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Not All Weak Signals Are Alike: Divergent Effects on Political Uncertainty and Heuristic Reliance

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Abstract: ***Political judgments often depend on elite cues, yet citizens frequently encounter political environments in which elite signals are weak or difficult to interpret. This paper develops a theoretical framework explaining how variations in elite signal clarity shape citizens' political judgment under uncertainty. Drawing on signaling theory (Spence, 1973; Crawford & Sobel, 1982) and attribute substitution theory (Kahneman & Frederick, 2002), it distinguishes three weak-signal conditions—signal absence, signal ambiguity, and signal conflict—and argues that they create different levels of perceived uncertainty. When elite signals are difficult to interpret, citizens rely more heavily on heuristic cues rather than systematic policy evaluation. Building on evolutionary psychology (Tooby & Cosmides, 1992), the paper proposes three heuristic cue families: coalition and dominance detection, threat and disgust sensitivity, and fairness and reciprocity intuitions. To test these ideas, it proposes a 3 (signal condition) × 2 (issue identity salience) between-subjects experimental design with individual-level moderators including need for cognition, partisan identification, and prior policy knowledge. Survey experiment results indicate that signal ambiguity produces the highest perceived uncertainty, while weak signals increase reliance on heuristic reasoning. These findings indicate that different forms of weak elite signals represent distinct informational environments rather than varying degrees of the same condition. The paper contributes to political psychology by identifying perceived uncertainty as a key mechanism linking elite communication to heuristic processing and highlighting that the interpretability of elite signals, rather than their mere presence, shapes political judgment.***

Keywords: Elite signals; Heuristic processing; Attribute substitution; Political uncertainty; Signaling theory; Democratic citizenship.

1. THE INFORMATIONAL PROBLEM OF DEMOCRATIC CITIZENSHIP

The demand for cognitive shortcuts in democratic decision-making is not an incidental failure of civic education but a structural equilibrium produced by rational ignorance. As Downs (1957) argued, the near-zero probability of an individual vote being decisive makes the cost of information acquisition exceed its expected return. This foundational logic has been compounded in contemporary democracies by a high-choice media environment that structurally divides access to political information: engaged news consumers absorb an abundance of political content while large segments of the public systematically avoid it (Prior, 2007). Even among citizens who do engage, processing is not neutral. Achen and Bartels (2016) argue that citizens tend to prioritize social identity over substantive policy content, treating policy positions as expressive identity signals rather than instrumental judgments. Selective exposure patterns reinforce this tendency, with consumption of factually dubious content concentrated among the most ideologically homogeneous information consumers (Guess, Nyhan, & Reifler, 2018).

These conditions give rise to what Converse (1964) identified as non-attitudes: citizens lack stable, pre-formed policy preferences and instead construct them in real-time by sampling from contextually available considerations (Zaller & Feldman, 1992). Within Zaller's (1992) Receive-Accept-Sample (RAS) model, the strength of elite signals determines the pool of considerations citizens draw upon when constructing survey responses and vote choices. Strong, consistent elite signals produce coherent attitude distributions; weak or inconsistent signals produce noisier, more susceptible distributions. This framework predicts that the influence of partisan cues will be greatest when those cues are unambiguous, repeatedly transmitted, and sourced from elites whose partisan identity is clearly established in the receiver's mental model.

Druckman (2012) argues that whether a citizen pursues accuracy or directional (partisan) goals depends critically on the structure of available signals. When signals originate from credible, non-partisan sources, citizens tend to activate accuracy goals. When signals are heavily loaded with partisan undertones, citizens shift into a defensive mode, seeking to justify prior group commitments rather than evaluate substantive policy quality. Yet crucially, greater cognitive sophistication does not reliably correct this problem. On identity-salient issues, more analytically

capable citizens may deploy their reasoning to defend group-consistent positions, producing greater polarization rather than convergence (Kahan, 2017). This observation fundamentally complicates normative theories of democratic deliberation that treat education and information provision as correctives to heuristic reliance.

The most rigorous experimental evidence complicating this pessimistic picture comes from Bullock (2011). Across large-sample survey experiments, he demonstrates that when citizens are exposed to substantial policy-specific information, the effect of that information on policy attitudes is at least as large as—and often considerably larger than—the effect of partisan elite cues. Exposure to partisan cues did not suppress citizens' depth of processing of policy content, as cued subjects recalled policy facts at equivalent rates and generated equivalent volumes of policy-relevant thoughts. The implication is that the apparent dominance of elite cues in observational research may largely reflect the ordinary condition of citizen ignorance rather than an intrinsic tendency to disregard policy content when it is available.

This evidence introduces a key moderating condition, namely, the volume and quality of available political information. Yet it simultaneously exposes a deeper structural question that the existing literature leaves underspecified. Whether heuristics function as efficient shortcuts or as systematic distortions is not a fixed property of citizen cognition, but rather, a function of the informational environment in which that cognition operates. What remains unclear is how citizens form judgments when signals are neither fully absent nor fully available, but partially degraded, ambiguous, or conflicting. Addressing this question requires a theoretical framework that specifies (1) the conditions under which elite signal environments generate subjective uncertainty, and (2) the cognitive mechanisms through which citizens respond to that uncertainty. The two sections that follow address each requirement in turn.

2. SIGNAL ENVIRONMENTS, ELITE CUE CREDIBILITY, AND THE PRODUCTION OF POLITICAL UNCERTAINTY

To analyze when and why elite cues function as effective political heuristics, it is necessary first to establish the formal conditions under which a signal carries genuine information. Following Spence's (1973) foundational account of job market signaling, a signal is informative only when its cost is negatively correlated with the sender's type: credible signals must be costly to fake. When this cost-type correlation is unobservable, degraded, or absent, the signal approaches the cheap talk condition formalized by Crawford and Sobel (1982), in which unsupported assertions carry no inherent informational value because any sender type can produce them at identical cost. In the domain of political communication, elite cues function as credible signals to the extent that they are grounded in observable positional commitments, such as party platforms, legislative voting records, and reputational histories, which are costly to alter or fabricate. When these anchors erode, elite cues lose their separating equilibrium property and become indistinguishable from cheap talk.

Banks and Sobel (1987) formalize this problem in the context of signaling games, demonstrating that multiple equilibria become possible when the off-equilibrium belief structure is unconstrained. Applied to political communication, this formal result implies that under conditions of signal degradation, receivers face genuine indeterminacy: they cannot reliably discriminate among competing interpretations of elite messages using the signals themselves. Lupia (1994) demonstrates empirically that a single credible cue can enable relatively uninformed voters to replicate the behavioral choices of highly informed ones, but the efficiency of this heuristic depends critically on the receiver's ability to verify the cue-giver's preferences and expertise. When verifiability is compromised, the heuristic fails in systematic rather than idiosyncratic ways.

The political behavior literature reveals that signal degradation does not produce a single, uniform failure mode but at least three empirically distinct patterns. Cohen (2003) demonstrates that partisan cues can overwhelm substantive policy content even when that content is simultaneously available, suggesting that cue dominance is not merely a product of information scarcity but can operate as an independent source of bias. Kahan (2017) complicates this further, arguing that on identity-salient issues, more sophisticated reasoners deploy their cognitive resources to defend group-consistent positions—a pattern he terms identity-protective cognition—rather than to evaluate evidence, meaning that increased analytical capacity can amplify rather than attenuate heuristic distortion. Taken together with Bullock's (2011) finding that policy content competes effectively with partisan cues under conditions of informational richness, these three accounts describe what looks like incompatible mechanisms but is better understood as different regions of the signal quality spectrum, treating heuristics as rational shortcut under credible signals, partisan override under partial degradation, and identity defense under dense partisan signaling with thin policy content.

The nature of signal degradation matters not only in degree but in kind. The present paper distinguishes three distinct weak-signal conditions: signal absence (no elite cues provided), signal ambiguity (cues present but unclear or unverifiable), and signal conflict (competing cues from opposing elites). These three conditions are not equivalent in their inferential demands. Absence creates an information vacuum; ambiguity preserves surface content while undermining its diagnostic value; conflict provides information but renders it unintelligible as a guide to inference. The literature has not systematically distinguished among these conditions, treating weak signaling as a unidimensional continuum. Carmines and Stimson's (1980) distinction between easy and hard issues provides partial traction. On technically complex issues that resist direct evaluation against personal experience, citizens rely more heavily on elite guidance, meaning that signal absence on hard issues generates greater uncertainty than signal absence on easy ones. But this issue-level typology does not map onto the signal-condition typology this paper proposes, and the interaction between them remains an open empirical question.

