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# How altruistic alternatives reverse the compromise effect

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## Abstract

Brand managers increasingly add altruistic product attributes, such as fair trade or charitable donations, to their products to account for consumers' increasing expectations of altruistic brand behavior. Despite the extensive amount of altruistic product attributes in today's markets, it is unclear how these attributes affect consumer decision-making in different contexts. This paper particularly examines the influence of altruistic product attributes on the compromise effect. Through five experimental studies, we provide pioneering evidence that consumers face general difficulty in accepting trade-offs involving altruistic attributes and that altruistic attributes change the compromise effect substantially. While the well-established compromise effect, predicting a preference for middle options (compromises) over extreme options, holds for trade-offs between utilitarian attributes, it diminishes for altruistic trade-offs. Moreover, the trade-offs between utilitarian and altruistic attributes reverse the compromise effect, i.e., leading to a preference for extreme options. We also demonstrate that impression management moderates this effect.

**Keywords** Compromise effect · Altruistic attributes · Utilitarian attributes · Decision-making · Decision difficulty · Impression management

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## 1 Introduction

With consumers' rising awareness of poverty, climate change, environmental pollution, and unethical production conditions, practitioners increasingly add and communicate altruistic product attributes that primarily benefit others (e.g., donations or animal welfare) to their products. Still, the impact of these attributes on consumers' decision-making is not evident. While research suggests altruistic attributes are welcomed by consumers (Chernev & Blair, 2015; Romani et al., 2013), consumers often do not have stable preferences and rely on context to determine their decision (Amir & Levav, 2008; Bettman et al., 1998; Huber et al., 1982; Tversky & Simonson, 1993). However, whether and how the presence of altruistic attributes influences how consumers make trade-offs is unclear. We address this gap by focusing on the compromise effect (Kim & Kim, 2016; Simonson, 1989) and demonstrating the general difficulty that consumers experience in accepting trade-offs for altruistic attributes.

Prior research on the compromise effect focuses almost exclusively on trade-offs between two utilitarian product attributes (hereafter, UU trade-offs), with a notable exception of considering hedonic ones (Kim & Kim, 2016). However, products increasingly feature altruistic attributes, such as fair trade or charitable donations. Consequently, consumers often face trade-offs between two altruistic product attributes (hereafter, AA trade-offs) and trade-offs between altruistic and utilitarian attributes (hereafter, AU trade-offs) in many purchase decisions (Lin & Chang, 2012).

This research sheds light on trade-offs involving altruistic attributes and their influence on the compromise effect. First, we examine AA trade-offs, replicating the well-established compromise effect. Next, we demonstrate that the compromise effect diminishes and even reverses in AU trade-offs. Finally, we address the moderating role of impression management.

## 2 Theoretical background and hypotheses

The compromise effect refers to the tendency of individuals to prefer a middle or compromise option over extreme alternatives, even when the extreme options are more favorable, i.e., higher quality or value (Simonson, 1989). Uncertainty is the key reason consumers prefer a middle option. In particular, the uncertainty of decision-making revolves around justifying a decision towards oneself or others due to uncertain preferences (Simonson, 1989; Wernerfelt, 1995). Choosing compromises reduces the associated risk and complexity of trade-off decisions, thus lightening the perceived decision difficulty (Dhar & Simonson, 2003; Luce et al., 2001).

Prior research on potential moderators of the compromise effect is represented by two major literature streams, focusing on choice framing and personal characteristics. Choice framing refers to how choice options are presented to the

consumer, such as the availability of a no-choice option (e.g., Dhar & Simonson, 2003), availability of time pressure (e.g., Dhar et al., 2000) or binding settings (e.g., Müller et al., 2012). Increasingly, studies focus on the influence of personal characteristics on the compromise effect, such as self-regulatory focus (Mourali et al., 2007), mood (Lin et al., 2006), brand familiarity (Sinn et al., 2007), maximizing tendencies (Mao, 2016), the need for justification (Chernev, 2005; Simonson, 1989), or the need to provide reasons (Briley et al., 2000). This study contributes to the emerging third stream that started to investigate product-related factors (Kim, 2017; Kim & Kim, 2016). For example, Kim and Kim (2016) detect stronger compromise effects in utilitarian (vs. hedonic) consumption situations.

