Pick your poison: Attribute trade-offs in unattractive consideration sets

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This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1002/JCPY.1202

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Article type : Research Report

Pick your poison:

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ABSTRACT

Consumers often have to make trade-offs between desirable, "more is better", and undesirable, "less is better", attributes. What drives whether the desirable or the undesirable attributes will be weighed more heavily in decisions? We show that the extent to which consumers focus on desirable versus undesirable attributes depends on the overall attractiveness of their consideration sets. The less attractive the options under consideration are – the higher is the weight allocated to undesirable attributes, such as price. Three experiments set in the contexts of lottery ticket purchasing (study 1), hotel booking (study 2), elections (study 3), and a conjoint study of online course evaluations (study 4) (N = 2,149, p-curve power estimate 90%), demonstrate that unattractive sets increase the relative weight of "undesirable" attributes (e.g. price of a product, workload of a course); and lead to increased preference for options superior on these attributes.

Consumers often have to make trade-offs between desirable, "more is better", and undesirable, "less is better", attributes. For example, when choosing between phone chargers described by their quality (a desirable attribute), and price (an undesirable attribute), consumers are unlikely to find a charger that is superior to the others on both attributes. Thus, when making

a choice, some consumers will put more weight on quality and pick the high quality—high price option, while others will put more weight on price and pick the low quality—low price alternative. But what determines whether consumers will put more weight on the desirable attribute (quality) or the undesirable attribute (price)? We show that the extent to which consumers focus on the desirable versus undesirable attributes depends on the overall attractiveness of their consideration sets. Specifically, the less attractive the options under consideration are, the greater will be the weight allocated to undesirable attributes.

While decisions among unattractive options seem less common than decisions among attractive options, people often have to face such decisions. Travelers who leave bookings till the last minute have to choose from unattractive hotels. Students with low SAT scores have to pick from unattractive colleges. Voters sometimes have to select from a list of disliked candidates, as was the case in the 2016 U.S. presidential elections where Hillary Clinton and Donald Trump held strongly unfavorable ratings (Enten, 2016). All these examples show that real-life decisions among unattractive options are neither rare nor trivial. More importantly, as the current paper shows, these decisions systematically differ from decisions among attractive options, in terms of the evoked attribute trade-offs. We find that unattractive sets increase the weight of undesirable attributes of the available options, and increase the preference for options superior on these attributes. We apply the label "undesirable attributes" to attributes that consumers want to minimize when comparing two or more options (e.g. hotel A has a higher price; hotel B has a lower price; all else equal – A < B); and apply the label "desirable attributes" to attributes that consumers want to maximize when comparing two or more options (e.g. hotel A has a higher quality rating; hotel B has a lower quality rating; all else equal – A > B). Thus, even though a "low price" can be considered as desirable, in our terminology, price is considered as an undesirable attribute that consumers generally want to minimize.

As such, compared to consumers considering attractive options, consumers considering unattractive options become more likely to select a product based on price; or select a course based on its workload. This set-attractiveness effect is demonstrated across four studies (N = 2,149, p-curve power estimate 90%; Simonsohn, Nelson, & Simmons, 2014), including a conjoint study capturing attribute weights; in the contexts of lottery ticket purchasing, hotel booking, elections, and online course evaluations.

This research contributes to the decision-making literature in two ways. First, it adds to research on attribute trade-offs which has shown that consideration set features, such as the presence of dominating or dominated options and option ordering (Evangelidis & Levav, 2013; Quaschning, Pandelaere, & Vermeir, 2014), affect attribute weights and choice. We add to this literature by showing that overall set attractiveness too affects the weighting of option attributes.

Our work also adds to a second, scant, but growing literature on decision-making in unattractive sets. This literature has examined the effect of set attractiveness on decision times (Chatterjee & Heath, 1996), decision difficulty (see e.g., Krishnamurthy & Nagpal, 2008; Perfecto et al., 2017), confidence (Meloy & Russo, 2004), vigilance (Malkoc, Hedgcock, & Hoeffler, 2013), and decision deferral (Bhatia & Mullett, 2016; Shafir, Simonson, & Tversky, 1993; Tversky and Shafir, 1992). We add to this literature by showing how unattractive sets affect attribute trade-offs and choice.

Theoretical Background

We first summarize the extant literature on attribute trade-offs and then discuss the alternative theories for the effect of set attractiveness on attribute weighting and choice.