Beyond partisan sources, Domke et al. (1999) emphasize that the identity of the signal source, whether political, religious, or professional, carries informational weight independent of party labels. Non-partisan professional sources theoretically provide more stable anchors by linking policy claims to broader epistemic norms rather than group loyalties. However, this non-partisan signaling channel has been substantially eroded. As Nichols (2017) and Gurri (2018) document, the collapse of expert credibility in contemporary information environments means citizens can no longer reliably use professional cues to discriminate between factual and partisan claims, forcing them back into identity-protective inference. This erosion of non-partisan signal anchors has a direct implication for the present paper. It means that the conditions under which citizens must navigate weak, ambiguous, or conflicting signals are not exceptional but routine, and that the cognitive response to such conditions is therefore of substantial theoretical and normative importance.

What this literature establishes, then, is a two-stage inferential problem. First, signal environments vary in their capacity to generate perceived uncertainty: stronger, more credible, more substantively specific signals reduce uncertainty; weaker, less verifiable, more conflicted signals increase it. Second, once uncertainty is generated, citizens must select an inferential strategy. Signal theory specifies the first stage with rigor. It does not, however, specify the second. Explaining how citizens respond to signal-induced uncertainty requires a different theoretical apparatus, one grounded in the cognitive psychology of inference under uncertainty. That apparatus is developed in the section that follows.

3. HEURISTIC INFERENCE UNDER UNCERTAINTY: ATTRIBUTE SUBSTITUTION AND THE SALIENCE OF EVOLUTIONARILY GROUNDED CUES

The cognitive response to uncertainty is not random. When individuals face judgments that are difficult, computationally demanding, or informationally underspecified, they do not suspend judgment—they substitute. Kahneman and Frederick (2002) formalize this process as attribute substitution. When an individual is asked to assess a target attribute that is difficult to evaluate directly, such as the likely welfare consequences of a complex policy, they instead assess a heuristic attribute that is more cognitively accessible and produces a judgment that feels relevant, even though it may be only loosely correlated with the target. The substitution is typically unconscious, as the respondent believes they are answering the hard question when they are in fact answering the easier one. Attribute substitution is not a failure mode reserved for cognitively limited individuals, but rather a structural feature of the rapid, intuitive inference system that operates in parallel with deliberate analytical reasoning (Kahneman, 2011; Stanovich & West, 2000). The key empirical prediction is that substitution becomes more likely, and more consequential, precisely when the target attribute is most uncertain, that is, when signal environments are weak.

This prediction connects directly to dual-process accounts of political judgment. According to the Elaboration Likelihood Model (Petty & Cacioppo, 2012), weak or low-quality signals suppress the likelihood of central-route elaboration—systematic evaluation of argument quality—and trigger a shift toward peripheral heuristic processing. Rather than suspending judgment when diagnostic signals are thin, citizens activate substitute cues that are available, accessible, and affectively loaded. Lodge and Taber (2013) extend this logic through their work on hot cognition and the online processing model, demonstrating that evaluations of political objects are constructed rapidly and automatically on the basis of affect-laden associative networks, with deliberate reasoning serving primarily to rationalize pre-formed intuitions rather than to revise them. The implication is that attribute

substitution in political judgment is not a residual last resort but the default mode of inference, with systematic deliberation occurring only when motivational conditions and signal availability jointly support it.

The core question for this paper then emerges from this collective assessment: which heuristic attributes are substituted when political signals are weak? The answer depends on what is cognitively accessible, and accessibility is not arbitrary—it is shaped by evolutionary history. Tooby and Cosmides (1992) argue that the human cognitive architecture is populated by evolved psychological mechanisms that were calibrated to recurrent adaptive problems in ancestral environments. Several of these mechanisms generate heuristic inference patterns that remain active in contemporary political cognition, even when their original adaptive function is no longer directly relevant. Three families of evolutionarily salient cues are particularly germane to political attitude formation under uncertainty.

The first is coalition and dominance detection. Kurzban, Tooby, and Cosmides (2001) show that humans possess fast, automatic mechanisms for tracking coalition membership and relative dominance status, mechanisms that evolved in the context of small-group competition and cooperation. In political contexts, these mechanisms produce rapid inferences about whether a policy or political actor signals in-group versus out-group affiliation, and whether support or opposition to that policy is consistent with the individual's perceived coalition interests. Todorov and colleagues (2005) provide direct experimental evidence that judgments of facial competence and dominance, formed within milliseconds of exposure, predict electoral outcomes with remarkable accuracy. This suggests that dominance-based heuristics exert influence on political evaluation even when respondents are engaging ostensibly with policy content. Under conditions of weak elite signaling, these coalition-based heuristics become disproportionately influential because they do not depend on signal quality for activation but rather operate on perceptual and affective inputs that bypass the deliberate inferential channel entirely.

The second family involves threat and disgust sensitivity. Haidt (2001, 2012) argues that moral intuitions, including strong affective responses to perceived purity violations, authority challenges, and in-group betrayal, are evolutionarily grounded rapid evaluations that precede and constrain deliberate reasoning rather than follow from it. Duckitt and Sibley's (2007) Dual-Process Motivational Model extends this argument to political ideology, showing that right-wing authoritarianism (RWA) and social dominance orientation (SDO) function as dispositional amplifiers that reinterpret ambiguous or weak political signals as symbolic markers of existential threat or group competition. This amplification effect is most pronounced precisely when signals are ambiguous, namely, when elite cues are clear and consistent, dispositional predispositions add relatively little explanatory variance. Alternatively, when signals are weak or conflicting, individual differences in threat sensitivity become the primary drivers of political inference. This moderating pattern maps directly onto the interaction effect proposed later in this paper.

The third family concerns fairness and reciprocity intuitions. Evolutionary models of cooperation predict that humans possess fast-acting mechanisms for detecting cheating, free-riding, and violations of reciprocal exchange norms (Cosmides & Tooby, 1992; Fehr & Gächter, 2002). In political attitude formation, these mechanisms generate intuitive assessments of whether policies conform to perceived norms of proportionality and desert. They make up assessments that operate independently of, and often prior to, deliberate evaluation of the policy's substantive consequences. When elite signals are weak and citizens cannot rely on expert or partisan guidance to evaluate policy merit, reciprocity-based heuristics provide a substitute evaluative criterion that is immediately accessible and affectively compelling.

Individual-level variation in the tendency to rely on these heuristic cues under signal uncertainty is predicted by two well-documented moderators. First, political knowledge affects the availability of alternative inferential resources: citizens with higher political knowledge possess more developed associative networks of policy-relevant information, and are therefore better positioned to engage in deliberate central-route processing even when elite signals are weak (Mondak, 1994; Lau & Redlawsk, 2001). However, the Kahan (2017) finding cautions against a simple sophistication-as-corrective interpretation, that on identity-salient issues, political knowledge may increase the efficiency of identity-protective cognition rather than attenuating heuristic reliance. Second, need for cognition, or the stable dispositional tendency to find effortful thinking intrinsically rewarding (Cacioppo & Petty, 1982), predicts the threshold at which individuals shift from heuristic to systematic processing. Bullock's (2011) finding that need for cognition made Democratic respondents more responsive to policy content, but Republican respondents less so, suggests that this moderator interacts with partisan identity in ways that are not yet fully theorized. The asymmetric effects across partisan groups imply that heuristic substitution under signal uncertainty may follow different cognitive pathways for different identity configurations, a possibility the present

paper addresses through interaction analyses.

Slothuus (2008) provides bridging evidence from the political framing literature that is particularly relevant to the intermediate signal environment this paper targets. He demonstrates that issue framing operates through a dual-process mechanism, whereby under weak signal conditions, frames serve as ready-made interpretive schemas that bypass systematic evaluation, enabling citizens to construct preferences without engaging in effortful elaboration. This finding is consistent with the attribute substitution account and extends it by showing that the specific content of the substituted attribute, or the frame, is not arbitrary but is selected on the basis of fit with pre-existing value structures. The implication is that evolutionarily salient heuristic cues are not simply activated by uncertainty but are selected and weighted by the individual's dispositional profile, substantiating structured rather than idiosyncratic variation in heuristic reliance across persons and signal conditions.

These literatures support a coherent theoretical account of heuristic inference under political uncertainty. When elite signal environments generate perceived uncertainty, whether through signal absence, ambiguity, or conflict, citizens do not suspend political judgment. Instead, they engage in attribute substitution, replacing the target attribute of policy evaluation with more accessible heuristic attributes whose salience is grounded in evolved cognitive architecture. The specific cues substituted, including dominance and coalition signals, threat and disgust responses, fairness and reciprocity intuitions, are activated automatically and operate with reduced dependence on signal quality. Individual-level moderators, including political knowledge and need for cognition, shape the threshold and direction of this substitution but do not eliminate it. This account generates the three hypotheses that organize the empirical section of this paper: that lower signal clarity increases perceived uncertainty (H1); that higher perceived uncertainty increases reliance on evolutionarily salient heuristic cues in policy evaluation (H2); and that the effect of heuristic cues on policy support is stronger under low than high signal clarity (H3).