We distinguish between altruistic and utilitarian product attributes. We define altruistic product attributes as primarily benefiting others (Melnik et al., 2022). These benefits can occur directly (e.g., donations to charity, support of animal welfare) or indirectly (e.g., contribution to environmental protection). Altruistic product attributes convey information, such as pollution, working conditions, or animal welfare, that is perceived as abstract and distant to the self but benefitting others (White et al., 2019). Despite being commonly quantifiable (e.g., amount of a donation, carbon footprint of a product), consumers often struggle to evaluate such attributes (Grinstein et al., 2018).

In contrast, utilitarian product attributes are driven by functionality goals and are evaluated primarily based on functional, instrumental, and practical benefits to consumers (e.g., Kim & Kim, 2016; Melnik et al., 2022). The functional nature of such attributes (e.g., printing speed, optical zoom) makes them relatively easy to understand and compare.

We expect consumers to have difficulty accepting and making trade-offs for altruistic attributes. Consumers search for reasons to justify an alternative towards others or oneself (Simonson, 1989). Altruistic product attributes often involve the prevention of ‘bad things’ (e.g., poverty or pollution) or directly helping others, making such trade-offs harder to justify relative to common utilitarian attributes. For instance, it is harder to justify an alternative that compromises charity donations for environmental protection than an alternative that compromises printing quality for printing speed.

Moreover, when a choice benefits others, social norms become more impactful (Melnik et al., 2022), accentuating a moral component that resists compromise. Therefore, consumers find it challenging to weigh altruistic attributes against each other and make compromises. In contrast, consumers are used to making trade-offs regarding utilitarian attributes, e.g., giving up quality for a lower price. Consequently, we expect consumers’ decisions in AA trade-offs to result less often in the compromise compared to UU trade-offs.

*H<sub>1</sub>: The compromise effect will be stronger under a utilitarian (UU) versus an altruistic (AA) trade-off.*

Nowadays, besides UU and AA trade-offs, consumers also face AU trade-offs in many purchase decisions (Lin & Chang, 2012), pitting individual practical goals (e.g., car functionality) against collective or other-benefitting goals (e.g.,

environmental protection). Thus, consumers are torn between utilitarian product alternatives, serving self-interest, and altruistic product alternatives (Schuitema & de Groot, 2015).

While altruistic product attributes improve consumers' liking and product evaluation (Arora & Henderson, 2007; Chernev & Blair, 2015), consumers are often unwilling to trade altruistic for utilitarian attributes, particularly regarding functionality (Barone et al., 2000; Luchs & Kumar, 2017). Hence, AU trade-offs create social dilemmas implying high decision difficulty. To address this dilemma, consumers must first prioritize between utilitarian and altruistic goals. This initial choice defines subsequent choice behavior. Importantly, such a two-step process for trade-off decisions increases the likelihood of choosing an extreme option due to the amplification of the consumers' initial preferences relative to a one-step choice process (Lei & Zhang, 2021).

Moreover, altruistic attributes have a moral component that resists compromise. Those who value the moral code are unwilling to diminish it for a utilitarian benefit. Those who favor utilitarian benefits tend to disregard the entire moral code, also ignoring its levels.

Consequently, we expect consumers in AU trade-offs to use a two-step process in their decision-making. First, consumers must decide on the dominant attribute type, i.e., the utilitarian or altruistic attribute. Second, consumers stick to their dominant attribute type and choose the more extreme option regarding this attribute. Regardless of the choice in the first step, the two-step process is likely to result in choosing an extreme alternative (Lei & Zhang, 2021), which contradicts the well-established compromise effect. Thus, we expect the compromise effect in AU trade-offs to turn negative, leading to a reverse compromise effect, i.e., an increase in preference for extreme options.