Attribute trade-off determinants

Focusing on attractive consideration sets, past work suggests that set features affect the relative weighting of option attributes and, consequently, the final decisions people make. For instance, Evangelidis and Levav (2013) show that when consumers choose from a set without dominated or dominating options, they focus on the more important, or prominent, attributes (e.g. quality) in their decisions. Yet, once dominated or dominating options are added, consumers become less likely to focus on prominent attributes, leading to lower preference for options superior on these attributes. Looking at quality tiers, Simonson and Tversky (1992) show that when sets include higher or intermediate quality tiers, consumers are more likely to select high quality—high price alternatives, suggesting that quality is given greater weight in such sets. Lastly, with a focus on set organization, Quaschning, Pandelaere, and Vermeir (2014) demonstrate that sets sorted on a given attribute boost the importance of that attribute.

Aside from set features, the characteristics of the decision-making process, also impact attribute trade-offs. Consumers weigh qualitative attributes with rich associations (e.g., brand) more heavily in purchase likelihood ratings than in choice; and weigh attributes on which options are easy to compare (e.g., price) more heavily in choice than in ratings (Nowlis & Simonson,

1997). Moreover, consumers value quality more in decisions for others, compared to decisions for themselves (Lu, Xie, & Xu, 2012); and value quality less if their decision-making is preceded by creation of a wish-list (Popovich & Hamilton, 2014).

Finally, attribute trade-offs can be affected by the type of decision strategy – choice versus rejection – used in the decision-making (Shafir, 1993; Meloy & Russo, 2004). Under instructions to "choose" (e.g. choose your most preferred option), people are more prone to select the "enriched" option which scores high on both desirable and undesirable attributes (e.g. high quality—high price). In contrast, under instructions to "reject" (e.g. reject your least preferred option), they are more prone to select the "impoverished" option which scores low on both desirable and undesirable attributes (e.g. low quality—low price). While attribute weights in choice and rejection were not directly compared in Shafir's studies (1993), his data suggest that people give more weight to desirable attributes when choosing and to undesirable attributes when rejecting.

Set attractiveness and attribute trade-offs

We expect that attractive (unattractive) sets will increase the relative weight of desirable (undesirable) attributes and increase preference for options superior on these attributes. This set-attractiveness effect can be explained by two theoretic accounts emerging from the task compatibility literature and the regulatory focus literature. We discuss these accounts next.

Task compatibility. Research on task-compatibility effects suggests that attractive sets may be compatible with choice; and unattractive sets – with rejection decision strategies. For instance, Nagpal and Krishnamurthy (2008) and Perfecto et al. (2017) find that choice is easier than rejection when the consideration set is attractive (e.g. attractive cars or pleasant words); and that rejection is easier than choice when the consideration set is unattractive (e.g. unattractive cars or unpleasant words). Similarly, Meloy and Russo (2004) report that people are more confident in promotion decisions, when deciding among positively described employees; and more confident in firing decisions, when deciding among negatively described employees – in line with the notion that attractive sets are compatible with choice, and unattractive sets – with rejection.

While in the papers above, choice and rejection strategies are externally imposed, the results suggest that set attractiveness may affect strategy selection when decision-makers are free to use either decision strategy. That is, attractive sets will prompt a choice strategy and

unattractive sets will prompt a rejection strategy. Importantly, taken together with Shafir's (1993) findings on the different weights given to desirable and undesirable attributes in choice and rejection, task-compatibility research suggests that attractive (unattractive) sets will increase the relative weight of desirable (undesirable) attributes.

Regulatory focus. We can make similar predictions using the regulatory focus literature. Higgins, Shah, and Friedman (1997) find that framing outcomes in terms of losses/non-losses (vs. gains/non-gains) increases decision-makers' prevention focus. The increased prevention focus, in turn, should increase consumers' vigilance against negative outcomes and increase the weighting of undesirable attributes (Chernev, 2004). We suggest that consideration of unattractive options should have a similar effect on consumers' regulatory focus, as consideration of losses/non-losses does: namely, it should increase consumers' prevention focus and, consequently, increase the relative weight of undesirable attributes in choice.

Next, we present four studies testing this set-attractiveness effect.

Study 1: Lottery Ticket Selection with Phantom Options

In study 1, we manipulated consideration set attractiveness using dominated or dominating phantom options. Predictions, procedures, and analysis plans for studies 1-4 were preregistered on Open Science Framework, study preregistration links are provided in the MDA.