4. RESEARCH DESIGN

4.1 Research Questions

This study asked: how does variation in elite signal clarity shape the inferential strategies citizens use to construct political judgments under uncertainty? Three sub-questions organize the empirical inquiry. First, does moving from strong to ambiguous to weak elite signals produce measurable increases in citizens' subjective perceived uncertainty about a policy's likely effects? Second, when perceived uncertainty rises, do citizens shift relative weight from substantive policy content toward evolutionarily salient heuristic cues in attitude formation? Third, which individual-level characteristics — need for cognition (NFC), partisan identification strength, and prior policy information — moderate the relationship between signal clarity and heuristic reliance, and do these moderators operate symmetrically across partisan groups?

4.2 Hypotheses

H1 (Signal-Induced Uncertainty): Lower elite signal clarity, from strong (bipartisan consensus with verifiable commitment) through ambiguous (intraparty disagreement or deliberate hedging) to weak (non-committal avoidance approximating cheap talk), produces monotonically higher subjective perceived uncertainty about the policy.

H2 (Heuristic Substitution): Higher signal-induced uncertainty increases reliance on evolutionarily salient heuristic cues, including but not limited to partisan cue weight, relative to substantive policy content, as citizens substitute an accessible heuristic attribute for the difficult-to-assess policy target attribute (Kahneman & Frederick, 2002).

H3 (Signal × Heuristic Interaction): The predictive effect of heuristic cues on policy attitude is significantly stronger under weak and ambiguous signal conditions than under strong signal conditions, holding policy information content constant.

H4 (NFC Moderation): Need for cognition moderates heuristic reliance asymmetrically by party: under signal degradation, higher NFC increases policy-content responsiveness among Democrats but increases identity-consistent heuristic reliance among Republicans, consistent with identity-protective cognition (Kahan, 2017).

H5 (Identity-Salience Moderation): On high-identity-salience issues, the shift from systematic to heuristic processing under signal degradation is more pronounced for respondents with stronger partisan identification, above and beyond the main effect of signal condition.

4.3 Experimental Design

The study employed a 3 (signal condition: strong / ambiguous / weak) × 2 (issue type: low vs. high identity salience) between-subjects factorial design, administered as an online survey experiment via Prolific. Individual-level moderators — NFC, partisan identification and strength, and prior policy information — were measured in a pre-treatment battery before random assignment to minimize contamination of moderator scores by treatment exposure.

Each respondent read a single scenario of approximately 450–550 words, modeled on the newspaper article format employed by Bullock (2011), describing a proposed federal broadband infrastructure policy. Policy content, including provisions, projected costs, distributional consequences, and stated rationale, is held constant across all six conditions; only the nature of elite positioning varies. In the strong signal condition, the scenario describes bipartisan consensus with concrete positional commitments tied to verifiable legislative records, satisfying the Spence (1973) cost-type correlation for credible signaling. In the ambiguous condition, visible intraparty disagreement or deliberately hedged language renders the signal informationally present but diagnostically unreliable, operationalizing the multiple-equilibria condition from Banks and Sobel (1987). In the weak condition, elite avoidance and non-committal language approximates the Crawford and Sobel (1982) near-babbling equilibrium, removing diagnostic content entirely. The identity-salience manipulation is implemented through a brief introductory paragraph framing the policy either as a technical regulatory question (low salience) or as a question of rural community economic sovereignty (high salience), with all remaining text identical across framings. Full stimulus wording appears in Appendix A.

The main study recruited N = 301 adult U.S. residents via Prolific (with valid participants N=296), stratified on partisan identification (approximately equal thirds Democrat, Republican, and independent), yielding approximately 49 respondents per cell. Power analyses using G*Power 3.1 indicates this sample provides 0.85 power to detect a small-to-medium interaction effect ($f = 0.15$) for the three-way interaction in H5 at $\alpha = .05$ (see Appendix B).

4.4 Measures

Pre-treatment measures include the standard ANES seven-point party identification scale (collapsed to party ID category and a 0–3 partisan strength continuous variable), the validated six-item Need for Cognition Scale (NCS-6; Coelho et al., 2020), a three-item factual knowledge quiz on federal infrastructure policy (0–3), and a three-item issue identity salience scale. All pre-treatment measures precede treatment assignment.

Post-scenario measures were administered in fixed order: manipulation checks first, then primary outcomes, then process measures. Signal clarity perception (two items, 5-point; "How clearly did the political figures described take a position on this policy?") and perceived uncertainty (two items, 5-point; "How uncertain are you about the policy's likely effects?") serve as the manipulation check and mediator for H1–H2 respectively. The primary dependent variable is policy attitude (7-point support/oppose scale). Secondary outcomes include confidence in judgment and willingness to seek additional information (both single items, 5-point).

Three process measures provide convergent evidence on cognitive pathway. Cue-weight and policy-weight attribution (one item each, 5-point) operationalize heuristic reliance as the difference score (cue-weight minus policy-weight) for H2 and H3. Three items targeting evolutionarily salient heuristic activation, including dominance-competence perception, fairness-reciprocity intuition, and coalition-identity signaling (all 5-point; adapted from Todorov et al., 2005), directly test whether signal degradation elevates non-partisan heuristic attributes above and beyond partisan cue reliance, providing the empirical grounding for the evolutionary framework. A thought-listing task (open-ended; coded by two blind independent coders following Bullock, 2011, with Cohen's κ target $\geq .75$) and time-on-page (auto-recorded) serve as behavioral validity checks. Full item wording, scale sources, and coding protocols appear in Appendix D.

4.5 Analytical Strategy

Analyses proceed in four stages. Stage one tests H1 by regressing signal clarity perception and perceived uncertainty on signal condition dummies, with the strong condition as reference category. Stage two tests H2 through causal mediation analysis (Imai, Keele, & Tingley, 2010), estimating the average causal mediation effect (ACME) of perceived uncertainty between signal condition and the cue-weight minus policy-weight difference score, with 1,000 bootstrap replications. Stage three tests H3 by estimating Signal Condition × Heuristic Cue interactions on policy attitude, with Bonferroni correction applied across the three evolutionarily salient heuristic items. Stage four tests H4 and H5 through pre-registered three-way interaction terms: Signal Condition × NFC × Party ID for H4, and Signal Condition × Issue Salience × Partisan Strength for H5. All models use OLS with heteroskedasticity-robust standard errors; primary analyses are replicated within the subsample passing both the instructional and signal clarity manipulation checks.

5. RESULTS

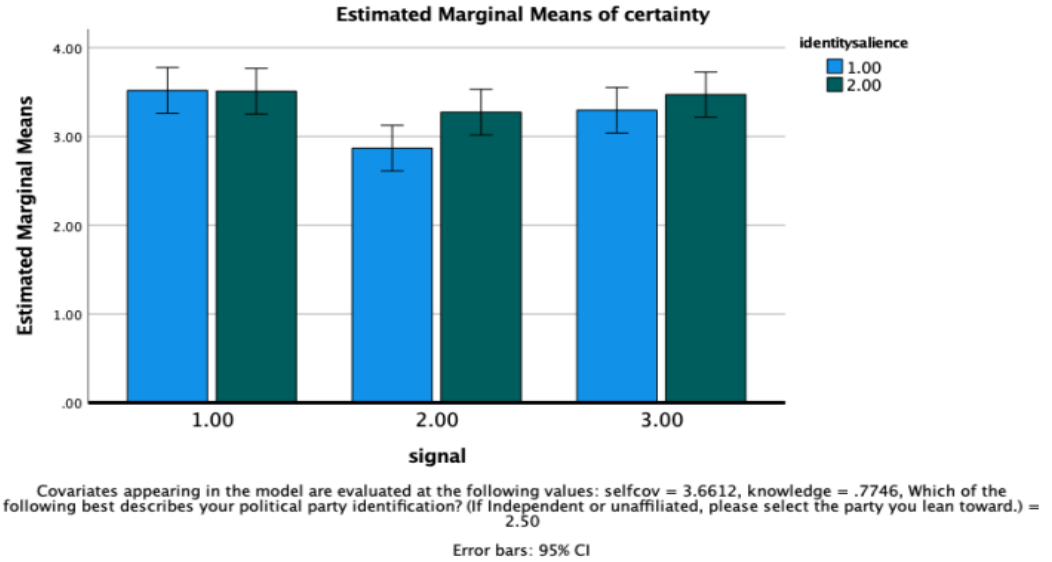

Figure 1: Two-Way Analysis of Covariance (ANCOVA) on Perceived Policy Uncertainty

Table 1: Two-Way Analysis of Covariance (ANCOVA) on Perceived Policy Uncertainty

Source	Type III SS	df	MS	F	p	Partial η^2
Corrected Model	18.402	8	2.300	2.705	.007	.069
Intercept	62.756	1	62.756	73.811	.000	.202
Self-Control Covariate (selfcov)	0.461	1	0.461	0.543	.462	.002
Prior Knowledge	2.053	1	2.053	2.414	.121	.008
Partisan Strength	0.749	1	0.749	0.881	.349	.003
Elite Signal	10.352	2	5.176	6.088	.003	.040
Identity Salience	2.734	1	2.734	3.216	.074	.011
Elite Signal × Identity Salience	2.130	2	1.065	1.252	.287	.009
Error	248.266	292	0.850			
Total	3592.250	301				

Note. Dependent Variable: certainty. $R^2 = .069$ (Adjusted $R^2 = .043$).

