Positive Contrast Scope Insensitivity

GUY VOICHEK
NATHAN NOVEMSKY

When consumers compare a worse product to a better product, negative contrast can make the worse product less attractive, and positive contrast can make the better product more attractive. We show that positive contrast is relatively scope insensitive: the size of the difference between products affects negative contrast but not positive contrast. Even when the difference between products is small enough to make negative contrast negligible, positive contrast remains strong. This means that when consumers compare a product to a slightly worse product, contrast makes the better product more attractive without making the worse product any less attractive. The asymmetry occurs because consumers are less likely to consider the size of the difference between products when evaluating the better product than when evaluating the worse product, such that nudging consumers to consider the size of the difference eliminates the asymmetry.

Keywords: comparisons, context effects, contrast effects, judgment and decision making

INTRODUCTION

The webpage for the iPhone 15 Pro includes a side-by-side comparison with its basic variant. The comparison highlights key differences between the models, including that the Pro's battery life, 29 hours, is 3 hours longer than the basic model's 26 hours. Does the comparison make the Pro model more attractive to consumers than it would have been without it? What if the Pro model was instead compared to the SE variant, an entry-level model with only 15 hours of battery life, increasing the gap to 14 hours? Would this make the Pro even more attractive?

It is well documented that a product's appeal is influenced by how it compares to other products. When a product is better than a comparator, positive contrast makes the product more attractive than it would have been in isolation, and when a product is worse than a comparator, negative contrast makes the product less attractive (Carter and Gilovich 2010; Cogan, Parker, and Zellner 2013; Dolese et al. 2005; Huh, Vosgerau, and Morewedge 2016; Kahneman and Miller 1986; Morewedge, Zhu, and Buechel 2019). However, not much is known about how the *size* of a difference between products affects the intensity of contrast effects. Intuitively, one might assume that bigger differences lead to stronger contrast effects. For instance, it seems reasonable that a smartphone is made *slightly* more attractive when presented next to a model with *slightly* shorter battery life, and *much* more attractive when presented next to a model with *much* shorter battery life.

This article shows that the relationship between product differences and the contrast effects they produce is more complex. Specifically, we show that positive contrast remains relatively constant as the size of the difference between products changes, such that placing a product next to a *slightly* worse comparator gives it the same attractiveness boost as placing the product next to a *much* worse comparator. Negative contrast, however, is scope sensitive: the bigger the difference between a product and a superior comparator, the less attractive the product becomes.

Guy Voichek (g.voichek@imperial.ac.uk) is assistant professor of marketing, Imperial College London, SW7 2AZ, UK. Nathan Novemsky (nathan.novemsky@yale.edu) is professor of marketing at Yale University, 165 Whitney Avenue, New Haven, CT 06511, USA. Please address all correspondence to Guy Voichek. This article is based on the lead author's dissertation completed under the supervision of the second author. Supplementary materials are included in the web appendix accompanying the online version of this article.

Editor: June Cotte

Associate Editor: Klaus Wertenbroch

Advance Access publication August 28, 2024

 • Vol. 52 • 2025
https://doi.org/10.1093/jcr/ucae052

Our theory is grounded in research, suggesting that people determine *whether* a product is better or worse than a comparator before considering *by how much* it is better or worse (Schley, De Langhe, and Long 2020; Woolley and Liu 2021) and are less attentive to comparisons when evaluating desirable options than when evaluating undesirable options (Gilovich 1983; Harinck et al. 2007; Lejarraga and Hertwig 2017; Öhman 2007; Pratto and John 1991; Taylor 1991). Building on these two findings, we propose that consumers tend to consider both the direction and size of a difference between a product and a comparator when the product is worse than the comparator, but only consider the direction of the difference when the product is better. As a result, positive contrast effects are relatively insensitive to the size of the difference between a product and a comparator.

The asymmetry persists even when products serve as mutual reference points, and to such an extent that when the difference is small enough to make negative contrast negligible, positive contrast remains strong. This means that when consumers compare across minor product differences, positive contrast is stronger than negative contrast, despite the prevailing notion that "bad is stronger than good" (Baumeister et al. 2001; Tversky and Kahneman 1991).

Next, we review research that underpins our prediction that positive contrast is relatively scope insensitive. We then present the findings of seven studies and six supplemental studies ($N = 9{,}899$) that support this prediction, demonstrate some of its implications for consumer choice, and examine the underlying psychology. Finally, we discuss implications of our findings.

THEORY DEVELOPMENT

Consumers' evaluations of products and experiences are often influenced by what they are compared with (Kahneman and Miller 1986). The perceived beauty of a painting, taste of a candy bar, or quality of a product can all depend on how they compare with the beauty, taste, or quality of other items (Carter and Gilovich 2010; Cogan et al. 2013; Huh et al. 2016). In such comparisons, positive contrast often makes the better option more attractive, and negative contrast often makes the worse option less attractive, than they would have seemed in isolation (Dolese et al. 2005; Morewedge et al. 2019; Novemsky and Ratner 2003).

Previous research on contrast effects has primarily examined which comparisons consumers make, focusing largely on the salience, cognitive ease, and motivation to make comparisons. To experience contrast effects, people must expend cognitive resources to make a comparison (Morewedge et al. 2010). People are more sensitive to contrast between material objects than between experiential objects because material objects are easier to compare (Carter and Gilovich 2010). People are also more likely to experience contrast between objects they consider part of the same consumption category than between objects they consider members of different consumption categories, because within-category comparisons are easier to make than between-category comparisons (Cogan et al. 2013; Huh et al. 2016). When comparing options, as in consumer choice, people tend to focus on alignable, and thus easily comparable, attributes rather than on nonalignable attributes (Zhang and Markman 2001). People are more attuned to social rather than non-social comparisons (Morewedge et al. 2019), to comparisons that maximize their satisfaction with their own outcomes (Kassam et al. 2011), and to comparisons that make it easier to justify selecting a desirable option (Evangelidis, Levav, and Simonson 2023).

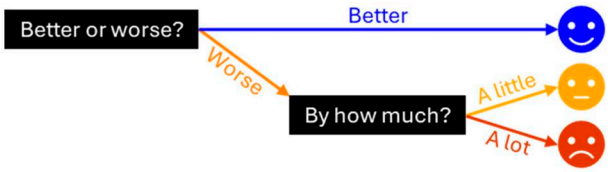
While most research on contrast effects examines when consumers make comparisons and what they compare, the present research examines the intensity of the contrast effects that occur during these comparisons. In other words, rather than ask *which* comparisons consumers make, we explore *how* they make them. Specifically, we study when consumers consider or ignore the size of the difference between comparators, and thus when contrast effects depend on, or are largely independent of, the size of the difference between products.

Intuition might suggest that the greater the difference between options, the stronger the contrast effect. For instance, a smartphone with battery life of 30 hours may appear worse if a consumer compares it to a 40-hour smartphone than to a 31-hour smartphone. However, for a greater difference to result in stronger contrast, the consumer must not only make an ordinal assessment (e.g., 30 is less than 40 or 31), but also a cardinal assessment (e.g., 30 is *much* less than 40 or *slightly* less than 31). These two types of assessments have distinct underlying processes, with cardinal assessments generally coming after and requiring more effort than ordinal assessments (Liu et al. 2018; Schley et al. 2020; Woolley and Liu 2021). When comparing options, people first identify which option is better, bigger, heavier, etc., and only then might they elaborate further to consider the magnitude of the difference.

Research also shows that the valence of options affects how much people elaborate on them. People tend to spend fewer cognitive resources when evaluating good things than bad things (Gilovich 1983; Harinck et al. 2007; Lejarraga and Hertwig 2017; Lejarraga, Hertwig, and Gonzalez 2012; Pratto and John 1991; Taylor 1991), and are generally less attuned to variations in desirable prospects than undesirable prospects (Baumeister et al. 2001; Rozin and Royzman 2001). Increased attention to negative information is also reflected in how people make comparisons. In competitive settings, people attend more to higher-ranked than to lower-ranked competitors (Weingarten, Davidai, and Barasch 2023). Across domains, people tend to pay less attention to comparisons when evaluating

FIGURE 1

PROCESS UNDERLYING ASYMMETRIC SCOPE SENSITIVITY



desirable outcomes than when evaluating undesirable outcomes (Voichek and Novemsky 2021).

Here, we extend these ideas to the question of how contrast effects are influenced by the size of differences between products. We hypothesize that when consumers compare a target product to a reference product on a given attribute, they first determine whether the target is better or worse on that attribute. If the target is worse, consumers then evaluate by how much it is worse. However, if the target is better, consumers tend to skip the secondary assessment. Consequently, when consumers compare a better and a worse product along a shared attribute, the evaluation of the worse product is affected by both the direction and size of the difference between the products, while the evaluation of the better product is primarily influenced by the direction of the difference (figure 1). Thus, a consumer evaluating a phone that lasts 30 hours between charges may be equally satisfied with its battery life regardless of whether they compare it to a phone that lasts 20 hours or 29 hours. However, they may be significantly less satisfied with the 30-hour phone when they compare it to one that lasts 40 hours instead of one that lasts 31 hours.

NOVEL PREDICTIONS

Our main proposition is that the size of the difference between products affects positive contrast less than negative contrast because consumers tend to overlook the size of the difference when evaluating the better, but not the worse, product. This implies that as the difference between products shrinks, negative contrast weakens, while positive contrast remains relatively unchanged. Consequently, when the difference is small, negative contrast is weak, but positive contrast is about as strong as when the difference is large. This leads to the prediction that when the difference is small, positive contrast is stronger than negative contrast. Figure 2 illustrates this point and juxtaposes our predictions with the prospect theory value function (Kahneman and Tversky 1979) to highlight the distinct implications of our theory. When the difference between products is large (marked "L"), both theories would predict that negative contrast is stronger than positive contrast. However, when the difference is small (marked "S"), prospect theory would predict that negative contrast is stronger than positive contrast, whereas we predict that negative contrast is *weaker* than positive contrast. We discuss in greater detail how our theory differs from prospect theory and other theories of asymmetric value in the General Discussion section.

Our theory should not be interpreted as an alternative to theories about value. Such theories, including prospect theory, often involve asymmetric *valuation*, whereas our theory is about asymmetric *consideration*. This distinction leads us to another unique prediction: attention should moderate asymmetric scope sensitivity. We proposed that consumers attend less to the size of the difference between options when evaluating the better option than when evaluating the worse option. This suggests that prompting consumers to consider the size of the difference between options should make positive contrast scope sensitive, but have no effect on negative contrast.

