



When and Why Opposition (vs. Support) Framing Increases Choice Confidence and Willingness to Pay

Daniel R. Rovenpor¹, Jacob D. Teeny², and Richard E. Petty³

¹ Baruch College, City University of New York

² Northwestern University

³ The Ohio State University

Consistent with a long history of interest in valence asymmetries in choice framing, one influential yet less understood asymmetry is *support-oppose framing*, in which a preference framed as opposition to the nonpreferred option (e.g., I am voting *against* the Republican) can be “stronger” than the same preference framed as support for the preferred option (e.g., I am voting *for* the Democrat; Bizer & Petty, 2005). We shed light on this phenomenon by examining it in a different domain (consumer preferences) with a different outcome (willingness to pay) and by contributing new insight into the effect’s mechanism. To adjudicate among several possible mechanisms, Studies 1 and 2 systematically vary the extremity of the preferred and nonpreferred options. This approach revealed that the opposition-strength effect emerges only when choosing between two options of similar extremity (i.e., when the preferred option is liked as much as the nonpreferred option is disliked), but not when extremity varies. These results help rule out certain plausible explanations for the mechanism (e.g., matching) and suggest that opposition-framing can strengthen attitudes because opposition carries greater psychological weight and helps to disambiguate the valence on which preferences are based. Study 3 offers additional support for this interpretation. We discuss theoretical implications of these insights with respect to the mechanisms underlying valence asymmetries more broadly, as well as practical implications for persuasion strategies in applied domains.

Keywords: support-oppose framing, choice framing, valence asymmetry, confidence, willingness to pay

Supplemental materials: <https://doi.org/10.1037/dec0000272.supp>

Any choice between two options can be construed in terms of *supporting* the preferred option or *opposing* the nonpreferred option. That is, in conceptualizing a choice, people can focus on what they like about the preferred option and why

it appeals to them, or they can focus on what they dislike about the nonpreferred option and its various flaws. Although these different conceptualizations reflect the same relative preference between two options, these different ways of

Tim Rakow served as action editor.

Daniel R. Rovenpor  <https://orcid.org/0000-0001-6762-1862>

Jacob D. Teeny  <https://orcid.org/0000-0001-6112-534X>

Richard E. Petty  <https://orcid.org/0000-0002-2870-8575>

The materials, data, and code for the studies are available at https://osf.io/v3kbh/?view_only=dec4ebaaad7045a184a744f3b579dcf2.

All authors contributed to the conceptualization of the research, the methodology, data analysis, writing the original draft, and editing of the article.

Daniel R. Rovenpor played a lead role in conceptualization and writing—original draft and an equal role in formal analysis, methodology, and writing—review and editing.

Correspondence concerning this article should be addressed to Daniel R. Rovenpor, Baruch College, City University of New York, 55 Lexington Avenue, New York, NY 10010, United States. Email: daniel.rovenpor@baruch.cuny.edu

framing one's choice can produce downstream consequences for how *strongly* that preference is held (Petty & Krosnick, 1995). Specifically, prior research on *support-oppose framing* (Bizer & Petty, 2005) examining political judgments found that being induced to construe a binary preference as opposing the nonpreferred political candidate (vs. supporting the preferred candidate) resulted in greater confidence in the preference, greater resistance to persuasion, and greater intentions to vote (Bizer et al., 2011, 2013; Bizer & Petty, 2005). Notably, this framing effect did not impact the underlying preference: people in either frame report preferring the desirable candidate (relative to the less desirable candidate) to the same degree (Bizer et al., 2011; Bizer & Petty, 2005; Teeny & Petty, 2025). The finding that opposition-framing strengthens attitude confidence, persuasive resistance, and behavioral intentions (the *opposition-strength effect*) represents one distinct type of valence asymmetry identified within a broader area of research in social judgment and decision making (Baumeister et al., 2001; Fazio et al., 2004; Kahneman & Tversky, 1979).

Goals of the Present Research

Here, we aim to advance research on the opposition-strength effect in several important ways, with an eye toward understanding the role of valence in judgmental processes more broadly. To date, the majority of evidence for the opposition-strength effect has come from the domain of political candidate preferences and with traditional indicators of *attitude strength* (confidence, persuasive resistance, enhanced behavioral consistency; Petty & Krosnick, 1995). Thus, we aimed (A) to test the opposition-strength effect in a nonpolitical domain (consumer choice) and (B) to examine a new outcome (willingness to pay [WTP]). Investigating whether the opposition-strength effect holds up in disparate contexts and on different outcomes is necessary before clear implications for the broader body of work on valence asymmetries can be established. Critically, we also aimed (C) to better understand the mechanism underlying the opposition-strength effect. Not only were multiple explanations plausible based on the broader literatures on framing and priming, but different mechanisms would also be expected to produce different outcomes under different conditions.

We employed a novel experimental paradigm within the context of a binary consumer decision

that orthogonally manipulated participants' focus on support versus opposition (support-oppose framing manipulation) as well as whether the superior option had more extreme positive attributes, the negative option had more extreme negative attributes, or the extremity of the options' positive and negative attributes was equal (relative option extremity manipulation). This enabled an evaluation of whether any of three basic psychological principles underlie the opposition-strength effect, including whether it emerges as a result of: (a) a general tendency for negative information to weigh heavily in information processing (Baumeister et al., 2001), (b) a match between support/oppose frames and attitudes rooted more in positive/negative attributes, which might produce opposition-strength and support-strength effects (Teeny et al., 2021), or (c) the tendency for primes to disambiguate unclear information but not clear information, which would produce an opposition-strength effect only when the options are of similar extremity (Loersch & Payne, 2011). In these ways, we examined the effect's *direction* and *ecological scope* while also suggesting *why* opposition plays an outsized role in decision making.

Support-Oppose Framing

Support-oppose framing is one type of framing distinction within a larger literature on valence asymmetries (for a review, see Levin et al., 1998); however, it is distinctive in multiple ways. For example, whereas much research on valence asymmetries varies the framing of *anticipated future consequences* of a choice (e.g., people dying vs. being saved), support-oppose framing merely varies the mindset with which one's own current choice is construed (i.e., preferring A over B can be considered in terms of either supporting A vs. opposing B). As such, this framing does not rely on the invocation of probability or risk-aversion (DeKay & Dou, 2024; Kahneman & Tversky, 1979). Further, whereas much work has focused on the framing of a single object described in terms of its pros or cons (e.g., meat described as 75% lean vs. 25% fat; Levin & Gaeth, 1988; Meyerowitz & Chaiken, 1987), support-oppose framing accommodates a choice between two entirely distinct objects (e.g., meat vs. fish) and reflects a difference in how the preference between them is construed. Importantly, and in contrast to several other forms of framing, such as gain-loss framing

(Idson et al., 2000), support-oppose framing varies the emphasis on supporting one option or opposing a second option without altering how the attributes of the options are described. In other words, support-oppose framing offers participants identical information about two options, and encourages different ways of construing one's choice between those options. Within the context of support-oppose framing, it is therefore possible to dissociate the support-oppose frame from the valence of the options' attributes (i.e., frames can emphasize reasons to support or oppose options of varying quality). This enables investigations into the mechanism underlying support-oppose framing by way of orthogonal manipulations of these two components.

Support-oppose framing has been shown to influence attitude strength (Bizer et al., 2011; Bizer & Petty, 2005; Teeny & Petty, 2025). The distinction between the attitudes toward options (i.e., the preference for one option over another based on their overall valence) and attitude strength (i.e., how durable, confidently held, and predictive the preference is; Petty, 2023; Petty & Krosnick, 1995) is widely accepted in attitudes research (Luttrell & Sawicki, 2020; Tormala & Rucker, 2025). Furthermore, prior research on support-oppose framing identified effects only on indicators of this secondary feature of preferences—preference strength—and not the underlying preference itself, and we, too, expected the same pattern. The overall preference between two options itself (e.g., I prefer meat over fish) is a more constrained construct dependent on idiosyncratic tastes and weighing of particular attributes, whereas the *strength* of that preference (e.g., I can be highly confident or doubtful in that preference and I can act on that preference or not) is what tends to be more vulnerable to the effect of contextual framing.