An analysis of covariance (ANCOVA) was conducted to examine whether elite signal clarity influenced perceived uncertainty while controlling for self-control, prior knowledge, partisan identification strength, and identity salience. The analysis revealed a significant main effect of elite signal, $F(2, 292) = 6.09$, $p = .003$, partial $\eta^2 = .040$, indicating that perceived uncertainty differed across the three signal conditions. Neither the interaction between elite signal and identity salience nor any of the control variables were statistically significant. significant. (The Table 1 Total N of 301 reflects five cases subsequently excluded by listwise deletion in the regression analyses, which use N = 296.)

To further examine this effect, a multiple regression analysis was conducted with the strong-signal condition as the reference category. Because the certainty measure was reverse-coded, negative coefficients indicate greater perceived uncertainty. Participants in the ambiguous-signal condition reported significantly greater perceived

uncertainty than those in the strong-signal condition (B = −0.314, p = .017). In contrast, participants in the weak-signal condition did not differ significantly from those in the strong-signal condition (B = 0.129, p = .323). These findings provide partial support for H1. Although elite signal clarity significantly affected perceived uncertainty, the hypothesized monotonic increase in uncertainty from strong to ambiguous to weak signals was not observed. Instead, perceived uncertainty was highest in the ambiguous-signal condition.

Table 2: Regression Coefficients Predicting Subjectively Perceived Policy Certainty

Predictor	B	Std. Error	β	t	p
(Constant)	2.957	.410		7.210	.000
Identity Salience	.192	.107	.102	1.795	.074
Self-Control (selfcov)	.045	.065	.039	.685	.494
Prior Knowledge	-.383	.224	-.098	-1.709	.088
Partisan Identification Strength	.110	.107	.058	1.022	.308
Weak Signal (signal = 1.0)	.129	.130	.065	.989	.323
Ambiguous Signal (signal = 2.0)	-.314	.130	-.157	-2.407	.017

Note. Dependent Variable: certainty. The reference category for the elite signal is Strong Signal (signal = 3.0).

Table 3: Multiple Regression Models Predicting Heuristic Reliance

Predictor	Model 1 (Total Effects)			Model 2 (Mediation)		
	B	Std. Error	p	B	Std. Error	p
(Constant)	.187	.629	.767	1.011	.673	.134
Identity Salience	-.223	.164	.174	-.174	.162	.284
Self-Control (selfcov)	-.226	.100	.025	-.215	.099	.030
Prior Knowledge	-.723	.344	.036	-.824	.341	.016
Partisan Identification Strength	-.050	.165	.762	-.022	.162	.891
Weak Signal (signal = 1.0)	.420	.201	.037	.459	.198	.021
Ambiguous Signal (signal = 2.0)	.192	.200	.339	.110	.199	.582
Certainty	—	—	—	-.276	.088	.002

Note. Dependent Variable: heuristic reliance. The reference category for the elite signal is Strong Signal (signal = 3.0). For Model 1, Adjusted R^2 = .039, F(6, 289) = 3.004, p = .007. For Model 2, Adjusted R^2 = .068, F(7, 288) = 4.063, p < .001.

Hierarchical multiple regression analyses were conducted to examine whether perceived uncertainty predicted heuristic reliance. In Model 1, participants in the weak-signal condition demonstrated significantly greater heuristic reliance than those in the strong-signal condition (B = 0.420, p = .037), whereas the effect of the ambiguous-signal condition was not statistically significant (B = 0.192, p = .339).

In Model 2, perceived uncertainty was included as a predictor. Because the certainty measure was reverse-coded, the negative regression coefficient indicates that greater perceived uncertainty was associated with increased heuristic reliance (B = −0.276, p = .002). The effect of the weak-signal condition remained significant after perceived uncertainty was included in the model (B = 0.459, p = .021), whereas the ambiguous-signal condition remained non-significant (B = 0.110, p = .582). Overall, these findings provide partial support for H2. Consistent with the heuristic substitution hypothesis, greater perceived uncertainty was associated with increased reliance on heuristic cues. However, this relationship was primarily driven by the weak-signal condition rather than by both low-clarity signal conditions as originally hypothesized.

Mean policy attitude was highest in the Weak Signal condition (M = 5.46, SD = 1.43), followed by the Strong Signal condition (M = 5.15, SD = 1.34) and the Ambiguous Signal condition (M = 5.08, SD = 1.34). Heuristic reliance scores ranged from −4 to +2 (M = −1.46, SD = 1.44), indicating that participants generally reported placing greater weight on policy information than on heuristic cues.

Model 1: Covariates Only

The covariates-only model was not significant, F(4, 291) = 1.22, p = .304, R^2 = .016, adjusted R^2 = .003. None of the covariates significantly predicted policy attitude (Table 4).

Table 4: Covariates-Only Model Predicting Policy Attitude

Predictor	B	SE (HC3)	β	t	p	95% CI
(Intercept)	4.064	0.620	—	6.56	< .001	[2.849, 5.279] ***

Self-Control	0.155	0.115	.094	1.35	.178	[−0.071, 0.381]
Party Strength	0.129	0.164	.047	0.79	.432	[−0.192, 0.450]
Prior Knowledge	−0.031	0.337	−.005	−0.09	.927	[−0.692, 0.630]
Identity Salience	0.199	0.163	.073	1.22	.223	[−0.121, 0.520]

N = 296. DV: Policy Attitude (7-point scale). R^2 = .016, Adj R^2 = .003, F(4,291) = 1.22, p = .304. All CIs are 95%.
* p < .05. ** p < .01. *** p < .001.

Model 2: Addition of Main Effects

Adding elite signal condition and heuristic reliance significantly improved model fit, ΔR^2 = .062, F(3, 288) = 6.51, p < .001. The overall model was significant, F(7, 288) = 3.52, p = .001, R^2 = .079, adjusted R^2 = .057. Greater heuristic reliance predicted lower policy support (B = −0.217, SE = 0.058, p < .001). Relative to the Strong Signal condition, participants in the Weak Signal condition reported significantly higher policy support (B = 0.404, SE = 0.200, p = .044), whereas the Ambiguous Signal condition did not differ from the Strong Signal condition (p = .900). No covariates reached statistical significance (Table 5).

Table 5: Main Effects Model Predicting Policy Attitude

Predictor	B	SE (HC3)	β	t	p	95% CI
(Intercept)	4.348	0.588	—	7.40	< .001	[3.196, 5.500] ***
Self-Control	0.111	0.117	.067	0.95	.343	[−0.119, 0.340]
Party Strength	0.110	0.162	.040	0.68	.496	[−0.207, 0.428]
Prior Knowledge	−0.194	0.343	−.034	−0.57	.571	[−0.866, 0.478]
Identity Salience	0.149	0.162	.054	0.92	.358	[−0.169, 0.467]
Weak Signal	0.404	0.200	.138	2.01	.044	[0.011, 0.797] *
Ambiguous Signal	−0.024	0.188	−.008	−0.13	.900	[−0.392, 0.345]
Heuristic Reliance (c)	−0.217	0.058	−.226	−3.74	< .001	[−0.330, −0.103] ***

N = 296. DV: Policy Attitude. Reference: Strong Signal. ΔR^2 = .062 (vs. Model 1), F(3,288) = 6.51, p < .001. R^2 = .079, Adj R^2 = .057.
* p < .05. ** p < .01. *** p < .001.

Model 3: Addition of Interaction Terms

To test H3, two interaction terms (Weak Signal × Heuristic Reliance and Ambiguous Signal × Heuristic Reliance) were added to Model 3. The interaction model did not significantly improve model fit beyond the main-effects model, R^2 = .005, F(2, 286) = 0.81, p = .553. The overall model remained statistically significant, F(9, 286) = 2.92, p = .002, R^2 = .084, adjusted R^2 = .055. Neither the Weak Signal × Heuristic Reliance interaction (B = 0.033, SE = 0.142, p = .819) nor the Ambiguous Signal × Heuristic Reliance interaction (B = −0.130, SE = 0.138, p = .346) was significant. Therefore, the relationship between heuristic reliance and policy attitude did not differ across elite signal conditions, and H3 was not supported (Table 6).