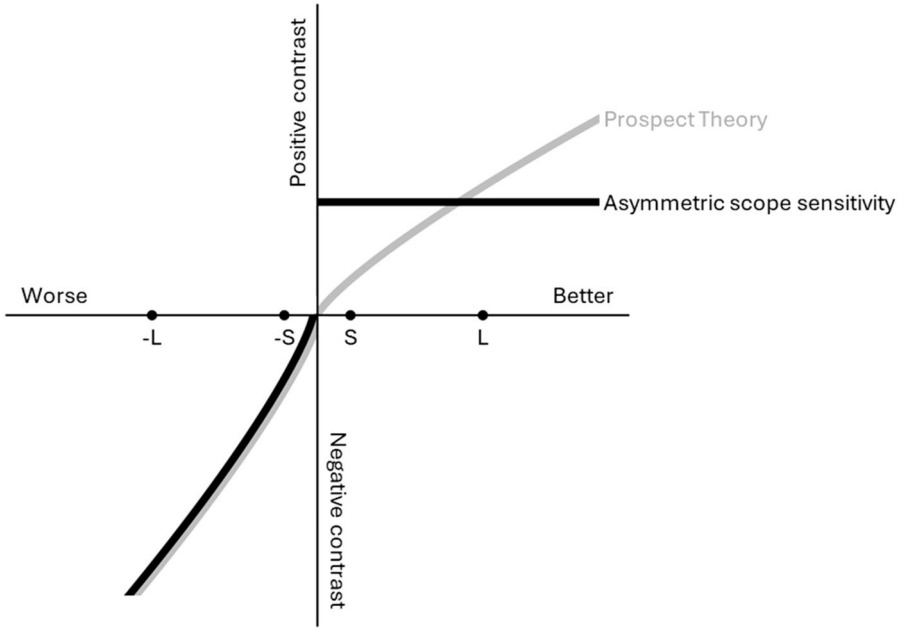
In summary, we propose that positive contrast is relatively insensitive to the size of the difference between products because consumers are less likely to consider the size of this difference when evaluating the better product than when evaluating the worse product. This implies that when the difference between products is small, positive contrast is stronger than negative contrast, and that prompting consumers to consider the size of the difference eliminates the asymmetric scope sensitivity of positive and negative contrast.

OVERVIEW OF STUDIES

Our empirical evidence is organized into three sections that reveal (1) the scope insensitivity of positive contrast, (2) its impact on consumer choice, and (3) the psychological mechanism underlying it. In the first section, we show that positive contrast is relatively scope independent, meaning that while negative contrast is affected by the size of the difference between products, positive contrast is relatively insensitive to it. Consequently, when the difference between products is small, positive contrast is stronger than negative contrast. In fact, we find that introducing a small difference between products leads to positive contrast but no significant negative contrast. In the second section, we examine implications of asymmetric scope sensitivity for consumer choice. Consistent with small differences generating positive contrast but no negative contrast, we find that introducing a small difference between products in a choice set increases sales of one product without hurting sales of the other product. We also investigate how asymmetric scope sensitivity affects choice when products represent a tradeoff, that is, when each product is better than the other on one attribute but worse on another. We find that consumers are more likely to purchase a product with a smaller (rather than larger) tradeoff relative to another product, as shrinking the tradeoff makes a product more attractive with respect to its inferior attribute (by reducing

FIGURE 2

CONTRAST EFFECTS PREDICTED BY PROSPECT THEORY AND ASYMMETRIC SCOPE SENSITIVITY



negative contrast) without making it less attractive with respect to its superior attribute (because positive contrast remains strong as the difference shrinks). In the third section, we provide evidence for the psychological mechanism underlying asymmetric scope sensitivity by both measuring and manipulating whether consumers consider the size of the difference between products. We find that positive contrast is relatively scope insensitive because consumers are less likely to consider the size of the difference between products when evaluating the better product than when evaluating the worse product.

In all studies, participants evaluated products presented side by side in an attribute-by-attribute comparison, a common method consumers use to evaluate products in the marketplace. In each section, we include studies that use subjective attribute representations, such as rating scales, as well as studies that use objective descriptors, such as the number of pixels in a display or the amount of RAM in a laptop, which are commonly used on websites like rtings.com, cnet.com, and amazon.com.

We preregistered all studies[1] and report all manipulations and measures. Studies were completed on Qualtrics by participants recruited with Prolific, and we do not exclude any participant who completed a study. All study materials and data are publicly available on the Open Science Framework.[2]

STUDIES 1A AND B: POSITIVE CONTRAST IS RELATIVELY SCOPE INSENSITIVE

We propose that positive contrast is relatively insensitive to the size of the difference between products. Therefore, we predict that as the difference between products shrinks, negative contrast weakens but positive contrast does not, and that a small difference leads to a stronger positive contrast than negative contrast. Studies 1A and B test these predictions by examining how evaluations of products are affected by the presence and size of a difference between them.

STUDY 1A

In study 1A, we asked participants to evaluate a target product presented in an attribute-by-attribute comparison with a reference product. We varied whether the target product was better or worse than the reference product, and

1 Preregistration links: 1A: https://aspredicted.org/487vt.pdf; 1B: https://aspredicted.org/j6ug2.pdf; 2A: https://aspredicted.org/pg928.pdf; 2B: https://aspredicted.org/5kp9d.pdf; 2C: https://aspredicted.org/3h6ka.pdf; 3A: https://aspredicted.org/uy2gn.pdf; 3B: https://aspredicted.org/xa39i.pdf

2 https://osf.io/ujg2h/?view_only=a64c2ff2cf2c4b3189786cde86e6c185

whether the difference was small or large. Because we hypothesize that positive contrast is less sensitive than negative contrast to the size of the difference between products, we expected that changing the size of the difference would affect evaluations of the target product when it is worse than the reference product more than when it is better than the reference product.[3] Consequently, we expected that a small difference would generate stronger positive contrast than negative contrast.

Method

Participants ($N = 500$, mean age 30, 53% female and 46% male) were randomly assigned among five conditions. All participants viewed images, prices, and feature ratings of two portable speakers and evaluated how satisfied they would be with the durability of model A (the target) if they were to purchase it, on a nine-point scale ranging from "not satisfied at all" (coded 1) to "extremely satisfied" (coded 9). As shown in figure 3, the target's attributes were constant across conditions, and the durability rating of model B (the reference) was varied such that the target was rated the same (control), worse, or better than the reference. For participants in the *contrast* conditions, the difference in durability ratings between the models was 0.1 points (*small difference* conditions) or 1.5 points (*large difference* conditions).

Results

Changing the Size of the Difference Affected Negative Contrast but Not Positive Contrast. To test whether the size of the difference affected positive and negative contrast differently, we conducted a 2 (difference: small, large) × 2 (contrast: positive, negative) ANOVA on participants in the four *difference* conditions (table 1). A significant *difference* by *contrast* interaction suggests that changing the size of the difference affected positive and negative contrast differently ($F(1, 396) = 13.24$, $p < .001$, $\eta_G^2 = 0.032$; figure 4). Planned contrasts confirmed that changing the size of the difference significantly affected evaluations in the negative contrast conditions ($M_{small} = 6.13$ vs. $M_{large} = 4.94$, $t(396) = 5.34$, $p < .001$, $d = 0.74$) but not in the positive contrast conditions ($M_{small} = 7.25$ vs. $M_{large} = 7.30$, $t(396) = 0.22$, $p = .82$, $d = 0.032$).

A Small Difference Generated Positive Contrast but No Negative Contrast. We used the control condition as a baseline for testing the contrast effects that occur when there is a small difference between products. *T*-tests revealed that the target seemed better when it was slightly better than the reference ($M_{control} = 6.18$, SD = 1.86 vs.

3 The prediction that changing the size of the difference between products affects negative contrast more than positive contrast was also tested in supplemental studies 1–3, 5, and 6. The results were similar to study 1A (web appendix).

FIGURE 3

STUDY 1A STIMULI

	 Model A *(Target)*	 Model B *(Reference)*
Price	$130	$130
Sound quality (1=low; 10=high)	7.0	7.0
Durability (1=low; 10=high)	6.5	*Small difference:* 6.4 *or* 6.6 *Large difference:* 5.0 *or* 8.0 *Control:* 6.5
Water resistance (1=low; 10=high)	6.0	6.0
Battery life (1=short; 10=long)	6.5	6.5

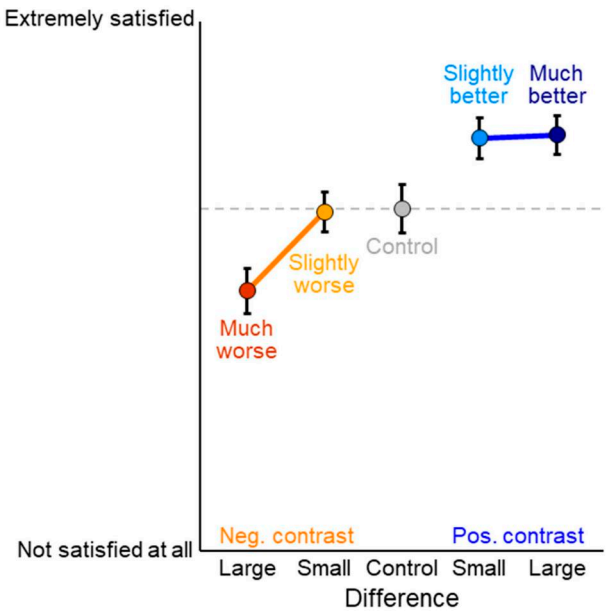
TABLE 1

STUDY 1A ANOVA (ANTICIPATED SATISFACTION)

Predictor	$F(1, 396)$	p	η^2_g
Difference (small, large)	15.64	<.001	0.038
Contrast (negative, positive)	122.15	<.001	0.24
Difference × contrast	13.24	<.001	0.032

FIGURE 4

STUDY 1A, SATISFACTION AS FUNCTION OF CONTRAST (NEGATIVE, POSITIVE)



NOTE.—Mean satisfaction with the target in the control condition (gray), negative contrast conditions (orange), and positive contrast conditions (blue) are shown as a function of the size of the difference between the target and the reference. Error bars are 95% CI.

$M_{\text{small difference}} = 7.25$, SD = 1.57; $t(199) = 4.40$, $p < .001$, $d = 0.62$) but did not seem worse when it was slightly worse than the reference ($M_{\text{small difference}} = 6.13$, SD = 1.50; $t(196) = 0.20$, $p = .84$, $d = 0.028$).

Discussion

Study 1A found that positive contrast is relatively insensitive to the size of the difference between products. Because shrinking the difference affected negative contrast but not positive contrast, when the difference was small, positive contrast was stronger than negative contrast.

A limitation of study 1A is that participants only evaluated one of the products; in the marketplace, consumers often evaluate both products. The next study tests whether positive contrast remains relatively scope insensitive when people evaluate both the better product and the worse product.

STUDY 1B

Study 1B extends study 1A in several ways. First, it involves a different product category and objective feature values (study 1A involved subjective ratings). Second, and more importantly, in this study, participants evaluated both the better product and the worse product, in line with the marketplace scenario where consumers consider buying and therefore evaluate both products, each providing a reference point for evaluations of the other. We predicted that despite attending to the size of the difference when evaluating the worse product, consumers will not attend to the size of that same difference when encountering it again, this time from the perspective of the better product.

Method

Participants ($N = 1{,}597$, mean age 25, 78% female and 21% male) were divided into *comparison* and *control* conditions. Study 2B tested our main proposition that positive contrast is relatively scope insensitive twice, both with a white air fryer (which participants evaluated first) and a black air fryer (evaluated second). Evaluations of the white model were tested in a between-participants two (difference: large vs. small) by two (contrast: positive vs. negative) plus four control conditions design. In the four *comparison* conditions, participants saw two air fryers (figure 5A). They were asked how satisfied they would be with the number of built-in presets of the white model if they were to purchase it, using a nine-point scale from "not at all" (coded 1) to "extremely" (coded 9). We manipulated the number of presets of the white model such that it had either more or fewer presets than the black model. The difference between the models was 1 preset in the *small difference* conditions and 3 presets in the *large difference* conditions. In each of the four *control* conditions, participants saw and evaluated one of the same versions of the white model used in the *comparison* conditions (with either 4, 6, 8, or 10 presets; figure 5B) without a comparison with the black model. This allowed us to establish a baseline satisfaction level for each version of the white model used in the *comparison* conditions.