*H<sub>2</sub>: The compromise effect will be stronger under a utilitarian (UU) and reverses under an altruistic-utilitarian (AU) trade-off.*

Expanding upon the need for self- or other-justification (Simonson, 1989; Wernerfelt, 1995), we expect that a need for impression management amplifies these preference structures. High impression management refers to using deliberate and strategic behaviors to create a positive image of oneself to others, while low impression management involves minimal use of such behaviors and prioritizes authenticity (Peloza et al., 2013; Schlenker, 1980).

Impression management theory states that individuals are generally motivated to make a good impression on others and strive to present themselves positively (Goffman, 1959). Consumers tend to choose products that align with their desired self-image and conform to the behaviors of their favored in-group while avoiding products associated with distanced out-groups (Cialdini & Goldstein, 2004; Peloza et al., 2013; Schlenker, 1980).

When consumers engage in impression management, they are more likely to choose alternatives that are intermediate between two extremes in UU trade-offs because they may be perceived as more balanced and easier to justify (Peloza et al., 2013; Simonson, 1989). Consequently, impression management is likely to enhance the compromise effect, promoting middle compared to extreme options. Thus, we

expect a stronger compromise effect in UU trade-offs for consumers with a high need for impression management.

In contrast, we expect a stronger preference for extreme options in AU trade-offs for consumers with a high need for impression management. In such situations, to create a positive image of themselves to others, consumers must first identify the dominant attribute type, i.e., utilitarian or altruistic, of their favored in-group and then choose the alternative with the most extreme expression of this attribute as they want to gain admiration (Cialdini & Goldstein, 2004). If they expect the utilitarian attribute to be dominant, they will compromise on the altruistic attribute, and vice versa (Lei & Zhang, 2021; Peloza et al., 2013). This rationale implies that choosing the middle option may have strategic negative impacts. Consequently, in AU trade-offs, individuals with a high need for impression management are more likely to choose the alternative with the most extreme expression of the dominant attribute.

*H<sub>3</sub>: Impression management moderates the compromise effect under utilitarian (UU) and altruistic-utilitarian (AU) trade-offs.*

### 3 Overview of experimental studies

We conducted five experimental studies to test the three hypotheses (see Web Appendix A for details). Studies 1a and 1b investigate how the compromise effect differs between UU and AA trade-offs ( $H_1$ ) across two product categories: FMCG and cars. Studies 2a and 2b examine how AU trade-offs impact the compromise effect ( $H_2$ ) and determine the robustness and generalizability of our findings across two different product categories: FMCG and consumer electronics. Finally, study 3 tests whether impression management accentuates the differences between UU and AU trade-offs ( $H_3$ ).

#### 3.1 Study 1

Studies 1a and 1b examine whether and how the compromise effect differs between UU and AA trade-offs.

##### 3.1.1 Participants and design

We recruited 469 adults ( $M_{\text{age}} = 28.08$ ; 53.85% female) for study 1a and 467 participants ( $M_{\text{age}} = 28.92$ ; 56.33 % female) for study 1b to participate in an online experiment. Participants were randomly assigned to one of four between-subjects experimental conditions: 2 (ABC vs. BCD choice set) x 2 (UU vs. AA trade-off).

##### 3.1.2 Procedure

We asked participants to imagine they were shopping for shower gel (study 1a) or a car (study 1b). Next, participants were randomly assigned to solve a UU or AA

trade-off in a trinary choice set (see Web Appendices B and C). The product image was identical for all alternatives per study. A brief description provided the benefit and range of each attribute.

*Study 1a.* In the UU trade-offs, the shower gels exhibited two utilitarian product attributes, i.e., therapeutic scent duration (5 hours, 10 hours, 15 hours, or 20 hours) and moisturizing strength (80, 60, 40, or 20). In the AA trade-offs, the shower gels exhibited two altruistic product attributes, i.e., support for Afriwell (90 cents, 70 cents, 50 cents, or 30 cents) and support for sustainability (levels of 2, 3, 4, or 5). For the ABC choice set, participants considered three alternatives (UU trade-off: 5 hours therapeutic scent duration and moisturizing strength of 80, 10 hours and 60, and 15 hours and 40; AA trade-off: 90 cents support for Afriwell and level 2 of support for sustainability, 70 cents and 3, and 50 cents and 4). For the choice set BCD, alternative A was replaced with alternative D (UU trade-off: 20 hours and 20; AA trade-off: 30 cents and 5), exhibiting a high benefit on one product attribute but a low benefit on the other.