Method

The study adopted a 2-cell (consideration set: attractive vs. unattractive) between-subjects design. Participants read that they were considering buying a lottery ticket. The tickets in this study were characterized by two attributes – a desirable attribute (probability of winning $150) and an undesirable attribute (price).

In the "attractive set" condition, on the first screen participants saw a lottery A ticket which had a 4% probability of winning $150 and was priced at $20 (designed as a dominated phantom option) and indicated whether they would participate in lottery A. On the second screen participants read that that lottery A was no longer available, and that instead they could participate in lottery B (9% probability of winning $150; $9 ticket price, i.e. low good—low bad option) or in lottery C (15% probability of winning $150; $15 ticket price, i.e. high good—high bad option). The lotteries were designed such that lotteries B and C were superior to option A in terms of probability of winning and price, rendering the "B and C" set relatively attractive.

The "unattractive set" condition mimicked the attractive set condition except that the lottery A ticket had a 20% probability of winning $150 and was priced at $4, making it a dominating phantom option, and rendering the "B and C" set relatively unattractive (Table 1).

Table 1

After participants selected one of the two lotteries – B or C, they rated lottery set attractiveness as a manipulation check (see MDA for manipulation check results for studies 1-4) and reported their demographic information.

Results and Discussion

Three hundred ninety-nine M-Turk panelists completed the study. One participant was removed due to repeat participation. The final sample included 398 participants (225 male).

Lottery Selection: Binary logistic regression with manipulated set attractiveness as the independent variable (unattractive=0; attractive=1) and the selected lottery (high good—high bad lottery C=1, otherwise=0) as the dependent variable indicated that participants were more likely to select the high good—high bad option in the "attractive set" condition ($b=0.81$, Wald $\chi^2 = 15.34$, $p<.001$), supporting our predictions (see Figure 1 for choice shares for studies 1-3).

Figure 1

Study 2: Hotel Selection and Attribute Weights

Study 2 tested the effect of set attractiveness on attribute weighting and option selection in a hotel selection scenario.

Method

The study adopted a 2-cell (consideration set: attractive vs. unattractive) between-subjects design. On the first screen, participants read that they would have to choose between three hotels: A, B, and C. The hotels were characterized by a desirable attribute (user rating) and an undesirable attribute (price). Similar to study 1, the set of hotels was constructed so that hotel A would be dominated by (dominating) hotels B and C on both user rating and price, rendering the set of hotels B and C relatively attractive (unattractive; Table 2).

Table 2

On the second screen, participants read that hotel A was sold out for the dates of their trip and were asked to choose between hotels B and C. Next, they rated the importance of user rating and price in their previous choice on 5-point scales (1="not at all important", 5="very important"), completed a manipulation check, and filled out their demographic information.

Results and Discussion

Five hundred fifty-five M-Turk panelists completed the study. Ten participants were removed due to repeat participation. The final sample included 545 participants (277 male).

Hotel Selection: To analyze the effect of set attractiveness on hotel selection, we ran a binary logistic regression with set attractiveness as the independent variable (unattractive=0; attractive=1) and the selected hotel (high good—high bad hotel C=1, otherwise=0) as the dependent variable. As predicted, participants were more likely to select the high good—high bad option in the "attractive set" condition (b=0.57, Wald $\chi^2 = 9.35$, p=.002).

Attribute Weights: To test the effect of set attractiveness on attribute weights, we computed a user-rating-versus-price index by subtracting the importance of price from the importance of user ratings. A one-way ANOVA showed that set attractiveness had a significant effect on the user-rating-versus-price index ($M_{unattractive}$=-0.42 vs. $M_{attractive}$=-0.17, F(1,543)=4.59, p=.033).

Mediation Analysis: The mediation analysis with INDIRECT macro based on 10,000 bootstrap samples, indicated that set attractiveness significantly influenced hotel selection via the rating-versus-price index, with the indirect effect point estimate at 0.36 ($CI_{95\%}$ [0.03; 0.72]), supporting our theorizing. The analysis based on 5,000 bootstrap samples produced a similar estimate of 0.36 ($CI_{95\%}$ [0.03; 0.74]).

Study 3: Voting Decisions and Decision Deferral

The setup of study 3 was similar to that of studies 1-2, except that we added a no-choice option.