On the following screen, participants in the *comparison* conditions answered the same question they just answered about the white model, but this time about the black model (participants in *control* conditions neither saw nor evaluated the black model). The black model always had seven presets, but the different conditions made seven presets either a lot better, a little better, a little worse, or a lot worse than the white model. Thus, similar to evaluations of the white model, evaluations of the black model were tested in a between-participants two (difference: large vs.

FIGURE 5

STUDY 1B STIMULI

Panel A: four comparison conditions

		
Price	$90	$90
Built-in presets (higher is better)	*Small difference:* 6 *or* 8 *Large difference:* 4 *or* 10	7
Preheating time (lower is better)	5 minutes	5 minutes

Panel B: four control conditions

	
Price	$90
Built-in presets (higher is better)	4 *or* 6 *or* 8 *or* 10
Preheating time (lower is better)	5 minutes

small) by two (contrast: positive vs. negative) design. *Control* conditions for the black model were not necessary because it did not change between conditions.

Results: First Evaluation (White Model)

The Size of the Difference Affected Negative Contrast, but Not Positive Contrast. We matched each *comparison* condition with a corresponding *control* condition that had the identical version of the white model. We used the variable *comparison* (present, absent) to toggle between each *comparison* condition and its matched *control* condition. The results of this analysis are illustrated in figure 6, where contrast effects in evaluations of the white model are indicated by differences in Y coordinates between evaluations in each control condition and its corresponding comparison condition (i.e., between gray and colored circles with the same X coordinates). For example, the leftmost orange and gray circles both represent evaluations of the white model when it had four presets. However, the orange circle shows evaluations of the white model when it was presented next to the black model, and the gray circle shows evaluations of the white model when it was presented on its own.

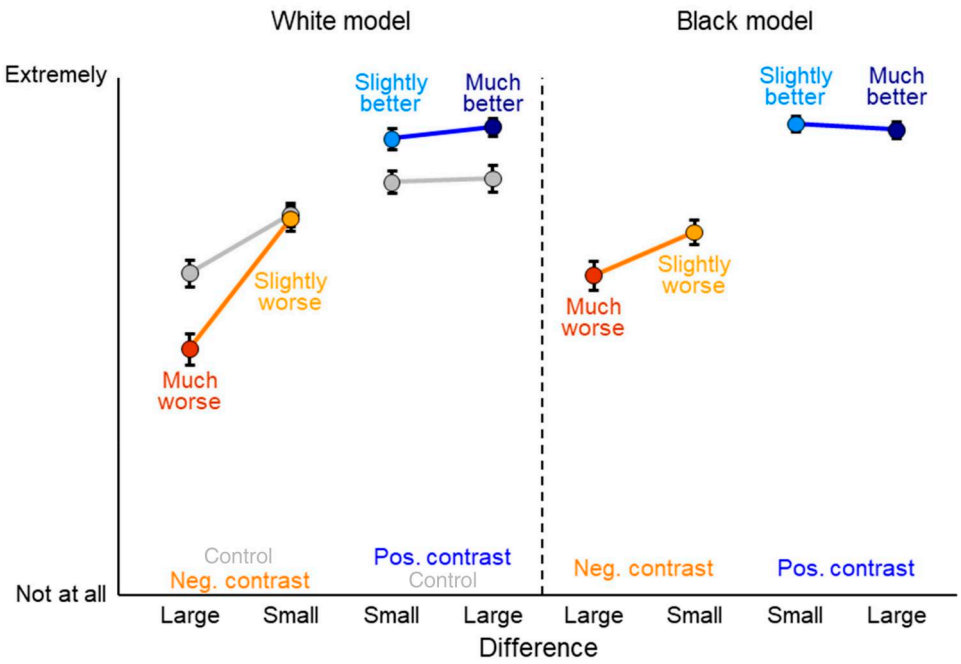
An ANOVA found a significant *contrast* (negative, positive) by *difference* (small, large) by *comparison* (present, absent) three-way interaction ($F(1, 1589) = 12.96$, $p < .001$, $\eta_G^2 = 0.0081$; panel A in table 2). We unpack this interaction in the analyses reported below.

To test whether the size of the difference affected negative contrast, we conducted a follow-up *difference* (small, large) by *comparison* (present, absent) two-way ANOVA with participants for whom the white model was worse than the black model and participants in the corresponding *control* conditions (panel B in table 2). We found a significant *difference* by *comparison* interaction ($F(1, 794) = 27.46$, $p < .001$, $\eta_G^2 = 0.033$). To unpack it, we conducted supplemental contrasts using evaluations of the white model in isolation as baselines and found negative contrast when the difference was large ($M_{large} = 4.81$ vs. $M_{matched\ control} = 5.98$, $t(794) = 7.83$, $p < .001$, $d = 0.73$) but not small ($M_{small} = 6.83$ vs. $M_{matched\ control} = 6.89$, $t(794) = 0.43$, $p = .67$, $d = 0.05$).

To test whether the size of the difference affected positive contrast, we conducted a *difference* (small, large) by *comparison* (present, absent) two-way ANOVA for participants for whom the white model was better than the black model and participants in the corresponding *control* conditions (panel C in table 2). There was no *difference* (small, large) by *comparison* (present, absent) interaction ($F(1, 795) = 0.57$, $p = .45$, $\eta_G^2 < 0.001$), such that positive contrast did not depend on the size of the difference. Using evaluations in the *control*

FIGURE 6

STUDY 1B, SATISFACTION AS FUNCTION OF CONTRAST (NEGATIVE, POSITIVE)



NOTE.—Mean satisfaction with a model when it was worse (orange) and better (blue) than the other model as a function of the size of the difference between them, as well as satisfaction with the white model in the control conditions (gray). Error bars are 95% CI.

TABLE 2

STUDY 1B ANOVA (ANTICIPATED SATISFACTION, WHITE MODEL)

	Panel A All conditions			Panel B Negative contrast			Panel C Positive contrast			Panel D large difference			Panel E Small difference		
Predictor	F (1, 1589)	p	η^2_g	F (1, 794)	p	η^2_g	F (1, 795)	p	η^2_g	F (1, 793)	p	η^2_g	F (1, 796)	p	η^2_g
Difference (small, large)	135.25	<.001	0.078	191.12	<.001	0.19	1.94	.16	0.0024						
Comparison (present, absent)	0.78	.38	<0.001	34.12	<.001	0.041	74.53	<.001	0.086	95.86	<.001	0.108	16.29	<.001	0.020
Contrast (negative, positive)	598.06	<.001	0.27							591.76	<.001	0.43	91.29	<.001	0.103
Difference × comparison	20.73	<.001	0.013	27.46	<.001	0.033	0.57	.45	<0.001						
Difference × contrast	97.59	<.001	0.058												
Comparison × contrast	99.42	<.001	0.059							3.36	.067	0.0042	11.15	.001	0.014
Difference × comparison × contrast	12.96	<.001	0.0081												

conditions as baselines, supplemental contrasts confirmed that there was positive contrast regardless of the size of the difference ($M_{small} = 8.07$ vs. $M_{matched\ control} = 7.39$, $t(795) = 5.59$, $p < .001$, $d = 0.56$; $M_{large} = 8.25$ vs. $M_{matched\ control} = 7.45$, $t(795) = 6.62$, $p < .001$, $d = 0.67$).

When the Difference Was Large, Positive Contrast Was Weaker than Negative Contrast; When the Difference Was Small, Positive Contrast Was Stronger than Negative Contrast. We conducted separate two-way ANOVAs for participants in the *large* and *small difference* conditions, each compared to its corresponding *control* conditions.

When the difference between products was large (panel D in table 2), there was a marginally significant contrast (negative, positive) × comparison present (yes, no) interaction ($F(1, 793) = 3.36$, $p = .067$, $\eta_G^2 = 0.0042$). As the contrast analyses reported above show, large differences generated substantial positive contrast ($M_{large} = 8.25$ vs. $M_{matched\ control} = 7.45$, $t(795) = 6.62$, $p < .001$, $d = 0.67$) and substantial negative contrast ($M_{large} = 4.81$ vs. $M_{matched\ control} = 5.98$, $t(794) = 7.83$, $p < .001$, $d = 0.73$), with the marginally significant interaction showing somewhat stronger negative contrast than positive contrast.

When the difference was small (panel E in table 2), the *contrast* (negative, positive) by *comparison* (present, absent) interaction was significant ($F(1, 796) = 11.15$, $p = .001$, $\eta_G^2 = 0.014$), such that small differences generated stronger positive than negative contrast. As the contrast analyses reported above indicate, small differences generated substantial positive contrast ($M_{small} = 8.07$ vs. $M_{matched\ control} = 7.39$, $t(795) = 5.59$, $p < .001$, $d = 0.56$) but no negative contrast ($M_{small} = 6.83$ vs. $M_{matched\ control} = 6.89$, $t(794) = 0.43$, $p = .67$, $d = 0.05$).

Results: Second Evaluation (Black Model)

The Size of the Difference Affected Negative Contrast, but Not Positive Contrast. An ANOVA of ratings of the black model (table 3) revealed a significant *contrast* (negative, positive) by *difference* (small, large) interaction ($F(1, 792) = 17.69$, $p < .001$, $\eta_G^2 = 0.022$), suggesting that the size of the difference affected evaluations of the black model differently depending on whether it was better or worse than the white model (figure 6). This was confirmed by supplemental contrasts showing that the size of the difference between the products affected evaluations of the black model when it was worse than the white model ($M_{small} = 6.62$ vs. $M_{large} = 5.95$, $t(792) = 5.40$, $p < .001$, $d = 0.43$) but not when it was better ($M_{small} = 8.29$ vs. $M_{large} = 8.20$, $t(792) = 0.70$, $p = .49$, $d = 0.10$). Notably, these evaluations were made by participants who evaluated those same gaps moments earlier in the other direction, from the perspective of the white model. Thus, positive contrast is size insensitive even when it follows the same attribute comparison that led to size-sensitive negative contrast in an earlier evaluation.

Discussion

Extending the results of study 1A to situations where products serve as mutual reference points, study 1B showed that even when consumers evaluate both the worse product and the better product, the size of the difference between the products has a greater impact on evaluations of the worse product (negative contrast) than on evaluations of the better product (positive contrast). Because shrinking the difference weakened negative contrast without significantly affecting positive contrast, when the difference was small (but not when the difference was large) negative contrast was weaker than positive contrast.

TABLE 3

STUDY 1B ANOVA (ANTICIPATED SATISFACTION, BLACK MODEL)

Predictor	$F(1, 792)$	p	η^2_g
Contrast (negative, positive)	467.63	<.001	0.37
Difference (small, large)	10.15	.001	0.013
Contrast × difference	17.69	<.001	0.022

STUDIES 2A–C: CHOICE IMPLICATIONS OF ASYMMETRIC SCOPE SENSITIVITY

The second empirical section examines some of the ways asymmetric scope sensitivity influences consumer choice. Study 2A shows that slightly degrading one option does not significantly impact its sales but can significantly boost the sales of a competing option. Study 2B shows that this happens because small differences generate stronger positive than negative contrast. Study 2C demonstrates a consequence of positive contrast scope insensitivity for scenarios where products represent a relative tradeoff, each better than the other on one attribute and worse on another attribute. It shows that a product is more attractive when it represents a smaller rather than a larger tradeoff relative to another product. This is because reducing the tradeoff size enhances the appeal of the product's weaker attribute without diminishing the appeal of its stronger attribute.