*Study 1b.* The UU trade-offs were between driving comfort (levels of 25, 20, 15, or 10) and the amount of advanced driver assistance systems (1, 2, 3, or 4). For the AA trade-offs, cars exhibited the percentage of recycled bauxite (90%, 70%, 50%, or 30%) and the reduction of carbon monoxide emissions (10 g/km, 20 g/km, 30 g/km, or 40 g/km reduction).

We measured the elapsed time in seconds until the participants chose an alternative. After making their choice, participants filled in demographic variables.

### 3.1.3 Results

As Table 1 shows, we calculated the compromise effect for the UU and AA trade-offs separately by comparing the relative choice shares of the two identical alternatives in the ABC and BCD sets (cf. Kim & Kim, 2016). Further, we investigated the difference in the compromise effects between UU and AA trade-offs by applying one-tailed z-tests (cf. Guo, 2022).

In study 1a, the compromise effect is positive and significant for both the UU trade-offs (29.45%,  $z = 3.921$ ,  $p = .000$ ) and the AA trade-offs (14.40%,  $z = 1.840$ ,  $p = .033$ ). However, the difference between the UU and AA trade-offs is marginally significant ( $z = 1.454$ ,  $p = .073$ ). Participants also needed significantly less time to make their decision in UU (compared to AA) trade-offs ( $M_{UU} = 31.83$ ;  $SD_{UU} = 24.93$ ;  $M_{AA} = 46.57$ ;  $SD_{AA} = 118.15$ ;  $t_{Welch} = -1.731$ ,  $p = .042$ ).

In study 1b, we find a positive and significant compromise effect for the UU trade-offs (33.26%,  $z = 4.489$ ,  $p = .000$ ) and the AA trade-offs (17.01%,  $z = 2.220$ ,  $p = .013$ ). The difference in the compromise effects between UU and AA trade-offs is marginally significant ( $z = 1.596$ ,  $p = .055$ ). Participants needed less time to make their decision in UU (compared to AA) trade-offs ( $M_{UU} = 36.62$ ;  $SD_{UU} = 49.76$ ;  $M_{AA} = 45.19$ ;  $SD_{AA} = 66.98$ ;  $t_{Welch} = -1.457$ ,  $p = .073$ ). Overall, in support of  $H_1$ , we find a stronger compromise effect and faster response times for UU (compared to AA) trade-offs.

**Table 1** Study 1a and 1b results

Study 1a: shower gels ( $n = 469$ )				
Alternative	UU trade-offs		AA trade-offs	
	ABC	BCD	ABC	BCD
A	34.23% (38/111)		21.55% (25/116)	
B	52.25% (58/111)	39.67% (48/121)	37.07% (43/116)	19.01% (23/121)
C	13.51% (15/111)	39.67% (48/121)	41.38% (48/116)	38.84% (47/121)
D		20.66% (25/121)		42.15% (51/121)
Compromise effect	29.45%, $z = 3.921$ , $p = .000$		14.40%, $z = 1.840$ , $p = .033$	
Pc(B; A) – P(B; A)	58/73 – 48/96 = 79.45% – 50.00%		43/91 – 23/70 = 47.25% – 32.86%	
$\Delta$ compromise effects	29.45% – 14.40% = 15.05% $z = 1.454$ , $p = .073$			
Study 1b: cars ( $n = 467$ )				
Alternative	UU trade-offs		AA trade-offs	
	ABC	BCD	ABC	BCD
A	35.04% (41/117)		23.15% (25/108)	
B	52.14% (61/117)	38.52% (47/122)	41.67% (45/108)	26.67% (32/120)
C	12.82% (15/117)	43.44% (53/122)	35.19% (38/108)	45.00% (54/120)
D		18.03% (22/122)		28.33% (34/120)
Compromise effect	33.26%, $z = 4.489$ , $p = .000$		17.01%, $z = 2.220$ , $p = .013$	
Pc(B; A) – P(B; A)	61/76 – 47/100 = 80.26% – 47.00%		45/83 – 32/86 = 54.22% – 37.21%	
$\Delta$ compromise effects	33.26% – 17.01% = 16.25% $z = 1.596$ , $p = .055$			