Method

The study adopted a 2-cell (consideration set: attractive vs. unattractive) between-subjects design. Participants received information about two hypothetical presidential candidates

A and B. The candidates were characterized by "the likelihood that the economy will improve during his/her term" (i.e. desirable attribute) and "the likelihood that the economy will get worse during his/her term" (i.e. undesirable attribute; Table 3). To minimize noise in participants' responses, driven by inherent differences in attribute importance across voters, we used two attributes describing the state of the economy that were expected to be equally important to a given voter.

Table 3

Both candidates had a relatively high likelihood of making the economy better and a relatively low likelihood of making the economy worse in the "attractive set" condition; the opposite was true in the "unattractive set" condition. Across conditions, candidate A was more likely to make the economy better, but also more likely to make it worse (high good—high bad candidate), compared to candidate B (low good—low bad candidate). We predicted that participants would be more likely to select the high good—high bad candidate A in the attractive (vs. unattractive) set condition.

Participants indicated whether they would select candidate A or B, or whether they would not vote at all ("not vote" option). Finally, participants completed a manipulation check, reported their party affiliation and their demographic information.

Results and Discussion

Four hundred and two M-Turk panelists completed the study (224 male).

Deferral. A binary logistic regression with manipulated set attractiveness as the independent variable (unattractive=0; attractive=1) and voting (not vote=0; vote for candidate A or B=1) as the dependent variable indicated that participants were marginally more likely to vote, i.e. less likely to defer choice, in the attractive set ($b = 0.60$, Wald $\chi^2=3.72$, $p=.054$).

Candidate Selection. Critically for our hypothesis testing, among those who voted, candidate selection was affected by overall attractiveness of the candidates. A binary logistic regression with set attractiveness as the independent variable (unattractive=0; attractive=1) and candidate selection (high good—high bad=1, otherwise=0) as the dependent variable on the sample of participants who decided to vote (n=351) indicated that participants were more likely

to select the high good—high bad candidate in the "attractive set" condition (b=0.91, Wald χ^2 = 17.01, p<.001).

To ensure the robustness of our results we also compared candidate shares in the full sample (i.e. including those who decided not to vote) in two binary logistic regressions. The results remained unchanged and are reported in Table 4. Thus, study 3 replicates the results of studies 1 and 2 allowing for a no-choice option.

Table 4

Study 4: Conjoint Part-Worths across Attractive and Unattractive Sets

Studies 1-3 tested the set-attractiveness effect on consumers' decisions in binary choice settings where options were described by two attributes. Study 4 aimed to conceptually replicate our key finding using a conjoint design paradigm with multiple options described on multiple attributes.

Method

The study adopted a 2-cell (consideration set: attractive vs. unattractive) between-subjects design. Participants received information about nine hypothetical online courses. They read: "the courses offered have been rated by previous students in terms of how interesting (1=not at all; 5=very much), useful in job search (1=not at all; 5=very much), and high in workload (1=not at all; 5=very much) they are". Each course also had information on average failure rates from previous student intakes. The former two attributes were the desirable, "more is better", attributes and the latter two attributes were the undesirable, "less is better", attributes.

In the attractive set condition, the nine courses scored between 3 and 5 in terms of how interesting and useful they were; between 1 and 3 in terms of their workload; and between 10% and 30% on failure rates. In the unattractive set condition, the courses scored between 1 and 3 in terms of how interesting and useful they were; between 3 and 5 in terms of their workload; and between 30% and 50% on failure rates. All course profiles were presented on one page in random order (see MDA for course profiles).

In the main task, participants had to rank-order the nine courses from most (=1) to least preferred (=9). We expected that desirable attributes would have a positive effect on course rankings, i.e. have positive part-worths, and that undesirable attributes would have a negative

effect on course rankings, i.e. have negative part-worths. Importantly, we expected that the positive effect of desirable attributes on course rankings would be weaker (i.e. lower and closer to zero) in the unattractive set, compared to the attractive set condition; and that the negative effect of undesirable attributes on course rankings would be stronger (i.e. lower and farther from zero) in the unattractive set condition. Thus, we expected a main effect of set attractiveness on conjoint part-worths, wherein attribute part-worths would be lower in the unattractive set condition.

Following the main task, participants completed a manipulation check and reported their demographic information.

Results and Discussion

Eight hundred and six M-Turk panelists completed the study. Two participants were removed due to repeat participation. The final sample included 804 participants (421 male).