Does Support-Oppose Framing Impact Consumer Judgment and WTP?

We tested the impact of support-oppose framing in the consumer domain for four reasons. First, the consumer domain facilitates a clear and objective manipulation of the quality of the options and their various attributes. Examining a choice between consumer products allowed us to precisely manipulate how objectively good or bad each option is relative to a neutral midpoint in a

way that would be much more difficult with political candidates due to the many preexisting policy attitudes (and idiosyncratic weightings of those various attitudes) that feed into candidate preferences.

Second, researchers are ultimately interested in judgmental processes because of the ability of those judgments to guide behavior (e.g., Fishbein & Ajzen, 2009). Testing support-oppose framing in the consumer domain allowed us to go beyond traditional attitude strength measures and examine whether the opposition-strength effect would also influence a decision to purchase something (i.e., purchasing a product) as indexed by the amount of money people are willing to pay for their preferred choice. WTP has been shown to approximate actual behavior better than traditional self-report measures (Miller et al., 2011). Thus, given the same information about two options, we examine whether merely focusing on reasons for opposing (vs. supporting) one option generates greater WTP for the preferred option. Prior research (Maier et al., 2015) has demonstrated a link between greater attitude confidence and higher WTP. Because greater confidence is one known outcome of opposition-framing (Bizer et al., 2011), an effect of opposition-framing on increased WTP for the favored option seemed plausible. Thus, we examined whether opposition-framing might not only increase confidence in a consumer domain, but also WTP, a finding that itself would contribute to the body of knowledge on the antecedents of consumer behavior and the consequences of basic judgmental processes.

Third, the consumer domain might arguably provide a cleaner context than the political domain for testing a possible negativity dominance mechanism (e.g., Baumeister et al., 2001). In political and moral judgments, negative information tends to be particularly *diagnostic* and thereby informative (Lau, 1985; Skowronski & Carlston, 1987), because immoral behavior tends to be more rare than moral behavior. The heightened diagnosticity of negative information about morality is likely less relevant in the consumer domain, given that capability is a major concern in the consumer domain, and *positive* information can be more diagnostic of capability (Martijn et al., 1992). Although the present research does not aim to directly evaluate or manipulate diagnosticity, demonstrating the opposition-strength effect in the consumer domain would extend the documented scope of the effect to a domain in which negative information about

morality is not of paramount importance, and thus to a domain relatively better suited to evaluate the role of negativity dominance unconfounded from diagnosticity.

Finally, drawing a contrast between two consumer options is a popular marketing approach (e.g., Beard, 2016; Grewal et al., 1997; Pechmann & Stewart, 1990; Sujan & Dekleva, 1987; Yucel-Aybat & Kramer, 2018), making the introduction of support-oppose framing to the consumer domain practically relevant.

What Mechanism(s) Underlie the Opposition-Strength Effect?

Most critical for advancing research on the opposition-strength effect is obtaining a better understanding of when and why it emerges. The original work establishing the effect (Bizer et al., 2011; Bizer & Petty, 2005) speculated that it might arise from the tendency for individuals to attend to, process, and weigh negative information to a greater extent than positive information (Baumeister et al., 2001). Yet, subsequent advances in research on matching effects in persuasion (e.g., Teeny et al., 2021) and on the principles governing priming effects (Loersch & Payne, 2011, 2014) raise important questions about the nature of the opposition-strength effect. As we elaborate on below, research on persuasive matching effects in the context of other types of framing (e.g., Perfecto et al., 2017) raises the question of whether the original opposition-strength effect might be an artifact of the particular options provided (i.e., opposition-framing emphasizes extremely negative nonpreferred options) and whether support-strength effects could also emerge (when support-framing emphasizes extremely positive preferred options). Further, research on the mechanisms underlying priming effects finds that subtle primes are primarily effective when they introduce information that can be confused for one's own thoughts (Loersch & Payne, 2011). Thus, if the opposition-strength effect follows the principles of priming effects more broadly, it may *only* emerge when the preferred and nonpreferred options are perceived as being similarly extreme, and opposition-framing has the opportunity to disambiguate whether one's preference is more strongly based in support or opposition.

We addressed two core questions about the nature of the opposition-strength effect. First, does the original opposition-strength effect emerge when the nonpreferred option is equally as “bad” as the preferred option is “good”? If so, this would indicate that psychological negativity dominance, and not artifactual matching, contributes to the opposition-strength effect, as originally conceptualized. A second closely related question is: What happens when the valence of one option is clearly more extreme than the valence of the other option? Could matching effects emerge, *reversing* the opposition-strength effect under these new conditions? Or would these conditions *eliminate* the opposition-strength effect, because opposition information can no longer easily be confused as stemming from one's own thoughts? The present research aims to answer these interrelated questions which ultimately bear on the mechanism, direction, and boundaries of support-oppose framing effects.

To illustrate these questions that remain about support-oppose framing, consider the following scenarios, in which a consumer prefers iPhone to Android. In one case, the consumer perceives many deficiencies in Android but just a few merits in iPhone. Here, the negative information about the nonpreferred option is more extreme, and opposition-framing could strengthen one's attitude by evoking the existing stronger negative basis for one's preference. But, what happens if the consumer perceives just a few deficiencies in Android and many merits in iPhone, such that the positive information about the preferred option is more extreme? Would *support-framing* now generate stronger attitudes by making salient the stronger *positive* basis for one's preference? Finally, consider a case in which Android is perceived to have just a few deficiencies and iPhone is perceived to have just a few merits. When the differential valence of options are equal in extremity, would opposition-framing still have an advantage? If so, this would illustrate that opposition weighs more heavily on the mind than support even when the actual extremity (deviation from neutrality) of the underlying information is objectively equivalent.

We tested these different possibilities experimentally by systematically varying two key factors: (a) how participants think about their choice (supporting the preferred option vs. opposing the nonpreferred option) and (b) the relative quality of the two options. More specifically, we created

three different choice scenarios to serve as distinct contexts for support-oppose framing. One choice scenario had a preferred option with strong positive features. A second choice scenario had a nonpreferred option with strong negative features. And a third choice scenario had both options as mildly positive or negative (and equally so to one another). By observing *when* different framing effects emerge in the context of different choice configurations, we aimed to better understand *why* the framing effect emerges.

Three Possible Hypotheses

At least three distinct hypotheses regarding mechanism can be derived. Each hypothesis predicts a different pattern of results based on a different underlying mechanism. The first and simplest possibility is that opposition-frames strengthen attitudes across the board, regardless of the extremity of the options, because “bad is stronger than good” (Baumeister, 2001). According to this possibility, which we refer to as the *across-the-board negativity dominance hypothesis*, an opposition (vs. support) frame should increase choice confidence and WTP for the preferred option regardless of the relative extremity of the merits or deficiencies of the options. This would suggest that the opposition-strength effect is robust to, and operates entirely separately from, the extremity of the valence of the options.