### 3.1.4 Discussion

Study 1a provides initial evidence that the compromise effect is stronger for UU (compared to AA) trade-offs, while Study 1b replicates the findings for a high-involvement product category (cars). Thus, across very different product categories (low involvement FMCG versus high involvement car purchases), we find a stronger compromise effect and shorter response times for UU (compared to AA) trade-offs. The significant difference in response times further supports the notion that consumers struggle to weigh altruistic attributes in trade-off decisions. Overall, the results indicate the general difficulty consumers face accepting trade-offs for altruistic attributes, in contrast to easier trade-offs between utilitarian attributes.



## 3.2 Study 2

Studies 2a and 2b investigate whether and how the compromise effect differs between UU and AU trade-offs. For study 1, we compared choice sets {a, b, c} versus {b, c, d} to counterbalance the manipulation. For study 2, we compared choice sets {a, b} versus {a, b, c} following the majority of previous papers investigating the compromise effect, which is also a more conservative test (Neumann et al., 2016).

### 3.2.1 Participants and design

We recruited a total of 160 participants for study 2a ( $M_{age} = 32.01$ ;  $SD_{age} = 10.56$ ; 50.63% female) and 240 participants for study 2b ( $M_{age} = 30.46$ ;  $SD_{age} = 10.19$ ; 49.58 % female) from Prolific and randomly assigned them to one of four between-subjects experimental conditions: 2 (binary vs. trinary choice set) x 2 (UU vs. AU trade-off).

### 3.2.2 Procedure

We asked participants to imagine they were planning to buy a vanilla yogurt (study 2a) or a digital camera (study 2b). Next, by randomization, participants had to solve a UU or AU trade-off in a binary or trinary choice set (see Web Appendix D and E). The product image and size were identical for all alternatives. After making their choice, participants filled in demographic variables.

*Study 2a.* In the UU trade-offs, the vanilla yogurts exhibited two utilitarian product attributes, i.e., price (29 cents, 59 cents, or 89 cents), and the origin of the vanilla flavor (artificial flavor (no real vanilla), natural flavor (no real vanilla), or ground vanilla (real vanilla)). In the AU trade-offs, the vanilla yogurts exhibited one utilitarian product attribute, i.e., price (29 cents, 59 cents, or 89 cents) and one altruistic product attribute, i.e., level of animal welfare (animal husbandry: stable, outdoor, or premium). For the binary choice set, participants considered two alternatives (UU trade-off: 29 cents and artificial flavor (no real vanilla) versus 59 cents and natural flavor (no real vanilla); AU trade-off: 29 cents and stable keeping versus 59 cents and outdoor keeping). Each alternative had a high benefit for one product attribute but a low benefit for the other. For the trinary choice set, participants considered a third alternative (UU trade-off: 89 cents, ground vanilla (real vanilla); AU trade-off: 89 cents, premium keeping). Adding a third alternative always creates a compromise option (e.g., Kim, 2017; Simonson & Tversky, 1992).

*Study 2b.* The UU trade-offs were between optical zoom (30x, 25x, or 20x) and megapixels (16, 18, or 21.1). For the AU trade-offs, digital cameras exhibited optical zoom (30x, 25x, or 20x) and the percentage of recycled material (made from 25%, 50%, or 75% recycled materials).

### 3.2.3 Results

As Table 2 shows, we calculated the compromise effect for the UU and AU trade-offs separately by comparing the relative choice shares of the two identical alternatives in the binary and trinary sets (Mourali et al., 2007; Simonson & Tversky, 1992). Therefore, participants who chose the additional alternative in the trinary choice set were excluded from the analysis (Kim, 2017). Finally, we investigated the difference in the compromise effects between UU and AU trade-offs (see Guo, 2022).