We obtained the attribute part-worths for each participant using the "CONJOINT" command for rank-ordered data in SPSS. The analysis produced beta-coefficients for each of the four course attributes for each participant. Next, we analyzed the effect of set attractiveness on attribute part-worths using a mixed linear model. Consideration set (attractive vs. unattractive), attribute type (desirable vs. undesirable), attribute replicate (two per attribute type), and their two- and three-way interactions served as the independent variables. Participants' conjoint part-worths served as the dependent variable.

The analysis revealed a significant effect of attribute type ($F(1, 802) = 2592.60$, $p < .001$) and a significant effect of set attractiveness ($F(1, 802) = 6.56$, $p=.011$). None of the interactions were significant (two-way interactions: $p>.20$; three-way interaction: $p=.638$).

As predicted, desirable attributes affected course rankings positively ($M_{desirable} = 1.24$) and undesirable attributes affected course rankings negatively ($M_{undesirable} = -0.50$). Importantly, the conjoint part-worths were lower in the unattractive set condition, compared to the attractive set condition ($M_{unattractive} = 0.32$ vs. $M_{attractive} = 0.42$, $p = .011$).

Further probing indicated that the negative effect of undesirable attributes was significantly stronger (i.e., more negative) in the unattractive set, compared to the attractive set condition ($M_{unattractive} = -0.58$ vs. $M_{attractive} = -0.43$, $p=.002$). The positive effect of desirable attributes was directionally weaker in the unattractive set condition compared to the attractive set

condition ($M_{unattractive}$ = 1.21 vs. $M_{attractive}$ = 1.27, p=.260). Table 5 provides simple contrasts for individual part-worths for each of the four course attributes.

Table 5

Option indifference as an alternative explanation. One could argue that unattractive sets make participants indifferent among the available options leading to a 50/50 split in preferences. The conjoint design in this study allows us to directly test and rule out the indifference account. If unattractive sets increase option indifference, both desirable and undesirable attribute part-worths should become closer to zero in these sets. If unattractive sets increase the relative weight of undesirable attributes (as we predict), the undesirable attribute part-worths should become more negative, i.e. get farther from zero, in these sets. Study 4 supports the latter explanation and runs counter to the increased indifference account.

Enriched/Impoverished options. Study 4 also shows that our theory extends beyond the selection of enriched (i.e. high good—high bad options; Shafir, 1993) and impoverished (i.e. low good—low bad) options. Extant research shows that the selection of enriched/impoverished options changes as a function of an assigned decision strategy (choice vs. rejection; Shafir, 1993). Studies 1-3 add to this work by demonstrating that enriched/impoverished option selection also varies with set attractiveness. However, in many contexts consumers have to make decisions among complex alternatives described on many attributes, where no single option can be clearly categorized as enriched or impoverished. Study 4 demonstrates that our theory extends to these settings as well.

General Discussion

We suggest that the overall attractiveness of a consideration set affects the trade-offs between desirable and undesirable attributes; and, consequently, affects preference between different options. Four experiments in the contexts of lottery ticket purchasing (study 1), hotel booking (study 2), elections (study 3), and course evaluations (study 4), show that unattractive sets lead to increased preference for options superior on "undesirable" attributes (e.g. price of a product, workload of a course). Studies 2 and 4 directly demonstrate that unattractive sets increase the relative weight of undesirable attributes.

Theoretical Implications

This work contributes to the attribute trade-off literature by outlining the implications of set attractiveness for trade-offs between desirable and undesirable attributes. Prior research has studied differences in decisions between unattractive stimuli and attractive stimuli (Barker, 1942; Chatterjee & Heath, 1996; Dijksterhuis & Aarts, 2003; Malkoc, et al. 2013; Tversky & Kahneman, 1981), but has not focused on attribute trade-offs as a function of set attractiveness. We show that set attractiveness affects desirability—undesirability trade-offs across a range of contexts. Future work could examine the implications of set attractiveness for other types of trade-offs, such as feasibility—desirability trade-offs (Liberman & Trope, 1998; Lu, Xie, and Xu, 2012), and central—peripheral attribute trade-offs (Petty & Cacioppo, 1986).

Our findings also have implications for conjoint study research. In the contexts of option selection and ranking, we find that attribute weights change depending on set attractiveness. Whether consumers carry over attribute weights from their first decision to their subsequent decisions (Evangelidis & Levav, 2013), or whether they adapt their attribute weights from one decision to another (Payne, Bettman, & Johnson, 1993), incorporating possible effects of set attractiveness on attribute weighting in choice-based conjoint studies can help better estimate consumers' attribute part-worths and improve out-of-sample predictions.