Table 6: Interaction Model Predicting Policy Attitude

Predictor	B	SE (HC3)	β	t	p	95% CI
(Intercept)	4.420	0.604	—	7.32	< .001	[3.236, 5.604] ***
Self-Control	0.121	0.119	.073	1.02	.310	[−0.112, 0.353]
Party Strength	0.092	0.165	.034	0.56	.577	[−0.232, 0.416]
Prior Knowledge	−0.247	0.370	−.043	−0.67	.504	[−0.972, 0.478]
Identity Salience	0.140	0.164	.051	0.86	.392	[−0.181, 0.461]
Weak Signal	0.381	0.203	.130	1.87	.061	[−0.018, 0.779]
Ambiguous Signal	−0.032	0.188	−.011	−0.17	.865	[−0.401, 0.337]
Heuristic Reliance (c)	−0.179	0.088	−.187	−2.04	.041	[−0.351, −0.007] *
Weak × Heuristic	0.033	0.142	.018	0.23	.819	[−0.245, 0.310]
Ambiguous × Heuristic	−0.130	0.138	−.081	−0.94	.346	[−0.400, 0.140]

N = 296. DV: Policy Attitude. Reference: Strong Signal. ΔR^2 = .005 (vs. Model 2), F(2,286) = 0.81, p = .553. R^2 = .084, Adj R^2 = .055.
* p < .05. ** p < .01. *** p < .001.

Table 7: Hierarchical Regression Model Summary for Policy Attitude

Model	R^2	Adj R^2	ΔR^2	F-change	df	p (F-ch)
M1: Covariates	0.016	0.003	—	—	—	—

M2: + Main Effects	0.079	0.057	0.062	6.51	3, 288	< .001
M3: + Interactions	0.084	0.055	0.005	0.81	2, 286	.553

N = 296. M1 includes self-control, party strength, prior knowledge, and identity salience. M2 adds Weak Signal, Ambiguous Signal, and centered heuristic reliance. M3 adds the two interaction terms.
* p < .05. ** p < .01. *** p < .001.

Variance inflation factors (VIFs) indicated no evidence of problematic multicollinearity (all VIFs < 3.0). Influential observations were assessed using Cook's distance. Re-estimating the final model after excluding influential cases yielded substantively identical results, indicating that the findings were robust.

H4: Need for Cognition Moderation

Table 8 summarizes the hierarchical regression models. The covariates-only model explained a small but significant proportion of variance in heuristic reliance, $R^2 = .026$, $F(2, 293) = 3.87$, $p = .021$. Adding the main effects significantly improved model fit, $\Delta R^2 = .033$, $F(4, 289) = 2.53$, $p = .038$. However, the addition of the two-way interactions did not significantly improve the model, $\Delta R^2 = .027$, $F(5, 284) = 1.69$, $p = .132$, nor did the addition of the two three-way interaction terms, $\Delta R^2 = .002$, $F(2, 282) = 0.35$, $p = .709$.

Table 8: Hierarchical Regression Model Summary for H4 (NFC Moderation)

Model	R^2	Adj R^2	ΔR^2	F-change	df	p (F-ch)
M1: Covariates	0.026	0.019	—	—	—	—
M2: + Main Effects	0.059	0.039	0.033	2.53	4, 289	0.038
M3: + Two-Way Interactions	0.086	0.051	0.027	1.69	5, 284	0.132
M4: + Three-Way Interactions	0.088	0.046	0.002	0.35	2, 282	0.709

N = 296. M1: prior knowledge, identity salience. M2: + Weak Signal, Ambiguous Signal, NFC(c), Republican. M3: + all two-way interactions. M4: + Weak×NFC×Rep, Ambiguous×NFC×Rep.
* p < .05. ** p < .01. *** p < .001.

Model 2: Main Effects

In Model 2, participants in the Weak Signal condition reported significantly greater heuristic reliance than those in the Strong Signal condition (B = 0.420, p = .035). NFC was negatively associated with heuristic reliance (B = −0.226, p = .026), indicating that higher NFC was associated with greater reliance on policy content. No significant effects were observed for party identification or identity salience (Table 9).

Table 9: Main Effects Model for H4 Predicting Heuristic Reliance

Predictor	B	SE (HC3)	β	t	p	95% CI
(Intercept)	−1.076	0.351	—	−3.07	.002	[−1.764, −0.388] **
Prior Knowledge	−0.723	0.376	−.121	−1.93	.054	[−1.460, 0.013]
Identity Salience (c)	−0.223	0.165	−.078	−1.35	.176	[−0.547, 0.100]
Weak Signal	0.420	0.199	.138	2.11	.035	[0.029, 0.811] *
Ambiguous Signal	0.192	0.206	.063	0.93	.353	[−0.213, 0.597]
NFC (c)	−0.226	0.101	−.131	−2.23	.026	[−0.425, −0.028] *
Republican	−0.050	0.166	−.017	−0.30	.764	[−0.376, 0.276]

N = 296. DV: Heuristic Reliance. Reference: Strong Signal, Democrat. $R^2 = .059$, $F(6, 289) = 3.00$, $p = .006$.* p < .05. ** p < .01. *** p < .001.

Model 3: Two-Way Interactions

Adding the two-way interaction terms did not significantly improve overall model fit, $\Delta R^2 = .027$, $p = .132$. Although the Weak Signal × NFC (B = 0.452, p = .049) and Ambiguous Signal × NFC (B = 0.535, p = .031) interaction terms reached statistical significance, neither the Signal × Party nor the NFC × Party interactions were significant (all ps > .23). Because the hypothesized moderation involved a three-way interaction, these two-way effects were interpreted cautiously and evaluated further in the final model.

Table 10: Two-Way Interaction Model for H4 Predicting Heuristic Reliance

Predictor	B	SE (HC3)	β	t	p	95% CI
(Intercept)	−0.970	0.388	—	−2.50	.012	[−1.731, −0.210] *
Prior Knowledge	−0.770	0.380	−.129	−2.03	.043	[−1.516, −0.025] *

Identity Salience (c)	−0.185	0.165	−.065	−1.12	.263	[−0.509, 0.139]
Weak Signal	0.168	0.280	.055	0.60	.549	[−0.382, 0.717]
Ambiguous Signal	0.306	0.320	.101	0.95	.340	[−0.323, 0.934]
NFC (c)	−0.481	0.192	−.279	−2.50	.012	[−0.857, −0.104] *
Republican	−0.153	0.288	−.053	−0.53	.596	[−0.718, 0.412]
Weak × NFC	0.452	0.230	.159	1.97	.049	[0.002, 0.903] *
Ambiguous × NFC	0.535	0.248	.181	2.15	.031	[0.047, 1.022] *
Weak × Republican	0.469	0.397	.124	1.18	.238	[−0.309, 1.247]
Ambiguous × Republican	−0.224	0.434	−.059	−0.52	.605	[−1.074, 0.626]
NFC × Republican	−0.152	0.201	−.063	−0.76	.449	[−0.547, 0.242]

N = 296. DV: Heuristic Reliance. ΔR^2 = .027 (vs. M2), F(5, 284) = 1.69, p = .132. R^2 = .086, F(11, 284) = 2.43, p = .005. * p < .05. ** p < .01. *** p < .001.e. ΔR^2 = .027 (vs. M2), F(5, 284) = 1.69, p = .132. R^2 = .086, F(11, 284) = 2.43, p = .005.

Model 4: Three-Way Interactions

To test H4, the two three-way interaction terms (Weak Signal × NFC × Republican and Ambiguous Signal × NFC × Republican) were entered in the final model. The inclusion of these terms did not significantly improve model fit, ΔR^2 = .002, F(2, 282) = 0.35, p = .709. Neither the Weak Signal × NFC × Republican interaction (B = −0.377, p = .422) nor the Ambiguous Signal × NFC × Republican interaction (B = −0.065, p = .899) was statistically significant. In addition, the previously significant Signal × NFC interactions were no longer statistically significant after the three-way interaction terms were included (Weak × NFC: p = .055; Ambiguous × NFC: p = .115). Therefore, the hypothesized party-specific moderating effect of NFC was not supported.

Table 11: Three-Way Interaction Model for H4 Predicting Heuristic Reliance

Predictor	B	SE (HC3)	β	t	p	95% CI
(Intercept)	−0.947	0.390	—	−2.42	.015	[−1.712, −0.181] *
Prior Knowledge	−0.799	0.384	−.134	−2.08	.038	[−1.551, −0.046] *
Identity Salience (c)	−0.189	0.166	−.066	−1.14	.254	[−0.514, 0.136]
Weak Signal	0.176	0.281	.058	0.63	.532	[−0.375, 0.726]
Ambiguous Signal	0.293	0.326	.096	0.90	.370	[−0.347, 0.932]
NFC (c)	−0.555	0.235	−.322	−2.37	.018	[−1.015, −0.095] *
Republican	−0.162	0.290	−.057	−0.56	.576	[−0.730, 0.406]
Weak × NFC	0.650	0.339	.228	1.92	.055	[−0.015, 1.315]
Ambiguous × NFC	0.561	0.356	.190	1.58	.115	[−0.136, 1.259]
Weak × Republican	0.470	0.399	.124	1.18	.239	[−0.312, 1.253]
Ambiguous × Republican	−0.212	0.437	−.055	−0.49	.627	[−1.069, 0.645]
NFC × Republican	0.009	0.321	.004	0.03	.979	[−0.620, 0.637]
Weak × NFC × Rep	−0.377	0.470	−.099	−0.80	.422	[−1.298, 0.544]
Ambiguous × NFC × Rep	−0.065	0.510	−.015	−0.13	.899	[−1.064, 0.935]

N = 296. DV: Heuristic Reliance. ΔR^2 = .002 (vs. M3), F(2, 282) = 0.35, p = .709. R^2 = .088, F(13, 282) = 2.10, p = .012.