For study 2a, as predicted ( $H_1$ ), we find a positive and marginally significant compromise effect of 20.70% for the UU trade-offs (share of alternative B in the binary and trinary choice set: 26.76% vs. 47.37%,  $z = 1.611$ ,  $p = .054$ ). However, as predicted ( $H_2$ ), we find a negative but nonsignificant compromise effect of  $-7.20\%$  for the AU trade-offs (share of alternative B in the binary and trinary choice set: 59.38% vs. 52.17%,  $z = -.532$ ,  $p = .297$ ). The difference between the UU and AU trade-offs is marginally significant ( $z = 1.474$ ,  $p = .070$ ).

The results of study 2b are consistent with study 2a. We find a positive and significant compromise effect of 19.58% for the UU trade-offs (61.82% vs. 81.40%,  $z = 2.107$ ,  $p = .018$ ). For the AU trade-offs, we find a negative but nonsignificant compromise effect of  $-8.82\%$  (share of alternative B in the binary and trinary choice set: 58.82% vs. 50.00%,  $z = -.929$ ,  $p = .176$ ). The difference in the compromise effects between UU and AU trade-offs is significant ( $z = 2.191$ ,  $p = .014$ ).

**Table 2** Study 2a and 2b results

Study 2a: vanilla yogurts ( <i>n</i> = 160)				
Alternative	UU trade-offs		AU trade-offs	
	AB	ABC	AB	ABC
A	73.33% (33/45)	28.57% (10/35)	40.63% (13/32)	22.92% (11/48)
B	26.67% (12/45)	25.71% (9/35)	59.38% (19/32)	25.00% (12/48)
C		45.71% (16/35)		52.08% (25/48)
Compromise effect	20.70%, <i>z</i> = 1.611, <i>p</i> = .054		− 7.20%, <i>z</i> = − .532, <i>p</i> = .297	
Pc(B; A) – P(B; A)	9/19 – 12/45 = 47.37% – 26.67%		12/23 – 19/32 = 52.17% – 59.38%	
Δ compromise effects	20.70% – (− 7.20%) = 27.90% <i>z</i> = 1.474, <i>p</i> = .070			
Study 2b: digital cameras ( <i>n</i> = 240)				
Alternative	UU trade-offs		AU trade-offs	
	AB	ABC	AB	ABC
A	38.18% (21/55)	13.11% (8/61)	41.18% (28/68)	41.07% (23/56)
B	61.82% (34/55)	57.38% (35/61)	58.82% (40/68)	41.07% (23/56)
C		29.51% (18/61)		17.86% (10/56)
Compromise effect	19.58%, <i>z</i> = 2.107, <i>p</i> = .018		− 8.82%, <i>z</i> = − .929, <i>p</i> = .176	
Pc(B; A) – P(B; A)	35/43 – 34/55 = 81.40% – 61.82%		23/46 – 40/68 = 50.00% – 58.82%	
Δ compromise effects	19.58% – (− 8.82%) = 28.40% <i>z</i> = 2.191, <i>p</i> = .014			

### 3.2.4 Discussion

Across different product categories (FMCG and consumer electronics), results of Studies 2a and 2b indicate that UU and AU trade-offs impact the compromise effect differently. Specifically, we find a consistent pattern of significant differences in compromise effects depending on the trade-off type: both studies reveal a positive compromise effect for the UU trade-offs and a preference for extreme options under AU trade-offs, supporting  $H_2$ .

## 3.3 Study 3

Study 3 investigates the moderating role of impression management (Peloza et al., 2013) in UU and AU trade-offs. Therefore, we utilized printers as a product category with two utilitarian attributes (printing quality, printing speed), as these are commonly used in studies on the compromise effect (e.g., Chernev, 2005; Kim & Kim, 2016; Murali et al., 2007). We use printing speed and the share of compensation for production-related CO<sub>2</sub> emissions for the AU trade-offs.

### 3.3.1 Participants and design

A total of 240 participants ( $M_{\text{age}} = 32.26$ ;  $SD_{\text{age}} = 11.32$ ; 50.42 % female) were recruited from Prolific and randomly assigned to one of four between-subjects experimental conditions: 2 (binary vs. trinary choice set) x 2 (UU vs. AU trade-off).