A second possibility is that frames strengthen attitudes to the extent that they match the informational basis for one’s attitude. This *matching hypothesis* predicts that in contexts where the negative option is more extreme, opposition-framing would strengthen attitudes; however, in contexts where the positive option was more extreme, support-framing would strengthen attitudes. In other words, frames may operate by emphasizing stronger valence-congruent information. This hypothesis fits with a broader literature of matching effects in persuasion (Teeny et al., 2021). Hinting at the viability of this matching hypothesis, research has demonstrated that frames (e.g., “choose” vs. “reject”) coupled with simple stimuli (words, images) can generate greater confidence when the frame matches the valence of *both* options (e.g., “choosing” between two similarly positive words [joy/kiss] and “rejecting” between two similarly negative words [murder/tumor]; Nagpal & Krishnamurthy, 2008; Perfecto et al., 2017; Shafir, 1993).¹ Such matches may be experienced as more fluent (e.g.,

Alter & Oppenheimer, 2009; Tormala et al., 2002). However, this work did not examine options differing in valence, which would be key for testing whether frames strengthen attitudes by cueing stronger valence-congruent attribute information. If opposition-strength effects were *solely* driven by a matching mechanism, there would be no framing effect under conditions of equal option extremity, implying that prior work demonstrating an opposition-strength effect might have inadvertently provided a more extreme negative option. We subject the opposition-strength effect as originally conceived to a stringent test under equal-extremity conditions, while allowing for matching effects to potentially emerge under nonequal conditions.

Third, it is possible that the previously identified opposition-strength effect could be *most* pronounced under conditions of similar option extremity. That is, when the options themselves leave it unclear whether one’s preference is based more in merits or deficiencies, only then do externally imposed frames have an impact (namely, for negativity to be weighed more heavily than positivity; Baumeister et al., 2001). This *disambiguity hypothesis* builds on the across-the-board negativity dominance hypothesis but qualifies it based on theories and research on priming effects in attitudes and social cognition. According to theorizing about the impact of primes (Clore et al., 2001; Gasper & Clore, 2000; Loersch & Payne, 2011; Petty et al., 2008), two necessary features of effective primes are misattribution (one is unaware of the true source of the primed concepts) and confusability (the primed concept should be mistaken for having originated from one’s own thoughts). Confusability is most likely when it is initially ambiguous where one stands with respect to the to-be-primed information; here, primes can be confused for one’s own thoughts and help disambiguate the unclear information. For example, a primed construct (e.g., hostile) is more likely to impact interpretation of a target’s behavior when the target’s behavior is ambiguously hostile, rather than clearly high or low in hostility (Srull & Wyer, 1979). Similarly, credible message sources tend to bias the interpretation of arguments that are ambiguous

¹ A separate line of research, which demonstrates the potential for *support*-strength effects to emerge and the importance of testing for them, has found that people are more likely to *share* support-framed (rather than oppose-framed) information with others, a behavior for which self-presentation goals might dominate (Catapano & Tormala, 2021).

in strength, rather than clearly strong or weak (Chaiken & Maheswaran, 1994). Thus, the disambiguity hypothesis posits that opposition-frames strengthen attitudes because negative information subjectively weighs more heavily in one's mind (in accord with a negativity dominance mechanism); however, it does so chiefly when the basis of one's preference (in support or opposition) is unclear. That is, when it is ambiguous whether one's preference stems from liking the preferred option or disliking the nonpreferred option (i.e., when the options are perceived as equal in their extremity but not in the other scenarios), opposition-framing would be most impactful in strengthening attitudes and behavioral intentions.²

These different hypotheses are summarized in Table 1. Although various other hypotheses are possible, we have highlighted the three that best map onto plausible, theoretically based mechanisms that emerged from the literatures on negativity biases, matching effects, and priming, and which could be tested by varying the extremity of the options' positive and negative attributes. To be clear, existing work did not provide a clear basis for anticipating which of these possibilities would be supported in our experiments because some prior research appears to favor each. Given that these plausible mechanisms make different predictions, it was critical to conduct research that could tease them apart.

The Present Research

Two studies (Studies 1 and 2) tested these alternative hypotheses by presenting participants with one of three choice contexts: (a) the better option has especially strong positive qualities (positive-more-extreme), (b) the disliked option has especially strong negative qualities (negative-more-extreme), or (c) the liked option is as positive in extremity as the disliked option is negative (equal extremity). We then induced either an opposition or support frame and measured participants' choice confidence and WTP. We note that this extremity manipulation enabled an examination of two critical questions for research on support-oppose framing. First, it created a condition where the better option was exactly as good as the worse option was bad, allowing us to test whether people naturally give more weight to negative information when deciding between objectively extreme options. Second, the manipulation also created conditions where one option was clearly more extreme than the other.

This allowed us to test whether opposition-framing only helps when the choice basis is unclear (equal-extremity scenario; disambiguity hypothesis), whether it only helps when there is strong negative information but reverses when there is strong positive information (negative-more-extreme and positive-more-extreme scenarios; matching hypothesis), or whether it emerges across all three scenarios (across-the-board negativity dominance hypothesis). Ultimately, we find support for the disambiguity hypothesis. Therefore, Study 3 used a distinct paradigm to offer additional support for the disambiguity hypothesis.

Studies 1 and 2

Method

Participants

A power analysis indicated that a sample size of 315 would provide .80 power to detect a small-medium ($\eta_p^2 = .03$) two-way 2 (Support-Oppose frame) $\times$ 3 (Extremity) interaction effect. We thus aimed for a final (postexclusion) sample of at least 315 participants in each study. In light of recommendations that replication studies should be larger than the original (Brandt et al., 2014), and given that Study 2 aimed to replicate Study 1, we aimed for a larger sample in Study 2. Sample size was determined before any data analysis was conducted.

In exchange for \$0.25 on MTurk, 459 participants completed Study 1 and 722 completed Study 2. We applied the same exclusion criteria in both studies to remove inattentive responders and bots.³ This resulted in a final sample of 326 (119 males, 196 females, $M_{\text{age}} = 39.35$) in Study 1 and 531 (193 males, 322 females, $M_{\text{age}} = 37.74$) in Study 2.

² We emphasize that the disambiguity hypothesis is compatible with the across-the-board negativity dominance hypothesis in that it shares the assumption that people subjectively weigh negative information more heavily, but it represents a more nuanced and circumscribed version of that hypothesis by specifying an important precondition to weighing negative information more heavily.

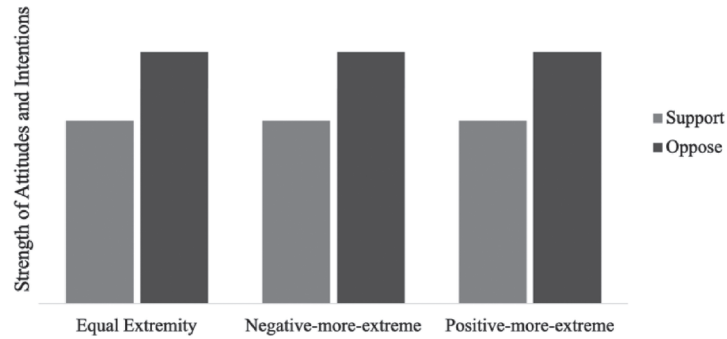
³ Given the theoretical focus of our research questions and the need to retain for analysis participants who attended to the research materials and followed instructions, we applied several exclusion criteria (Chmielewski & Kucker, 2020). We used the same exclusion criteria in both studies (see Supplemental Materials for details).

Table 1

Depicts the Distinct Patterns of Idealized Hypothesized Results Made Under Each Hypothesis for the Impact of Support-Oppose Framing in Each of the Relative Extremity Conditions

Across-the-board

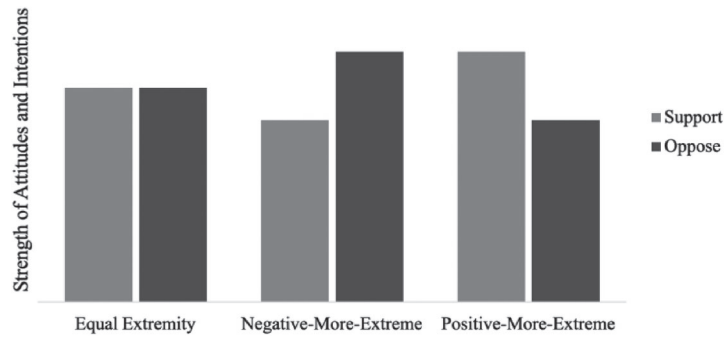
negativity dominance hypothesis: Framing effect operates via an across-the-board negativity bias mechanism



Idealized results under the across-the-board negativity dominance hypothesis, depicting a main effect of framing in which opposition-frame strengthens attitudes and intentions regardless of the relative extremity of the choices.