H5: Identity-Salience Moderation

Table 12 summarizes the hierarchical regression analyses. The covariate-only model explained a small but significant proportion of variance in heuristic reliance, R^2 = .021, F(1, 294) = 6.33, p = .012. Adding the main effects did not significantly improve model fit, ΔR^2 = .021, F(4, 290) = 1.59, p = .173. Likewise, neither the addition of the two-way interaction terms, ΔR^2 = .024, F(5, 285) = 1.47, p = .195, nor the addition of the two three-way interaction terms, ΔR^2 = .013, F(2, 283) = 1.93, p = .143, significantly improved the model.

Table 12: Hierarchical Regression Model Summary for H5 (Identity-Salience Moderation)

Model	R^2	Adj R^2	ΔR^2	F-change	df	p (F-ch)
M1: Covariate	0.021	0.018	—	—	—	—
M2: + Main Effects	0.042	0.026	0.021	1.59	4, 290	0.173
M3: + Two-Way Interactions	0.066	0.033	0.024	1.47	5, 285	0.195
M4: + Three-Way Interactions	0.079	0.040	0.013	1.93	2, 283	0.143

N = 296. M1: prior knowledge. M2: + Weak Signal, Ambiguous Signal, Identity (High), Party (centered). M3: +

all two-way interactions. M4: + Weak×Identity×Party, Ambiguous×Identity×Party. * p < .05. ** p < .01. *** p < .001.

Model 2: Main Effects

In Model 2, participants in the Weak Signal condition reported significantly greater heuristic reliance than those in the Strong Signal condition (B = 0.438, SE = 0.202, p = .030). Prior knowledge was negatively associated with heuristic reliance (B = −0.824, SE = 0.370, p = .026). Neither identity salience nor partisan identification strength showed significant main effects (Table 13).

Table 13: Main Effects Model for H5 Predicting Heuristic Reliance

Predictor	B	SE (HC3)	β	t	p	95% CI
(Intercept)	−0.933	0.353	—	−2.64	.008	[−1.626, −0.241] **
Prior Knowledge	−0.824	0.370	−.138	−2.23	.026	[−1.549, −0.099] *
Weak Signal	0.438	0.202	.144	2.17	.030	[0.042, 0.834] *
Ambiguous Signal	0.205	0.208	.068	0.99	.324	[−0.203, 0.613]
Identity (High)	−0.200	0.166	−.070	−1.21	.228	[−0.525, 0.125]
Party (centered)	−0.090	0.166	−.031	−0.54	.587	[−0.415, 0.235]

N = 296. DV: Heuristic Reliance. Reference: Strong Signal, Low Identity. R^2 = .042, F(5, 290) = 2.55, p = .026. * p < .05. ** p < .01. *** p < .001.

Model 3: Two-Way Interactions

Adding the five two-way interaction terms did not significantly improve model fit, ΔR^2 = .024, F(5, 285) = 1.47, p = .195. None of the interaction terms reached statistical significance (all ps > .13). Therefore, there was no evidence that the association between elite signal condition and heuristic reliance differed as a function of identity salience or partisan identification strength at the two-way level (Table 14).

Table 14: Two-Way Interaction Model for H5 Predicting Heuristic Reliance

Predictor	B	SE (HC3)	β	t	p	95% CI
(Intercept)	−0.930	0.392	—	−2.37	.018	[−1.699, −0.162] *
Prior Knowledge	−0.862	0.381	−.145	−2.26	.024	[−1.609, −0.114] *
Weak Signal	0.318	0.298	.105	1.07	.285	[−0.265, 0.902]
Ambiguous Signal	0.360	0.317	.119	1.14	.256	[−0.261, 0.980]
Identity (High)	−0.172	0.288	−.060	−0.60	.550	[−0.737, 0.392]
Party (centered)	−0.444	0.348	−.155	−1.28	.202	[−1.128, 0.239]
Weak × Identity	0.264	0.398	.069	0.66	.507	[−0.516, 1.045]
Ambiguous × Identity	−0.289	0.415	−.076	−0.70	.487	[−1.102, 0.525]
Weak × Party	0.532	0.397	.107	1.34	.181	[−0.247, 1.310]
Ambiguous × Party	−0.174	0.419	−.035	−0.42	.678	[−0.994, 0.647]
Identity × Party	0.490	0.331	.121	1.48	.139	[−0.160, 1.140]

N = 296. DV: Heuristic Reliance. ΔR^2 = .024 (vs. M2), F(5, 285) = 1.47, p = .195. R^2 = .066, F(10, 285) = 2.02, p = .028. * p < .05. ** p < .01. *** p < .001.

Model 4: Three-Way Interactions

To test H5, two three-way interaction terms (Weak Signal × Identity Salience × Partisan Identification Strength and Ambiguous Signal × Identity Salience × Partisan Identification Strength) were added in the final model. The inclusion of these terms did not significantly improve model fit, ΔR^2 = .013, F(2, 283) = 1.93, p = .143. Neither the Weak Signal × Identity Salience × Partisan Identification Strength interaction (B = −0.123, p = .876) nor the Ambiguous Signal × Identity Salience × Partisan Identification Strength interaction (B = −1.421, p = .085) reached statistical significance. Therefore, H5 was not supported.

Table 15: Three-Way Interaction Model for H5 Predicting Heuristic Reliance

Predictor	B	SE (HC3)	β	t	p	95% CI
(Intercept)	−0.960	0.386	—	−2.49	.013	[−1.716, −0.203] *
Prior Knowledge	−0.845	0.378	−.142	−2.23	.026	[−1.587, −0.103] *
Weak Signal	0.348	0.297	.114	1.17	.241	[−0.234, 0.930]
Ambiguous Signal	0.383	0.313	.126	1.22	.222	[−0.232, 0.997]

Identity (High)	−0.163	0.288	−.057	−0.57	.572	[−0.728, 0.402]
Party (centered)	−0.702	0.446	−.245	−1.58	.115	[−1.576, 0.171]
Weak × Identity	0.246	0.399	.064	0.62	.538	[−0.536, 1.028]
Ambiguous × Identity	−0.296	0.414	−.078	−0.72	.474	[−1.107, 0.514]
Weak × Party	0.585	0.589	.117	0.99	.321	[−0.570, 1.739]
Ambiguous × Party	0.539	0.628	.109	0.86	.391	[−0.692, 1.769]
Identity × Party	1.010	0.575	.250	1.76	.079	[−0.118, 2.137]
Weak × Identity × Party	−0.123	0.789	−.018	−0.16	.876	[−1.670, 1.423]
Ambiguous × Identity × Party	−1.421	0.825	−.204	−1.72	.085	[−3.038, 0.196]

N = 296. DV: Heuristic Reliance. ΔR^2 = .013 (vs. M3), F(2, 283) = 1.93, p = .143. R^2 = .079, F(12, 283) = 2.02, p = .019. * p < .05. ** p < .01. *** p < .001.

6. DISCUSSION

The present study examined how variations in elite signal clarity shape citizens' political judgment by influencing perceived uncertainty, heuristic reliance, and policy attitudes. Across the five hypotheses, the findings provide partial but theoretically meaningful support for the proposed framework. Rather than demonstrating that weaker elite signals uniformly increase heuristic processing, the results suggest that different forms of signal degradation influence political judgment through distinct psychological mechanisms. More importantly, the findings indicate that the manner in which elite signals become degraded may be as important as the amount of information they provide. Although several predicted interaction effects were not supported, the overall pattern suggests that subjective uncertainty represents an important cognitive mechanism linking elite communication to political judgment. These findings therefore contribute to the literature by emphasizing that the psychological consequences of degraded political signals depend not only on the quantity of available information but also on how interpretable that information is.

H1 predicted that decreasing elite signal clarity would increase perceived policy uncertainty. The results provided partial support for this expectation. Participants exposed to ambiguous elite signals reported significantly greater uncertainty than those exposed to strong signals, whereas participants in the weak-signal condition did not differ significantly from those in the strong-signal condition. Rather than indicating that weaker signals uniformly increase uncertainty, this pattern suggests that interpretive difficulty, rather than informational scarcity alone, may be the primary source of subjective uncertainty. This interpretation is consistent with signaling theory. According to Spence (1973), signals reduce uncertainty only when they credibly communicate otherwise unobservable information, while Banks and Sobel (1987) argue that ambiguity creates multiple plausible interpretations that receivers cannot reliably distinguish. Rather than simply lacking information, individuals confronted with ambiguous signals must actively evaluate competing interpretations without possessing sufficient evidence to determine which interpretation is correct. Consequently, ambiguity creates a qualitatively different cognitive environment from signal absence.