STUDY 2A

Studies 1A and B found that when differences between products are small, positive contrast is stronger than negative contrast. This implies that introducing small differences between options should make the better option more attractive to a greater degree than it makes the worse option less attractive. Study 2A tested this prediction. We predicted that introducing small differences between options would boost sales of the now-better option to a greater extent than it would deter sales of the now-worse option.[4]

Method

Participants ($N = 602$, mean age 33, 53% female and 45% male) were presented with two mobile phones in a format akin to that used in online phone reviews or e-commerce sites like cnet.com or apple.com (figure 7). Participants were randomly assigned to either the *control* or *small difference* condition. Model A was held constant across conditions. In the *control* condition, the two phones cost the same and had the same technical specifications (resembling the Google Pixel 7 Pro). In the *small difference* condition, model B was slightly cheaper and had slightly worse technical specifications ("constructed" using specifications of similar phones on the website cnet.com[5]). Participants had the hypothetical choice to either purchase one of the phones or to look for other options. We hypothesized that making model B slightly worse would increase sales of model A more than it would decrease its own sales, leading to an increase in the overall purchase rate.

Results

Slightly Reducing the Quality of Model B Did Not Hurt Its Sales, but Significantly Increased Sales of Model A. Making model B slightly worse did not decrease its sales (in both conditions, 28% of participants chose model B) but did increase sales of model A (control: 29% vs. small difference: 52%; $\chi^2(1) = 33.95$, $p < .001$; table 4), increasing the overall purchase rate (control: 57% vs. small difference: 80%; $\chi^2(1) = 37.29$, $p < .001$).

Discussion

Study 2A found that making one of the products in a choice set slightly worse did not hurt its sales but did increase sales of the other product. Next, we test whether small differences produce this asymmetric effect on sales by generating an asymmetric effect on product evaluations.

STUDY 2B

Study 2B was a conceptual replication of study 2A, with several changes. First, study 2B used consequential choices where participants might receive what they chose. Second, participants saw a different product category. Third, in addition to measuring the choice consequences of changing product attributes, we also examined perceptions of the products. We predicted that introducing a small difference between products would improve evaluations and increase sales of the now-better product more than it would hurt evaluations and decrease sales of the now-worse product.

Method

Participants ($N = 601$, mean age 30, 46% female and 53% male) read "you are about to make a purchase decision. One participant, selected at random, will be allocated $200 and actually receive their choice: If this participant chooses to not make a purchase, they will receive the full

4 In studies 2A and B, we did not include a "large difference" condition because this would have required significantly altering the choice set across conditions. This would have made it difficult to differentiate contrast effects from attribute value effects, or actual preferences for particular attribute levels, when interpreting differences in choice patterns across conditions. We include a *large difference* condition in choice study 2C, which avoids this issue by varying a product that is not available for purchase.

5 https://www.cnet.com/tech/mobile/pixel-7-pro-review-googles-best-flagship-phone-gets-better/

FIGURE 7

STUDY 2A STIMULI

	 Model A	 Model B	
Price	$750	*Control:* $750	*Small difference:* $730
Resolution	3,120 x 1,440 p	*Control:* 3,120 x 1,440 p	*Small difference:* 3,088 x 1,440 p
Pixel density	512 ppi	*Control:* 512 ppi	*Small difference:* 501 ppi
Refresh rate	120 Hz	120 Hz	
Camera	50 mp	*Control:* 50 mp	*Small difference:* 48 mp
Storage	512 GB	512 GB	
RAM	12 GB	12 GB	
Battery	5,000 mAh	5,000 mAh	

TABLE 4

STUDY 2A RESULTS

	Control	Small difference
Purchased A	29%	52%
Purchased B	28%	28%
No purchase	43%	20%

$200. If this participant chooses to make a purchase, we will ship it to their preferred shipping address and pay them the remainder of the $200." All participants saw the price and technical specifications of two e-book readers in a format very similar to the comparisons on the product page for the Kindle Paperwhite on amazon.com[6] (figure 8). Participants were randomly assigned to either a *control* condition or one of two *small difference* conditions. In the *control* condition, both models had the same price and technical specifications. In the *small difference* conditions, model B was either slightly more expensive with slightly better specifications, or slightly less expensive with slightly worse specifications. The price and specifications of model A were fixed across conditions. Participants in all conditions were asked whether they would prefer to keep their money, purchase model A, or purchase model B. Finally, each participant was randomly assigned to rate the quality of either model A or model B using a seven-point Likert scale from "very low quality" (coded 1) to "very high quality" (coded 7).

6 https://www.amazon.com/kindle-paperwhite/dp/B08N38WQSH/ref=sr_1_2?keywords=kindle+paperwhite+2022&qid=1674219150&sprefix=kindle+paper%2Caps%2C334&sr=8-2

Results

Introducing Small Differences Increased Sales of the Now-Better Product without Lowering Sales of the Now-Worse Product. Participants were more likely to make a purchase if there was a small difference between the models, both when model B was better (control: 31% vs. small difference: 41%; $\chi^2(1) = 3.6$, $p = .044$) and when it was worse (52%; $\chi^2(1) = 16.00$, $p < .001$). Making model B slightly better increased its sales (control: 16% vs. small difference: 28%; $\chi^2(1) = 7.8$, $p = .004$) without significantly hurting model A's sales (control: 15% vs. small difference: 13%; $\chi^2(1) = 0.30$, $p = .49$), and making model B slightly worse did not significantly hurt its sales (control: 16% vs. small difference: 12%; $\chi^2(1) = 1.30$, $p = .20$) but did increase model A's sales (control: 15% vs. small difference: 40%; $\chi^2(1) = 29.00$, $p < .001$; table 5).

Introducing Small Differences Made One Product Seem Better without Making the Other Seem Worse. To compare evaluations between conditions, we conducted a *condition* (control, small difference (worse B), small difference (better B)) by *product* (model A, model B) ANOVA (table 6), followed by planned contrasts. Making model B slightly worse did not make it significantly less attractive ($M_{\text{control}} = 4.83$ vs. $M_{\text{small difference}} = 4.59$, $t(595) = 1.65$, $p = .18$, $d = 0.23$), but it did make model A seem better ($M_{\text{control}} = 4.90$ vs. $M_{\text{small difference}} = 5.37$, $t(595) = 3.22$, $p = .003$, $d = 0.43$). Similarly, slightly improving model B made it seem better ($M_{\text{control}} = 4.83$ vs. $M_{\text{small difference}} = 5.31$, $t(595) = 3.17$, $p = .003$, $d = 0.47$) without making model A seem significantly worse ($M_{\text{control}} = 4.90$ vs. $M_{\text{small difference}} = 4.65$, $t(595) = 1.77$, $p = .14$, $d = 0.24$).

In short, introducing a small difference between products in a choice set made the now-better product more attractive

FIGURE 8

STUDY 2B STIMULI

	 Model A	 Model B	
Price	$150	*Control:* $150	*Small difference:* $130 *or* $170
Storage	15 GB	*Control:* 15 GP	*Small difference:* 14 GB *or* 16 GB
Resolution	270 ppi	*Control:* 270 ppi	*Small difference:* 240 ppi *or* 300 ppi
Battery life	9 weeks	*Control:* 9 weeks	*Small difference:* 8 weeks *or* 10 weeks
Front light	16 LEDs	*Control:* 16 LEDs	*Small difference:* 15 LEDs *or* 17 LEDs

TABLE 5

STUDY 2B RESULTS (CHOICE)

	Control	Small difference (worse B)	Small difference (better B)
Purchased A	15%	40%	13%
Purchased B	16%	12%	28%
No purchase	69%	49%	59%

TABLE 6

STUDY 2B ANOVA (PERCEIVED QUALITY)

Predictor	F	p	η^2_g
Set (control, small difference (worse B), small difference (better B))	$F(2, 595) = 0.77$	.46	0.0026
Product (model A, model B)	$F(1, 595) = 0.58$	.45	0.001
Set × product	$F(2, 595) = 24.18$	<.001	0.075

and increased its sales without making the now-worse product less attractive or decreasing its sales.

Discussion

Giving a product a very slight quality advantage led to a disproportionate increase in its sales, consistent with our theorizing that when consumers evaluate a product as better than an alternative, they do not then evaluate by how much it is better. Importantly, the same difference that resulted in a large increase in sales of the now-better product had no significant effect on sales of the now-worse product. This suggests that when evaluating the worse option, consumers tend to consider the size of the difference, such that when it is very small, negative contrast may be negligible.[7]

Some alternative interpretations of studies 2A and B are worth discussing. First, suppose participants focused on the *number* of superior features rather than on the *scope* of improvement in each feature, making one product seem much better than the other. This might explain why introducing small differences across multiple features had a large effect on sales of the better product. However, attribute-counting should have a symmetric effect: if it makes one product seem much better, it should also make the other product seem much worse. We found that introducing a small difference made one product much more attractive without making the other significantly less attractive, a pattern more consistent with asymmetric scope sensitivity than with attribute counting.

The second alternative interpretation revolves around reason-based choice (Shafir, Simonson, and Tversky 1993). In studies 2A and B, introducing product differences resulted in one product dominating the other across all features. This could have prompted some participants to ignore the size of the differences and choose the dominant product simply because it was dominant. However, much like the attribute-counting explanation outlined above, this explanation predicts a symmetric effect: if consumers follow the rule "pick the dominating product," sales of the dominant product should increase while those of the dominated decrease. Yet, we find that introducing a small difference significantly boosts sales of one option without adversely affecting the other. Furthermore, reason-based

7 Whereas we find no reliable negative contrast effect from small differences on sales (ps = 1, .58, and .25), our theory allows for small negative differences to produce small negative contrast effects. Our theory simply asserts that such negative contrast will be scope sensitive and therefore smaller than the positive contrast resulting from the same differences.

explanations are difficult to apply to our other studies where participants did not make a purchase decision (1A, 1B, 3A, and 3B). Finally, we find analogous results in study 2C below and in supplemental studies 1–4 (web appendix), where there is no dominant product.

STUDY 2C

Study 2C demonstrates an implication of asymmetric scope sensitivity for consumer choices where a product's relative advantage on one attribute is working against a relative disadvantage on another attribute. For example, when a laptop has an advantage on display quality relative to another laptop, it may have a disadvantage on battery life. In study 2C, we manipulated the size of such a tradeoff: each product was either *slightly* better than the other on one attribute and *slightly* worse on another attribute, or *much* better on one attribute and *much* worse on another. In addition, study 2C measured both choice and evaluations of a product's better and worse attributes, enabling us to directly test whether asymmetric contrast in attribute evaluations mediates the effect of changing the size of the difference on choice. In line with our finding that decreasing the size of the difference between options affects evaluations of the worse option more than evaluations of the better option, we predicted that decreasing the size of the tradeoff would make a product's worse attribute more attractive without making its better attribute less attractive. Consequently, consumers should be more likely to purchase a product representing a smaller, rather than a larger, tradeoff.[8]

Method

Participants ($N = 401$, mean age 28, 45% female and 54% male) saw information about two Bluetooth speakers. We varied ratings of durability and battery life for model B (the reference) such that model A (the target) was better than the reference on one attribute and worse on the other attribute (attributes were presented as ratings on 10-point scales, and we counterbalanced which attribute was better for each model). The differences between the attribute ratings of the models (for both durability and battery life) were 0.1 points in the *small difference* condition and 1.5 points in the *large difference* condition (figure 9). Assuming only the target model is available, participants were asked if they would purchase it or look for other options.[9] Then we asked participants, on separate pages in random order, how satisfied they would be with the battery life and durability of the target model if they were to purchase it, using nine-point scales from "not satisfied at all" (coded 1) to "extremely satisfied" (coded 9).