Matching hypothesis:

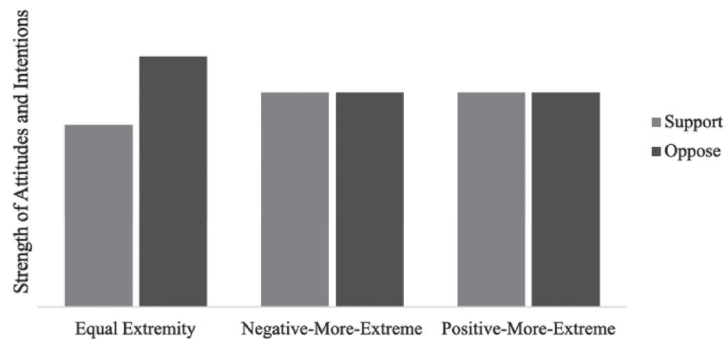
Framing effect operates because either frame (opposition *or* support) emphasizes frame-consistent information that is more extreme



Idealized results under the matching hypothesis, depicting an interaction between framing and relative choice extremity such that the impact of support-oppose framing depends on which attributes (positive or negative) are more extreme, with no effect in the equal-extremity condition.

Disambiguity

hypothesis: Framing effect operates because the negativity conveyed by opposition-framing strengthens attitudes/intentions when the basis of the attitude is initially unclear



Idealized results under the disambiguity hypothesis, depicting an interaction between framing and relative choice extremity such that the impact of opposition-framing emerges most strongly when the relative basis of one's attitude in positivity or negativity is initially ambiguous due to equal attribute extremity.

Because Studies 1 and 2 were identical with the exception of one methodological detail (a minor, but important, difference in how the relative extremity manipulation was implemented, explained below), we followed recommendations regarding the analysis of multiple similar studies (Curran & Hussong, 2009; Schimmack, 2012) by combining the two samples ($N = 857$), treating study as a factor in order to provide maximum statistical power (yielding .99 power to detect main effects and interactions of $\eta_p^2 = .03$). The interaction contrast analyses achieve even higher power to detect smaller effects and allow us to control and test for differences as a function of the methodological variations. For completeness, we also report the results of each study individually in the [Supplemental Materials](#) (the results of both studies are the same).

The materials, data, and code for the studies are available at https://osf.io/v3kbh/?view_only=dee4ebaaad7045a184a744f3b579dcf2. All studies reported were approved by the Ohio State University IRB (Protocol No. 2014B0333). None of the authors have a conflicts of interest to disclose. Informed consent was obtained from all participants online prior to beginning the study. This research was not preregistered.

Procedure

Participants were told they would read two consumer product reviews ostensibly selected at random from a large database of product categories. In reality, all participants read about two Bluetooth speakers. To enhance engagement, participants were asked to imagine they would be giving one of these speakers as a present to a friend or family member. We had participants share this person's first name or initials, which was later piped back to them during the study.

To orient participants to the reviews, we provided an initial description of the "review process," which described the dimensions along which the speakers were evaluated. For the reviews themselves, each speaker was given a generic product name, a generic image, a rating on each of the three evaluated dimensions (audio quality, features, and design), and a one-sentence summary. This paradigm made clear how discrepant each product's quality was from a neutral midpoint, while also providing details about the products for participants to think about. The same amount of information was provided about the

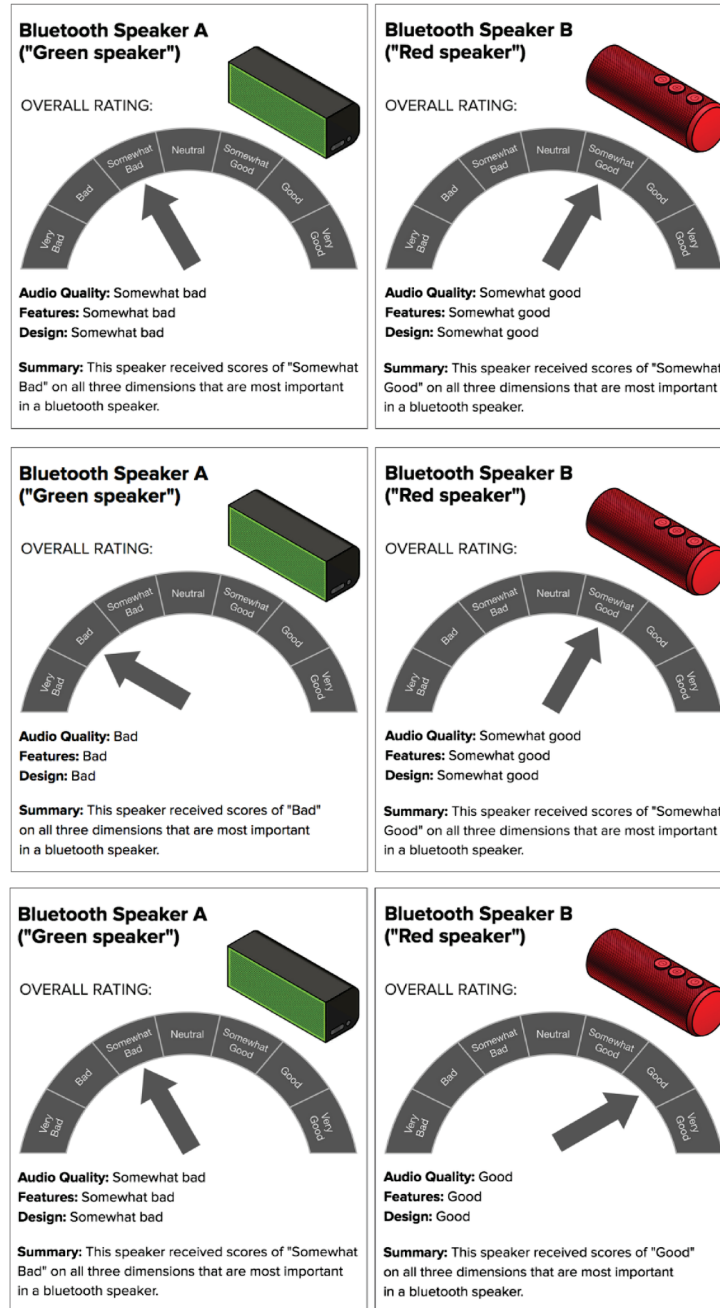
features of each speaker. For all sets of reviews, one speaker was always clearly better than the other, and each speaker's overall rating was identical to the ratings of each of its specific dimensions (to eliminate variability in how participants might have weighed the individual dimensions, which could have differentially influenced perceptions of overall quality). After reading the reviews—variations in which constituted the extremity manipulation—participants completed the support-oppose framing manipulation and the dependent measures.

Extremity Manipulation

Participants were randomly assigned to one of three conditions. In the "equal-extremity" condition, the speakers were portrayed as being equidistant from the neutral midpoint in their objective quality (i.e., the better speaker was equally as positive as the worse speaker was negative). In the "negative-more-extreme" condition, the worse option was rated as more negative than the better option was positive. In the "positive-more-extreme" condition, the opposite was true.