### 3.3.2 Procedure

We asked participants to imagine they want to buy a printer. Participants had to choose one printer alternative from a binary or trinary choice set (see Web Appendix F). In the UU trade-offs, the printers exhibited printing speed (20 ppm, 15 ppm, or 10 ppm) and printing quality (1000 dpi, 1200 dpi, or 1400 dpi). In the AU trade-offs, the printers exhibited printing speed (20 ppm, 15 ppm, or 10 ppm) and CO<sub>2</sub> compensation (the share of compensation of production-related CO<sub>2</sub> emissions of 25%, 50%, or 75%). The product image and price were identical for all alternatives. Next, participants answered three questions on impression management by Peloza et al. (2013) (“I want to present myself in a positive way to others,” “I want to make a positive impression on others,” and “I want to make myself look good to others;” 1: I strongly disagree, 7: I strongly agree) and filled in attention checks and demographic variables.

### 3.3.3 Results

Table 3 shows that consistent with studies 1a, 1b, 2a, and 2b, we find a marginally significant positive compromise effect of 12.52% for the UU trade-offs (share of alternative B in the binary and trinary choice set: 80.33% vs. 92.86%,  $z = 1.506$ ,  $p = .066$ ). Consistent with studies 2a and 2b, we find a negative but nonsignificant

**Table 3** Study 3 results

Alternative	UU trade-offs		AU trade-offs	
	AB	ABC	AB	ABC
A	19.67% (12/61)	3.45% (2/58)	32.69% (17/52)	20.29% (14/69)
B	80.33% (49/61)	44.83% (26/58)	67.31% (35/52)	26.09% (18/69)
C		51.72% (30/58)		53.62% (37/69)
Compromise effect Pc(B; A) - P(B; A)	12.52%, $z = 1.506, p = .066$ 26/28 – 49/61 = 92.86% – 80.33%		–11.06%, $z = -1.020, p = .154$ 18/32 – 35/52 = 56.25% – 67.31%	
$\Delta$ compromise effects	12.52% – (– 11.06%) = 23.59% $z = 1.815, p = .035$			

compromise effect of -11.06% for the AU trade-offs (share of alternative B in the binary and trinary choice set: 67.31% vs. 56.25%,  $z = -1.020$ ,  $p = .154$ ). Importantly, the difference between the UU and AU trade-offs is significant ( $z = 1.815$ ,  $p = .035$ ).

To investigate the moderating role of consumer impression management, we conducted a median split based on the average across the three corresponding items (Cronbach's  $\alpha = .89$ ). Table 4 shows the results for low and high impression management.

**Table 4** Study 3 results depending on impression management

Alternative	UU trade-offs		AU trade-offs	
	AB	ABC	AB	ABC
Low impression management				
A	17.65% (6/34)	7.69% (2/26)	48.00% (12/25)	24.32% (9/37)
B	82.35% (28/34)	38.46% (10/26)	52.00% (13/25)	27.03% (10/37)
C		53.85% (14/26)		48.65% (18/37)
Compromise effect	.98%, $z = .077, p = .469$		.64%, $z = .034, p = .514$	
Pc(B; A) - P(B; A)	10/12 – 28/34 = 83.33% – 82.35%		10/19 – 13/25 = 52.63% – 52.00%	
Δ compromise effects	.98% – .64% = .35% $z = .017, p = .493$			
High impression management				
A	22.22% (6/27)	0% (0/32)	18.52% (5/27)	15.63% (5/32)
B	77.78% (21/27)	50% (16/32)	81.48% (22/27)	25% (8/32)
C		50% (16/32)		59.38% (19/32)
Compromise effect	22.22%, $z = 2.033, p = .021$		-19.95%, $z = -1.365, p = .086$	
Pc(B; A) - P(B; A)	16/16 – 21/27 = 100% – 77.78%		8/13 – 22/27 = 61.54% – 81.48%	
Δ compromise effects	22.22% – (– 9.95%) = 42.17% $z = 2.427, p = .008$			

Consistent with  $H_3$ , under high impression management, we find a positive and significant compromise effect of 22.22% for UU trade-offs (share of alternative B in the binary and trinary choice set: 77.78% vs. 100%,  $z = 2.033$ ,  $p = .021$ ). For AU trade-offs, we find a negative and marginally significant compromise effect of -19.95% (share of alternative B in the binary and trinary choice set: 81.48% vs. 61.54%,  $z = -1.365$ ,  $p = .086$ ). The difference between compromise effects is significant ( $z = 2.427$ ,  $p = .008$ ).