Results

Shrinking the Tradeoff Increased Purchase Likelihood. Participants in the *small difference* condition were more likely to purchase the target model than were participants in the *large difference* condition (75% vs. 60%; $\chi^2(1) = 9.10$, $p = .003$). Purchase likelihood was not affected by whether the target model was better on battery life or on durability (small diff.: 74% vs. 75%, respectively; $\chi^2(1) < 0.001$, $p > .999$; large diff.: 63% vs. 57%, respectively; $\chi^2(1) = 0.52$, $p = .47$).

Shrinking the Tradeoff Improved Evaluations of the Target Product's Worse Feature without Affecting Evaluations of Its Better Feature. An ANOVA with attribute evaluations as the dependent variable revealed a significant *contrast* (negative, positive) by *difference* (small, large) interaction ($F(1, 794) = 24.45$, $p < .001$, $\eta_G^2 = 0.03$; table 7), suggesting that the size of the difference between the models affected negative contrast more than positive contrast (figure 10). Supplemental contrasts confirmed that the size of the difference affected evaluations of the worse attribute (durability: $M_{small} = 6.70$ vs. $M_{large} = 5.82$, $t(794) = 4.98$, $p < .001$, $d = 0.66$; battery: $M_{small} = 6.57$ vs. $M_{large} = 5.77$, $t(794) = 4.57$, $p < .001$, $d = 0.61$) but not the better attribute (durability: $M_{small} = 7.00$ vs. $M_{large} = 6.98$, $t(794) = 0.11$, $p = .91$, $d = 0.02$; battery: $M_{small} = 7.05$ vs. $M_{large} = 7.01$, $t(794) = 0.23$, $p = .82$, $d = 0.03$).

Attribute Evaluations Mediated the Effect of the Size of the Difference on Purchase Likelihood. In a supplemental mediation analysis, we tested for mediation separately for evaluations of the better attribute and for evaluations of the worse attribute with 10,000 bootstrapped samples each, with the size of the difference as the independent variable (with small coded 0 and large coded 1), willingness to purchase as the dependent variable (with no purchase coded 0 and purchase coded 1), and attribute evaluation as the mediator. Willingness to purchase was mediated by evaluations of the worse product attribute (indirect effect = –0.09, 95% CI = [–0.13, –0.05], $p < .001$). Increasing the difference reduced participants' evaluations of the worse product attribute, $b = –0.84$, SE = 0.13, $p < .001$, which in turn made them less likely to make a purchase, $b = 0.30$, SE = 0.05, $p < 0.001$. This relationship did not hold for evaluations of the better product attribute (indirect effect = –0.003, $p = .80$).

In short, decreasing the size of the tradeoff between products improved evaluations of a product on its worse attribute, without hurting its evaluations on its better

8 Study 2C was replicated in supplemental study 3, except that participants made attribute evaluations prior to the purchase decision. The prediction that decreasing the size of the tradeoff between items makes them more attractive was also tested in supplemental study 4. The results were similar to study 2C (web appendix).

9 Unlike studies 2A and B, in study 2C, attribute values for model B varied significantly between conditions. For this reason, we did not make model B available for purchase, as it would have been difficult to disentangle contrast effects from attribute value effects.

FIGURE 9

STUDY 2C STIMULI

	 Model A *(Target)*	 Model B *(Reference)*
Price	$130	$130
Sound quality (1=low; 10=high)	8.0	8.0
Durability (1=low; 10=high)	7.5	*Small difference:* 7.4 *or* 7.6 ¦ *Large difference:* 6.0 *or* 9.0
Water resistance (1=low; 10=high)	7.0	7.0
Battery life (1=short; 10=long)	7.5	*Small difference:* 7.6 *or* 7.4 ¦ *Large difference:* 9.0 *or* 6.0

TABLE 7

STUDY 2C ANOVA (ANTICIPATED SAFISFACTION)

Predictor	$F(1, 794)$	p	η^2_g
Difference (small, large)	21.21	<.001	0.026
Contrast (negative, positive)	81.06	<.001	0.093
Attribute (battery, durability)	0.07	.79	<0.001
Difference × contrast	24.45	<.001	0.03
Difference × attribute	0.07	.79	<0.001
Contrast × attribute	0.53	.47	0.001
Difference × contrast × attribute	0.03	.87	<0.001

NOTE.—The evaluated attribute (battery, durability) did not interact with any other variable in the ANOVA, suggesting that our findings did not depend on attribute. Nevertheless, we conducted separate ANOVAs for evaluations of durability and battery life. Both showed significant difference by contrast interactions (durability: $F(1, 397) = 13.31$, $p < .001$, $\eta_G^2 = 0.032$; battery life: $F(1, 397) = 11.22$, $p = .001$, $\eta_G^2 = 0.027$).

attribute. Consequently, decreasing the size of the tradeoff increased purchase likelihood.

Discussion

The first empirical section established that positive contrast is relatively scope insensitive. The second empirical section demonstrated some implications of this for consumer choice. Specifically, studies 2A and B found that because small differences generate stronger positive than negative contrast, introducing small differences between options in a choice set increases sales of one option without hurting sales of the other. Study 2C extended our investigation to situations where products represent a relative tradeoff. It showed that because shrinking a difference weakens negative contrast without affecting positive contrast, narrowing the tradeoff between products makes them more attractive.

STUDIES 3A AND B: ASYMMETRIC SCOPE SENSITIVITY RESULTS FROM ASYMMETRIC ATTENTION

The final two studies examine why positive contrast is relatively scope insensitive. By both measuring and manipulating consideration of the size of the difference, studies 3A and B show that positive contrast is relatively scope insensitive because consumers are less likely to consider the size of the difference between products when evaluating the better one. Specifically, study 3A finds that consumers spend more time making a comparison and are more likely to consider the size of the difference between products when evaluating the worse product than when evaluating the better product, leading to positive contrast scope insensitivity. Then, study 3B shows that prompting consumers to consider the size of the difference makes positive contrast as scope sensitive as negative contrast.

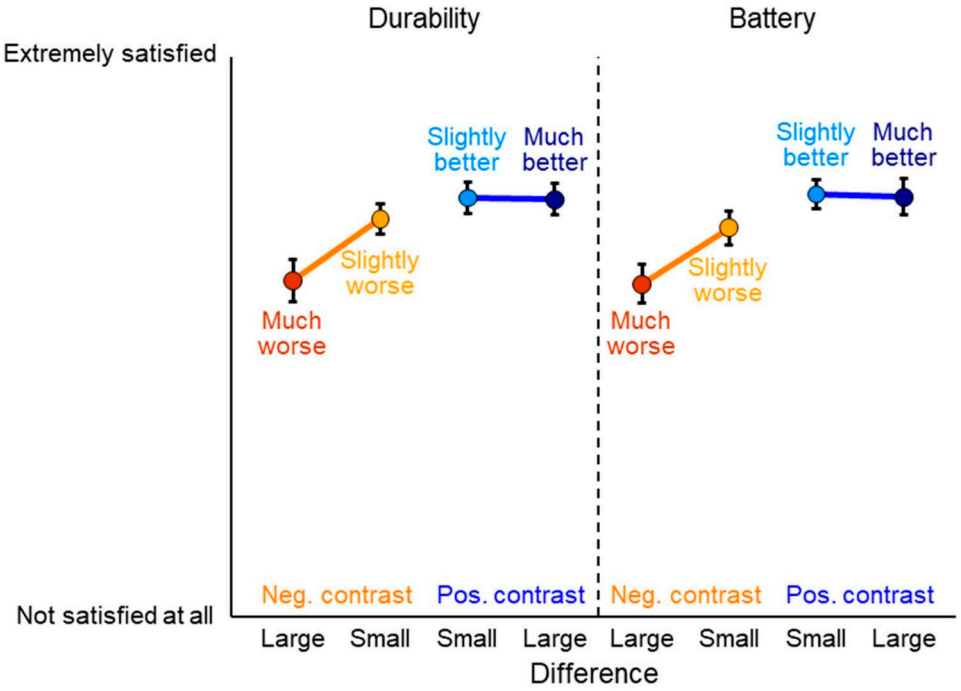
STUDY 3A

In study 3A, we monitored the amount of time participants spent making a comparison when evaluating either the better or the worse of two products. Afterwards, we also asked them whether they considered the size of the difference between the products. As in our previous studies, we predicted that the size of the difference would affect negative contrast more than positive contrast. In addition, we predicted that when evaluating the better product, participants will spend less time making the comparison, and this will be reflected in lower likelihood of reporting consideration of the size of the difference.[10]

10 The prediction that consumers spend more time comparing products when exhibiting negative contrast was also tested in supplemental study 5. The prediction that negative contrast increases the likelihood of reporting consideration of the size of the difference was also tested in supplemental study 6. Results were similar to study 3A (web appendix).

FIGURE 10

STUDY 2C, SATISFACTION AS FUNCTION OF CONTRAST (NEGATIVE, POSITIVE)



Note.—Mean satisfaction with a target rated worse (orange) or better (blue) than the reference as a function of the size of the difference between them. Error bars are 95% CI.

Method

Participants ($N = 1{,}592$, mean age 31, 52% female and 47% male) were presented with two printers and asked to estimate their satisfaction with the print resolution of the white printer if they were to purchase it (figure 11). We recorded the amount of time participants spent on the comparison page before moving on. On the next page, participants provided an evaluation on a seven-point scale from "dissatisfied" (coded –3) to "satisfied" (coded 3). As an exploratory dependent variable, we recorded the duration from the moment the measure appeared to the submission of the participants' evaluation.[11] On the final page, participants were asked "Did you simply determine whether Printer A is better or worse than Printer B, or did you also consider how big or small is the difference between them?" and picked either "Just determined if printer A is better or worse" or "Also considered the size of the difference." This is a conservative measure of attention; even when people do not pay attention to something, they tend to say that they did when asked about it explicitly (Simons 2010; Simons and Chabris 1999).

Participants were randomly assigned to one of two conditions (contrast: negative, positive). The target printer was the same for all participants, but we varied attributes of the reference printer across participants. In the negative contrast condition, the target printer had worse specifications than the reference. Conversely, in the positive contrast condition, the target printer had better specifications than the reference. The reference's print resolution, the attribute participants evaluated, was randomized across a wide range of values that such that the target printer ranged from much worse to much better than the reference for that attribute.

Results

The Size of the Difference Affected Negative Contrast More than Positive Contrast. A linear regression with evaluation of the target item as the dependent variable (reverse coded for positive contrast) and the size of the difference, contrast (negative/positive), and their interaction as independent variables (panel A in table 8) found a significant *difference* by *contrast* interaction ($\beta = 0.0011$, $t(1588) = 2.61$, $p = .009$), suggesting that the size of the

11 All findings hold regardless of whether we use reading time (on the comparison page) or response time (on the evaluation page) in our analysis. For more details, see web appendix.