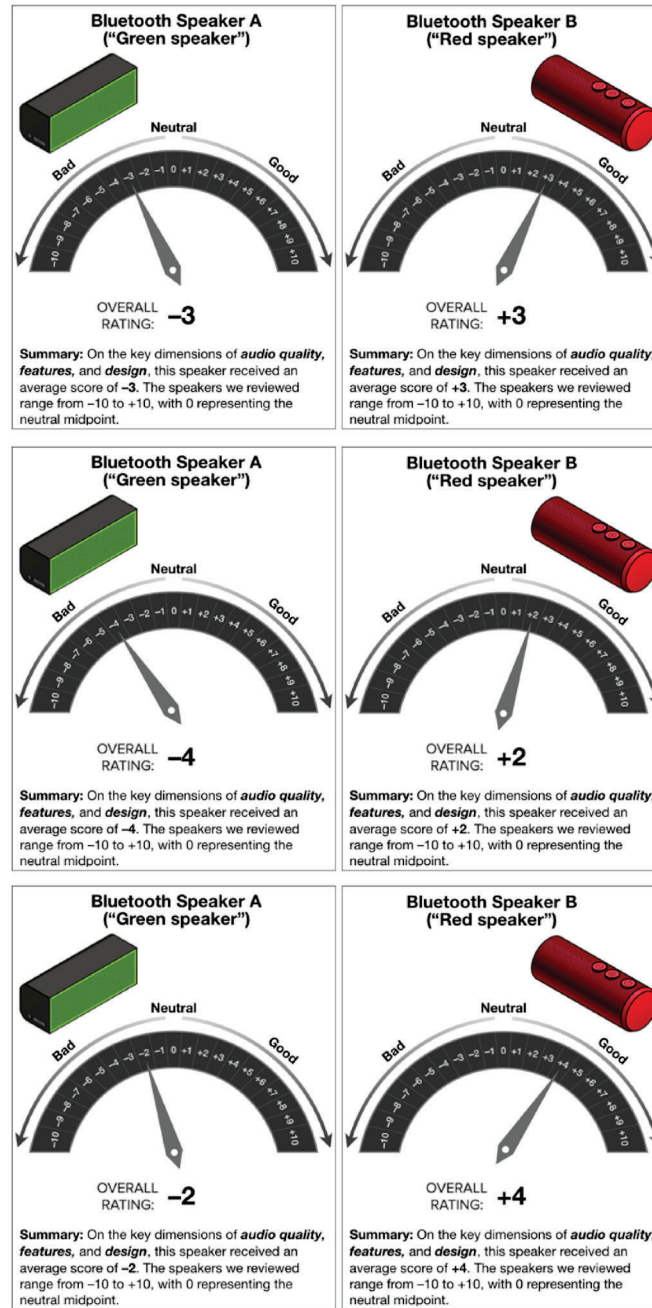
For generality, the extremity manipulation was implemented in a slightly different way in each study (see [Figures 1 and 2](#), and the description of stimulus construction in the [Supplemental Materials](#)). In Study 1, we kept one speaker's rating constant and only varied the more extreme rating across conditions. That is, relative to the equal-extremity condition (e.g., -1 vs. $+1$), the worse option was one value lower in the negative-more-extreme condition (-2 vs. $+1$), and the better option was one value higher in the positive-more-extreme condition (-1 vs. $+2$). In Study 2, we moved *both* speakers' ratings up or down together, so the distance between all comparisons stayed the same. That is, in the positive-more-extreme (e.g., $+4$ and -2), negative-more-extreme ($+2$ and -4), and equal-extremity conditions ($+3$ and -3), the difference between options remained constant because the ratings of both speakers shifted together away from the equal-extremity condition. The advantage of Study 1's operationalization is that it only varies the quality of one option, keeping the quality of the less extreme option constant across conditions. The advantage of Study 2's operationalization is that although it changes the ratings of both speaker options from the equal-extremity condition, it holds the distance between the options constant across conditions. Thus, each method of operationalizing the core

Figure 1
Study 1 Speaker Reviews



Note. Top panel = equal-extremity condition; middle panel = negative-more-extreme condition; bottom panel = positive-more-extreme condition. See the online article for the color version of this figure.

Figure 2
Study 2 and Study 3 Speaker Reviews



Note. Top panel = equal extremity condition; middle panel = negative-more-extreme condition; bottom panel = positive-more-extreme condition. See the online article for the color version of this figure.

independent variable provides one additional element of experimental control over the other. We note that no operationalization could have achieved both of these characteristics. That is, it is impossible to vary relative extremity while keeping both the quality of the less extreme option constant as well as the distance between the options constant. We therefore used both approaches. It is important to note, though, that neither approach introduces a flaw that prevents us from interpreting each manipulation as an induction portraying one product's positive or negative attributes as more extreme. Still, the different ways of operationalizing the extremity manipulation do represent slightly different decision contexts with different peripheral features. Implementing both operationalizations can thus establish the robustness and generalizability of our effects across multiple choice contexts. Further, we test for any impact of the different ways of varying extremity in our results (finding no such impact).

Support-Oppose Framing Manipulation

After receiving the product reviews, participants were randomly assigned to a framing condition that either led them to construe their preference in terms of an opposition or support frame. The framing conditions employed four questions with different wording to subtly emphasize support or opposition. Following prior research (Bizer & Petty, 2005), participants were either asked to indicate which of the two speakers they were “in favor of/approved of” or which they were “opposed to/disapproved of.” They were then presented with two frame-consistent measures designed to reinforce the assigned framing (i.e., “how strongly” and “to what extent” they supported or opposed the option they selected [5-point scales]) and one free response box asking them to write a sentence explaining why they approved or disapproved of the selected speaker.

Measures

In line with prior support-oppose framing work, after the framing manipulation, participants indicated their *relative preference* for the two speakers on a 9-point bipolar scale: “Please tell us how you feel using the following scale” (“Intensely prefer Speaker A” to “Intensely prefer Speaker B”). As in prior work, this measure was

used to confirm that any differences resulting from the framing manipulation were not reducible to differences in preference ratings.

Next, participants responded to the two primary outcome measures. They first indicated their *choice confidence* in their preference by responding to the following question: “How confident are you in your above judgment?” (1 = *not at all confident*, 7 = *extremely confident*). Participants then indicated their *WTP* by entering an amount in a free-response box asking, “How much money would you be willing to pay” for the preferred speaker.⁴ Given that the open-ended nature of the WTP measure allows for high outliers, we also reran the analyses twice—after removing outliers and after log-transforming WTP—and the results remained the same (see [Supplemental Materials](#)).⁵

Results

Analytic Approach

Our analyses tested the following model: 2 (Framing: Oppose vs. Support) $\times$ 3 (Option Extremity: Equal Extremity vs. Negative-More-Extreme vs. Positive-More-Extreme) $\times$ 2 (Study: 1 vs. 2). The across-the-board negativity dominance hypothesis would expect a main effect of framing on both dependent variables across levels of extremity. The matching and disambiguity hypotheses each predict very different forms of interaction patterns (see [Table 1](#)), which we tested using orthogonal interaction contrast analyses. The matching hypothesis predicts a cross-over interaction, with an opposition-strength effect in the negative-more-extreme condition but a support-strength effect in the positive-more-extreme condition. Thus, the first orthogonal interaction contrast tested whether the effect of framing differed in the negative-more-extreme condition compared to the positive-more-extreme condition. The disambiguity hypothesis predicts an opposition-strength effect in the equal-extremity condition, but no (or a reduced) effect in either of

⁴ Though no specific currency was specified, the study was conducted in the United States and responses were presumed to be in U.S. Dollars (many participants referenced U.S. Dollars but never any other currency).

⁵ Five participants who did not provide valid responses to the WTP item were omitted via pairwise deletion from analyses involving WTP. Fifteen participants who did not provide valid responses to the confidence item were omitted via pairwise deletion from the confidence analyses.

the other two conditions. Thus, the second orthogonal interaction contrast tested whether the effect of framing in the equal-extremity condition differed from the overall effect of framing in the nonequal conditions (see [Supplemental Materials](#) for additional details on the coding schemes employed).