An additional implication of this finding concerns the psychological distinction between ambiguity and signal absence. Although both conditions represent degraded elite communication, they may encourage fundamentally different cognitive responses. In the ambiguous condition, participants were exposed to multiple, partially credible elite positions, which likely encouraged continued efforts to interpret conflicting information. This process is consistent with Banks and Sobel's (1987) argument that ambiguity creates multiple plausible equilibria, requiring receivers to actively resolve competing interpretations. By contrast, participants in the weak-signal condition encountered almost no elite guidance. Rather than attempting to reconcile conflicting information, they may simply have recognized that no reliable signal was available and reduced further interpretive effort. Consequently, complete signal absence may require less cognitive engagement even though it provides less information. This distinction suggests that ambiguity is psychologically more demanding than simple information scarcity and provides a plausible explanation for why ambiguity generated greater perceived uncertainty than the weak-signal condition.

This interpretation also corresponds closely with Crawford and Sobel's (1982) concept of cheap talk. When signals carry little diagnostic value, receivers may recognize that meaningful inference is no longer possible and therefore stop searching for additional guidance. From this perspective, the weak-signal condition more closely resembles a cheap-talk environment in which elite communication provides little basis for inference, whereas ambiguous signals continue to invite interpretation despite offering insufficient evidence for confident judgment. Rather than treating weak signaling as a single informational continuum, the present findings suggest that ambiguity and signal

absence should be conceptualized as psychologically distinct informational environments that engage different cognitive processes.

This distinction also extends previous empirical research on elite cues. Lupia (1994) demonstrated that uninformed citizens can make decisions comparable to highly informed voters when credible elite cues are available because such cues effectively substitute for extensive political knowledge. The present findings suggest that this shortcut mechanism depends not only on whether elite cues exist but also on whether those cues remain sufficiently interpretable to function as reliable informational anchors. Once elite communication becomes internally inconsistent or difficult to evaluate, citizens appear unable to benefit from heuristic shortcuts in the same manner. Consequently, the effectiveness of elite cues may depend less on their mere presence than on their perceived credibility and diagnostic clarity. Together, these findings suggest that subjective uncertainty emerges not simply from limited information but from the reduced interpretability of available political information. This interpretation extends existing signaling theory by highlighting interpretability, rather than information quantity alone, as a key determinant of how citizens respond to elite communication.

The second hypothesis proposed that greater perceived uncertainty would increase reliance on heuristic cues during policy evaluation. The results provided partial support for this prediction. Overall, participants experiencing greater uncertainty relied more heavily on heuristic information when forming policy evaluations, suggesting that uncertainty changes not merely confidence in political judgments but also the strategies through which those judgments are constructed. This finding supports the central theoretical argument of the present study that subjective uncertainty functions as an important cognitive mechanism linking elite communication to heuristic processing.

This interpretation is consistent with Kahneman and Frederick's (2002) theory of attribute substitution, which proposes that individuals confronted with difficult judgments unconsciously replace complex target attributes with simpler and more cognitively accessible substitute attributes. In the context of political decision making, evaluating unfamiliar public policies often requires substantial factual knowledge and considerable cognitive effort. When elite communication fails to reduce uncertainty, citizens may instead rely on heuristic cues, such as general impressions of political actors or intuitive evaluations of credibility, rather than systematically evaluating policy content. Similarly, the Elaboration Likelihood Model (Petty & Cacioppo, 2012) suggests that limited cognitive resources or increased judgment difficulty encourage greater reliance on peripheral cues. Lodge and Taber (2013) further argue that political evaluations are often constructed through automatically activated affective associations, with deliberate reasoning serving primarily to justify rather than generate initial judgments. Together, these perspectives provide a coherent theoretical explanation for why greater subjective uncertainty was associated with increased heuristic reliance in the present study.

At the same time, the pattern of results revealed an important and unexpected distinction. Although the ambiguous-signal condition generated the highest level of perceived uncertainty, only participants in the weak-signal condition demonstrated significantly greater heuristic reliance than those in the strong-signal condition. This divergence suggests that perceived uncertainty alone may not fully account for heuristic processing. Consistent with the interpretive-effort distinction discussed above, ambiguity may sustain continued engagement with conflicting elite information and thereby delay reliance on heuristics, whereas complete signal absence offers too little basis for continued deliberation and more quickly prompts a shift toward heuristic strategies. This interpretation also helps reconcile the present findings with Bullock's (2011) influential work on elite cues, which demonstrated that policy content continues to influence political attitudes even in the presence of partisan endorsements. The current findings do not contradict this conclusion; rather, they suggest that the availability of policy information and the interpretability of elite communication represent two distinct dimensions of political information processing, each contributing separately to the divergent patterns observed across the ambiguous and weak-signal conditions.

More broadly, these findings extend existing research on heuristic decision making. Previous studies have often characterized heuristic reliance primarily as a consequence of low political knowledge or limited cognitive motivation (Downs, 1957; Prior, 2007). The present results instead suggest that heuristic reasoning may arise even when policy information remains available, provided that elite communication becomes difficult to interpret—reinforcing the broader argument that ambiguity and signal absence operate as qualitatively distinct informational environments rather than differing degrees of the same underlying continuum. The divergence between the H1 and H2 findings helps explain why H3 was not supported: if ambiguity primarily heightens subjective uncertainty while signal absence more directly drives heuristic reliance, the relationship between signal

clarity, heuristic processing, and policy attitudes is unlikely to follow the single linear pathway originally hypothesized.

Contrary to the third hypothesis, heuristic reliance did not interact significantly with elite signal clarity in predicting policy attitudes. Although greater heuristic reliance was associated with lower policy support overall, this relationship did not become stronger under weaker or more ambiguous signal environments as originally hypothesized. At first glance, this finding appears inconsistent with attribute substitution theory, which predicts that heuristic cues should exert greater influence under conditions of greater uncertainty. However, the absence of a significant interaction does not necessarily contradict the broader theoretical framework. Instead, it suggests that heuristic processing may influence policy attitudes relatively consistently across informational environments, while signal clarity primarily affects the cognitive processes leading to heuristic reliance rather than altering its downstream influence on attitudes.

One possible explanation concerns the informational richness of the experimental context. Unlike many observational settings in which citizens possess limited policy knowledge, participants in the present experiment were provided with relatively detailed policy information before evaluating elite positions. Bullock (2011) demonstrated that when citizens receive substantial policy-specific information, policy content often exerts effects comparable to or even stronger than partisan elite cues. Importantly, Bullock also found that exposure to elite endorsements does not necessarily reduce attention to substantive policy information. This interpretation provides a plausible explanation for the current findings. Although uncertainty encouraged greater heuristic reliance, participants continued evaluating the substantive policy information across all signal conditions. As a result, heuristic cues and policy information may have operated simultaneously rather than competitively, producing a stable relationship between heuristic reliance and policy attitudes regardless of signal clarity.

A second explanation concerns the characteristics of the policy issue itself. The experimental stimulus focused on broadband infrastructure expansion, a relatively technical policy that lacks the strong ideological polarization associated with issues such as immigration, abortion, gun control, or climate change. Previous research suggests that elite cues become particularly influential when policy debates are perceived as symbolic expressions of group identity rather than technical policy questions (Cohen, 2003; Achen & Bartels, 2016). Because broadband infrastructure is unlikely to activate strong partisan identities, participants may have continued evaluating the policy primarily on its substantive merits instead of relying predominantly on elite endorsements. Consequently, although uncertainty increased heuristic reliance, heuristic processing may not have translated into substantially different policy attitudes across signal conditions. This interpretation is also consistent with the Elaboration Likelihood Model (Petty & Cacioppo, 2012) suggests that limited cognitive resources or increased judgment difficulty encourage greater reliance on peripheral cues. Lodge and Taber (2013) further argue that political evaluations are often constructed through automatically activated affective associations, with deliberate reasoning serving primarily to justify rather than generate initial judgments.

Taken together, these findings suggest that the relationship between elite communication and political attitudes is more nuanced than originally hypothesized. Signal clarity appears to influence how citizens process political information by shaping uncertainty and heuristic reliance, but the ultimate formation of policy attitudes depends on additional factors, including the informational richness of the environment and the characteristics of the policy itself. Rather than indicating a failure of the proposed framework, the lack of support for H3 suggests that heuristic processing does not exert stronger effects simply because informational uncertainty increases. Instead, the influence of heuristics on political attitudes appears to depend on the broader decision-making context in which political judgments are formed.