As expected, the compromise effect fades under low impression management. It is nonsignificant for UU trade-offs (share of alternative B in the binary and trinary choice set: 82.35% vs. 83.33%,  $z = .077$ ,  $p = .469$ ) and AU trade-offs (share of alternative B in the binary and trinary choice set: 52.00% vs. 52.63%,  $z = .034$ ,  $p = .514$ ). The difference between compromise effects is also nonsignificant ( $z = .017$ ,  $p = .493$ ).

### 3.3.4 Discussion

The results of study 3 demonstrate that, consistent with  $H_3$ , impression management moderates the differences between UU and AU trade-offs. While the compromise effect fades under low impression management, high impression management increases the compromise effect for UU trade-offs (i.e., increases preference for middle options) and decreases the compromise effect for AU trade-offs (i.e., increases preference for extreme options).

## 4 General discussion

This research demonstrates that the compromise effect varies systematically depending on the trade-off type and that consumers face general difficulty accepting trade-offs for altruistic attributes. While the well-established compromise effect predicts a preference for middle options over extreme options in UU trade-offs, we show that the compromise effect is systematically stronger for UU compared to AA trade-offs. Further, we provide pioneering evidence that consumers prefer extreme options in AU trade-offs and replicate these findings across different product categories. These findings have several theoretical and managerial implications.

First, we uncovered a previously unaddressed boundary condition of the compromise effect, i.e., the presence of altruistic attributes, which becomes increasingly common in the marketplace. By investigating the compromise effect in UU, AA, and AU trade-offs and demonstrating the general difficulty consumers face accepting trade-offs for altruistic attributes, we contribute to the emerging literature on consumer reactions to altruistic attributes (Melnik et al., 2022; Pfeifer & Schreiner, 2024), as well as research on the product-related attributes of the compromise effect (Kim, 2017; Kim & Kim, 2016). Second, we investigate the moderating role of impression management. In particular, we show that impression management increases the compromise effect for UU trade-offs and decreases the compromise effect for AU trade-offs. Finally, our results suggest that consumers

may solve AU trade-offs in two steps instead of directly trading off altruistic and utilitarian attributes, ultimately resulting in a lexicographic processing of the attributes, contributing to the literature on the routes consumers take to reach their final choice (Lei & Zhang, 2021).

The findings offer important insights for brand managers, highlighting potential unintended consequences of communicating altruistic product attributes. From a practical perspective, implications derived from the well-established compromise effect are no longer valid when altruistic product attributes are present in the decision-making process. Hence, marketers should anticipate preference for extreme options in their assortment when communicating both utilitarian and altruistic attributes. For instance, our results suggest that highlighting altruistic attributes can make more self-focused consumers prefer extreme utilitarian options. At the same time, marketers should consider the moderating role of impression management and the related social norm (Melnik et al., 2022) by emphasizing the attributes most important to the corresponding in-groups (e.g., “most successful millennials prefer ...”).

To summarize, we provide the first evidence of the interplay of utilitarian and altruistic product attributes in the compromise effect, ultimately resulting in preferences for extreme options. This research’s limitations offer opportunities for future research to address the underlying mechanisms (e.g., manipulation of impression management) of the uncovered effect and potentially extend to other context effects. Another promising avenue is the role of altruistic values and product experience on the compromise effects in the presence of altruistic trade-offs. Finally, like many studies on context effects, we did not measure actual buying behavior. Hence, the robustness of our results, including alternative manipulation of impression management, should be tested based on consequential buying behavior.

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## Declarations

**Ethical approval** The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Institutional Review Board (or Ethics Committee) of Kiel University.

**Informed consent** Informed consent was obtained from all subjects involved in the studies.

**Competing interest** The authors have no relevant financial or non-financial interests to disclose.

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