Relative Preference

We first sought to verify that, consistent with prior work (Bizer & Petty, 2006), the framing manipulation did not substantially affect preference ratings. Indeed, a 2 (Framing) $\times$ 3 (Option Extremity) $\times$ 2 (Study) ANOVA confirmed that no significant effects of framing emerged ($ps > .401$, $\eta_p^2 < .002$; see [Supplemental Materials](#) for the expected main effect of extremity condition). Thus, regardless of framing condition, participants indicated a similar overall preference for the desirable speaker.

WTP

For our primary dependent variable of interest—WTP for the preferred product ($M = 50.58$, $Mdn = 40.00$, $SD = 39.09$)—we conducted a 2 (Framing) $\times$ 3 (Option Extremity) $\times$ 2 (Study) ANOVA. First, a main effect of extremity emerged, where participants who saw preferred products that were more extreme reported greater WTP, $F(2, 840) = 4.82$, $p = .008$, $\eta_p^2 = .011$. The critical test, however, was whether any differences in WTP emerged as a function of framing. In contrast to the across-the-board negativity dominance hypothesis, no main effect of framing emerged, $p = .249$, $\eta_p^2 = .002$. Instead, there was a significant interaction between framing and option extremity, $F(2, 840) = 4.00$, $p = .019$, $\eta_p^2 = .009$ (see [Figure 3](#)). This indicated that framing differentially affected WTP depending on the relative extremity of the options. No significant main effects or interactions involving study emerged (all $ps > .219$, $\eta_p^2 < .004$).

To understand this interaction, we conducted planned orthogonal contrasts (outlined earlier). The first contrast tested the matching hypothesis's prediction that the impact of framing would differ between the negative-more-extreme and positive-more-extreme conditions. This contrast was not significant, $F(1, 840) = 0.291$, $p = .590$, $\eta_p^2 < .001$. This justified the second contrast, testing the disambiguity hypothesis. This contrast

was significant, $F(1, 840) = 7.71$, $p = .006$, $\eta_p^2 = .009$, indicating that the effect of framing differed as a function of whether option extremity was equal or not. Importantly, study did not moderate either contrast (all $ps > .577$, $\eta_p^2 < .001$).

To further unpack the interaction, we probed the simple effects of framing within each extremity condition. Opposition-framing (vs. support-framing) led to greater WTP in the equal-extremity condition, $F(1, 840) = 8.71$, $p = .003$, $\eta_p^2 = .030$: Participants reported a WTP \$13.90 more for the preferred speaker under an opposition-frame ($M = 59.14$, $SE = 3.37$, 95% CI [52.68, 65.60]) than under a support-frame ($M = 45.24$, $SE = 3.29$, 95% CI [38.62, 51.86]). The effect of framing was not significant in either the negative-more-extreme, $F(1, 840) = 0.707$, $p = .401$, $\eta_p^2 = .003$, or positive-more-extreme conditions, $F(1, 840) = 0.006$, $p = .937$, $\eta_p^2 < .001$. None of these simple effect tests were moderated by study (all $ps > .399$, $\eta_p^2 < .003$). Thus, clearly supporting the disambiguity hypothesis, opposition-framing increased WTP only when the extremity of the options was equal. Consistent with the absence of any moderation by study, each individual study showed similar results (see [Supplemental Materials](#) for details). The effects were thus robust to the different extremity manipulations.

Choice Confidence

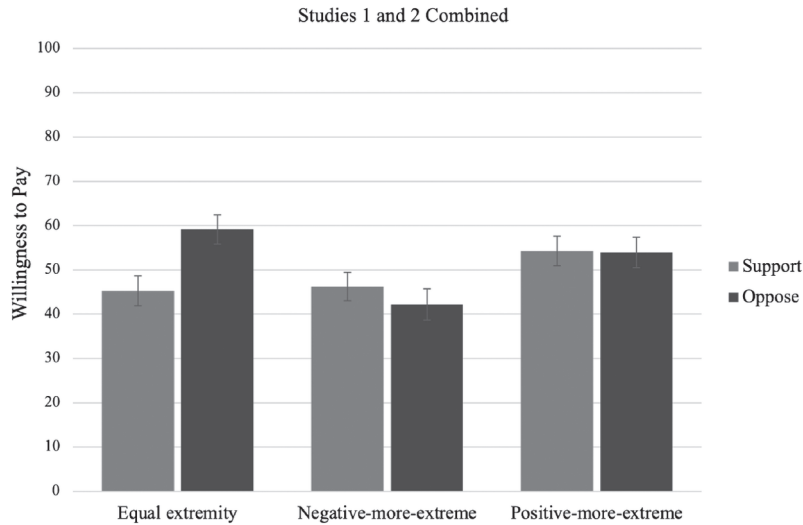
On choice confidence ($M = 6.11$, $Mdn = 6.00$, $SD = 1.06$), a similar interaction pattern emerged (see [Figure 4](#)). Using the same interaction contrasts as with WTP, there was no support for the matching hypothesis (i.e., no significant difference in the impact of framing between the two nonequal conditions), $F(1, 830) = 0.037$, $p = .848$, $\eta_p^2 < .001$, thereby justifying the second interaction contrast. This contrast, testing the disambiguity hypothesis, trended in the predicted direction, $F(1, 830) = 3.33$, $p = .068$, $\eta_p^2 = .004$.⁶ Study did not moderate any of these interaction effects (all $ps > .337$, $\eta_p^2 < .001$).

Participants in the equal-extremity condition expressed more confidence in their preference

⁶ Although the interaction contrast effect was not as strong on choice confidence as it was on WTP, this is perhaps because effects on the choice confidence scale suffered from a slight ceiling effect in a way that the open-ended WTP variable did not.

Figure 3

Effects of Support-Oppose Framing and Extremity on Willingness to Pay in Studies 1 and 2 Combined



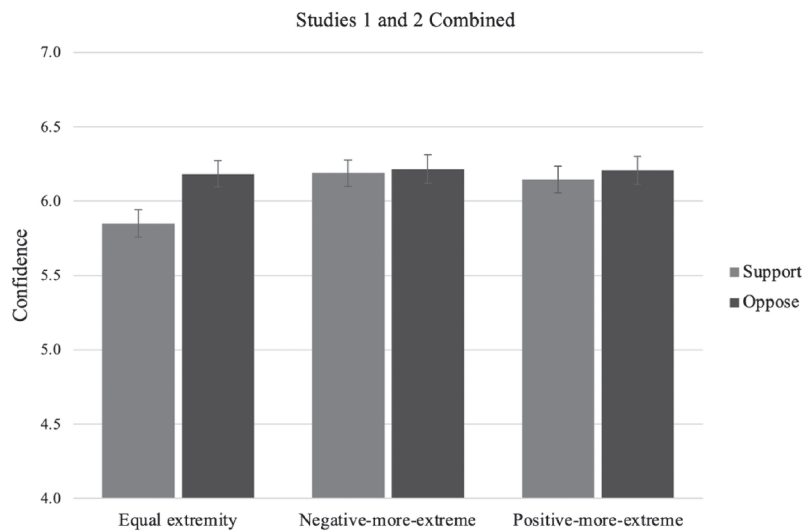
Note. Error bars represent standard errors of the means.

under an opposition-frame ($M = 6.18$, $SE = 0.09$, 95% CI [6.01, 6.36]) than under a support-frame ($M = 5.85$, $SE = 0.09$, 95% CI [5.67, 6.03]), $F(1, 830) = 6.66$, $p = .010$, $\eta_p^2 = .023$. This is consistent

with the support-oppose framing effect found in previous research and with the finding for WTP. Framing had no significant impact in the negative-more-extreme, $F(1, 830) = 0.043$, $p = .837$,

Figure 4

Effects of Support-Oppose Framing and Extremity on Choice Confidence in Studies 1 and 2 Combined



Note. Error bars represent standard errors of the means.