Aside from adding to the attribute trade-offs literature, our work provides an alternative interpretation for earlier findings on the antecedents of choice and rejection decision strategies (Ordóñez, Benson, & Beach, 1999), which suggest that rejection dominates prescreening, and choice dominates final selection. A prescreening process is characterized by lower average attractiveness of the available options, compared to the final decision stage, where only a few best alternatives remain. Our theory and data indicate that rejection may be used more when the available options are perceived as less attractive. Thus, the previously established link between decision tasks and decision strategies may have been driven by low perceived option attractiveness, rather than by the nature of the task itself. Future research might test this conjecture.

Another open question pertains to the nature of shifts in attribute weights across attractive and unattractive sets. On the one hand, our results may be driven by a strong implicit association between unattractive options and losses, rendering the shifts in attribute weights across sets to be automatic. Alternatively, the results could be driven by deliberative processing, wherein

unattractive sets prompt participants to strategically minimize losses. Across the studies, we observe that participants took longer to make their decisions in the "unattractive set" condition (see MDA). Yet, controlling for response times did not affect the results in any of the studies, suggesting that shifts in attribute weighting may be automatic. While our response time data provide initial support for the implicit association account and against the deliberation account, future research should investigate this question more systematically.

Finally, we note that our paper does not follow the more typical hypothetico-deductive route (Lynch et al., 2012), but attempts to contribute via the non-deductive substantive contribution route – through the empirical results, demonstrating the hypothesized effect across multiple contexts. Nevertheless, we discuss four possible explanations for our set-attractiveness effect: option indifference, increased deliberation, a task-compatibility account, and an explanation based on regulatory focus. We rule out the first two explanations and leave it to future research to the test the other two competing accounts.

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Table 1. Study 1: Lottery tickets in the "attractive set" vs. "unattractive set" conditions.

	ATTRACTIVE CONSIDERATION SET*		
	LOTTERY A (PHANTOM)**	LOTTERY B (TARGET) [low good—low bad]	LOTTERY C (TARGET) [high good—high bad]
Probability of winning $150	4%	9%	15%
Price	$20	$9	$15
	UNATTRACTIVE CONSIDERATION SET		

	LOTTERY A (PHANTOM)	LOTTERY B (TARGET) [low good—low bad]	LOTTERY C (TARGET) [high good—high bad]
Probability of winning $150	20%	9%	15%
Price	$4	$9	$15

*Note that participants saw Lottery A on screen 1 and saw Lotteries B and C on screen 2.

** Italicized text was not provided in the stimuli

Table 2. Study 2: Hotel descriptions in the "attractive set" vs. "unattractive set" conditions.

	ATTRACTIVE CONSIDERATION SET		
	HOTEL A (PHANTOM)*	HOTEL B (TARGET) [low good—low bad]	HOTEL C (TARGET) [high good—high bad]
User rating	4.0 from 235 ratings	6.0 from 245 ratings	6.5 from 235 ratings
Price	$200 per night	$120 per night	$140 per night
	UNATTRACTIVE CONSIDERATION SET		
	HOTEL A (PHANTOM)	HOTEL B (TARGET) [low good—low bad]	HOTEL C (TARGET) [high good—high bad]
User rating	8.5 from 235 ratings	6.0 from 245 ratings	6.5 from 235 ratings
Price	$60 per night	$120 per night	$140 per night

* Italicized text was not provided in the stimuli

Table 3. Study 3: Candidate descriptions in the "attractive" vs. "unattractive" set conditions.

	ATTRACTIVE SET CONDITION	
	Candidate A [high good—high bad]* (probability)	Candidate B [low good—low bad] (probability)
Economy will improve during his/her term	55%	40%
Economy will get worse during his/her term	35%	20%
	UNATTRACTIVE SET CONDITION	
	Candidate A [high good—high bad] (probability)	Candidate B [low good—low bad] (probability)
Economy will improve during his/her term	35%	20%
Economy will get worse during his/her term	55%	40%

* Italicized text was not provided in the stimuli

Table 4. Study 3: Candidate selection in the sample of those who voted and in the full sample.