FIGURE 11

STUDY 3A STIMULI

	 Printer A *(Target)*	 Printer B *(Reference)*
Price	$140	*Negative contrast:* $160 *Positive contrast:* $120
Print speed	30 pages per minute	*Negative contrast:* 35 pages per minute *Positive contrast:* 25 pages per minute
Print resolution	1000 dpi	*Neg. contrast:* (random value between 1001 and 1500) dpi *Pos. contrast:* (random value between 500 and 999) dpi
Paper capacity	250 sheets	*Negative contrast:* 280 sheets *Positive contrast:* 220 sheets
Warranty	3 years	*Negative contrast:* 4 years *Positive contrast:* 2 years

TABLE 8

STUDY 3A REGRESSION RESULTS (ANTICIPATED SATISFACTION)

	Panel A All conditions			Panel B Negative contrast			Panel C Positive contrast		
Predictor	β	$t(1588)$	p	β	$t(797)$	p	β	$t(791)$	p
(Intercept)	1.31	17.41	<.001	1.31	0.11	<.001	2.38	41.11	<.001
Difference (small, large)	–0.0014	–5.13	<.001	–0.0014	–3.68	<.001	0.00025	1.31	.19
Contrast (negative, positive)	–3.69	–3.69	<.001						
Difference × contrast	0.0011	2.47	.014						

difference affected evaluations of the target differently depending on whether participants exhibited positive or negative contrast. Separate regressions for participants in the positive and negative contrast conditions (panels B and C in table 8) revealed that the size of the difference affected evaluations in the negative contrast condition (β = –0.0014, $t(797) = -3.68$, $p < .001$) but did not have a significant effect in the positive contrast condition ($\beta = 0.00025$, $t(791)=1.31$, $p = .19$).

Participants Spent More Time Making the Comparison When There Was Negative Contrast than When There Was Positive Contrast. Following our preregistered analysis plan, we winsorized reading time at the 5th and 95th percentiles (Meyvis and Van Osselaer 2017). A t-test revealed that participants spent more time examining the attribute values in the negative contrast condition than in the positive contrast condition ($M_{\text{negative}} = 18.6$s, SD = 10.19 vs. $M_{\text{positive}} = 16$s, SD = 8.59; $t(1590) = 5.47$, $p < .001$, $d = 0.27$). This is consistent with our theory that consumers elaborate more on negative comparisons than positive ones.

Participants Were Less Likely to Consider the Size of the Difference between the Products When Exhibiting Positive Contrast. In the positive contrast condition, 60% of participants reported considering the size of the difference, compared with 71% in the negative contrast condition ($\chi^2(1) = 22.56$, $p < .001$).

Reading Time Mediated the Effect of Positive versus negative Contrast on Consideration of the Size of the Difference. We tested for mediation with 10,000 bootstrapped samples, with consideration of the size of the difference as the dependent variable (no consideration coded 0 and consideration coded 1), contrast direction as the independent variable (positive contrast coded 0 and negative contrast coded 1), and reading time as the mediator. Likelihood of considering the size of the difference was mediated by reading time (indirect effect of 0.0075, 95% CI = [0.00, 0.015], $p = .008$). Negative contrast increased reading time relative to positive contrast ($b = 2.23$, SE = 0.47, $p < .001$), which in turn increased the likelihood of considering the size of the difference ($b = 0.015$, SE = 0.0058, $p = .01$).

Reported Consideration of the Size of the Difference Moderated the Impact of the Size of the Difference on Evaluations. We hypothesize that negative contrast is more scope sensitive than positive contrast because it leads people to reflect more on the size of the difference. Accordingly, we predicted that consideration of the size of the difference would moderate the effect of the size of the difference on evaluations. A regression analysis with evaluation as the dependent variable and the size of the difference and its interaction with reported consideration of the size of the difference as independent variables revealed a significant main effect of the size of the difference ($b = –0.0025$, SE $= 0.00044$, $p < .001$), and more importantly, a significant interaction term ($b = 0.0015$, SE $= 0.00037$, $p < .001$). This shows that consideration of the size of the difference moderated the impact of the size of the difference on evaluations.

Reading Time Moderated the Impact of the Size of the Difference on Evaluations. We also predicted that reading time would moderate the effect of the size difference on evaluations, such that the size of the difference has a stronger effect on evaluations when reading time is higher. A regression analysis with evaluation as the dependent variable and the size of the difference and its interaction with reading time as independent variables revealed a significant main effect of the size of the difference ($b = –0.0025$, SE $= 0.00049$, $p < .001$), and more importantly, a significant interaction term ($b = 0.000054$, SE $= 0.000018$, $p = .003$). This shows that reading time moderates the impact of the size of the difference on evaluations.

Study 3A found that positive contrast is relatively scope insensitive because consumers spend less time scrutinizing the comparison and are less likely to report considering the size of differences between options when they exhibit positive, rather than negative, contrast. Next, we directly manipulate attention to the size of the difference to provide an additional test of whether asymmetric attention causes asymmetric scope sensitivity.

STUDY 3B

In study 3B, we manipulated the size of the difference between products and asked participants to evaluate either the worse or the better product. Importantly, we prompted some participants to consider the size of the difference when making their evaluation. We predicted that this prompt would make positive contrast scope sensitive without affecting negative contrast, resulting in positive contrast being as scope sensitive as negative contrast.

Method

Participants ($N = 1{,}601$, mean age 30, 46% female and 54% male) saw the attribute ratings of two skillets (figure 12). Participants were randomly assigned to one of eight conditions of a two (contrast: positive, negative) by two (difference: small, large) by two (prompt: absent, present) design. We varied the rating of model B (the reference) such that it was either worse or better than model A (the target). The difference between the attribute ratings of the models was 0.1 points in the *small difference* conditions and 1 point in the *large difference* conditions. Participants evaluated how satisfied they would be with the target if they were to purchase it, using a nine-point scale from "not at all" (coded 1) to "extremely" (coded 9). In the *prompt present* conditions, we asked participants to consider not only whether, but also by how much, the target is better or worse than the reference.

FIGURE 12

STUDY 3B STIMULI

	 Model A *(Target)*	 Model B *(Reference)*
Ease of cleaning	4.0	4.0
Durability	9.5	9.5
Cooking performance	5.5	*Negative contrast:* 5.6 *or* 6.5 *Positive contrast:* 5.4 *or* 4.5

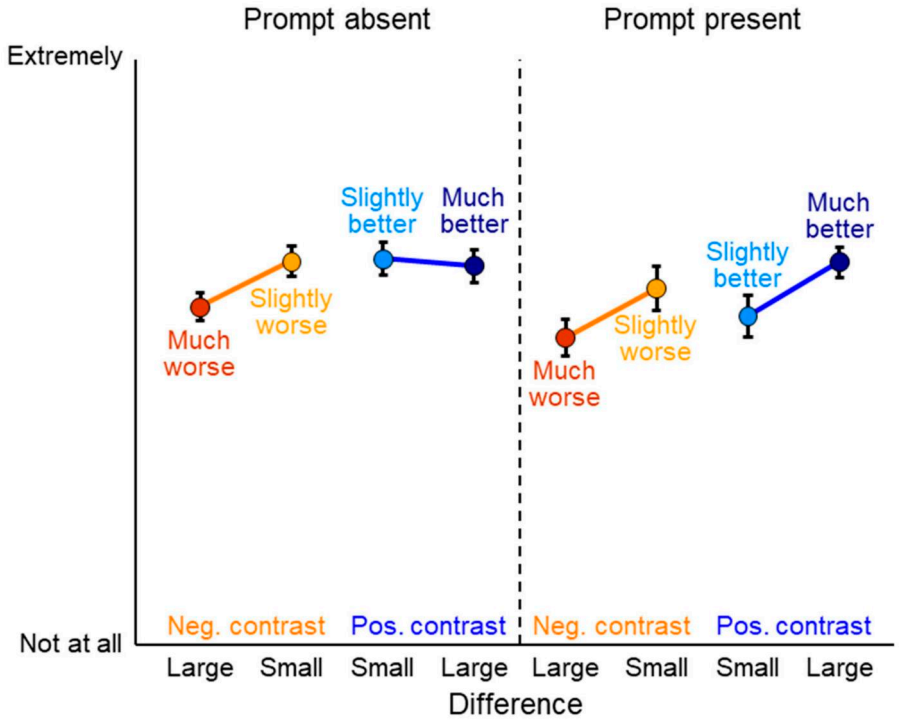
Results

Prompting Participants to Consider the Size of the Difference Eliminated the Asymmetric Scope Sensitivity. An ANOVA revealed a significant *contrast* (negative, positive) by *difference* (small, large) by *prompt* (absent, present) three-way interaction ($F(1, 1593) = 5.38$, $p = .021$, $\eta_G^2 = 0.0034$; figure 13 and panel A in table 9). A follow-up two-way ANOVA for participants in the *prompt absent* condition (panel B in table 9) showed a significant *contrast* (negative, positive) by *difference* (small, large) interaction ($F(1, 797) = 11.19$, $p < .001$, $\eta_G^2 = 0.014$), replicating our finding that when participants are not prompted to consider the size of the difference, negative contrast is more scope sensitive than positive contrast. Supplemental contrasts confirmed that in the *prompt absent* condition, the size of the difference affected negative contrast ($M_{small} = 6.25$ vs. $M_{large} = 5.63$, $t(797) = 4.09$, $p < .001$, $d = 0.43$) but not positive contrast ($M_{small} = 6.29$ vs. $M_{large} = 6.19$, $t(797) = 0.64$, $p = .52$, $d = 0.06$).

Importantly, a two-way ANOVA for participants in the *prompt present* condition (panel C in table 9) did not find a *contrast* (negative, positive) by *difference* (small, large) interaction ($F(1, 796) = 0.068$, $p = .795$, $\eta_G^2 < 0.001$), suggesting that if participants were prompted to consider the size of the difference, that size affected positive as much as negative contrast. Supplemental contrasts

FIGURE 13

STUDY 3B, SATISFACTION AS FUNCTION OF CONTRAST (NEGATIVE, POSITIVE)



NOTE.—Mean satisfaction with a target rated worse (orange) or better (blue) than a reference as a function of the size of the difference between them. Error bars are 95% CI.

TABLE 9

STUDY 3B ANOVA (ANTICIPATED SATISFACTION)

	Panel A All conditions			Panel B Prompt absent			Panel C Prompt present			Panel D Positive contrast			Panel E Negative contrast		
Predictor	F (1, 1593)	p	η^2_g	F (1, 797)	p	η^2_g	F (1, 796)	p	η^2_g	F (1, 796)	p	η^2_g	F (1, 797)	p	η^2_g
Difference (small, large)	32.29	<.001	0.020	5.96	.015	0.0074	28.54	<.001	0.035	7.31	.007	0.0091	28.02	<.001	0.034
Contrast (negative, positive)	13.38	<.001	0.0083	7.54	.0062	0.0094	6.15	.013	0.008						
Difference × contrast	3.67	.056	0.0023	11.19	<.001	0.014	0.068	.795	<0.001						
Prompt (present, absent)	20.07	<.001	0.012							9.52	.002	0.012	10.55	.001	0.013
Difference × prompt	6.71	.010	0.0042							12.43	<.001	0.015	0.039	.85	<0.001
Contrast × prompt	0.033	.86	<0.001												
Difference × contrast × prompt	5.38	.021	0.0034												

confirmed that in the *prompt present* condition, the size of the difference affected both negative contrast (M_{small} = 5.88 vs. M_{large} = 5.21, $t(796) = 3.59$, $p < .001$, $d = 0.34$) and positive contrast (M_{small} = 5.50 vs. M_{large} = 6.24, $t(796) = 3.96$, $p < .001$, $d = 0.42$).

An alternative, supplemental analysis using two-way *prompt* (present, absent) by *difference* (small, large) ANOVAs for participants in the *positive contrast* conditions (panel D in table 9) and separately in the *negative contrast* conditions (panel E in table 9) found a significant

prompt by *difference* interaction for participants in the *positive contrast* condition ($F(1, 796) = 12.43$, $p < .001$, $\eta_G^2 = 0.015$), but not for participants in the *negative contrast* condition ($F(1, 797) = 0.04$, $p = .85$, $\eta_G^2 < 0.001$). This shows that a prompt to assess the size of the difference affected positive contrast but not negative contrast, suggesting that participants in the negative contrast conditions considered the size of the difference whether they were prompted to do so or not.