$\eta_p^2 < .001$, or positive-more-extreme conditions, $F(1, 830) = 0.227$, $p = .634$, $\eta_p^2 < .001$. Investigating the means indicates that confidence levels were lowest under the equal-extremity condition's support-frame, and confidence was maintained under the opposition-frame. Again, the study did not moderate these effects ($ps > .222$, $\eta_p^2 < .001$). These results further support the disambiguity hypothesis.⁷

Mediation

In light of prior work showing that confidence can promote greater WTP (Maier et al., 2015), we examined whether individuals were willing to pay more money for products under opposition frames, in part, because they feel more confident in their choice. We conducted a moderated mediation analysis (Hayes, 2013; Model 8; 10,000 bootstrapping resamples) to test the indirect effect of framing condition on WTP via choice confidence, moderated by an extremity variable comparing the equal-extremity to nonequal-extremity conditions (study was included as a covariate). As expected, we found a significant indirect effect of opposition-framing on higher WTP through heightened choice confidence in the equal-extremity condition, $b = 1.09$, $SE = 0.58$, 95% CI [0.23, 2.57], but not in the nonequal conditions, $b = 0.06$, $SE = 0.30$, 95% CI [-0.51, 0.71]. The moderated mediation index was significant, $b = -1.03$, $SE = 0.64$, 95% CI [-2.72, -0.07], indicating that the indirect effect significantly differed across equal and nonequal conditions. This suggests that confidence is a plausible mediator in our data. Nonetheless, while consistent with our predictions, it is important to note that this mediation analysis tests *associations* between confidence and WTP, without evaluating a causal connection between them or ruling out other models in which correlates of confidence could serve a similar mediating role.

Study 3

Study 3 was a follow-up experiment using a modified paradigm that aimed at further understanding the mechanism underlying the opposition-strength effect obtained. The disambiguity hypothesis postulates that the support-oppose framing effect emerges primarily when people are unsure of the basis of their choice. When one option is clearly more positive than the other is

negative (e.g., the positive-more-extreme condition from Studies 1 to 2) or vice versa, it is easy to infer why one is making the choice (e.g., my choice is based on my great liking for the better option or my high disliking for the worse option). When one option is just as positive as the other is negative, however, people should be less clear as to the valence-basis of their choice, and opposition-framing can disambiguate the situation. Study 3 directly tested these assumptions and the hypothesis that variations in information extremity affect awareness of preference bases. We note that Study 3 follows a causal-chain approach to testing mechanism (Spencer et al., 2005); thus, a manipulation of support-oppose framing was not necessary to test these assumptions and was not implemented in Study 3.

Method

Participants

We aimed for .80 power to detect a medium effect ($\eta_p^2 = .08$) for a three condition (option extremity: equal extremity vs. positive-more-extreme vs. negative-more-extreme) between-subjects design, which requires 102 participants. We recruited 154 MTurk participants (in exchange for \$0.10) to account for exclusions anticipated based on Studies 1 and 2. We excluded participants using identical criteria as those studies (one participant did not list a friend, 29 failed the attention check, eight participants did not prefer the better speaker, and two participants indicated they had not spoken English for at least 5 years; no participants met any of the other criteria), resulting in a final sample of 117 (53 males, 61 females, $M_{age} = 36.96$).

⁷ A separate item measured how certain participants were in their opinion (rather than how confident participants were in their judgment; see Supplemental Materials), and the same pattern of effects emerged on this item. However, the effects were slightly weaker due to a stronger ceiling effect on the certainty item, rendering it less informative than the confidence item. Specifically, the mean of the certainty item (6.19) was slightly higher, and the SD (1.03) was slightly lower than with the confidence item. Still, consistent with the confidence item, an effect of opposition-framing emerged significantly in the equated condition, $p = .039$, $\eta_p^2 = .015$, and not in the nonequated conditions (all $ps > .551$, $\eta_p^2 < .002$). Notably, the skew of the WTP variable was in the opposite direction, with no ceiling effect. Thus, consistent results emerged across items with different psychometric properties.

Procedure

Participants completed the same product review task with the same extremity manipulation as Study 2 (see Figure 2). Again, no support-oppose framing was induced, because we were solely interested in how the different choice scenarios from Studies 1 to 2 (preferred and nonpreferred options were either equal in extremity, positive-more-extreme, or negative-more-extreme) affected people's perceptions of their valence basis. Thus, after viewing the product reviews in the randomly assigned extremity condition, participants proceeded directly to the measures described next.

Measures

After indicating their relative preference for the speakers, participants completed two measures assessing whether they perceived their preference as being based on their liking for the better option or their disliking for the worse one. The first measure consisted of a *dichotomous choice*: "You indicated a preference for Speaker B (the red speaker). Did you choose Speaker B because you liked Speaker B or because you disliked Speaker A?" Participants then selected between two options: "My choice was based on liking Speaker B (the red speaker)" and "My choice was based on disliking Speaker A (the green speaker)." A second measure consisted of a *continuous scale*: "To what extent is your preference for Speaker B a result of liking Speaker B versus disliking Speaker A?"

(1 = *completely a result of disliking Speaker A*, 9 = *completely a result of liking Speaker B*). According to the disambiguity hypothesis, participants should be least clear about their valence-basis in the equal-extremity condition.

Results

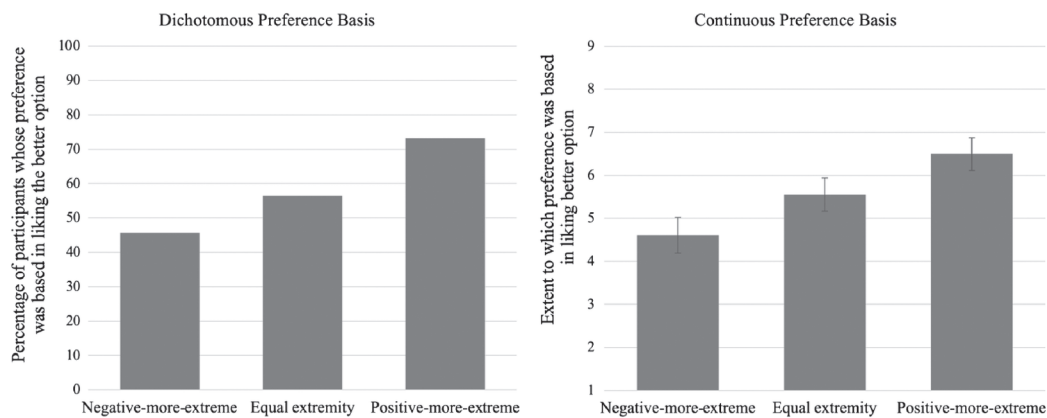
Dichotomous Preference Basis

A chi-square analysis testing for differences between the three conditions yielded a significant effect of extremity on whether participants reported that disliking the worse speaker or liking the better speaker formed the basis of their preference, $\chi^2(2) = 6.07, p = .048$ (see Figure 5). As expected, in the equal-extremity condition, participants were split relatively evenly over whether their preference was based on their liking for the better option (56.4%) or their disliking for the worse one. In contrast, a greater proportion of participants indicated that their preference was based on liking the better speaker in the positive-more-extreme condition (73.2%), and a lower proportion did so in the negative-more-extreme condition (45.7%).

Continuous Preference Basis Measure

A comparable analysis on the continuous preference basis measure using a one-way ANOVA yielded a similar effect of extremity, $F(2, 114) = 5.54, p = .005, \eta_p^2 = .089$ (see Figure 5). That is,

Figure 5
Effects of Extremity on Dichotomous (Left) and Continuous (Right) Measures of Preference Basis in Study 3



Note. Error bars represent standard errors of the means.

participants in the positive-more-extreme condition reported basing their preferences more on liking the better speaker ($M = 6.49$, $SE = 0.39$) than those in the negative-more-extreme condition, who reported basing their preferences more on liking the worse speaker ($M = 4.61$, $SE = 0.42$), $p < .001$, $d = .75$. Furthermore, those in the positive-more-extreme condition tended to differ from those in the equal-extremity condition ($M = 5.56$, $SE = 0.39$), $p = .088$, $d = .40$, who in turn tended to differ from those in the negative-more-extreme condition, $p = .097$, $d = .38$.

