognitive processing was problematic. We construed measures of depth of processing (such as long reading time, quiz performance, and thought listing) to be indicative of effortful rationalization of the policy position (e.g., Petersen et al. 2013). Perhaps we should have chosen a more direct measure of rationalization, such as attempts to specifically explain and justify the party's policy position. Ascertaining the mechanism(s) for an experimental effect requires a sustained and systematic program of research (Bullock, Green, and Ha 2010). Such an endeavor is beyond the scope of the current article, which instead focuses on large-sample tests of which subgroups are most receptive to cues. However, we do contribute some evidence regarding the role of depth of processing in cue receptivity, which can be built on in future work.

Next, we note certain limitations that restrict the scope of the conclusions that may be drawn from the current studies. First of all, the current experimental stimuli cover only a small fraction of the universe of political messages (and accompanying cues and frames) that are operative in the American political information environment. Variation in issue type, aspects of the supportive framing, and many incidental wording-related features can influence not only the extent of cue-following but also the motives that underlie it. In particular, we imagine that such effects would be muted in the case of salient and politicized issues, on which many partisans already hold crystallized attitudes (Arceneaux and Vander Wielen 2017).

The current findings also seem to be at least somewhat conditional on the measure of cognitive resources employed. Evidence was more likely to be consistent with the expressive utility model when NfC and latent cognitive resources variables were used. The CRT, which has been used in Kahan's (2013) seminal work, yielded weaker support for the expressive utility model. Meanwhile, all cognitive resource measures yielded findings inconsistent with the bounded rationality model.

Another limitation of this research is that its findings do not speak directly to the causal influence of cognitive resources on cue-following, because cognitive resources were not experimentally manipulated.[17] The capacity to think with depth and sophistication about politics cannot necessarily be equated with actual deep and sophisticated thinking about politics. To the extent that strong cognitive resources and partisan social identification combine to yield cue-following, it is possible that the process by which this occurs does not involve high cognitive resource individuals actually exerting more effortful thought (as the null findings of studies 3 and 4 suggest). Individual differences in cognitive resources might, for example, serve as a proxy for careful reading of the stimulus materials or might represent some other source of motivation (beyond partisan social identification) to toe the party line in particular circumstances. Future research should address this matter directly by manipulating depth of processing and exploring the effects of other individual differences—especially motivationally relevant variables—that might drive the effects of dispositional cognitive resources.

In a related vein, we want to reiterate that identity-expressive motivation to follow cues need not necessarily involve great exertion of cognitive effort. Upon encountering a political message, a partisan might toe the party line to gain identity-based psychological benefits without devoting mental effort to justifying or even remembering this position. Nonetheless, we believe that the interaction between social identity and cognitive resources is useful for distinguishing the relative plausibility of the expressive utility and bounded rationality accounts. Strong social identification with a party could conceivably relate to cue-following because such identification represents a willingness to defer to trusted elites in order to save effort or compensate for low cognitive resources. Meanwhile, expressive utility accounts of political behavior place an emphasis on the role of effortful rationalization (Kahan 2013; Petersen et al. 2013; Taber and Lodge 2006), even if such rationalization is not inherently necessary for identity expression.

It is also important to acknowledge that the three-way interactions in individual experiments usually did not reach the conventional level of statistical significance. In the meta-analysis presented in the main text (using comparisons involving a no-cues condition), we found stronger and perfectly directionally consistent effects of the three-way interactions, although only two of six effects reached statistical significance. The patterns that we observed concerning significant and nonsignificant slopes almost always conformed to the key prediction of the expressive utility model. In the second

17. Aside from the trade policy experiment reported in app. H.4.

meta-analysis, which focused on the in-party versus out-party cue comparison, we found significant three-way interactions in line with the expressive utility model in two of three cases. This evidence, coupled with the complete lack of support for the bounded rationality model, suggests that identity-expressive motives more often account for partisan cue-following than do motives to compensate for low cognitive resources.[18]

Finally, we must note a potential threat to external validity in this study and others like it. Specifically, one-shot experimental manipulations embedded within attitude surveys do not adequately capture political information environments. The latter are characterized by a cacophonous stream of political messages from a range of sources being released over a period of time. What experiments such as ours can shed light on is the prevalence of short-term cue-following on a newly politicized issue among different subgroups of a population. In a context with repeated and consistent cues, the type of process that occurs in the current experiments can accumulate and result in stable partisan attitudes (Layman and Carsey 2002; Lenz 2013).

In closing, we remind readers of the American Political Science Association's Committee on Political Parties urging, in 1950, of the American parties to become more dissimilar and thereby supply voters with more distinctive options. As American political elites have polarized (McCarty, Poole, and Rosenthal 2006), highly engaged individuals have become far more likely to adopt party-line positions (Abramowitz 2010). However, this is not typically viewed as a positive development. Our findings are consistent with the perspective that elite polarization may trickle down to a segment of strongly identified partisans, through identity-driven conformity (Lavine, Johnston, and Steenbergen 2012; Layman and Carsey 2002). Ironically, reflective citizens, who are sometimes seen as ideal citizens, might be the subset of strong partisan identifiers most likely to fall in line with the party. Since higher levels of cognitive resources and partisan social identity are associated with higher levels of political activism (Huddy et al. 2015), the effect may be self-reinforcing, wherein political elites polarize the strongly identified and cognitively reflective, who then elect more polarized elites. The democratic dilemma may not be whether low-information citizens can learn what they need to know (Lupia and McCubbins 1998) but whether high-information citizens can set aside their partisan predispositions.

18. Study 4—conducted with an MTurk sample—failed to produce any trace of the patterns observed in other studies. This certainly might provide useful information about the theories being tested (Mullinix et al. 2016), and we believe that efforts to narratively or quantitatively summarize the literature should include this study (as we did in our meta-analyses). However, it is worth noting that the measures of cognitive reasoning had significantly higher means in the MTurk sample than in the Bovitz Forthright sample used in study 3 (see app. D.5). It is possible, then, that something about the platform encouraged respondents to engage in more effortful processing—perhaps concerns of panelists that they would be penalized for suboptimal responding. Also, CRT measures on MTurk might have lower validity because of overuse on that platform (Haigh 2016). Although we do not dismiss the results of study 4 out of hand, MTurk might not be the ideal platform for conducting studies like ours.

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