Discussion

By both measuring and manipulating consideration of the size of the difference between products, studies 3A and B show that asymmetric scope sensitivity is driven by asymmetric attention to the size of the difference. Study 3A found that when experiencing positive, rather than negative, contrast consumers spend less time making a comparison and are less likely to consider the size of the difference between the target and the reference. Study 3B found that prompting consumers to consider the size of the difference eliminates the asymmetric scope sensitivity of positive and negative contrast. This occurs because prompting consideration of the size of the difference makes positive contrast scope sensitive without affecting negative contrast, consistent with study 3A's finding that consumers are less likely to spontaneously consider the size of the difference when exhibiting positive contrast. These results support our proposed attention-based mechanism and are not predicted by asymmetries of value, such as loss aversion (Tversky and Kahneman 1991).

GENERAL DISCUSSION

When consumers compare products, negative contrast can make a product seem worse, and positive contrast can make a product seem better. We find that the size of the difference between products affects negative contrast but not positive contrast.

Our first set of studies provided evidence for this asymmetric scope sensitivity by showing that shrinking the size of the difference between products weakened negative contrast but had no measurable effect on positive contrast. Consequently, when the difference between products was small, positive contrast was stronger than negative contrast.

The second set of studies showcased some practical implications of asymmetric scope sensitivity for consumer choice. Slightly reducing the quality of one option in a choice set increased sales of the now-slightly-better option despite not significantly reducing sales of the now-slightly-worse option, because small differences generated strong positive contrast but no measurable negative contrast. Where one product represented a tradeoff relative to another product, decreasing the size of the tradeoff made the target product more attractive by making its inferior attribute seem better without its superior attribute seeming worse.

The final set of studies demonstrated that asymmetric scope sensitivity results from asymmetric consideration of the size of the difference between products. Consumers exhibiting positive contrast devoted less time to scrutinizing the comparison and were less likely to spontaneously consider the size of the differences than those exhibiting negative contrast. Accordingly, prompting consumers to consider the size of the difference made positive contrast as scope sensitive as negative contrast.

Theoretical Contribution

While it is well documented that differences between products lead to contrast effects (Cogan et al. 2013; Dolese et al. 2005; Huh et al. 2016; Kahneman and Miller 1986; Morewedge et al. 2019; Novemsky and Ratner 2003), the present work investigates how the size of these differences influences the intensity of such effects. Our experiments show that consumers are less likely to consider that size when evaluating the better product than when evaluating the worse product, leading to an asymmetric effect of the size of the difference on the intensity of positive and negative contrast. Thus, although it might have been previously assumed that bigger differences lead to stronger contrast effects, we offer a more nuanced view, where the relationship between size of differences and intensity of contrast effects depends on the direction of comparison.

Our findings also contribute to research about how the attention paid to positive and negative stimuli determines their impact. Prior research emphasized that negativity typically garners more attention (Gilbert et al. 2004; Gilovich 1983; Harinck et al. 2007; Lejarraga and Hertwig 2017; Lejarraga et al. 2012; Öhman 2007; Pratto and John 1991; Taylor 1991), and often linked greater attention to stronger reactions and contrast effects (Morewedge et al. 2019; Smith and Krajbich 2019; Voichek and Novemsky 2021). Based on this research, it might be inferred that a given difference between products always generates stronger negative than positive contrast. However, we find that when the difference is small, positive contrast is stronger than negative contrast. Increased attention to a comparison does not simply intensify its impact; it makes the processing of the comparison more elaborate, focusing consumers on the size of the difference. Consequently, greater attention can lead to either intensified or diminished contrast effects, depending on the size of the difference, such that when the difference is small, greater attention leads to weaker contrast. Because consumers attend more to the size of small differences when evaluating the worse product than when evaluating the better product, small differences lead to weaker negative contrast than positive contrast. This is consistent with research showing other cases where greater attention to a stimulus decreases its hedonic impact

(Gilbert et al. 2004; Taylor 1991). For instance, greater attention to gambling losses allows for more elaboration and can help discount those losses (Gilovich 1983), and greater attention can focus participants on the fact that a prize is not immediate and dampen the excitement of winning it (Ebert and Meyvis 2014).

We also contribute to research on positive–negative asymmetries. Social scientists have generally accepted that "bad is stronger than good" and that people are overly sensitive to losses (Baumeister et al. 2001; Rozin and Royzman 2001). This is often attributed to asymmetric subjective value, where downward deviations from a reference point are more impactful than corresponding upward deviations (Kahneman and Tversky 1979; Tversky and Kahneman 1991). By testing when consumers pay attention to the size of the difference, we identify a positive/negative asymmetry that results from asymmetric consideration rather than asymmetric value and identify conditions where bad is *weaker* than good.

An alternative explanation for negative contrast being more scope sensitive than positive contrast comes from prospect theory (Kahneman and Tversky 1979). In that view, negative contrast is more scope sensitive because the loss function is steeper than the gain function (Tversky and Kahneman 1991). Accordingly, applying prospect theory to the question of how the size of the difference between options affects positive and negative contrast effects (which requires the assumption that consumers consider the size of the difference between options when comparing them) leads to the prediction that negative contrast is always stronger than positive contrast. Contrary to this prediction, we find that when the difference is small, negative contrast is *weaker* than positive contrast. Furthermore, whereas the ratio of the steepness of the loss function to the steepness of the gain function, or the *loss aversion coefficient*, was estimated to be around 2 (Brown et al. 2021), in our studies, this ratio is many times higher, sometimes reaching infinity (1B, 2C, and 3B, as well as supplemental studies 1 and 3, where increasing the size of the difference did not even directionally increase positive contrast). This cannot be explained by loss aversion but is consistent with our theory, as we propose that the size of the difference tends to not be considered in positive contrast, such that the denominator in the ratio above may reach zero.

While predictions derived from our theory might appear to conflict with some earlier research, these differences should not be interpreted as contradictions. Other theories about subjective value, such as prospect theory (Kahneman and Tversky 1979), do not indicate when people attend to or ignore the size of the difference between options. For instance, range–frequency theory (Parducci 1965) and adaptation level theory (Helson 1948) do not make predictions about asymmetries between positive and negative contrast in general, and do not specify whether the size of the difference between options affects positive and negative contrast differently. Rather, such theories focus on explaining people's choices or evaluations assuming that they have considered the information in front of them, including the size of any differences between objects. The asymmetry we introduce occurs at an earlier stage, after consumers noticed a gap but have not yet considered its size. Specifically, we propose and demonstrate that consumers tend to ignore the size of the difference between products when assessing the better option but consider it when evaluating the worse option (studies 3A and B). This distinction between our theory about attention and earlier theories about value is clearly demonstrated by our finding that prompting consideration of the size of the difference affects evaluations. This finding cannot be explained by theories about value, because those theories do not speak to when people consider the size of the difference, and thus to whether increasing attention to it would affect positive and negative contrast effects differently. Therefore, apparent contradictions between our theory and these earlier theories can be reconciled by applying earlier theories in contexts where consumers consider the size of differences between options and applying our theory to predict when such considerations are likely to occur.

Our finding that small differences lead to strong positive contrast may seem at odds with the earlier finding that they can lead to assimilation (Herr 1989). However, assimilation typically occurs when people focus on similarities; focusing on differences tend to produce contrast. Direct product comparisons, a part of most consumer choice processes, naturally lead consumers to focus on differences rather than similarities, leading to contrast effects rather than assimilation (Cunha and Shulman 2011; Mussweiler 2007; Stapel, Koomen, and Velthuijsen 1998).

Practical Implications

The growing availability and sophistication of comparison tools, such as the websites rtings.com, versus.com, or cars.com, make it even easier for consumers to conduct detailed product comparisons. Even when consumers do not actively seek to compare a product to its alternatives, marketers often prompt them to do so. For example, on the amazon.com product pages for the portable speakers used in one of our experiments, a prompt to "consider a similar item" appears immediately beneath the products' descriptions. Further down the page, consumers are shown an attribute-by-attribute comparison between the speaker and other portable speakers, similar to our opening example where apple.com product pages introduce attribute-by-attribute comparisons between variants of the latest iPhone.

Such comparisons are frequently made between relatively similar products, perhaps even more often than comparisons between dissimilar options. For instance, the first results of our Google searches "speaker comparison" and "earphones comparison" brought up function-by-function

comparisons between products with rating differences ranging from 0.1 to 0.8 points on 10-point scales, strongly resembling our studies 1A and 2C. Furthermore, manufacturers often encourage comparisons involving small differences. For instance, similar to our study 2A, Apple's website includes an iPhone comparison tool where consumers comparing the 14th and 15th generations of the iPhone see that the earlier model has a display resolution of 2,532 × 1,170 pixels, while the latest model has a resolution of 2,556×1,179 pixels.

Our findings have direct implications for how such comparisons between relatively similar options influence consumer choice. Whereas much research may lead to the prediction that a comparison always makes the inferior product seem worse more than it makes the superior product seem better (Baumeister et al. 2001; Rozin and Royzman 2001; Tversky and Kahneman 1991), we find that providing a comparison between products with minor quality differences significantly enhances the appeal of one product without diminishing the attractiveness of the other. This suggests that marketers may increase the sales of one product without diminishing the appeal of another product by encouraging consumers to compare between relatively similar products—such as by displaying them side by side or presenting attribute-by-attribute comparison tables. Alternatively, when presenting comparisons that emphasize only a select few product attributes (similar to our opening example, where the comparison featured three out of dozens of potential attributes), marketers could focus on attributes where the products exhibit relatively small differences to get these disproportionate positive effects.

As mentioned above, we identify an asymmetry that results from asymmetric consideration rather than asymmetric value. Unlike asymmetries resulting from asymmetric value, the asymmetry we identify may be mitigated with simple prompts to consider the size of the difference between options. This implies that when a marketer's offering is far superior to the competition, they should stress the scope of the difference. For instance, in Samsung's classic "It doesn't take a genius" ad, a Galaxy phone is compared to an iPhone, and significant comparative advantages for the Galaxy (such as 790 hours of standby time, compared with iPhone's 225 hours) may be underappreciated. Our theory suggests that the ad might have been more effective if it were to highlight, for example, that the Galaxy has *much* longer battery life rather than simply presenting the two attribute values and assuming consumers will consider the size of the difference.

Our findings also imply that manufacturers may use small differences to gain sales, as small advantages generate as much positive contrast as large advantages (studies 1A and B), resulting in substantial increases in sales (studies 2A and B). This suggests that manufacturers may not always need to make groundbreaking improvements to be much more attractive than close competitors.

Lastly, reminding consumers to consider not only whether, but also by how much, products are better and worse than one another would help them avoid giving too much weight to minor differences or too little weight to major differences.

Limitations and Future Directions

In our experiments, participants made comparisons between no more than two options. This approach allows for experimental control and is used to explain actual decisions in both classical and recent research on context effects and consumer decision making in general (Kahneman and Tversky 1979; Shafir et al. 1993; Simonson and Tversky 1992; Sokolova, Krishna, and Döring 2023; Wilson and Bellezza 2022). Like in this earlier research, we believe that our theory applies to larger consideration sets. When presented with many options, consumers often simplify the decision by comparing two options at a time, ultimately leading to a choice between two options. This seems to be a fundamental aspect of how people make choices (Bettman, Luce, and Payne 1998), suggesting that our theory likely extends to choices among many options. Nevertheless, future research could examine how our asymmetry applies in such situations, given that positive and negative contrast can take on different meanings in the context of a larger choice set.