In sum, two measurement approaches confirmed that when one option's valence is more extreme than the other, people have enhanced awareness of which side of the preference continuum drives their attitude. When the options are equivalent in extremity, inferences are not as clear, which, as we showed in Studies 1 and 2 can allow opposition (vs. support) frames to strengthen one's attitude.

General Discussion

This research advances an understanding of the mechanisms plausibly underlying the impact of support-oppose framing on consumer choice confidence and behavioral intentions. Two studies found that inducing a shift in mindset—viewing one's preference as opposing an undesirable option rather than supporting a desirable one—increased choice confidence and WTP for a consumer product. Notably, this outcome only occurred when the extremity of the options was equal (i.e., when the underlying basis of one's preference was unclear). By demonstrating that the opposition-strength effect emerges when the option being opposed is objectively as “bad” as the option being supported is “good,” these studies illustrate that thinking about opposition weighs more heavily on the mind than thinking about support, even when the strength of the underlying information is objectively equivalent (which was assumed but not tested in prior research).

These results are consistent with the disambiguity hypothesis, the notion that opposition-framing strengthens attitudes and intentions in part because it helps to disambiguate the basis of one's choice. When people are unclear whether their preference is based more on rejecting the disliked option or accepting the liked one, support-oppose framing can influence their thinking, and the inferences drawn about what it means to oppose

something end up weighing more heavily than inferences drawn about what it means to support something. These inferences can shape choice confidence and behavioral intentions in the absence of other information about the basis of one's preference. These findings help integrate research on the disambiguation effects of primes (Loersch & Payne, 2011; Srull & Wyer, 1979) with work on valence asymmetries, indicating that the attitude strength derived from opposing is subject to the basic processes that govern other types of primes. The findings implicate disambiguation of preference valence-bases, the greater psychological weight of opposition, and enhanced choice confidence as operative pieces of the psychological process involved in the opposition-strength effect. As such, these results have implications for understanding when and through which mechanisms other valence asymmetries might be likely to occur. The negativity conveyed in other types of valence asymmetries might similarly emerge most reliably when negative frames have the chance to clarify otherwise ambiguous valence-bases of preferences.

Previous research on opposition-strength effects has primarily examined it in the context of political candidate attitudes (e.g., Bizer et al., 2011). Thus, demonstrating similar effects in the consumer domain helps to establish the domain-generalizability of the opposition-strength effect. In identifying effects on WTP, our results advance an understanding of the predictors of consumer decision making. The findings also speak to the literature in consumer behavior on *comparative advertising*, a common marketing approach that draws a contrast between two products/brands to promote the focal one (e.g., Beard, 2016; Sujan & Dekleva, 1987; Yucel-Aybat & Kramer, 2018). Our findings suggest that emphasizing reasons to oppose the competitor's product (rather than merely drawing the overall comparison or emphasizing reasons to support the target product) could play an important role in driving the benefits of comparative ads over noncomparative ads. Further, emphasizing opposition may be more potent only when it is unclear whether advantages or disadvantages form the basis for the initial preference.

Extending the opposition-strength effect from the political to the consumer domain is also important because it indicates that the effect can operate even when the informational diagnosticity of negative moral information may be less relevant, (Martijn et al., 1992; Skowronski & Carlston, 1987). While

research directly manipulating diagnosticity and/or testing support-oppose framing across disparate domains is needed before making strong claims about the role (or lack thereof) of diagnosticity in these effects, our results offer an initial demonstration that they can operate separately from the strong diagnosticity of negative moral/political information.

It is important to contextualize the magnitude of the detected effects. Prior opposition-strength effects detected in the political domain ranged from small to large ($\eta_p^2 = .015$ to $\eta_p^2 = .249$; Bizer et al., 2011, 2012; Bizer & Petty, 2005). The effects we obtained in our studies were small ($\eta_p^2 = .030$ for WTP and $\eta_p^2 = .023$ for confidence, within the equal-extremity condition). Many factors bear on the proportion of variance the IV is able to explain in the outcome. Unlike in the prior work, the choice in our studies itself was quite easy and straightforward since there was always a clearly superior option. This limited the variability that could emerge in preference strength indicators (as evidenced by high overall levels of choice confidence). Many other factors are likely to bear on consumer WTP and confidence (e.g., interest in the product, income), and it is perhaps not entirely surprising that altering the wording of four questions to frame the same straightforward information about two generic, unbranded consumer products would not result in especially large effects. Our findings are important nonetheless because they demonstrate that such effects *can* emerge on consumer confidence and WTP, under some theoretically derived conditions but not others. Additional research is needed to test the magnitude and pervasiveness of these effects in the context of actual consumer decisions and actual money spent on preferred products (e.g., perhaps employing incentive-compatible measurement of WTP). The present research was not designed to evaluate the real-world magnitude of such effects.

Avenues for Future Research

We believe that support-oppose framing is an understudied phenomenon, and that there are further questions worth pursuing. For example, future research might consider whether matching effects could still perhaps emerge in other ways, independent of the extremity of the options, such as with natural variations in how people frame a

given choice or chronic background individual difference factors that avoid making preference bases salient (Siev et al., 2024). Future research might also consider additional pieces of the mechanism operating alongside those we have identified. For example, negative information could weigh on people's minds more heavily when the options are similarly extreme because negative information is more attention-grabbing, more memorable (Baumeister et al., 2001), more diagnostic (Skowronski & Carlston, 1987), or because there is greater thoughtful deliberation under an opposition frame (Sokolova & Krishna, 2016). Theories and methods examining the sequencing involved in cognitive processing, such as query theory (Johnson et al., 2007), might further help elucidate the underlying processes involved (e.g., with the opposition-frame potentially having a bigger influence on memory query order under conditions of equal extremity). Future research should explore these possibilities.

Questions also remain about how broadly our findings would apply in the real world. It remains to be tested how much variation in option extremity the opposition-strength effect can tolerate. A related question is how commonly the perception of similarly extreme strengths and weaknesses of two options emerges across contexts in the real world. In real-world choices, ambiguity about the basis of a preference in strengths versus weaknesses could arise when it is clear that the preference is based equally in both, or from complex multifaceted choices in which the basis is difficult to discern. This could occur when choosing between new or lesser known products on the market, or when choosing between similarly ranked options. In these cases, a standout strength or fatal flaw could go a long way in clarifying the basis of the preference and reduce opposition-strength effects. Such real-world operationalizations of unclear preference valence bases remain to be tested.

It also remains to be seen whether opposition-strength effects might extend beyond binary choices to multioption choices. When deciding between many options, one could focus on support for one or several strong options or on opposition to one or several (or even *all*) of the weak options. Focusing on opposition to (rather than support for) one or more options might produce similar strength effects (possibly depending on how many options are in the opposed/supported sets). For instance, focusing on opposition to one option could increase overall

choice confidence and WTP (and voting intentions in multiparty political systems) for a person's #1 pick relative to #'s 2, 3, and 4. Our extremity manipulation, which enables precise experimental control over the quality of each option, can be extended to systematically test such questions by ensuring that the options can be meaningfully compared.

By extending the opposition-strength effect to the consumer domain while identifying an important boundary condition and ruling in one of three possible explanations, our studies raise some intriguing new questions—while offering a methodological innovation suited to answer them—about consumer choice and the mechanisms underlying valence asymmetries. We hope that future research will build on the theoretical advances we offer, so that researchers, citizens, marketers, and consumers alike can gain a better understanding of when and why opposition animates people more than support.

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Received September 26, 2025

Revision received July 29, 2026

Accepted July 30, 2026 ■