The fourth hypothesis proposed that Need for Cognition (NFC) would moderate the relationship between elite signal clarity and heuristic reliance. Although individuals with higher NFC generally relied less on heuristic cues, the predicted interaction between NFC and signal condition was not supported. This finding suggests that while dispositional motivation for analytical thinking influences individuals' overall processing style, it does not necessarily alter how they respond to degraded elite communication. This interpretation is broadly consistent with previous research on Need for Cognition. Cacioppo and Petty (1982) conceptualized NFC as a stable tendency to enjoy effortful cognitive activity, implying that individuals high in NFC are generally more likely to engage in systematic information processing. Consistent with this expectation, participants with higher NFC in the present study reported lower overall heuristic reliance. However, Bullock (2011) demonstrated that greater cognitive engagement does not uniformly reduce reliance on elite cues across political contexts. Instead, analytical thinking often depends on the informational environment in which political judgments are formed. The absence of a

significant interaction therefore suggests that although high-NFC individuals may process political information more carefully overall, they are not necessarily better able to overcome the uncertainty created by degraded elite signals.

One possible explanation is that cognitive motivation and information quality represent different constraints on political judgment. Individuals high in NFC may be more willing to invest cognitive effort, but additional effort cannot compensate for information that is fundamentally ambiguous or lacks sufficient diagnostic value. When elite communication fails to provide interpretable guidance, even highly motivated individuals must make judgments under conditions of uncertainty. As a result, NFC may reduce baseline heuristic reliance without substantially changing the psychological effects of signal degradation. These findings therefore suggest that the effectiveness of analytical thinking depends not only on individual motivation but also on the quality of the information environment. Rather than diminishing the influence of degraded elite communication, higher NFC appears to improve overall information processing while leaving the cognitive consequences of ambiguity largely intact. This finding further supports the broader argument of the present study that characteristics of the information environment continue to shape political judgment independently of individual differences in cognitive style.

The fifth hypothesis examined whether identity salience and partisan identification jointly moderated the effects of elite signal clarity on heuristic reliance. Neither the predicted two-way nor three-way interactions reached statistical significance. Although these findings contrast with expectations derived from theories of identity-protective cognition, they do not necessarily challenge these theoretical perspectives. Instead, they suggest that the influence of identity may depend on the characteristics of the policy context in which political judgments are formed. Kahan (2017) argues that individuals often use their cognitive abilities to defend pre-existing group identities rather than to objectively evaluate political information. Similarly, Lodge and Taber (2013) propose that political reasoning frequently serves to justify intuitive responses rooted in partisan identity. However, both perspectives assume that the policy under consideration strongly activates identity-related motivations. In the present study, participants evaluated a relatively low-conflict broadband infrastructure policy that is unlikely to represent a core symbolic issue for most citizens. Consequently, participants may not have experienced sufficient identity threat to trigger the identity-protective reasoning predicted by these theories.

This interpretation is also consistent with Cohen's (2003) demonstration that partisan cues exert their strongest effects when they clearly communicate group membership. In the present experiment, the manipulation varied the clarity of elite communication rather than its ideological direction. Participants therefore received relatively little information regarding which partisan coalition they should support or oppose. Under these conditions, uncertainty may have encouraged greater heuristic processing without necessarily activating identity-based reasoning. The absence of significant moderation therefore appears to reflect characteristics of the experimental context rather than evidence against identity-protective cognition itself. Future research should examine whether stronger identity-related effects emerge when elite signal clarity is manipulated within highly polarized policy domains.

Taken together, the findings across all five hypotheses suggest that the consequences of degraded elite communication are more complex than originally hypothesized: rather than weaker signals uniformly increasing heuristic processing, different forms of signal degradation appear to activate different cognitive mechanisms, with ambiguity primarily heightening subjective uncertainty and signal absence more directly encouraging heuristic reliance despite lower uncertainty. This reinforces the central argument that ambiguity and signal absence represent qualitatively different informational environments rather than differing degrees of the same continuum.

More broadly, the present study makes three theoretical contributions to the literature. First, it refines signaling theory by demonstrating that the interpretability of elite communication may be more consequential than the quantity of information available. Existing research has generally conceptualized degraded elite communication as a single continuum ranging from strong to weak signals. The present findings instead suggest that ambiguity and signal absence produce different psychological responses because they create different inferential demands for citizens. Second, the study identifies subjective uncertainty as an important mechanism connecting elite communication and heuristic processing. Rather than assuming that elite cues directly shape political attitudes, the findings suggest that elite communication first influences how confidently citizens interpret political information, which subsequently affects the cognitive strategies they employ during judgment formation. Finally, the study integrates signaling theory with cognitive theories of heuristic decision making by showing that characteristics of the information environment and individual cognitive processes should be understood as complementary explanations of political judgment rather than competing theoretical perspectives.

These findings also carry broader implications for democratic politics. Contemporary citizens are exposed to unprecedented amounts of political information, yet greater information availability does not necessarily reduce uncertainty. Instead, fragmented media environments, inconsistent elite messaging, and declining trust in traditional information sources increasingly require citizens to interpret complex and sometimes contradictory political information. Under such conditions, heuristic reasoning may become more common not because citizens possess less information, but because they face greater difficulty determining which information is reliable and meaningful. Improving democratic decision-making may therefore require not only expanding access to political information but also improving the clarity, consistency, and credibility of elite communication. By emphasizing interpretability as a central feature of democratic information environments, the present study highlights subjective uncertainty as a key psychological mechanism through which elite communication shapes political judgment.

7. LIMITATIONS

Several limitations should be acknowledged when interpreting the findings of the present study. First, although the experiment employed random assignment and standardized experimental stimuli, the sample was recruited through Prolific, an online participant platform. Previous research suggests that Prolific generally provides higher-quality data than many traditional convenience samples because participants tend to provide more attentive and reliable responses. Nevertheless, Prolific users remain younger, more digitally engaged, and generally more politically attentive than the broader population. Consequently, the generalizability of the present findings should be interpreted with caution. Citizens with lower levels of political engagement or those operating within different media environments may respond differently to variations in elite signal clarity. Future research should therefore examine whether the observed relationships can be replicated using nationally representative samples and across different political and cultural contexts.

Second, the experimental policy concerned broadband infrastructure expansion, a relatively technical issue with limited symbolic or ideological significance. This design helped minimize strong pre-existing attitudes and allowed the effects of elite signal clarity to be examined more independently. At the same time, however, the relatively low level of issue polarization may explain why the predicted moderating effects of identity salience and partisan identification were not observed. Identity-protective cognition is most likely to emerge when policies directly threaten or reinforce important social identities (Kahan, 2017), while partisan cues are generally more influential when policy debates serve as clear markers of group membership (Cohen, 2003). Future research should therefore examine whether the cognitive mechanisms identified in the present study operate differently in highly polarized policy domains such as immigration, abortion, climate change, or gun control. In particular, it would be valuable to investigate whether the distinction observed between ambiguous and weak signals remains stable when identity concerns become more salient.

Third, heuristic reliance was measured using participants' self-reported evaluations of the extent to which elite cues and policy information influenced their judgments. Although this approach captures perceived decision-making strategies, it cannot directly observe the cognitive processes underlying heuristic judgment. Political cognition often operates automatically and outside conscious awareness (Lodge & Taber, 2013), meaning that participants may not accurately report the processes through which their judgments were formed. Future studies should therefore incorporate behavioral measures, such as thought-listing procedures (Bullock, 2011), response latency, eye-tracking, or process-tracing techniques, to provide a more direct assessment of how citizens process competing elite signals under conditions of uncertainty.

Fourth, the present study examined citizens' immediate responses following a single exposure to elite communication. In real political environments, however, individuals encounter repeated and often contradictory elite messages over extended periods of time through news media, social media, and interpersonal discussion. Repeated exposure may gradually alter perceptions of uncertainty, trust, and heuristic reliance in ways that cannot be captured within a single-session experiment. Longitudinal and repeated-exposure designs would therefore provide valuable evidence regarding how uncertainty develops and how citizens adapt their information-processing strategies over time.

Finally, the present study focused primarily on subjective uncertainty as the cognitive mechanism linking elite communication to heuristic reliance. Although the findings support the importance of uncertainty, other psychological mechanisms may also contribute to this relationship. For example, emotional responses, perceived source credibility, political trust, or affective polarization may independently shape how citizens interpret

degraded elite communication. Future research should integrate these factors into a broader theoretical framework to better explain how multiple psychological processes jointly influence political judgment in increasingly complex information environments.

8. CONCLUSION

The present study examined how variations in elite signal clarity shape political judgment through perceived uncertainty and heuristic reliance. Although several hypotheses received only partial support, the central finding is that ambiguity and signal absence are not simply different degrees of weak signaling: ambiguous elite communication primarily heightened subjective uncertainty, whereas signal absence more directly encouraged heuristic reliance despite lower uncertainty. By identifying subjective uncertainty as a key mechanism linking elite communication to heuristic processing, the study extends signaling theory and offers a more nuanced account of how citizens evaluate political information under uncertainty.

These findings also carry implications for democratic politics: as citizens face increasingly fragmented and contradictory political information, improving democratic decision-making may require not only greater access to information but also clearer and more consistent elite communication.

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Appendix

Supplementary Appendix Access