We showed that positive contrast scope insensitivity could be eliminated by a simple prompt to consider the size of the difference between products. Future research may investigate the contextual and individual factors that determine when consumers spontaneously consider the size of the difference, given that features of a comparison affect how much consumers attend to that comparison (e.g., people attend more to social comparisons (Morewedge et al. 2019) and less to cross-category comparisons (Cogan et al. 2013; Huh et al. 2016)). For instance, it is possible that maximizers' tendency to maximize the relative advantages of their chosen option (Schwartz et al. 2002) leads them to focus on the size of all differences and experience scope-sensitive positive contrast. Conversely, when an evaluation is highly emotional, consumers might experience scope-insensitive negative contrast, because emotionality decreases scope sensitivity (Hsee and Rottenstreich 2004).

Finally, whereas our studies focused on product choice, the finding that positive contrast is relatively scope insensitive has potential implications for any comparative judgment. For instance, in a preliminary study, we find that when people receive the smaller of two awards, they feel worse if their award is much, rather than slightly, smaller, but when they receive the larger of two awards, their happiness does not depend on the size of the other award. Future research could investigate whether asymmetric scope insensitivity occurs in non-product comparisons.

Conclusion

Positive contrast is relatively scope insensitive: the size of the difference between products affects the attractiveness of the worse product much more than that of the better one. Even when the difference is so small that negative contrast is negligible, positive contrast is as strong as when the difference is large. This asymmetry occurs because consumers are less likely to consider the size of the difference when evaluating the better product than when evaluating the worse one.

DATA COLLECTION STATEMENT

The first author collected all data using Prolific between the winter of 2021 and the summer of 2024. The first author analyzed these data. The data are currently stored in a project directory on the Open Science Framework.

REFERENCES

Baumeister, Roy F., Ellen Bratslavsky, Catrin Finkenauer, and Kathleen D. Vohs (2001), "Bad Is Stronger Than Good," *Review of General Psychology*, 5 (4), 323–70.

Bettman, James R., Mary Frances Luce, and John W. Payne (1998), "Constructive Consumer Choice Processes," *Journal of Consumer Research*, 25 (3), 187–217.

Brown, Alexander L, Taisuke Imai, Ferdinand M. Vieider, and Colin F. Camerer (2024), "Meta-Analysis of Empirical Estimates of Loss Aversion," *Journal of Economic Literature*, 62 (2), 485–516.

Carter, Travis J. and Thomas Gilovich (2010), "The Relative Relativity of Material and Experiential Purchases," *Journal of Personality and Social Psychology*, 98 (1), 146–59.

Cogan, Elizabeth, Scott Parker, and Debra A. Zellner (2013), "Beauty Beyond Compare: Effects of Context Extremity and Categorization on Hedonic Contrast," *Journal of Experimental Psychology. Human Perception and Performance*, 39 (1), 16–22.

Cunha, Marcus, and Jeffrey D. Shulman (2011), "Assimilation and Contrast in Price Evaluations," *Journal of Consumer Research*, 37 (5), 822–35.

Dolese, Melissa J., Debra A. Zellner, Marsha Vasserman, and Scott Parker (2005), "Categorization Affects Hedonic Contrast in the Visual Arts," *Bulletin of Psychology and the Arts*, 5 (2), 21–5.

Ebert, Jane E. J. and Tom Meyvis (2014), "Reading Fictional Stories and Winning Delayed Prizes: The Surprising Emotional Impact of Distant Events," *Journal of Consumer Research*, 41 (3), 794–809.

Evangelidis, Ioannis, Jonathan Levav, and Itamar Simonson (2023), "The Upscaling Effect: How the Decision Context Influences Tradeoffs between Desirability and Feasibility," *Journal of Consumer Research*, 50 (3), 492–509.

Harinck, Fieke, Eric Van Dijk, Ilja Van Beest, and Paul Mersmann (2007), "When Gains Loom Larger Than Losses—Reversed Loss Aversion for Small Amounts of Money," *Psychological Science*, 18 (12), 1099–105.

Gilbert, Daniel T., Matthew D. Lieberman, Carey K. Morewedge, and Timothy D. Wilson (2004), "The Peculiar Longevity of Things Not So Bad," *Psychological Science*, 15 (1), 14–9.

Gilovich, Thomas (1983), "Biased Evaluation and Persistence in Gambling," *Journal of Personality and Social Psychology*, 44 (6), 1110–26.

Helson, Harry (1948), "Adaptation-Level as a Basis for a Quantitative Theory of Frames of Reference," *Psychological Review*, 55 (6), 297–313.

Herr, Paul M. (1989), "Priming Price: Prior Knowledge and Context Effects," *Journal of Consumer Research*, 16 (1), 67–75.

Hsee, Christopher K. and Yuval Rottenstreich (2004), "Music, Pandas, and Muggers: On the Affective Psychology of Value," *Journal of Experimental Psychology. General*, 133 (1), 23–30.

Huh, Young Eun, Joachim Vosgerau, and Carey K. Morewedge (2016), "More Similar but Less Satisfying: Comparing Preferences for and the Efficacy of within- and Cross-Category Substitutes for Food," *Psychological Science*, 27 (6), 894–903.

Kahneman, Daniel and Amos Tversky (1979), "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47 (2), 263–92.

Kahneman, Daniel and Dale T. Miller (1986), "Norm Theory. Comparing Reality to Its Alternatives," *Psychological Review*, 93 (2), 136–53.

Kassam, Karim S., Carey K. Morewedge, Daniel T. Gilbert, and Timothy D. Wilson (2011), "Winners Love Winning and Losers Love Money," *Psychological Science*, 22 (5), 602–6.

Lejarraga, Tomás and Ralph Hertwig (2017), "How the Threat of Losses Makes People Explore More Than the Promise of Gains," *Psychonomic Bulletin & Review*, 24 (3), 708–20.

Lejarraga, Tomás, Ralph Hertwig, and Cleotilde Gonzalez (2012), "How Choice Ecology Influences Search in Decisions from Experience," *Cognition*, 124 (3), 334–42.

Liu, Peggy J., Kelly L. Haws, Karen Scherr, Joseph P. Redden, James R. Bettman, and Gavan J. Fitzsimons (2018), "The Primacy of "What" over "How Much": How Type and Quantity Shape Healthiness Perceptions of Food Portions," *Management Science*, 65 (7), 3353–81.

Meyvis, Tom and Stijn M. J. Van Osselaer (2017), "Increasing the Power of Your Study by Increasing the Effect Size," *Journal of Consumer Research*, 44 (5), 1157–73.

Morewedge, Carey K., Daniel T. Gilbert, Kristian Ove R. Myrseth, Karim S. Kassam, and Timothy D. Wilson (2010), "Consuming Experience: Why Affective Forecasters Overestimate Comparative Value," *Journal of Experimental Social Psychology*, 46 (6), 986–92.

Morewedge, Carey K., Meng Zhu, and Eva C. Buechel (2019), "Hedonic Contrast Effects Are Larger When Comparisons Are Social," *Journal of Consumer Research*, 46 (2), 286–306.

Mussweiler, Thomas (2007), "Assimilation and Contrast as Comparison Effects: A Selective Accessibility Model," in *Assimilation and Contrast in Social Psychology*, ed. D. A. Stapel and J. Suls, New York, NY: Psychology Press, 165–85.

Novemsky, Nathan and Rebecca K. Ratner (2003), "The Time Course and Impact of Consumers' Erroneous Beliefs About Hedonic Contrast Effects," *Journal of Consumer Research*, 29 (4), 507–16.

Öhman, Arne (2007), "Has Evolution Primed Humans to "Beware the Beast," *Proceedings of the National Academy of Sciences*, 104 (42), 16396–7.

Parducci, Allen (1965), "Category Judgment: A Range-Frequency Model," *Psychological Review*, 72 (6), 407–18.
Pratto, Felicia and Oliver P. John (1991), "Automatic Vigilance: The Attention-Grabbing Power of Negative Social Information," *Journal of Personality and Social Psychology*, 61 (3), 380–91.
Rozin, Paul and Edward B. Royzman (2001), "Negativity Bias, Negativity Dominance, and Contagion," *Personality and Social Psychology Review*, 5 (4), 296–320.
Schley, Dan R., Bart De Langhe, and Andrew R. Long (2020), "System 1 Is Not Scope Insensitive: A New, Dual-Process Account of Subjective Value," *Journal of Consumer Research*, 47 (4), 566–87.
Schwartz, Barry, Andrew Ward, John Monterosso, Sonja Lyubomirsky, Katherine White, and Darrin R. Lehman (2002), "Maximizing Versus Satisficing: Happiness Is a Matter of Choice," *Journal of Personality and Social Psychology*, 83 (5), 1178–97.
Shafir, Eldar, Itamar Simonson, and Amos Tversky (1993), "Reason-Based Choice," *Cognition*, 49 (1-2), 11–36.
Simons, Daniel J. (2010), "Monkeying around with the Gorillas in Our Midst: Familiarity with an Inattentional-Blindness Task Does Not Improve the Detection of Unexpected Events," *i-Perception*, 1 (1), 3–6.
Simons, Daniel J. and Christopher F. Chabris (1999), "Gorillas in Our Midst: Sustained Inattentional Blindness for Dynamic Events," *Perception*, 28 (9), 1059–74.
Simonson, Itamar and Amos Tversky (1992), "Choice in Context: Tradeoff Contrast and Extremeness Aversion," *Journal of Marketing Research*, 29 (3), 281–95.
Smith, Stephanie M. and Ian Krajbich (2019), "Gaze Amplifies Value in Decision Making," *Psychological Science*, 30 (1), 116–28.
Sokolova, Tatiana, Aradhna Krishna, and Tim Döring (2023), "Paper Meets Plastic: The Perceived Environmental Friendliness of Product Packaging," *Journal of Consumer Research*, 50 (3), 468–91.
Stapel, Diederik A., Willem Koomen, and Aart S. Velthuijsen (1998), "Assimilation or Contrast?: Comparison Relevance, Distinctness, and the Impact of Accessible Information on Consumer Judgments," *Journal of Consumer Psychology*, 7 (1), 1–24.
Taylor, Shelley E. (1991), "Asymmetrical Effects of Positive and Negative Events: The Mobilization-Minimization Hypothesis," *Psychological Bulletin*, 110 (1), 67–85.
Tversky, Amos and Daniel Kahneman (1991), "Loss Aversion in Riskless Choice: A Reference-Dependent Model," *The Quarterly Journal of Economics*, 106 (4), 1039–61.
Voichek, Guy and Nathan Novemsky (2021), "Asymmetric Hedonic Contrast: Pain Is More Contrast Dependent Than Pleasure," *Psychological Science*, 32 (7), 1038–46.
Weingarten, Evan, Shai Davidai, and Alixandra Barasch (2023), "Who's on First? People Asymmetrically Attend to Higher-Ranked (vs. lower-Ranked) Competitors," *Journal of Experimental Social Psychology*, 104, article 104405.
Wilson, Anne V. and Silvia Bellezza (2022), "Consumer Minimalism," *Journal of Consumer Research*, 48 (5), 796–816.
Woolley, Kaitlin and Peggy J. Liu (2021), "How You Estimate Calories Matters: Calorie Estimation Reversals," *Journal of Consumer Research*, 48 (1), 147–68.
Zhang, Shi and Arthur B. Markman (2001), "Processing Product Unique Features: Alignability and Involvement in Preference Construction," *Journal of Consumer Psychology*, 11 (1), 13–27.

Journal of Consumer Research, 2025, 52, 157–178
https://doi.org/10.1093/jcr/ucae052
Article