Dependent variable	Sample	B (S.E.)	Wald chi^2	p-value
1 = high good-high bad candidate 0 = low good-low bad candidate	351	.91 (.22)	17.01	<.001
1=high good-high bad candidate 0= low good-low bad candidate or no vote	402	.93 (.20)	20.68	<.001

1 = low good-low bad candidate 0 = high good-high bad candidate or no vote	402	-.71 (.21)	11.46	.001

Table 5. Study 4: Conjoint part-worths for four course attributes in the "attractive" vs. "unattractive" set conditions.

Attribute	Attractive set part-worth Mean (S.E.)	Unattractive set part-worth Mean (S.E.)	p-value
Interesting?	1.27 (.06)	1.19 (.06)	.353
Useful in job search?	1.28 (.06)	1.22 (.06)	.498
Workload high?	-0.36 (.04)	-0.56 (.04)	.002
Failure rates?	-0.49 (.06)	- 0.59 (.06)	.201

Figure 1. Choice shares across studies 1-3 in the "attractive" vs. "unattractive" set conditions.

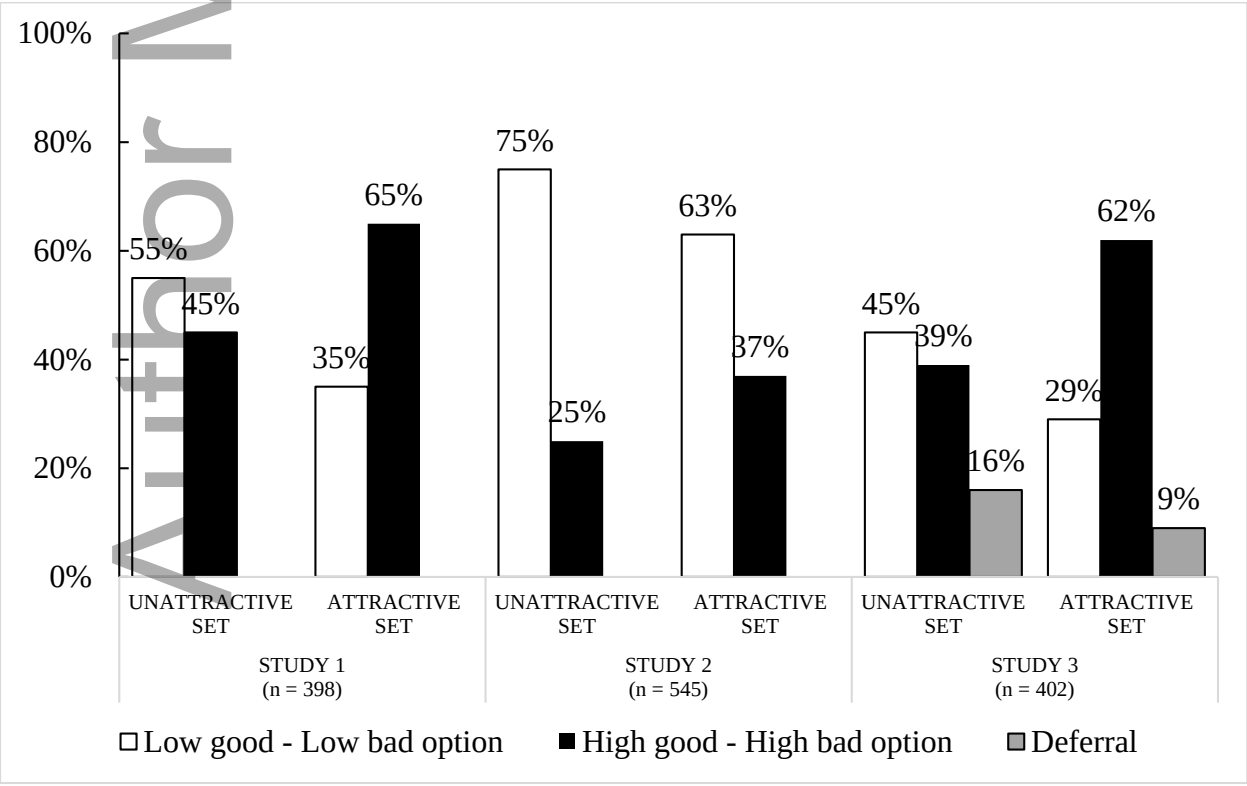

Figure 1. Choice shares across studies 1-3 in the “attractive” vs. “unattractive” set conditions.